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Herring Gull taxonomy

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EDITORIAL

Spindrift, Eastshore,
Virkie, Shetland ZE3 9JS
Tel: 01950 460080
Papers, notes, letters, illustrations, etc.
Roger Riddington
E-mail: editor@britishbirds.co.uk

'News & comment' information
Adrian Pitches, 22 Dene Road,
Tynemouth, Tyne & Wear NE30 2JW
E-mail: adrianpitches@blueyonder.co.uk

Rarity descriptions
Nigel Hudson, Post Office Flat,
St Mary's, Scilly TR21 0LL
E-mail: secretary@bbrc.org.uk

CIRCULATION & PRODUCTION

4 Harlequin Gardens,
St Leonards on Sea,
East Sussex TN37 7PF
Tel & fax: 01424 755155

Design & Production
Mark Corliss
E-mail: m.corliss@netmatters.co.uk

Subscriptions & Administration
Hazel Jenner
E-mail: subscriptions@britishbirds.co.uk

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Species boundaries in the Herring and Lesser Black-backed Gull complex

J. Martin Collinson, David T. Parkin, Alan G. Knox, George Sangster and Lars Svensson

Caspian Gull *David Quinn*

ABSTRACT The BOURC Taxonomic Sub-committee (TSC) recently published recommendations for the taxonomy of the Herring Gull and Lesser Black-backed Gull complex (Sangster *et al.* 2007). Six species were recognised: Herring Gull *Larus argentatus*, Lesser Black-backed Gull *L. fuscus*, Caspian Gull *L. cachinnans*, Yellow-legged Gull *L. michahellis*, Armenian Gull *L. armenicus* and American Herring Gull *L. smithsonianus*. This paper reviews the evidence underlying these decisions and highlights some of the areas of uncertainty.

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We dedicate this paper to the memory of Andreas Helbig, our former colleague on the BOURC Taxonomic Sub-committee. He was a fine scientist who, in addition to leading the development of the BOU's taxonomic Guidelines, made significant contributions to our understanding of the evolutionary history of Palearctic birds, especially chiffchaffs and *Sylvia* warblers. He directed one of the major research programmes into the evolution of the Herring Gull complex. His tragic death, in 2005, leaves a gap in European ornithology that is hard to fill.

Introduction

Until recently, the Herring Gull *Larus argentatus* was treated by BOU as a polytypic species, with at least 12 subspecies: *argentatus*, *argenteus*, *heuglini*, *taimyrensis*, *vegae*, *smithsonianus*, *atlantis*, *michahellis*, *armenicus*, *cachinnans*, *barabensis* and *mongolicus* (Vaurie 1965; BOU 1971; Grant 1986; fig. 1). Other subspecies have been recognised, but are less widely accepted. The Lesser Black-backed Gull *L. fuscus* has also been treated as a polytypic species by BOU, with three subspecies: *fuscus*, *graellsii* and *intermedius*. Hereafter, we will refer to the various races of Lesser Black-backed and Herring Gull by their subspecific names, as outlined above, e.g. *graellsii* for *L. f. graellsii*. In the case of *atlantis*, we follow Dwight (1925) and Vaurie (1965) by including the Herring Gulls breeding along the coasts of northwest Africa, including the Azores, Madeira and Canary Islands, but not the coasts of Iberia. The problematic taxon *taimyrensis* is discussed in detail below, and the name is used in this paper to describe the birds breeding from the Ob River east to the Khatanga (Vaurie 1965). There has been no molecular work comparing the similar and intergrading taxa *argentatus* and *argenteus* directly and any reference to '*argentatus*' in this paper implies '*argentatus* and *argenteus*'.

The Herring Gull/Lesser Black-backed Gull complex has been cited as an example of a ring species (e.g. Mayr 1940, 1963). Herring and Lesser Black-backed Gull are treated as separate species (Brown 1967), but there is an apparent cline in mantle coloration from the darkest Lesser Black-backed, eastwards through Siberia (*heuglini*, *taimyrensis*, *vegae*), across North America (*smithsonianus*) to the palest birds (*argenteus*/*argentatus*), whose distribution overlaps with that of Lesser Black-backed Gulls in northern Europe. A 'southern ring' of potentially interconnected forms, from *atlantis*

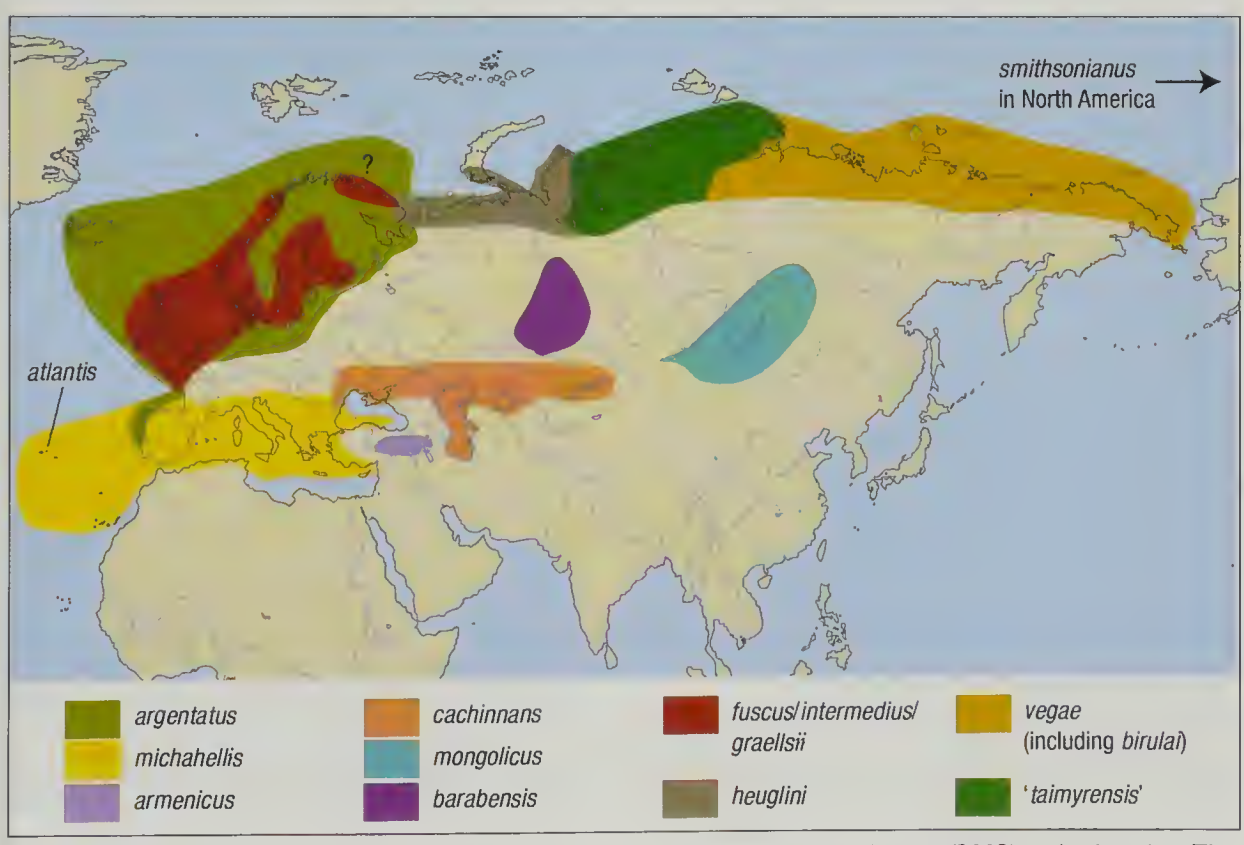

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Fig. 1. Distribution of large white-headed gull taxa, based on Malling Olsen & Larsen (2003) and other data. The map does not show the range of the American Herring Gull *Larus smithsonianus*, or some of the other taxa within the complex that are uncontroversially accepted as being separate species, such as Great Black-backed Gull *L. marinus*, Glaucous Gull *L. hyperboreus*, Iceland Gull *L. glaucoides* and other North American and Siberian species.

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165. Adult European Herring Gull *Larus argentatus*, Fraserburgh, North-east Scotland, March 2005. Amid the confusing and complicated taxonomic issues, and identification problems that are increasingly associated with gulls at rubbish tips and in concrete environments, it is sometimes too easy to forget that we are dealing with some very attractive birds. The *argenteus* subspecies of Herring Gull is at the pale end of the circumpolar changes in mantle and wing colour, most famously formalised by Ernst Mayr, and 'Silver Gull' (Silbermöwe) is an appropriate vernacular name. In central Europe, *argentatus* hybridises with Caspian Gull *L. cachinnans*, which is expanding its range. This may eventually complicate both identification and taxonomic issues. Past episodes of hybridisation between these two taxa may explain why some Herring Gulls have the 'wrong' mtDNA and lie with the Aralo-Caspian clade.

through *michahellis*, *cachinnans*, *barabensis* and *mongolicus*, was also postulated (Mayr 1942; Barth 1968). The species boundary between Lesser Black-backed and Herring Gull is not universally agreed, and some authors (e.g. Cramp & Simmons 1983) have treated *heuglini* and *taimyrensis* as subspecies of the former, whereas others (Vaurie 1965; Grant 1986) treat them as races of the latter. Indeed, if one accepts that they form a ring species, it is not entirely clear why they are currently regarded as two species at all, and not one, as with another ring species, the Greenish Warbler *Phylloscopus trochiloides* (Irwin 2002; Collinson *et al.* 2003; Irwin *et al.* 2005).

Species Guidelines and gull taxonomy

The BOURC Taxonomic Sub-committee (TSC) has published its own guidelines for assigning species rank (Helbig *et al.* 2002; referred to throughout this paper as the 'Guidelines'). These were developed initially as an internal document, but they have now been adopted by several other taxonomic committees, including the Taxonomic Advisory Committee of the Association of European Records and Rarities Committees (AERC 2003). They attempt to set practical criteria that may be used to delineate species boundaries, broadly based upon a General Lineage species concept (de Queiroz 1998). The Guidelines are, in general, rather conservative. They demand that, for two taxa to be regarded as separate species, they should first be diagnosable at the taxon level: individuals must be clearly identifiable as belonging to one taxon or the other on the basis of genetically determined characters. Second, the Guidelines require that two taxa can be regarded as separate species only if they are likely to retain their separate genetic and phenotypic integrities in the future, i.e. the evidence suggests that they will not ultimately merge. The Guidelines also express a strong preference that taxonomic decisions be based on evidence published in peer-reviewed scientific literature. Gulls present particular problems for the delineation of species under these Guidelines: most of the taxa are very similar, yet all of them are rather

variable, which makes diagnosis difficult; much of the identification literature has not been published in peer-reviewed journals; gulls frequently hybridise at low levels, and hybridising taxa are by definition never fully diagnosable with respect to each other; and finally, many gull taxa show unstable, rapidly changing ranges, which may bring distinctive taxa into secondary contact and create the opportunity for hybridisation.

Taxonomic decisions involving sympatric species (those for which the breeding ranges overlap significantly) are usually relatively easy to resolve. If two diagnosably distinct taxa, such as *argentatus* and *michahellis*, breed in sympatry without merging (because hybridisation is either very rare or absent), this is strong evidence of reproductive isolation and the taxa are best regarded as separate species (condition 1 of the Guidelines). Similar conclusions can be drawn for parapatric taxa (those whose ranges meet but do not overlap), and genuinely parapatric taxa that are diagnosably distinct and do not hybridise and merge are also best regarded as separate species (condition 2 of the Guidelines). This situation is rare among birds in temperate environments. Hybridising taxa are considered under condition 3 of the Guidelines: otherwise diagnosable taxa that hybridise are most appropriately treated as separate species if hybridisation is the product of recent contact due to range expansion and there is evidence that the taxa are sufficiently distinct that they are unlikely to merge (condition 3.1). They may also be treated as separate species under condition 3.2 of the Guidelines if hybridisation is limited to a narrow, stable hybrid zone, indicating restrictions to free gene flow, as with Hooded *Corvus cornix* and Carrion Crows *C. corone* (Parkin *et al.* 2003).

Some taxonomic decisions concern allopatric gulls (like *mongolicus*, whose breeding range does not overlap with that of any other large gull). Taxonomic decisions are often controversial in the case of allopatric populations, because it is more difficult to infer reproductive isolation between two or more taxa that never get the opportunity to interbreed. The best we can do is to look at the degree of difference between closely related allopatric taxa, and assess whether this is similar to the degree of difference between sympatric taxa that we know are separate species. Under the Guidelines, allopatric taxa should be treated as separate

Chris Gibbins

166. First-winter American Herring Gull *Larus smithsonianus*, St John's, Newfoundland, Canada, February 2007. Given the similarity between adult American and European Herring Gulls *L. argentatus*, it is counterintuitive to believe the mtDNA genetic data which splits the two taxa. However, the rather uniform dusky underparts of many first-year Americans, combined with the dark tail, was perhaps always a clue that *smithsonianus* had some 'Siberian' input.

species if they are diagnosably distinct on the basis of one or more genetically determined characters (conditions 4.1 and 4.2), or on the basis of two or three characters in combination when any one of those characters by itself does not allow complete diagnosability (condition 4.3). However, in all 'condition 4' cases, the allopatric taxa must approach a level of distinctiveness seen in closely related sympatric taxa. It is not our intention that very small genetic differences between taxa should by themselves justify recognition of species status. When genetic differentiation is modest (e.g. Carrion and Hooded Crows, Parrot *Loxia pytyopsittacus* and Common Crossbills *L. curvirostra*), other evidence of reproductive isolation is essential. As will be seen later, there are cases where there is very little genetic differentiation among gull taxa that are widely accepted as 'good' species (e.g. Iceland *L. glaucoides*, Slaty-backed *L. schistisagus*, Glaucous-winged *L. glaucescens* and *smithsonianus* Herring Gulls). Conversely, morphologically well-differentiated taxa may show no evidence of reproductive isolation. In situations such as these, decisions are not made on genetic differentiation alone, but it has to be recognised that small genetic distance *and* poor phenotypic diagnosability may confuse the evolutionary picture in large gulls.

In the last 15 years, a large amount of new data relevant to gull taxonomy has become available. Not least are the enormous advances in identification, both in the field and in the hand, which have catalysed taxonomic review (for example, see Yésou 2002 for a summary of the whole white-headed gull group and Jonsson 1998a for the Lesser Black-backed complex). Other advances have taken place in the field of molecular phylogeny, in particular the genetic analysis of the relationships among gull taxa. Both lines of evidence have indicated a need for radical revisions of established gull taxonomy. Molecular phylogenies are generally published in peer-reviewed scientific journals, with a high standard of rigour and objectivity. The same cannot be said for advances in field identification, which, with few exceptions, are published in unrefereed magazines and books, on unmonitored websites, or are passed on by oral tradition; furthermore, they often involve the identification of (unverifiable) extralimital individuals. Some gull identification texts, such as Grant (1986) and Malling Olsen & Larsson (2004), are of a high standard, but many are not. We do not ignore informal non-peer-reviewed or anecdotal identification literature, but we recognise that some of it has to be treated with caution. Despite a growing confidence among birders in their ability to identify extralimital individuals, the evidence relating to such birds can be difficult to evaluate objectively. This in turn leads to the perception that taxonomic authorities are lagging behind experienced field observers.

To set the scene for a revision of gull taxonomy, we first review the genetic evidence that shapes our understanding of gull evolution. On the basis of this, the 'Herring/Lesser Black-backed Gull' complex is divided into independently evolving populations or lineages, among which taxonomic relationships are defined by morphological and behavioural characters. The result is a taxonomic arrangement that we believe better reflects our current understanding of the species limits within this complex group of birds.

Genetic analyses of gull evolution and species boundaries

Early attempts to unravel gull evolution using biochemical or molecular data (Tegelström *et al.* 1980; Ryttman *et al.* 1981; Johnson 1985; Snell 1991) found very little difference among the taxa, demonstrating that the currently recognised 'large white-headed gull' taxa have evolved so rapidly that it is not easy to determine their relationships (Wink *et al.* 1994; Heidrich *et al.* 1996). The taxa are closely related and (as with many northern hemisphere birds) much of their evolutionary history has probably been driven by the ebb and flow of glaciations. Recent studies using rapidly evolving genes have been more informative and have clarified our understanding of the relationships among these gulls. Many of these genes lie in small cellular structures called mitochondria, and evolve more rapidly than 'conventional' genes in the cell nucleus. The DNA sequence of the same gene is determined for each taxon under investigation, and phylogenies (or evolutionary trees) are generated, based upon genetic similarity (see Maclean *et al.* 2005). Since the genetic difference between two taxa depends upon how long they have been evolving independently, individuals with similar sequences are placed close together in a phylogeny. Two parts of the mitochondrial chromosome keep cropping up in gull genetics:

these are the *cytochrome-b* gene (*cyt-b*) and the stretch of DNA called the 'control region'. The latter is not a real gene, but is involved with organising the way that the genes are read and replicated; it does, however, evolve rapidly and so is particularly useful for comparing closely related, or recently diverged, taxa.

Although phylogenies based on mitochondrial-DNA (mtDNA) sequences are widely used as a basis for taxonomic decisions, they are not without their limitations, and sometimes give an unrepresentative or misleading impression of the relationships between the taxa under review. It is well established that phylogenies based on a single gene may not represent the evolutionary history of a species accurately (this is well described for birders in Alström *et al.* 2003). The problems are exacerbated for taxa that have diverged only recently and may still hybridise or share genetic variations that were present in their common ancestor. Because mtDNA is transmitted through only the female line, even species that are effectively reproductively isolated by the infertility of hybrids may be able to share mtDNA lineages. Appendix 1 presents some examples that demonstrate the problems with mtDNA-based phylogenies.

Rather than seek potential problems with published phylogenies based on mtDNA, however, a more pragmatic approach is to take the most robust mtDNA phylogenies at face value, and then consider any complications that may arise when molecular and morphological data disagree. With this in mind, the most recent mtDNA studies make a lot of things clear, albeit raising many new questions as well. Broadly, the genetic results for many of the large white-headed gulls are consistent with rapid interglacial radiation from one of two glacial refuges (areas of suitable habitat that persisted during the ice ages). The following points summarise key issues which have emerged from the most recent genetic studies.

1. 'Herring Gull' should be split

Crochet *et al.* (2000, 2002) analysed the mitochondrial control region and *cyt-b* sequences of large white-headed gull taxa. They showed that these taxa form a monophyletic group (or clade) of closely related species, indicating that they have a recent common ancestor. Crochet and his colleagues identified a '*fuscus*' clade that included not only *fuscus*, *argentatus* and *michahellis*, but also Great Black-backed Gull *L. marinus* and a group of closely related Arctic (Siberian and American) taxa: Slaty-backed, Iceland and Californian Gulls *L. californicus*. In a similar study, Gay *et al.* (2005) confirmed this

Simon Stirrup

167. Third-winter Iceland Gull *Larus glaucoides*, Galway City, March 2007. Although plumage and structural features make this species easy to identify, genetically it forms part of the 'Siberian' clade, and it would be difficult, if not impossible, to try and identify one solely on the basis of a DNA sample.

clade of closely related Arctic taxa, including Glaucous-winged, Glaucous *L. hyperboreus*, Iceland, Thayer's *L. glaucoides thayeri* and Slaty-backed Gulls. Interestingly, American Herring Gull (*smithsonianus*) also grouped within this Arctic/American/Siberian clade, rather than being particularly closely related to European Herring Gull (*argentatus*), suggesting that they may be different species. Together, the data suggest that at least one taxon (*smithsonianus*) currently included in the 'Herring Gull' complex should be treated as a separate species. The currently recognised 'Herring Gull' is not a homogeneous unit, but is paraphyletic in that taxa such as Great Black-backed Gull and Glaucous Gull, which are widely accepted to be distinct species, are embedded within it. By convention, paraphyletic species are not allowed (Maclean *et al.* 2005), and the 'Herring Gull', on the basis of genetic evidence, should be split into more species.

2. Gulls hybridise

It is well known that mtDNA sequences (haplotypes) that are characteristic of one taxon may also occur within individuals of another. This can be explained either by incomplete lineage sorting or by hybridisation. The former occurs where two taxa still possess one or more haplotypes that were present within the gene pool of their most recent common ancestor. This is commonly seen when two separate species have split from each other only recently, and analysis of the patterns of genetic variation within large gulls shows quite clearly that incomplete lineage sorting is partly responsible for the sharing of mtDNA sequences between recently evolved gull taxa (P. de Knijff pers. comm.). However, genetic sequences of one taxon can also be transferred to another taxon when individuals hybridise. Crochet *et al.* (2002) found genetic evidence for low levels of hybridisation between different gull taxa and concluded that the sharing of DNA haplotypes between taxa is partly due to hybridisation. There was no evidence of any restriction of gene flow in Lesser Black-backed Gulls between nominate *fuscus* and *graellsii*, supporting their treatment as conspecific. Indeed, there was evidence of gene flow between *fuscus* and *heuglini*, and even into East Siberian taxa such as *vegae*. Furthermore, perhaps due to their recent evolutionary origins and episodes of hybridisation, none of the American/Siberian taxa were genetically distinct, not even those that are morphologically quite divergent and universally accepted as different species, e.g. Slaty-backed and Glaucous Gulls.

Data from Crochet's team suggest both strong genetic differentiation within the large white-headed gulls (revealing boundaries between previously unrecognised species) and a lack of genetic differentiation (so far discovered) between taxa that are generally recognised as 'good' species. These data are broadly compatible with those of an independent team, led by Andreas Helbig, who used overlapping but more extensive mtDNA sequences (including part of the control region) to reveal a high-definition picture of gull phylogeny. The study by Liebers *et al.* (2004) built upon Liebers & Helbig (1999) and Liebers *et al.* (2001, 2002) to test directly the hypothesis that Herring Gulls are a classic ring species.

3. Yellow-legged Gull (michahellis) and Armenian Gull (armenicus) are genetically distinct

Liebers & Helbig (1999) studied the relationship between *michahellis* and *armenicus*. Analysis of control-region sequences showed that these are closely related but genetically distinct sister taxa, although hybridisation and morphologically intermediate birds were found at a mixed colony at Lake Beysehir, Turkey. In spite of this, and the implied potential for free genetic mixing, the mtDNA analysis revealed only limited evidence of *michahellis* sequences in the western *armenicus* populations, and none in the other direction. This was surprising, but suggested a degree of reproductive isolation between the two forms.

4. Southern 'yellow-legged' taxa are not a continuum of closely related forms

Helbig's analysis was then extended to include *atlantis*, *cachinnans*, *barabensis*, *mongolicus*, *graellsii*, *heuglini* and *taimyrensis* (Liebers *et al.* 2001). A related group was formed by *michahellis*, *atlantis* and *armenicus*, but whereas *michahellis* and *armenicus* were genetically distinct within this group, *michahellis* and *atlantis* were not. In fact, *michahellis* mtDNA haplotypes tended to be a subset of (or were recently derived from) *atlantis* DNA haplotypes, suggesting that *atlantis* was the ancestral form and that *michahellis* resulted from colonisation of the Mediterranean by birds from the current

range of *atlantis*. Genetically, *armenicus* is relatively old (certainly older than *michahellis*), and it is likely that *atlantis*-like founders colonised the Mediterranean twice – the first time giving rise to *armenicus*, the second time (much later) giving rise to *michahellis*.

A second group was formed by *cachinnans*, *barabensis*, *mongolicus* and *graellsii/heuglini/taimyrensis*, these being genetically distinct from *michahellis*, *atlantis* and *armenicus*. Helbig's team found almost no evidence of gene flow between these two groups, in spite of their overlapping range (albeit at a low density and involving relatively few individuals) and occasional observations of hybridisation. In the Black Sea area, *michahellis* breeds in close proximity to *cachinnans*, while the range of *graellsii* overlaps with that of both *atlantis* and *michahellis*. The most genetically diverse taxon was *cachinnans* and it was placed basally in the phylogeny, suggesting that it was ancestral to the Siberian/Arctic taxa and Lesser Black-backed Gulls. Three taxa – *heuglini*, *taimyrensis* and *barabensis* – were very closely related; *barabensis* and *heuglini* were not distinguishable genetically, and genetic variation within *barabensis* was very small, suggesting that this taxon was a recently derived southern offshoot of *heuglini* and not, as had been previously assumed (Johansen 1960; Jonsson 1998b), a northern offshoot of *cachinnans*.

Reconstructing the evolution of these gulls suggests that *cachinnans* was long-established in a glacial refuge somewhere in the region of the Aral and Caspian Seas. Presumably during an interglacial, its range expanded northwards forming a population of gulls that subsequently evolved into *heuglini/taimyrensis*. More recently, birds from within the range of *heuglini* expanded south, giving rise to *barabensis*, which met *cachinnans* in secondary contact. There was evidence of gene flow between *barabensis* and *cachinnans* but, as with *armenicus* and *michahellis*, it was primary unidirectional (from *barabensis* into *cachinnans*, but not the other way). This suggests that free genetic mixing was not occurring, despite the lack of geographic barriers between the taxa. Hence Mayr's 'southern ring' of *atlantis*, *michahellis*, *cachinnans*, *barabensis* and *mongolicus* does not represent a valid taxonomic grouping, because several of the taxa are not particularly closely related to each other (de Knijff *et al.* 2005).

5. Lesser Black-backed Gulls are one or two species, not four or five

Liebers & Helbig (2002) used the mitochondrial control region to study the five northern taxa of 'Lesser Black-backed Gulls': *graellsii*, *intermedius*, *fuscus*, *heuglini* and birds that they assigned to *taimyrensis*. They analysed birds from the breeding grounds of each of these taxa and found that they were only very weakly differentiated, in general forming a single genetic

Chris Gibbins

168. Lesser Black-backed Gulls *Larus fuscus graellsii*, Tarragona, Spain, February 2006, with at least one *L. f. intermedius* (foreground). Identification of gulls is sometimes a process of iterative refinement. When a winter flock of *graellsii* presents an almost uniform appearance, it is tempting, and probably correct, to pick on the darkest bird and call it an *intermedius*. Such identifications are not usually independently verifiable, which does not mean that they are wrong, but as there is free gene flow and intergradation between *graellsii* and *intermedius* in northern Europe, assignment of an individual gull to subspecies depends more on where it breeds than what it looks like.

group dominated by two mtDNA sequences that differed by only one DNA base pair. There was some evidence of hybridisation with *cachinnans*, and also with taxa from the Pacific, though on a very limited scale. None of these five taxa is genetically fully distinct from the others, consistent with a relatively recent divergence from a common ancestor and rapid range expansion. Nevertheless, certain patterns were evident: *heuglini* and *taimyrensis* were genetically more variable than the western taxa, of which *graellsii* was particularly uniform. This suggests that the eastern taxa are longer established, and that range expansion from ancestral populations of 'pre-*heuglini*' in northwest Siberia gave rise to *fuscus*, *intermedius* and *graellsii*. Whether this was by progressive expansion westwards, or by the separate evolution of *fuscus* and *graellsii* and their subsequent contact to produce *intermedius*, cannot presently be resolved. Gene flow across the range of the five subspecies is not completely unrestricted; there is isolation by distance. At over 4,000 km, the breeding range of the five taxa is much greater than the dispersal distances of individual gulls, so that birds at the extremes are geographically too far apart to meet and hybridise. Furthermore, the data indicated a significant (though incomplete) barrier to gene flow between *fuscus* and *heuglini*. Because there is no obvious environmental barrier to hybridisation between these taxa, Liebers & Helbig speculated that the boundary between *fuscus* and *heuglini* may approach the species level. There was, however, no genetic evidence for further splits within the 'Lesser Black-backed' grouping.

Yésou (2002) argued that the individuals of *taimyrensis* sampled by Liebers & Helbig (2002) were in fact taken from a location where many, perhaps all individuals, were of the form '*birulai*' (the characteristically yellow-legged western population of *vegae*). The implications of this will be discussed below.

6. The Herring Gull is not a ring species

The paradigm of the Herring Gull as a ring species had already been questioned (Allano & Clamens 2000; Yésou 2001a) by the time the emerging genetic picture was being evaluated and synthesised in Liebers *et al.* (2004). The last authors analysed not only the control region, but also the whole of the mitochondrial *cyt-b* gene, and greatly increased both the number of individuals and the number of taxa, to include *argentatus*, *smithsonianus* and other (mostly Pacific and Arctic) species. Their paper, boldly titled 'The Herring Gull is not a ring species', built on arguments put forward by Yésou (2001, 2002) and confirmed the finding of Crochet *et al.* (2002) that *smithsonianus* does not appear to be closely related to *argentatus* (which it would be if Herring Gull was really a ring species). Using Western Gull *L. occidentalis* as a more distantly related comparison (an outgroup), the deep genetic split between an Atlantic/Mediterranean clade of gulls ('Clade 1') and an Aralo-Caspian/Siberian clade ('Clade 2') was confirmed (fig. 2). Clade 1 comprised *atlantis*, *michahellis* and *armenicus* (as described in Liebers *et al.* 2001), also *argentatus*, Great Black-backed Gull and Palearctic individuals of Glaucous Gull. Clade 2 included *cachinnans*, *barabensis*, *heuglini*, *fuscus*, *intermedius* and *graellsii* as described above, and also Kelp Gull *L. dominicanus* and a mixed assemblage of genetically very similar taxa including *vegae*, *smithsonianus*, *mongolicus*, Slaty-backed, Iceland and Glaucous-winged Gulls, Nearctic individuals of Glaucous and some individuals of *argentatus*. Within Clades 1 and 2, *argentatus* and *cachinnans* were, respectively, the taxa with the oldest and most diverse mtDNA lineages, suggesting these to be the most direct descendants of the ancestral Clade 1 (Atlantic) and Clade 2 (Aralo-Caspian) gulls. No *smithsonianus* mtDNA sequences were found in *argentatus*, and *smithsonianus* was placed securely within a group of very closely related East Siberian/Pacific/Nearctic species. *Mongolicus* was shown to be closely related, not to *cachinnans*, but to the Pacific coast taxa (from whence its ancestors presumably colonised Mongolia only recently). Kelp Gull was shown to be a southern offshoot of the Lesser Black-backed taxa *fuscus*/*heuglini*/*taimyrensis*. Leaving aside for the moment the complication of two taxa (*argentatus* and *hyperboreus*) that have individuals in both clades, a putative evolutionary scenario for gulls was confirmed. As described earlier, two ancient glacial refuges are proposed – one in the North Atlantic where the ancestors of *argentatus* lived, and one in the Aralo-Caspian region that harboured the ancestors of *cachinnans*. North Atlantic 'pre-*argentatus*' gulls gave rise to two apparently reproductively isolated species: Great Black-backed (possibly originating in North America), and a yellow-legged 'pre-

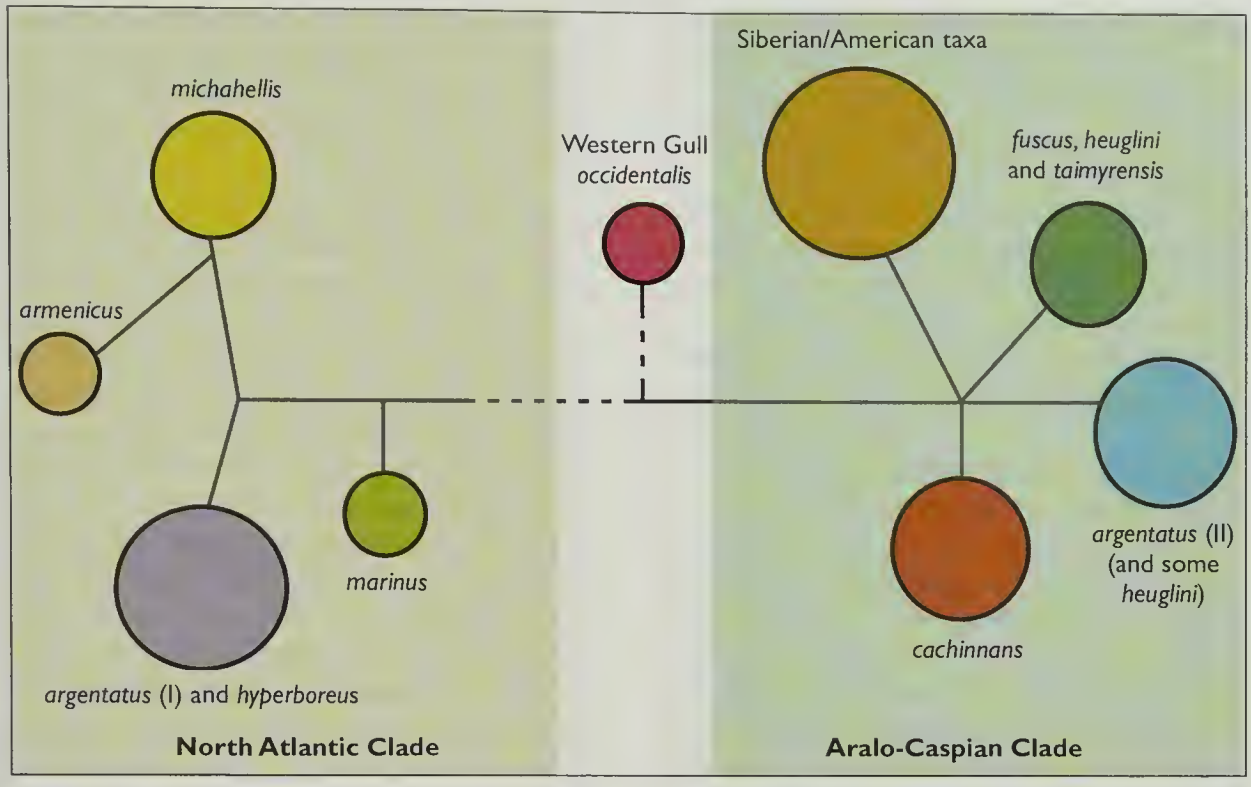

Fig. 2. Pictorial representation of the genetic relationships between large white-headed gulls. The lines represent genetic distance, the lengths of the lines being roughly proportional to the number of DNA mutations differentiating among the taxa. The filled circles represent a cluster of individual gulls with very similar or identical mtDNA sequences. The orange circle representing 'Siberian/American' taxa contains individuals of Iceland Gull *Larus glaucoides*, Glaucous-winged Gull *L. glaucescens*, American individuals of Glaucous Gull *L. hyperboreus*, Slaty-backed Gull *L. schistisagus*, as well as individuals of *smithsonianus*, *taimyrensis*, *mongolicus*, *vegae* and *heuglini*. The figure is based on Liebers *et al.* (2004), but very much simplified and with several anomalies removed. The occurrence of European and British Herring Gulls (*argentatus/argenteus*) with mtDNA sequences that fall within either clade may be due either to past hybridisation or to retention of ancient DNA sequences that were present in the ancestors of all the gulls.

atlantis' in the south. From here, *atlantis*-like birds colonised the eastern Mediterranean evolving into *armenicus*, which presumably became isolated during a subsequent glaciation. A second colonisation of the Mediterranean by *atlantis* gave rise to *michahellis*, which met *armenicus* in secondary contact in the eastern Mediterranean. From the Aralo-Caspian region, a process of contiguous population expansion driven by periodic climatic amelioration saw *cachinnans* birds moving northwards, evolving into *heuglini*, then west to become *fuscus*, and east to become the East Siberian and North American taxa *vegae*, *mongolicus* and *smithsonianus*. Thus, the Herring Gull is not a ring species.

The data suggest that 'large white-headed gull' divergence has been driven relatively recently by geographical separation, range expansion, and occasional long-distance colonisations over the last 300,000 years or even earlier (Crochet *et al.* 2002; de Knijff *et al.* 2005). Furthermore, for these gulls at least, there would appear to be no close relationship between genetic divergence and the evolution of reproductive isolation.

There is also the complication of *argentatus* and Glaucous Gull, which have individuals in both major genetic clades. There are two alternative explanations for this: (i) the retention of DNA variants that were present in a (presumably long-established and genetically diverse) common ancestor of Clade 1 and Clade 2 taxa, or (ii) more recent hybridisation between Clade 1 and Clade 2. For *argentatus*, it is possible that both have occurred. The Clade 1 mtDNA haplotypes found in *argentatus* are varied and basal to the phylogeny – suggesting that they are ancient. In contrast, the Clade 2 mtDNA haplotypes are more recent and less varied, and more suggestive of fairly recent hybridisation between *argentatus* and a Clade 2 taxon such as *cachinnans* or *fuscus*. Clade 1 DNA appears to be the 'original' for *argentatus*, hence the placing of this taxon within the North Atlantic assemblage. Glaucous Gull is different because all the Clade 1 mtDNA haplotypes came from the Palearctic, and all the Clade 2 from the Nearctic,

suggesting a geographical basis to the genetic variation. Across its range, Glaucous Gull is observed to hybridise frequently only with *argentatus* in Iceland, and with *smithsonianus* in Alaska. This hybridisation may have led to Glaucous Gull acquiring the mtDNA of another taxon at some point during its evolution. Hence its molecular phylogeny is obscured because, in some parts of the range, its own evolving mtDNA sequences have been replaced by those from another taxon.

7. Nuclear- and mitochondrial-DNA comparisons

The occurrence of both Clade 1 and Clade 2 haplotypes in *argentatus* and *hyperboreus* has important implications for the way gull phylogenies are interpreted. Over the course of time, mtDNA lineages will be lost from the population, more or less randomly, as females with those mitochondrial sequences die without leaving any offspring. If new sequences were not created by mutation, all individuals within a taxon would eventually share the same mtDNA (see Maclean *et al.* 2005). Consequently, if we came back in 50,000 years time, it is possible that all Clade 1 haplotypes would have been lost from *argentatus*, and we would resolve it, entirely falsely, as a Clade 2 taxon. How do we know that other gull taxa within the current phylogeny have not been displaced by similar random events? Furthermore, if gull taxa can adopt, by hybridisation, the mtDNA sequences of another taxon, how can we be certain about the placement of any taxon? For example, is it possible that *smithsonianus* is really a close relative of *argentatus*, but that it hybridised with a North American taxon and adopted the mtDNA of that taxon? Both of the North American *marinus* specimens examined by Crochet *et al.* (2003) yielded 'Siberian' (possibly *smithsonianus*) mtDNA haplotypes (see also de Knijff *et al.* 2005), presumably a result of past or currently observed hybridisation. These complications do not just make gull phylogenies difficult: they may cause entirely false conclusions to be drawn about species boundaries. The problems are not insoluble, and they can be partly resolved by the simultaneous analysis of nuclear DNA and morphology. While mtDNA sequences are driving our understanding of gull evolution and are enormously informative, it must be recognised that splits or lumps based *solely* on mtDNA cannot be regarded as robust.

Nuclear genes evolve and diverge more slowly than does mtDNA. Studies of the nuclear DNA of gulls have been more limited in scope, and the results are less informative because the very recent radiation of this group has not allowed much time for the genetic divergence of nuclear genes. Two studies (Panov & Monzikov 1999 and de Knijff *et al.* 2001) did not directly sequence nuclear genes, but drew up partial phylogenies using a crude variant of genetic fingerprinting. Panov & Monzikov limited their analysis to the relationship between *argentatus* and *cachinnans* as part of a broader behavioural and morphological study, and revealed clear evidence for regular hybridisation along a long, but narrow, contact zone accounting for a small part of the Russian populations of both taxa. In particular, they found evidence in the Volga basin for the introgression of *argentatus* genetic fingerprints into *cachinnans*. De Knijff *et al.* (2001) studied nuclear genes in *cachinnans*, *atlantis*, *michahellis*, *argentatus*, *fuscus*, *graellsii*, *intermedius*, *heuglini* and *taimyrensis*. Their analysis did not really resolve any of the taxa as being genetically distinct from the others because the method is relatively insensitive, although it has now been improved (P. de Knijff pers. comm.). However, in common with other studies, their results suggest rapid evolution of gulls, and continued gene flow between taxa. Their tentative phylogenetic tree put *cachinnans* as a basal group, supporting the existence of the ancestral Aralo-Caspian gull clade, and based upon an entirely distinct set of genetic data. The five 'Lesser Black-backed' taxa which they examined also grouped together, as did *atlantis*/*michahellis* with *argentatus*. So although the analysis did not radically alter our existing understanding of gull phylogenetics, it was broadly consistent with the mtDNA data for the same taxa.

Crochet *et al.* (2003) used a different technology to examine nuclear DNA from *marinus*, *michahellis*, *fuscus*, *argentatus*, *hyperboreus* and *smithsonianus*. Again, they found only very low levels of divergence among the taxa, which contrasted with the strongly structured phylogeny based on mtDNA, and which did not provide a solution to the *smithsonianus* problem. And again, the low level of divergence is consistent with the relatively recent radiation of the taxa (they estimate speciation events occurring 100,000 to 500,000 years ago), combined with ongoing hybridisation. In fact, they concluded

that intraspecific genetic diversity is accounted for almost entirely by hybridisation. This is not to imply that hybridisation is out of control, and that distinct gull taxa are currently merging. A reasonable mathematical estimate for gene flow between *argentatus* and *fuscus*, based on nuclear-DNA data, is that one hybrid per year successfully breeds with each parental species (Crochet *et al.* 2003). In the long term, small amounts of hybridisation can homogenise nuclear-DNA sequences across taxa and there are other examples of distinct species, such as crossbills and Galapagos ground finches *Geospiza*, that maintain species boundaries with little genetic differentiation, in spite of real or apparent hybridisation (Sato *et al.* 1999; Piertney *et al.* 2001). Furthermore, the data in Crochet *et al.* (2003) strongly suggested that the distinctiveness of the gull taxa was being maintained through selection against hybrids. In short, gull taxa are maintaining distinct morphologies by natural selection, in spite of the genetic 'scars' left by hybridisation, an argument for the continued importance of 'morphology-based' taxonomy.

8. General conclusions about genetic data

The implications of these genetic analyses for individual gull taxa will be discussed below. But what are the general lessons? First, molecular data reveal unsuspected examples of partial or complete reproductive isolation between gull taxa, and thereby provide strong evidence that valid species boundaries have previously been overlooked. Second, although molecular divergence between taxa may imply reproductive isolation, reproductive isolation does not necessarily produce significant genetic divergence, certainly not within the relatively short timescale of the evolution of these birds (i.e. good gull species may not have had time to become totally genetically distinct). Third, hybridisation between gulls is ongoing, and may obscure phylogeny; hybridisation may also make it difficult to define diagnostic characters for some taxa, and this has to be borne in mind when assessing potential species boundaries.

Taxonomic conclusions for the Herring Gull/ Lesser Black-backed Gull assemblage

Lesser Black-backed and Herring Gulls are specifically distinct. They breed extensively in sympatry without merging, demonstrating effective reproductive isolation. On the occasions where hybridisation has been observed, the hybrids are fertile, though not necessarily as fit as pure-bred birds. Reproductive isolation is maintained largely by behavioural and morphological factors influencing female mate choice. There is an extensive range of species-specific displays, and females choose a mate of their own species on the basis of long-call vocalisations and posture, and the colour of bare parts, eye-ring and mantle (Tinbergen 1953; Brown 1967). Similar isolating factors may operate between other gull taxa, and must be considered when defining species boundaries. The ability of two closely related taxa to interbreed is in some respects a retained ancestral character, and may not always be taxonomically informative. For gulls, it is important to remember that failure or inability of two taxa to interbreed does not correlate well with the genetic difference between them (Liebers *et al.* 2004).

The Atlantic taxa – Herring Gull and Mediterranean, Atlantic and Armenian Yellow-legged Gulls

Mediterranean *michahellis* and Atlantic Yellow-legged Gulls *atlantis* are fairly similar in structure and plumage, and appear to be closely allied, a conclusion that was confirmed by genetic analyses described above. Although some *atlantis* may be identifiable in the field, especially individuals from the distinctive Azores population, the two taxa intergrade and are not diagnosably distinct; at present there is no evidence to support a species-level split between them (de Knijff *et al.* 2001; Liebers *et al.* 2001), although the continued recognition of at least two subspecies is desirable. There is a need for further research into the affinities of birds breeding in coastal Morocco and on the Atlantic coast of Portugal. Birds breeding along the north coast of Spain, which can be distinguished on the basis of plumage, vocalisations and structure (Teyssèdre 1983; Carrera *et al.* 1987), may also merit subspecific recognition, but are genetically very similar to *michahellis* (Pons *et al.* 2005).

Northwards range expansion of *michahellis* has brought it into limited contact with *argenteus* in northwest Europe (Nicolau-Guillaumet 1977; Marion 1985), and occasional hybridisation with both *argenteus* and *graellsii* has been recorded (e.g. Yésou 1991). Hybridisation is not unusual for individuals at the edge of their

range, where potential mates are scarce, and has little taxonomic significance. However, on the west coast of France, *michahellis* and *argenteus* have bred in mixed colonies for nearly 30 years and mating is strongly assortative, i.e. mixed pairs are much rarer than would be expected if mating were random (Yésou 1991). The two taxa effectively ignore each other, and there is little if any evidence of merging (Yésou 2002; Pons *et al.* 2004). Criteria for separating *michahellis* and *atlantis* from other gulls, in immature and adult plumages, through bare-part coloration and vocalisations, have been well described (Glutz & Bauer 1982; Teyssèdre 1983, 1984; Dubois & Yésou 1984; Filchagov 1993, 1999; Garner & Quinn 1997; Klein & Buchheim 1997; Klein & Gruber 1997; Liebers & Helbig 1999; Dubois 2001).

As defined by Helbig *et al.* (2002), *michahellis/atlantis* fulfils diagnosability and other criteria for specific rank, separate from Herring Gull. Together with the clear genetic differentiation between *michahellis/atlantis* and all other taxa, these data indicate a prolonged period of independent evolution that has led to a level of reproductive isolation consistent with species boundaries between *michahellis/atlantis* and both *argentatus* and *fuscus/graellsii/intermedius*.

Liebers & Helbig (1999) carefully analysed the extent of morphological diagnosability in Armenian Gull *armenicus*, finding small but significant differences from *michahellis* in the long-call vocalisations, and also in wing-tip pattern. Other characters, such as wing and head length, differ statistically, but there is considerable overlap. Their molecular data showed evidence of reproductive isolation, although this is not complete because of limited maternal gene flow from *michahellis* into *armenicus* populations (although not in the opposite direction). So, although the breeding colonies of *armenicus* are well within the dispersal distance of *michahellis* in the eastern Mediterranean (and hybridisation is known to occur), *michahellis* and *armenicus* are genetically distinct and there is no evidence of introgression on a scale to suggest that the two taxa will merge. Thus, *michahellis* and *armenicus* are diagnosable by a combination of bill markings, wing-tip pattern, biometrics and mtDNA; by treating them as

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169. Adult Yellow-legged Gull *Larus michahellis* Tarragona, Spain, February 2006. It is difficult to believe now that this distinctive species was ever lumped with Herring Gull *L. argentatus*. The bright yellow legs, red-orange eye-ring and stout bill are distinctive, and many individuals can be identified on voice alone. When *michahellis* and *argentatus* breed in some of the same colonies in northwest Europe, they most often virtually ignore each other. Both *michahellis* and the closely related Armenian Gull *L. armenicus* appear to have evolved from founder populations that colonised the Mediterranean region from ancestral ranges on the Atlantic coasts.

largely allopatric taxa with occasional hybridisation, they fulfil species criteria 3 or 4.2 defined by Helbig *et al.* (2002).

Previously, *michahellis* and *atlantis* have been split by some authorities from Herring Gull but lumped with *cachinnans*; this was the position previously adopted by *British Birds* (*Brit. Birds* 86: 1–2) and is the current treatment in Dickinson (2003). However, *michahellis* and *cachinnans* are essentially parapatric, separated by breeding habitat, although they breed in near sympatry in Poland and Romania, where hybridisation has been suspected, but not proven (Klein & Buchheim 1997; Faber *et al.* 2001). Both morphological and behavioural evidence suggest a high degree of reproductive isolation (this is covered in more detail under the section on *cachinnans* below), and the genetic evidence confirms that *michahellis* and *cachinnans* should not be treated as conspecific.

The TSC has recommended that Yellow-legged Gull and Armenian Gull be treated as separate species (Sangster *et al.* 2005) – a recommendation which, of course, parallels decisions made by other European taxonomic committees.

- Yellow-legged Gull *L. michahellis* (polytypic, incl. subspecies *michahellis*, *atlantis* and possibly other populations that may deserve subspecific recognition)
- Armenian Gull *L. armenicus* (monotypic)

Caspian (Pontic) Gull – cachinnans

Perhaps no taxon better demonstrates the contribution that birders have made to gull identification than *cachinnans* (Yésou 2002). As recently as 1995, few people were identifying extralimital Caspian Gulls, yet a combination of ringing data and careful field observation has shown that this (sometimes) distinctive taxon is not an uncommon visitor to northwest Europe (Klein 1994; Gruber 1995; Garner & Quinn 1997).

Both nuclear and mitochondrial DNA strongly suggest that *cachinnans* is conspecific with neither *argentatus* nor *michahellis/atlantis*. However, *cachinnans* is morphologically variable, and the problem for the assessment of diagnos-

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170. Adult or near-adult Caspian Gull *Larus cachinnans*, Histria, Romania, August 2006. In the space of ten years this species has gone from 'first' to 'mega' to 'non-rarity' status in Britain, thanks to a combination of ringing studies that showed that the species was on the move into northwestern Europe and some very sharp birding. It was previously considered to be closely related to the Yellow-legged Gull *L. michahellis*, but the genetic data suggest that this species is more closely related, and possibly ancestral, to Lesser Black-backed Gull *L. fuscus*. Extensive white tongues to the inner webs of the outer primaries are characteristic of this species, and although the iris colour is variable, many adult Caspian Gulls have striking dark eyes. The open-winged posture during long-call display is characteristic of Caspian Gull, and the scientific name refers to its unusual dry 'laughing' call.

ability is that the full range of variation has probably not been formally published (Liebers & Dierschke 1997; Gibbins 2003). There is also hybridisation with *argentatus* along a narrow zone where the taxa meet in eastern and central Europe, which makes it difficult to distinguish the range of variation within pure *cachinnans* from the variation that results from hybrids (Panov & Monzikov 1999; Neubauer *et al.* 2006). Nevertheless, a substantial body of identification literature suggests multiple characters by which many individuals can be recognised. These will not be repeated in detail here (see, for example, Panov *et al.* 1991a,b, Garner & Quinn 1997, Klein & Gruber 1997, Liebers & Dierschke 1997, Jonsson 1998b) but include: distinctive structural features of the bill and legs; wing and neck length and posture; an apparently diagnostic pattern of white tongues on the inner webs of the outer primaries of adults; specific body-feather patterns on young birds (especially first-winters); and characteristic underwing and greater-covert patterns. The voice is distinctive, as is the long-call posture (though this may be cultural rather than genetic; Tinbergen 1953). Clearly, *cachinnans* and *argentatus* fulfil diagnosability requirements for species status.

Sometimes, *cachinnans* breeds in close geographical proximity to *michahellis* with no significant hybridisation, perhaps in part due to differences in their preferred habitat. The taxa are phenotypically distinct and there is no evidence of gene flow, suggesting that they are reproductively isolated. The range of *cachinnans* also approaches that of *barabensis*, with which it has previously been regarded as conspecific (Johansen 1960). There is some evidence of hybridisation between the two, but it is very limited and unidirectional: *barabensis*-type mtDNA has been found in individuals that are phenotypically *cachinnans*, but not vice versa (the implication being that *barabensis* females are mating with *cachinnans* males and their progeny are being incorporated into the *cachinnans* population, perhaps by the female offspring becoming imprinted upon their fathers). This is a similar situation to that which exists between *armenicus* and *michahellis*. A degree of reproductive isolation is implied, though this is possibly incomplete – individual gulls in Kazakhstan (or wintering in Arabia) are sometimes of intermediate character between *barabensis* and *cachinnans*, and may be impossible to assign to either form (Johansen 1960). Introgression of *cachinnans* into *barabensis* populations has been inferred from morphological studies (Panov & Monzikov 2000), although these authors showed only that some *barabensis* individuals were close to *cachinnans* in some characters, which does not necessarily imply intergradation. On all morphological, behavioural and vocal criteria, *barabensis* is much closer to *heuglini* than to *cachinnans*. Thus, there is no compelling evidence to suggest that *barabensis* and *cachinnans* should be treated as conspecific, whereas there is convincing evidence that, as the best description of the relationship between the taxa, they should be split.

The problem of cachinnans–argentatus *hybridisation*

A broad zone of introgression was described by Panov & Monzikov (1999) as a cline from the Volga (pure *cachinnans*) to eastern Scandinavia (pure *argentatus*). In fact, what was described was a broad zone in which individual gulls often showed mixed characters of either taxon, but there was limited genetic evidence of introgression of *argentatus* genes into the Volga basin. Hybridisation has been inferred in expanding *cachinnans* colonies in eastern Europe (Faber *et al.* 2000; Neubauer *et al.* 2006; Yakovets 2006), and has probably been occurring intermittently for some considerable time where these two taxa meet. It was even suggested that eastern '*omissus*' *argentatus* may result from previous episodes of hybridisation between *argentatus* and *cachinnans*. Although the fitness of hybrids has never been formally tested, true reproductive isolation between *cachinnans* and *argentatus* probably does not exist, and we have to consider whether the taxa are merging. Neubauer *et al.* (2006) analysed the situation in most detail in Poland, where both *argentatus* and *cachinnans* have recently expanded their numbers and range (*argentatus* from the north, *cachinnans* from the south). In central Poland, the two taxa have come into contact and are breeding. Neubauer *et al.* regarded *argentatus* and *cachinnans* as diagnosably distinct, and confirmed the ecological (habitat) differences between the two taxa. Birds in central Poland that could not be identified because they fell outside the range of variation of their reference populations of *argentatus* and *cachinnans* from Poland and elsewhere, or

that showed mixed characters, were treated as hybrids. Whether these really are hybrids or are just unidentifiable is difficult to determine, but two observations strongly support the hybrid suggestion: 1) they occur predominantly in central Poland where the two taxa coexist; and 2) pairings occur between the two taxa. There are approximately 200 pairs of gulls each year with some sort of hybrid *argentatus/cachinnans* pairing/contribution, in a 300-km zone across the middle of Poland. This is out of a population of about 1,500 pairs of *argentatus* (a recent colonist but its population is steady or declining) and 500 of *cachinnans* (rapidly expanding in numbers and range from the south). The data are consistent with recent (20 years) secondary introgression driven by range expansion, especially that of *cachinnans* from the south. We cannot predict whether this hybridisation might eventually lead to the merging of the two taxa. There is a possibility that as *cachinnans* continues to exploit refuse tips across Europe, it will continue to spread northwest, hybridising freely with *argentatus* to form a hybrid swarm (a mixed population of individuals with variably intermediate appearances due to multi-generation interbreeding) or a cline, and so would no longer fulfil the Guidelines criteria for separate species (Helbig *et al.* 2002). It is also possible that a stable hybrid zone will develop (satisfying Guidelines criterion 3.2), or that they will become sympatric and reproductively isolated like *argentatus* and *michahellis* in western Europe (satisfying criterion 1.2). The TSC cannot make confident predictions about this, but to assert that in future the taxa will merge and should therefore remain lumped requires several assumptions that cannot currently be supported by evidence, especially while we know nothing about the long-term fitness of the hybrids. The mtDNA evidence is unequivocal – *argentatus* and *cachinnans* are quite different evolutionary lineages, and cannot be lumped – and the evidence for hybridisation cannot be shown to be taxonomically any more significant than hybridisation between White-headed *Oxyura leucocephala* and Ruddy Ducks *O. jamaicensis*, i.e. the result of range expansion bringing divergent but reproductively compatible taxa into contact. However, we recognise that this is a situation that should be kept under review, and we cannot discount the possibility that *cachinnans* will begin to merge with *argentatus* through hybridisation.

In the light of these data, we recognise that *cachinnans* fulfils diagnosability criteria and has maintained its identity over evolutionary time despite close contact and proven hybridisation with other gull taxa. It should therefore be treated as a separate species:

- Caspian Gull *L. cachinnans* (monotypic)

There is variation within *cachinnans*, and western birds ('*ponticus*' from the Black Sea) have been described as showing more white in the primaries than eastern birds. It is not, however, certain that this geographic variation would withstand a critical examination, so for now we treat Caspian Gull as monotypic, with considerable individual variation. There is need for a rigorous assessment of morphological variation within and between populations of *cachinnans*, to establish whether there is sufficient differentiation to merit the recognition of any subspecies.

Lesser Black-backed Gulls – L. fuscus

It has previously been proposed that the Baltic Gull *L. f. fuscus* should be split from the other subspecies of Lesser Black-backed Gull, on the basis of plumage and structural characters, moult cycle, foraging and migration strategies (Sangster *et al.* 1999). However, mantle colour varies clinally from *graellsii* through *intermedius* to *fuscus*, and field identification of *fuscus* is probably impossible, except on the basis of geographical location (Barth 1966, 1968; Jonsson 1998a; Gibbins 2004a; Muusse *et al.* 2005). 'Soft' characters such as foraging strategy and migration routes are likely to be environmentally constrained, and not taxonomically informative. Using a long sequence of mtDNA, Liebers & Helbig (2002) found a continuous gradation from *graellsii*, through *intermedius* to nominate *fuscus*, confirming genetic arguments presented by Crochet (1998), suggesting little if any reproductive isolation. This genetic cline more or less parallels the changes in mantle colour across the range. Under the Guidelines, we therefore intend to continue to treat nominate *fuscus*, *intermedius* and *graellsii* as subspecies within a single species.

The systematics of the three west Siberian taxa *heuglini*, *taimyrensis* and *barabensis* are unclear. They have been poorly described in the literature until quite recently, when more information has become available (Filchagov *et al.* 1992b; Eskelin & Pursiainen 1998; Rauste 1999;

Panov & Monzikov 2000; Buzun 2002). Generally, *taimyrensis*, the name usually given to the taxon breeding from the Ob to the Khatanga (Vaurie 1965), has been regarded as the pale end of a cline in mantle coloration running from dark-mantled *heuglini* in the west to paler-mantled *taimyrensis* in the east. Yésou (2002) reported that birds now breeding within the accepted range of *taimyrensis* are in fact phenotypically identical to the generally yellow-legged '*birulai*' form of the East Siberian 'Herring' Gull *vegae*. There is a sharp divide in average mantle colour between birds breeding west of the Ob (*heuglini*) and those breeding east of the Ob (*birulai* = *vegae*) (Yésou 2001b). A minority of intermediates occurring from the Ob eastwards to southwestern Taimyr (not farther east) are in some respects phenotypically intermediate and might be labelled '*taimyrensis*', but Yésou suggested that if *taimyrensis* ever existed as a valid taxon, it was the result of hybridisation between western *vegae* ('*birulai*') and eastern *heuglini* in some sort of unstable hybrid zone. There is nevertheless a cline in *heuglini* mantle colour, getting paler from west to east (Buzun 2002). It may be sensible to recognise this differentiation taxonomically, although the degree of difference is very slight.

Liebers & Helbig (2002) showed genetically that breeding birds from the ranges of *heuglini*, *taimyrensis* and *barabensis* are very closely related, and that *barabensis* is clearly related to 'Heuglin's' rather than Caspian Gull. Generally, *barabensis* is morphologically distinct from Caspian Gull, but the limited introgression detected by Liebers & Helbig (2002) is perhaps reflected in the field. Studies of breeding *barabensis* have demonstrated small population-level differences from *heuglini* in plumage pattern and biometrics (Panov & Monzikov 2000). It remains possible that, as more data become available, *barabensis* will be recognised as a separate monotypic species, but the current uncertainty about the extent of intergradation with *heuglini* leads us to retain it as part of the *heuglini* group.

Any taxonomic decision on the relationship of *heuglini* and *barabensis* with *fuscus*, *intermedius* and *graellsii* will be borderline. The latter

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171. Adult Lesser Black-backed Gull *Larus fuscus*, Tampera, Finland, August 2007. This is a 'Baltic Gull' *L. f. fuscus*. Without its rings this would not normally be diagnosably distinguishable from *L. f. intermedius* as an extralimital vagrant. However, the long-winged and slightly built appearance may be a clue to its identity, and moult-cycle differences with respect to other Lesser Black-backed taxa may help to identify some individuals. There is no substantial evidence to suggest that it should be split from *L. f. intermedius* or *L. f. graellsii*, but its relationship with *L. f. heuglini* is much more borderline, there being only restricted gene flow and very little if any observed mixed pairing in spite of close contact between the taxa.

group arose through rapid range expansion of *heuglini*-like ancestors into northern Europe. Although most *heuglini* are distinguishable from nearly all *fuscus/intermedius/graellsii* on the basis of mtDNA, the genetic differences are minimal and there is considerable overlap, suggesting that some introgression may still occur. This was the conclusion reached by Liebers & Helbig (2002), who suggested that their data were consistent with a significant, though incomplete, barrier to gene flow between *fuscus* and *heuglini*. Behavioural data, on the other hand, indicated no hybridisation between these taxa (Filchagov *et al.* 1992a), in spite of their close geographical contact around the Kola Peninsula and the White Sea. The taxa are separated on the basis of habitat preferences, *heuglini* nesting primarily on inland tundra, and *fuscus* generally restricted to the coast. Diagnosability is a problem. The identification criteria for *heuglini* with respect to the near-identical *graellsii* remain uncertain; the proven occurrence of *graellsii* in Finnish refuse tips, where many of the putative identification criteria for (extralimital) *heuglini* have been defined, makes the data very difficult to interpret (Gibbins 2004a).

There is much work still to be done on 'Heuglin's Gull'. Genetic sampling of *taimyrensis* is incomplete and the taxon itself may not be valid. Diagnosability of *heuglini* has not been confirmed with respect to *fuscus/intermedius/graellsii*. Although many gull workers recognise Heuglin's Gull *L. heuglini* as a distinct species, until further genetic sampling has been undertaken it is more defensible to recognise the five (or six) subspecies – *fuscus*, *intermedius*, *graellsii*, *heuglini*, (*taimyrensis*) and *barabensis* – as members of a single clinal, polytypic species, with a slight step between *heuglini* and *fuscus*.

It is probable that *vegae* is not a 'Lesser Black-backed Gull'. Although field impressions of *vegae* suggest that it resembles a pale *heuglini* (Yésou 2001, 2002), *vegae* genetically belongs to the Siberian/Arctic group discussed below, and Yésou argued convincingly that hybridisation is limited and/or sporadic. The problem is the genetic status of *taimyrensis*. Birds within the historical range of this taxon are genetically part of the *heuglini* group (Liebers & Helbig 2002; Liebers *et al.* 2004) but phenotypically of the

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172. Adult Lesser Black-backed Gull – presumed to be 'Heuglin's Gull' *Larus f. heuglini*, Khor Kalba, United Arab Emirates, March 2006. Identification of adults of this taxon with respect to the virtually identical *L. f. graellsii* is still not fully resolved, although there may be population-level differences in average structure and primary pattern. Tampere rubbish dump in southwest Finland has become the place to see this taxon in Europe, but the occurrence of *graellsii* in Finland has confused the identification literature, and further work is ongoing. Taxonomy of the 'Siberian' gull taxa *heuglini*, *taimyrensis*, *barabensis*, *vegae* and *mongolicus* remains controversial, and several different arrangements would be defensible on current evidence, under slightly differing species concepts and interpretations of the data.

vegae group (Yésou 2002). It appears that there is a sharp genetic divide between 'West Siberian Gulls' and 'East Siberian Gulls', and a sharp (if slight) morphological (phenotypic) divide, but it is not clear that the phenotypic and genetic divides coincide. This is explicable if it is assumed that hybridisation is taking (or has taken) place, as stated by Yésou (2002).

The recommendation is therefore to recognise:

- Lesser Black-backed Gull *L. fuscus* (polytypic, with subspp. *fuscus*, *intermedius*, *graellsii*, *heuglini*, *taimyrensis*, *barabensis*)

Although *taimyrensis* is included here, we acknowledge that it may be best synonymised with *heuglini* or be regarded as a transient *heuglini* × *vegae* hybrid population.

The 'Siberian' grouping – vegae, mongolicus *and* smithsonianus

Genetically, these three taxa lie within a Siberian assemblage that also contains a number of relatively uncontroversial and (although hybridisation is not uncommon) broadly reproductively isolated species such as Slaty-backed and Glaucous-winged Gulls. These are more closely related to Lesser Black-backed than to *argentatus*, and, despite the fact that the whole Siberian grouping is under-represented in the genetic studies, it is unlikely that they are members of *L. argentatus*.

The identification of American Herring Gull, *smithsonianus*, has been discussed thoroughly in Lonergan & Mullarney (2004) and Adriaens & Mactavish (2004). Both of these papers were written primarily as guides to the identification of vagrant *smithsonianus* in western Europe, and concluded that many individuals may be separable from European Herring Gulls on plumage characteristics. American *smithsonianus* are more distinct from European birds in first-winter plumage than as adults, although there is much overlap; many individuals of each age group are essentially unidentifiable and the taxon has not been shown to be diagnosably distinct on the basis of plumage. However, to retain *smithsonianus* as a subspecies of *L. argentatus* would make that species paraphyletic ('Herring Gull' would then include the distantly related *smithsonianus* but not the more closely related taxa such as Great Black-backed Gull, etc.), a situation we prefer to avoid. It has also been reported that *argentatus* does not respond to vocalisations of *smithsonianus*, and that this underlies taxon recognition – the implication being that a degree of reproductive isolation may exist (Frings *et al.* 1958). On current evidence, therefore, *smithsonianus* should be recognised as distinct from *L. argentatus*. Geographic variation within *smithsonianus* exists, but has not been fully documented, and there may be a case for the recognition of subspecies of *L. smithsonianus* in the Nearctic (Jonsson & Mactavish 2001; de Knijff *et al.* 2005).

What of the relationship between *smithsonianus* and *vegae*? Although the genetic differences are minimal, about 90% of the *smithsonianus* so far sampled carry mtDNA haplotypes that are not found in *vegae* (Liebers & Helbig 2004; de Knijff *et al.* 2005). There are also structural differences (Chu 1998). On the other hand, they are not 100% genetically distinguishable, and *vegae* and *smithsonianus* show some plumage similarities – there is, for example, considerable overlap in the dark-bodied, pale-headed appearance of first-winters of both taxa (shown by representative photographs in Moores 2003). Although there is overlap, adult *vegae* tend to be darker on the mantle than *smithsonianus* and generally to have more black pigmentation (as far as P3) on the primaries (Gibbins 2004b). The black subterminal primary markings of *vegae* generally lack the 'W' shape described for *smithsonianus*, and features such as eye-ring colour, head streaking, iris and leg pigmentation differ on average too. However, the taxa are not 100% diagnosably distinct on genetic or morphological criteria and, at present, the evidence for more than subspecific differentiation is not overwhelming. There is at least as much morphological difference between *vegae* and *smithsonianus* as there is between *smithsonianus* and *argentatus*, and many ornithologists regard *vegae* and *smithsonianus* as specifically distinct. They may well be right. However, under the Guidelines they do not fulfil the criterion of diagnosability and, in recognition of the uncertain relationships between these taxa, we recommend that *vegae* and *smithsonianus* continue to be treated as conspecific.

The relationship between *mongolicus* and *vegae* is borderline, and its evaluation is made difficult by geographical variation, which may not yet be fully described within both taxa. Genetically, it is impossible to say whether *mongolicus* is derived from *vegae* or from Slaty-backed Gull (Liebers *et al.* 2004; de Knijff *et al.* 2005). Genetically, it is not a Caspian Gull, and

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173. Adult American Herring Gull *Larus smithsonianus*, St John's, Newfoundland, Canada, February 2007. The asymmetric 'W' of the black subterminal bands to the primaries, looking quite spikey on the outer webs, is characteristic of this species. The AOU Committee on Classification and Nomenclature has considered and, at the time of writing, rejected the split of *smithsonianus* from European *argentatus* (see http://www.aou.org/committees/nacc/proposals/2007_B_votes_web.php3). That committee regards the genetic data as insufficient to support a split, which shows how delicately balanced some of these taxonomic decisions are. Differences in accepted species definitions and the perceived value of stability can lead to significant differences in opinion between authorities. Indeed, one member of the American Committee confessed to having given up with large white-headed gulls, which is an understandable but, in a Palearctic context, unsatisfactory standpoint.

there are marked plumage differences from this species (Yésou 2001), with which it has previously been regarded as conspecific. Population-level differences between *mongolicus* and *vegae* include the greater extent of black pigmentation in the primaries of adult *mongolicus* and that taxon's restricted head-streaking in winter plumage (Yésou 2001; Moores 2003; Gibbins 2004b). Gulls wintering in Korea are thought to be *mongolicus* on plumage characteristics and habitat preferences (Moores 2003), but this cannot be confirmed objectively. It cannot be shown that diagnosability conditions can be fulfilled and, although recognising that this is a close call, the most defensible option is to follow Yésou (2002) and recognise *mongolicus* as conspecific with *vegae*. Further study may, of course, change this position.

In summary, the recommendation is to recognise:

- American Herring Gull *L. smithsonianus* (polytypic, with subspp. *smithsonianus*, *vegae*, *mongolicus*)

We accept that others may prefer to recognise two or three species, although this would not affect the British List.

Conclusions

There is still much to be learnt about what we used to call simply Herring Gulls and Lesser Black-backed Gulls before we can be confident that we understand the relationships of the component taxa. The biological relationships of these gulls, their behaviour and even their morphology may change more rapidly than taxonomists can keep pace with. It is clear that the former ring-species arrangement that put three taxa in *L. fuscus*, and at least 12 in *L. argentatus*, while giving full species status to *L. marinus* and several Siberian/Arctic gull species, does not reflect the evolutionary or the biological relationships of the birds themselves. Under the Guidelines, we recommend the following taxonomy (Sangster *et al.* 2007):

- Caspian Gull *L. cachinnans* (monotypic)
- Lesser Black-backed Gull *L. fuscus* (polytypic, with subspp. *fuscus*, *intermedius*, *graellsii*, *heuglini*, *taimyrensis*, *barabensis*)
- American Herring Gull *L. smithsonianus* (polytypic, with subspp. *smithsonianus*, *vegae*, *mongolicus*)
- Herring Gull *L. argentatus* (polytypic, with subspp. *argentatus* and *argenteus*)

- Yellow-legged Gull *L. michahellis* (polytypic, including subspecies *michahellis, atlantis* and possibly other populations that may deserve subspecific recognition)
- Armenian Gull *L. armenicus* (monotypic)

The taxonomy recommended above recognises 20 years of new research into the evolution and identification of Herring/Lesser Black-backed Gulls. It accepts the genetic evidence that the 'Herring Gull' is not a ring species, and that *argentatus, michahellis, armenicus* and *marinus* form a group of reproductively isolated species that are not closely related to the rest of the complex. The taxonomy also recognises that 'Lesser Black-backed Gulls' evolved by a process of contiguous range expansion from a refugial population of 'pre-*cachinnans*' birds in the Aralo-Caspian region. These populations expanded north to west Siberia, then both west into northern Europe (*fuscus, intermedius, graellsii*) and east into northern Siberia (*heuglini*). Defining species boundaries within this group is always going to be difficult because the taxa with contiguous ranges are in general very closely related. Species boundaries here are controversial, and a conservative arrangement is recommended that is consistent with the Guidelines (Helbig *et al.* 2002) but recognises that there are other potential species boundaries that must be kept under review.

In general, we are adopting a taxonomy that assumes that the genetic groupings described by Liebers *et al.* (2004) and summarised in simplified form in Maclean *et al.* (2005) (fig. 2) are likely to delineate the species boundaries that, on the basis of current evidence, are best supported. In some cases, this assumption is backed by strong morphological, plumage and behavioural evidence for biological reproductive isolation. For example, the recognition of Great Black-backed, Lesser Black-backed, Yellow-legged and Armenian Gulls as specifically distinct from Herring Gull is generally uncontroversial and could be supported on morphological and behavioural grounds without any genetic evidence. We have then extrapolated the argument to use genetic differentiation as a guide to other potential species barriers, such as the separation of American Herring Gull from Herring Gull, and of Caspian Gull from all other taxa. We have recognised, or continued to recognise, separate species that fall within a single genetic grouping if there is good evidence of strong reproductive isolation and morphological divergence (such as for Glaucous-winged, Iceland and Slaty-backed Gulls). This approach has produced a taxonomy that is similar to that proposed by Yésou (2002) and others, but with some differences, most noticeably the retention of *smithsonianus* and *vegae* as conspecific. If *vegae* and *smithsonianus* were formally shown to be diagnosable, either on the basis of morphology or genetics, this decision would no longer be supportable under the Guidelines, and we would welcome further data to clarify this situation.

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Dr J. Martin Collinson, Biomedical Sciences, Institute of Medical Sciences, University of Aberdeen, Aberdeen AB25 2ZD
Prof. David T. Parkin, Institute of Genetics, University of Nottingham, Queen's Medical Centre, Nottingham NG7 2UH
Dr Alan G. Knox, Historic Collections, King's College, University of Aberdeen, Aberdeen AB24 3SW
George Sangster, Stevenshof 17, 2312 GM Leiden, The Netherlands
Dr Lars Svensson, S:ta Toras väg 28, S-260 93 Torekov, Sweden

Appendix 1. Discrepancies between nuclear and mitochondrial DNA.

Western Gull *L. occidentalis* and Glaucous-winged Gull *L. glaucescens* hybridise commonly along the west coast of the USA and Canada and there is evidence of nuclear gene flow between the two species across the hybrid zone (Bell 1996). In contrast, there appears to be no introgression of mitochondrial DNA, and the genetic distance between the two species suggests that they last shared a common ancestor over one million years ago (this compares with an estimate of 300,000 years for the evolution of the whole Herring/Lesser Black-backed Gull complex of which *glaucescens* is a part) (Liebers *et al.* 2004; de Knijff *et al.* 2005). Assuming that *glaucescens* has been adequately sampled, the most likely explanation is perhaps that only the male hybrids are fertile (in line with Haldane's Rule), so hybrid females (that alone are ensuring that mtDNA is passed to the next generation) never get the chance to introduce the mtDNA of one species into the other. The example also shows how very distantly related gulls with very effective partial reproductive isolation may nevertheless hybridise extensively (de Knijff *et al.* 2005).

Recent studies of wagtails *Motacilla* based on mtDNA suggested a deep genetic divide in both Yellow Wagtails *M. flava* and Citrine Wagtails *M. citreola*, with nominate Citrine Wagtails within an 'eastern' yellow wagtail clade and *calcarata* Citrine Wagtails within a 'western' yellow wagtail clade (Voelker 2002; Ödeen & Björklund 2003). If this represents the true phylogeny of Citrine Wagtails, it would be very strong evidence that Citrine Wagtail should be split. However, Ödeen & Björklund (2003) also reported a separate phylogeny, based on a nuclear DNA. It placed nominate and *calcarata* Citrine Wagtails together, as members of a single clade, in effect 'repairing' the phylogeny produced by mtDNA, while maintaining the separate (species-level) distinction of eastern and western *flava* wagtails. This is not the place for a detailed discussion of the problems associated with these types of analyses, but it is sufficient to state that caution is required when building or interpreting phylogenies based on mtDNA, especially when these conflict with 'conventional' morphology-based phylogenies. This caution impacts on the conclusions we can make on the basis of published gull phylogenies.

Nor is it always the case that nuclear DNA tells a conservative story that tempers the excesses of mtDNA. Bensch *et al.* (2006) showed that although Willow Warblers *P. trochilus* show very little variation in their mtDNA across the species (much less than the variation seen in chiffchaffs (*sensu lato*) *P. collybita/ibericus*), they also harbour a rich and relatively ancient pool of alleles at several nuclear loci. It is suggested that the mtDNA diversity seen in Willow Warblers is artificially low as the result of strong selection in the past, whereas the nuclear DNA accurately reflects a complicated evolutionary history. There may even have been introgression of nuclear alleles from a (now extinct) diverged *Phylloscopus* taxon. The paper highlights the fact that phylogenetic trees based only on mtDNA may be seriously biased, and not reflect the true evolution of the species because its patterns of inheritance do not fully reflect that of the species involved (Hudson & Coyne 2002; Ballard & Whitlock 2004).

Looking back

One hundred years ago:

'COMMON TERNS ON THE HOLYHEAD SKERRIES. It is generally supposed that these birds do not breed on the Skerries, and that the rocks are occupied during the breeding season exclusively by Arctic Terns and a few Roseate Terns (*cf.* H. E. Forrest, *Vert. Fauna N. Wales*, p. 375). That this is not the case has recently been proved by her Grace the Duchess of Bedford, who has been good enough to forward me a Common Tern (*Sterna fluviatilis*), which killed itself against the telephone wire whilst she was visiting the colony. Her Grace added, "several were seen". HEATLEY NOBLE.' (*Brit. Birds* 2: 64, July 1908)

Recording areas of Great Britain

David K. Ballance and A. Judith Smith

Migrating Turnstones *Arenaria interpres* and a Dunlin *Calidris alpina* crossing an inland county boundary *Alan Harris*

It has recently become apparent that there are some confusions and anomalies in the way that national journals and organisations are reporting records received from County Recorders or taken from published sources. Examples of the problem can be seen in a recent *Ibis* paper on the British List (Dudley *et al.* 2006). We have, therefore, attempted to produce a definitive list of Recording Areas which will be acceptable to national and local authorities and which can be generally recognised. It is our intention to describe current practice, not to suggest corrections or improvements, except in some details of presentation.

The list incorporates all Recording Areas and relates them to old and new County, Regional and Unitary Authority boundaries, and (except in Scotland) to Watsonian Vice-counties. It is important that any code of practice should derive from County and Local Recorders themselves, and not be imposed upon them. In our view, a lesson can be learnt here from the recent attempt to establish vernacular names that would be internationally acceptable; these have been only partly adopted, and some have already been abandoned. Local patriotism is always stronger than bureaucrats assume, and we have to recognise that some areas may for years continue to be claimed by both new and original 'owners', whatever centralisers may propose.

The main problems are in the London area, around the borders of Yorkshire, and in North and South Wales. Others arise from the use of the titles of Metropolitan Counties, Scottish Regions and Districts, and other (often ephemeral) creations, of which some actively survive in ornithology (e.g. Avon, Greater Manchester), while others have never been used for recording or have not been universally accepted (e.g. Tyne & Wear, North and South Humberside, Strathclyde).

The system of Watsonian Vice-counties, invented in 1852 for botanists and still widely used outside ornithology, is of importance in Wales (where it closely but not absolutely corresponds with the pre-1974 county boundaries), and also in Surrey, Suffolk and Yorkshire. In the last two it gains support because county reports have been produced by sections of general natural history societies. Vice-counties have the great drawback that their boundaries are not marked on Ordnance Survey maps where they

The version published here is a much abbreviated version of the paper submitted originally by the authors. A full version, which contains more details, especially with regard to historical boundary changes, county and local reports and maritime problems, is available as a pdf at www.britishbirds.co.uk/recordingareas

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differ from those currently determined by Government. Although in general they approximate to the pre-1974 borders, familiar to older observers, there were many minor changes between 1852 and 1974, especially in the 1890s, following the introduction of County Councils, and in the early twentieth century, when cities such as Sheffield, Bristol and Manchester were expanding into neighbouring counties. The ornithological interest of an area can affect decisions on who is entitled to record it: the most famously disputed site is the south side of Breydon Water, which until 1889 was clearly in Suffolk, and whose observers still retain it. In Wales, some claims have recently been made to small areas where the shift of a border had passed unnoticed for more than a century.

Vice-counties have had no real effect on Scottish recording. Here, most local reports did not start until after 1974 and it was natural to look back to the system of Faunal Areas masterminded by Harvie-Brown before 1914. These were determined by geographical features, especially river basins, and their influence can be seen in the naming of central Scottish recording areas; part of the Clyde/Upper Forth border is a rare example of such a boundary not coinciding with any past or current political line. The controlling influence has been that of the Scottish Ornithologists' Club (SOC), founded in 1936, which produces an excellent map to define areas (www.the-soc.org.uk).

Occasions will arise when reference has to be made to pre-1974 records which were originally for counties that once had other names or boundaries than those of today. It is suggested that the standard form for this might be (for example): 'Chew Valley Lake (Avon; then [or 'formerly'] Somerset)'. Or (perhaps in a more strictly historical context): 'Chew Valley Lake (Somerset; now Avon)'.

There are some problems in marine recording. Obviously, birds visible with a telescope from the coast of a county can be safely claimed, at least up to the mid-line of a strait or estuary that marks the border with a neighbour. In England, Wales and the Isle of Man, there is no general policy on the inclusion within county or area frontiers of offshore records beyond these limits. Many such records used to come from manned lighthouses and lightvessels; the former, because they are built on rocks, can always be assigned to a Recording Area, but the latter may present problems. They remain of some historical importance, especially for records published by the British Association (1879–89, etc.) and by Eagle Clarke (1912). The SOC map defines the allocation of remote islands, including all lighthouses, and the division of seas crossed by regular ferries; it also establishes an offshore limit of three nautical miles (5.5 km) for those stretches of north and east Scotland where there are no complications from ferry routes, islands or lighthouses. From the Humber to the English Channel, the situation is more complicated, largely because of offshore sandbanks, many of which used to be marked by manned lightvessels. Following automation, some of these have been replaced by floats or buoys, though a few survive and may be visible from the coast in good conditions, even if they are now visited only by service vessels. The writers of local avifaunas for coastal counties from Lincolnshire to Kent have often thought that they should mention records from such sites, which once included important rarities, but they have sometimes hesitated to accept them for a county list. It can be hard to find the exact position of marine sites, since land-based cartographers generally include as little sea as they can get away with; we suggest referring to the annual *Admiralty List of Lights and Fog Signals* (UK Hydrographic Office). Oil and gas platforms proliferate, especially in the North Sea; some that are permanently manned are regularly reported on by the North Sea Bird Club, which also covers records from service vessels. A few estuarine forts and other structures may attract breeding gulls (Laridae) and must therefore be assigned to Recording Areas.

Estuaries can raise local difficulties, such as those in the Tamar Complex (Devon and Cornwall). Boundaries are seldom mapped beyond the mouths of rivers, and some are unclear further upstream: the Lancashire & North Merseyside/Cheshire & Wirral border along the Mersey is marked as 'undetermined'. In the list below, the boundary should be assumed to be the midway line unless otherwise specified.

In the English Channel and the Irish Sea, the national boundaries are also normally assumed to be the midway line, but it is not clear whether such counties as the Isle of Wight, Devon or Lancashire & North Merseyside would actually claim records as far out as this, or how the Isle of Man fits into the system. The Isles of Scilly Bird Group has recently defined its own pelagic limits in the form of a rectangle

around the islands. Many sightings from ferries must go unrecorded, for want of knowing who would deal with them, but they can be sent to the Editor of *Sea Swallow*, the journal of the Royal Naval Birdwatching Society. Beyond the limit of any possible county attributions, records within British waters should be assigned to the appropriate Sea Area.

Reservoirs have often been created from rivers that form county boundaries. Sometimes the boundary has been diverted so as to place the water wholly within one county, but more often no change has been made, leaving an invisible submarine frontier, as in King George's Reservoir (Greater London/Essex). Local arrangements have sometimes been made for the recording of such sites.

Institutions such as the BTO are naturally eager to be given map references, which can be plotted on a computerised database, yet they must still be able to classify all entries by an agreed system of Recording Areas. Very few local observers use map references when submitting records, except perhaps for exact locations of breeding birds.

In order to compile a definitive list, we have consulted all current County Recorders and those national organisations that are most closely concerned with local recording. We received many replies, and corrections to a first draft. There are probably still confusions, and we should appreciate any suggestions, improvements or corrections.

List of recording areas

The order is that of the Vice-counties (VC), except for Scotland. There is no intention of emphasising their importance or of suggesting their general adoption, but they provide a convenient pattern and points of historical reference. In the Vice-county system, counties could be subdivided or merged; detachments (of which there were still many in 1852) were included with the surrounding county.

Very small differences between old and new borders are usually given only where an area is of some importance. The many minor adjustments and exchanges of parishes (especially in the West Midland Bird Club area and in Gloucestershire) are another argument against the use of Vice-counties; for example, there were about 35 such adjustments to Worcestershire between 1895 and 1995, many of which have been long forgotten by its inhabitants.

The name in bold type is the **Recording** Area. Vice-counties and Sea Areas (SA) are given first, before the area is defined in relation to current or past administrative boundaries; most Unitary Authorities (UA) now functioning are mentioned, though hardly any of the wholly new ones have ornithological recognition. Some explanatory comment may be added, including a definition of any Areas of Double Recording (ADR), i.e. areas of any importance which are at present claimed by more than one county or area and included regularly in their reports. We suggest that, when records from these are published in the national literature, both areas might be given, the original county being placed first, e.g. Breydon Wall (Suffolk/Norfolk); Chingford (Essex/Greater London).

'Problem Areas' are places along the borders where records may be hard to assign definitively to either side. Their mention does not necessarily imply contentious claims; there are often local arrangements to assign, or duplicate, records. These may also concern river boundaries, which are far too common to mention individually.

The entry finishes with the titles of (extant) annual reports for the whole area and the organisations responsible for their production. In three counties where these reports are, or have recently been, in abeyance, local reports are mentioned.

England

1. Cornwall

VCs 1 (W) & 2 (E); SAs Plymouth, Lundy. Present county, excluding Isles of Scilly since 1969 but including offshore lighthouses except the Eddystone (see Devon).

Problem Areas: the Tamar Estuarine Complex below the Tamar and Saltash Bridges is generally considered as Cornwall, but above these is an ADR (with Devon). Tamar Lakes are usually assigned to Devon, though the west banks are in Cornwall.

Report: *Birds in Cornwall* (Cornwall Birdwatching & Preservation Society).

2. Isles of Scilly

Part of VC 1. Scilly lies in NE corner of SA Sole; SA Fastnet begins immediately to NW and SA Plymouth immediately to east, boundary being 06°15'W line of longitude. Pelagic area has recently been extended as follows: 50°15'N to 49°35'N, 05°50'W to 06°50'W.

Report: *Isles of Scilly Bird & Natural History Review* (Isles of Scilly Bird Group).

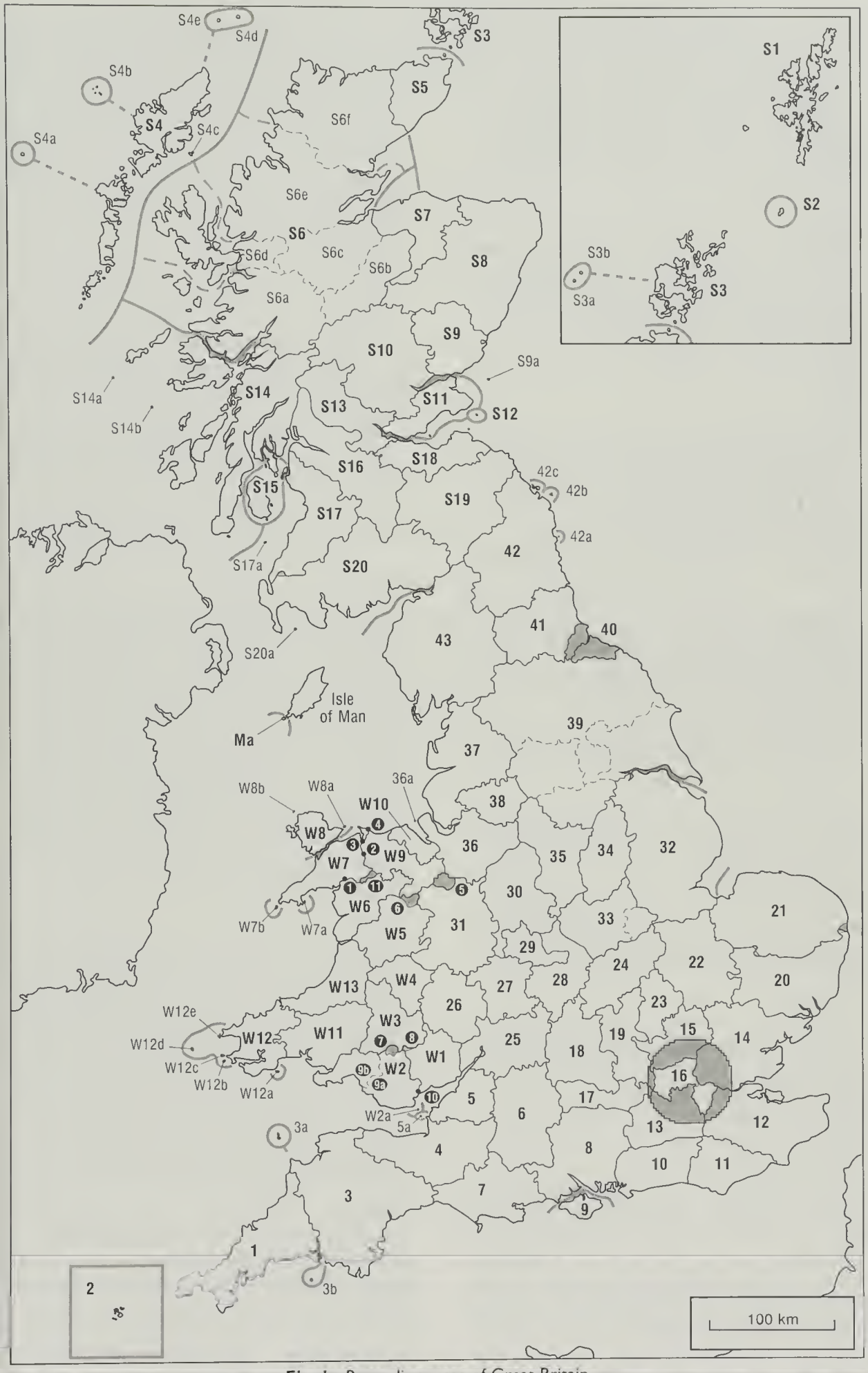

Fig. 1. Recording areas of Great Britain.

3. Devon
VCs 3 (S) & 4 (N); SAs Portland, Plymouth, Lundy. Present county, including Lundy (3a) and the Eddystone (3b – technically in Cornish waters and in VC 2), and incorporating UAs of Plymouth and Torbay.
Problem Areas: Tamar Estuary (see Cornwall).
Report: *Devon Bird Report* (Devon Bird Watching & Preservation Society).

4. Somerset
VC 5 (S) & part of 6 (N). Post-1974 county, excluding UAs of North Somerset (with Steep Holm) and Bath & NE Somerset (see Avon).
Problem Areas: Axe Estuary (with Avon).
Report: *Somerset Birds* (Somerset Ornithological Society).

5. Avon
Part of VCs 6 (N Somerset) & 34 (S Gloucestershire). 1974–95 county, consisting of UAs of North Somerset (including Steep Holm 5a), Bath & NE Somerset, Bristol, and South Gloucestershire.
Problem Areas: Axe Estuary (with Somerset).
Report: *Avon Bird Report* (Avon Ornithological Group).

6. Wiltshire
VCs 7 (N) & 8 (S). Present county, incorporating UA of Swindon; see also Gloucestershire.
Problem Areas: Cotswold Water Park West (with Gloucestershire).
Report: *Hobby* (Wiltshire Ornithological Society).

7. Dorset
VC 9 & small part of 11 (S Hampshire); SAs Wight, Portland. Post-1974 county, incorporating UAs of Bournemouth and Poole.
Problem Areas: for older records only, former Hampshire areas (which included Christchurch & Bournemouth).
Report: *Dorset Bird Report* (Dorset Bird Club).

8. Hampshire
VC 12 (N) & most of 11 (S); SA Wight. Post-1974 county, incorporating UAs of Southampton and Portsmouth.
Problem Areas: see Dorset, above.
Report: *The Hampshire Bird Report* (Hampshire Ornithological Society).

9. Isle of Wight
VC 10; SA Wight. Present county. Separately recorded since 1977; three earlier avifaunas included it with Hampshire.
Report: *The Isle of Wight Bird Report* (Isle of Wight Natural History & Archaeological Society and Isle of Wight Ornithological Group).

10/11. Sussex
10. West Sussex: VC 13 & fragment of 17 (Surrey); SAs Wight, Dover. 11. East Sussex: VC14; SA Dover. Generally recorded simply as Sussex, these two political divisions (introduced in 1865 and not exactly equivalent to the VCs) have sometimes been treated separately, but that is not current practice. Present counties, incorporating UA of Brighton & Hove. West Sussex includes Gatwick Airport, formerly mostly within Surrey and an ADR.
Report: *Sussex Bird Report* (Sussex Ornithological Society).

12. Kent
VC 15 (E) & most of 16 (W); SAs Thames, Dover. Post-1965 county, excluding areas taken into London in 1889 and into Greater London in 1965 (see London); incorporating UA of Medway.
Problem Areas: parts of the present county within 20 miles (32 km) of central London (St Paul's) are an ADR, from the Thames at Northfleet SW to Sevenoaks and Westerham.
Report: *The Kent Bird Report* (Kent Orn. Soc.).

13. Surrey
VC 17. Surrey thus incorporates the Greater London Boroughs of Richmond-upon-Thames, Kingston-upon-Thames, Wandsworth, Merton, Sutton, Lambeth, Croydon and Southwark, which are collectively an ADR with Greater London, as are Walton-on-Thames Reservoirs and some or all of the Surrey Boroughs of Elmbridge, Epsom & Ewell, Reigate & Banstead and Tandridge, where these fall within 20-mile London circle. Part of site of Gatwick Airport transferred to West Sussex in 1974, but remains an ADR. For Spelthorne, see Greater London; see also Wheatley (2007).
Report: *Surrey Bird Report* (Surrey Bird Club).

14. Essex
VCs 18 (S), 19 (N) & small part of 15 (Hertfordshire); SA Thames. Pre-1965 county, thus incorporating Greater London Boroughs of Waltham Forest, Redbridge, Barking & Dagenham, Newham and Havering, collectively an ADR, and UAs of Southend and Thurrock. Other parts of W Essex are also double-recorded within London circle, and are known ornithologically as 'Metropolitan Essex'. Changes along Hertfordshire border in 1992, from Bishops Stortford area south to Waltham Abbey, now accepted by both counties.
Problem Areas: Suffolk border along R. Stour, which now follows low-water mark on Suffolk side; any problems easily resolved with Suffolk.
Report: *The Essex Bird Report* (Essex Birdwatching Society).

15. Hertfordshire
VC 20, small parts of 18 (S Essex) & 21 (London).

Post-1965 county. Parts of S and SW Hertfordshire (from Rye Meads along south side of Ware and Hertford to Hatfield, St Albans, King's Langley and Rickmansworth) are an ADR with Greater London. See also Essex.
Report: *The Hertfordshire Bird Report* (Hertfordshire Bird Club).

16. Greater London
VC 21, parts of 16 (W Kent), 17 (Surrey), 18 (S Essex), 20 (Hertfordshire), 22 (Berkshire) & 24 (Buckinghamshire). Recording area is a circle of 20 miles (32 km) from St Paul's; for most purposes now converted to polygon of grid-squares of slightly larger area. The only parts now recorded solely in the *London Bird Report* are the former county of Middlesex, including small additions made from Hertfordshire to Greater London in 1965 and Spelthorne, ceded to Surrey in 1965 but not recorded by that county (except in Wheatley 2007); and the London (post-1889 and post-1965) corner of W Kent. Additions to Greater London in 1965 within Surrey (south of Thames) and Essex are ADRs with those counties; as are parts of Surrey, Kent, Essex, Hertfordshire, Buckinghamshire and (present-day) Berkshire that fall outside Greater London but inside the recording circle; for details see those counties. In referring to surrounding counties, London NHS has generally used VC boundaries rather than later ones. Apart from Spelthorne, records within the LNHS area, but outside Greater London, are in *national* literature normally assigned only to their current county, e.g. most of the Rainham Marshes reserve is in Essex, not Greater London, though it all lies within the LNHS circle. The map (fig. 2) has been adapted from Hewlett (2002).
Problem Areas: Wraysbury Reservoir was in Buckinghamshire from 1971 to 1974, then was shared between Berkshire and Greater London until 1991, and is now recorded by Greater London.
Report: *London Bird Report* (London Natural History Society).

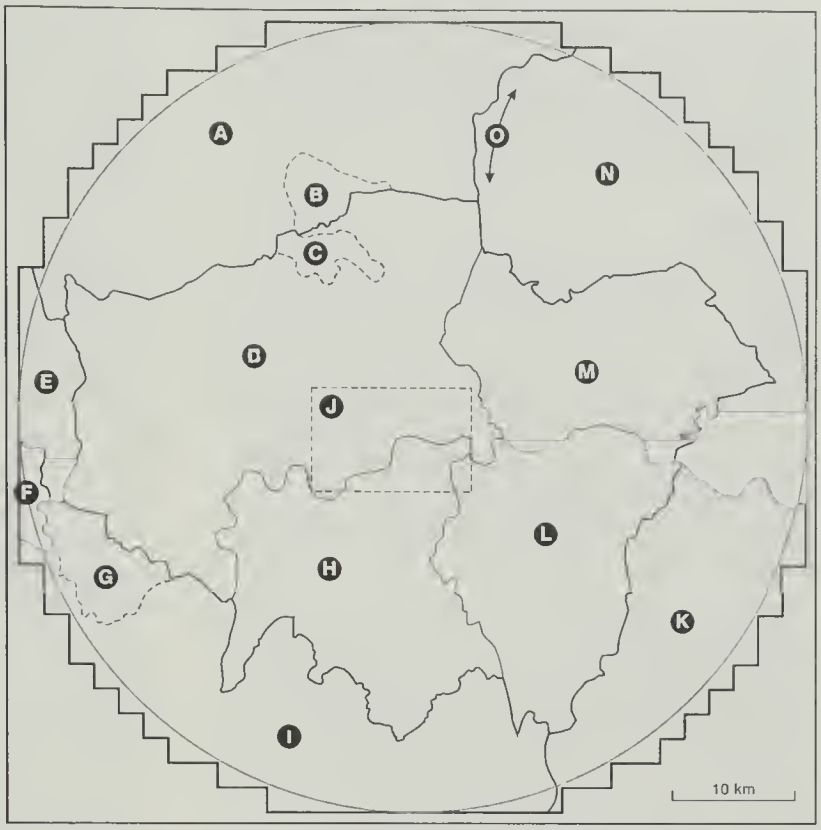

Fig. 2. The London Recording Area.
A: part of Hertfordshire; **B:** part of Middlesex (Potters Bar, etc.) transferred to Hertfordshire, 1965; **C:** part of Hertfordshire (Barnet area) transferred to Greater London, 1965; **D:** former county of Middlesex, now Greater London; **E:** part of Buckinghamshire; **F:** part of Berkshire; **G:** district of Spelthorne, formerly Middlesex, now Surrey but generally recorded by London; **H:** part of Surrey VC, now Greater London; **I:** part of Surrey; **J:** Inner London; **K:** part of Kent; **L:** parts of Kent transferred to London in 1889 & 1965; **M:** 'Metropolitan Essex'; **N:** part of Essex; **O:** various adjustments between Hertfordshire and Essex, 1965.

17. Berkshire
Much of VC 22, parts of 24 (Buckinghamshire) & 21 (London). Post-1974 county; in 1995, slight eastward extension into Buckinghamshire, SW of the M25/M4 junction (around Colnbrook), brought county into 20-mile Greater London circuit.
Problem Areas: Wraysbury Reservoir (see Greater London).
Report: *The Birds of Berkshire* (Berkshire Ornithological Club).

18. Oxfordshire
VC 23 & part of 22 (Berkshire). Post-1974 county.
Report: *Birds of Oxfordshire* (Oxford Ornithological Society).

19. Buckinghamshire
Most of VC 24. Post-1974 county, incorporating UA of Milton Keynes (but see Berkshire, above). A corner of the SE, from Denham south to M4, is an ADR with Greater London.
Problem Areas: Wraysbury Reservoir (see Greater London).
Report: *Buckinghamshire Bird Report* (Buckinghamshire Bird Club).

20. Suffolk
VCs 25 (E) & 26 (W); SA Thames. The two vice-counties. The Lothingland area was transferred to Norfolk, partly in 1889 and more extensively in 1974, thus (from 1889) the south shore of Breydon Water was lost from Suffolk. This remains an ADR with

Norfolk, as does the SW edge of Thetford, ceded to Norfolk in 1894.
Other Problem Areas: Stour Estuary (see Essex).
Report: *Suffolk Birds* (Suffolk Naturalists' Society & Suffolk Ornithologists' Group).

21. Norfolk
VCs 27 (E) & 28 (W), small parts of 25 (E Suffolk) & 26 (W Suffolk); SAs Humber, Thames. Post-1974 county.
Problem Areas: Ouse Washes (with Cambridgeshire), where border was moved south in 1895. For ADRs with Suffolk, see above. Birds at Wisbech Sewage-farm, operational until the 1980s, were recorded jointly by Norfolk and Lincolnshire.
Report: *Norfolk Bird & Mammal Report* (Norfolk & Norwich Naturalists' Society).

22. Cambridgeshire
VCs 29 (Cambridgeshire) & 31 (Huntingdonshire), part of 32 (Northamptonshire). Post-1974 county, including Huntingdonshire and the Soke of Peterborough (this was recorded with Northamptonshire until 1974 and became a separate UA in 1997).
Problem Areas: Ouse Washes (see Norfolk).
Report: *Cambridgeshire Bird Report* (Cambridgeshire Bird Club).

23. Bedfordshire
VC 30. Present county, incorporating UA of Luton.
Report: *The Bedfordshire Bird Report* in *Trans. Bedfordshire Natural History Society.*

24. Northamptonshire
Most of VC 32. Post-1974 county (see also Cambridgeshire).
Problem Areas: Stanford Reservoir (with Leicestershire).
Report: *Northants Birds* (Northamptonshire Bird Club), in abeyance since 2001. The report of the Banbury Orn. Soc. covers part of SW Northamptonshire.

25. Gloucestershire
VCs 33 (N) & part of 34 (S). Post-1974 county, thus excluding Bristol and South Gloucestershire (see Avon).
Problem Areas: Cotswold Water Park West (with Wiltshire).
Report: *Gloucestershire Bird Report* (Gloucestershire Ornithological Co-ordinating Committee).

26. Herefordshire
VC 36. Present county; merged with Worcestershire from 1974 to 1998, but with no effect on recording.
Problem Areas: Malvern Hills (ridge forms part of Worcestershire border).
Report: *The Birds of Herefordshire* (Herefordshire Ornithological Club).

27. Worcestershire
Most of VC 37. Post-1974 county, thus excluding areas in NE transferred to Warwickshire in 1911 and to West Midlands in 1974. See also Herefordshire.
Problem Areas: Malvern Hills (ridge forms part of Herefordshire border).
Report: *The Birds of Staffordshire, Warwickshire, Worcestershire and the West Midlands* (West Midland Bird Club).

28. Warwickshire
Most of VC 38. Post-1974 county, thus excluding areas in NW (some gained from Worcestershire) which were then transferred to West Midlands.
Report: see Worcestershire.

29. West Midlands
Parts of VCs 37, 38 & 39. 1974–95 county, now dissolved for most purposes into its seven UAs: Coventry, Solihull, Birmingham, Walsall, Sandwell, Wolverhampton and Dudley.
Report: see Worcestershire.

30. Staffordshire
Most of VC 39. Post-1974 county, thus excluding areas in SW then transferred to West Midlands, and incorporating UA of Stoke-on-Trent.
Problem Areas: Chasewater was from 1974 to 1995 partly in West Midlands, now again wholly in Staffordshire.
Report: see Worcestershire.

31. Shropshire
VC 40. Present county, incorporating UA of Telford & Wrekin.
Report: *The Shropshire Bird Report* (Shropshire Ornithological Society).

32. Lincolnshire
VCs 53 (S) & 54 (N); SA Humber. Present county, incorporating UAs of North Lincolnshire and NE Lincolnshire.
Problem Areas: former Wisbech Sewage-farm (see Norfolk).
Report: *Lincolnshire Bird Report* (Lincolnshire Bird Club), now in abeyance. Local reports are produced by Gibraltar Point NNR and by Scunthorpe.

33. Leicestershire & Rutland
VC 55. Present counties, incorporating UA of Leicester.
Problem Areas: Eye Brook Reservoir is shared between the two counties, and Stanford Reservoir with Northamptonshire. All records should be classed as 'Leicestershire & Rutland'.
Report: *The Leicestershire and Rutland Bird Report* (Leicestershire & Rutland Ornithological Society).

34. Nottinghamshire
VC 56. Present county, incorporating UA of Nottingham City.
Report: *The Birds of Nottinghamshire* (Nottinghamshire Birdwatchers).

35. Derbyshire
Most of VC 57 & small part of 58 (Cheshire). Present county, incorporating UA of Derby and excluding some losses to Yorkshire in 1934 and 1968; see also Cheshire & Wirral, below.
Report: *The Derbyshire Bird Report* (Derbyshire Ornithological Society).

36. Cheshire & Wirral
Most of VC 58, parts of 57 (Derbyshire) & 59 (S Lancashire); SA Irish Sea. Post-1974 county, incorporating UAs of Wirral (including Hilbre Island 36a), Halton and Warrington. Many small adjustments along Lancashire/Greater Manchester and Derbyshire borders from 1932 to 1974.
Problem Areas: on Dee border with Flintshire, border does not follow mid-line, but includes, in Flint, reclaimed land (Shotton Pools, etc.) on north bank; up to 1960s this was recorded by Cheshire, and it was included by Coward (1900) and Bell (1962). All records should be classed as 'Cheshire & Wirral'.
Report: *Cheshire and Wirral Bird Report* (Cheshire & Wirral Ornithological Society).

37. Lancashire & North Merseyside
VC 60 (W), parts of 59 (S) & 64 (Mid-west Yorkshire); SA Irish Sea. Present county of Lancashire and UAs of Sefton, Liverpool, Knowsley, St Helens, Blackburn-with-Darwen and Blackpool. Furness has been recorded with Cumbria since 1974. See also Cheshire. All records should be classed as 'Lancashire & North Merseyside'.
Report: *The Lancashire Bird Report* (Lancashire & Cheshire Fauna Society).

38. Greater Manchester
Parts of VCs 58 (Cheshire), 59 (S Lancashire) & 63 (SW Yorkshire). Metropolitan County of Greater Manchester (1974–86), now UAs of Wigan, Bolton, Salford, Bury, Rochdale, Oldham (including part of pre-1974 Yorkshire), Tameside, Stockport, Manchester and Trafford. See also Cheshire & Wirral.
Report: *Birds in Greater Manchester* (Greater Manchester Bird Recording Group).

39. Yorkshire
VCs 61 (SE), 62 (NE), 63 (SW), 64 (Mid-west) and 65 (NW) – of which only the first remains complete within post-1974 borders – and parts of 57 (Derbyshire) & 59 (S Lancashire); SAs Tyne, Humber. Present counties of North Yorkshire and East Riding of Yorkshire (incorporating UAs of Kingston-upon-Hull), and UAs of York, Bradford, Calderdale, Kirklees, Leeds, Wakefield, Barnsley, Sheffield, Rotherham, Doncaster, Redcar & Cleveland and Middlesbrough. The last two (with part of Stockton-on-Tees) form SE part of 1974–95 county of Cleveland (below), the whole of which forms two ADRs with VCs 62 & 66; see also Durham. The five Recording Areas are the VCs, less their various 1974 excisions, but they include expansions of Yorkshire into Derbyshire, south of Sheffield (1934 and 1968), and into Lancashire, west of Todmorden (1889). The ornithological world outside Yorkshire has tended to reject its claim to Cleveland and to adopt the four 1974–95 divisions, which are still the Lord Lieutenancies: East Yorkshire ('North Humberside', now again substantially the East Riding, but including York and Hull UAs); South Yorkshire (Barnsley, Doncaster, Sheffield and Rotherham); West Yorkshire (Wakefield, Leeds, Bradford, Calderdale and Kirklees); and North Yorkshire (today's county, including Selby District). There is much to be said for continuing this division, since VC boundaries cannot be found on OS maps, although for rare and scarce breeders 'Yorkshire' may be more desirable.
Reports: *Yorkshire Bird Report* (Yorkshire Naturalists' Union, Ornithological Section), 1940–1997, revived 2005–. In the absence of a county report, various local reports have been important, notably Hull Valley, York, Bradford, Doncaster, Huddersfield, Barnsley, Sheffield, Halifax, Harrogate and Leeds.

40. Cleveland
Parts of VCs 62 (NE Yorkshire) & 66 (Durham); SA Tyne. Recording Area since 1974, consisting of two ADRs (see also Durham and Yorkshire), in both of which, validation of rarity records lies with Cleveland.
Report: *Cleveland Bird Report* (Teesmouth Bird Club).

41. Durham
VC 66 & part of 65 (NW Yorkshire); SA Tyne. Present county, incorporating UAs of Stockton-on-Tees (in part) and Hartlepool (the NW parts of the former county of Cleveland; see above), Darlington, Gateshead, South Tyneside and Sunderland. The former county of Tyne & Wear (1974–95) has no ornithological recognition.
Problem Areas: Derwent Reservoir (with Northumberland).
Report: *Birds in Durham* (Durham County Bird Club).

42. Northumberland
VCs 67 (S) & 68 (N); SA Tyne. Present county, incorporating UAs of Newcastle-upon-Tyne and North Tyneside and including Coquet Island (42a), the Farne Islands (42b) and Holy Island (42c).
Problem Areas: Derwent Reservoir (with Durham).
Report: *Birds in Northumbria* (Northumberland & Tyneside Bird Club).

43. Cumbria
VCs 69 (Westmorland) & 70 (Cumberland), with part of 65 (NW Yorkshire); SA Irish Sea. Post-1974 county.
Report: *Birds and Wildlife in Cumbria* (Cumbria Naturalists' Union).

Wales

In addition to coverage by individual county reports, Wales has been covered by the annual *Welsh Bird Report* (Welsh Ornithological Society) since 1998. The following names should not be used in ornithological recording: 'Clwyd' and 'Dyfed' (which are now obsolete); 'Gwynedd' and 'Powys' (still in administrative use); 'Conwy' (created in 1995); or any of the post-1974 subdivisions of Glamorgan and Gwent. Records from these should be assigned to the appropriate VCs, as given below. In general, Welsh Recording Areas are the VCs, but some adjustments have been made. The index numbers in the Area sections correspond to those on the map; they indicate sites with problems, mainly where the accepted boundaries differ from the Watsonian ones.

W1 Gwent
Most of VC 35 & small part of 42 (Breconshire). Pre-1974 county of Monmouthshire, known as Gwent from 1974 to 1995, and now divided into UAs of Monmouthshire, Newport, Torfaen, Blaenau-Gwent and east part of Caerphilly. Includes Denny Island and the former Breconshire areas of Trefil, Brynmawr and Llanelly (8). The Glamorgan boundary is now accepted to be the Rhymney River, but near its mouth the area of Rumney and St Mellons (10), transferred to Glamorgan in 1974, remains in that county (in UA Cardiff).
Report: *Gwent Bird Report* (Gwent Ornithological Society).

W2 Glamorgan
VC 41, small parts of 42 (Breconshire) & 35 (Gwent). Divided into two Recording Areas (East Glamorgan and Gower), but at a national scale all records are simply for Glamorgan.
East Glamorgan (9a) incorporates UAs of Bridgend, Rhondda/Cynon/Taff, Vale of Glamorgan, west part of Caerphilly, Cardiff, and Merthyr Tydfil (including Vaynor and Penderyn from Breconshire (7)). Includes Flat Holm (W2a). For border with Gwent, see above.
Report: *Eastern Glamorgan Bird Report* (Glamorgan Bird Club).
Gower (9b) incorporates UAs of City & County of Swansea and Neath Port Talbot.
Report: *Gower Birds* (Gower Ornithological Society).

W3 Breconshire
Most of VC 42. Pre-1974 county (now part of Powys), apart from areas ceded in 1974 to Glamorgan and Gwent (see above).
Report: *Breconshire Birds* (Brecknock Wildlife Trust).

W4 Radnorshire
VC 43. Pre-1974 county (now part of Powys). No report since 1987.

W5 Montgomeryshire
VC 44 & part of 50. Pre-1974 county, now part of Powys. Includes part of the Berwyn Mountains, formerly in Denbighshire, but now in Powys and considered an ADR with Denbighshire (6). No report since 1998/99.

The next three counties, W6–W8, were combined as Gwynedd during 1974–95. Anglesey was withdrawn in 1995, but the other two remain as districts of Gwynedd. They are all reported in *The Cambrian Bird Report* (Cambrian Ornithological Society).

W6 Meirionnydd
Most of VC 48 & small part of 50 (Denbighshire); SA Irish Sea. 1974 District, within Gwynedd, substantially the historic county. The NE section (part of Dee Valley and West Berwyns), ceded to Clwyd in 1974 and now in Denbighshire, is still included in the Recording Area. The Nantmor section of the parish of Beddgelert (1) was ceded to Caernarfon in 1895. The Migneint (11), the SW 'tongue' of Denbighshire, is an ADR with that county.

W7 Caernarfonshire
Most of VC 49 & small part of 48 (Meirionnydd); SA Irish Sea. 1974 District of Arfon, in Gwynedd; substantially the historic county, but excluding the salient of Maenan (2) east of the Afon Conwy, now in Denbighshire. The Ormes, Llandudno and Rhos Point (4) remain in Caernarfon. Includes St Tudwal's Islands (W7a) and Bardsey (Ynys Enlli) (W7b). The Conwy RSPB Reserve (3) is an ADR with Denbighshire, to which it belonged before 1879. See also Meirionnydd, above.

W8 Anglesey
VC 52; SA Irish Sea. Post-1995 county, including Puffin Island (Ynys Seiriol) (W8a) and The Skerries (Ynysoedd y Moelrhoniad) (W8b).

The next two counties, W9 & W10, were combined as Clwyd during 1974–95. Their subsequent revival has different boundaries from the old VCs, which largely remain the Recording Areas. They are reported in the *North-east Wales Bird Report* (Clwyd Bird Recording Group).

W9 Denbighshire
Most of VC 50 & small part of 49 (Caernarfon); SA Irish Sea. Pre-1974 county, includes ADRs with Montgomeryshire (6), Caernarfonshire (3) and Meirionnydd (11); see these areas, above. Incorporates UA of Wrexham, including the two pre-1974 detachments of Flintshire (below). The Afon Conwy is now deemed

to be the Caernarfon border.

W10 Flintshire
VC 51; SA Irish Sea. Pre-1974 county, without the two detachments that formed part of VC50 (see above; Maelor Saesneg (5) was sometimes recorded by Shropshire (Rutter *et al.* 1964), while Marford & Hoseley was always recorded by Denbighshire).
Problem Areas: Dee Estuary; see Cheshire & Wirral.

The next three counties, W11–W13, were combined as Dyfed during 1974–95.

W11 Carmarthenshire
VC 44; SA Lundy. Present county.
Report: *Carmarthenshire Bird Report* (Carmarthenshire Ornithological Recording Committee).

W12 Pembrokeshire
VC 45; SAs Lundy, Irish Sea. Present county, including all islands: Caldey (W12a), Skokholm (W12b), Skomer (W12c), Grassholm (W12d) and Ramsey (W12e). Most of the former enclaves of Ceredigion south of the Teifi Estuary (on either side of St Dogmaels) have recently been absorbed into Pembrokeshire, but remain in their original Recording Area.
Report: *Pembrokeshire Bird Report* (Wildlife Trust for South & West Wales).

W13 Ceredigion
VC 46; SA Irish Sea. Present county. For recent administrative changes, see Pembrokeshire.
Report: *Ceredigion Bird Report* (Wildlife Trust for South & West Wales).

Isle of Man

Now recorded as a separate unit from the UK, but still included in BBRC and Rare Breeding Birds Panel reports. VC 71; SA Irish Sea. Present area, including the Calf of Man (Ma).
Report: in *Peregrine* (Manx Ornithological Society).

Scotland

In addition to area reports, Scotland is covered by the annual *Scottish Bird Report* (not produced since 2001 report). The following regional terms, current from 1974 to 1995, should *not* now be used to define records: 'Strathclyde', 'Central', 'Tayside', 'Grampian'. The Scottish Raptor Study Groups use the following divisions (with approximate SOC equivalents in brackets, where different): Dumfries & Galloway; Lothian & Borders; South Strathclyde (=Clyde, Clyde Islands and Ayrshire), Argyll, Central (=Upper Forth), Tayside (=Perth & Kinross and Angus & Dundee), North-east (including the eastern half of Moray & Nairn), Highland (including the western half of Moray & Nairn, and Caithness), Uists, and Orkney (there are as yet no contributors from Lewis/Harris or Shetland). For offshore and pelagic limits, see S21. All Scottish Recording Areas bear numbers, as given below. The pre-1974 counties are given but not the VCs.

S1 Shetland
Present UA, excluding Fair Isle.
Report: *Shetland Bird Report* (Shetland Bird Club).

S2 Fair Isle
Administratively part of Shetland. Often treated separately in avifaunas and has its own Recorder, but included in Shetland by Pennington *et al.* (2004).
Report: *Fair Isle Bird Report* (Fair Isle Bird Observatory Trust).

S3 Orkney
Present UA; includes Pentland Skerries (which were sometimes placed in Caithness), Sule Stack (S3a) and Sule Skerry (S3b).
Report: *Orkney Bird Report* (Orkney Bird Report Committee).

S4 Outer Hebrides
Present UA of Western Isles. Includes Lewis (before 1974 in Ross & Cromarty), Harris, North and South Uist, Benbecula and Barra (before 1974 in Inverness-shire), St Kilda (S4a), the Flannans (S4b), Sula Sgeir (S4c), North Rona (S4d), the Shiants (S4e), and (theoretically) Rockall.
Report: *Outer Hebrides Bird Report* (Western Isles Natural History Society).

S5 Caithness
Pre-1974 county, now administered with Highland. Includes Stroma, but not now the Pentland Skerries (see Orkney).
No report since 1997, but records in separate section of *Highland Bird Report* from 2004.

S6 Highland
Inverness-shire, Ross & Cromarty and Sutherland. Post-1974 UA, including all Inner Hebridean and inshore islands from Muck to Eilean Roan, but excluding pre-1974 Nairnshire and Caithness (but see above). Some internal use is still made of Districts, although they are not regarded as separate Recording Areas: Lochaber (S6a), Badenoch & Strathspey (S6b), Inverness District (S6c), Skye & Lochalsh (S6d), Ross & Cromarty (S6e; most of the former county of that name, apart from its Outer Hebridean component); and Sutherland (S6f; a slight expansion of the former county).
Report: *Highland Bird Report* (private & SOC).

S7 Moray & Nairn
UA of Moray and former Nairnshire, since 1974 part of Highland.
Report: *Birds in Moray and Nairn* (private).

S8 North-east Scotland
Aberdeenshire, Kincardineshire and part of Banffshire. Post-1995 Region, incorporating UAs of Aberdeenshire and Aberdeen City.
Report: *North-east Scotland Bird Report* (North-east Scotland Bird Club).

S9 Angus & Dundee
Present Region, incorporating UAs of Angus and Dundee City, and including Bell Rock.
Report: *Angus & Dundee Bird Report* (Angus & Dundee Bird Club).

S10 Perth & Kinross
Before 1988, Kinross was recorded with Fife.
Report: *Perth & Kinross Bird Report* (private).

S11 Fife
Excludes Isle of May (below), Inchkeith and Inchcolm; last two reported in both *Forth Islands Bird Report* and *Fife Bird Report*.
Report: *Fife Bird Report* (Fife Bird Club).

S12 Isle of May
Administratively part of Fife but has its own Recorder; included in Elkins *et al.* (2003).
Report: *Isle of May Bird Observatory Report* (Isle of May Bird Observatory and Field Station Trust).

S13 Upper Forth
Now includes UAs of Clackmannanshire, Falkirk (created from parts of Stirling and West Lothian) and parts of Stirling within the Forth Basin. For ADR with Clyde, see below.
Report: *Forth Area Bird Report* (in *Forth Naturalist & Historian*).

S14 Argyll
Post-1995 UA of Argyll & Bute, but excluding the Bute section (see Clyde Islands) and the area between Loch Lomondside and Loch Long and north from Arrochar over Ben Vane to Maol Breac and the Lairig Arnan (formerly part of West Dunbartonshire) – see Clyde. Includes lighthouses of Skerryvore (S14a) and Dubh Artach (S14b).
Report: *Argyll Bird Report* (Argyll Bird Club).

S15 Clyde Islands
The 'Clyde Islands Report' is a separate section within *Clyde Birds*. Regarded by SOC as a separate Area, with its own Recorder. Includes Bute section of UA of Argyll & Bute (the Island of Bute, and Great and Little Cumbrae) and the Isle of Arran.

S16 Clyde
Now includes: UAs of East and West Dunbartonshire, South and North Lanarkshire, Glasgow City, East Renfrewshire, Renfrewshire and Inverclyde, and those parts of Stirling and Argyll & Bute that are in the Clyde Basin. The Carron Valley Reservoir is sometimes considered an ADR with Upper Forth.
Report: *Clyde Birds* (SOC Clyde).

S17 Ayrshire
Most of UA of North Ayrshire, all of UAs of East and South Ayrshire – except that in the last, an area south of Ballantrae was ceded to Dumfries & Galloway in 1995, but is still recorded by Ayrshire. Also Horse Island, Lady Isle and Ailsa Craig (S17a). Arran and the Cumbraes, now in North Ayrshire, are recorded in Clyde Islands (see above).
Report: *Ayrshire Bird & Butterfly Report* (SOC Ayrshire).

S18 Lothian
UAs of West Lothian, Midlothian, East Lothian and City of Edinburgh. Monynut Water drainage area in East Lothian ceded to Borders in 1995.
Report: *Lothian Bird Report* (SOC Lothian).

S19 Borders
Mainly Peebles-shire, Selkirkshire, Roxburghshire and Berwickshire. Since 1974, all Scottish Borders Region; see also Lothian, above.
Report: *Borders Bird Report* (SOC Borders).

S20 Dumfries & Galloway
Dumfries-shire, Kirkcudbrightshire and Wigtownshire. Post-1974 Region, including The Scares (Scar Rocks). See also Ayrshire, above.
Report: *Birds in Dumfries & Galloway* (private & SOC).

S21 At Sea
The SOC map provides for records in this category in Scotland: almost all of SAs Forth, Cromarty, Hebrides and Fair Isle (which covers Orkney & Shetland and should not be confused with S2); most of SA Hebrides; the western parts of SAs Forties and Viking; the northern parts of SAs Rockall and Malin; the southern part of SA Bailey, and 'Waters North of Shetland'. Forrester *et al.* (2007) showed other marine boundaries used for that book. In the *North Sea Bird Report*, the North Sea Bird Club publishes records from a number of platforms and vessels, at present largely in SAs Forties, Viking, and North of Shetland; see also Forrester *et al.*

This paper does not deal with Recording Areas in the Channel Islands or Northern Ireland.

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David K. Ballance, Flat Two, Dunboyne, Bratton Lane, Minehead, Somerset TA24 8SQ
A. Judith Smith, 12 Edge Green Street, Ashton-in-Makerfield, Wigan WN4 8SL

Short Reviews

TWO CENTURIES OF CROYDON'S BIRDS: BIRDS OF THE CROYDON AREA 1800–2000

By John Birkett. Croydon RSPB Group, Croydon, 2007. 125 pages; many drawings, maps and diagrams. No ISBN. Paperback, £14.00 inc. p&p from author, 24 Briton Hill Road, Sanderstead, Surrey CR2 0JL.

The area covered is the Greater London Borough. This is a highly competent local avifauna, with distribution maps for the commoner species and coloured site maps for places of birding interest (which include the tower blocks now colonised by Peregrine Falcons *Falco peregrinus*). There is a good bibliography.

THE BIRDS OF RATCLIFFE-ON-THE-WREAKE GRAVEL-PITS, LEICESTERSHIRE, 1974–80

Loughborough Naturalists' Club, Loughborough, 2007. Paperback, £6.00 inc. p&p from Mrs M. Gamble, 96 Meeting Street, Quorn, Leicestershire LE12 8EX.

This is largely the historical record of a ringing station.

THE BIRDS OF THE CAERPHILLY BASIN: A PERSONAL PERSPECTIVE

By Neville J. Davies. Glamorgan Bird Club, 2008. 48 pages, line-drawings, maps, colour photographs. ISBN 978-0-9554483-3-1.

A full account of the birds in about 15 km^2 around Caerphilly, an area once studied by the late Bruce Campbell during his wartime teaching stint.

WHERE TO WATCH BIRDS IN NORTH WEST ENGLAND AND THE ISLE OF MAN

By Allan Conlin, J. P. Cullen, Pete Marsh, Tristan Reid, Chris Sharpe, Judith Smith and Stephen Williams. Christopher Helm, A&C Black, London, 2008. 287 pages; many maps and line-drawings. ISBN 978-0-7136-6421-8. Paperback, £16.99.

Third edition, fully revised and updated, with over 30 new sites added; covers over 90 sites or areas in detail.

WHERE TO WATCH BIRDS IN WALES

By David Saunders and Jon Green. Christopher Helm, A&C Black, London, 2008. 352 pages; many maps and line-drawings. ISBN 978-0-7136-7484-2. Paperback, £16.99.

Fourth edition, fully revised and updated, with 40 new sites added; covers 108 sites in detail.

WHERE TO WATCH BIRDS IN SOUTHERN AND WESTERN SPAIN

By Ernest Garcia and Andrew Patterson. Christopher Helm, A&C Black, London, 2008. 400 pages; many maps and line-drawings. ISBN 978-0-7136-8315-8. Paperback, £16.99.

Third edition of this guide to Andalucía, Extremadura and Gibraltar. Completely revised and updated, with nine major new sites described. Detailed coverage of all major sites in all ten provinces, over 200 sites covered in total, with new updated maps for all sites.

Conservation research news

Compiled by Will Peach and Len Campbell

Effects of Magpie removal on Parisian songbirds

The role of avian predators in limiting the numbers of their songbird prey has been a controversial subject for many years. Some argue that the large declines in many songbird populations have been caused by increased numbers of nest predators like Magpies *Pica pica* and other corvids, while others stress the importance of depleted food resources and declining habitat quality. While there is some evidence that a higher proportion of songbird nests are predated in areas of high corvid density, there is little indication that this causes declines in songbird populations.

The possible influence of Magpies on songbirds has recently been addressed in an intriguing experiment conducted in Paris, France. As in many other European cities, Magpie numbers have increased markedly in the parks and gardens of suburban Paris, raising concerns about the possible impact on songbirds. The study (reported in Chiron & Julliard 2007) was conducted by researchers from the Natural History Museum in Paris, who trapped Magpies in cages and released them far away, in the surrounding countryside. A sustained trapping effort resulted in 93 Magpies being removed from the city, which reduced breeding-season densities by about 60%.

The team then used constant effort mist-netting to measure changes in the abundance of recently fledged songbirds at sites with and without Magpie removal. Following the removal of Magpies, there were no overall changes in the catch of young songbirds, implying that Magpies had no general impact on nesting success. In the case of Blackbird *Turdus merula*, one of the species most heavily predated by Magpies, far fewer young were caught at netting sites in suburban Paris compared with rural sites, which implies lower nesting success in Paris, where Magpies are most abundant. But despite potentially high rates of nest predation in the Parisian suburbs, breeding Blackbirds were more abundant in the city than in the surrounding countryside.

The failure of this study to detect an impact of Magpies on the songbirds of Paris is unlikely to end the debate surrounding this contentious issue. Critics might question the reliability of mist-netting as a method to measure local songbird breeding success, especially as young passerines are known to be highly dispersive.

Of the three common songbirds that have shown marked population declines in UK gardens, two – House Sparrow *Passer domesticus* and Common Starling *Sturnus vulgaris* – nest mainly in cavities and are therefore protected from any possible impact of corvids. Only in the case of the Song Thrush *Turdus philomelos* could corvid predation be a potential cause of population decline.

Chiron, F., & Julliard, R. 2007. Responses of songbirds to Magpie reduction in an urban habitat. *J. Wildl. Management* 71: 2624–2631.

Pipefish – no substitute for sandeels if you are a hungry seabird

It is now generally agreed that changes to the world's oceans and their effects on fish stocks are likely to have a major impact on marine wildlife in general and seabirds in particular. However, it is possible that changes in the relative abundance of one particular prey

species may be offset by changes in another – so that, if these are of equal food value, there may be little or no impact on the predators which have traditionally relied on the declining species. Recent work has thrown some important light on this issue and hints that a more pessimistic outcome may be equally likely, however.

For reasons as yet unknown, the Snake Pipefish *Entelurus aequoreus* has, since 2003, shown a very considerable expansion in the northeast Atlantic and North Sea and has started to appear regularly in the diets of both adult and young seabirds. At the same time, at some key seabird colonies at least, there has been evidence of a shortage of Lesser Sandeel *Ammodytes marinus*, an established and preferred prey species. To broaden our understanding of the importance of pipefish as food for seabirds, Mike Harris and his team collected samples of pipefish and other seabird food, including sandeels and sprats *Sprattus*, from around the Isle of May and adjacent waters in which seabirds are known to feed. Energy levels of these samples were analysed and compared. The mean energy density of pipefish was shown to be significantly lower than that of the other species, particularly medium and large sandeels and sprats, which are known to be eaten by Puffins *Fratercula arctica* and Common Guillemots *Uria aalge* in the area. Other published data show that pipefish have the lowest energy values of almost 50 species of fish eaten by seabirds. Conversely, pipefish have a much higher mineral content than the other species in this study and, compared with other published data, the highest mineral content of 17 fish species analysed.

Earlier work by Mike Harris's team and others have shown clearly that seabirds breed most successfully when fed on fish with a high oil content such as sprat and herring *Clupea* and less so on less oily fish such as whiting *Menticirrhus*. Pipefish were recorded in the diet at some but not all seabird colonies with recent breeding failures, and there is good evidence at some of these that they are becoming increasingly common in the diet. Observations from various localities have suggested that the adult birds of several species, including Common Eider *Somateria mollissima*, Northern Gannet *Morus bassanus*, Shag *Phalacrocorax aristotelis* and Great Black-backed Gull *Larus marinus*, have difficulty swallowing even quite small pipefish, whose rigid and armoured body is difficult to bend or break apart. Starvation of seabird chicks sitting on uneaten piles of pipefish and death by choking of tern *Sterna* chicks are further evidence that, both nutritionally and structurally, pipefish are unlikely to fill any gap left by decreasing stocks or availability of sprats and sandeels. This is a worrying sign of further pressure on our breeding seabirds.

Harris, M. P., Newell, M., Daunt, F., Speakman, J. R., & Wanless, S. 2007. Snake Pipefish *Entelurus aequoreus* are poor food for seabirds. *Ibis* doi: 10.1111/j.1474-919x.2007.00780.x

Hugh Harrop

174. Even birds as large as Northern Gannets *Morus bassanus* have trouble dealing with the rigid and armoured body of Snake Pipefish *Entelurus aequoreus*.

Letters

Distribution and identification of Iberian Chiffchaff

Collinson & Melling (2008) discussed the potential pitfalls of identifying vagrant Iberian Chiffchaffs *Phylloscopus ibericus* (*Brit. Birds* 101: 174–188). Some of their statements prompt a correction and a discussion.

Their paper showing the breeding range of the Iberian Chiffchaff (fig. 1, p. 175) is inaccurate. Rather than being widely spread over the entire Iberian Peninsula, Iberian Chiffchaff is confined largely to the westernmost Pyrenees and to western parts of the peninsula; away from this stronghold there are just isolated occurrences. A more accurate map is presented here (fig. 1), which has been prepared by Lars Svensson for a forthcoming revision of the *Collins Bird Guide* and is based mainly on information provided by myself and modern fieldwork by Spanish and Portuguese ornithologists. Collinson & Melling cited Martí & del Moral (2003) as a source for their map, but the latter showed both Iberian and Common Chiffchaffs *P. collybita* on the same map (owing to difficulties in separating the two species at the time). However, the text of the atlas is clear in mentioning the exclusive presence of *collybita* in Catalonia, Valencia, Murcia, Albacete and most of Soria, as well as in the Pyrenees in Huesca province.

Another point to discuss is the claimed validity of the subspecies *biscayensis*, described by Salomon *et al.* (2003). The type description mentions the allopatric distribution of a northern population (*biscayensis*) and a southern one (*ibericus*), differences in habitat selection between the two, and statistical differences in some morphological characters (including length of wing, tarsus and bill). However, Elias (2004) drew attention to the continuous rather than allopatric distribution of *ibericus* in western Iberia, based on several sources and good field knowledge (the continuous breeding range is conveniently supported by the map presented by Collinson & Melling themselves – and fig. 1 here). The claimed habitat preferences might simply be the product of different habitat availability in northern and southern parts of the Iberian Peninsula. In fact, riverine forests, one of the habitats preferred by Iberian Chiffchaffs, are occupied continuously from north to south (Elias 2004; pers. obs.). In addition, Salomon *et al.* (2003) found an average difference in wing length of only 1.28 mm between males of *biscayensis* and *ibericus* – by itself a very minor difference on which to base a new taxon, and one that is most likely to reflect simply a somewhat longer migration distance for northern Iberian birds to their winter quarters in Africa. Similar clinal differences probably exist within many taxa. Furthermore, Lars Svensson (pers. comm.) analysed his dataset of measurements of *ibericus* of known provenance and found that wing, tarsus, and bill co-varied geographically, all being a trifle larger in the north than in the south. This is in contrast to the data presented by Salomon *et al.* (2003), who found shorter tarsus and bill length for males in the north, but longer wing length. Svensson's dataset is limited (n=49), but it offers a different interpretation of the variation. Until other and more tangible differences are presented, it seems advisable to continue to treat *P. ibericus* as monotypic.

Collinson & Melling stated that Iberian and Common Chiffchaffs have virtually identical bill length, or that Iberian, if anything, has a shorter bill than Common Chiffchaff (based on unspecified biometrics). According to Svensson (pers. comm.), the bill of Iberian is fractionally longer on average, although the difference is very small (1.7% longer; *ibericus* 10.4–13.3 mm, mean 12.0, n=49; *collybita* 10.4–12.7, mean 11.8, n=122).

Collinson & Melling discussed identification pitfalls linked to the above-mentioned variation, postulating that Iberian Chiffchaffs from southern Iberia might be more difficult to separate on morphology from Common Chiffchaffs than northern ones. I have already pointed out that geographical variation in size is marginal, and that existing biometrics do not support the existence of a separate taxon. However, sexual dimorphism is a more significant problem, females being more similar between the two species than males (females of both species having shorter and more rounded wings and being less distinct). This was not discussed by Collinson & Melling.

I would advise ringers who catch a potential Iberian Chiffchaff in Britain to refer to the discriminant formula worked out by Svensson

(2001) (the multiple character value or 'MCV'). At a symposium in Riello, León, in May 2007, devoted solely to the identification of Iberian Chiffchaff and related subjects, it was agreed that this formula worked best of those available. The formula, used in combination with the coloration of certain feather tracts (ear-coverts, hind neck, breast, and mantle), has been tested in field conditions by Onrubia & Arroyo (2003) on a large sample of ringed birds (>400), in northern and southern Spain. More than 80% of the birds could be identified using the formula and the plumage characters in combination. Most ringers with experience of the species in Iberia agree that this MCV is a useful method by which to discriminate a majority of Iberian Chiffchaffs.

Finally, the moult status should be considered when handling a possible Iberian Chiffchaff. Monteagudo *et al.* (2003) found that all of a sample of 12 second-calendar-year birds had eccentric (partial) primary moult, all or most of P1–P6 (counted from the outside inwards) being renewed during an extensive post-juvenile winter moult. They confirmed the age of these birds as first-year birds after retrapping several birds ringed locally the previous year. Moult of the outer primaries by Common Chiffchaff in winter/spring is extremely rare. Out of several thousand birds checked in spring in Spain, very few cases of replaced primaries have been encountered (<1%; Gargallo & Clarabuch 1995; pers. obs.). It may thus be useful to note the moult of a suspected Iberian Chiffchaff and look for two generations of primaries. The two generations of feathers are easiest to detect in early spring (March–April) and become less obvious through wear in mid May.

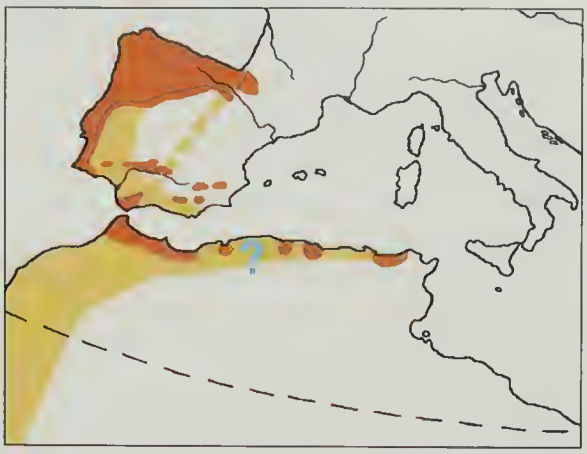

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Fig. 1. Distribution of Iberian Chiffchaff *Phylloscopus ibericus* (dark orange shows breeding range, abandoned in winter, pale orange shows distribution on migration).

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José Luis Copete
Lepant 291 1r 2a, 08224 Terrassa, Spain; e-mail jlcopete@telefonica.net

Mixed-singing Iberian Chiffchaffs: is it their 'swan song'?

The map in the recent paper on Iberian Chiffchaff *Phylloscopus ibericus* (Collinson & Melling 2008) is not really right from a French point of view. The most up-to-date information (Dubois *et al.* in press) suggests (approximately) that Iberian Chiffchaff breeds *only* in the orange-shaded area of the map shown by Collinson & Melling – i.e. the area where they suggested that this species hybridises with Common Chiffchaff *P. collybita*.

During the past 10–15 years, the breeding range of Iberian Chiffchaff in France has been greatly reduced, leaving just a very small area in the extreme southwest. From the limited information available, it is clear that this is now a severely declining species in France. In many places, it has disappeared and been superseded by Common Chiffchaff. For example, in an area above Biarritz, Pyrénées-Atlantiques, there is now no Iberian where, about 15–20 years ago

there were some 20 singing birds (J. F. Terrasse pers. comm.). Common Chiffchaff is now a widespread species there. There are other examples where Common Chiffchaff has taken over areas formerly occupied by Iberian. In other places where Iberian was heard several years ago, only mixed singers are now heard in spring (J.-L. Grangé *in litt.*). During the 1990s, the French population was estimated to be 10,000–30,000 pairs (Dubois *et al.* 2000). Now, the population probably barely exceeds 5,000 pairs (Dubois *et al.* in press). Over the same period, there has been an upsurge of extralimital records in France, with 20 records up to 2007, most of them since the 1980s.

Hybridisation is perhaps the most logical explanation for mixed songs. However, a pure Iberian could perfectly well incorporate some Common Chiffchaff phrases in its song, in a situation either where there is a shortage of partners or where it is far away from traditional breeding areas. It would be difficult to establish whether such mixed song is simply a 'conflict song' or if the advertising song includes some Common Chiffchaff elements to improve the chances of finding a partner in a non-assortative mating system. There is no direct evidence for the latter hypothesis, but a shortage of partners in the core breeding area might conceivably be one factor in the recent upsurge of extralimital singing males in France (and elsewhere in northwestern Europe). In short, all 'mixed' singers are not *inevitably* hybrids but could include true Iberian Chiffchaffs in search of a mate.

Dr Philippe J. Dubois
104 rue Saint-Jean, 95300 Pontoise, France

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Colour nomenclature

Martin Woodcock's reflections upon 'colour nomenclature' (*Brit. Birds* 101: 259) confirm the importance of the topic but I think that he is a little pessimistic in his conclusions. While the editors of *British Birds* undoubtedly try to ensure the accuracy of graphics appearing in the journal, I am sure they would acknowledge that its colour reproduction does not adhere to any precise colour standard, and that economic constraints preclude such close colour-control. Unfortunately, the printed versions of the colour swatches in my letter (Colour nomenclature and Siberian Chiffchaffs, *Brit Birds* 101: 146–149) have been impaired by an overall green bias and the RGB values of several of the individual hues are significantly different from the originals. However, the annotated colour swatch was intended to *illustrate a point* (or technique) and not of itself to provide a standard reference for the colours cited. Indeed, as my letter emphasised, publication of a new and readily accessible reference for 'colour standards' is a pre-requisite for consistent colour nomenclature. In practice, colour citations would be based upon closely controlled swatches in such a guide and certainly not upon less precise graphics appearing in journals and magazines. When cited hues are accompanied by their associated numerical parameters (including RGB or CMYK values among others), then they do constitute an objective standard.

Martin Woodcock is right to highlight the difficulties which beset accurate colour reproduction but, when colour fidelity is set as a priority, then a high degree of accuracy is achievable using modern colour-printing techniques – though at a cost. Martin's comments upon the subjectivity of colour naming and colour perception simply echo the fourth and fifth paragraphs of my letter and are, of course, the very reasons why I have advocated a new and readily available colour standard. Although absolute terminology will remain elusive, an accessible 'colour standard' would provide a consistent point of reference and would be immeasurably preferable to the ambiguity that currently besets colour nomenclature.

Alan R. Dean
2 Charingworth Road, Solihull, West Midlands B92 8HT

Past British birds and the Sherborne Missal

Bill Bourne's letter (*Brit. Birds* 101: 214) provides further information on possible past British breeding birds but my own research into the bird portraits in the fifteenth-century Sherborne Missal suggests some alternative interpretations, which may affect their value as evidence for past populations.

For example, I disagree that the Missal shows 'a young Night Heron *Nycticorax nycticorax*'. The image shows a pale brown bird covered with distinct black streaks, many showing transverse dark bars, and appears more likely to be a Eurasian Bittern *Botaurus stellaris*. I agree that the 'Waryghanger' shows enough characters to be reasonably considered a Southern Grey Shrike *Lanius meridionalis*, but the 'Viuene Cok' is altogether less satisfactory. It does have the characteristic head pattern of a Woodchat Shrike *Lanius senator* but, given the accuracy of that depiction, it is surprising that the body lacks obvious field marks, notably the white scapular patches, while it has an atypically spotted and barred tail.

The images of birds in the Sherborne Missal fall into three distinct groups. The first is of species that are instantly recognisable and acutely observed. This group seems to be made up predominantly of species of culinary significance and includes Common Pheasant *Phasianus colchicus*, Common Snipe *Gallinago gallinago* and Woodcock *Scolopax rusticola*. The second group is predominantly of passerines or smaller non-passerines which, like the 'Viuene Cok', frequently show extraordinary inconsistencies of plumage. Among these is a 'Mose Cok' which, given the constraints of the medium, is a fair likeness of a Great Tit *Parus major*, but with the wing of a Bullfinch *Pyrrhula pyrrhula*. The third group is described by Backhouse (2001) and Yapp (1982) as being of 'imaginary birds', many of them bizarre in form but still with some recognisable parts.

These plumage discrepancies could be explained if, among the copy books used for reference by scribes and illuminators, some held a stock of dried fragments of birds; it is a simple matter to preserve wings, tails, legs and even heads of small birds in this way. They are easily portable and would provide a useful source of true colour and pattern in an age before field guides or even effective taxidermy. Given that the first group of illustrations demonstrate considerable familiarity with the species in question, the discrepancies in the other two groups could result from reliance on this sort of fragmentary reference by someone unfamiliar with the species. Stylistically, there is evidence of French influence in the Sherborne Missal (Yapp 1982) and a tradition of bird images in contemporary French manuscripts. Both ideas and reference material might have been shared or traded between France and England and the origins of relatively inert material such as dried wings and tails could have been even farther away.

This is merely a hypothesis but it suggests an alternative explanation for the apparent presence of southern species in fifteenth-century Dorset. The Sherborne Missal also contains convincing illustrations of an apparent Rose-ringed Parakeet *Psittacula krameri*, Peacock (Indian Peafowl) *Pavo cristatus* and even an Ostrich *Struthio camelus*; the last probably derived from an earlier bestiary. We have no difficulty in rejecting the notion that these were part of the avian community of medieval Dorset and we should exercise caution in interpreting manuscript images as evidence of the former status of unusual species.

Dr Norman McCanch
23 New Street, Ash, Canterbury, Kent CT3 2BH

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Bill Bourne's suggestion (*Brit. Birds* 101: 214) that the birds reported nesting on St Giles' in Edinburgh in 1416 might have been Grey Herons *Ardea cinerea* and not White Storks *Ciconia ciconia* is not very convincing. The report originates with Walter Bower, abbot of Inchcolm Abbey in the Firth of Forth, who had some passing interest in natural history and would have known the heron very well as a shore bird, no doubt visible daily from his study. He wrote *Scotichronicon* as a record of remarkable events. This is exactly what he said,

in the most recent translation (Watt 1998): 'In the same year a pair of birds called storks [*ciconiarium*] came to Scotland and nested on the church of St Giles in Edinburgh. They stayed there for part of the year, but where they went afterwards is unknown. They give the greatest care to their offspring, as Pliny says, to the extent that while they are carefully looking after their nests, they continuously cast their soft feathers while lying down. But no less extraordinary devotion is shown by the chicks to their mothers, for however long the mothers have spent on the training of their young, they are supported by the chicks for as long. Hence the stork is called the affectionate bird.'

The point is not whether the comment attributed to Pliny is correct or not (it was actually by the third-century AD naturalist Solinus, who added among other things that storks were migratory, ate serpents and were held in high regard). Rather, it emphasises how Bower is reporting on something remarkable and unfamiliar, and that he explicitly relates it to the storks upon which the classical naturalist had commented. In context, the evidence that White Stork and not Grey Heron was intended by Bower seems strong.

Bill's comment that in a 'deforested Edinburgh' Grey Herons might have nested on St Giles' overlooks the fact that the first plan of Edinburgh, from the English siege of 1544, shows some trees within the city, and the second, of 1573, shows stylised clumps of trees to the north and south of the city walls. There is no reason to think that these were a new feature. Herons in any case very seldom nest on buildings and perhaps have never been recorded doing so on an occupied building; the only reference I can find anywhere of a Grey Heron breeding on a man-made construction of any sort is one on the wall of a ruined croft on Oronsay, Argyll (Forrester *et al.* 2007).

The main reason adduced for supposing that the reference may be to Grey Herons is the fact that the court accounts of James V in the early sixteenth century refer to the provision of both storks (*ciconii*) and herons (*ardeae*) for the royal table. Some of the references to *ciconii* were in winter. As White Storks were unlikely to have been residents in Scotland at that time, the conclusion is drawn that the clerks who drew up the accounts used both Latin terms interchangeably for Grey Herons, and that if they had done so in 1530, the term *ciconii* could also have meant 'heron' in 1416. Perhaps indeed these particular clerks were so careless, though that is no reason to assume that Bower was also. But another explanation could be that the two terms were not interchangeable at all, and that storks were imported for food, as Bill says they apparently were in sixteenth-century England. Scotland, no less than England, had vibrant and immediate cultural and commercial contact with the south of Europe. Syphilis, for instance, was first reported in Europe in 1495 and in Edinburgh in 1497 – if bacilli could be instantaneously imported, so could storks. Kept in cages, as was common with large birds reared for food at the time, the storks could have been eaten at feasts in summer or winter.

In the same letter, Bill proposed that on the basis of the Sherborne Missal we should consider the Night Heron *Nycticorax nycticorax*, the Southern Grey Shrike *Lanius meridionalis* and the Woodchat Shrike *L. senator* as possible English breeding birds but, as he himself has observed elsewhere (Bourne 2007), the missal artistically shows strong continental influence, possibly French, and is perhaps of little value for English ornithological history. Many Englishmen of the age of Henry V would have been well acquainted with France and could perhaps have given the birds which they saw in the fields and vineyards English names.

Chris Smout
Chesterhill, Shore Road, Anstruther, Fife KY10 3DZ

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Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Brood amalgamation in Mute Swans

The disused Grantham Canal in West Bridgford, Nottingham, is split into many sections by old locks, which help to define territory boundaries between several breeding pairs of Mute Swans *Cygnus olor*. In early May 2007, one family with eight small cygnets was at the edge of their territory, which was adjacent to another territory at a higher water level on the other side of the lock. The male and six of the seven cygnets from the upper territory had strayed to the lower level, while the remaining youngster and the female remained in their own territory. As I approached, a battle started between the two males; the remaining 'upper' cygnet joined its siblings at this point, and all seemed in danger of being swamped by the fracas between the males.

After about 30 minutes, the 'lower' female rounded up all the cygnets, and all 15 joined her at the lower nest, some 400 m away. Meanwhile, the battle continued, with the upper female joining in with the two males. For several days afterwards, all 15 cygnets lived on the nest with the lower parents. After seeing all 15 one evening, I was surprised to find only nine cygnets the following morning, there being no evidence of predation – and they were never seen again.

P. A. Stockton
1 Martindale Close, Gamston, Nottingham NG2 6PN

EDITORIAL COMMENT Brood amalgamation is well known among waterfowl, but appears to be genuinely rare in Mute Swans.

Juvenile Common Kestrel diving at female

On 8th August 2007, at a quarry in Sandy, Bedfordshire, I witnessed a fascinating interaction among a family party of Common Kestrels *Falco tinnunculus*: a male, female and a juvenile. While the male soared high above the quarry, the juvenile hovered above the female, who was perched on the quarry face. With wings pinned back in the manner of a Peregrine Falcon *F. peregrinus*, the juvenile dived onto the perched female, pulling up shortly before making contact. The female flew off a short distance and perched on a tree guard. The juvenile flew towards the female, swept up above her some 6–7 m, hovered again, and dived once more onto the clearly agitated female. This behaviour lasted some 20 minutes and was repeated on a further two occasions, interspersed with short chases, the juvenile calling noisily in pursuit of the female.

I can find no reference to this behaviour in *BWP* or in *The Kestrel* (Andrew Village, 1990, Poyser).

Darren Oakley-Martin
RSPB, The Lodge, Sandy, Bedfordshire SG19 2DL

Peregrine Falcon defending prey from flock of Carrion Crows

Mark Cocker's interesting account of a confrontation over food between an immature Peregrine Falcon *Falco peregrinus* and a flock of 18 Carrion Crows *Corvus corone* (*Brit. Birds* 100: 307) reminded me of a similar incident that, long after the event, now seems worth putting on record given the late Derek Ratcliffe's quoted comment 'that he had never encountered a comparable example of this behaviour'.

On 8th December 1979, at Black Rock, Cornwall, the late Mike Combridge and I saw a Peregrine strike down and begin to pluck a Black-headed Gull *Chroicocephalus ridibundus*.

A group of 12 Carrion Crows quickly assembled and surrounded the falcon in an irregular circle, from which at intervals one or more would swiftly hop forwards and attempt to seize the gull, aim a peck at the falcon or, on three occasions, smartly tug the falcon's tail. None of these strategies resulted in the Peregrine relinquishing a firm grip on its prey, and unlike Cocker's immature bird, which appeared 'stressed', the Cornish falcon (perhaps because it was a more experienced adult?) never seemed to us in serious danger of losing its meal. After about 15 minutes, the Peregrine flew off with the remains of the gull, followed in a straggling line by five of the crows.

Pete Combridge
16 Green Close, Whiteparish, Salisbury SP5 2SB

House Martins eating elderberries

Bob Brookes

Bob Brookes

175 & 176. Juvenile House Martins *Delichon urbicum* feeding on elderberries *Sambucus nigra*, Gloucestershire, August 2007.

On 10th August 2007, I noticed a flock of House Martins *Delichon urbicum* lined up on some overhead wires near my home in the north Cotswolds. On closer inspection, I saw that 10–12 birds were landing in a small Elder *Sambucus nigra* bush just below the wires and it soon became obvious that they were pecking at and pulling off berries in various stages of ripeness. Initially, most of the birds on the bush were juveniles but subsequently a number of adults joined in, although they took only ripe berries. I watched them for around 30 minutes and the birds were still feeding as I left.

The weather that day was warm, dry and calm and there were many other hirundines and a few Common Swifts *Apus apus* feeding high overhead. *BWP* lists just one other record of House Martins eating plant material, that being hawthorn *Crataegus* berries.

Bob Brookes
7 Ganborough Road,
Longborough,
Moreton-in-Marsh,
Gloucestershire GL56 0RE

Eurasian Jay killing adult Common Chaffinch and Greenfinch

Eurasian Jays *Garrulus glandarius* regularly come to take peanuts from a feeder in our garden in Norfolk, and in spring 2007 a pair visited particularly frequently. At around 08.00 hrs on 17th May, I noticed a Jay fly from the peanut feeder to a nearby birch *Betula* tree with something hanging from its bill. I was surprised to see that this was an adult male Common Chaffinch *Fringilla coelebs*, which the Jay spread-eagled across a horizontal branch, belly up, holding it down with one foot. It pecked hard and repeatedly, sending clouds of feathers down and, after about ten minutes, had consumed the Chaffinch apart from a few wing feathers. Just a few days later, what was presumably the same Jay (or possibly the other member of the pair) despatched an adult Greenfinch *Carduelis chloris*, which it dealt with on the ground below the feeder, plucking it as clean as the unfortunate Chaffinch.

BWP gives only one instance of a Jay killing an adult bird, in an extremely extensive account of feeding habits. However, Seebohm (1883) quoted Charles Dixon as having seen a Jay in close pursuit of a Great Tit *Parus major*, which escaped only by taking refuge in a thick bush; and on another occasion had seen one strike at small birds, being deterred only by the presence of a human being. Macgillivray (1837) also mentioned that Jays will 'pounce on mice, and sometimes birds'.

Martin Woodcock
Furlongs, Long Lane, Wiveton, Norfolk NR25 7DD

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Common Crossbill flycatching

Michal Ciach's note on a Common Crossbill *Loxia curvirostra* flycatching in Poland (*Brit. Birds* 100: 507) prompts me to record the following. The late Mike Combridge and I spent 1st April 1991 watching Common Crossbills in the New Forest, Hampshire, finding two nests and many non-breeding flocks (which in total amounted to some 300–350 birds). While watching one of these groups (of 30–40 birds), we saw a male Common Crossbill make several brief aerial forays in pursuit of insects from near the top of a Scots Pine *Pinus sylvestris*. As described by Ciach, these forays were somewhat reminiscent of a clumsy Spotted Flycatcher *Muscicapa striata*.

During my period watching Common Crossbills in the New Forest (a span of 25 years 1975–99), this was the only time that I recorded this species flycatching, on which basis I am tempted to suggest that it may be an infrequently used and perhaps opportunistic feeding technique. In this connection, it is worth noting that invertebrates form a part of the diet of several crossbill species; I have occasionally seen Common Crossbills pick off and eat small items which I strongly suspected were insects from the boles and branches of conifer trees, while Nethersole-Thompson (1975) reported that Parrot Crossbills *L. pytyopsittacus* have been recorded feeding insect larvae to 'grown young', also noting that brooding females (these presumably Scottish Crossbills *L. scotica*) 'frequently snap at, and eat, any small flies that they can catch', and also eat ectoparasites from their bodies and the nest lining.

Pete Combridge
16 Green Close, Whiteparish, Salisbury SP5 2SB

Reference

Nethersole-Thompson, D. 1975. *Pine Crossbills*. Poyser, Berkhamsted.

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Greenland's seabird slaughter

An international campaign has been launched to halt the slaughter of Greenland's nesting seabirds. Thousands of birds have been killed this spring after Greenland's government caved in to hunters and allowed an extra month of shooting.

The RSPB, Audubon in the USA – each with more than one million backers – and two Canadian conservation groups have appealed to Greenland to restore the ban on hunting in March – imposed by law in 2001 – to give birds such as Kittiwake *Rissa tridactyla*, Common Eider *Somateria mollissima* and Brünnich's Guillemot *Uria lomvia* a chance to recover their numbers.

Greenland's 100,000-strong seabird colonies of 40 years ago now total just a few thousand birds because of intensive hunting and egg-collecting. In Iceland, Brünnich's Guillemot is now endangered, its decline blamed on Greenland's hunters.

Among those calling for hunting restrictions to be restored is Graham Wynne, Chief Executive of the RSPB. In a letter to Greenland's Cabinet, he said: 'Indigenous peoples worldwide pride themselves on their ability to live sustainably with nature and I see your Government's aim is sustainability. But I am afraid that the record of seabird protection in Greenland shows a very different story. It is a story of the destruction of nature through an unwillingness to manage hunting, resulting in seriously damaged populations of many seabird species.'

Hunting between 15th February and the autumn was banned under Greenland's 2001 Bird Protection Act, the country's first legislation promoting the sustainable use of wildlife. Common Eiders have declined by 80% in 40 years and the 150,000 Brünnich's Guillemots seen at a breeding colony in Uummannaq, northern Greenland, 60 years ago have gone completely.

But in each of the seven years since restrictions were imposed, hunters have lobbied for restrictions to be relaxed. Politicians relented in 2004 and did so again this year, rushing through their decision on 29th February and allowing the hunting of Kittiwakes and Eiders throughout March. Greenland's government claimed that the birds' numbers had risen sufficiently to withstand the extended onslaught. About 2,000 of Greenland's 10,000 hunters (out of a total population of 56,000) depend on sales of seabird meat at town and city markets. The rest hunt for pleasure alone, using powerful speedboats and semi-automatic guns.

Hasse Hedemand, of the Greenland conservation group Timmiaq, said: 'Seabird numbers are nowhere near the level you could call sustainable and the decision this year to allow more birds to be killed is a tragedy. Our international reputation is being tarnished by this unsustainable hunting. Most of the shooting is recreational. There is a long tradition of hunting in Greenland, but with increasing numbers of people, fast boats and firearms, it is the politicians' responsibility to ensure that the hunting is sustainable. Our wildlife is in a sorry state compared to 50 years ago. This shouldn't have been allowed to happen.'

Markus Varesvuo

177. Brünnich's Guillemot *Uria lomvia*.

* A special report on the wintering seabirds of southwest Greenland appeared in *BB* in 2006: *Brit. Birds* 99: 282–298.

British island holds a quarter of new Critically Endangered species

Eight species have joined the ranks of the world's 190 Critically Endangered birds in the latest revision of the IUCN Red List – and two of those are from just one tiny island belonging to the UK.

The Gough Island Finch *Rowettia goughensis* and Tristan Albatross *Diomedea dabbenena* are both restricted to Gough Island, in the South Atlantic, and now face a very high chance of extinction in the wild following predation by introduced House Mice *Mus domesticus* and, in the case of the albatross, longline fishing too. The island also supports another five bird species facing a high or very high risk of global extinction.

Gough Island, which is smaller than Guernsey and is a UK World Heritage Site, is part of the Tristan da Cunha group, a UK Overseas Territory. The House Mice, which were accidentally released on the island in the nineteenth century, are predators on the chicks of both the finch and the albatross and literally eat them alive (see *Brit. Birds* 98: 504–505). The rodents also compete with the buntings for food.

Dr Geoff Hilton, an RSPB scientist who has been researching conservation problems in UK Overseas Territories for some time, said: 'In the presence of House Mice, the albatross and the bunting have no chance of survival. Things are getting worse and the only hope for these threatened birds is complete eradication of the mice.'

The Overseas Territories Environment Programme – a joint programme of the Foreign and Commonwealth Office and the Department for International Development – has paid for a provisional study, which suggests that the mice could be eradicated by dropping poison bait from helicopters. Other governments are already funding full rodent eradication programmes on much larger islands.

Dr Hilton added: 'The big question is whether the UK Government will take their international commitments seriously and do what the governments of New Zealand and Australia have done, and provide the big money needed to actually do the mouse eradication. If they don't, we won't be able to give two critically threatened species the lifeline they need. The world's greatest seabird island is being eaten alive, as the mice are likely to be affecting the fortunes of many seabirds on the island. Without help, Gough Island will be likely to lose the majority of seabirds, not just those that are confined to the island.'

Gough Island, which features in a forthcoming paper in *BB* and has been described as the most important seabird colony in the world, supports millions of pairs of seabirds of several species. Apart from Tristan Albatross, the island also supports the entire world population of the rapidly declining Atlantic Petrel *Pterodroma incerta* and a significant proportion of the recently split Northern Rockhopper Penguin *Eudyptes moseleyi*; both of these are listed as Endangered in this year's Red List revision.

The new Red List shows that there are now 1,226 species of bird facing global extinction and 190 of those are Critically Endangered. Also upgraded to Critically Endangered is the Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, while Gurney's Pitta *Pitta gurneyi* has been downgraded from Critically Endangered to Endangered.

Perhaps surprisingly, there are two Red List revisions that affect British birds, suggesting that they might have started on the slide towards extinction. Eurasian Curlew *Numenius arquata* and Dartford Warbler *Sylvia undata* have both been listed as Near Threatened, only one step below those species facing global extinction. That takes the number of Near Threatened birds that breed in the UK to five; the others are Red Kite *Milvus milvus*, Corn Crake *Crex crex* and Black-tailed Godwit *Limosa limosa*.

Swannery bounces back from bird flu

A record number of cygnets have hatched at Abbotsbury swannery in Dorset despite the bird flu outbreak earlier this year. Ten wild Mute Swans *Cygnus olor* and a Greater Canada Goose *Branta canadensis* tested positive for the virulent H5N1 strain of the disease at Abbotsbury during the January outbreak (*Brit. Birds* 101: 105). Six months later, the swannery is having one of its busiest breeding seasons after reopening to the public in March; it is home to a herd of 800 wild swans, and more than 600 cygnets are expected this season.

The bird flu outbreak was probably caused by an infected migratory bird, according to Defra. An epidemiology report found the strain of the virus was similar to that found in Europe in the latter part of 2007. Swan herder David Wheeler said: 'It was a grim time, we were very worried. We half expected to lose a lot of swans but it just seemed to be one or two birds over the whole of the lagoon.' Vets believe that the Abbotsbury swans may have developed some kind of immunity to the disease, which prevented it from spreading much further. They claim that it also explains why the new cygnets have been protected.

Good news and bad for nesting Peregrines

This spring has been notable for the number of Peregrine Falcons *Falco peregrinus* colonising urban areas and nesting on prominent historic – and not so historic – buildings, much to the delight of city dwellers. Peregrines have nested on cathedrals in Chichester and Lincoln, churches in Exeter and Worcester, Cardiff City Hall, the A14 bridge over the River Orwell in Suffolk (the county's tallest structure) and in the centre of Birmingham, Manchester and London.

But despite the delight they bring to hundreds of thousands of people in Britain, there remain a minority of idiots who still attempt to kill or maim Peregrines and destroy their nests. There were two shocking incidents in the West Midlands in May. On 13th, the RSPB received reports of traps being set on a Peregrine nest ledge at a quarry near Kingswinford; when officers went to investigate, they found three steel spring traps set around a Peregrine nest, which also contained two smashed eggs. Then on 22nd, volunteers watching a nest at a quarry near Cannock in Staffordshire spotted a male Peregrine caught in one of five spring traps which had also been set on a nest ledge. The volunteers, who are licensed raptor workers, managed to reach the nest and rescued the bird, along with two chicks, which were close to starvation. The male later had to be put down. Raptor Rescue, an organisation that cares for injured birds of prey, is now looking after the chicks, while it is believed that the female may have died too.

Mark Thomas, RSPB investigations officer, said: 'These are sickening incidents. The fear now is that those responsible may be planning to target more nests in the area. Someone must know who has been setting these traps and why. I urge anyone with information to come forward and help to make sure that no more Peregrines suffer in this way. We are offering a reward of up to £1,000 if the information we receive leads to a conviction.'

Anyone with information on the Kingswinford incident can call West Midlands Police on 0845 113 5000, while the Staffordshire Police information line is 0845 330 2010. People can also call Crimestoppers anonymously about either incident on 0800 555 111.

Stef McElwee

178. *British Birds* and the British Birds Rarities Committee have marked the retirement of long-serving BBRC Chairman Colin Bradshaw (right) with the presentation of an original Ian Lewington painting. The painting shows a Ross's Gull *Rhodostethia rosea* that Colin found on his home patch in Tynemouth on 2nd May 1997 – a rosy bird on a rosy dawn for New Labour. On present form, the odds of him finding another Ross's in Tynemouth are probably far greater than another new dawn for New Labour... The painting was presented by fellow BBRC stalwart and Northumberland birder Jimmy Steele.

Patchworkers notch up 3,000th day on the trot

Birders that regularly work a local patch certainly try to get out there at least once or twice a week. The more dedicated may manage nearly seven days a week – but how many local patches have been watched for 3,000 consecutive days?! N&c readers may recall a reference to the Carr Vale Nature Reserve in northeast Derbyshire in March 2003 (*Brit. Birds* 96: 148), reporting on the team of patchworkers there who had notched up their 1,000th consecutive daily visit on 17th December 2002. The 2,000th consecutive daily visit was celebrated on 14th September 2005, and this marathon of dedicated patchworking reached the 3,000th consecutive daily visit on 10th June this year. The team of regular observers (Mark Beevers, Richard Box, Dave and Sue Came, Tony Irons, Kevin Navin and Ian Swain) last missed a day on 22nd March 2000!

Mark Beevers describes it as a 'mad quest', and said: 'since 1st January 1997 we have missed only 34 dates. This is an incredible run given that all the observers work and have families.' He is rightly proud of the latest milestone, and of what has been achieved at the site, which until 1998 was mainly farmland. The site list has now increased to 203, and the year-list record of 148 was set in 2007. Of those species recorded, some of the more notable (for Derbyshire) have been Ring-necked Duck *Aythya collaris*, Northern Gannet *Morus bassanus*, Shag *Phalacrocorax aristotelis*, Pectoral Sandpiper *Calidris melanotos*, and Yellow-browed Warbler *Phylloscopus inornatus*. Mark admits that the list of species recorded is not remarkable – 'but this is rarity-starved Derbyshire!' These folk have clearly set the benchmark for dedication to local patching...

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

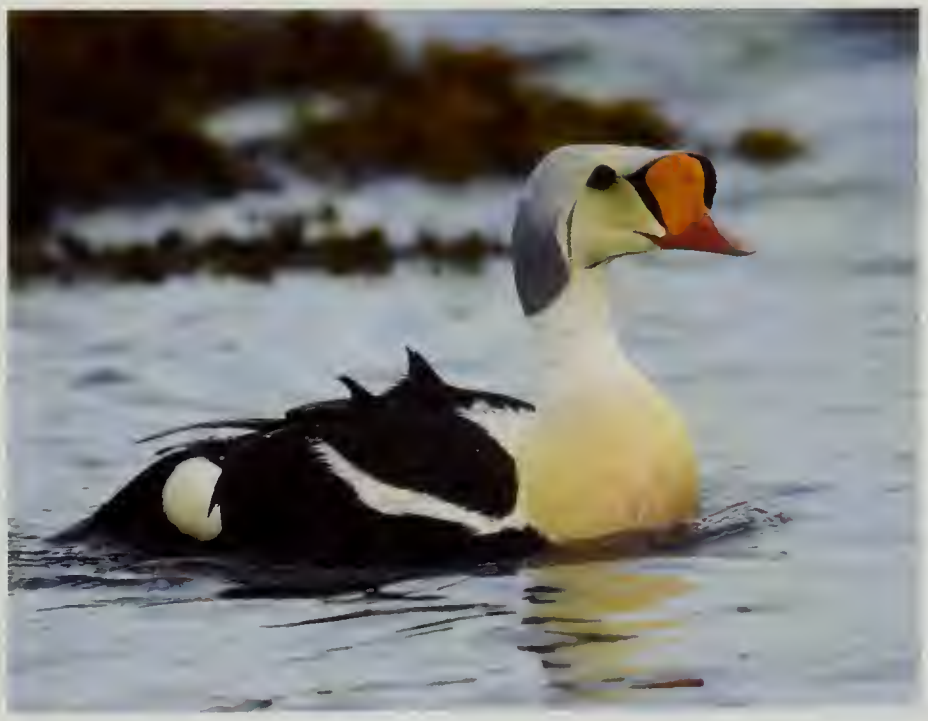
This summary of unchecked reports covers mainly new arrivals between early May and early June 2008.

Black Duck *Anas rubripes* Butter's Tor Moor (Cornwall), 23rd May. Blue-winged Teal *Anas discors* Lough Beg (Co. Derry), 13th May. Lesser Scaup *Aythya affinis* St John's Loch (Highland), 13th–15th May. King Eider *Somateria spectabilis* Fair Isle, 18th–22nd May, presumed same Sumburgh 25th May and Virkie (all Shetland), 27th; Tacumshin Lake (Co. Wexford), 25th May.

White-billed Diver *Gavia adamsii* Gruinard Bay (Highland), 13th May; Lewis (Outer Hebrides), 14th May; Sound of Harris (Outer Hebrides), 17th May; Uyea (Shetland), 18th May; Dunnet Bay (Highland), 20th May; Scourie (Highland), 27th May; Out Skerries (Shetland), 30th May to 6th June; Cape Clear (Co. Cork), 3rd June. Black-browed Albatross *Thalassarche melanophris* At sea, west of Galway Bay, 4th–5th June.

Little Bittern *Ixobrychus minutus* Lodmoor (Dorset), 17th–20th May. Cattle Egret *Bubulcus ibis* Reports, mainly involving long-stayers from the earlier influx, received from Co. Cork, Devon (including a juvenile at Braunton Marsh, 30th May), Dorset, Glamorgan, Gloucestershire, Greater Manchester, Hampshire, Kent, Co. Kerry, Norfolk, East Sussex and West Sussex. No reports from Cornwall, their first blank month since October 2007. Great White Egret *Ardea alba* Westleton Heath, 11th May, perhaps same Brampton and North Warren (all Suffolk), 17th May and 4th–8th June; Garretstown (Co. Cork), 12th–19th May; Pennington Flash (Greater Manchester), 14th May; Blithfield Reservoir (Staffordshire), 17th May; Radipole Lake (Dorset), 17th May; Cantref Reservoir (Breconshire), 18th May to 1st June; Farmoor Reservoir (Oxfordshire), 21st May; Horse Eye Level (East Sussex), 21st–22nd May; Land's End (Cornwall), 22nd May; Abbotsbury (Dorset), 2nd June; Southrop (Gloucestershire), 2nd June; Ham Wall (Somerset), 3rd June; Rainham Marshes (Greater London), 4th–7th June, then two on 8th; Ogston Reservoir (Derbyshire), 4th June; Stodmarsh (Kent), 6th June; Slimbridge (Gloucestershire), 6th June. Black Stork *Ciconia nigra* Cuckmere Valley, 18th May, perhaps same Eastbourne (both East Sussex), 28th May, and perhaps same East Grinstead (West Sussex), 5th June; in Orkney, various locations 23rd–26th May, then presumed same at various locations in Shetland 28th May to 1st June; North Warren, 8th June. Glossy Ibis *Plegadis falcinellus* Shapwick Heath (Somerset), 16th May, presumed same Ferrybridge (Dorset), 17th May and Keyhaven Marshes (Hampshire), 17th–18th May; Marshside RSPB (Lancashire & N Merseyside), long-stayer to 30th May, joined by another on 27th May.

Black Kite *Milvus migrans* Sculthorpe (Norfolk), 11th May; Fair Isle 7th–10th May; Paxton (Cambridgeshire), 10th May; Wearde Quay (Cornwall), 13th May; Earls Barton



Brian Egan

179. Long-staying drake King Eider *Somateria spectabilis*, Girvan, Ayrshire, May 2008.

Rob Fray

180. First-summer female Red-footed Falcon *Falco vespertinus*, Bixter, Shetland, June 2008, part of a widespread influx in spring 2008.

(Northamptonshire), 14th May; Yatton, Steart and then Taunton, 17th May, presumed same Priddy (all Somerset), 21st May; Wisley Common (Surrey), 19th May; Pevensey, perhaps same Brighton (both East Sussex), 20th May; Beaulieu Road Station and Old Basing (both Hampshire), 24th May; Littlehampton (West Sussex), 24th May; Udimore, 26th May, Forest Row and Ringmer (all East Sussex), 29th May; Warham Greens (Norfolk), 31st May; Westhay (Somerset), 31st May; Woolhampton GP (Berkshire), 5th June. **White-tailed Eagle** *Haliaeetus albicilla* Silver End (Essex), 20th May. **Red-footed Falcon** *Falco vespertinus* The influx continued, with about 60 in this period. About 20 arrived between 9th and 15th May, about another 17 between 16th and 22nd May, another 14 between 23rd and 31st May and up to eight in June; some duplication in these records invariably occurred. There were up to six in Cambridgeshire, five in Kent and Dorset, four in Bedfordshire and Essex, Hampshire, Suffolk, Norfolk and Cornwall, three in South Yorkshire, two in Berkshire and Gloucestershire and singles in Berkshire, Derbyshire, Devon, Co. Dublin, Glamorgan, Greater London, Lothian, Northamptonshire, Nottinghamshire, Perth & Kinross, Shetland, Somerset, Surrey, East Yorkshire and West Yorkshire.

Black-winged Stilt *Himantopus himantopus* Neumann's Flash (Cheshire), long-staying breeding pair, plus one young, to 8th June; Blashford Lakes (Hampshire), 10th May; Lough Eurna (Co. Tipperary), 27th May; Little Island, (Co. Cork), 27th May; Dungeness (Kent), 28th–30th May. **American Golden Plover** *Pluvialis dominica* Newcastle (Co. Wicklow), 22nd May; Cemlyn Bay (Anglesey), 30th May to 3rd June; Annagh Marsh (Co. Mayo), 31st May to 5th June; Pegwell Bay (Kent), 1st–5th June. **Stilt Sandpiper** *Calidris himantopus* Rutland Water (Leicestershire & Rutland), 27th May. **Broad-billed Sandpiper** *Limicola falcinellus* Spurn (East Yorkshire), 24th–26th May. **Great Snipe** *Gallinago media* Holy Island (Northumberland), 31st May to 2nd June. **Terek Sandpiper** *Xenus cinereus* Rye Harbour, 31st May, then The Midrips (both East Sussex), 1st and 8th June. **Spotted Sandpiper** *Actitis*

Steve Young/Birdwatch

181. Wilson's Phalarope *Phalaropus tricolor*, Seaforth, Lancashire & N Merseyside, June 2008.

macularius Broad Lough (Co. Wicklow), 18th May; Ringabella (Co. Cork), 22nd May. **Lesser Yellowlegs** *Tringa flavipes* Lough Beg, 3rd May; Hauxley 10th May, then Druridge Pools (both Northumberland), 11th–15th May. **Marsh Sandpiper** *Tringa stagnatilis* Rutland Water, 27th–30th May. **Wilson's Phalarope** *Phalaropus tricolor* North Uist, 29th May; Seaforth (Lancashire & N Merseyside), 3rd–4th June.

Franklin's Gull *Larus pipixcan* Stithian's Reservoir (Cornwall), 11th May. **Ross's Gull** *Rhodostethia rosea* Lytham St Anne's and the Ribble Estuary area (Lancashire & N Merseyside), long-stayer to 16th May, when found dead. **Bonaparte's Gull** *Chroicocephalus philadelphia* Stocks Reservoir (Lancashire & N Merseyside), 10th–11th May; Bowling Green Marsh (Devon), 20th–21st May; Loch Ruthven (Highland), 3rd–6th June.

Whiskered Tern *Chlidonias hybrida* Slimbridge (Gloucestershire), 10th–13th May; Sennybridge, 23rd May, then Llangorse Lake (both Powys), 27th–30th May; Grove Ferry, 31st May, then Stodmarsh/Collard's Lake (all Kent), 31st May to 5th June; Loch of Strathbeg (North-east Scotland), 5th–8th June; Barton-on-Humber (Lincolnshire), 7th June; Ouse Washes and Fen Drayton (both Cambridgeshire), 8th June. **White-winged Black Tern** *Chlidonias leucopterus* Draycote Water (Warwickshire), 10th May; Hickling Broad (Norfolk), 22nd May; Lodmoor, 27th May; Bray (Co. Wicklow), 4th June. **Forster's Tern** *Sterna forsteri* Tacumshin, 17th May to 5th June.

Snowy Owl *Bubo scandiacus* North Uist, two, 10th May, one to 23rd; Lewis, 15th May. **Alpine Swift** *Apus melba* Newbiggin (Northumberland), 23rd May; Lewes (East Suffolk), 28th–30th May; Pegwell Bay 8th June. **European Bee-eater** *Merops apiaster* Influx, with up to 47 recorded in the period, of which about 19 arriving between 10th and 15th May, another six between 17th and 21st May, another 15 between 23rd and 31st May and seven in June. There were up to six in Cornwall, Hampshire and Kent, up to five in Norfolk, up to four in West Sussex, up to three in Highland and Suffolk, probably two in Scilly, two in Dorset, Outer Hebrides, East Sussex and East Yorkshire and singles in Devon, Greater London, Somerset and Staffordshire. **European Roller** *Coracias garrulus* Howden's Pullover (Lincolnshire), 28th May.

Kit Day

182. Whiskered Tern *Chlidonias hybrida*, Radipole Lake, Dorset, May 2008.

Red-rumped Swallow *Cecropis daurica* Saltee Island (Co. Wexford), 12th–14th May; St Agnes (Scilly), 13th–23rd May; Lodmoor, 17th–19th May; Leasowe (Cheshire & Wirral), 18th May; Maldon (Essex), 21st May; Lizard (Cornwall), 30th May; Beachy Head (East Sussex), 31st May; Portland (Dorset), 31st May; Whalsay (Shetland), 5th June; North Uist, 6th June. **Red-throated Pipit** *Anthus cervinus* Isle of May, 10th May; Handa (Highland), 12th May; Burnham (Norfolk), 15th May; Pabbey (Outer Hebrides), 24th May; Blakeney Point, 27th May, and Holme (both Norfolk), 28th May; Dorman's Pool (Cleveland), 30th May. **Citrine Wagtail** *Motacilla citreola* Spurn, 10th May; Fair Isle, 11th–13th May; Titchwell (Norfolk), 27th–29th May; Caerlaverock (Dumfries & Galloway), 4th June; Brecon (Breconshire), 5th June. **Thrush Nightingale** *Luscinia luscinia* Portland, 18th May; Kilnsea (East Yorkshire), 28th May; Spurn, 29th May to 1st June; Grutness, 30th May, Unst, 30th May, and Foula (all Shetland), 4th June; Minsmere (Suffolk), 5th–8th June.

River Warbler *Locustella fluviatilis* Beachy Head, 30th May. **Blyth's Reed Warbler** *Acrocephalus*

John Malloy

183. Lesser Grey Shrike *Lanius minor*, Long Nanny, Northumberland, June 2008.

dumetorum Tiree (Argyll), 3rd June. Great Reed Warbler *Acrocephalus arundinaceus* Lakenheath Fen (Suffolk), 11th May and 8th June; Seil Island (Argyll), 11th–12th May; Chew Valley Lake (Avon), 12th May; Minsmere 17th–18th and 29th–30th May; Amwell GP (Hertfordshire), 20th–21st May; Cley (Norfolk), 21st May; Flamborough Head (East Yorkshire), 29th May. Eastern Olivaceous Warbler *Hippolais pallida* Portland, 17th May. Booted Warbler *Hippolais caligata* South Gare (Cleveland), 29th May. Spectacled Warbler *Sylvia conspicillata* Westleton Heath, 10th May. Subalpine Warbler *Sylvia cantillans* In Shetland, one on Fair Isle to 18th May, another 17th–18th, one of these to 20th; also Hoswick 14th, Foula 14th, Wester Quarff 20th, Scatness and Sumburgh, 26th and Unst 29th–30th May. Elsewhere, Bardsey (Caernarfonshire), 13th and 27th May; Calf of Man (Isle of Man), 14th May; Mullet Peninsula (Co. Mayo), 14th May; Dursey Island (Co. Cork), 15th May; Ramsey (Pembrokeshire), 15th May; Skomer (Pembrokeshire), 19th May; Gorran Haven (Cornwall), 20th May; St Kilda (Outer Hebrides), 22nd May; North Uist, 23rd May; Hartlepool (Cleveland), 28th May; Filey (North Yorkshire), 28th May; Warham Greens and another Blakeney Point, both 29th May; Landguard, 29th–30th May; St Margaret's at Cliffe (Kent), 31st May; Saltee Island, 2nd June. Greenish Warbler *Phylloscopus trochiloides* Wells-next-the-Sea, 30th May; Noss (Shetland), 3rd June. Dusky Warbler *Phylloscopus fuscatus* Blakeney Point, 4th June.

Mark Breaks

184. Male Citril Finch *Serinus citrinella*, Fair Isle, Shetland, June 2008; this will be the first for Britain if accepted.

Collared Flycatcher *Ficedula albicollis* Lundy (Devon), 12th May; North Ronaldsay, 24th May. Lesser Grey Shrike *Lanius minor* Long Nanny (Northumberland), 3rd–8th June. Citril Finch *Serinus citrinella* Fair Isle, 6th–8th June. Trumpeter Finch *Bucanetes githagineus* North Rona (Outer Hebrides), 25th May; Blakeney Point, 31st May to 4th June; Telescombe Cliffs (East Sussex), 4th–6th June. White-crowned Sparrow *Zonotrichia leucophrys* nr Leuchars (Fife), 17th May. Black-headed Bunting *Emberiza melanocephala* Robin Hood's Bay (North Yorkshire), 28th May; Fetlar (Shetland), 4th–7th June.

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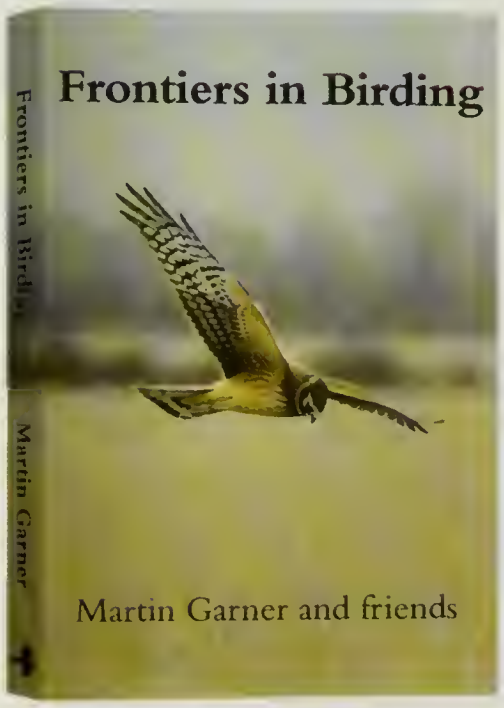

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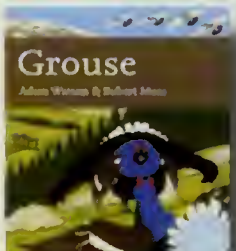

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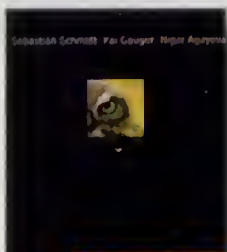

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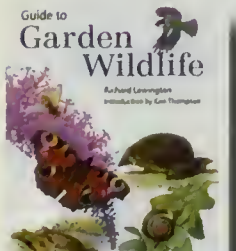

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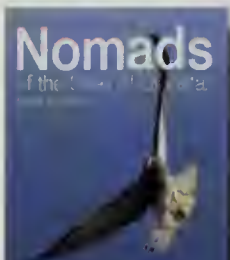

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Northern Harrier

Bird Photograph of the Year

Breeding seabirds on Scilly

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ISSN 0007-0335

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Spindrift, Eastshore,
Virkie, Shetland ZE3 9JS
Tel: 01950 460080
Papers, notes, letters, illustrations, etc.
Roger Riddington
E-mail: editor@britishbirds.co.uk

'News & comment' information
Adrian Pitches, 22 Dene Road,
Tynemouth, Tyne & Wear NE30 2JW
E-mail: adrianpitches@blueyonder.co.uk

Rarity descriptions
Nigel Hudson, Post Office Flat,
St Mary's, Scilly TR21 0LL
E-mail: secretary@bbrc.org.uk

CIRCULATION & PRODUCTION

4 Harlequin Gardens,
St Leonards on Sea,
East Sussex TN37 7PF
Tel & fax: 01424 755155

Design & Production
Mark Corliss
E-mail: m.corliss@netmatters.co.uk

Subscriptions & Administration
Hazel Jenner
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'Northern Harrier' on Scilly: new to Britain

John P. Martin

Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, incoming, off Scilly, October 1982. *D. I. M. Wallace*

ABSTRACT A juvenile harrier on Scilly from 22nd October 1982 until 8th June 1983 has now been accepted as Britain's first Hen Harrier *Circus cyaneus* of the Nearctic race *hudsonius*, or 'Northern Harrier'. This article describes the occurrence and presents criteria that distinguish *hudsonius* from the nominate form of Hen Harrier in juvenile plumage.

October 1982 was a classic month on Scilly, with an array of rarities that even today looks impressive. The second half of the month was dominated by westerly winds and several Nearctic species arrived in quick succession. Following an Upland Sandpiper *Bartramia longicauda* on St Agnes on 19th, a Common Nighthawk *Chordeiles minor* was seen there the next day, preceding a Black-billed Cuckoo *Coccyzus erythropthalmus* on St Mary's and a Killdeer *Charadrius vociferus* on St Martin's on 21st. The following day, a ringtail harrier appeared, seen initially around Porthellick Down, St Mary's, but later wandering widely round this and various other islands (and ultimately remaining on Scilly until 8th June 1983). It was a particularly striking bird, with uniform orange underparts and a dark brown 'hood'. Having seen it just before leaving Scilly, I was interested to hear later that it had been identified as a 'Marsh Hawk', the name then favoured for the North American race of Hen Harrier *Circus cyaneus hudsonius* (hereafter referred to as *hudsonius*). Many people saw the

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bird but, with all the other exciting birds on the islands at the time, plus Britain's first Chimney Swifts *Chaetura pelagica* in Cornwall, it perhaps did not receive the attention it deserved.

Descriptions of the bird were submitted to BBRC by R. J. Raines and Peter Basterfield, while Barrie Widden provided a good-quality colour slide. Further notes and sketches were received from Chris Heard and Keith Vinicombe in response to a request in the Isles of Scilly Bird Report. Mike Rogers, in his astute introductory notes accompanying the first circulation of the record in late 1983, remarked that the slide in particular offered hope of making progress with the identification of a form that had long troubled British observers.

A chequered history

The famous 'Cley harrier', present from October 1957 until April 1958, was identified as *hudsonius* at the time (Wallace 1971) but remained controversial as the identification criteria were, to some extent, uncertain. Initially, unstreaked warm orangey or rufous underparts and a darker hood were thought to be key characters that distinguished juvenile *hudsonius* from the nominate form in Europe (hereafter referred to as *cyaneus*). Grant (1983) set out the findings of a review that concentrated on these features and tried to obtain firm evidence of immature *cyaneus* with unstreaked rufous underparts. He noted that many typical young *cyaneus* are buff or rufous below with dark or rufous-brown streaks that might give a false impression of uniformly rufous underparts at a distance. He listed 12 Palearctic observations of 'Hen Harriers' with 'uniformly or faintly streaked rufous underparts'. Two related to specimens, although one of these, from Japan and held in the Natural History Museum (NHM), Tring, had narrowish streaking described as 'not faint' on the whole of the underparts, which seems perfectly normal for juvenile *cyaneus*. Moreover, of the 12 records, eight could conceivably have been vagrant *hudsonius* anyway (indeed two were submitted as *hudsonius* and are discussed below), so do not contribute to our knowledge of the variation in juvenile *cyaneus*.

Grant (1983) also listed stronger and more contrasting head markings; rufous markings pervading the whole of the upperparts and upperwing; and a dark underside to the secondaries as possible additional features. He concluded that what he called 'rufous phase *cyaneus*', although thought to be rare, was a real stumbling block when it came to identification of vagrant *hudsonius* in Europe. Against this background it was not surprising that opinion on the Scilly record within BBRC was divided, and it spent the next 18 years in limbo. During this period, Thorpe (1988) reported a brood of unstreaked juvenile *cyaneus* on the Isle of Man, further adding to the uncertainty. Without photographs or contemporary field notes, however, it is not possible to know exactly what these birds looked like.

The identification of raptors, including ringtail harriers, has subsequently made great progress, marked by the publication of Wheeler & Clark (1995) and, in particular, Forsman (1999), who showed how important primary patterns and facial markings are in distinguishing juvenile Montagu's *C. pygargus* and Pallid Harriers *C. macrourus*. Wallace (1998) had also suggested primary and secondary patterns as potentially useful features for separating ringtail *hudsonius* from *cyaneus*.

With this additional information available, I rashly asked to review the 'Marsh Hawk file' in late 2002, which, besides the 1982–83 Scilly record, contained details of three other pending claims: Hengistbury Head, Dorset (on 22nd October 1983); Wicken Fen, Cambridgeshire (from 29th October to 18th November 1972); and Saltfleetby, Lincolnshire (from 18th November 1973 to mid March 1974). Meanwhile, Keith Vinicombe (2003) discussed the identification of *hudsonius* and its potential as a likely vagrant, and included a 'new' photograph of the 1982 Scilly bird. Keith put me in touch with the photographer, Barrie Widden, who kindly sent two additional slides of the bird, which had not previously been seen by BBRC. It was clear, however, that progress would be made only by further refinement of the identification criteria; this is described below.

Identification criteria for vagrant juvenile hudsonius

Only juveniles are considered in this review as, at the time of writing, all British claims of *hudsonius* have been juveniles. Moreover, this is the most likely age class for vagrants, and birds in this plumage are much more distinctive than adult females. Adult males are also rather distinctive but are not discussed here.

Most of the potentially useful plumage features could be checked against museum

specimens. Brian Small provided colour photos, sketches and notes of head and body patterns from the skin collection at NHM, Tring, and I later examined all the skins of juveniles of the two forms in this collection. Primary patterns are, at best, difficult to see on skins but many excellent photographs of both forms were examined.

In autumn, juvenile ringtail harriers are in fresh plumage with no signs of moult. Adult females are superficially similar to juveniles in terms of plumage pattern but by September and October are nearing the end of their complete moult, and may show gaps or moult limits in the primaries and secondaries. The primaries of juvenile *hudsonius* and *cyaneus* are somewhat narrower and more pointed at the tips than the broad, rather square-ended 'fingers' of adult females; adult females also have slightly broader wings, especially the inner hand. Juveniles also differ from adult females in certain plumage details. They show largely dusky secondaries, contrasting with the paler primaries (this feature is age related, rather than indicative of *hudsonius* as suggested by Grant 1983); darker brown upperparts (lacking grey tones) with warm feather edging; and a more strongly contrasting head pattern. Any ringtail harrier in autumn with distinctly orange-toned underparts will be a juvenile, adults having creamy or whitish underparts with distinct dark streaking. Juvenile *cyaneus* often shows rich ochre or rufous tones to the distinctly streaked breast and belly (though some individuals are more cream- or buff-toned here), while juvenile *hudsonius*, and juvenile Pallid and Montagu's Harriers share a largely unstreaked cinnamon to deep orange breast and belly.

For observers in western Europe, ringtail harriers are a difficult group of birds to identify but effectively fall into two pairs in terms of size, build and, in particular, wing structure. Montagu's and Pallid harriers are the smaller, 'slim-winged' harriers (with four fingers forming the wing-point, and a lighter, more buoyant flight action), while *hudsonius* and the closely related *cyaneus* comprise the other pair. Structurally, *hudsonius* is very similar to *cyaneus*, with relatively broad wings and five fingers at the tip, contributing to a heavier flight than that of the two smaller species. The identification of the three European breeding species is particularly well covered in Forsman (1999).

A bird showing the broad wings and five-fingered primaries of Hen Harrier, in combination with apparently unstreaked, orange-toned breast and belly, is well worth careful scrutiny but other features need to be considered, as set out below and in appendix 1.

J. P. Martin © NHM, Tring

185. Underparts of juvenile Hen Harrier *Circus cyaneus cyaneus* (lower two birds) and juvenile 'Northern Harrier' *C. c. hudsonius* (upper two). Typically, *hudsonius* shows mostly plain, rufous-orange underparts and fine, darker streaks restricted to the sides of the upper breast and across the lower throat, just below the dark 'boa'[1]. In contrast, the paler, buff ground colour of *cyaneus* is heavily marked with extensive bold, dark brown streaking.

Plumage features

Overall, *hudsonius* has darker brown plumage with the paler areas distinctly rufous; while *cyaneus* is

[1] There seems to be no proper name for the dark half- (or complete) band on the neck sides but it has been referred to elsewhere as a 'boa'. I have therefore used this term to distinguish it from the paler band behind the ear-coverts, which I have termed the 'collar'. I use 'hood' to refer to the boa plus the rest of the head.

lighter brown with the paler areas often colder buff or cream. The upperparts of *hudsonius* are dark chocolate brown with rich rufous fringes, at least when fresh; while *cyaneus* is typically paler, mid brown above with paler rufous tones to feather edgings and often a paler, buffy nape-patch. There seems to be little or no overlap in plumage tones between the two forms when a series of skins is compared, but accurate judgement on a lone bird in the field would be much more difficult.

Underparts

The birds depicted in plate 185 are considered to be typical, though some *hudsonius* may have paler cinnamon underparts, including birds in fresh plumage (i.e. not just bleached and faded birds later in the season). Richer, orangey-toned *cyaneus* are frequent but they always show larger, bolder and more extensive streaking than *hudsonius*. While *cyaneus* is never as deep rufous-orange on the breast and belly as the darkest *hudsonius*, there is overlap in background colour. There is little overlap in terms of the extent and boldness of the streaking, although the most heavily marked *hudsonius* might conceivably overlap with the most lightly streaked *cyaneus*. Accurate evaluation of the strength and extent of any streaking on the underparts is vital and requires good views.

Head and neck pattern

The head and neck pattern is a useful feature for identifying ringtail harriers in general and this includes *hudsonius*, which shows more or less solid dark brown or blackish neck sides, creating a dark boa recalling that of juvenile Pallid Harrier. On weakly marked individuals, this area is less solidly dark, consisting of blotchy dark chocolate streaks on a dark rufous background, but still forms a strong boa. On many but not all individuals, the boa meets across the breast. On all *hudsonius*, however, it is separated from the dark ear-coverts by a more or less prominent narrow pale band or collar that can extend to the nape and across the breast on some. Some *cyaneus* can show a faint or shadowy dark boa but it comprises a patch of dark streaking over a paler ground colour – either matching or just slightly darker than the rest of the underparts. It is never as contrasting as on a well-marked *hudsonius*; the difference between the two is similar to that between typical Pallid and heavily marked Montagu's Harriers. The pale collar is also present in *cyaneus* but tends to be less contrasting as the boa is not so dark.

Almost all *hudsonius* show a solidly dark chocolate crown with a warmer pale supercilium over the eye, which is separated from a shorter pale crescent below it by a dark line through the eye. The ear-coverts are usually solidly blackish or dark chocolate, like the crown. On *cyaneus* the crown and ear-coverts are usually somewhat paler and more obviously streaky, although the ear-coverts in particular often form a solid-looking dark block. The supercilium is typically longer and broader, sometimes reaching the forehead and joining the (often larger) pale crescent below the eye. Juvenile *cyaneus* may show a reduced supercilium and a small pale crescent below the eye, much like *hudsonius*, but the latter rarely seems to have as much white around the eye as shown by some *cyaneus*. The head patterns do vary but the better-marked birds are distinctive.

The largely dark head and solid dark boa of *hudsonius* contrasts with the largely unstreaked orange-toned body to give many individuals a strikingly hooded appearance. A minority are less well marked and might be hard to tell from the most rufous and least streaked *cyaneus*, particularly if the latter also happens to be one of the few with a shadowy boa.

Underside of primaries

The pattern of the underside of the primaries is a useful and well-known feature for identifying juvenile ringtail harriers in Europe, and it can also be useful when identifying *hudsonius*. In *hudsonius*, P10 (the outermost primary) shows three or four, or sometimes even five, blackish bars in addition to the black tip. Most usefully, P8 and P9, the longest primaries, show five or six blackish bars plus the dark tip. In *cyaneus*, P10 normally shows three blackish bars plus the black tip, while P8 and P9 have three or four (but sometimes five) blackish bars plus the dark tip. There also appears to be a difference in the pattern to the trailing edge of the inner primaries. Although both races show a darker trailing edge to the inner hand, on *hudsonius* this tends to be paler and less contrasting than on many *cyaneus*. Some *cyaneus*, perhaps especially males, can have a poorly marked trailing edge but these tend to be individuals with very

continued on page 402

Steve Baranoff

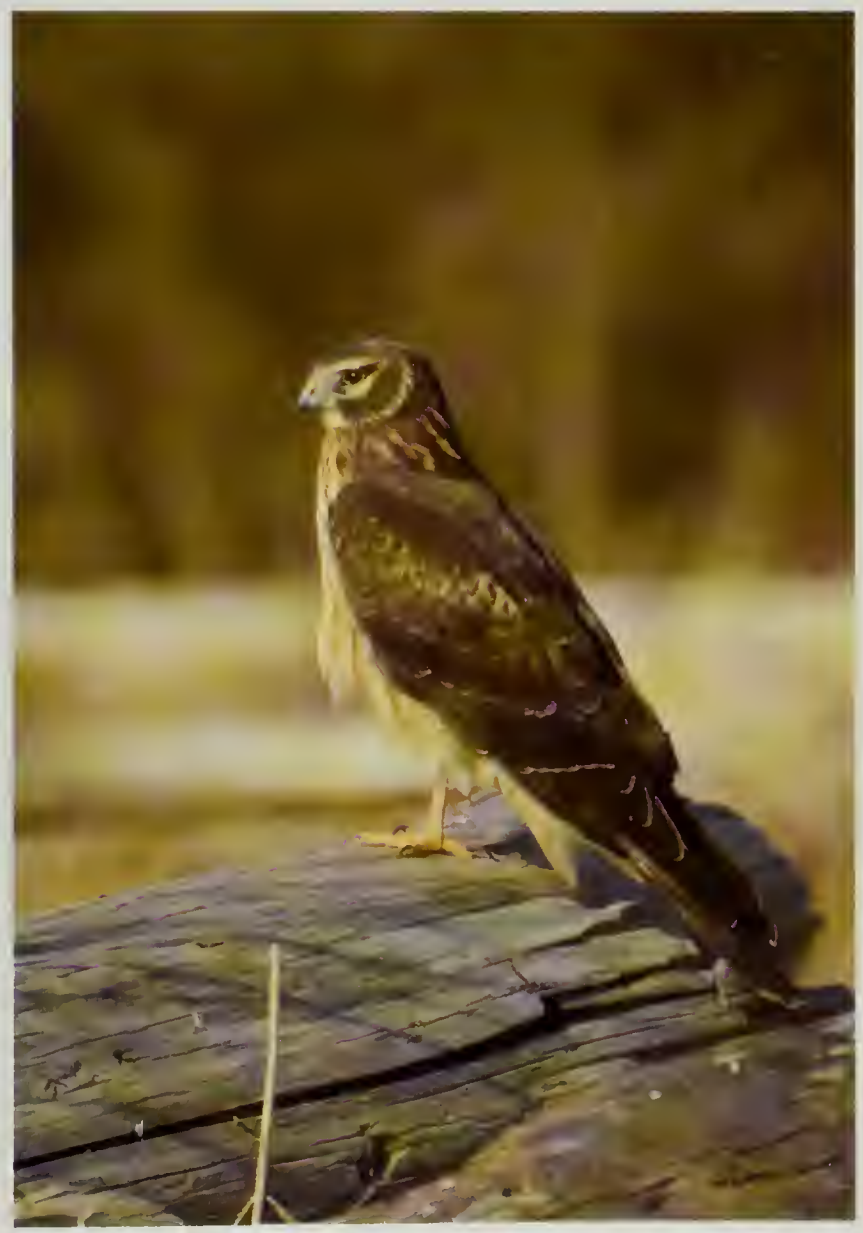
186. Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, New Mexico, USA, November 2005. A beautiful and distinctive individual. The pale cinnamon-washed body is almost unmarked, apart from the flanks. The strong head pattern and boa are typical, as is the underwing pattern of six dark bars (excluding the dark tip), the innermost very thin, on the longest primaries.

Steve Baranoff

187. Juvenile male 'Northern Harrier' *Circus cyaneus hudsonius*, Texas, USA, September 2006. Note the typical head and neck pattern, as well as the warm fringes to the median upperwing-coverts. The cinnamon-washed underparts are typical, although the (characteristically fine) darker streaking is more extensive than on most *hudsonius*.

Bill Schmoker

188. Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, North America, November 2005. Another striking juvenile. This bird typically has a limited area of bold streaking on the flanks, and some very fine streaks (which would be hard to see in the field) towards the breast sides. There are five dark bars on the longest primaries, although the outermost contrasts less with the darker background colour of the feather and is difficult to see. The head pattern is typical, though with a small pale buff patch below the eye eating into otherwise solidly chocolate-coloured ear-coverts.



Bob Steele

189. Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, British Columbia, Canada, February 2006. The head pattern is typical – mostly solidly dark chocolate with restricted pale feathering around the eye. The boa comprises blotchy dark markings dominating a paler warm brown background on this individual, and is at the less-well-marked end of the spectrum. Note the warm buff tones to the pale fringing on the upperparts, probably somewhat faded by this date.

Richard Chandler

190. Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, California, USA, November 2007. Another striking bird, with typical, virtually unstreaked orange-brown underparts and six bars on the longest primaries. The darker boa is present but is rather shadowy and poorly marked on this individual, overlapping with many *cyaneus* in this respect.

Bob Steele

191. Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, California, USA, December 2005. Note the darkness of the upperparts as well as the typical head pattern.

Josef Hlásek

192. Juvenile Hen Harrier *Circus cyaneus cyaneus*, Pisek, Czech Republic, December 2007. A rather pale bird, with extensive brown streaking on the body, four dark bars on the longest primaries, lots of white around the eye and only a faint suggestion of a dark boa.

Steve Round

193. Juvenile Hen Harrier *Circus cyaneus cyaneus*, Benbecula, Outer Hebrides, August. This bird has a head pattern much like that of many *hudsonius*, the boa is well defined and the whole plumage is suffused with warm orangey-buff tones. The body is rather lightly streaked, although this is more extensive and stronger than on the majority of *hudsonius* (but it might overlap with some). The longest primary (P8) shows five bars (excluding the dark tip), although the basal bar is very faint and so close to the primary coverts that it could easily be missed; while P9 has only four. A small minority of *hudsonius* might look much like this but they would clearly not be within the 'comfort zone' for identification in a vagrancy context.

Ian Fulton

194. Juvenile Hen Harrier *Circus cyaneus cyaneus*, North Ronaldsay, Orkney, October 2006. This photo shows the key features of Hen Harrier nicely: rufous-toned but extensively streaked body, a good deal of white round the eye and a fairly weak face pattern, an indistinct shadowy boa, and five dark bars (the basal one very faint, narrow and easily missed so appearing more like four in all but the best views) on the longest primaries.

lightly marked primaries. Another possible feature is a tendency for *hudsonius* to show a more conspicuous pale crescent at the base of the outer primaries because the dark bars here are narrower than they are on *cyaneus*.

Underside of secondaries

The underside of the secondaries is dusky/dark overall on juveniles of both forms. In *hudsonius*, there are three clear dark bands: typically a broad and diffuse terminal band, the middle band narrower than the other two, and the basal band the broadest. Suggestions of a fourth band are visible on the outer secondaries of most. Many *cyaneus*

Hugh Harrop

195. Juvenile ringtail harrier *Circus*, with Hooded Crow *Corvus cornix*, Shetland, March 2008. While searching for photographs to illustrate this article, I discovered images of an extremely distinctive juvenile harrier in Shetland. The bird shows what look like unstreaked brown underparts and a fairly well-marked dark boa. These aspects recall *hudsonius*, although the primary markings (with only four dark bars on the longest primaries) are typical of *cyaneus*, while the amount of pale feathering around the eye also points in that direction. Furthermore, the body colour appears to be a muddy brown rather than showing orange or cinnamon tones, while the boa is rather 'shadowy'. Nonetheless it is an unusual bird and, while pondering how to deal with it, I was directed to Forsman & Peltomäki (2007), which documents the first case of hybridisation between Hen *Circus cyaneus* and Pallid Harriers *C. macrourus*, in Finland. The Shetland bird does share some features with the juvenile hybrid illustrated in Forsman & Peltomäki, although this is not the place to go into great detail about this particular individual. Regardless of its true identity, one can easily imagine a Hen x Pallid juvenile showing a combination of features similar to *hudsonius*, perhaps sharing the unstreaked underparts and strong dark boa of Pallid with a more Hen-like structure. Such hybrids are clearly rare, but are perhaps likely to be increasing as the range of Pallid expands into that of Hen. They might now be at least as likely to occur in Britain as *hudsonius* so do need to be taken into account. As ever, vagrants should be identified using a full range of features.

show a similar pattern; although perhaps fewer have a fourth band on the outer secondaries and the subterminal dark band noticeably narrow, there seems to be too much overlap to make this a useful feature.

Summary and conclusions

In summary, most juvenile *hudsonius* should be identifiable using a combination of the strong contrast between the orange hue to the more or less unstreaked underparts and the solidly dark boa and largely dark head markings. The underparts are warm-toned, appearing pale cinnamon in some but rich orange or rufous in others. They are typically streaked only on the flanks/'wing pit' and close to the lower border of the 'hood', but some individuals appear almost unstreaked.

A minority of juvenile *cyaneus* can be just as rufous as *hudsonius* (many are warm-toned) but are always streaked. Even the most poorly marked *cyaneus* have darker streaking in the middle of the breast. Exceptional *cyaneus*, with the most rufous and least streaked underparts, together with the darkest shadowy hoods, can be problematic, appearing very close to the most heavily streaked minority of *hudsonius*. There are occasional reports of juvenile *cyaneus* with unstreaked rufous underparts (e.g. Thorpe 1988); since *hudsonius* is rarely or never completely unstreaked on the underparts, it seems doubtful that such *cyaneus* are ever truly unmarked, though presumably they showed reduced or rather light streaking (though see plate 195). Although this variation has in the past contributed to the view that the two forms cannot be reliably separated, this is really not the case. Most *hudsonius* are identifiable on body and head markings alone. For the small proportion of birds in the overlap zone with respect to underpart and head plumage, the primary pattern and upperpart coloration are also helpful.

While *hudsonius* typically shows five or six dark bars on the longest primaries (excluding the dark tip), *cyaneus* usually shows three or four bars, though a (small?) minority show five. The other, more subtle, differences in primary and secondary pattern are probably supportive but require more study. Other differences are difficult to discern in field conditions, although the dark upperpart tone and rufous fringing should be apparent with good views.

The majority of *hudsonius* should be identifiable, if well documented, using a combination of the features described above, and indeed the majority should appear rather striking. Of course, photographic evidence always helps to clinch the final identification, as in the case of the Scilly bird, discussed below.

The Scilly bird

Description

The following account is based on the four descriptions held in the BBRC 'Marsh Hawk' file, from Peter Basterfield (PB), Chris Heard (CDRH), R. J. Raines (RJR) and Keith Vinicombe (KEV), plus Barrie Widden's (BW) colour slides.

Barrie Widden

Barrie Widden

196 & 197. Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, Bryher, Scilly, October 1982. This bird, like the majority of *hudsonius*, is a striking individual with a solidly dark hood contrasting with the mainly plain orange or cinnamon body. The head pattern, with restricted pale areas around the eye, is typical of *hudsonius* while the longest primaries have five dark bars and P10 has four. Note also the pale crescent at the base of the primaries and the barely darker tips to the inner primaries.

Size, shape and jizz

A ringtail harrier with five-fingered primaries, and shape much as *cyaneus*. PB and RJR commented that it appeared larger and bulkier than *cyaneus* but CDRH described it as 'not especially large but with substantial/stocky wings'.

Underparts

The underparts were variously described as 'incredibly rufous' (PB), 'deep chestnut brown' (RJR), 'orangey, strikingly so' (KEV) and 'cinnamon' (CDRH). There was agreement that they were basically unmarked, though RJR noted streaks 'towards the axillaries'. The colour slides confirm the underparts as rather pale orangey or cinnamon with some light streaking confined to the flanks.

Head

All observers noted the darkness of much of the head and three mentioned that this produced a hooded effect. CDRH, who watched the bird through a telescope as it sat on a post, had the best views and provided the most detailed description. He noted the large dark patches at the chest sides, with rufous fringes to the feathers, joined across the mid breast by a brown wash; this being the boa referred to above (footnote, p. 396). He also noted the dark brown crown, ear-coverts and hind neck, the pale crescent below and behind the eye, and slight supercilium. BW's photographs confirm the striking, solid-dark-brown appearance of the hood, which contrasts strongly with the body plumage. The rather short pale crescent below the eye and short supercilium above it, forming a rather restricted pale area around the eye, are also visible.

Underwing

The underwing colour and pattern was variously described and was clearly difficult to observe in the field. CDRH probably had the best views of the bird and his account describes pale cinnamon underwing-coverts, unmarked apart from a few spots on the outermost primary coverts, and mentions the dark underside to the secondaries with two or three visible bars. More detail is discernible in the photographs, where the outer primary can be seen to show four dark bars in addition to the dark tip, and the longest two primaries (P8 and P9) to show five dark bars. There is an unmarked, paler crescent at the base of the primaries. The secondaries form a darker block, having three blackish bands on a dusky grey background, the middle dark band being narrower than the terminal band. The underwing-coverts are similar in tone to the body and generally plain but there are some darker streaks and spots.

Upperparts

All observers commented on the darkness of the upperparts and two described rufous tones here. All also noted that the rump was conspicuously white and unmarked, some considering it to be larger or broader and more obvious than that of *cyaneus*.

Bare parts

PB noted that the bill was blue with a dark tip. He described the iris as yellow and KEV noted it as pale, indicating that it was a young male.

Discussion

Though the field descriptions are helpful in confirming some features such as plumage tones, BW's colour slides proved critical in the identification of the bird. They show rich pale orangey-buff and largely unstreaked underparts, with some light streaking confined to the breast sides. This pattern alone is at least a very strong pointer to *hudsonius*. This bird lies at the paler end of the spectrum of variation but is entirely typical in terms of the extent of the streaking. Juvenile *cyaneus* can be approximately this colour but is almost always more extensively streaked.

The boa on this bird is very dark and solid, going right across the upper breast and contrasting sharply with the lower breast and upper flanks. The rest of the head appears solidly dark brown apart from the short crescent below the eye and the supercilium above. This head and boa pattern is entirely typical of *hudsonius*, as is the contrast with the unmarked body; the result is a very characteristic appearance not matched by any *cyaneus*.

The dark upperparts with rufous fringes are again typical of *hudsonius*. Whether the striking white rump is actually larger than that of *cyaneus* or just appears more obvious as it contrasts more with the darker upperparts is unclear. Many specimens of juvenile *cyaneus* have dark spots within the white rump, while the rump on all *hudsonius* examined was unmarked white. This could perhaps be another minor supportive feature.

The photographs show clearly the five dark bars on the underside of P8 and P9, and four bars on the underside of the outermost primary (P10). There is an unmarked pale crescent at the base of the primaries, and the inner primaries seem rather indistinctly darker-tipped. The pattern is typical of *hudsonius*, though a minority of *cyaneus* show the same number of bars. The barring on the longest primaries supports the identification while the paler crescent and paler inner primary tips are possibly also supportive but require further study. The darker secondaries are typical of juveniles of both forms. The narrower central dark band might be weakly supportive of *hudsonius* but, in my view, this feature is of little use because individual variation seems quite large and it is also difficult to observe in the field.

Stepping back from the detail of the descriptions and photographs, this bird is actually particularly distinctive and the combination of features allows it to be confidently identified as *hudsonius*.

Range and vagrancy potential

Northern Harrier breeds widely in North America from Alaska east to Newfoundland, Canada, and south to 30°N in Baja California, Mexico, in the west and Pennsylvania, USA, in the east. It winters from southern Canada south to northern South America, a proportion of the population comprising long-distance migrants. It is declining across much of its range, though remains locally common.

Long-distance flights over water by broad-winged raptors were once considered to be impossible. However, a juvenile Honey-buzzard *Pernis apivorus* that was radio-tracked as it flew for at least four days over the Atlantic (www.roydennis.org) has shown that such birds are in fact capable of remarkable feats of endurance. Other raptors of Nearctic origin that have reached Europe include plausible records of Rough-legged Buzzard *Buteo lagopus*, Northern Goshawk *Accipiter gentilis* and Bald Eagle *Haliaeetus leucocephalus* as well as both American Kestrel *Falco sparverius* and Merlin *F. columbarius*. Further records of *hudsonius* might be expected but it is likely to remain an extremely rare vagrant.

Other claims

Of the three other recent claims of *hudsonius* held in the BBRC archives, none was considered to be acceptable. They are discussed briefly here.

Wicken Fen, Cambridgeshire, 29th October to 18th November 1972

This ringtail harrier was described as having rufous underparts, a solidly dark hood and dark upperparts. The account lacks critical detail, however, such as the primary pattern. There is no mention of streaking in the underparts but there would almost certainly have been at least some, which suggests that views were not optimal. The submission compared the Cambridgeshire bird with the one at Cley in 1957–58, although the published colour drawing of the Cley bird (Wallace 1971) shows a lot of white around the eye and the lack of a dark boa, neither feature being typical of *hudsonius*. The Wicken Fen bird was simply not described in sufficient detail to establish the identification.

Saltfleetby, Lincolnshire, 18th November 1973 to mid March 1974

This bird showed rufous underparts; dark head markings including solidly dark ear-coverts; and dark chocolate upperparts (though there was no mention of rufous fringes in the description). The pale underside to the primaries suggested a juvenile male but detail of the pattern was not reported. As with the Cambridgeshire bird, some aspects of the description sound promising but the identification could not be established owing to a lack of crucial detail.

Hengistbury Head, Dorset, 22nd October 1983

This bird was present for a few minutes only but one of the observers managed to obtain a useful series of colour photographs. They show orange-toned underparts and a darker boa. On closer examination, the boa appears to be too pale and shadowy for a well-marked *hudsonius*, while there is a good deal of white around the eye. The underparts are warm orangey-brown with apparently little streaking but the shots are not quite sharp enough to be sure about its extent, and a lightly marked *cyaneus* could not be excluded on this evidence. The written description described the underparts as 'unstreaked' but this would be at best exceptional for either form and, in fact, one image does appear to show streaking that extends to

the middle of the breast. It is interesting to note that a bird perceived in the field as being unstreaked on the underparts might in fact be reasonably well streaked! The pattern of P9 is just discernible in one image and shows only four dark bars. Using this combination of features, the Dorset bird can be identified as a lightly marked, but distinctly rufous *cyaneus* with a shadowy hood.

Taxonomy

Both Ferguson-Lees & Christie (2001) and Simmons (2002) treated *hudsonius* as a separate species, distinct from both *cyaneus* and Cinereous Harrier *C. cinereus* of South America. Simmons considered the three forms as an allospecies and reported DNA evidence to suggest that *hudsonius* has been isolated from *cyaneus* for over 400,000 years. Ferguson-Lees & Christie also mentioned differences in juvenile plumage as a significant distinction between *cyaneus* and *hudsonius*. Their treatment of harrier taxonomy may be worthy of review by the BOURC's Taxonomic Sub-committee.

John P. Martin
34 Cranmoor Green, Pilning, Bristol BS35 4QF

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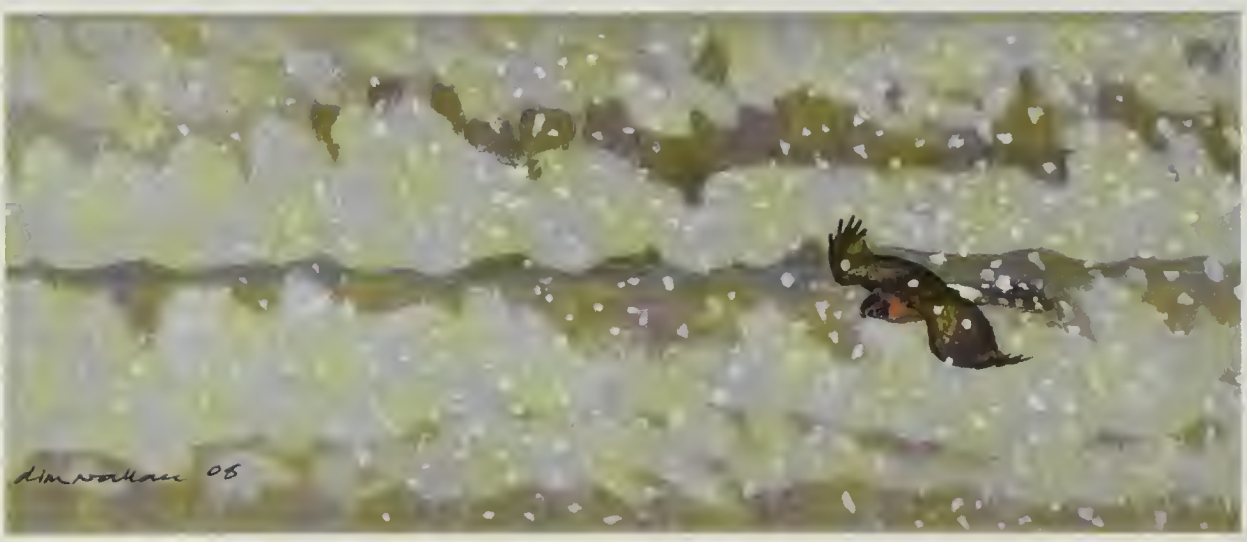

D. I. M. Wallace

Juvenile 'Northern Harrier' *Circus cyaneus hudsonius*, outgoing, over the Bronx, New York, November 1983.

Appendix 1. Comparison of plumage features of juvenile Hen Harrier *Circus cyaneus* of Eurasian race *cyaneus*, and juvenile North American 'Northern Harrier' *C. c. hudsonius*.

	Northern Harrier	Hen Harrier	Comments
Body/underwing-coverts	Deep rufous-orange to paler cinnamon, with variable, but rather narrow dark streaking usually confined to flanks and sometimes breast sides; unmarked in middle of breast apart from immediately below dark boa.	Usually paler, creamy or buff ground colour; rufous-toned individuals are not infrequent, though rarely matching the orange or cinnamon tones of Northern. Streaking stronger and more extensive than on Northern, extending right across the breast and often onto the belly.	A very lightly streaked and rufous-toned Hen would be very close to the most heavily marked Northern but most individuals are outside the overlap zone.
Hood/neck ('boa')	More or less solidly dark brown or almost blackish 'boa' (though occasionally slightly more streaky/blotchy), thus recalling juvenile Pallid Harrier *C. macrourus* – but often meets across breast, sometimes as a series of broad, blotchy streaks; separated from dark ear-coverts by a more or less prominent narrow pale band (collar).	Can sometimes show a shadowy, darker 'boa' but this is always streaky, with a rather pale ground colour similar to rest of underparts and not as contrasting as on Northern (like comparing heavily marked Montagu's Harrier *C. pygargus* with Pallid). Pale surround to facial disc (collar) present.	In combination with unstreaked, orange-toned body, the dark hood and boa gives Northerns a striking appearance. Some are less well-marked and might be hard to tell from a rufous-toned, lightly streaked Hen, especially if latter also has a shadowy boa. Well-marked Northerns (majority) are distinctive and not approached by any Hen.
Head pattern	Overall more solidly dark chocolate, with more contrasting and warmer pale supercilium, separated from shorter, thicker pale crescent below eye by eye-stripe. Solidly blackish-brown ear-coverts (tone as crown).	Overall paler and streakier, with more white round the eye. Often lacks dark line behind the eye and has pale lores. Brown ear-coverts much as crown and usually paler and streakier than Northern's, but can be similarly solidly dark.	A little variable, with some Hens quite like typical Northern but latter rarely (or never?) as pale as typical Hen.
Upperparts	Distinctly darker chocolate brown than Hen and with rich/warm pale fringes (at least when fresh).	Mid brown, paler than Northern, with paler buff tones to feather edgings. Nape area paler owing to pale buffy fringes.	No overlap apparent when a series of skins compared but would not be easy to judge on a lone bird. Rufous fringes (of Northern) a more useful feature.
Underside of primaries	Five 'fingers'. P10 (outermost) with 3–4 (rarely 5) blackish bars plus the black tip. P8–P9 with 5–6 blackish bars plus the dark tip. Inners with only two blackish bars and indistinctly dark at tip.	Five 'fingers'. P10 with three blackish bars plus the black tip. P8–P9 with 3–4 (5) blackish bars plus the dark tip. Inners with only two blackish bars and on average more distinctly dark at tip. Barring may be very weak on some males.	Based on photos, as impossible to see on most skins.
Underside of secondaries	Typically has a diffuse, broad dark trailing band. Subterminal band is usually narrower than those on either side. Inner band is broadest. Hints of a fourth band visible on outers on most. Often dark/dusky overall (age related not species-specific).	Can be similar on at least some individuals. Fewer have the fourth band on the outers.	Appears to be of little use as a feature.
Overall plumage tones	Overall darker brown with paler areas more rufous.	Overall paler brown with paler areas colder buffish.	

Bird Photograph of the Year 2008

The judging of 'BPY' is always one of the highlights of the *BB* year. With more entries this year, and a clutch of unfamiliar names on the leader board, it is satisfying to know that this competition continues to go from strength to strength. This does not make the judging any easier, though; in fact, with so many top-class entries to choose from, judging this year was perhaps the closest for many years.

A concern voiced by the judges in recent competitions was the relative lack of routine post-processing carried out by photographers, perhaps owing to a misunderstanding of the rules. On behalf of the judges, David Tipling prepared a short article on digital manipulation techniques (*Brit. Birds* 101: 39–42), suggesting some of the simpler techniques that can be employed to improve images, and which would be appropriate if carried out on entries for this competition. One of the characteristics of digital photography is that the initial results tend not to be as crisp and contrasting as their conventional counterparts. This is readily overcome by using a digital manipulation program, such as Photoshop, which modifies brightness, contrast and sharpness and allows the photographer to crop an image to bring out the best composition. David's article has undoubtedly resulted in improvements in the quality of the images we received.

A total of five slide images were received for the 2008 competition but we have decided that, from 2009, only digital images will be accepted. We are also investigating means by which images can be submitted via our website www.britishbirds.co.uk in order to simplify the entry process. Details will be announced in the January 2009 issue.

In previous years, this competition has encouraged and promoted digiscoping as a means of documenting interesting aspects of bird behaviour, beyond that possible using a conventional lens. Our 2007 winner, depicting the unusual begging behaviour of juvenile Mediterranean Gull *Larus melanocephalus*, illustrates exactly what is achievable. And to encourage digiscopers to submit their best work for judging, The Eric Hosking Charitable Trust has made a generous cash prize available. In 2008, however, the judges felt that although the images entered included several extremely attractive portraits, none met the aims and goals set for this award. Consequently, and with the agreement of The Eric Hosking Charitable Trust, the judges decided not to award the digiscoping prize this year.

As in previous years, the judging procedure followed the traditional format. Each image was viewed twice, and a shortlist of 20 images was

198. BIRD PHOTOGRAPH OF THE YEAR 2007 Common Pheasant *Phasianus colchicus*, near Aviemore, Scotland, April 2007 (Canon EOS 1D3; Canon 300-mm lens; 1/3200, f3.5, ISO 125). *Philip Newman*

1st	Common Pheasant *Phasianus colchicus*	(plate 198)	Philip Newman
2nd	Little Stint *Calidris minuta*	(plate 199)	Harri Taavetti
3rd	Snow Buntings *Plectrophenax nivalis*	(plate 200)	Ernie Janes
4th=	Little Ringed Plovers *Charadrius dubius*	(plate 201)	Bill Baston
4th=	Wryneck *Jynx torquilla*	(plate 202)	Philip Mugridge
6th	Sooty Falcon *Falco concolor*	(plate 203)	Jens Eriksen
7th	Common Eider *Somateria mollissima*, King Eider *S. spectabilis*, Long-tailed Duck *Clangula hyemalis* and Steller's Eider *Polysticta stelleri*	(plate 204)	Harri Taavetti
8th	Steller's Eiders *Polysticta stelleri*	(plate 205)	Bill Coster
9th	Red-necked Phalarope *Phalaropus lobatus*	(plate 206)	Hugh Harrop
10th	Barn Swallow *Hirundo rustica*	(plate 207)	Roger Tidman
11th	Common Goldeneye *Bucephala clangula*		Steve Young
12th	Great Tit *Parus major*		Philip Newman
13th=	Sanderling *Calidris alba*		Richard Steel
13th=	Lesser Kestrel *Falco naumanni*		David Edge
15th=	Willow Grouse *Lagopus lagopus*		Markus Varesvuo
15th=	Puffin *Fratercula arctica*		Rebecca Nason
15th=	Blackcap *Sylvia atricapilla* and Common Starling *Sturnus vulgaris*		Mike Lane
18th	Fieldfare *Turdus pilaris*		Markus Varesvuo
19th	Avocets *Recurvirostra avosetta*		Roger Tidman
20th	Common Stonechat *Saxicola torquatus*		Tom Wylie

(eventually) selected. At this point, the photographs were examined even more closely, the judges looking for sharpness and clarity of reproduction, as well as any telltale indications of over-sharpening or other signs of excessive digital manipulation. Because there were so many outstanding images, judging was exceptionally difficult this year and there was no clear contender for first prize. But after spending a total of five hours pouring over some wonderful images of both common and widespread and rare and exotic species, the votes were cast to produce the results shown above.

First place this year goes to Philip Newman, who produced this outstanding image of a cock Common Pheasant *Phasianus colchicus* in full display. When seen like this, with the soft morning light highlighting the iridescence of the greens, bronzes and purples, you realise just what an attractive bird the Pheasant really is. Philip commented that he had previously noted that Pheasants were quite common in the Highland Wildlife Park near Aviemore, where they can regularly be seen displaying among attractive open birch woodland. With this very image in mind, he returned in April 2007. 'For once I was in the right place at the right time because the first Pheasant I slowly drove up to immediately walked onto a nearby mound and started to display, giving me just enough time to rattle off a few images. I did not have any time to adjust camera settings and consequently the RAW file is a little dark and this has been recovered in Photoshop.' The judges felt that although Philip had frozen the movement of the body to reveal the plumage to perfection, the slight blurring of the wing-tips enhanced the sense of action within the image, and said so much more, as this frisky male demanded to be noticed by his females. This is the first occasion that Philip has won this competition, but we hope that it will not be the last. Philip will receive a telescope from Zeiss, books of his choice from Collins and A&C Black and a cash prize, as well as the traditional inscribed salver for the competition's overall winner.

Northern Norway is a wonderful destination and, as no fewer than four of this year's top ten images were taken here, it is clear to see why: exciting birds, breathtaking scenery, superb light, obliging birds and always the opportunity for that unexpected bonus shot. Our second prize this year goes to Harri Taavetti, who took this unusual picture of a Little Stint *Calidris minuta* at Höyholmen, Tana River delta, on 4th June 2007, which embodies much of the urgency of the brief Arctic summer. Harri commented that 'on the site there were many shallow, sandy pools with insects forming a mattress around the water. A flock of Little Stints was feeding on the insects, and when the stints ran along, the insects took off making a

199. SECOND Little Stint *Calidris minuta*, Tana River delta, Norway, June 2007 (Canon EOS 20D; Canon 300-mm f2.8 lens + 2.0x converter; 1/1250, f5.6, ISO 200). *Harri Taavetti*

200. THIRD Snow Buntings *Plectrophenax nivalis*, Salthouse, Norfolk, February 2008
(Canon EOS 1D Mark II; Canon 16–35-mm lens set at 29 mm; 1/1000, f8, ISO 320, remote exposure). *Ernie Janes*

"clear" area around the birds.' The judges felt that this picture told a fascinating story: the dashing behaviour of the newly arrived Little Stint eager to stock up on depleted fat reserves before heading east to breed in Arctic Russia, and the innate behaviour of the insects, keeping just out of harm's way and re-settling behind the bird when the danger had passed. As our second-placed winner, Harri will receive an outdoor jacket from Sprayway, a selection of books from Collins and A&C Black, and a cash prize.

Just occasionally, the BPY judges say that they wished they had thought of that. In this particular case, both the location and the birds were very familiar to the judging panel, most of whom had visited Salthouse, Norfolk, and come away with pleasing shots of the wintering Snow Buntings *Plectrophenax nivalis*. But Ernie Janes looked at the photographic possibilities from a different angle (literally) and came up with this unique shot. To achieve this striking image, he set up his camera with a 16–35-mm wide-angle zoom lens, and used a remote shutter release. By using a short-focal-length lens, Ernie has not only achieved a considerable depth of field, freezing the birds as they descended to feed, but has also managed to include an attractive skyscape and the well-known shingle bank behind. While perhaps this technique may not be to everyone's taste, the judges felt that the combined artistic and technical aspects of the photograph merited a well-deserved third place. Ernie will receive a selection of books from Collins and A&C Black, and a cash prize.

Bill Baston's delightful picture of a family of Little Ringed Plovers *Charadrius dubius* has it all and fully deserves its fourth-placed position. This is a crisp portrait in superb light with an appealing youngster that almost seems to be pleading with its parent to be 'let in', plus the novelty of a 'six-legged' adult! Bill commented that 'this family of Little Ringed Plovers was feeding on the edge of the Alikes saltpans on the Greek island of Zakynthos. Being in a rather exposed area, prone to disturbance from locals, tourists and the local dog and cat population, the chicks would run to the calling adult birds and seek sanctuary under their feathers. In this photo, two chicks have already disappeared, leaving just their legs showing, and a third chick looks as if it is asking if there is room for one more!'

Also in fourth (equal) position comes Philip Mugridge's shot of a Wryneck *Jynx torquilla* at its nest in Bulgaria. Usually, a photograph of a bird at the nest would not make the top ten in this competition, as these tend to be repeating what has gone before, when nest photography was often the only means of obtaining a good-quality photograph of many species. In this case, though, the judges felt that the Wryneck's cryptic plumage blended so well with the gnarled and cracked bark on its nest tree that it has become difficult to see where the bird ends and the tree begins, particularly towards the tail-tip. As the nest was in shade, Philip has used fill flash to bring out the plumage detail to good effect, as well as capturing a highlight in the bird's eye, and illuminating one of its favourite foods: ant pupae.

In sixth place, Jens Eriksen's action-packed shot of a Sooty Falcon *Falco concolor* scything through the air evokes both the power and the beauty of this rare falcon. As the bird looks directly into the lens, enhancing the drama of the moment which Jens's chance shot has frozen, it is almost possible to feel the fear which this bird would instil into a hapless migrant passerine about to make landfall.

Seventh place goes to Harri Taavetti for his attractive portrait of four of northern Norway's most colourful sea ducks, which he has entitled 'the Arctic handsomes': Common Eider *Somateria mollissima*, King Eider *S. spectabilis*, Long-tailed Duck *Clangula hyemalis* and Steller's Eider *Polysticta stelleri*. Harri commented: 'While I was sitting on a floating pontoon, many King, Steller's and Common Eiders and Long-tailed Ducks were swimming around at close range. As this flock swam past the pontoon, I realised the unique situation and I set a small aperture to get a decent depth of field with all the birds as sharp as possible.' The result was this stunning, well-composed image, which the judges felt fully deserved a place in the top ten.

Sticking with the Norwegian seaduck theme, Bill Coster successfully captured a remarkable aspect of Steller's Eider behaviour when he came across this tightly knit group of wintering birds at Varanger Fjord in early April 2007. Documenting unusual behaviour as well as producing an artistic image will never fail to impress the judges. In this shot, Bill has captured the contrast between the brightly patterned males and duller females, which adds to this attractive portrait; this image may have

201. FOURTH equal Little Ringed Plovers *Charadrius dubius*, Alikes saltpans, Zakynthos, Greece, May 2007 (Canon EOS 1D Mark II; Canon 500-mm lens + 1.4x extender; 1/320, f9, ISO 200). *Bill Baston*

202. FOURTH equal Wryneck *Jynx torquilla*, Bulgaria, May 2007 (Canon EOS 1D Mark II; 500-mm lens + 1.4x extender; 1/80, f5.6, ISO 400 with fill flash). *Philip Mugridge*

achieved an even higher place if the right-hand-most male had not been cropped. Bill commented that this flock of eiders crowded together on the sea to form a densely packed group, quite unlike the behaviour of other duck; a truly remarkable sight. The judges thought the same and awarded Bill's superb image eighth place.

Red-necked Phalaropes *Phalaropus lobatus* are always delightful birds to photograph, being both approachable and highly photogenic. So for an image of this species to make the top ten, it really needs to be something special. We felt that Hugh Harrop had achieved this with his action shot of a male in flight at Båtsfjord Fjellen in northern Norway, which takes ninth position. Hugh commented that he came across a party of incredibly active Red-necked Phalaropes on a roadside pool, constantly chasing each other in flight and on the water. With so many opportunities, he spent several hours working with these delightful birds, concentrating on trying to capture a sharp in-flight image. Hand-holding a heavy 500-mm lens and camera combo amidst armies of mosquitoes was not easy but persist-

ence paid off and as this bird flew up off the water directly towards him, he captured this stunning image, the subject being enhanced by the softness of the late evening light.

Last year, Roger Tidman won this competition with his image of a Common Swift *Apus apus* drinking. This year, he returns in tenth position with his crisp image of a Barn Swallow *Hirundo rustica* frozen in flight, complete with a mouthful of mud. This is behaviour we observe routinely, but which is rarely captured so well. It also makes one wonder how the poor bird ever gets the taste of mud out of its mouth! Roger's efforts to obtain this image seemed all the more outstanding when we realised (after the judging) that he had a badly dislocated knuckle and his arm in a sling, preventing him from wielding his camera for this action shot, and so he had to achieve it by resting the lens on his car window and waiting!

As mentioned above, the judges were again disappointed that relatively few images were submitted for the digiscoping prize. For this year's competition, the images received failed to convey the benefits which digiscoping holds over conventional photography, and which this category is hoping to promote. We know that there are many avid digiscopers out there who produce some outstanding work and we encourage them to enter this competition next year. Many birders routinely carry a small camera and opportunistically take 'digiscoped' and 'digibinned' images, many of which are of high quality and depict interesting behaviour. It is these images, some of which appear on websites such as BirdGuides (www.birdguides.com), that we are hoping to attract. This competition remains committed to promoting and extending the benefits of digiscoping.

The prizes for the overall winner, second and third places will be presented at this year's British Birdwatching Fair at Rutland Water, in August. We wish to take this opportunity to thank our sponsors, Zeiss (www.zeiss.co.uk), A&C Black (www.acblack.com), Collins (www.collins.co.uk), Sprayway (www.sprayway.com) and The Eric Hosking Charitable Trust, once again for their support, without which this competition would not continue. The rules for next year's competition will be announced in the January 2009 issue of *BB*, and on our website www.britishbirds.co.uk.

Richard Chandler, Tim Appleton, Robin Chittenden, David Hosking, Peter Kennerley and David Tipling, c/o 4 Kings Road, Oundle, Peterborough PE8 4AX

203. SIXTH Sooty Falcon *Falco concolor*, Ras As Sawadi, Oman, September 2007 (Canon EOS 5D; Canon 500-mm lens; 1/4000, f4, ISO 200). *Jens Eriksen*

204. SEVENTH Common Eider *Somateria mollissima*, King Eider *S. spectabilis*, Long-tailed Duck *Clangula hyemalis* and Steller's Ei *Polysticta stelleri*, Båtsfjord, Norway, March 2007. (Canon 20D; Canon 300-mm f2.8 lens + 2.0x converter; 1/250, f22, ISO 400). *Harri*

205. EIGHTH Steller's Eiders *Polysticta stelleri*, Varanger Fjord, Norway, April 2007. (Canon EOS 1D; Canon 400-mm lens with 1.4x converter; 1/500, f16, ISO 400). *Bill Coster*

206. NINTH Red-necked Phalarope *Phalaropus lobatus*, Båtsfjord Fjellen, Norway, July 2007 (Canon EOS 1D Mark II; 500-mm lens; 1/2000, f4.5, ISO 200). *Hugh Harrop*

207. TENTH Barn Swallow *Hirundo rustica*, Spain, May 2007 (Canon EOS 1D Mark IIN; Canon 500-mm f4 lens; 1/1600, f7.1, ISO 320). *Roger Tidman*

Important Bird Areas:

Breeding seabirds on the Isles of Scilly

Vickie Heaney, Leigh Lock, Paul St Pierre and Andy Brown

Razorbills *Alca torda* *Ren Hathway*

ABSTRACT The Isles of Scilly are long famous for attracting rare migrant birds, and much-visited in spring and autumn by those in search of them, but it is much less widely appreciated that the islands also support an outstanding and internationally important assemblage of breeding seabirds. We document the present status and distribution of seabirds on the islands, set populations in their regional, national and international contexts, and review recent and historical changes in numbers. In the light of some alarming population trends, we discuss the possible roles of persecution, disturbance, predation, habitat change, waste and fisheries management, climate change and pollution in bringing about these changes. Finally, we identify a range of actions that we believe will do much to improve the fortunes of the seabirds breeding in the archipelago.

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The Isles of Scilly are situated some 45 km to the west of the southwest tip of the British mainland. Five inhabited islands and at least 300 smaller, uninhabited islands, islets and rocks cover a total area of 16 km^2. Composed primarily of granite, the island group is perhaps best visualised as an island Dartmoor or Bodmin Moor, with the lowest levels now flooded by the sea. The open landscape is a result of forest clearance for arable cultivation, which commenced with the settlement of Scilly in the early Bronze Age, just over 4,000 years ago (Ratcliffe & Straker 1996). The islands are dominated by grass and heathland species, while the littoral fringe varies from low cliffs and rugged rock exposures to sheltered bays and sandflats. Technically, the islands are the sole European example of a Lusitanian[1] semi-oceanic archipelago (UK Biodiversity Steering Group 1995). A modern account of the archipelago's natural history is provided by Parlsow (2007).

The islands support a greater diversity of breeding seabirds than any other island group or mainland site in England, with over 9,100 pairs of up to 14 species. They support internationally important populations of European Storm-petrel *Hydrobates pelagicus* [hereafter 'Storm-petrel'] and Lesser Black-backed Gull *Larus fuscus* and nationally important populations of Shag *Phalacrocorax aristotelis* and Great Black-backed Gull *L. marinus*. The populations of a further six species (seven if Roseate Tern *Sterna dougallii* is included) are regarded as important in a southwest regional context. The greater part of the seabird interest is contained within 14 Sites of Special Scientific Interest (SSSI)[2], the Isles of Scilly Special Protection Area (SPA) and Ramsar Site, and the Isles of Scilly Important Bird Area (IBA)[3]. Much of the area is also a Special Area of Conservation (SAC).

A history of seabird censusing on the islands

As this archipelago is of such considerable seabird interest, it is not surprising that many of the older county avifaunas refer to the presence of seabirds in some numbers. However, few of the references are quantitative and information on the size of seabird colonies on Scilly prior to the Operation Seafarer surveys of 1969–70 is scant. We have gathered information from all published (and some unpublished) sources known to us (see reference list), with Penhallurick (1969), Allen (1976), Chown & Lock (2002), Robinson (2003) and Flood *et al.* (2007) providing particularly useful overviews of historical information.

The most recent survey took place in 2006 and formed part of the *Action for Birds in England* programme, a partnership between Natural England and the RSPB, and was conducted in collaboration with the Isles of Scilly Wildlife Trust (IOSWT) and the Isles of Scilly Bird Group. All islands believed to be capable of supporting breeding seabirds were searched during the survey using standard methods (see Gilbert *et al.* 1998). The actual count units used varied between species in strict accordance with these methods. For simplicity, however, all are expressed here as 'pairs', including uncorrected counts of individual auks. The two most recent surveys (2006 and the 1998–2002 Seabird 2000 surveys) used identical methods, were organised by the same team and many of the surveyors, including the authors, were involved in both surveys. The results are thus directly comparable.

The status of seabirds on Scilly in 2006

A total of 9,161 pairs of 14 species of seabird were recorded from 58 islands in 2006 (see table 1).

The seabird assemblage is dominated numerically by gulls, which are also among the most widespread seabirds in the islands. Numbers of both Lesser Black-backed and Great Black-backed Gulls exceed 1% of the national total. Furthermore, since Lesser Black-backed Gulls breeding in Britain constitute about 65% of the global population of the sub-

[1] Denoting flora or fauna characteristically found only in the warm, moist, west-facing coastal regions of Portugal, Spain, France, and the west and southwest coasts of Great Britain and Ireland.

[2] Not all SSSIs in the archipelago support breeding seabirds and an additional three SSSIs between them support ten pairs of Herring Gulls *L. argentatus*.

[3] The population of wintering Turnstones *Arenaria interpres* additionally forms part of the qualifying interest of the Isles of Scilly IBA (Heath *et al.* 2000). Numbers were estimated at 940 individuals in winter 1984/85, but had fallen to some 330 individuals by winter 1997/98 (Rehfisch *et al.* 2003). As there has been no more recent census, the focus of this paper is on the IBA's seabirds.

species *graellsii*, the Scilly population is regarded as internationally important. Lesser Black-backed Gull is thus a key species for which the SPA has been designated. Its overall numbers in the archipelago represent some 36% of the total numbers of birds in the assemblage. The regional significance of the Scilly populations of both these species is exceptional.

Numbers of two other species exceed 1,000 pairs. The archipelago is the only place in England where Storm-petrels breed; the population of this Annex 1 species exceeds 1% of the national total and is thus of international importance. The number of breeding Shags represents half the southwest total, a third of the English total and is also of national significance, there being nearly 5% of the British total in the islands; the Scilly colony is the third-largest in Britain, after Foula (Shetland) and the Farne Islands (Northumberland).

The remaining species are much less numerous but nonetheless important: the islands are one of only two nesting stations for Manx Shearwater *Puffinus puffinus* in England (the other being Lundy, Devon). Numbers of both Razorbill *Alca torda* and Common Tern *Sterna hirundo* are large in a regional context, the tern population being one of only three in southwest England. The Fulmar *Fulmarus glacialis* population is of some regional importance but is expanding rapidly and may assume greater significance in the future. The Puffin *Fratercula arctica* population is of great regional importance and, along with colonies in the Channel Islands and Co. Kerry, marks the southwestern limits of the species' Eurasian breeding range.

The current distribution of seabirds within the archipelago

Scilly's breeding seabirds are not evenly distributed: many islands are too small or low-lying to offer shelter from Atlantic storms and even some relatively sheltered islands are regularly washed over on spring tides. The inhabited islands are also scarcely used by breeding seabirds. For example, in 2006, the only species to nest on St Mary's (the largest island, with a coastline of more than 15 km) was Herring Gull, three pairs nesting on rooftops in Hugh Town. This is by far the most widespread species on the inhabited islands, and a further 87 pairs bred on Tresco, 25 on Bryher, 15 on St Agnes and 13 on St Martin's. The remaining seabird interest on the inhabited islands is focused on four areas (figures in parentheses refer to number of pairs nesting in 2006): the Daymark, St Martin's (46 Fulmar, 15 Kittiwake *Rissa tridactyla*, four Lesser Black-backed Gull, three Great Black-backed and 12 Herring Gull);

Table 1. Seabirds on the Isles of Scilly, ranked by their abundance in 2006, and showing regional, national and international importance. For scientific names of species, see text. The highest level at which numbers are significant is indicated in bold; an asterisk denotes numbers of international importance.

	no. pairs	no. occupied islands	no. pairs as % of SW regional total	no. pairs as % of English total	no. pairs as % of British total
Lesser Black-backed Gull	3,335	25	44.6	4.7	2.7*
European Storm-petrel	1,398	11	100	100	5.5*
Shag	1,296	28	51.3	33.6	4.9
Great Black-backed Gull	901	38	62.7	58.9	5.4
Herring Gull	715	43	4.2	1.2	<1
Razorbill	342	14	18	3	<1
Fulmar	279	19	11.4	4.4	<1
Kittiwake	266	5	7.7	<1	<1
Puffin	174	8	90.2	<1	<1
Manx Shearwater	171	6	46.6	46.6	<1
Common Guillemot	155	3	<1	<1	<1
Common Tern	78	6	21.6	1.6	<1
Great Cormorant	50	4	3.7	1.2	<1
Sandwich Tern	1	1	<1	<1	<1
Total	*9,161*	*58*			

Wingletang Down, St Agnes (eight Manx Shearwater and four Herring Gull); Shipman Head/Shipman Head Down, Bryher (13 Fulmar, 13 Manx Shearwater, four Shag, six of both Great and Lesser Black-backed Gull, and 11 Herring Gull); and Gimble Porth, Tresco (37 Kittiwake, four Lesser Black-backed Gull and 54 Herring Gull). All four areas are within SSSIs and, with the exception of Wingletang Down, are part of the SPA.

The principal seabird interest of the archipelago is, however, largely concentrated within six key islands or island groups:

Annet

This small island is of outstanding importance for breeding seabirds, supporting 1,638 pairs of ten species in 2006, some 18% of the total in the archipelago. It is low-lying and of gentle relief throughout, and is covered by large expanses of maritime grassland, a prominent element of the sward being either Thrift *Armeria maritima* or Bracken *Pteridium aquilinum*. The grassland supports the bulk of the gulls and burrow-nesting Manx Shearwaters and Puffins. Impressive storm beaches provide nesting grounds for many of the island's Storm-petrels,

Fig. 1. The Isles of Scilly.

Andy Brown

208. The Eastern Approaches, a familiar site to those who travel to Scilly by air. Seen here are Menawethan (foreground), Great Innisvouls (middle distance) and Great Gannilly (far left) in the Eastern Isles, with Chapel Down and the Daymark, St Martin's, in the background; July 2000.

Table 2. A summary of the status of the seabirds breeding on Scilly. This shows the number of breeding pairs in 2006, the % change since 1999–2000, when the SPA was classified, and longer-term trends.

	2006	change since 1999–2000	longer-term trends
Fulmar	279	+52%	Rapid increase in numbers continues since first breeding in 1951
Shag	1,296[1]	+17%	Apparent stability
Razorbill	342	+16%	Recent increase after earlier massive decline
Great Black-backed Gull	901	+12%	Recent upturn after a general decline (down 43% since the mid 1970s)
Puffin	174	+4%	Recent increase since the 1980s, following earlier massive decline
Sandwich Tern	1	n/a	An occasional breeder for much of the time since 1880
European Storm-petrel	1,398[1]	-5%	Numbers appear relatively stable, though possibly a slight decrease[2]
Kittiwake	266	-5%	Rapid decline continues, by 70% since 1983
Lesser Black-backed Gull	3,335[1]	-8%	Slow decline continues, by 18% since peak of 4,050 pairs in 1983
Great Cormorant	50	-11%	Apparent stability
Manx Shearwater	171	-15%	Apparent recent decrease[2]
Common Tern	78	-19%	A regular breeder since the 1940s at least; numbers peaked 1983 with steady decline since
Common Guillemot	155	-21%	Recent decrease following a steady rise in numbers (numbers have tripled since 1969) after an earlier massive decline
Herring Gull	715	-21%	Steep decline continues – by 68% since 1974

[1] Represents >10% of overall breeding assemblage (Great Black-backed Gull now 9.8%).
[2] Long-term trends not known with certainty as earlier surveys used methods which are not comparable or no surveys conducted.

while the fringe of low cliffs supports most of the remaining birds. The island's populations of Manx Shearwater (89 pairs) and Storm-petrel (788 pairs) each exceed just over half the archipelago total, while the populations of Great Black-backed Gull (187 pairs, 21% of the archipelago total) and Puffin (50 pairs, 29% of the archipelago total) are also notable. There are also large numbers of Shag (177 pairs) and Lesser Black-backed Gull (281 pairs) and small numbers of Fulmar (37 pairs), Herring Gull (24 pairs) and Razorbill (four pairs). Terns nest here occasionally, and one pair of Common Terns did so in 2006. The island is an SSSI in its own right and lies within the SPA.

Samson

Samson consists of two rounded granite hills (South Hill towering to 42 m asl), which sweep up from the shoreline, sandy to the east and with low cliffs to the west. A narrow neck of sand separates the two hills. Samson's near neighbours – White, Puffin, Green, and Stony Islands – are low-lying, the last two frequently inundated by high spring tides. There tends to be much interchange of birds between them and so the islands are treated as one unit here. Although the greater part of the islands is covered with bramble *Rubus fructicosus* agg. and Bracken scrub, which can be quite dense in parts, the main seabird interest of Samson itself is found on the Bracken-covered heath and grassland flanks of South Hill and on the low cliffs which fringe the western coastline. Gulls and terns are numerically dominant, there being 1,223 pairs of Lesser Black-backed, 73 of Great Black-backed and 189 of Herring Gull and 47 pairs of Kittiwake (respectively, 37%, 8%, 26% and 18% of the archipelago totals). Fifty-nine pairs of Common Terns nested in 2006 (76% of the archipelago total), all but three of which were on Green Island, and a single pair of Sandwich Terns *S. sandvicensis*. Small numbers of Fulmar (five pairs), Great Cormorant *P. carbo* [hereafter 'Cormorant'] (nine pairs) and Shag (35 pairs) are also present. All the islands are within the Samson SSSI and the SPA.

The Norrard and Western Rocks

The many small islands which, along with Annet, guard the western approaches to Scilly, face deep Atlantic water and their rugged form, practically devoid of vegetation, bears witness to the powerful seas that wash over them during winter storms. The breeding bird assemblage, of ten species, is numerically dominated by those nesting on the ledges and crevices of the islands' cliffs, on the buttresses and in the few sheltered hollows between them. The islands are important for Storm-petrel (339 pairs, 24% of the archipelago total), Cormorant (31, 62%), Shag (588, 45%) and Great Black-backed Gull (213, 24%) but they are of particular interest in that they hold the bulk of the archipelago's breeding auks: Common Guillemot *Uria aalge* [hereafter 'Guillemot'] (60 pairs, 39% of the total), Razorbill (236, 69%) and Puffin (105, 60%). All sites are within either the Norrard Rocks or Western Rocks SSSIs and the SPA.

The Eastern Isles

Far less rugged than the westernmost islands, the Eastern Isles are rather similar in form to Samson, consisting of tall hills sweeping gently from the sea, flanked by numerous sandy beaches and isthmuses. There are some rocky beaches and numerous rocky outcrops, however, and some islands are flanked by tall, well-creviced cliffs. The vegetation is lush compared with that on the western islands, often consisting of a dense, even impenetrable sward of tall grass, honeysuckle *Lonicera* and bramble, particularly on Great Ganilly and Little Ganinick. A total of seven breeding

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209. Annet, viewed from St Agnes in May 2006. The most important seabird island in the archipelago, with some 1,600 pairs of ten species, including over half the archipelago's total of European Storm-petrels *Hydrobates pelagicus* and Manx Shearwaters *Puffinus puffinus*.

seabird species were found in 2006, including Shag (330 pairs, 26% of the archipelago total) and Great Black-backed Gull (265, 29%). Also of note were Cormorant (10, 20%) and Fulmar (77, 28%). All the islands are within the Eastern Isles SSSI and the SPA.

Gugh

This large, domed island is separated from St Agnes by a sandbar, submerged by each high tide. The island is covered by grassland that, over most of its area, has been invaded by a dense sward of Bracken and gorse *Ulex*. Other areas are quite sparsely vegetated. It is flanked, for the most part, by low cliffs. The area includes The Bow, Cow and Calf and Kittern Rock, which are immediately offshore. It supports six species, including very small numbers of Fulmar (three pairs), Manx Shearwater (nine pairs), Great Black-backed (four pairs) and Herring Gull (69 pairs). The large colony of Lesser Black-backed Gulls (875 pairs, 26% of the archipelago total) and 131 pairs (49%) of Kittiwakes nesting on the island's low cliffs are the main interest. All areas except Kittern Rock are within Gugh SSSI and all lie within the SPA.

St Helen's, Round Island and Men-a-vaur

These adjacent islands mark the northernmost edge of the archipelago. Each has a distinct character, however: Men-a-vaur is a rugged, weather-beaten and sea-pummelled group of three rocks; Round Island is gently profiled, rising to 44 m asl and with large areas covered by a thick mat of introduced Hottentot-fig *Carpobrotus edulis*; while St Helen's is a relatively large, steep-sided yet fairly flat-topped island rising to a similar height. St Helen's is richly vegetated, largely with an impenetrable thicket of bramble and honeysuckle. The islands support 11 breeding seabird species. Of the four species of nesting gulls, there are 687 pairs of Lesser Black-backed (21% of the archipelago total), 14 of Great Black-backed and 84 of Herring Gull, and 36 pairs of Kittiwake. A substantial population of Storm-petrels (271 pairs, 19%) and Manx Shearwaters (52 pairs) inhabit the islands, nearly all among the Thrift, Sea Campion *Silene uniflora* and Hottentot-figs of Round Island. Auks are represented by 95 pairs of Guillemot (61%), 90 of Razorbill and 19 of Puffin, while 45 pairs of Shag and 49 of Fulmar are also of interest. Round Island lies within the Pentle Bay, Merrick and Round Islands SSSI and St Helen's and Men-a-vaur within the St Helen's (with Northwethel and Men-a-vaur) SSSI; all three are within the SPA.

Other islands with 20 or more breeding seabird pairs

Just four other islands support 20 or more pairs of breeding seabird: Tean, with five Lesser Black-backed and 49 Herring Gull; Northwethel, with 36 Lesser Black-backed, 15 Great Black-backed and 32 Herring Gull; Guther's Island, with two Lesser Black-backed, 25 Great Black-backed and 13 Herring Gull and one Shag; and White Island, with 187 Lesser Black-backed, six Great Black-backed, 32 Herring Gull and six Fulmar. All lie off St Martin's or between this island and Tresco. Northwethel is within the St Helen's (with Northwethel and Men-a-vaur) SSSI, Tean is part of the Tean SSSI (which includes Pednbrose and Old Man), and White Island is an SSSI

Bryan Thomas

210. Manx Shearwater *Puffinus puffinus*, off Scilly, August 2004. The Scilly archipelago is one of just two areas supporting breeding Manx Shearwaters in England. Though currently small, it is hoped that the population of this species will increase considerably following the removal of rats *Rattus norvegicus* from several islands, each with the potential to support substantial numbers.

in its own right; and these three are within the SPA. Guther's Island is not an SSSI and is not part of the SPA.

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211. Shags *Phalacrocorax aristotelis* on the Western Rocks, together with the Bishop Rock lighthouse, guard the nation's Southwestern Approaches in July 2000.

The former status of seabirds on Scilly and recent changes

While there is considerable evidence that seabirds have long bred on the islands, with archaeological remains of Manx Shearwater, Cormorant and all three auk species having been unearthed at Neolithic sites on Nornour (Turk 1971, 1984), the lack of systematic counts before 1970 makes assessing and interpreting overall population trends far from straightforward. Fig. 2 brings together data from all the comprehensive counts for the archipelago and shows that, although the total number of breeding seabirds has decreased only slightly in the past seven years (by 2.4%, to 9,161 pairs in 2006), this is part of a longer-term trend which has seen at least a 24% decrease since the peak of 12,063 pairs in 1983 (just prior to SSSI designation in 1986). However, if we correct for the number of unused (i.e. empty) Lesser Black-backed Gull nests, which are currently included within the total count for this species (by applying the standard correction factor of 0.61; O'Connell *et al.* 1997), the overall decline in numbers since 1999–2000 would be a more alarming 9.4%, to 8,821 pairs (see dotted line in fig. 2). Moreover, comparable counts for breeding Storm-petrel and Manx Shearwater are not available before 2000, so we have assumed that they were stable between 1983 and 2000. As past counts, in fact, suggest a higher population (see below), it is likely that we have underestimated the overall rate of decline.

The Isles of Scilly SPA does not cover the entire land area of the islands and 108 and 96 seabird territories, of five species, were recorded outside the SPA in 1999 and 2006, respectively. Thirteen species have bred regularly on Scilly since the SPA was classified, and all were found in 2006, though eight of them in smaller numbers. The following sections explore the changes for each species in turn.

Cormorant and Shag: apparent stability

The evidence from written historical accounts and from recent surveys is that relatively few species have maintained their present status, but these are two exceptions. Censused on at least 11 occasions, Cormorant numbers have varied between 49 and 61 pairs since at least 1945, although the exact locations of the small colonies have varied between years. Shags are much more numerous, but the population

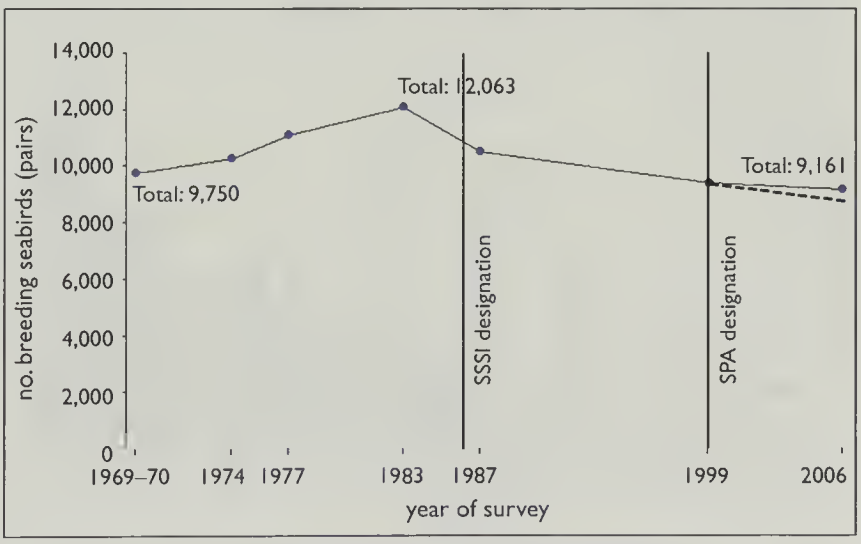

Fig. 2. Species assemblage total, 1969–2006.

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212. A Great Black-backed Gull *Larus marinus* guards its nest on Pednbrose in May 2006, with White Island, St Martin's, in the background.

trend is essentially similar; birds were reportedly numerous 'on all the islands' in the early twentieth century and there have usually been some 1,000–1,500 pairs since the late 1960s, though there was a low count of 809 pairs in 1974. Stability on Scilly is in line with regional trends.

Manx Shearwater and Storm-petrel: uncertain trends

Shearwaters have long been associated with Scilly. Their remains have been found in prehistoric sites and medieval records suggest the use of 'puffins' (a term generally referring to young shearwaters; Lockwood 1984) to pay land rents as far back as 1337 (Turk 1971). Estimates of shearwater numbers in the nineteenth century range from 200 to 150,000 pairs. Current estimates establish that either there has been a huge decline or past estimates were grossly inaccurate. Estimates of 900–1,000 pairs in 1974 and 850–1,000 pairs in 1977 are still considerably greater than counts from 2000 and 2006, the first to use diurnal playback to elicit responses from birds in occupied burrows. All previous estimates were based on counts of rafting birds around the islands, counts of birds calling at night or catch rates in mistnets. These are not directly comparable and we have only a limited appreciation of how estimates made using such techniques relate to the size of the breeding population. Nonetheless, there is a strong suggestion that numbers are now much lower than formerly; indeed, numbers may still be falling, as they declined by 15%, to 171 pairs, between 2000 and 2006. Furthermore, although shearwaters occupied the same six sites (Annet; Round Island; Shipman Head/Shipman Head Down, Bryher; Gugh; St Helen's; and Wingletang Down, St Agnes) in both the recent censuses, we found none on the many islands from which breeding has been reported in the more distant past (including Tresco, Menawethan, St Martin's Daymark, Gweal, Giant's Castle on St Mary's and Great Innisvouls).

Perhaps overlooked because of their small size and nocturnal habits, Storm-petrels were not reported from Scilly before the mid nineteenth century but the species then reportedly bred in 'thousands'. Birds apparently continued to breed in some numbers until the first systematic counts were made using playback to identify occupied burrows. An estimated 1,398 pairs in 2006 is a slight decline (5%) on the numbers recorded

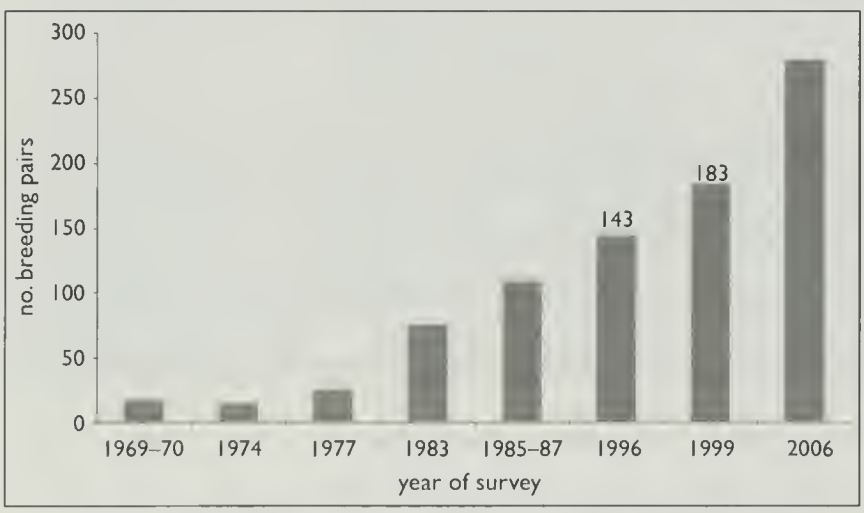


Fig. 3. Number of breeding Fulmars *Fulmarus glacialis* (pairs), 1969–2006.

during the 2000 survey. There are no comparable previous estimates, either from Scilly or elsewhere, as this census technique was not used in the UK prior to 1999–2000.

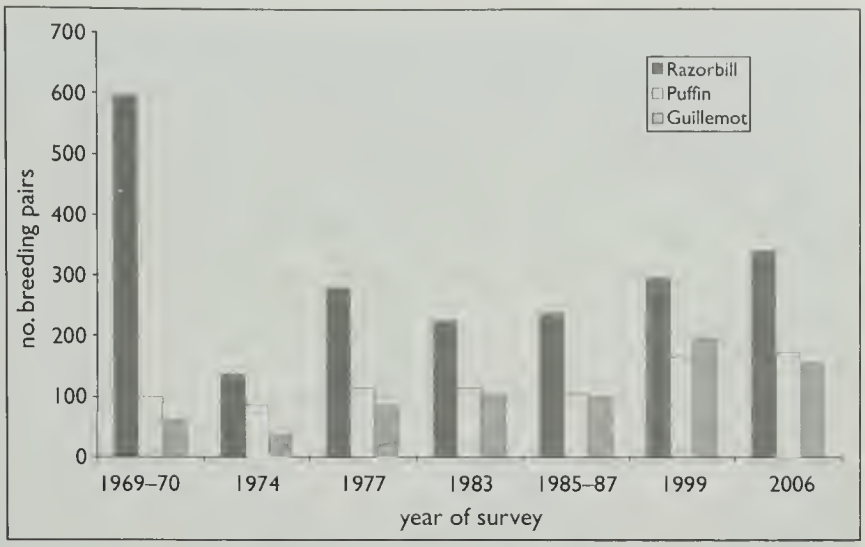


Fig. 4. Numbers of breeding auks, 1969–2006.

Fulmar: rapid increase of a recent colonist

Fulmars first bred on Scilly in 1944 (Penhallurick 1969) and numbers have steadily increased since. Both colonisation and growth have been in line with national trends, although growth between the 1999–2000 and 2006 surveys of 52% (a rate which shows no sign of slowing, see fig. 3) bucks the most recent trends at many mainland colonies (Mitchell *et al.* 2004).

Auks: apparent former abundance and current relative scarcity

There is archaeological evidence of Guillemot and Razorbill from several sites on Scilly and of Puffin from Nornour (Turk 1971, 1984). Guillemots reportedly once 'nested in great profusion' (Clark & Rodd 1906), had become scarce by the late nineteenth century, yet apparently nested in numbers too large to estimate in 1946 (Penhallurick 1969). Razorbills were apparently nesting in 'extraordinary' and 'countless' numbers by the late nineteenth and early twentieth centuries but appear also to have declined thereafter (see Robinson 2003), while Puffins reportedly bred in 'thousands' early in the twentieth century – there is a report of 100,000 pairs on Annet alone in 1908. A huge decline in numbers has apparently thus ensued. Given the apparent scale of change, it is unfortunate that we have no comprehensive counts before 1970. Trends in numbers since then are shown in fig. 4, revealing that all three (despite a worrying and recent decline of Guillemots) have increased substantially since the early 1970s, in line with national trends and even, in the case of Puffin, bucking regional trends (Mitchell *et al.* 2004).

Terns: three species lost, one gained

Terns have long been known as breeding birds on Scilly. Interestingly, the three species which no longer breed regularly appear to have been the most numerous in earlier times. Sandwich Tern reportedly bred in reasonable numbers in the nineteenth century, there being at least a hundred pairs in 1841 (Clark & Rodd 1906). By the 1880s, however, breeding had become occasional and from 1911 to 1978 (when 6–7 pairs again nested on the islands; Birkin & Smith 1987) there were no recorded breeding attempts. Small numbers bred annually from 1978 to 1993, with a maximum of 18–22 pairs in 1987, and single pairs have attempted to breed in 1998, 2004, 2005 and 2006. Roseate Tern was 'tolerably common' in 1840 but there were just two pairs in 1854, none recorded between 1867 and 1920, and no more than five pairs breeding in any one

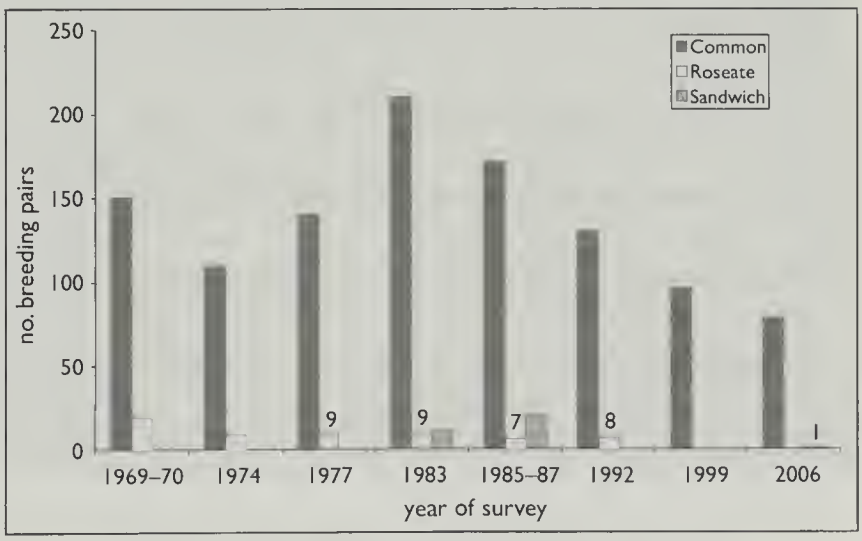
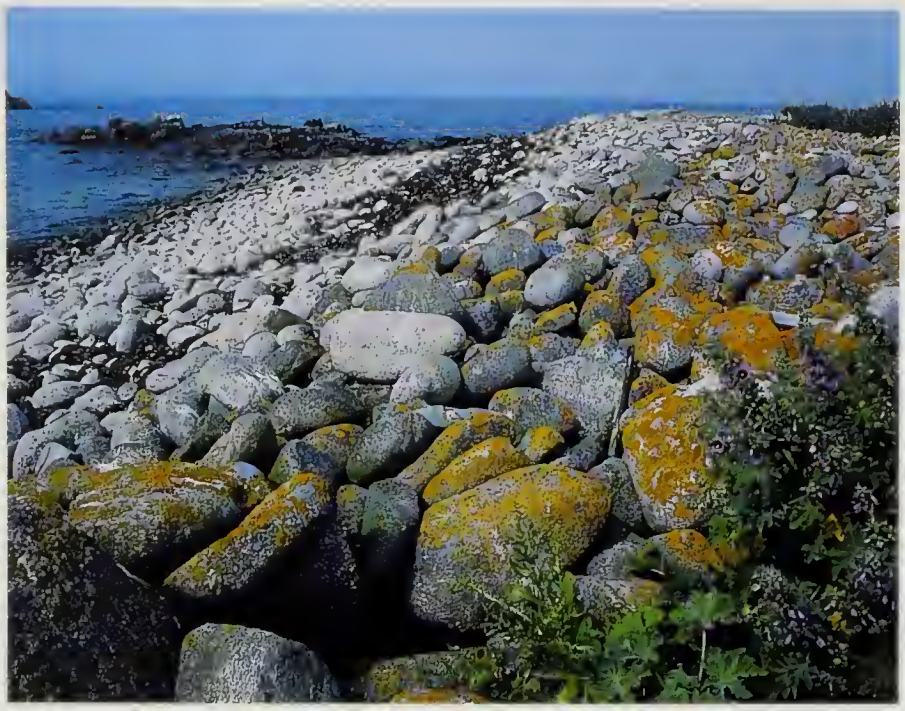


Fig. 5. Number of breeding terns (pairs), 1969–2006.



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213. A storm beach on Annet, site of Scilly's largest European Storm-petrel *Hydrobates pelagicus* colony, in July 2000. Scilly supports the only nesting Storm-petrels in England.

year between then and 1950. An estimated 12 pairs bred in 1959, 20 in 1969, 8–12 in 1979 and 6 in 1989 (Robinson 2003). There were still 6–8 pairs as recently as 1992 but despite extensive searching there has been no proof of breeding since 1995. The loss, recolonisation and subsequent decline of Roseate Tern on Scilly mirrors national and European trends. Arctic Tern also once bred on the islands in some numbers but by the beginning of the twentieth century was much reduced and had almost certainly disappeared by the late 1920s. The few available records suggest that there were at least occasional breeding attempts in later years: 30 pairs reportedly bred on Annet in 1945, and there were 'a few' there in 1948, 12 in 1963 and 40–60 in 1964; and birds were reported nesting on Tresco in 1973 and 1977. More recently, a single bird was recorded among nesting Common Terns on Samson in 1995 (see Robinson 2003). The only species to nest regularly today is Common Tern, which has bred since at least the 1940s, in which decade there were 150 pairs on Green Island, Samson, in 1943 and 150 pairs on Annet in 1946 (Chown & Lock 2002). The first comprehensive counts revealed 150 pairs in the archipelago in 1969. Numbers peaked at 210 pairs in 1983 and have fallen steadily since (fig. 5).

Gulls: apparent former scarcity, recent relative abundance and worrying decline

Four species of gull breed on Scilly. Historical accounts suggest that both Lesser Black-backed and Herring Gull nested in large numbers early in the twentieth century, with Herring Gull then probably the most numerous of the large gulls. Owing to considerable persecution elsewhere in the nineteenth century, the islands were then also the sole breeding station of Great Black-backed Gull in England, though estimates suggest as few as 200 pairs in the 1920s, rising to 700 pairs by 1933. Kittiwakes bred on Menawethan and Gorregan in the nineteenth century but

Vickie Heaney

214. One of the lesser joys of seabird censusing: using playback of calls to elicit a response from European Storm-petrels *Hydrobates pelagicus* nesting on Annet in July 2006.

numbers fell and the species did not breed on Scilly between 1901 (Clark & Rodd 1906) and 1938. Following recolonisation, numbers increased, peaking at 861 pairs in 1983 (Harvey 1983) but declined rapidly towards the late 1990s, since when they appear to have been relatively stable, with 266 pairs in 2006.

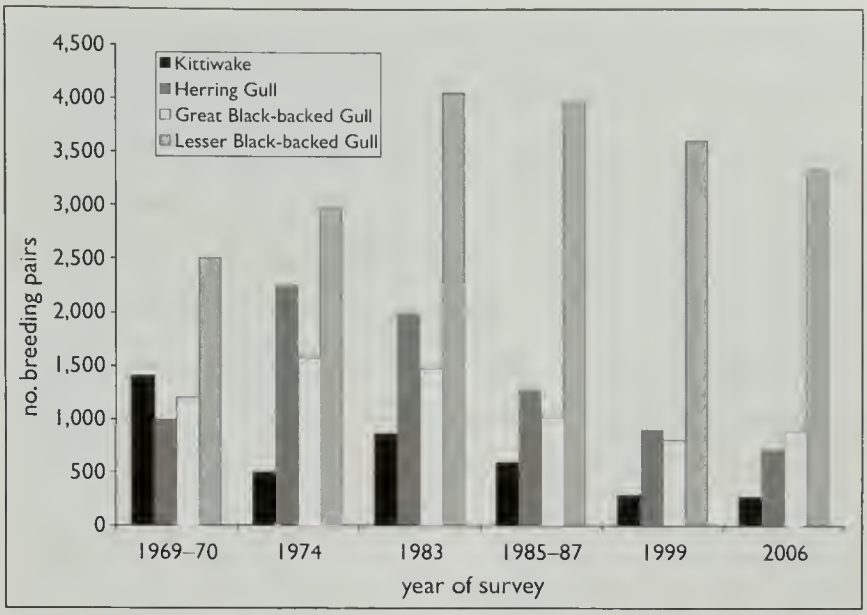

Fig. 6. Numbers of breeding gulls (pairs), 1969–2006.

The first comprehensive counts of gulls took place in 1969–70. The three large gulls appear to have increased from this time, to a peak sometime between 1974 and 1983, and then fallen to a low in 1999 or 2006, which, other than for Lesser Black-backed, is lower than the 1969–70 count (fig. 6). While trends in Herring Gull, Great Black-backed Gull and Kittiwake reflect national trends, the decline in numbers of Lesser Black-backed Gull is in contrast to regional trends, since populations on mainland southwest Britain are increasing and overall UK numbers are as high as they have ever been (Mitchell *et al.* 2004).

Discussion

Key concerns

Among the complexity of changes in the seabird populations on Scilly, it is possible to discern some worrying trends – in overall numbers, in the numbers of individual species and in the numbers on individual islands or island groups. We have particular concern over the following:

- The overall number of seabirds breeding on Scilly has declined by at least 24%, from c. 12,063 pairs in 1983 to 9,161 pairs in 2006. There is a strong suggestion that, if comparable counts for Storm-petrel and Manx Shearwater were available prior to 2000, our assessment of the scale of decline would be worse still.
- Four species have declined by over 25% in the last 25 years: Herring Gull (down by 64%), Kittiwake (69%), Great Black-backed Gull (39%) and Common Tern (63%).
- Numbers on four of the eight SSSIs with a qualifying seabird interest have fallen by 37% or more since designation (using information on bird numbers from 1983): Eastern Isles (decreased by 45%), Shipman Head (43% in the last seven years alone), Samson group (41%) and Annet (37%).

Andy Brown

215. Round Island, at the northern fringe of the archipelago, May 2006. This island supports important numbers of Manx Shearwaters *Puffinus puffinus* and European Storm-petrels *Hydrobates pelagicus*, many of which nest beneath dense mats of the introduced Hottentot-fig *Carpobrotus edulis*.

Bryan Thomas

216. A juvenile Kittiwake *Rissa tridactyla* from the Gimble Porth colony, on the eastern side of Tresco. The low cliffs which fringe Gimble Porth support one of the few remaining Kittiwake *Rissa tridactyla* colonies on Scilly. Long known as breeding birds in the archipelago, Kittiwakes were absent between 1901 and 1938 but following recolonisation increased to a population of over 800 pairs in the early 1980s. There has since been a 70% decline in numbers and there was complete breeding failure in both 2006 and 2007.

Most of the losses are accounted for by the loss of gulls.

- Numbers of eight of the 13 species which breed regularly on Scilly fell between 1999–2000 and 2006, Herring Gull and Guillemot numbers declining by 21% in this brief period.
- The Kittiwake population has fallen by 5% over the last seven years and the species fledged no young on the islands in at least 2006 and 2007.
- The overall number of seabirds breeding on Annet, the most important of the seabird islands, has fallen by 20% over the last seven years.
- The numbers of seabirds nesting on the inhabited islands of Tresco, St Martin's, Bryher and St Agnes have fallen by up to 70% in the last seven years, these losses relating mainly to gulls.

Factors affecting seabirds on Scilly

1. Persecution and disturbance

Seabirds on Scilly appear to be rarely persecuted. The Nature Conservancy Council culled Great Black-backed Gulls on Annet in 1978, reducing the island population by 35%, and it is thought that other, unofficial culls have taken place on occasion. These culls have usually been associated with efforts to conserve other seabird species. More recently, Lesser Black-backed and Herring Gulls have been dissuaded from nesting close to the terneries on Samson, to try to keep these areas, which are safe from tidal inundation, available for nesting terns. The number of nests destroyed has not exceeded 20 in any one year and many of the birds affected are likely to have re-nested elsewhere on the island. There are occasional reports of gulls being shot on the inhabited islands, presumably to prevent them nesting on buildings. However, surprisingly few gulls nest on the rooftops of St Mary's and gulls are declining on the other inhabited islands (in contrast, roof-nesting is now commonplace elsewhere in the UK – in Cornwall, for example, this habit increased by nearly 900% between 1976 and 1998–2002, when almost 1,500 pairs nested on buildings at 35 sites; Mitchell *et al.* 2004).

Tourism is a vital part of the economy of the islands, accounting for 85% of the local economic revenue of Scilly. The requirement for visitor management is widely recognised, so the activities of those with an interest in wildlife and wild places are closely but discreetly controlled. The most important seabird islands are permanently closed to visitors (many are also extremely dangerous islands on which to land, so access is effectively impossible anyway): Men-a-vaur, Hanjague, Great Ganilly, Great and Little Innisvouls, Menawethan, the Western Rocks, Annet, Melledgan, Mincarlo, the Norrard Rocks and Scilly Rock. Furthermore, some islands are closed during the breeding season, while access to others is permitted only

along well-defined routes which avoid the most important seabird areas. Notices, temporary fences and visiting wardens help to manage visitor access and regulate disturbance. However, provision for visitors to witness the Scilly seabird spectacle is still considerable: a plethora of boat operators offer visits to the waters around the seabird islands, some guided by expert local ornithologists, while there are late-evening visits to witness rafting shearwaters and pelagic trips to search for petrels and the rarer seabirds of the Southwestern Approaches. This suite of measures appears to be effective in keeping seabirds and visitors separated by an appropriate distance. We do not believe that either persecution or recreational disturbance influences recent seabird population trends significantly.

2. Mammalian predators

Scilly supports just one native land mammal, the endemic Scilly race of the Lesser White-toothed Shrew *Crocidura suaveolens cassiteridum*. It is not known as a predator of seabirds, their eggs or young. In contrast, introduced Brown Rats *Rattus norvegicus* (now widespread throughout the archipelago), cats and dogs (found mainly on the inhabited islands) and Hedgehogs *Erinaceus europaeus* (found only on St Mary's) are rapacious predators of seabirds worldwide (Atkinson 1985; Jackson & Green 2000). On Scilly, as elsewhere in the UK (e.g. Brooke 1990, Thompson *et al.* 1997, 1998, Swann 2000, Upton *et al.* 2000), they have done much to reduce the suitability of offshore islands for nesting seabirds.

The effects of mammalian predators are clearly apparent in the distribution of seabirds within the archipelago. For example, all 11 Storm-petrel colonies are located on islands which have long been known to be rat-free (though Annet was occupied by rats for a brief period in the mid 2000s). A similar pattern is evident in Orkney and Shetland, where the presence or absence of rats was found to be the single most important factor in explaining the breeding distribution of Storm-petrels (de León *et al.* 2006). Several islands in the Scilly archipelago, including Gweal and Menawethan, have large areas of apparently suitable habitat for other species but the current absence of former breeders such as Puffin and Manx Shearwater is believed to be due to the presence of rats. A number of small, uninhabited islands, notably those forming the Western and Norrard

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217. European Storm-petrels *Hydrobates pelagicus* photographed in July 2005 from one of the summer-evening pelagic trips which operate regularly from St Mary's; just part of the seabird spectacle awaiting visitors to the Scilly archipelago.

Rocks, have never been known to support rats: they are regularly battered by storms and washed over by winter tides, and food availability outside the seabird breeding season must be scarce. Other uninhabited islands support thriving populations of rats, and feral cats are established on Gugh.

There have been numerous attempts to control rats on Scilly, but these have tended to provide only temporary benefit as rats have quickly recolonised cleared islands from adjacent islands, accessible on the lowest of spring tides. The concerted programme of rat control instigated recently by the IOSWT, with support from Natural England and the RSPB, has used a different approach, and has eradicated rats from groups of adjacent islands and from any parts of inhabited islands likely to be a source of new colonists. There have now been apparently successful eradications from Samson, St Helen's, Tean, Northwethel, Menawethan and the Eastern Isles (Mawer & Williams 2007). Monitoring is an essential part of the programme and relies on regular inspection of baited monitoring stations, in turn allowing immediate action to remove rats as soon as they are found. The lack of such routine monitoring on Annet, long known to be rat-free, prevented early detection of the recent incursion. Once discovered, the rats were found to be numerous and although an immediate and apparently successful eradication ensued, the rats had clearly been active for at least one and perhaps several breeding seasons. Their activities may go a long way to explain the large decline in breeding seabirds on Annet between 1999 and 2006, particularly Storm-petrels, which decreased by some 16%.

The rat populations on St Mary's, Tresco, St Martin's, Bryher and St Agnes are likely to be responsible for the current small size of seabird populations on these large and otherwise apparently suitable islands; unless rats are eradicated, it is unlikely that this situation will improve. Moreover, these islands will always act as a source of rats capable of colonising adjacent islands, moving between them on boats or when tides are exceptionally low. The eradication of rats from the entire archipelago is likely to be the most effective long-term solution, not only to seabird predation, but also to the other public health risks posed by rat infestation (Battersby & Webster 2001). Furthermore, initiatives should be taken immediately to control feral cats (especially those on Gugh) and to prevent the spread of Hedgehogs from St Mary's to other islands.

3. Avian predators

The role of native avian predators in the dynamics of seabird populations on Scilly is, as elsewhere, much less clear-cut. Raptors, herons (Ardeidae), large gulls, corvids and some waders may opportunistically take seabird eggs or young. Numbers of many such predators are low but Scilly does support Herring, Lesser Black-backed and Great Black-backed Gulls in large numbers, such that they are regarded as of conservation importance in their own right (see above). Great Black-backed Gulls in particular are often reported as predators of seabirds. It is interesting to note that Shag numbers have recently increased where the numbers of large gulls have decreased, for example on Menawethan and Great Innisvouls; and have declined where

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218. Poisoned bait in place on Tean in May 2006, with warning and information signs (for humans) placed by the Isles of Scilly Wildlife Trust as part of the successful eradication programme supported by RSPB and Natural England.

Great Black-backed Gulls have increased, such as on White Island, Samson. On Annet, the increase in Great Black-backed Gull numbers in the last seven years has coincided with a decrease in the numbers of most other species. Examination of pellets and predated carcases also confirms that these gulls take seabirds, notably adult petrels and shearwaters, although for two reasons it is not necessarily the case that they have a population-level effect on their prey. Firstly, predation by gulls on burrow-nesters such as petrels and shearwaters focuses mainly on prospecting non-breeders and fledglings, these birds being taken in the air or on the ground. Breeding adults tend to fly quickly to and from colonies and spend little time on the ground (Brooke 1990). Secondly, predation on other birds tends to be carried out by only a proportion of gulls, which seem to specialise in such behaviour; since it is behaviour rather than abundance which is important, levels of predation may not vary directly with the size of the predator colony (Furness 2003; Votier *et al.* 2004; Oro *et al.* 2005).

We believe it is unlikely that the recent decline in breeding seabirds on Scilly can be attributed to Great Black-backed Gull predation. First, the number of Great Black-backed Gulls on Annet and in the archipelago as a whole is much lower now than in the early 1970s, when detailed studies concluded that levels of predation did not have a significant impact on the populations of shearwaters, petrels or Shags (Allen 1974). Second, large increases in the number of pairs of Puffin (3 to 14), Storm-petrel (57 to 129) and Shag (117 to 137) on Rosevear, site of the second-largest Great Black-backed Gull colony in 2006, have been coincident with a small increase in the gulls from 95 to 109 pairs between 1999/2000 and 2006. We also know that the large decline in seabird numbers on Annet was coincident not only with an increase in Great Black-backed Gull numbers but also with an incursion of Brown Rats.

Rabbits *Oryctolagus cuniculus* occur on Annet and a number of other islands and there may be an interaction between their numbers and levels of both gull and rat predation on seabirds, the intensity of predation being related to the availability of alternative food sources (Uttley *et al.* 1989; Furness *et al.* 1997; Robertson & Colombe 2001). For example, recent losses at a French Storm-petrel colony have been linked to predation by Great Black-backed Gulls, which has increased since the gulls' alternative food supplies, mostly rabbits, have disappeared (B. Cadiou pers. comm.). In contrast, on an island in New Zealand where rat predation was suppressing petrel breeding success, the problem was exacerbated by the *introduction* of rabbits, a food source through the winter when the petrels were absent, allowing the island to support a larger rat population (Imber *et al.* 2000). The mainly nocturnal habits of the rabbits on Annet suggest that their predation by gulls is significant and it would be interesting to explore this relationship further.

Large gulls are also capable of displacing other breeding seabirds, including Puffin (Finney *et al.* 2003; Soanes *et al.* 2006). The majority of Puffins on Scilly nest on islands where there are few large gulls but it is possible that gulls may influence Puffin recruitment on Annet and St Helen's, where they co-exist. A study of gull and Puffin nest-site proximity and of interactions between the two species would be useful for the management of this iconic and economically important species.

4. Habitat change

Invasive non-native plants are widespread on Scilly. Together with changes in the relative abundance of native plant species through human management, they can influence breeding seabirds directly (by reducing the amount of suitable nesting habitat) or indirectly (by providing habitat for predators). The long-term decline in the numbers of Puffins on Annet, for example, has been attributed by some to vegetation change, specifically the development of a tussocky sward, which favours breeding gulls over Puffins (Allen 1974).

On Scilly, the species most obviously affected by vegetation is the Lesser Black-backed Gull. The majority nesting in the four main colonies do so among dense ground cover and the species appears better able to maintain numbers on islands with greater vegetation cover (e.g. Samson and St Helen's) than where vegetation is less dense (e.g. Annet and Gugh) or suppressed (e.g. after winter salt damage or dry summers) (Robinson 1993, 2003). Tall vegetation around gull nests has been shown to reduce predation rates (Brouwer & Spaans 1994), provide a sheltered microclimate

(Calladine 1997; Kim & Monaghan 2005) and reduce conspecific aggression (Bukacińska & Bukaciński 1993; Gotmark *et al.* 1995; Ellis & Good 2006). There is, however, a trade-off between nest-site concealment and predator visibility (sparse cover allows early detection of predators but the nest itself is more visible; Gotmark *et al.* 1995, Borboroglu & Yorio 2004) and while dense vegetation may also deter human visitors, reducing disturbance, it may eventually hamper chick manoeuvrability and access by adults. Given the continued decline of Lesser Black-backed Gulls on Scilly, a study of the effect of vegetation cover on gull distribution would be invaluable; it should incorporate a review of the historical balance of the main vegetation types, particularly on Annet, Samson, St Helen's and various Eastern Isles, as large areas on these islands are dominated by dense stands of Bracken, honeysuckle and bramble.

5. Changes in fisheries discards, agriculture and the management of waste

Changes in the abundance of breeding seabirds on Scilly may relate to wider regional, national or global factors, including changes in the management of fisheries discards and of human waste. Commercial fisheries produce enormous volumes of unwanted fish and offal that are often discarded overboard, thus providing food for scavenging seabirds such as Fulmar and gulls (Hamer *et al.* 1997; Reeves & Furness 2002). It is widely accepted that the huge increase in fishing activity during the twentieth century fuelled burgeoning Fulmar and gull populations, at least until the 1980s. In addition, new feeding opportunities at large rubbish dumps and landfill sites have benefited gulls since at least the 1970s (Grieg *et al.* 1986). More recently, with fishing effort curbed to protect fish populations, offal retained for conversion to fish meal and changes in the management of refuse (with more being incinerated or buried), the availability of food for scavenging seabirds has declined (Reeves & Furness 2002). This may have led to falling productivity of large gulls (Pons & Migot 1995; Perrins & Smith 2000), while the calamitous decline in nesting Herring Gulls in Britain, by as much as 57% since 1969, is often attributed to changes in fisheries and waste management practices. In line with this national trend, Herring Gulls on Scilly have declined precipitously, to just 32% of the 1974 peak of 2,249 pairs. The Scillonian fishery has never been large, takes mainly shellfish, and does not involve the landing of any commercial fish. However, the large fishing fleet based at Newlyn, Cornwall, often operates within the foraging range of Herring Gulls from Scilly and thus its activities may have influenced seabird trends on the islands. Although the human population of Scilly is small (2,100 in winter, up to 5,000 in summer) and there are few waste-disposal sites, it is plausible that improvements in waste management on Scilly (the majority of waste is now incinerated) may have contributed to the Herring Gull's decline. Interestingly, the other large gulls have not declined so precipitously and tend to be less reliant on man-made food sources.

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219. A tranquil scene in May 2006: a Herring Gull *Larus argentatus* nesting among boulders, lichens and Hottentot-figs *Carpobrotus edulis* on St Agnes.

6. Climate change

Since the 1970s, global warming has increased the frequency of severe weather events around the world (Intergovernmental Panel on Climate Change 2001). Warming may also cause greater fluctuation

in the North Atlantic Oscillation (NAO), a measure of the pressure differential between tropical and polar air masses, tending to produce more warm, wet and stormy weather in northern Europe. Under such conditions, the abundance of zooplankton and the recruitment of sandeels *Ammodytes* in the northeast Atlantic and North Sea are low (Planque & Taylor 1998; Arnott & Ruxton 2002). It is not clear whether food availability for seabirds in Scillonian waters is, or has been, similarly affected. Surface-feeders and those with short foraging ranges, inflexible time budgets or restricted diets are likely to be adversely affected by reduced food availability before those which can alter their behaviour, foraging areas or diet (Furness & Tasker 2000). Kittiwakes are small-bodied surface feeders, with a relatively restricted foraging range and are strongly affected by local changes in prey abundance or availability (Hamer *et al.* 1993; Furness 1997; Regher & Montevecchi 1997; Lewis *et al.* 2001; Daunt *et al.* 2002). Kittiwake numbers across the south of England fell by about 40% between 1985 and 2000 (Mitchell *et al.* 2004); those on Scilly have declined by 70% since 1983. Monitoring work on Scilly and at other sites in southwestern England showed complete breeding failure in both 2006 and 2007 (H. Booker pers. comm.). On Scilly, most nests were lost when chicks were between two and three weeks old, which supports the idea that failure was down to poor food supply; chicks may either starve or suffer predation, as food-stressed parents spend longer foraging away from the colony and their nests are exposed to predators for longer (Bukacińska *et al.* 1996, 1998; Perrins & Smith 2000). Monitoring Kittiwake productivity on Scilly thus provides a sensitive measure of food availability in surface waters around the islands.

The tendency of climatic change to result in stormier weather, particularly at unusual times of year, may also adversely affect seabirds, for example by nest inundation, chick mortality and mass-kills of vulnerable species (Robinson *et al* 2002). Bad weather has affected seabirds in several parts of the UK in recent years, and there are reports of terns being buried in blown sand in Norfolk and of storms washing eggs and young from exposed cliffs (Ratcliffe 2004). On Scilly, Common Terns repeatedly choose to nest on low-lying sites which are already frequently inundated by sea water, despite human attempts to lure birds to safe, alternative nest-sites nearby (plate 220). Any increase in storminess can only exacerbate the problem and since the return of former breeders such as Roseate Tern probably depends on the maintenance of a strong tern colony in the archipelago, prospects for that happening are not bright. A feature of the 2006 breeding season on Scilly was the apparent abandonment of nesting attempts, after scrapes had been made but before eggs were laid, among Lesser Black-backed Gulls (up to 30% of attempts were abandoned at some sites). This habit is well-known in other colonies and is thought to be due to poor weather in May (Calladine & Harris 1997; O'Connell *et al.* 1997). It seems likely that weather-related breeding interruptions will increase and we have great concern for the future effects of climate change on Scilly's seabirds.

7. Pollution, disease and fisheries bycatches

A number of diseases and natural toxins can affect seabirds. Avian botulism in gulls (Lloyd *et*

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220. Decoys and tern calls broadcast from a CD player have been used during attempts to lure Common Terns *Sterna hirundo* to their traditional nesting site on North Hill, Samson, and away from low-lying beaches regularly washed over by spring tides. Photo taken in July 2000.

al. 1976), puffinosis in Manx Shearwater chicks (Brooke 1990) and 'red tide' toxins in Shags and Kittiwakes (Potts *et al.* 1980; Coulson & Strowger 1999) can all cause significant mortality. However, none of these are known to have affected birds on Scilly. Exposure to oil can be fatal owing to the fouling of feathers and the pathological effects of oil ingestion (Leighton 1991; Briggs *et al.* 1997). However, apart from large disasters such as the wreck of the Torrey Canyon oil tanker in 1969, which may have affected auk populations on Scilly, this also does not appear to be a significant problem on Scilly (though oil pollution may have wide-reaching impacts on some seabird populations; Votier *et al.* 2005). Inshore fixed gill-nets can be a source of considerable mortality for pursuit-diving seabirds, especially if set close to large breeding colonies (Piatt & Nettleship 1987), but the local Scilly fishery is small and unlikely to cause change at the population level.

Key actions for recovery

Birds, and seabirds in particular, are an important attraction for visitors to Scilly and, as much of the islands' economy is founded on tourism, the conservation of seabirds must be of central concern to all those with interests in the archipelago. A detailed plan of action – the Isles of Scilly Seabird Conservation Strategy (Lock *et al.* 2006) – has been drawn up by the organisations with responsibilities and interests in conserving seabirds on Scilly. The essential elements of the plan are to:

- Continue the non-native mammal monitoring and control programme to ensure that islands currently without rats remain rat-free.
- Extend the control programme to remove feral cats from Gugh.
- Maintain localised control of rats in the vicinity of important colonies where eradication is not currently feasible and at points most likely to be used by rats when they move to rat-free islands.
- Consider eradication of rats from the entire archipelago as a more cost-effective long-term solution to rat predation and other rat-related problems.
- Ensure that steps are taken to prevent further introductions of Hedgehogs to the archipelago and to ensure that the mammals do not spread from St Mary's.
- Extend the SSSI and/or SPA boundary to include the significant seabird colonies on Wingletang Down SSSI and on Plumb, Guther's and Pernagie Islands off St Martin's.
- Advise extension of the seaward boundary of the SPA to include marine features important in supporting the SPA seabird assemblage.
- Increase public awareness of the importance of the islands for seabirds and especially of human impacts on breeding seabirds, notably through recreational disturbance and the introduction of non-native predators.
- Maintain the programme of restricted access to important/sensitive seabird colonies.
- Review patterns of historical vegetation change on key islands and conduct field trials into the effects of vegetation patch clearance on densely vegetated islands on seabird (especially gull and tern) numbers and breeding success.
- Ensure that areas of suitable habitat for nesting terns are maintained on predator-free islands away from areas subject to tidal inundation.
- Repeat all-island seabird surveys at six-yearly intervals and establish an annual productivity monitoring programme encompassing key species on selected islands which informs the requirements for, and success of, the above measures. This may act as a 'quality of life' indicator for Scilly and will contribute directly to the national seabird monitoring programme.

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Vickie Heaney, 3 The Wrais, Hugh Town, St Mary's, Isles of Scilly TR21 0JG
Leigh Lock and Paul St Pierre, RSPB, Keble House, Southernhay Gardens, Exeter EX1 1NT
Andy Brown, Natural England, Northminster House, Peterborough PE1 1UA

Letter

Recent records of southern skuas in Britain

It is now over a decade since the first of three recent controversial large skuas turned up in Britain, and the debate on their identity continues to ebb and flow. Jiguet (2007) was among the more recent to discuss the three birds – in Dorset, in January 1996 (Millington 2000); on the Isles of Scilly, in October 2001 (Scott 2002); and in Glamorgan, in February 2002 (Moon & Carrington 2002) – and commented that the Scilly and Glamorgan birds resembled South Polar Skua *Stercorarius maccormicki*.

Suspicion that the Scilly and Glamorgan birds were not Great Skuas *S. skua*, but more likely South Polar Skuas, led to DNA samples being taken. These samples confirmed that the birds were certainly not Great Skuas. However, their initial identification as Brown Skuas *S. antarcticus* (Votier *et al.* 2004) was not satisfactory; it was based on a reference DNA sample from a single South Polar Skua used in an earlier study (Cohen *et al.* 1997) that differed in just a single base from other southern skua DNA samples, including other South Polar Skuas analysed later (Votier *et al.* 2007).

After that initial identification as Brown Skua, other evidence, that might have conflicted, was quietly overlooked. Who was going to argue with a DNA test? Instead, a 'wild skua chase' to test other specimens, some labelled as South Polar Skuas, from the North Atlantic ensued. All turned out to have mitochondrial-DNA sequences that eliminated Great Skua, differed from the South Polar used in Cohen *et al.* (1997) and were actually more similar to those of the two disputed British birds. This led to further tests of known South Polars, from King George Island, courtesy of Markus Ritz. Subsequently, Votier *et al.* (2007) considered that the DNA samples of the two disputed British birds could not distinguish between South Polar and Brown Skua, or any other southern skua for that matter. However, fig. 1 in Votier *et al.* (2007) showed that the Scilly and Glamorgan birds clustered more closely with South Polar specimens from King George Island than with any other skuas. While the differences involved are small and not sufficient to identify the birds conclusively, at the very least the DNA evidence should not sway the identification away from South Polar.

Status of southern skuas in the northern hemisphere

To date, there are no confirmed records of Brown Skua in the North Atlantic, and there is only a handful from anywhere else in the northern hemisphere, in the Indian Ocean, though none farther north than Oman (~22°N) (Malling Olsen & Larsson 1997). There is a report of a possible Brown Skua in the North Pacific, among the many South Polars that occur there (Howell 2005), as well as a bird (not accepted) showing the characters of Brown Skua off North Carolina in May 1993 (Mike Tove pers. comm.). A German researcher, Mathias Kopp, fitted Global Location Sensing loggers to 11 breeding Brown Skuas on the Antarctic Peninsula, but none was recorded north of 25°S (Markus Ritz *in litt.*). Of course, younger birds may well disperse farther north. In contrast, South Polar Skua appears to be a regular migrant to both the North Atlantic and the North Pacific.

Biometrics and structure

Unfortunately, the Scilly bird was not measured, and the Dorset bird was not trapped, but the measurements of the Glamorgan bird exclude everything apart from 'Falkland' Brown Skua *S. a. antarcticus* and South Polar Skua. 'Falkland Skua' has a high mass to wing-area ratio and, with Tristan Skua *S. a. hamiltoni*, is the least likely long-distance migrant of all the southern skuas (Furness 1987, pp. 34–37). Moreover, Devillers (1977) claimed that a bill to tarsus ratio greater than 0.7 separates a high proportion of South Polars from Falkland Skuas (though based on a small sample). The Glamorgan bird has a ratio of at least 0.72.

A provisional analysis of bill shape (bill length to depth ratio) of full-grown birds shows a complete separation between (small samples of) Antarctic Peninsula South Polars and Falkland Skuas (Peter Hayman pers. comm. plus my own work based on measurements from photographs). All three of the UK birds were full-grown – the Glamorgan bird was about one year old; the Scilly bird was at least 19 months and probably at least 31 months old; and the Dorset bird was judged to be in its third or fourth calendar-year (Millington 2000;

Markus Ritz pers. comm.) – and all three had a length to depth ratio well within the range of South Polar and outside the range of Falkland Skua. This analysis would benefit from a larger sample of measurements, and there is also the possibility that bill shape may be age-related, with younger birds having a more slender bill.

Photographs suggest that South Polar has a longer primary projection than Brown Skua (Steve Votier pers. comm.) although, like all structural features, this must be assessed with care. The Scilly skua has three primary tips well clear of the tail and five primaries visible beyond the tertials, thus suggesting South Polar rather than Falkland. Both of these extensions are notably longer than a series of measurements made of specimens of both Falkland Skua and the subantarctic Brown Skua *S. a. lonnbergi* by Peter Hayman (pers. comm.). This feature is difficult to assess on photographs of either the Dorset or the Glamorgan skua, especially as both have worn outer primaries. Wing-width to tail-length ratio can sometimes be judged from photographs. South Polars have a relatively shorter tail and photographs of the Dorset skua fall within the range of South Polar (Peter Hayman pers. comm.).

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221 & 222. The Scilly skua (see text), in care, St Mary's, Isles of Scilly, October 2001. Plate 222 shows the long primary projection of this individual, with three primary tips well beyond the tail tip; this supports its identification as South Polar Skua *Stercorarius maccormicki* rather than Brown Skua *S. antarcticus*.

Plumage

The plumage of both the Glamorgan and the Scilly skua is consistent with South Polars that appear on the west coast of North America (Howell 2004; Steve Howell pers. comm.). The fine neck-hackles of the Scilly bird are entirely consistent with South Polar and unlike Brown Skua. Some images of the Dorset skua exhibit a frosty bloom typical of South Polar Skua, though the photographic record is ambiguous as to its actual plumage tones (Millington 2000). The neck-streaking on this bird is also rather fine, again indicating South Polar Skua (Markus Ritz pers. comm.). Interestingly, the Scilly bird is closely matched in appearance by a skua taken at Yarmouth, Norfolk, in October 1869, the specimen now in the Castle Museum, Norwich. This was identified by Bill Bourne as a South Polar and has since been confirmed by DNA as not a Great Skua (Martyn Kennedy pers. comm.), but it was not accepted as the former, perhaps wrongly, on the grounds of provenance (Bourne & Curtis 1994; Bourne & Lee 1994).

Moult

Both the Dorset and the Glamorgan bird were in wing moult, both having almost completed their

primary moult. Jiguet (2007) claimed that the state of moult of both birds eliminates South Polar Skua. Although there are few data on South Polar Skua moult after October (e.g. Howell 2004), of two immatures in the Balleny Islands (66°50'S 163°30'E) in February, one was beginning and the other finishing its primary moult (James 1996) and therefore consistent with the Dorset and Glamorgan birds. More recently, Howell (2008) also showed that the primary moult stage of the Dorset bird (and therefore also the Glamorgan bird) is not inconsistent with South Polar Skua. The Scilly bird was not moulting.

Hybrids

Of course, the question of hybrids is bound to arise. Mixed pairs occur at a frequency of around 15% at Potter Peninsula, King George Island (Ritz *et al.* 2005), and ringing recoveries demonstrate that hybrids may migrate north, including a South Polar × Chilean Skua *S. chilensis* (¾ South Polar), in the western North Atlantic (Koeppen & Scheil 2001). The wing-length of the Glamorgan Skua is below the minimum for South Polar given in James (1996), although within the range given by Ritz *et al.* (2005). DNA confirmed that it was a female (which tend to be larger than males), so a very small bird indeed. Given that hybrids between South Polar and the usually larger Brown Skua are intermediate in size (Hemmings 1984; Parmalee 1988; Jiguet *et al.* 1999), this points to a pure South Polar. As for the Scilly skua, seasoned observers, looking at the bird in a box, debated whether it was a Great or a Pomarine Skua *S. pomarinus*, suggesting that it was neither large nor heavy (Martin Scott pers. comm.). This bird showed no structural or plumage features, including its cold plumage tones, near to Brown Skua, so it is probably pure too.

Whether the points highlighted above, some of which need more data to be fully corroborated, are sufficient for any of the three to be accepted onto the British List as South Polar Skua is a matter for BBRC and BOURC. Personally, I see no evidence to argue against all three being South Polar Skuas and the evidence for the Scilly and Glamorgan birds is especially compelling.

Dick Newell
Old Beach Farm, Green End, Landbeach, Cambridge CB25 9FD

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Notes

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Common Eiders attacked and killed by Harbour Seal

The accompanying images (plates 223–225) illustrate some remarkable behaviour that I have photographed recently on the Isle of Bute: a Harbour Seal *Phoca vitulina* killing and eating drake Common Eiders *Somateria mollissima* at various sites along the coast.

The behaviour was first brought to my attention by a neighbour, who witnessed it at Kerrycroy in November 2006. Shortly afterwards, I obtained my first images there. During winter 2006/07, I saw what I presume was the same seal attacking and killing eiders on numerous occasions, and I also found several carcases along the shoreline. Interestingly, as far as I can ascertain, all the birds attacked have been drakes. The behaviour has been witnessed by several other islanders, including Ian Hopkins, a keen ornithologist. I have seen this seal most commonly around Ascog and Kerrycroy, and also Rothesay Bay and Ardbeg Point, a stretch of coastline some 5 km in length. When attacks are observed in one area, they are not seen in the others, lending support to the idea that just one seal may be involved. I am not aware of any reports of the behaviour during the summer of 2007, but the attacks began again in winter 2007/08, continuing up to late March 2008. It seems possible that the attacks are related to declining fish supplies during the winter compared with plentiful supplies of mackerel (Scombridae) during the summer.

Typically, the seal would approach its victim underwater and take the bird from underneath as it sat on the water. On several occasions, the seal appeared to play with the duck, much as a cat plays with a mouse, sometimes for up to 15 minutes, before eventually skinning it by vigorous shaking and eventually consuming the bird. My attention was often drawn to the occurrence by the number of gulls

Philip Kirkham

Philip Kirkham

Philip Kirkham

223–225. Harbour Seal *Phoca vitulina* chasing, killing and eating drake Common Eiders *Somateria mollissima*, Isle of Bute, Clyde Islands, March 2007.

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(Laridae) hovering overhead, waiting for a morsel of flesh.

There are other published records of seals taking waterbirds, although this behaviour is clearly uncommon (or at least rarely witnessed). Harbour Seals have previously been recorded predating a Harlequin Duck *Histrionicus histrionicus* (Tallman & Sullivan 2004) and also catching a Little Grebe *Tachybaptus ruficollis* (Boekema 1984). There are several notes in *BB* concerning Grey Seals *Halichoerus grypus* attacking/catching birds, including Eurasian Wigeon *Anas penelope* (Barnes 1986), Common Eider (Morgan 1986), Manx Shearwater *Puffinus puffinus* (McCanch 1981) and Razorbill *Alca torda* (del Nevo 1986). An editorial comment in *Handbook of British Mammals* (2nd edn, 1977), notes that Grey Seals 'occasionally take birds swimming on surface of sea'. More recently, the devastating effects that Killer Whales *Orcinus orca* may have on groups of moulting eiders was described by Smith (2006).

Acknowledgments

I would like to thank Ian Hopkins for his observations of this behaviour on Bute; Prof. Geoff Moore for confirming the identity of the seal; and Ian Dawson and Richard Sabin for locating the published references of seals attacking waterbirds cited above.

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Philip Kirkham
Crofton Cottage, Ascog, Isle of Bute, Argyll PA20 9LN

The Ebro Delta Audouin's Gull colony and vagrancy potential to northwest Europe

In their commentary on Britain's second record of Audouin's Gull *Larus audouinii*, a second-summer at Beacon Ponds, Kilnsea, East Yorkshire, on 1st June 2005, Fraser & Rogers (2007) discussed its possible origin and mentioned the expanding colony at the Ebro Delta, in northeast Spain, as a potential source for vagrants to northwest Europe. We wish to clarify some of the points relating to the Ebro Delta colony, and suggest an alternative hypothesis for the origin of vagrant Audouin's Gulls along the Atlantic coastline of western Europe.

With over 20,000 breeding pairs, Spain supports almost 93% of the world's Audouin's Gull population, a species which is still categorised as 'Vulnerable' (MMA 2004; Mínguez 2006; table 1). The Ebro Delta colony is by far the largest in Spain, with 14,177 pairs in 2007 (IMEDEA/Ebro Delta Natural Park *in litt.*); Audouin's Gulls first bred there in 1981, and the population has increased spectacularly since then (fig. 1). The early growth of this colony, which occupies a long, sandy peninsula rather than the rocky island habitats typical of most other colonies, can be attributed to a rich supply of discards from the local fishing industry (Oro *et al.* 1996a; Oro & Ruxton 2001). However, a moratorium established in 1991, to curb overexploitation of fish stocks around the delta, seriously affected the breeding success of Audouin's Gulls

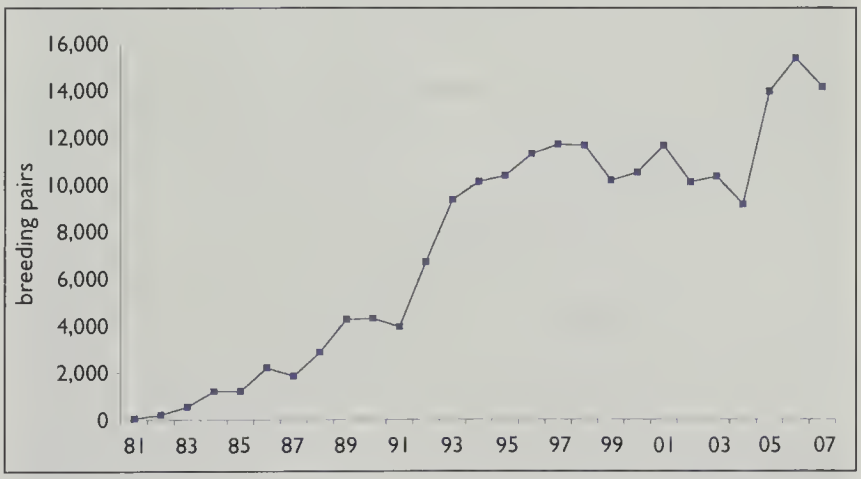

Fig. 1. Number of breeding pairs of Audouin's Gulls *Larus audouinii* at the Ebro Delta colony, northeast Spain, 1981–2007.

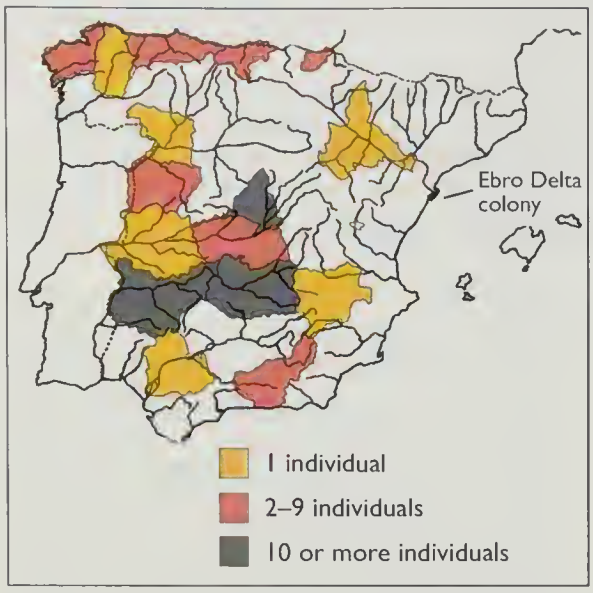

Fig. 2. Number of inland and north-coast records of Audouin's Gulls *Larus audouinii* in Spain, by province. The country's main river systems are also marked. Records in coastal Mediterranean provinces have not been included. Given that the main colony is at the Ebro Delta, it is interesting to note the low number of records along that river's inner course (map compiled from data in www.seo.org/media/docs/BoletinGIAM28_2007.pdf).

(although the population still continued to increase), with knock-on effects on various breeding parameters and phenology (e.g. Oro & Martínez 1992, Oro *et al.* 1996a,b, 1997, 1999). In particular, the gulls were forced to seek alternative food sources. Foraging birds began to range more widely along the coast, finding a readily available food supply at rubbish dumps; they also began to exploit introduced North American Red Swamp Crayfish *Procambarus clarkii*, which are abundant in the extensive rice paddies close to the breeding colony, and which became an important food source. In the Ebro Delta, Audouin's Gull has thus developed from a chiefly pelagic gull into a mainly coastal-foraging, even scavenging species (e.g. Oro *et al.* 1996a, Oro 1999, Pedrocchi *et al.* 2002). The fishing moratorium was relaxed in 2000 so that fishing could continue during the gulls' breeding season; as discards became available again, now supplemented by crayfish, the population was clearly boosted, and reached a peak of 15,396 breeding pairs in 2006 (Oro 2006). This increase has fuelled the establishment of satellite colonies to the south, also in 'flat' habitats, including the Torrevieja lagoon, Alicante, where 31 pairs nested for the first time in 2005 and increased to 298 pairs in 2006 (Sáez & Arroyo 2005, www.naturalicante.com/noticias/Noti-jun-2005/noticias-junio-05.htm).

Migration and dispersal

In early spring, northbound adult Audouin's Gulls pass through the Strait of Gibraltar from early February onwards, though mostly in March with a secondary peak in April; the main arrival at the Ebro Delta is in mid March. In autumn, breeders begin to leave the Mediterranean in early July; numbers passing through the Strait of Gibraltar peak in August, after which there is a steady decline (Garcia 2004, 2006). In recent years, a few have remained in the Ebro Delta throughout the winter, with an average of c. 90 wintering birds during the period 1996–2008, but occasionally up to 300.

Despite its abundance along the Atlantic coastline of Morocco, Audouin's Gull remains extremely rare along the north coast of Spain. For example, from February to October 2006, during surveys conducted by the Spanish Seabird Monitoring Network, which monitors seabird passage past up to 15 capes and headlands along the Atlantic coastline of northwest Spain, not a single Audouin's Gull was noted

Ricard Gutiérrez

226. Adult Audouin's Gull *Larus audouinii* at the nest, Ebro Delta, Spain, June 2007.

among 65,770 seabirds counted. From November 2006 to October 2007, an expanded monitoring programme along the Mediterranean seaboard and Portuguese coasts once again failed to record any Audouin's Gulls off northern Spain and Portugal, among 132,640 birds counted (see www.telefonica.net/web2/redavesmarinas). This puts into context the species' great rarity farther north in Europe.

Away from breeding sites along the Mediterranean coast of Spain, second-summer birds are invariably the most abundant age class recorded. For example, at the Llobregat Delta (immediately south of Barcelona, 180 km north of the Ebro Delta and an important roost site for subadults), observations show that 72% of birds at this site between May and July were second-summers; only 6% were first-summers, 15% were third-summers and 7% were adults (Pedrocchi 2005). This reflects the dispersal strategy of immatures: the vast majority of young birds remain along the African coast in their first-summer, while most third-summers attend the breeding colony as non-breeders. This leaves second-summer birds, which migrate to the Mediterranean but which do not join breeding colonies, to form these large gatherings, often far from colonies (de Juana *et al.* 1987; Hoogendoorn & Mackrill 1987; Mackrill 1989; Oro & Martínez 1994).

The first two British records of Audouin's Gull, in 2003 and 2005, were both aged as second-summer birds (Walker 2004; Fraser & Rogers 2007) and support the idea that this age group is the most likely to return to the Mediterranean from the wintering areas and then wander far from the breeding colonies. Dispersal of these second-summer birds presents the most likely source of vagrants to northwest Europe, although not necessarily from the Spanish population (see below).

Given that the Spanish Audouin's Gull population is doing so well, why has there been no corresponding increase in sightings along the Atlantic coast of Spain and beyond? It is inter-

Table 1. Number of breeding pairs of Audouin's Gull *Larus audouinii* and overall significance in 2007 (data supplied by the various autonomous communities in Spain and Mínguez 2006).
* Denotes approximate count according to latest data available.

	no. breeding pairs	% Spanish population	% world population
Ebro Delta[1]	14,177	72.6	67.0
Valencian community[2]	618	3.2	2.9
Columbretes islets	79	0.4	
Albufera de Valencia	88	0.5	
Islote de Benidorm	1		
La Mata-Torrevieja	450	2.3	
Murcia region[3]	785	4.0	3.7
Isla Grosa	583	3.0	
Parque Regional de Salinas y arenales de San Pedro del Pinatar	13	0.1	
Espigón de Puerto Mayor, La Manga del Mar Menor	189	1.0	
Balearic islands[4]	1,474	7.6	7.0
Mallorca	366	1.9	
Menorca	164	0.8	
Archipiélago de Cabrera	39	0.2	
Ibiza and Formentera	905	4.6	
Isla de Alborán[5]	526	2.7	2.5
Islas Chafarinas[6]	1,937	9.9	9.2
Spanish total	19,517		
France *	100		0.5
Italy *	500		2.4
Croatia	65		0.3
Greece	700–900		3.8
Turkey	60–90		0.4
Cyprus	15–20		0.1
Lebanon	15		0.1
Portugal	11		0.1
Tunisia	60		0.3
world total	21,161		

[1] IMEDEA/Parc Natural Delta de l'Ebre
[2] Generalitat Valenciana
[3] Gobierno de Murcia
[4] Govern de les Illes Balears
[5] Junta de Andalucía
[6] 2006 data (Mínguez 2006)

esting to compare the migration and post-breeding dispersal patterns of this species with those of Yellow-legged Gull *L. michahellis*. Both gulls breed in the Ebro Delta, there being 9,744 pairs of Yellow-legged Gulls in 2007 (authors' own data). The latter species is well-known as an inland coloniser, however, spreading along major river networks such as the Rhône, Aude and Garona, connecting the Mediterranean to the Atlantic and providing a route into north-west Spain and northwest Europe. This link was initially established for the Catalan population in the 1980s (Carrera *et al.* 1981) and remains an important post-breeding conduit to the Atlantic coasts of western Europe (Cadiou 2004). However, only small numbers of Audouin's Gulls disperse to the north of the Ebro Delta along the Mediterranean coastline, and it is rare from Blanes to the French border and exceptionally rare inland in Catalonia. It seems clear that Audouin's Gull largely avoids overland dispersal.

Between 1973 and 2004, 38,485 Audouin's Gulls were ringed in Spain, resulting in 9,405 recoveries; no fewer than 5,754 of these recoveries came from within 10 km of the ringing site. Since 1988, chicks of Audouin's Gulls breeding in the Ebro Delta have been fitted with a metal ring and a white plastic ring; 6,350 pulli were fitted with plastic rings during 2003–2006. At the time of writing, four colour-ringed individuals have been observed in Guipúzcoa, Euskadi, on the Atlantic coastline of northwest Spain, but only two of these came from the Ebro Delta: one was from a small colony in Croatia, and another was from Livorno, Italy. This provides direct evidence that at least some of the Audouin's Gulls that reach the west coast of Europe are derived from the much smaller populations breeding in the central and eastern Mediterranean. Furthermore, a pullus ringed at Pianosa Island, Tuscany, Italy, in June 2001 was seen at Margencel, Haute-Savoie, France, on 16th August 2001, and again near Allaman, Switzerland, on 18th August 2001 (Gantlett 2002).

Although the central and eastern Mediterranean populations of Audouin's Gull are much smaller, the occurrence of three colour-ringed birds from colonies in this region in western Europe suggests that for some reason these may be more pre-disposed to westward vagrancy than their Spanish counterparts. Many of these colonies remain small and show no sign of the extraordinary rates of population growth experienced by Spanish colonies (BirdLife International 2004; Mínguez 2006). While this remains the case, future records of Audouin's Gull in western Europe may remain nothing more than erratic and occasional. If these populations do start to increase, however, it is possible that this species may become more familiar in northwest Europe.

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Ricard Gutiérrez and Emma Guinart
Servei de Protecció de la Fauna, Flora i Animals de Companyia, Generalitat de Catalunya, Dr Roux 80 5th 08017, Barcelona, Spain; e-mail rgutierrez@gencat.cat

Rooks killing adult Black-tailed Godwit

On 18th May 2007, at Zhaskairat, in the Pavlodar region of northeast Kazakhstan, we became aware of two Rooks *Corvus frugilegus* being mobbed by a nesting male Black-tailed Godwit *Limosa limosa*. This bird and its female partner had been driving away the numerous Rooks feeding at this site for some time, so we did not pay much attention initially. At one point, however, we noticed that the Rooks did not fly away as usual but, together with a third bird, attacked the godwit from three sides and tried to pin it to the ground. Several times the godwit landed and the Rooks tried to cover it with their wings, but it escaped. After at least ten such attacks, the wader stayed on the ground, clearly exhausted, and the Rooks started to stab it with their bills, finally opening the main neck artery. Tasks were obviously divided: two of the corvids kept the godwit down on the ground by wing pressure, the third bird stabbed with its bill. The godwit soon stopped defending itself and died; the fight had lasted about seven minutes. When we approached the area to photograph the scene, the Rooks flew off but soon returned after we retreated and began to eat small parts of the godwit's body. When inspecting the dead godwit, we confirmed our suspicions that it had a recently broken leg, which had restricted its mobility on the ground (though it had seemed unaffected by this in flight).

Rooks have been considered responsible for predation of eggs and chicks of ground-breeding waders in Kazakhstan (e.g. Belik 2005). They feed mainly on invertebrates, but regularly take carrion and occasionally eggs and chicks. However, we can find no published cases of Rooks killing adult birds.

Our observations were made during field research on Sociable Lapwing *Vanellus gregarius*, partly funded by the UK Darwin Initiative.

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Johannes Kamp
Hindenburgstrasse 3, D-26122 Oldenburg, Germany; e-mail johannes.kamp@uni-oldenburg.de
Kseniya V. Grishina
ul. R. Madina 22/1, kv. 3, p. Korgalzhyn, Akmolinskaya oblast', 474210 Kazakhstan

Reviews

BIRDS OF SURREY

By Jeffery J. Wheatley. Surrey Bird Club, 2007. 696 pages; 11 colour plates; 57 line-drawings; 36 colour photographs; numerous maps and tables. ISBN 978-0-901363-08-6. Hardback, £35.00.

This book has been a long time coming, but it really has been worth the wait! It was originally conceived as a successor to Parr's *Birds in Surrey 1900–1970*, which would incorporate the results of the county tetrad breeding atlas carried out from 1988 to 1994 (later extended to 1997). However, the work became a labour of love for the sole author, Jeff Wheatley, and he broadened his researches to include much pre-twentieth century information and even evidence from the fossil record.

The book is in two main parts: a lengthy introduction and the systematic list. The former is a pleasure to delve into and comprises seven sections, including 'Geology, climate, weather and land use', 'The development of the landscape', and 'The history of bird recording in Surrey'. There is a wealth of interesting information here, including a summary of the documented climatic events for the last 300 years; the spread of urbanisation and resultant loss of heathland (Surrey's key habitat); and a summary of other important habitats and main ornithological sites. The introduction is followed by a brief section summarising information about the changing population of various species, migratory movements and roosts.

The systematic list covers all 339 species reliably recorded in the vice-county of Surrey (VC 17) and Spelthorne district. The latter, although outside the vice-county, is within the present administrative county and includes important sites such as Staines, King George VI and Queen Mary Reservoirs, Perry Oaks Sewage Farm (now obliterated by Terminal Five at Heathrow airport) and Staines Moor. This somewhat pragmatic approach is surprising given that *Surrey Bird Club* still sticks rigidly to VC 17 as its recording area; no doubt the first authoritative summary for the Spelthorne sites since the publication of a revised edition of *Birds of the London Area* in 1964 will result in further sales, and rightly so! The Surrey list by region and month, which follows the systematic list, shows that the inclusion of Spelthorne adds six waders and two terns (Sternidae) to the county list.

The species accounts are particularly detailed; for example, that for House Martin *Delichon urbicum* has 15 sections, including early Surrey history, nest-sites, large counts, visible migration, movements, longevity, parasites and plumage variations. This gives an indication of the subject matter that has been researched exhaustively. Despite the detail, much of the text is easy to read, although there are too many lengthy lists of locations and inconsistencies between the accounts. It is not always clear exactly what period is covered; a clearly stated cut-off date with an appendix of noteworthy later records up to the date of publication would have been preferable. The arrival of summer visitors is well analysed, with bar charts showing average arrival dates by ten-year periods and a discussion of any trends for each species. A mass of other data is presented in tabular form – wildfowl counts, territory counts of key breeding species and bird-month totals for scarcer visitors.

The tetrad breeding maps are presented clearly, with two sizes of green circle to represent breeding and presence in suitable habitat. Comments on the atlas results vary; consistent coverage for every species including a population estimate at the end of the atlas period and an indication of trends since then, especially given that the atlas was finished over a decade ago, would have been useful. It is surprising that very little comment has been made on the methodology and overall results of the atlas. There are three paragraphs at the end of the introduction but no information about the total number of species found breeding in the county is given, nor is there a map showing the numbers of species recorded in each tetrad.

The book concludes with several short chapters, including hybrids; escapes, introductions and birds of unknown origin; other published records (not admitted to the main list); plus an extensive bibliography and a gazetteer. It is superbly produced. One is immediately struck by the dust jacket, with its wonderfully evocative painting, by John Davis, of Thursley Common, featuring a heathland scene with two Hobbies *Falco subbuteo* mobbing a Honey-buzzard *Pernis apivorus*. Davis is the principal artist, and has contributed a further ten superb full- or double-page paintings of Surrey locations and their birds. Seven artists, including Davis, have contributed 57 line-drawings, which appear throughout the text. The introduction also contains 24 excellent colour photographs of prime habitats.

This is an excellent county avifauna, essential for anyone with an interest in Surrey birds, their history, patterns of occurrence and conservation. It charts the improving fortunes of internationally important populations of European Nightjar *Caprimulgus europaeus*, Wood Lark *Lullula arborea* and Dartford Warbler *Sylvia undata*, and the extremely vulnerable heathlands which they inhabit. This book reveals the history of Surrey's birds and shows that many of them are in a healthier position than they were a century ago; only some farmland and woodland birds have declined to a parlous state but that is being addressed on a wider scale. Jeff Wheatley is to be highly congratulated on a job well done; despite my few niggles, this is a magnificent book.

John Clark

BIRDS OF ARGYLL

Edited by Tristan ap Rheinallt, Clive Craik, Paul Daw, Bob Furness, Steve Petty and David Wood. Argyll Bird Club, Lochgilphead, Argyll, 2007. 424 pages; numerous maps, photographs and drawings. ISBN: 978-0-9557777-0-7. Hardback, £45.00; post-free to UK addresses.

Argyll is a largely rural and remote area of Scotland with many varied islands and as such holds a great appeal to those who are privileged to know it. A few may have visited just one part (probably Islay or Mull) but are ignorant of the rest of the region. Argyll includes not only Islay and Mull but also Coll and Tiree, Colonsay and Jura, many smaller islands, and the mainland with its extensive coastline stretching from north of Oban south to the Mull of Kintyre and right the way back north up the spectacular Loch Fyne to Inveraray and the Cowal Peninsula. Inland, several mountains rise to over 3,000 feet. Some 29% of the land area is afforested, mostly with non-native conifers. Significant birds of the area include Greenland White-fronted Goose *Anser albifrons flavirostris*, White-tailed Eagle *Haliaeetus albicilla*, Golden Eagle *Aquila chrysaetos* and Red-billed Chough *Pyrrhocorax pyrrhocorax* but there are 328 species on the Argyll list, including Britain's only Snowy Egret *Egretta thula*, identified in November 2001.

This new avifauna should appeal to all with an interest in Argyll, for it is an informative yet concise summary of the birds of this area and contains much to entice the reader to book their next visit. Those who already live in Argyll should without doubt own a copy, since it is the only definitive record for the whole area of Argyll. The last equivalent was Harvie-Brown & Buckley's *A Vertebrate Fauna of Argyll and the Inner Hebrides* published in 1892.

This is a large-format, hardback book with both colour photographs and line-drawings of most of the species listed. Many of the photos are of the birds in local habitat rather than portraits and this adds to the local feel. But it is the superb photographs of Argyll itself which makes this book special to me. They really capture the atmosphere and the space of Argyll. The aerial images by John Anderson are especially evocative. If you pick up a copy of this book, a glimpse of these will, at the very least, encourage you to go there, see the place for yourself, and go birding!

There are plenty of sites to visit, and so it is most useful to have a section on where to watch birds in Argyll, featuring 75 sites with grid references, habitats and species to be expected there. You will need to read the species accounts to check which might be present in the season you are there, but this important point is clearly stated in the introduction to this chapter. There is a comprehensive gazetteer with four-figure grid references of over 700 sites.

The book begins with introductory chapters which set the scene, describing the background to the book, past and present ornithological work in Argyll, climate, geology and habitats. These are well written and informative. Then it's the job of the species accounts to describe the avifauna of Argyll and these are comprehensive, detailed yet readable accounts. Information is up to date to the end of 2003, but some records up to 2006 have been included where they add something extra. Rarer species have all records tabulated for easy reference. A wide range of authors have been involved and the accounts are well referenced. Editorial control has been tight.

There are graphs for seasonal or annual occurrences for some species, and maps for breeding seabirds (only). This is one area that could perhaps have been improved on: to provide more scientific data, visually. However, I know that many areas of Argyll suffer from poor coverage and recording effort so it is possible that the data are just not there to support better analysis. Population estimates are available for some species but they are buried in the text of the species accounts. I would like to have seen numerical information such as this included in the Appendix 'Status of Argyll bird species', which really is just a checklist with notes on national conservation and BAP status, and Gaelic names.

With the publication of *Birds of Scotland* (Forrester *et al.*, 2007) at about the same time as this book, the Argyll enthusiast is now well served with both this avifauna and the broader Scottish perspective. I would recommend *Birds of Argyll* to anyone with an interest in Scottish birds and Argyll in particular.

Mark Holling

COLLINS BIRDS OF PREY

By Benny Génsbøl, illustrated by Bjarne Bertel. Collins, London, 2008. 414 pages; numerous colour photos and plates; distribution maps. ISBN 978-0-00-724814-8. Hardback, £30.00.

Many *BB* readers will be familiar with the general layout of this colourfully illustrated book, as it is the fourth edition of a work that was first published (under a slightly different title) in 1984. Coverage has been expanded to include no fewer than 49 of the nearly 60 species of diurnal raptor (Falconiformes) that have occurred in the Western Palearctic, excluding irregular vagrants such as American Kestrel *Falco sparverius* but usefully including Oriental Honey-buzzard *Pernis ptilorhyncus* and Rüppell's Vulture *Gyps rueppellii*. The book is divided into three main parts, the first of which briefly considers important background information on various subjects, for example the special adaptations of raptor bills and feet,

and threats from environmental poisoning and direct persecution.

The introductory section is followed by a series of individual species accounts, each of which is enlivened by colour photos. These accounts are short and concise when discussing rarities such as Shikra *Accipiter badius*, but more expansive and accompanied by a map and a table of population estimates when dealing with species that are common in the region (for example, Marsh Harrier *Circus aeruginosus*). The maps (which helpfully show political boundaries) are very clear and of decent size, but my initial enthusiasm for them waned as closer inspection revealed a few too many inaccuracies (among the most glaring, from a British perspective, being the inexplicable failure to show breeding ranges – however sketchily – of Honey-buzzard *P. apivorus*, Montagu's Harrier *C. pygargus* and Hobby *F. subbuteo* in Britain). The lifestyle and status of each species is well summarised in the texts, though there are a small number of instances where the meaning of certain statements could have been made clearer (but this could be a fault of translation rather than authorship). For example, when discussing Peregrine Falcon *F. peregrinus* it is stated that, 'The [population] figures for Russia and Morocco... are estimates, partly because of possible confusion with Barbary Falcon [*F. pelegrinoides*]', a statement which, because the latter species does not breed in Russia, is in obvious need of reworking. In short, the species accounts, though still useful and packed with information, would have benefited from the services of someone with an ornithological background to edit them.

The remaining part of the book deals with identification, and will be, I suspect, the main reason why many birders will be unable to resist buying a copy. Compared with the first edition, this section is now considerably longer (166 pages against 96 in the original), while the black-and-white drawings of previous editions have been replaced by a series of informative colour plates. The strength of this section lies not so much with species posing few identification problems (such as Dark Chanting-goshawk *Melierax metabates*), but rather with the trickier challenges set by, for example, the buzzards *Buteo*, which are considered in greater depth and depicted in a wider range of plumages than is possible in a general field guide.

This volume can be recommended as a handy and reasonably up-to-date distillation of facts about these magnificent birds. The impressive identification section makes it an essential reference for ardent raptor watchers visiting bird of prey 'hotspots' in Europe.

Pete Combridge

NEW HOLLAND
EUROPEAN BIRD GUIDE

By Peter H. Barthel and Paschalis Dougalis. New Holland, London, 2008. 192 pages, 1,752 colour illustrations.
ISBN 978-1-84773-110-4.
Paperback, £10.99.

Selling field guides to the British is like preaching to the converted, and it is no surprise that New Holland has introduced yet another to the market. Rather than commission a new work, they have taken a shortcut by translating a guide that was published in German in 2006 (and was itself a complete overhaul, in both text and illustrations, of a book which first appeared as long ago as 1936).

The book is designed to be small and light enough to carry in the field, and to that end only those species occurring regularly in Europe, plus a selection of vagrants and established feral species, are included. The overall standard of artwork is very good (and much of it is excellent), but the artist appears to have been let down on certain of the plates by colour reproduction; for example, the bill of the eastern race *rubrirostris* of Greylag Goose *Anser anser* does not appear pink enough in comparison with that of western nominate *anser*. The accompanying texts are both clear and concise, concentrating only on key points. Just occasionally, I felt that some accounts were slightly ambiguous or in need of clarification, but in those (very few) cases it is likely that this minor niggle is the result of editing subsequent to translation. The maps are tiny (9 mm x 9 mm) and show only breeding distributions. Despite these limitations, they seem mostly accurate and helpful; among my very few gripes is that the breeding presence of Little Crake *Porzana parva* in the Baltic States and Finland is not mapped, while for clarity it would have been better had there been separate maps for Common *Carduelis flammea* and Lesser Redpolls *C. cabaret*. The guide contains a number of recently 'split' species; some of these splits – including the aforementioned redpolls – are familiar and widely accepted, while others (such as the treatment of the Iberian race of Green Woodpecker *Picus viridis* as 'Iberian Woodpecker *P. sharpei*') are as yet less so.

In summary, this is an inexpensive guide with useful texts and reliable illustrations. Not the least of its charms is that it is small and slim enough to fit easily into a jacket pocket, or into airline hand baggage on a flight to continental Europe.

Pete Combridge

THE ORNITHOLOGIST'S GUIDE TO THE ISLANDS OF ORKNEY AND SHETLAND

By Robert Dunn. Facsimile edn. Peregrine Books, Leeds, 2007 (published originally in 1837). 170 pages; contemporary illustrations and maps. No ISBN. Hardback, £30.00.

Robert Dunn was a Hull taxonomist and natural history dealer who made four visits to the Northern Isles between 1831 and 1842, when he settled in Shetland, later moving to Orkney. This is a well-produced facsimile edition of his 1837 book, which describes his visits north between 1831 and 1835 and includes a descriptive list of birds and mammals recorded from the archipelagos. It is a compelling account of his travels through the islands and of his often ruthless quest for specimens. This book has long been virtually unobtainable. It will not suddenly become a best-seller overnight either, but for residents of and regular visitors to the Northern Isles it is a fascinating glimpse of the islands in the early to mid nineteenth century.

Roger Riddington

NATIONAL GEOGRAPHIC BIRDING ESSENTIALS

By Jonathan Alderfer and Jon L. Dunn. National Geographic, Washington DC, 2007. 224 pages; many colour photographs; figures and maps. ISBN 978-1-4262-0135-6. Paperback, £9.99.

An introduction to birding and birding skills. Nine chapters cover most of what a relatively new birder needs to know, including the obvious advice on choosing and using binoculars and scopes, describing birds (including topography) and fieldcraft. There is a discussion of the different forms of variation in birds, migration strategies, a very brief section on taxonomy, and a few examples of identification challenges. This is quite a useful and helpful book, with loads of handy tips and reminders, but viewed entirely from a North American perspective. This could be potentially confusing, as references to 'the west' and 'the east' refer to the coasts of the USA and Canada, and identification issues are covered exclusively from the North American perspective. This book is clearly aimed at the North American market, but might be a good present for a new birder Stateside.

Martin Collinson

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Seabird woes I

Four years after the 'meltdown' headlines of 2004 (*Brit. Birds* 97: 425), the seabird situation in our northernmost archipelago again looks bleak. On Fair Isle, warden Deryk Shaw spoke gloomily of the situation in mid July. By then it was already quite clear that there would be no Arctic Skua *Stercorarius parasiticus*, Kittiwake *Rissa tridactyla* or Arctic Tern *Sterna paradisaea* chicks fledging in 2008. These three key species are perhaps the most 'predictable' victims of a bad season – more worryingly, Fair Isle's Shags *Phalacrocorax aristotelis*, Common Guillemots *Uria aalge* and Razorbills *Alca torda* have also suffered almost complete breeding failure. Many Shags and Guillemots simply elected not to breed; Razorbills have carried on regardless, yet for all three species virtually no chicks will fledge. Needless to say, food availability is the key factor. A record count of Great Skua *Stercorarius skua* occupied territories (294) is scant consolation in another desperately depressing season. In late June, Scottish Natural Heritage (SNH) launched a public consultation on behalf of the Scottish Government on the proposal to extend 31 existing land-based Special Protection Areas (including Fair Isle) up to 4 km out to sea. Although this is a welcome and long-overdue acknowledgment of the importance of Scotland's seabird colonies, it will not be a magic wand.

Elsewhere in Shetland, Martin Heubeck reports a less uniformly grim situation, although Arctic Tern failures are widespread. At Sumburgh Head, just 40 km north of Fair Isle and monitored by SOTEAG (Shetland Oil Terminal Environmental Advisory Group), Guillemot and Razorbill numbers remain low (39% and 27% of counts in 2000, respectively), with extensive non-breeding suspected. Hatching success of Guillemots was low (49% cf. 77% in 2000, the last 'good' year), as the stress of very long incubation shifts caused many birds to put their own survival first, and abandon their egg in situ. However, surprisingly high site attendance of failed breeders helped to reduce chick predation and, despite low feeding rates (of a diet including c. 50% sandeels *Ammodytes* and 45% small gadoids), chick survival was reasonable and breeding success was 0.25 chicks fledged per egg-laying pair – half of that in 2007 and a third of that in a 'good' year. In marked contrast to the situation

on Fair Isle, Shags at Sumburgh are having a reasonable, if somewhat late season. The number of nests is similar to that in 2007 and, by mid July, of the breeding attempts that hatched, over a third hatched broods of three or four chicks. Kittiwakes are clearly struggling, however. Only 60% of pairs beginning nests at Sumburgh went on to lay and by mid July 95% had failed. This pattern is mirrored at five other Kittiwake colonies monitored by SOTEAG, with failure rates by mid July ranging from 69% to 100%, with a few remaining nests yet to hatch. The decline mapped out in Martin's 2002 paper (*Brit. Birds* 95: 118–122) continues. Farther afield, the RSPB revealed early indications of poor seabird breeding success on many of its reserves this summer, particularly in Scotland and Wales (though with Orkney and Shetland apparently worst hit). Mark Avery, the RSPB's Conservation Director, said: 'Regrettably, the poor breeding performance of our internationally important seabird colonies is now an annual theme – [these] declines are a serious cause for concern.'

Back on Fair Isle, news of two Peregrine Falcon *Falco peregrinus* chicks fledging successfully in mid July provides a more positive note on which to finish. Peregrines last attempted to breed on Fair Isle in 1973 and were last successful in doing so in 1969. Despite the ups and downs of its seabirds, the island continues to attract record numbers of human visitors (helped by rarities such as the Citril Finch *Serinus citrinella* in June) – good news for Fair Isle Bird Observatory Trust, which hopes that its planned new £4-million bird observatory will be ready for visitors sometime in 2010.

Seabird Woes II

The RSPB believes that hundreds of seabirds have died so far this summer after becoming entangled in fishing nets set for salmon *Salmo salar* and sea trout *S. trutta* in Filey Bay, North Yorkshire. In response to the high numbers of casualties reported by the RSPB, the Environment Agency – the licensing authority – closed the fishery for two weeks in a voluntary agreement with the fishermen.

Kate Tanner, RSPB marine policy officer, said that observers: 'have witnessed horrific scenes of scores of seabirds floundering and drowning in nets set by the fishermen just offshore. We welcomed the temporary voluntary closure of the fishery, but we now have to work with all those involved to find a long-term solution to this terrible situation.'

The RSPB wants to support a sustainable fishery in Filey Bay, but is concerned that the future of any such fishery would be compromised if the large-scale death of seabirds cannot be prevented. So far the majority of the seabirds caught have been Razorbills, but it is possible that other locally nesting seabirds, such as Guillemots and Puffins *Fratercula arctica*, may be caught up in the nets too. It is almost certain that the seabirds being caught by this fishery have come from colonies in the nearby Flamborough Head protected sites, including the RSPB's Bempton Cliffs reserve.

But one Razorbill has cause to celebrate

What do Nicole Kidman and a Welsh Razorbill have in common? They've both recently celebrated their 41st birthdays! That might not be such a major milestone for Ms Kidman, but Razorbill M23170 has just become the oldest of its kind in Britain. Ringed as a chick on Bardsey, Caernarfonshire, it was reported back on the island for its 41st summer in 2008. The latest BTO Ringing Report, in the journal *Ringing & Migration*, lists 11 other record breakers, including a Eurasian Curlew *Numenius arquata* at 31 years, a Turnstone *Arenaria interpres* at 20 years and a Barn Owl *Tyto alba* at the ripe old age of 13.

Orphan Peregrines adopted

Two Peregrine chicks left orphaned after their parents were killed in illegal traps near Cannock, Staffordshire, have been placed with foster parents in the wild. RSPB officers managed to put the chicks in two separate nests away from the Birmingham area, where traps were found near two nests in May (*Brit. Birds* 101: 388). Peregrines often rear 3–4 chicks; the adoption sites selected had only two chicks in the nest, making them ideal new homes. At both sites, the two resident chicks immediately accepted their new sibling.

Also in May, three Peregrine chicks were stolen from a well-known nest at Beeston Castle, Tarporley, Cheshire & Wirral. Under the present Defra registration scheme, falconers find it difficult to 'launder' such illegally obtained birds because they have to prove that the birds are captive-bred. But Defra plans to remove Peregrine from the captive-bird register, making it difficult to trace wild birds stolen from their nests. In its defence, a Defra spokeswoman said: 'Trade in Peregrine Falcons is restricted under the Convention on International Trade in Endangered Species (CITES) and this protection would continue regardless of status on the bird registration scheme. Anyone wishing to sell a Peregrine would need to demonstrate it was legally acquired to obtain a CITES certificate. Inspections or DNA testing of a bird can take place to investigate captive-breeding claims.'

Golden Eagles under threat

It's the iconic image of wild Scotland but the magnificent Golden Eagle *Aquila chrysaetos* is facing relentless persecution in its UK stronghold. A new report by Scottish Natural Heritage (SNH), 'The Golden Eagle Framework', shows that illegal persecution is thwarting the raptor's recovery in Scotland (and thus its return to northern England).

Currently, there are 440 breeding pairs of Golden Eagle in the UK, all in Scotland. None has nested successfully in England since 1996; there is currently one lone male in the Lake District and, until persecution halts in Scotland, there is little chance of the species re-establishing in England. The report found that the most serious problems were in the central and eastern Highlands, where less than half of all known territories were occupied and existing populations continue to decline. 'The main land use in these regions is grouse moor management. These results are consistent with several other studies showing that eagles have been subjected to illegal persecution in parts of these areas.'

RSPB Conservation Director Mark Avery acknowledged 'a compelling report [which] provides strong evidence that illegal persecution of Golden Eagles has been the major factor in limiting their recovery and spread across what should be prime available habitat in some parts of Scotland.'

There was justifiable public outrage in August 2007 when the female of the only breeding pair of Golden Eagles in the Borders was found poisoned on a grouse moor near Peebles, leaving the male bird to rear their newly fledged chick. The chances of another female dispersing so far southeast seemed remote. But, amazingly, a new female did arrive in the area, and paired with the male bird in 2008. Reportedly, they have had a successful season, producing at least one chick. However, the RSPB believes that the Borders could comfortably support at least ten pairs of Golden Eagles, yet this remains the only breeding pair.

Golden Eagle Framework: www.snh.org.uk/pdfs/publications/commissioned_reports/Report%20No193.pdf

20th Birdfair to support Spoon-billed Sandpiper

...and Sociable Lapwing *Vanellus gregarius*, Azores Bullfinch *Pyrrhula murina*, Tuamotu Kingfisher *Todiramphus gambieri*, Dwarf Olive Ibis *Bostrychia bocagei* and Araripe Manakin *Antilophia bokermanni*, as BirdLife's Preventing Extinctions programme continues its three-year sponsorship by the Rutland Water Birdfair.

BirdLife could receive up to £750,000 from the 2007–2009 Birdfairs for its targeted schedule of conservation action for the world's 190 Critically Endangered species. The 2007 Birdfair donated a record £226,000 to BirdLife and this year's fair, and the 2009 event, will hopefully exceed that. So come and do your bit to Save Our Spoon-billed Sandpipers *Eurynorhynchus pygmeus*, whose global population may now number fewer than 250 birds.

The event at Rutland Water on 15th–17th August will be the usual heady mix of marquees full to bursting with birding trade stands and conservation charities, talks, workshops, celebrities – and panel games! The *BB* stand is in Marquee 3, nos 24–25. Do come and say hello! And Simon King will again be presenting the awards for Bird Photograph of the Year (pp. 408–417), in the Events Marquee on Friday 15th at 2.45 pm.

Next year's dates for your diary are 21st–23rd August 2009.
www.birdfair.org.uk

Richard Chandler

227. Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, Saemangeum, South Korea, May 2008.

Cattle Egret – the new Little Egret?

In 1989, Little Egret *Egretta garzetta* was still a BBRC rarity, albeit with only one more year to go before it was 'dropped' from the BBRC list. At the end of the entry in the 1989 BBRC report, which described no fewer than 122 records and ran to more than three pages, the question was posed 'will this boom year be a "one-off" or will global warming inspire flocks of egrets to come here and settle?' (*Brit. Birds* 83: 446). The recently published RBBP report for 2005 listed 391–433 breeding pairs in Britain – so it looks as though they are here to stay. Now, following an unprecedented influx of Cattle Egrets *Bubulcus ibis*, comes news of this species of egret nesting successfully in at least one and possibly two Somerset heronries, with a chick hatching not long before we went to press this month. Could this be the start of another colonisation? Watch this space...

Bitterns go west

Not to be outdone, Eurasian Bitterns *Botaurus stellaris* have also nested in Somerset, for the first time in 40 years, with two nests discovered by staff at Ham Wall RSPB reserve. In 1997, the UK Bittern population was down to just 11 males, principally in East Anglia, fuelling fears that Bitterns might become extinct in the UK. In 2007, a minimum of 51 males were recorded at 33 sites in the UK, although birds nested successfully at only 12. That dramatic turnaround reflects an intensive rescue package that improved the quality of reedbed habitat at core sites. However, being concentrated in freshwater wetlands along East Anglia's low-lying coast, the bulk of the UK population is still at risk from rising sea levels.

Request

Colour-ringed wagtails

Following an earlier request in *BB* (*Brit. Birds* 99: 446), it is planned to individually colour-ring a further 500 Pied/White Wagtails *Motacilla alba* at Slapton Ley, Devon, in autumn 2008. After five years' intensive study and some 3,000 birds ringed, it is now clear that some 50–65% of birds caught at Slapton during September are Icelandic White Wagtails *M. a. alba* en route to their winter quarters in Senegal/Gambia. Over 60% of recoveries to date result from colour-ringed resights and it is hoped that a higher percentage will be achieved in 2008/09. Wagtail colour-ringing will also continue at Abbotsbury (Dorset) and East Kilbride (Clyde).

There is growing evidence that White Wagtails (which comprise c. 15–20% of catches between November and February) regularly over-winter in southwest England and the Channel Isles, and a bird ringed at East Kilbride was resighted in Somerset early in 2008. It is thought that these birds may move south with Scottish and upland Pied Wagtails *M. a. yarrelli*, which regularly peak at 1,000 or more at Slapton in the second week of October (2,000 in 2005). It appears that this is a south-western phenomenon which does not occur east of Poole Harbour (Dorset). What are thought to be Pied × White hybrids are also regularly being caught during this period.

The colour coding will consist of a single 'year code' (colour over metal) on one leg, which may be the left (Abbotsbury) or the right (Slapton & East Kilbride), and three colour rings – striped (Abbotsbury & East Kilbride) or plain (Slapton) – on the other leg. If you see colour-ringed *alba* wagtails anywhere between Iceland and The Gambia, please send details to either the BTO (colourringing@bto.org) or Dennis Elphick, 2 Somerye, Chillington, Kingsbridge, Devon TQ7 2JU; e-mail dennis.elphick@tiscali.co.uk; tel. (01548) 580323.

600th British bird

The sweepstake to predict the 600th species admitted to the British List continues. Following the BOURC's elevation of Hooded Merganser *Lophodytes cucullatus* (a female or immature on North Uist, Outer Hebrides, in autumn 2000) and Great Blue Heron *Ardea herodias* (a juvenile on St Mary's, Isles of Scilly, in December 2007) to Category A, the official British List now stands at 580. The Citril Finch *Serinus citrinella* on Fair Isle in June, and other potential 'firsts' in 2007 still under consideration, could push the list nearer to 590.

So what will be number 600? Let N&c know your predictions by e-mail at the usual address.

Where to Watch Birds in Britain: *an appeal for help*

A fully revised version of the definitive guide to the best birding sites in Britain, *Where to Watch Birds in Britain*, by Simon Harrap and Nigel Redman, is scheduled for 2009. New sites will be added (and others deleted) to reflect the ever-changing environment for birders in Britain. As before, each of the entries will be refereed for accuracy, but the authors would welcome any feedback on the current edition. If you have any comments on the information for sites you know well, or consider that new sites should be added, please contact Nigel Redman (e-mail nredman@acblack.com). All contributions will be fully acknowledged, and major contributors will earn a free copy of the new edition (at the authors' discretion!).

Correction The full version of the paper 'Recording areas of Great Britain' (*Brit. Birds* 101: 364–375) is now available online at www.britishbirds.co.uk/recordingareas.pdf

Wicken Fen ringers notch up 40 years

It's the National Trust's oldest nature reserve, dating back to 1899, and now it's marked another milestone: 40 years of bird ringing. And the ringers at Wicken Fen, in Cambridgeshire, have notched up a further statistic too: they've just ringed their 100th species – a Grey Heron *Ardea cinerea*.

Of the 82,000 birds ringed at Wicken Fen since 1968, 429 have been retrapped elsewhere including 64 foreign recoveries, the most distant being a Barn Swallow *Hirundo rustica* in South Africa, 9,664 km from Wicken Fen. Other distant recoveries include a Common Starling *Sturnus vulgaris* in Russia, a Marsh Harrier *Circus aeruginosus* in Mauretania and a Turtle Dove *Streptopelia turtur* in Mali. Rarities ringed include a Great Reed Warbler *Acrocephalus arundinaceus* in 1971 and a Barred Warbler *Sylvia nisoria* in 1979. The 40-year study has confirmed the dramatic decline of a number of farmland species, particularly Tree Sparrow *Passer montanus* (170 were ringed in 1973 but only one in 2007), although others (including Eurasian Sparrowhawk *Accipiter nisus*) have increased.

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mainly new arrivals between early June and early July 2008.

Headlines Terek Sandpiper in Cleveland, some remarkable swift activity in Yorkshire, River Warbler in Orkney, Lesser Grey Shrike in Norfolk and a small influx of Rose-coloured Starlings, mainly in Scotland. An unseasonal Arctic Redpoll in Shetland and, perhaps connected, a handful of Waxwings *Bombycilla garrulus* and an influx of Common Crossbills *Loxia curvirostra*, with widespread flocks of up to 30 from early June. Disappointing news regarding the breeding Black-winged Stilts in Cheshire & Wirral and, after impressive numbers of Cattle Egrets and Red-footed Falcons recently, reports of these two species finally tailed off.

Lesser Scaup *Aythya affinis* Oxford Island (Co. Armagh), 22nd June. White-billed Diver *Gavia adamsii* South Ronaldsay (Orkney), 2nd–9th July. Wilson's Storm-petrel *Oceanites oceanicus* From pelagic trips off Scilly, two on 30th June.

Night Heron *Nycticorax nycticorax* Minsmere (Suffolk), 11th–12th June; Earith, 15th–16th and 23rd June, presumed same Chain Corner (both Cambridgeshire), 18th June. Cattle Egret *Bubulcus ibis* Near Bridgwater (Somerset), three, 11th June; Earith/Sutton Gault (Cambridgeshire), two, 15th–16th June; Cley (Norfolk), 25th June; Leighton Moss (Lancashire & N Merseyside), 28th June; Goldcliffe Pools NR (Gwent), 6th July. Great White Egret *Ardea alba* Denge Marshes (Kent), 10th June; Cotswold Water Park (Gloucestershire), 10th June; Swords Estuary (Co. Dublin), 11th June; Hatfield Moors (South Yorkshire), 11th and 20th June; Grove Ferry (Kent), 12th June; Rye Harbour (East Sussex), 13th June; Holme (Norfolk), 14th June; Harewood Moor (Derbyshire), 14th June; Lurgangreen (Co. Louth), 29th June; Brantham (Suffolk), 4th July. Black Stork *Ciconia nigra* Nether Winchendon, 9th June, presumed same Dancersend (both Buckinghamshire), 23rd June; Stow Longa (Cambridgeshire), 2nd July.

Black Kite *Milvus migrans* Wykeham Forest, 10th and 29th June, Laskill, 21st June, near Knaresborough (all North Yorkshire), 25th June and Grimston (East Yorkshire), 25th June, all presumed same; Exminster Marshes (Devon), 12th June; Heversham Moss (Cumbria), 15th June; Langham, 18th June, Dersingham, 1st July and Fakenham (all Norfolk), 8th July; Chatteris (Cambridgeshire), 24th June; Overton (Hampshire), 26th June; Old Basing (Hampshire), 27th June. Red-footed Falcon *Falco vespertinus* New arrivals during the period at Upton Broad (Norfolk), 9th June; Little Witcombe (Gloucestershire), 19th June; Derwent Reservoir (Derbyshire), 26th June; Panfield (Essex), 27th June; Stronsay (Orkney), 1st July; Sculthorpe (Norfolk), 4th July.

Black-winged Stilt *Himantopus himantopus* At Neumann's Flash, long-staying breeding pair

and one young, to 19th June, when young was predated; adults to 21st, when relocated to Ashton's Flash (both Cheshire & Wirral), 27th–29th June; possibly same Beaulieu (Hampshire), two, 30th June. American Golden Plover *Pluvialis dominica* Alaw Estuary (Anglesey), 25th–27th June. White-rumped Sandpiper *Calidris fuscicollis* Grove Ferry, 19th–20th June. Terek Sandpiper *Xenus cinereus* Saltholme Pools (Cleveland), 5th–10th July. Lesser Yellowlegs *Tringa flavipes* Minsmere, 15th and 27th–28th June; Cley, 24th June to 7th July.

Laughing Gull *Larus atricilla*, Mullet Peninsula (Co. Mayo), 22nd June. Gull-billed Tern *Gelochelidon nilotica* Morfa Madryn (Caernarfonshire), 27th June.

Alpine Swift *Apus melba* Oakham (Leicestershire & Rutland), 17th June; Brandon Point (Co. Kerry), 28th June. Common Swift *Apus apus* A southerly passage of 11,500 at Spurn (East Yorkshire) on 25th June. Pacific Swift *Apus pacificus* Kilnsea (East Yorkshire), 22nd June, presumed same Spurn, 26th June. Little Swift *Apus affinis* Spurn, 26th June, and presumed same Old Moor RSPB (South Yorkshire), 2nd July. European Bee-eater *Merops apiaster* In Cornwall, singles at Truro and Penzance on 13th June, Cape Cornwall/Cot Valley on 15th June, and probably one of same Polgigga on 15th, Land's End on 16th, and St Just on 17th June. In Warwickshire, at Long Lawford, 10th June, with perhaps same Brandon Marsh, 22nd June and Radford, 25th June. Elsewhere, Minsmere, 14th June; Winterton Dunes (Norfolk), 16th June; Belton Common (Norfolk), 22nd June; Ramsey (Pembrokeshire), 24th June; Boyton Marshes, 8th July and Landguard NR (both Suffolk), 9th July.

River Warbler *Locustella fluviatilis* Evie (Orkney), 9th–18th June. Subalpine Warbler *Sylvia cantillans* Portland (Dorset), 26th June. Sardinian Warbler *Sylvia melanocephala* Flamborough Head (East Yorkshire), 23rd June.

Lesser Grey Shrike *Lanius minor* Hickling (Norfolk), 19th–24th June. Woodchat Shrike *Lanius senator* Nr Minehead (Somerset), 29th–30th June; Saltfleet Haven (Lincolnshire), 30th June.

Rose-coloured Starling *Sturnus roseus* North Uist (Outer Hebrides), 9th June; Stoke Fleming (Devon), 10th June; Bardsey (Caernarfonshire), 10th June; Inskip, 11th–12th June, possibly same Lytham St Anne's, 23rd–29th June, and another at Thornton (all Lancashire & N Merseyside), 29th June; King's Lynn (Norfolk), 14th–17th June; Holyhead, 16th June, possibly same Rhosneigr (both Anglesey), 20th June. In Orkney, at Evie on 17th–18th June and 4th July, presumed same Stromness, 24th–26th June, nr Finstown, 26th, Deerness, 27th and Kirkwall, 28th June to 2nd July; others Stronsay, 1st July and South Ronaldsay, 25th June to 9th July. Elsewhere from mid June, Greenock (Clyde), 18th June; Newburgh (North-east Scotland), 19th June to 2nd July; Canna (Highland), 27th June to 2nd July; Mablethorpe (Lincolnshire), 28th–29th June; Harris (Outer Hebrides), 28th June; Earsham (Norfolk), 29th June; Lossiemouth (Moray & Nairn), c. 24th June, to 3rd July; Portsoy (North-east Scotland), 4th–6th July; St Ives (Cornwall), 9th July; Lewis (Outer Hebrides), 9th July.

Gary Jenkins

228. Rose-coloured Starling *Sturnus roseus*, Inskip, Lancashire & N Merseyside, June 2008.

Citril Finch *Serinus citrinella* Fair Isle, long-stayer to 11th June. Arctic Redpoll *Carduelis hornemanni* Unst (Shetland), 12th–17th June. Black-headed Bunting *Emberiza melanocephala* Fetlar (Shetland), long-stayer to 29th June.

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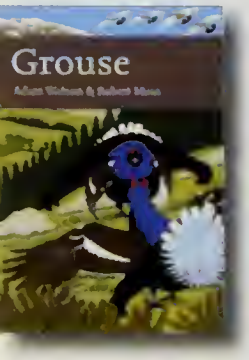

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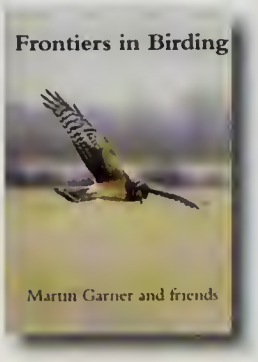

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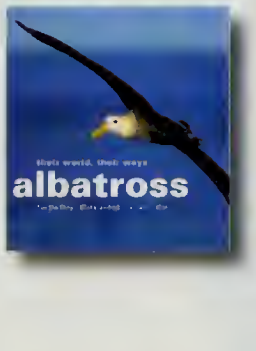

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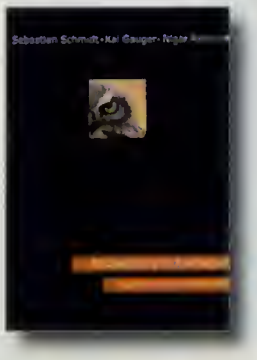

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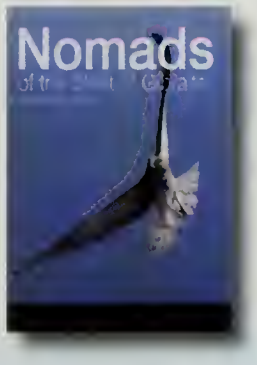

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Transatlantic vagrancy of landbirds

Eagle Owls in Britain

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EDITORIAL

Spindrift, Eastshore,
Virkie, Shetland ZE3 9JS
Tel: 01950 460080
Papers, notes, letters, illustrations, etc.
Roger Riddington
E-mail: editor@britishbirds.co.uk

'News & comment' information
Adrian Pitches, 22 Dene Road,
Tynemouth, Tyne & Wear NE30 2JW
E-mail: adrianpitches@blueyonder.co.uk

Rarity descriptions
Nigel Hudson, Post Office Flat,
St Mary's, Scilly TR21 0LL
E-mail: secretary@bbrc.org.uk

CIRCULATION & PRODUCTION

4 Harlequin Gardens,
St Leonards on Sea,
East Sussex TN37 7PF
Tel & fax: 01424 755155

Design & Production
Mark Corliss
E-mail: m.corliss@netmatters.co.uk

Subscriptions & Administration
Hazel Jenner
E-mail: subscriptions@britishbirds.co.uk

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Regular features

Further thoughts on the transatlantic vagrancy of landbirds to Britain & Ireland

Norman Elkins

Blackburnian Warbler *Dendroica fusca* — *Richard Johnson*

ABSTRACT This paper gives an overview of transatlantic landbird vagrancy to Britain & Ireland during 1997–2006, and also examines the meteorological context of such vagrants more widely along the NE Atlantic seaboard in this period. The number of Nearctic landbirds recorded in Britain & Ireland continues to fluctuate, being related to atmospheric variability across the North Atlantic and population trends in North America. It seems likely that some vagrants in northern Britain in autumn take a higher-latitude route than originally believed, as their arrival patterns often match those of vagrants to Iceland. Tropical storms play an indirect role in initiating vagrancy in autumn, but spring vagrants are unaffected by these and almost certainly include birds undertaking northward migration on the 'wrong' side of the Atlantic. The possibility of spring vagrants, particularly sparrows and buntings (Emberizidae), overshooting from North America is belied by the general lack of suitable wind conditions, and ship-assistance may play a significant role.

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The appearance of North American landbirds in western Europe continues to excite birders. Many of these vagrants are carried across the North Atlantic by the powerful, low-level airflows in mobile weather systems (Elkins 1979, 1988, 1999), although others may be ship-assisted. Two categories of Nearctic landbirds are involved in transatlantic crossings, particularly in autumn. The first includes migrants from Canada and NE USA that overfly the western Atlantic, using strong tailwinds to assist passage to the West Indies and beyond. The second group comprises southern breeders which have a tendency to 'reverse' migrate NE in warm autumn airflows (the term 'reverse' migration used here encompasses all movements in a direction opposite to that of normal migration and may include involuntary movements in strong winds). Some species may occur in both groups and both include individuals that become entrained in developing weather systems that deflect them across the North Atlantic. I have widened the scope of this analysis by including Icelandic records, in view of the increase in records of Nearctic vagrants there during recent years. There is emerging evidence that some vagrants to northern Britain may arrive via the Icelandic region and possibly even vice versa. The increase in Icelandic records is certainly due to a growth in observer awareness, as is the increase in records from newly 'discovered' migrant hotspots in western Scotland and the islands of Macaronesia.

Methods

Ornithological data

All Nearctic vagrant landbird records for Britain & Ireland were sourced from the reports on rare birds published annually in *BB* (Rogers *et al.* 1998–2005, Fraser *et al.* 2007a,b) and *Irish Birds*, and Icelandic records from annual reports in the Icelandic journal *Bliki*. Unpublished accepted records from Ireland and Iceland were provided by rarity authorities in the two countries. Unpublished and unverified records published elsewhere are not used although a few are quoted, including those of ship-assisted individuals. Only Category A species (those recorded in an apparently natural state and therefore excluding proven ship-assisted birds) were used in the numerical analyses.

Meteorological data

Twelve-hourly synoptic weather charts (six-hourly until 2000) of the North Atlantic and North America were scrutinised. Charts for the former were derived from UK Meteorological

Nigel Blake

229. Of the eight Nearctic passerines that first appeared during winter (December to February) in the decade under discussion, four were American Robins *Turdus migratorius*, including this first-winter female at Godrevy, Cornwall, in December 2003.

Office unpublished data and Wetterzentrale (2007), while those for the latter were obtained from the National Oceanic and Atmospheric Administration (NOAA 2007a) and Unisys (2007). Calculation of trajectories was attempted for many records using the methodology described in Elkins (1979) and Draxler & Rolph (2003). For the North Atlantic, trajectories were estimated using air speeds added to wind speeds. NOAA provided air-mass trajectories only but gave more precise tracks based on archived meteorological data, which allowed an individual vagrant's tracks to be assessed more realistically. Monthly mean sea-level pressure

Table 1. Accepted records of Nearctic landbirds in Britain & Ireland in spring (March to June), 1997–2006.

	97	98	99	00	01	02	03	04	05	06	Total
Belted Kingfisher *Megaceryle alcyon*									1		1
Tree Swallow *Tachycineta bicolor*						1					1
Hermit Thrush *Catharus guttatus*		1									1
Veery *Catharus fuscescens*	1										1
American Robin *Turdus migratorius*										1	1
Yellow-rumped Warbler *Dendroica coronata*			1								1
Blackpoll Warbler *Dendroica striata*				1							1
Common Yellowthroat *Geothlypis trichas*	1										1
White-crowned Sparrow *Zonotrichia leucophrys*							1				1
White-throated Sparrow *Zonotrichia albicollis*		1		1	1	1	3	1		1	9
Dark-eyed Junco *Junco hyemalis*				2			1	1			4
Rose-breasted Grosbeak *Pheucticus ludovicianus*										1	1
Annual totals	2	2	1	4	1	2	5	2	1	3	23

Table 2. Accepted records of Nearctic landbirds in Britain & Ireland in autumn (August to November), 1997–2006.

	97	98	99	00	01	02	03	04	05	06	Total
Mourning Dove *Zenaida macroura*			1								1
Yellow-billed Cuckoo *Coccyzus americanus*			2	1				1			4
Common Nighthawk *Chordeiles minor*		2	2								4
Chimney Swift *Chaetura pelagica*			8		1				18		27
Purple Martin *Progne subis*								1			1
Cliff Swallow *Petrochelidon pyrrhonota*				2	1						3
Grey Catbird *Dumetella carolinensis*		1			1						2
Hermit Thrush *Catharus guttatus*		1									1
Swainson's Thrush *Catharus ustulatus*			1	2			3	1			7
Grey-cheeked Thrush *Catharus minimus*		1			1	1	2	1	3		9
Veery *Catharus fuscescens*			1			1			1		3
American Robin *Turdus migratorius*		1					1			1	3
Red-eyed Vireo *Vireo olivaceus*		2		16	3		3	3	5	4	36
Blue-winged Warbler *Vermivora pinus*				1							1
Northern Parula *Parula americana*							1				1
Yellow Warbler *Dendroica petechia*								1	1		2
Yellow-rumped Warbler *Dendroica coronata*			1		2		1		1		5
Blackpoll Warbler *Dendroica striata*	1			1			1		3	1	7
Ovenbird *Seiurus aurocapilla*								1			1
Canada Warbler *Wilsonia canadensis*										1	1
Common Yellowthroat *Geothlypis trichas*	1						1	1		1	4
Savannah Sparrow *Passerculus sandwichensis*							1				1
White-throated Sparrow *Zonotrichia albicollis*						1					1
Rose-breasted Grosbeak *Pheucticus ludovicianus*		1		1	2				1		5
Bobolink *Dolichonyx oryzivorus*		1	1	1	2	1	2		1		9
Baltimore Oriole *Icterus galbula*			1		1					1	3
Annual totals	2	10	18	25	14	4	16	10	34	9	142

patterns were obtained from the 'Weather Log', published in the Royal Meteorological Society's journal *Weather*.

Although tropical storms (including hurricanes – the most powerful stage of these) are confined to the western North Atlantic and therefore unable to carry birds on a transatlantic journey, their extra-tropical stages can do so if they affect normal migration routes in autumn. Tropical storm tracks were also therefore scrutinised, obtained from NOAA (2007b). The analysis below refers only to those storms crossing migrant routes over the western Atlantic in September and October. Meteorological terminology has been kept to a minimum but clarification of any unfamiliar terms can be found in Elkins (2004).

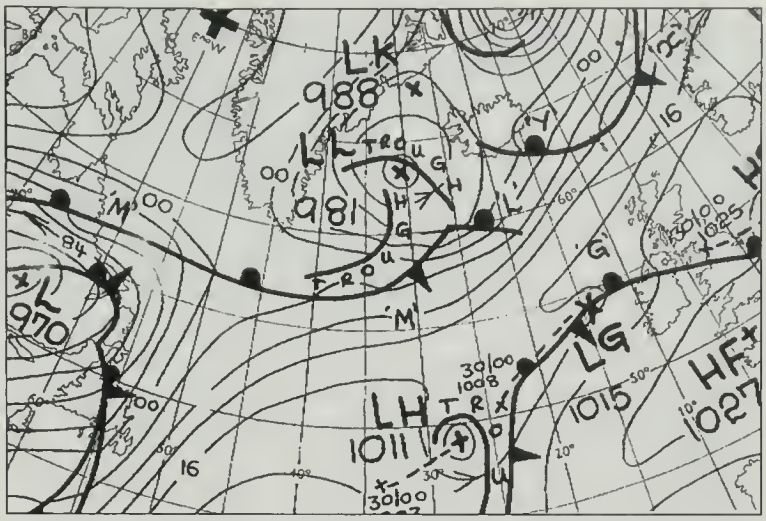

Fig. 1. Synoptic chart for 12.00 hrs on 30th September 1997, showing SW airstreams between eastern North America and Iceland.

Results

Tables 1 and 2 show the annual totals of each species for both spring and autumn.

There were also eight winter records of birds first observed between December and February, of which four were American Robins *Turdus migratorius*. The more significant events in each year are described below.

1997 No vagrants were reported in Britain & Ireland in September and only two in October. No tropical storms crossed migration routes and the atmospheric circulation was anomalous in both months. Persistent high pressure in the NE Atlantic steered developing depressions farther north than normal and a succession of such depressions ran NE towards Iceland in late September and early October, when eight Nearctic songbirds arrived in Iceland. Of these, a Common Yellowthroat *Geothlypis trichas* on 26th September followed a strengthening warm sector that departed E Canada on 24th. Another surge of strong, warm SW winds originated in Canada on 28th and the remaining seven birds (including five Red-eyed Vireos *Vireo olivaceus*) were discovered between 30th September and 7th October (fig. 1). This period of higher-latitude winds may have also been responsible for a Swainson's Thrush *Catharus ustulatus* in Norway on 30th September.

1998 Several sparrows, including two Dark-eyed Juncos *Junco hyemalis* and three White-throated Sparrows *Zonotrichia albicollis*, were found aboard a ship off Newfoundland in a fresh southwesterly on 1st May. Two White-throated Sparrows remained on board as the vessel passed through Sea Area Hebrides on 10th May, and one was still alive at Kiel, Germany, on 14th May (Cook 1998). The only spring records in Britain were a Hermit Thrush *C. guttatus* on 30th April and a White-throated Sparrow on 8th June, both in Shetland. No suitable transatlantic weather patterns were evident, and both birds may have been spring migrants moving north in the Palearctic or even ship-assisted. Two Belted Kingfishers *Mega-*

Ren Hathway

230. Male Common Nighthawk *Chordeiles minor*, St Agnes, Isles of Scilly, September 1998.

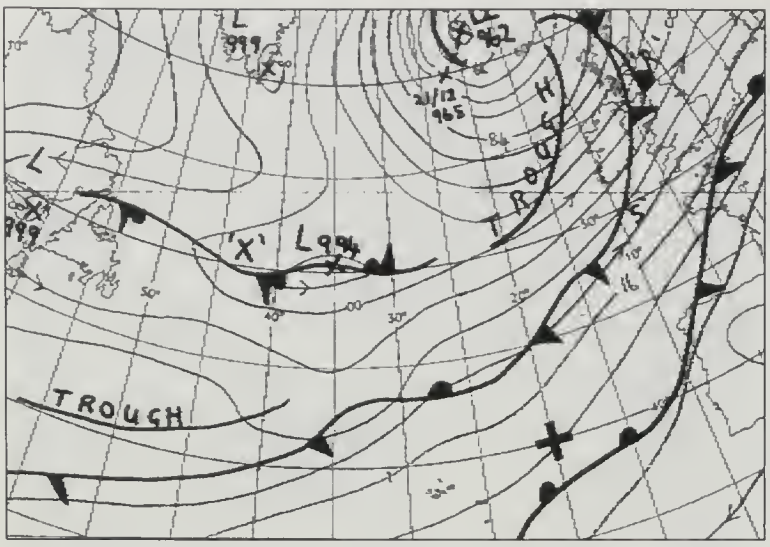

Fig. 2. Synoptic chart for 00.00 hrs on 22nd October 1998, showing a waving front at lower latitudes with a strong WSW flow to the south.

ceryle alcyon in Iceland, on 17th May and 18th June, could similarly have been moving north (as did the British bird in 2005; see below).

The mean low-pressure area in September was well south of its normal position near Iceland, with weaker westerlies than usual on its southern flank. A Common Nighthawk *Chordeiles minor* on Scilly on 9th coincided with the first of several Green Darner *Anax junius* dragonflies in Scilly and Cornwall, a North American species not recorded previously in the Western Palearctic. Davey (1999) suggested that these insects arrived in the strong transatlantic wind flow associated with the remnants of hurricane 'Earl' in its extra-tropical stage. Latterly, this system was absorbed by ex-hurricane 'Danielle' off western Scotland. It seems probable that the nighthawk also arrived in this flow, followed by a second nighthawk on Scilly on 12th and one in France on 17th. Atmospheric pressure in October was below normal off North America and also in northern Europe, creating a weaker, more southwesterly airflow than usual over the mid Atlantic. A frontal wave formed off eastern USA on 20th and ran quickly across the North Atlantic without developing, bringing SW gales to the Southwest Approaches on 22nd (fig. 2). The first arrival in Britain & Ireland (apart from a ship-assisted Grey Catbird *Dumetella carolinensis* in Southampton on 21st) was a Grey-cheeked Thrush *Catharus minimus* in Cornwall on 23rd, one of three thrushes in four days.

1999 In September, with pressure higher than normal over the western North Atlantic, the oceanic airflow was more northwesterly than average and, following a Baltimore Oriole *Icterus galbula* in Scilly on 27th September after a run of transatlantic westerlies, there were no further records until 10th October. A significant influx of Monarch *Danaus plexippus* butterflies from mid September (Tunmore 2000; see Discussion) did not coincide with the arrival of any transatlantic landbirds. However, with the October pressure pattern near normal, a secondary influx of butterflies coincided with a small influx of birds into SW England and Ireland: two Yellow-billed Cuckoos *Coccyzus americanus* on 10th and 12th, a Swainson's Thrush on 11th and single Veery *Catharus fuscescens* and Bobolink *Dolichonyx oryzivorus* on 13th. These arrivals occurred in a near-classic weather situation, with a strong, warm WSW airstream across the Atlantic during 5th–10th October. Anticyclonic weather over eastern Canada and USA on 7th–8th gave a NW airstream suitable for migration (see Elkins 1979), conveying birds out to sea and into warm southwesterlies with subsequent downwind flight. The next wave of Nearctic arrivals began on 22nd October, with a remarkable influx of Chimney Swifts *Chaetura pelagica* in SW England and Ireland: seven during 22nd–25th (see fig. 3), and another on 30th (and one in Sweden on 6th November).

Tony Collinson

231. Chimney Swift *Chaetura pelagica*, St Mary's, Isles of Scilly, October 1999.

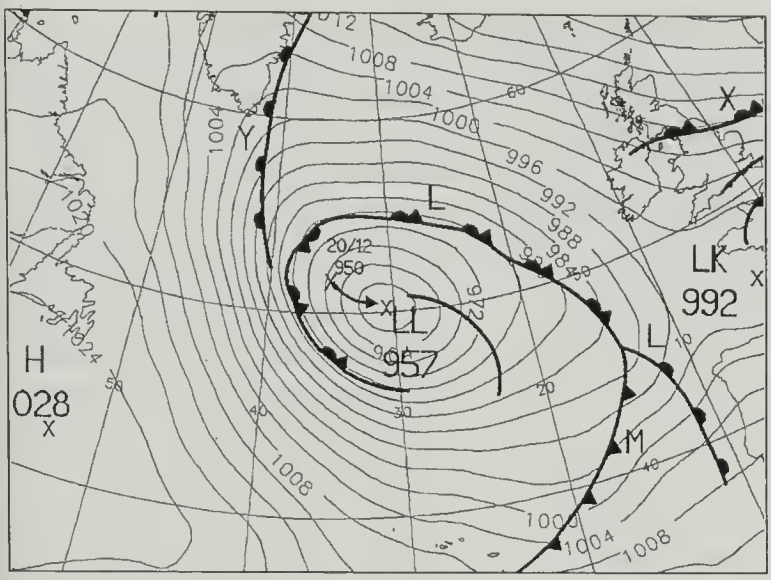

Fig. 3. Synoptic chart for 00.00 hrs on 21st October 1999. At this time, the Chimney Swifts *Chaetura pelagica* would have been about 800 km south of the depression centre.

The weather situation appears to have given rise to an uncharacteristic transatlantic crossing. Hurricane 'Irene', moving NE off the eastern seaboard of the USA, became extra-tropical SE of Newfoundland on 19th and moved out into the Atlantic, where it re-intensified rapidly into a deep depression. Migrating Chimney Swifts may have been following the NW winds to the rear of the depression, but these proved to be still of hurricane force, with reported sustained surface winds of up to 100 kph round the centre. As this storm moved steadily towards Britain (fig. 3), the birds would have been swept rapidly SE then east until they arrived on southwesterlies on 22nd. At all times, the birds would have remained in the cold air mass, which is unusual for transatlantic vagrants but supported by air-mass trajectories. A fast-moving frontal wave crossed the Atlantic between 21st and 24th, possibly bringing the later birds.

2000 A Chimney Swift on 6th August could have been a bird still in the Palearctic from the 1999 fall (as might one in Norway on 25th May). The North Atlantic atmosphere in September was close to normal, except that winds near Britain were more westerly than southwesterly. Three tropical storms were relevant during September, although only one is considered to have affected oversea migrants. A fall in SW Britain & Ireland between 26th September and 1st October included at least six Red-eyed Vireos and two Cliff Swallows *Petrochelidon pyrrhonota*, with another Cliff Swallow in France. Trajectories suggest that post-frontal northwesterlies over the western Atlantic stimulated initial movements on 22nd and 25th. As there is also a tenuous link with the warm air thrown up by tropical storm 'Helene' lying off Cape Hatteras on 24th, the initial movements may have been of birds reorienting after 'reverse' migration.

In October, the strength of the westerly flow across the North Atlantic in mid latitudes was notable, squeezed between an intense Azores anticyclone and a deep Icelandic low-pressure area, and transatlantic vagrancy was higher than average. An increase in tropical storm activity also affected the normal passage routes of Nearctic autumn migrants, perhaps leading to the surges of warm air that stimulated Red-eyed Vireos to 'reverse' migrate. One had even made

R. Thompson

232. Yellow-billed Cuckoo *Coccyzus americanus*, St Levan, Cornwall, October 2000.

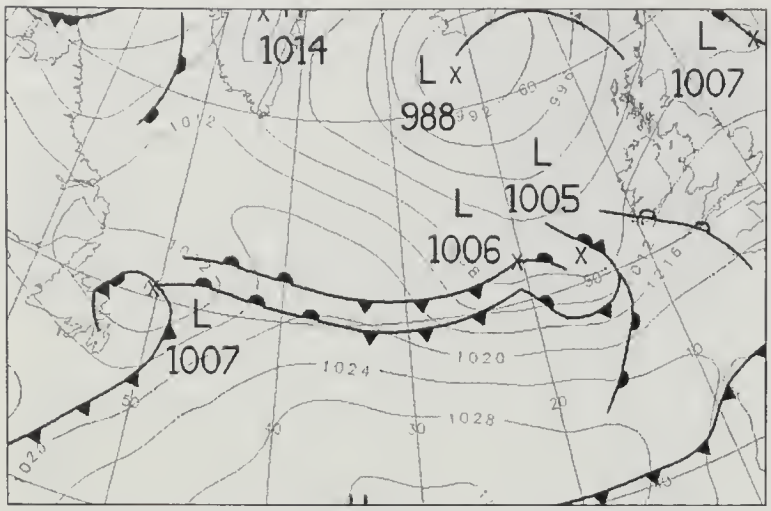

Fig. 4. Synoptic chart for 00.00 hrs on 9th October 2000. Complex frontal waves moving rapidly eastwards.

it to Poland by 17th and 16 were recorded in Britain & Ireland in the autumn. A small fall on 4th–6th October produced a Blue-winged Warbler *Vermivora pinus* in Co. Cork on 4th, four Red-eyed Vireos in the southwest on 5th and a Blackpoll Warbler *Dendroica striata* in Co. Galway on 6th. Backtracking suggests a northern origin for these birds – eastern Canada, where a warm WSW wind flow associated with a developing depression moved east, to arrive in Britain & Ireland on 4th. The vireos and the Blue-winged Warbler may have already been displaced NE in an earlier movement – such October arrivals of Red-eyed Vireos were noted in Newfoundland in 1989 (Mactavish 1990; Elkins 1999). After a brief lull, another strong westerly became established on 8th, with frontal waves running rapidly east into the Southwest Approaches on 9th–10th (fig. 4), associated with the remains of tropical storm 'Leslie'. Curiously, the next fall occurred on 12th, after winds had veered NW. The reason for this delay is not clear, but the birds included a Yellow-billed Cuckoo in Cornwall and single Swainson's Thrushes in Scilly, Shetland and NW France, where there was also a Scarlet Tanager *Piranga olivacea*. However, westerlies soon returned, bringing four more Red-eyed Vireos during 15th–18th and another on 21st.

2001 Most depressions in October followed a southern track, with westerlies stronger than normal to the SW of Britain. After a blank September, eight records during 2nd–9th October included Yellow-rumped Warbler *Dendroica coronata* on Cape Clear on 2nd, another in Co. Kerry on 4th, Grey Catbird (see Croft 2004) and Red-eyed Vireo on Anglesey on 4th and Rose-breasted Grosbeak *Pheucticus ludovicianus* in Devon on 6th. While the first bird almost certainly originated in northwesterlies across eastern Canada on 30th September, the next three, sharing the same range, had probably taken a more southern track in the warm sector of a wave originating off eastern USA on 30th and 1st October. This ran rapidly ENE to arrive in Britain & Ireland on 4th. Another wave moving from eastern Canada on 5th arrived on 7th, with Red-eyed Vireo in Cornwall and Baltimore Oriole in Co. Cork; while a Bobolink in Devon on 9th possibly arrived in the next wave. A fast-moving system in northern latitudes on 12th–13th may have brought an American Robin to Iceland on 13th and a Grey-cheeked Thrush to Orkney on 14th (fig. 5).

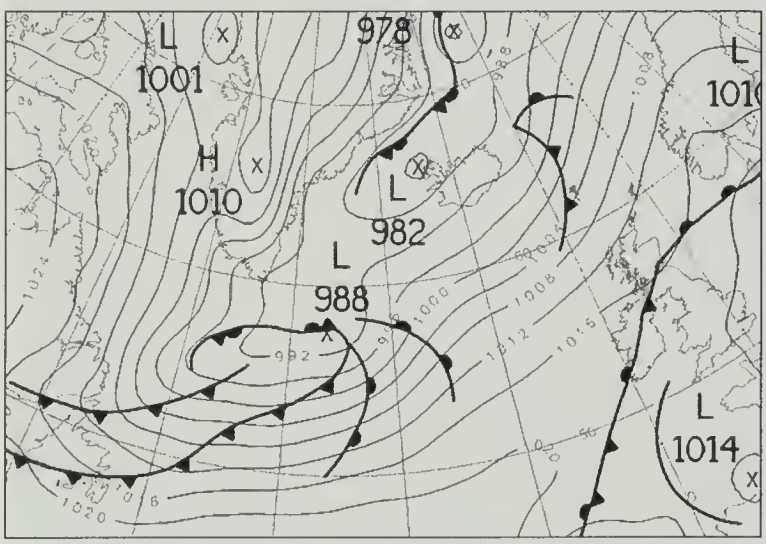

Fig. 5. Synoptic chart for 00.00 hrs on 13th October 2001. Strong SW winds over the North Atlantic associated with fast-moving frontal systems.

Single Cliff Swallow on 26th and Chimney Swift on 28th, both on Scilly, probably resulted from a fast-moving system arriving on 24th–25th; this may also have carried the long-staying Snowy Egret *Egretta thula*, first recorded in Argyll at the end of the month.

Perhaps the most intriguing event of autumn 2001 was the eruption of Snowy Owls *Bubo scandiacus* in Canada early in October, some of which reached Europe aboard ships. Although precise details of the

routes and timing of the various vessels is lacking, it seems that a number of birds boarded ships in Newfoundland and Greenland waters during violent storms, mainly between 11th and 13th (D. Verbelen pers. comm.). The second week of October was characterised by a high frequency of WNW storms over the Labrador Sea and surrounding regions and clearly coincided with a major eruption of owls. A soiled individual was found in Suffolk on 24th and several others landed in the Low Countries.

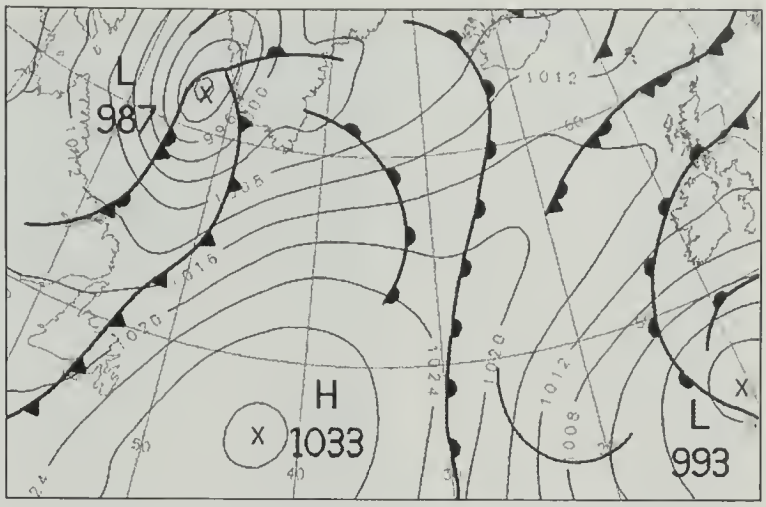

Fig. 6. Synoptic chart for 00.00 hrs on 1st October 2003. The warm sector SW of Iceland was one of a succession to bring vagrants across at high latitudes.

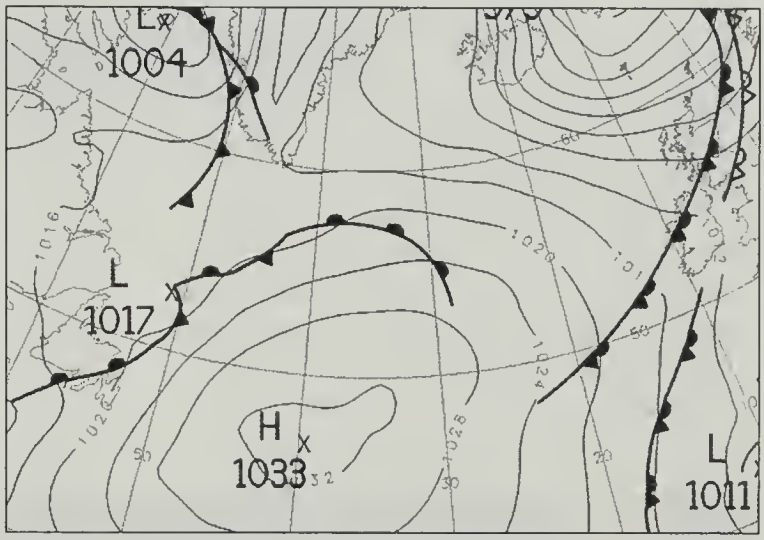

Fig. 7. Synoptic chart for 00.00 hrs on 3rd October 2003. One of several early October occluded fronts crossing Scotland bringing vagrants via a northern route, with another warm sector moving NE in the western Atlantic.

2002 May records included a White-throated Sparrow in Sea Area Dogger on 20th, a Tree Swallow *Tachycineta bicolor* in Shetland on 29th and a White-crowned Sparrow *Z. leucophrys* in Iceland on 28th. The atmosphere was abnormally vigorous in late May, with a succession of weather systems crossing the North Atlantic; had it been autumn, ideal transatlantic conditions would have been in place. The Icelandic bird could potentially have arrived via Britain as E/SE winds prevailed over Iceland during 16th–29th. Air-mass trajectories support this movement. September and October 2002 were anomalous months with frequent easterlies across the North Atlantic and there were just four autumn records.

2003 The normal westerly belt was displaced northwards in September, with higher pressure than normal to the south. This reduced the vagrancy risk and the first autumn vagrants were single Swainson's and Grey-cheeked Thrushes, both in Shetland on 27th. This coincided with the start of a large fall of Eurasian vagrants, when a slow-moving depression languished west of the Azores and maintained a NE flow over the western Atlantic; the provenance of the two *Catharus* thrushes was thus obscure. October also proved to be something of an enigma. Only one tropical storm came close to migrant routes and depression tracks remained farther west than normal. A Common Yellowthroat in Co. Clare on 3rd was followed on 5th by a Northern Parula *Parula americana* in Co. Waterford and a Red-eyed Vireo on Barra in the Outer Hebrides. These birds were all recorded in strong NW winds associated with depressions moving east across Iceland round a persistent anticyclone in mid Atlantic (figs. 6 & 7). It is tempting to think that the birds took a northern route, and Icelandic records of American Robin and Least Flycatcher *Empidonax minimus* on 6th and Baltimore Oriole on 7th support this. However, trajectories suggest that the British and Irish vagrants were routed south of latitude 60°N. As depressions continued to move from North America to Iceland, that island recorded Cedar Waxwing *Bombycilla cedrorum* on 8th, followed on 10th by Belted Kingfisher, Alder Flycatcher *E. alnorum* and Yellow Warbler *Dendroica petechia*. This particular fall could be linked to an intense depres-

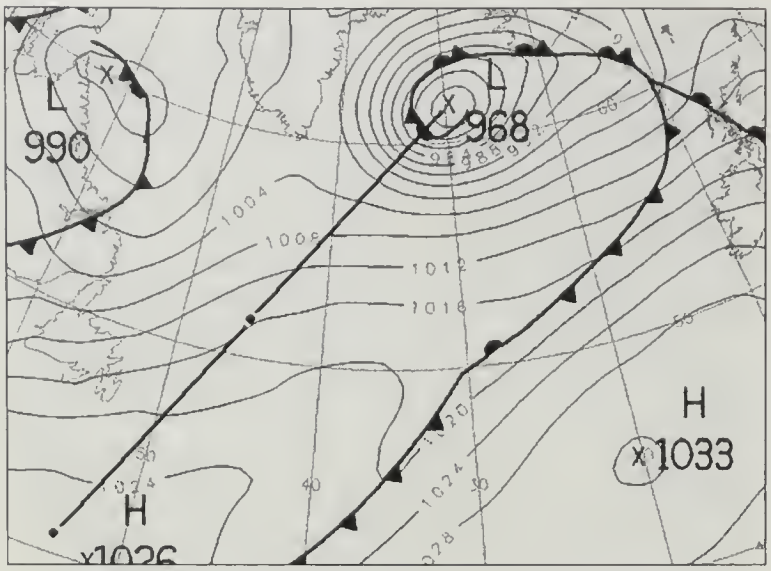

Fig. 8. Synoptic chart for 00.00 hrs on 9th October 2003. Intense depression (ex-hurricane 'Kate'), with track and previous midnight positions shown.

sion that originated as ex-hurricane 'Kate', which became extra-tropical on 7th (see fig. 8) and is an example of a fast-moving system that could carry vagrants without circumnavigation of the centre. Indeed, backtracking calculations show a direct air-mass trajectory from NE USA and Newfoundland. Wind speeds on the system's southern flank as it approached Iceland reached 130 kph. A Bobolink in Co. Cork on 10th and Red-eyed Vireo and Grey-cheeked Thrush on Scilly on 11th were perhaps too far south for this Icelandic route, but the trailing cold front south of the ex-hurricane may well have brought them on its forward edge early on 10th.

The weather pattern then changed as an anticyclone became established over the North Sea and southern Scandinavia. With depressions blocked farther south and west, a SE airstream covered Britain on 12th–17th, backing NE until 23rd. This stimulated a second wave of eastern vagrants, with record numbers of Pallas's Leaf *Phylloscopus proregulus* and Yellow-browed Warblers *P. inornatus* from 12th but with further Nearctic vagrants too. Of six birds between 13th and 21st, Swainson's Thrush and Savannah Sparrow *Passerculus sandwichensis* were on Shetland, Blackpoll Warbler was on the Outer Hebrides, while Red-eyed Vireo, Bobolink and another Swainson's Thrush were on Scilly. All these could have been earlier arrivals wandering within Britain or western Europe. Even more astonishing in such a situation was an American Painted Lady *Vanessa virginiensis* butterfly on Scilly on 18th (Headon 2004).

Late in the year came American Robins on Bardsey on 11th November and in Cornwall on 14th December, and a Baltimore Oriole in Oxford on 10th December (the December birds overwintered). The American Robins are thought to have been linked to a massive eastward movement across the USA in mid November. The species is known to make hard-weather movements and, with an area of heavy snow moving north in NE USA on 6th–8th December, such a movement could have driven the second bird eastwards into a strong WSW airstream that arrived in Britain on 11th. A third American Robin was discovered in Lincolnshire on 1st January 2004.

George Reszeter

233. Bobolink *Dolichonyx oryzivorus*, Bryher, Isles of Scilly, October 2003.

234. First-winter Savannah Sparrow *Passerculus sandwichensis*, Fair Isle, October 2003.

2004 The North Atlantic atmosphere in September was more active than normal, but only two birds were reported, both on 5th: a Red-eyed Vireo in Co. Cork and a Purple Martin *Progne subis* in the Outer Hebrides. The latter is an August migrant in North America, and those over eastern USA in late August would have been affected by hurricane 'Gaston' as it moved north. This storm delayed the southward movement of a cold front and maintained warm humid weather across easternmost states. By 31st August, the front was clearing the land and was preceded by strong, warm SW winds. As the storm was absorbed into a developing depression over Newfoundland on 1st September, this powerful system intensified and moved rapidly across the Atlantic to reach Ireland and western Scotland on 3rd. The British Purple Martin would have been swept eastwards in this 100-kph wind flow, probably within 36 hours (fig. 9), and air-mass trajectories support this. Another Purple Martin, on the Azores on 6th, may have departed the USA on a more southern track to be able to reorient into the lighter winds and broken cloud of a slow-moving anticyclone over the Azores region.

October brought just one relevant tropical storm and a mean low-pressure centre off western Scotland. East to NE winds over the ocean were much more frequent than normal, meaning few periods of suitable Nearctic vagrancy weather. One such occurred when warm-sector south-westerlies took a northern route from North America to Scotland between 29th September and 1st October, bringing a Yellow Warbler to Barra on 2nd. Two Buff-bellied Pipits *Anthus rubescens* appeared in Iceland on 7th and 9th as warm SSW winds spread NE on the western flank of an anticyclone over Scotland, followed by two Cliff Swallows on the next warm sector. A cold front cleared Nova Scotia and Newfoundland early on 19th October, but the associated small and weak depression became reinvigorated on 20th before accelerating across the Atlantic at 40°N to arrive on 24th. An Ovenbird *Seiurus aurocapilla* and a Swainson's Thrush were found on Scilly on 25th–26th, followed by Red-eyed Vireos in Co. Durham on 27th and Co. Cork on 30th.

2005 A Belted Kingfisher on 1st April in Staffordshire provided a welcome insight to the movement of spring vagrants in Britain. It was recorded in Yorkshire on 2nd and then appeared in Aberdeen on 4th, where it spent

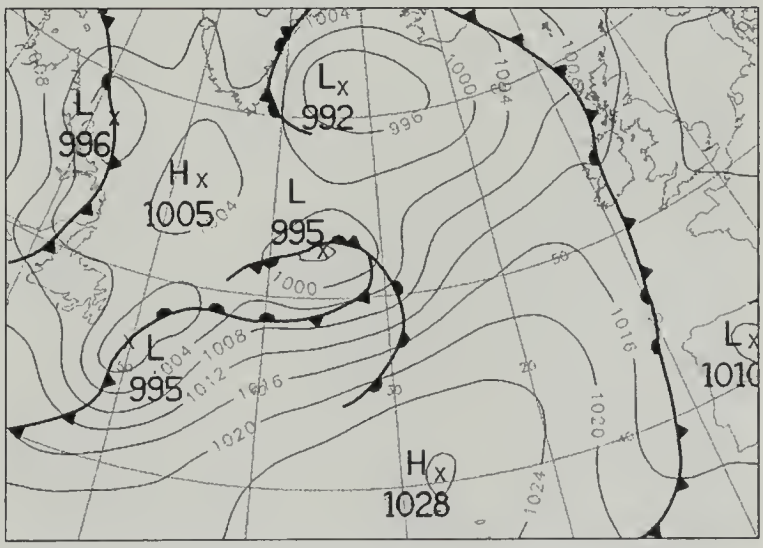

Fig. 9. Synoptic chart for 00.00 hrs on 2nd September 2004: a situation conducive to Purple Martin *Progne subis* vagrancy.

Hugh Harrop

235. First-winter male Yellow Warbler *Dendroica petechia*, Garths Ness, Mainland, Shetland, September 2005.

five days. As there had been no suitable transatlantic weather pattern prior to its arrival, it is possible that this bird was following a normal northward spring passage after spending the winter in southern Europe or North Africa.

The September pressure pattern over the North Atlantic was close to the long-term mean. The first vagrant was a Yellow Warbler in Shetland on 15th; an apparently suitable strong southwesterly had arrived in northern Scotland on 13th but its origins lay in mid Atlantic so could not be linked to this record unless an off-

George Reszeter

236. First-winter Blackpoll Warbler *Dendroica striata*, St Mary's, Isles of Scilly, October 2005.

shoot of hurricane 'Maria' had initially displaced the bird to the Azores. A Veery on 22nd, also in Shetland, was a more likely candidate for a recent transatlantic crossing. The strong southwesterly associated with this bird had originated in a developing depression off Nova Scotia on 18th. A subsequent succession of strong, warm airflows during 24th–30th coincided with Blackpoll Warblers on Scilly on 27th and the Outer Hebrides on 29th, a Bobolink in Shetland on 30th and Red-eyed Vireos on Lundy on 29th and the Outer Hebrides on 30th.

Weather systems in October were anomalous, with a mean low-pressure area well south of normal creating a strong cyclonic flow over the mid-ocean region south of 50°N. The North American tropical storm season was one of the most active on record, but most of those crossing migrant tracks were early. Only one ('Wilma') had any significant effect. An anticyclone over mid Atlantic at the beginning of the month drifted over southern Britain, forcing deep depressions NW: a Blackpoll Warbler on Skye on 4th, a Rose-breasted Grosbeak on Barra and a Grey-cheeked Thrush in Co. Cork, both on 8th, were consistent with this northerly track. A significant fall in Iceland during 16th–18th produced four Blackpoll Warblers, Yellow-rumped Warbler and Grey-cheeked Thrush; these may have been associated with strong southerlies that arrived in Iceland on 14th ahead of a rapidly deepening depression that left Newfoundland late on 11th.

The next episode was a significant one. Developments in eastern North America during late October heralded a major catastrophe for Nearctic migrants as hurricane 'Wilma' and its successors moved out into the Atlantic. 'Wilma' progressed north off the east coast to be absorbed into an extra-tropical depression, reaching NE USA from 26th October and depositing unprecedented numbers of migrants in eastern Canada. Several of the species involved had departed on normal autumn migration many weeks before and other species were rarities to the region. 'Hundreds' of Chimney Swifts, Tree Swallows and Barn Swallows *Hirundo rustica* had been displaced northwards to Cape Breton Island, while in Nova Scotia there were 500 Yellow-billed Cuckoos and thousands of Chimney Swifts, most of which died (Dinsmore 2006; P. Alfrey *in litt.*). Possibly, some of these birds had been displaced earlier, prior to 'Wilma', during a colossal fall of migrants in NE USA in mid October (Dinsmore 2006). Both cuckoos and swifts were also abundant on Bermuda, although this island was probably too far south to act as a source of transatlantic vagrants. The atmospheric pattern in mid and late October had therefore concentrated large numbers of displaced migrants in NE USA and eastern Canada. Those survivors ready to reorient and return southwards thus provided a source that contributed towards a major eastward displacement of Nearctic vagrants. A succession of active, low-latitude depressions crossed the North Atlantic after 'Wilma', affecting the Azores in the first instance, where large numbers of Nearctic vagrants were recorded, including more than 130 Chimney Swifts (P. Alfrey *in litt.*).

The vigour of the depressions and their NE route across the eastern Atlantic after following such a low-latitude track meant a reduced likelihood of a direct transatlantic crossing to Britain & Ireland. Birds in the Azores had already flown 3,000 km and many were dying. However, an influx of over 18 Chimney Swifts into Britain & Ireland from 29th October was undoubtedly associated with this movement (fig. 10). Birds were first recorded in SW Ireland and Scilly, with subsequent records NE to Northumberland. Grey-cheeked Thrush and Yellow-rumped Warbler appeared in Ireland on 29th–30th, while unprecedented numbers of Laughing Gulls *Larus atricilla* appeared from

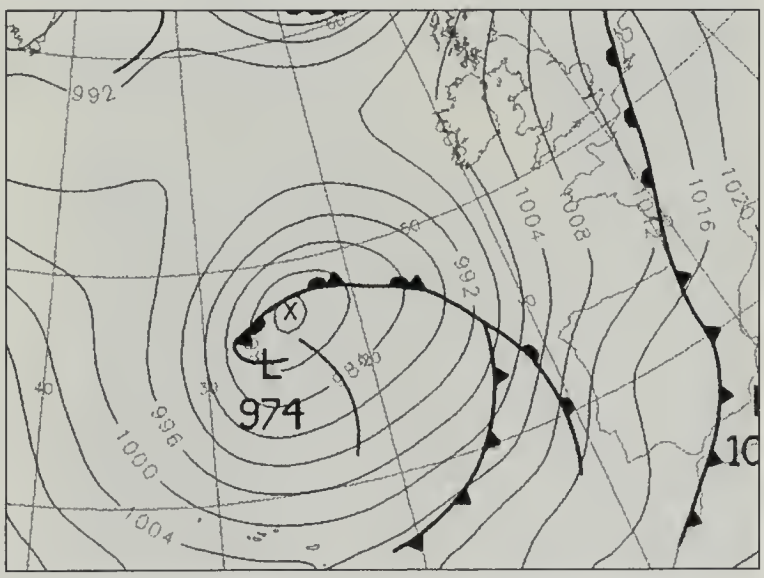

Fig. 10. Synoptic chart for 00.00 hrs on 29th October 2005. Influx of Chimney Swifts *Chaetura pelagica* from the Azores.

www.irishbirdimages.com

237. Hermit Thrush *Catharus guttatus*, Cape Clear Island, Co. Cork, October 2006.

Kit Day

238. First-winter Canada Warbler *Wilsonia canadensis*, Kilbaha, Co. Clare, October 2006.

2nd November, doubtless reflecting an influx in the Azores from 30th October. The gulls' arrival in Britain & Ireland coincided with a deep depression, which had developed off eastern USA on 29th October and almost certainly entrained birds already displaced by earlier storms.

2006 The arrival of the first autumn vagrant, a Red-eyed Vireo in Cornwall on 2nd October, was perhaps a consequence of ex-hurricane 'Helene', which arrived on 27th September. Two other vireos, in Ireland on 5th and 7th, preceded a Canada Warbler *Wilsonia canadensis* in Co. Clare on 8th, American Robin on Scilly and Blackpoll Warbler in Co. Cork on 10th, and a Baltimore Oriole in Co. Cork on 12th. These birds occurred in a period of vigorous activity over the Atlantic, as fast-moving warm sectors brought frequent SW airflows into Britain & Ireland. Anticyclonic weather with a succession of south-moving cold fronts over eastern Canada presented good conditions for the initiation of migration during this period with ideal air-mass trajectories for transatlantic vagrancy.

Discussion

Routes

There is perennial debate about the routes of migrant birds and it seems opportune to restate the basic principles concerning transatlantic vagrancy.

A great-circle route is the shortest distance between two points on the earth's surface and such a route from eastern North America to Britain would pass over relatively high latitudes, e.g. north to 55°N in mid Atlantic. However, the trajectories of most autumn landbird vagrants are much farther south (Elkins 1979). Most are unlikely to follow a great circle since they are normally subject to the wind and weather conditions that have displaced them in the first place. Thus SW Britain and Ireland see the largest numbers, while the smaller numbers arriving in northern Britain and Iceland may take a variety of more northern routes, but are nearly always influenced by strong wind regimes as described above. Some of these would, by default, appear to follow a great circle.

Low-altitude weather systems involved in transatlantic vagrancy of landbirds are unlikely to be directly responsible for Nearctic shorebird vagrancy, since the higher altitude flight of most of the latter often takes them into different wind regimes (Elkins 1988). The arrival dates of waders cover a much wider period than those of landbirds, chiefly from July to November, with the peak in mid September. Thus vagrancy in landbirds and shorebirds does not necessarily coincide. Nearctic seabirds and wildfowl can be drifted by strong low-level winds but, because of their ability to rest on the sea, their track and passage duration is impossible to calculate.

Tropical storms, including hurricanes, are slow-moving, so that migrants flying in their circulation would circumnavigate the centre for long periods and probably succumb in the severe conditions if over the sea. The same applies to deep, slow-moving depressions within which a bird's trajectory would be excessive. The worst-case scenario means that a bird could be over the ocean for several days, including the flight from and to the nearest land, which is beyond the survival capabilities of most small migrants. The massive falls of migrants on vessels and islands during hurricanes are especially noteworthy, but only when a tropical storm becomes extra-tropical (engages a cold air mass and begins to accelerate over cooler waters at higher latitudes) does it acquire the attributes suitable for transatlantic vagrancy. Tropical storms can affect migration indirectly, however: surges of warm air from such storms can and do stimulate passage in an inappropriate direction; storms may also convey migrants to areas where suitable conditions exist to further displace them eastwards, as happened in late October 2005 (see above).

Some records are due to ship-assistance. There are many migrant falls on shipping in the western North Atlantic and some of these birds are carried towards Europe (though not necessarily all the way). Most accounts emphasise that the majority die before reaching Europe. For those surviving a full transatlantic on-board passage, the duration would be an ordeal, especially for small insectivores. Although a few records each year may be the result of ship-assistance, especially in spring (see below), the more significant autumn falls in Europe are meteorologically induced, as is the occurrence of live North American butterflies, moths and dragonflies.

Atmospheric circulation

The vigour of the atmosphere over the North Atlantic clearly has a bearing on the number of Nearctic vagrants in Britain & Ireland. There has been considerable interest in recent years in the effect that the North Atlantic Oscillation (NAO) has on migratory birds, in the context of climate change. The NAO is a measure of the strength of the atmospheric circulation over the North Atlantic (see Appendix 1) and a positive NAO index represents a vigorous circulation in which westerly winds are frequent and strong. A strongly negative index denotes blocking of westerlies. The October indices for 1987–2006 revealed an apparent relationship to vagrant numbers in that month (fig. 11). In the autumns of 1992, 1997 and 2002, strongly negative indices reflected the high incidence of anticyclonic conditions over the northern and western North Atlantic, thus reducing movement of weather systems along their normal track and coinciding with low numbers of vagrants. Positive, or weakly negative, indices in 1987, 1990, 1995, 1996, 1999, 2000 and 2001 corresponded with higher numbers of vagrants. However, in other years, notably 1989 and 1998, the link was poor. There was also a negative relationship between the strength of ENSO (the El Niño/Southern Oscillation over the Pacific Ocean; see Appendix 1) and the number of

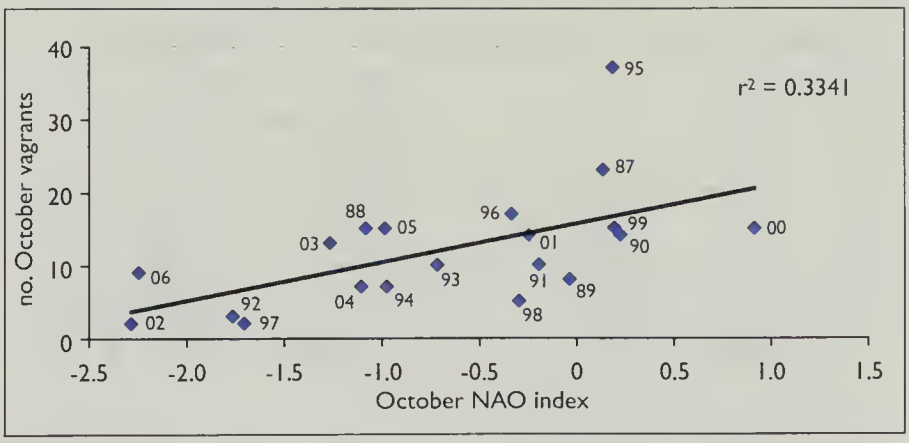

Fig. 11. Relationship between the North Atlantic Oscillation (NAO) index and the number of Nearctic landbird vagrants first recorded in October in Britain & Ireland, 1987–2006. This relationship is highly significant ($P<0.01$).

autumn vagrants. During years with a strong ENSO, the incidence of tropical storms in the North Atlantic is low (Gray 1984) and this may have a bearing on transatlantic vagrancy. Certainly, the autumns with the fewest vagrants (1997 and 2002) were also those with the strongest ENSO episodes but, as discussed, only a small number of tropical storms affect migrants in a location where they are likely to be subjected to vagrancy.

A weak positive correlation is apparent between NAO and number of vagrants in May (fig. 12) but any such correlation remains doubtful given the small sample size (24) and the possibility of birds moving within the Western Palearctic. No correlation was found between the NAO in the previous autumn and the number of vagrants in spring, which might have been the case if birds in spring had overwintered following an autumn arrival. It must also be emphasised that the NAO index is most valid in winter and less useful in other seasons.

The surge of vagrants noted in the Azores in October 2005, and its subsequent 'overspill' further east, in the Canary Islands and Iberia, was extraordinary. Although that month was also exceptional in a meteorological context, such an atypical atmospheric pattern has become more frequent recently. Such low-latitude depression tracks were almost unknown before 1996, but similar ones have been seen in four Octobers (1997, 2002, 2005 and 2006) in the last decade. Indeed, during the past three decades, the mean October position of the North Atlantic low-pressure area has shifted SE by as much as 5°, accompanied latterly by a weakening of the circulation. This has been most marked during the period under study, especially since 2001. The numbers of Nearctic vagrants are, of course, also dependent on suitable conditions occurring in eastern North America at the same time. When vagrants are displaced as far south as the Azores, as they were in 2005, it is not surprising that relatively few reach Britain & Ireland, since this entails a flight of 5,300 km.

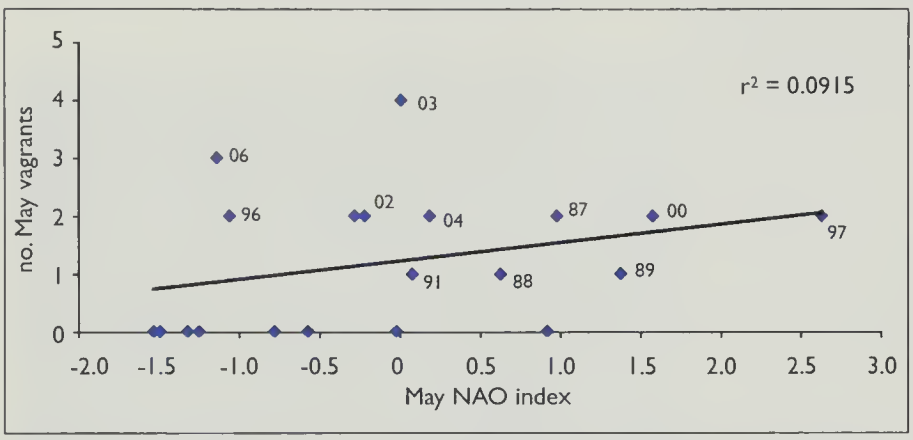

Fig. 12. Relationship between the North Atlantic Oscillation (NAO) index and the number of Nearctic landbird vagrants first recorded in May in Britain & Ireland, 1987–2006. This relationship is not significant (P>0.05).

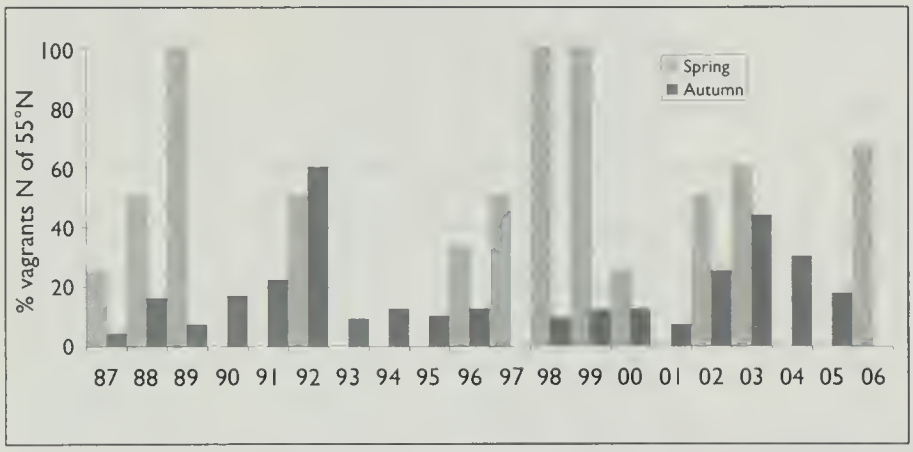

Fig. 13. Percentage of Nearctic landbird vagrants discovered north of 55°N in Britain & Ireland, 1987–2006.

Spring vagrancy

The occurrence of Nearctic landbirds in Britain & Ireland in spring has always been difficult to explain. Overwintering has been proven in some cases, including shorebirds (e.g. Elkins 1988) and gulls (e.g. Elkins 2005), so that northward movement of birds carried across the previous autumn almost certainly occurs. The Belted Kingfisher in April 2005 (see above) is probably the first Nearctic landbird that has been tracked northwards in spring in western Europe. Similarly, spring vagrants in Iceland may represent onward movements from NW Europe. The high proportion of Nearctic sparrows and buntings in spring suggests that many may have been in western Europe for some time, particularly as granivorous species are more

able to survive the winter than insectivorous ones. However, most of these rarely appear in autumn. The two most frequent spring vagrants, Dark-eyed Junco and White-throated Sparrow, account for 35 spring records between 1967 and 2006 compared with only seven in autumn. The mean arrival dates of these two species in spring were 9th and 24th May respectively; for all spring vagrants it was 17th May. When all records in Britain & Ireland during 1987–2006 are considered, 46% of spring records were in northern Britain, particularly the Northern Isles, compared with only 9% of autumn records (fig. 13). The suggestion that such birds are overshooting from North America on a great-circle route (Vinicombe & Cottridge 1997) may be credible, as orientation is on the correct heading to bring them into northern Britain. Both Dark-eyed Junco and White-throated Sparrow are common migrant breeders in the Canadian Maritime Provinces, arriving as late as mid May.

Steve Young/Birdwatch

239. This first-summer male Belted Kingfisher *Megaceryle alcyon* was tracked northwards through Britain in early April 2005, being seen in Staffordshire on 1st, Yorkshire on 2nd and finally Peterculter, North-east Scotland, on 4th–8th. (Photographed here at the last site.).

Compared with the situation in autumn, a far greater proportion of spring Nearctic vagrants arrive in anticyclonic situations, analogous to the overshooting of spring migrants into Britain from southern Europe. Indeed, a number of records have coincided with high-pressure zones extending across the North Atlantic between 50°N and 60°N. Although this would allow fine-weather passage, the shortest crossing between eastern Canada and Britain would still be over 3,000 km – beyond the capabilities of passerines in light anticyclonic winds. Ship-assistance has been proved on several occasions and may be the logical explanation for transatlantic vagrancy in spring, when North American granivores overshoot in fine weather and alight on ships. This could explain both species composition and the more northern landfall in Britain.

Autumn vagrancy

The juxtaposition of Nearctic and Eastern Palearctic vagrants in autumn is encountered more frequently in Britain than anywhere else (see Elkins 1986). The migration strategies of the two groups are broadly similar – their main aim is to vacate the increasingly hostile environment of the non-breeding season. Both groups undertake 'normal' migration – which for some Nearctic species includes transoceanic flight southwards – as well as frequent movements on inappropriate headings, variously described as overshooting, 'reverse' migration, misorientation, dispersal and exploration. However, atmospheric conditions over the breeding ranges are quite different in the two regions. Eastern Palearctic vagrants normally migrate south or southeast from a landlocked region where the autumn atmosphere is relatively inactive. Most Nearctic vagrants have wintering ranges to the south or southwest and migrate over regions with an often vigorous atmosphere, especially those undertaking an oceanic crossing. Of course, some migrants from the northern Nearctic winter in Europe and Africa and it has been suggested that Northern Wheatears *Oenanthe oenanthe* passing through the Canary Islands might have flown 4,000 km directly from northern Canada and western Greenland to North Africa (Thorup *et al.* 2006), albeit with wind assistance from northwesterlies. For Eastern Palearctic vagrants, there is often a substantial lag between their normal departure date and records in western Europe,

suggesting a leisurely movement over land. For Nearctic vagrants, movements become involuntary when overwhelmed by severe winds and weather, with ensuing vagrancy for the few and fatality for the majority. Reorientation is impossible when physical conditions in strong winds and dense cloud cover overcome the migrants' capabilities. However, a migrant that successfully negotiates adverse winds and weather may then find itself in a suitable environment in which reorientation is possible. The possible degree of reorientation is unknown, but almost certainly this must be the case for many migrants. Their location will govern the likelihood of reaching land, and weaker birds will doubtless succumb to lower thresholds of wind and weather. Most vagrants that do not appear to be immediately associated with transatlantic weather systems could comprise such wandering individuals, as well as those that have escaped detection for some time and the occasional ship-assisted bird.

The peak arrival time of Nearctic landbirds in Britain & Ireland between 1967 and 2006 was the second week of October; both mean and median dates were 11th October, with decadal means ranging from 10th to 13th. Peak numbers of autumn vagrants occurred in the mid 1980s, with an annual mean of 30 between 1985 and 1989. The best autumn was 1985, with 42 birds in October alone. Despite 37 vagrants in October 1995, numbers generally declined in the 1990s. During 1997–2006, there were 25–30% fewer October vagrants than in the previous two decades, possibly related to the redistribution of low pressure across the North Atlantic (see above). In the past two decades, the mean October atmospheric pressure in SW Britain has been lower than the long-term mean in all but five of the years. The presence of anomalously low pressure significantly farther south or southeast than the mean 'Icelandic' low position in 11 of these Octobers implies that depressions are taking a more southerly track (e.g. Hulme *et al.* 2002); recent events in the Azores support this. At the same time, the proportion of vagrants in northern Britain has increased slightly (despite the blank years of 1997 and 2006; fig. 13). This may be at least partly attributable to increased observer coverage there (e.g. Rivers 2004), since no climatological relationship is evident.

As described elsewhere (Nisbet 1963; Elkins 1979), arrival dates in Europe are significantly later than normal passage along the eastern seaboard of the USA. This timing has been associated with the rapidly waning tropical storm season; many of the species involved are late migrants that cross the western Atlantic and therefore have a greater chance of avoiding such storms at that time (Elkins 1979). Indeed, since many transatlantic vagrants appear well after their peak passage in North America, it is conceivable that late migrants might be more predisposed to displacement or that they are less well oriented; this might also apply to Eastern Palearctic vagrants. McLaren *et al.* (2006) found that October counts of migrant landbirds in eastern North America, especially of the larger, longer-distance species, best represented those reaching Britain and Ireland. Their analysis also upheld the concept of downwind displacement of Nearctic vagrants across the North Atlantic originating from migratory flights off the eastern seaboard of the USA, but concluded that extralimital individuals in NE USA and eastern Canada were unlikely to be further displaced to Britain & Ireland.

George Reszeter

240. Red-eyed Vireo *Vireo olivaceus* (here on St Mary's, Isles of Scilly, October 2003) is the most numerically abundant Nearctic landbird recorded in Britain & Ireland.

As suggested above, some Nearctic vagrants in NW Europe may have passed through Iceland. The occurrence of Swainson's Thrushes in Norway in September 1997 and October 1999 followed vagrant records in Iceland and it is not inconceivable that vagrants arriving in northern Scotland in easterlies, as in October 2003, were originally displaced to Scandinavia via Iceland. Reorientation would therefore bring them into situations coinciding with Palearctic vagrants. In view of some of the astonishing vagrants that have been found over the years, this possibility cannot be excluded.

Changes in numbers and composition of vagrants to Britain & Ireland have been tentatively related to breeding populations in North America (e.g. Elkins 1999). Butler (2000) hypothesised that breeding populations of long-distance migrants in eastern North America may be affected by the increased severity and frequency of tropical storms (including hurricanes) over the western Atlantic and the Gulf of Mexico. He found that fewer western breeders had declined and suggested that length of oceanic passage during autumn migration is important, with migrants on such routes becoming exposed to severe storms more frequently. Since 1995, every tropical storm season, with the exception of those in 1997, 2002 and 2006 (coincidentally the poorest recent autumns for Nearctic vagrants in Britain & Ireland), has experienced above-normal activity.

Several transatlantic vagrant species have shown declines here that have mirrored those observed by the North American Breeding Bird Survey (Sauer *et al.* 2005), particularly for Black-billed *Coccyzus erythrophthalmus* and Yellow-billed Cuckoos, Blackpoll and Black-and-white Warblers *Mniotilta varia* and Rose-breasted Grosbeak. Anders & Post (2006) related the decline in some Yellow-billed Cuckoo populations to rising temperatures. Other species, such as Common Nighthawk, Chimney Swift, Common Yellowthroat, White-throated Sparrow, and Baltimore Oriole, have also decreased in North America but have either not declined or become more frequent as vagrants. Both Red-eyed Vireo and Northern Parula have increased significantly in North America, which is not reflected here, e.g. Red-eyed Vireos were recorded in every autumn during 1987–1996 (76 individuals), but only in seven autumns during 1997–2006 (36 individuals). Red-eyed Vireo nonetheless remains the most numerically abundant Nearctic landbird recorded in Britain & Ireland since records began, followed by Grey-cheeked Thrush. Following the two influxes in 1999 and 2005, Chimney Swift has become the fifth most abundant, with 27 accepted records in 1997–2006. There were only five records before 1997, of a species declining in its native range. The dates of the two falls were only a week apart and both were associated initially with similar hurricane tracks off eastern North America.

Nearctic insects

The timing of arrival of vagrant Nearctic butterflies and dragonflies rarely coincides with that of vagrant landbirds. However, the 1999 Monarch influx was from 22nd September, with peaks on 25th September, 4th–5th October and 11th–12th October (Tunmore 2000), well within the envelope of bird vagrants. These peaks were probably genuine since, apart from 25th September, they occurred on weekdays (weekends are notable for artificially increasing number of records). There were few vagrant landbirds during this butterfly influx, or another in late September 2005, and it is probable that the timing of, and initiating conditions for, migration of the two groups in North America may differ somewhat. Certainly, insects have a minimal capability for correcting any deflection due to the wind. It has been suggested that a Blue Dasher *Pachydiplax longipennis* dragonfly on an oil rig off Shetland on 6th September 1999 might have been linked to a large influx of Nearctic shorebirds in Scotland (Parr 2000). The first three weeks of September 1999 brought a Short-billed Dowitcher *Limnodromus griseus*, an unprecedented 12 Semipalmated Sandpipers *Calidris pusilla* and a multiplicity of Pectoral Sandpipers *C. melanotos* (Rogers *et al.* 2000; Fraser & Rogers 2001; Pullan 2006). However, transatlantic shorebirds are more closely associated with higher altitude winds (Elkins 1988) than insects and it is unlikely that the two events were connected.

The future

It seems likely that patterns may continue to vary as climate change continues. Changes in sea-surface temperatures and salinity could conceivably alter ocean currents and the formation, intensity and tracks of frontal depressions (e.g. Santer *et al.* 2006, Singarayer *et al.* 2006)

and therefore affect vagrancy. However, it is likely that other factors do, and will continue to, play a much greater role in the dynamics of the migration of North American landbirds and it is these that will determine future vagrancy patterns.

Acknowledgments

Internet websites now prove to be a valuable source of information and I am grateful to the responsible authorities, particularly the NOAA Air Resources Laboratory (ARL) for the provision of the HYSPLIT transport and dispersion model (www.arl.noaa.gov/ready.html) used in researching trajectories. I am also grateful to the Met Office for the provision of appropriate weather charts. Thanks are due to Paul Milne, and Gunnlaugur Pétursson and Yann Kolbeinsson for currently unpublished data on Irish and Icelandic rarities respectively and Peter Alfrey for details of the 2005 Azores event. Prof. David Parkin kindly read an earlier draft and provided many constructive comments.

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Norman Elkins, 18 Scotstarvit View, Cupar, Fife KY15 5DX

Appendix 1. The NAO index used most frequently in Britain is calculated from the mean atmospheric sea-level pressure difference across the eastern North Atlantic, normally between Iceland and either the Azores or Gibraltar (Osborn 2006). As this index is valid only for the eastern North Atlantic, I used a more sophisticated set of indices from NOAA (2007c). These are constructed from anomalies of the 500 hPa height levels (the altitude at which the atmospheric pressure falls to 500 hPa, approximately 5.4 km). As these values are associated with changes in the intensity and location of the North Atlantic jet stream and storm track, I consider that they represent a more appropriate measure when considering transatlantic vagrancy. The positive phase of the NAO reflects below-normal heights and pressure across the high latitudes of the North Atlantic and above-normal heights and pressure over the central North Atlantic, the eastern USA and western Europe, signifying strong transatlantic westerlies. The negative phase reflects an opposite pattern of height and pressure anomalies over these regions. Atmospheric variability in the Pacific Ocean is normally measured by the El Niño/Southern Oscillation (ENSO), an index dependent mainly on sea-surface temperatures across the ocean and linked to tropical storm frequency across Central America and the Caribbean Sea as well as weather patterns over much of the Americas and beyond.

Brian Small

Dark-eyed Junco *Junco hyemalis*.

Rarities Committee news

'Siberian Chiffchaffs' in 2008

As reported previously (*Brit. Birds* 101: 165–166), BBRC has designated 2008 as a 'trial year' in which to seek a deeper understanding of the British status of 'Siberian Chiffchaff' *Phylloscopus collybita tristis*. The earlier request asked for record submissions of all Chiffchaffs in 2008 which are considered to be *tristis* and summarised the criteria previously set out by Dean & Svensson (*Brit. Birds* 98: 396–410).

It is pleasing to note that a number of submissions from the early part of 2008 have been made already and these are now being reviewed by the '*tristis* panel'. However, we are aware of a number of other individuals which have yet to be reported; and of course most 2008 reports will doubtless come from the late-autumn period. It therefore seems timely to remind observers and county recorders that submissions of all *tristis* Chiffchaffs in 2008 are still sought and will be gratefully received.

Individual submissions may comprise any combination of field descriptions, photographs and/or sound recordings but should in all cases be as detailed as possible, particularly in respect of precise plumage hues. We would still like counties to seek all claims of *tristis* that meet, or come close to meeting, the Dean & Svensson criteria and submit them to Nigel Hudson, BBRC Secretary. We also ask counties to provide summary details of any claims which are assessed locally as falling clearly outside the criteria.

Andy Stoddart, on behalf of BBRC

Chairman: Adam Rowlands, East Walks Bungalow, Minsmere RSPB Reserve, Westleton, Suffolk IP17 3BY
Secretary: Nigel Hudson, Post Office Flat, St Mary's, Scilly TR21 0LL; e-mail: secretary@bbrc.org.uk

The Eagle Owl in Britain

Tim Melling, Steve Dudley and Paul Doherty

Richard Allen

ABSTRACT Interest in the Eagle Owl *Bubo bubo* in Britain has increased during the past decade, particularly in relation to two well-known breeding pairs in northern England. An increase in the numbers being reported has led to calls for Eagle Owl to be re-admitted to the British List. This paper examines the BOURC's previous reviews, which led to the species' removal from the British List in 1996, the historical status of Eagle Owl in captivity, and other data relating to this species, in order to assess the likelihood of natural vagrancy.

The Eagle Owl *Bubo bubo* is a widespread and ecologically adaptable species, occupying a range of habitats in Europe, from the mountains of southern Spain to the forests of northern Scandinavia. It is therefore difficult to explain why the species apparently did not persist in Britain beyond the Mesolithic (c. 9,000–10,000 years BP; Stewart 2007). One possible explanation is that it was exterminated by humans (Mikkola 1983), although this seems unlikely given that more conspicuous predators, such as Wolf *Canis lupus* and Brown Bear *Ursus arctos*, survived until relatively recent times. Bears certainly persisted until Roman times in Britain (c. 2,000 years BP), and possibly later, whereas Wolves hung on until the seventeenth century (Yalden 1999). It is also surprising that, for an obvious and revered species, there are no lingering tales, legends, myths or folklore relating to Eagle Owls in British literature (Harrison & Reid-Henry 1988).

Recent historical status and BOURC reviews

Eagle Owl was included in all the BOU lists published before 1992. In the first (BOU 1883) and second (BOU 1915) it was described as a scarce/occasional visitor, the latter stating also that specimens were 'taken in the Shetland and Orkney Islands, Argyllshire, and in many counties of England. It is possible that some of those recorded may have escaped from captivity.' By 1952, it was listed as a 'probably irregular

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visitor' (BOU 1952), while the 1971 list (BOU 1971) stated: 'about 20 records in the eighteenth and nineteenth centuries, mostly poorly documented and rather vague, and some at least referring to escapes from captivity; birds in Orkney (1830), Shetland (autumn 1863, March 1871) and Argyll (February 1883) seem the most likely to have been genuine vagrants, correctly identified. In the twentieth century noted in the Outer Hebrides (November 1931), Devon (April 1933), Yorkshire (December 1943) and Shropshire (April 1954), but none of these records [are] entirely satisfactory.' Witherby *et al.* (1938–41) included Eagle Owl as a very rare vagrant but 'being frequently kept in captivity, suspicion rests upon a good many recorded occurrences'. So, as understanding of the species' vagrancy potential has developed and record assessment improved, the status of Eagle Owl as a British bird became increasingly questioned.

In 1972, BOURC reviewed Eagle Owl claims from 1931, 1933, 1941, 1943 and 1954. The 1941 and 1954 records were considered to be misidentified, and in the case of the other three the identification was considered not proven. A further review, in 1982–85, assessed four earlier records listed in BOU (1971): Orkney c. 1830, Shetland in autumn 1863 and March 1871, and Argyll in February 1883. These records were selected because of their remote locations, which were farthest from likely sources of captivity, and, in the case of the Orkney and Shetland records, because of their proximity to Norway. All four were considered to be insufficiently well documented. The 1871 record from Shetland was seen by an apparently reliable observer, but no description was available.

In 1994, an extensive literature search located at least 79 claims of Eagle Owl in Britain between 'some time prior to 1684' (Orkney) and the (then) most recent record in 1990 (West Midlands) (see Appendix 1). BOURC assessed these records (BOU 1997) and found that they fell into three groups: 1) misidentified, 2) insufficiently documented to confirm identification, and 3) identification confirmed but escape from captivity could not be eliminated. During this review, one BOURC member commented that on several occasions he had gone to investigate convincing reports of Snowy Owls *B. scandiacus* by crofters in Shetland yet all had turned out to be Short-eared Owls *Asio flammeus* – illustrating how easily and frequently people misjudge the size of birds. This experience was echoed more recently by an Orkney-based member. Many of the early descriptions of Eagle Owl do not rule out either Short-eared or Long-eared Owl *A. otus*.

The specimen of an 'eagle owl' shot by a gamekeeper in Shropshire in 1954 was traced and proved to be an American Great Horned Owl *B. virginianus*, undoubtedly of captive origin. Borrer (1891) referred to an 1813 publication that mentioned 'North American Eagle Owls' held in captivity at Arundel, Sussex, at this time. One record concerned an Eagle Owl seen flying low down the back streets of Scarborough, Yorkshire, in autumn 1879, which is an unlikely location for a wild bird, even though it appeared after northeasterly winds. The majority of records that were reviewed in 1994 were insufficiently documented to confirm identification. However, even if these records had been confirmed, captive origin would be difficult to eliminate given the long history of captive Eagle Owls in Britain.

Fisher (1966) suggested that Eagle Owls were 'possibly native [from the] eighth to eleventh centuries'. However, literature searches have failed to substantiate this. The only reference to Eagle Owl from this period comes from mentions in Old Latin and Old English glossaries from the eighth century (www.tha-engliscan-gesithas.org.uk/birdlore/fugellar.html).

Eagle Owls and humans

Behaviour towards humans

Eagle Owls are known to be wary, especially at or near the nest-site. Mikkola (1983) stated that they are extremely sensitive and prone to abandoning eggs and/or small young; he remarked that, during visits to many nests in Finland, it was often difficult even to catch sight of the adult birds. His experience matched that of renowned owl researcher Prof. Merikallio, who knew of only one instance of aggression by Eagle Owls towards humans in many decades of research in Finland (Mikkola 1983). This behaviour seems at odds with that of those nesting in Britain, where people close to the nest have been attacked (e.g. http://news.bbc.co.uk/1/hi/england/lancashire/6698873.st).

Historical accounts of Eagle Owls in captivity

Ray (1678) included an account of two Eagle Owls in 'His Majesty's Park of St James's near Westminster', plus another captive bird seen in

France at the King's Palace of Bois de Vincennes. Clearly, the species was held in captivity in western Europe at this time. Edward Fountaine bred Eagle Owls in his aviary at Easton, Norfolk, for the first time in 1849 and continued to do so almost annually until at least 1875. According to Gurney (1849a,b), this was apparently the first account of captive breeding in Britain; he commented that after only five weeks, the young were 'in the same stage as specimens *usually* [our italics] imported from Norway at this time of year by the London bird-dealers'. The key point here is that as far back as 1849, Eagle Owls were being imported with sufficient frequency for Gurney to use the term 'usually'.

Knox (1850) mentioned an unrivalled collection of these magnificent birds at Arundel Castle that apparently lived in a semi-wild state, in fissures in the ivy-covered rocks of the old dungeon keep, and occasionally reared young. These may have been the 'North American Eagle Owls' (i.e. Great Horned Owl) referred to by Borrer (1891). Lilford (1891–97) commented that he successfully bred Eagle Owls in captivity, and that other English possessors of these owls met with (even) greater success. Trevor-Battye (1903) quoted the following correspondence between Lilford and E. B. G. Meade-Waldo, dated 24th June 1887, concerning the latter's desire to dispose of some young Eagle Owls: 'I am much obliged for your offer of the young eagle owls, but I have no room for them. I will try to place them for you if you wish to dispose of them. I should think that the Duke of W—, who encourages eagles and almost all wild birds on his forest, would like to try the experiment of turning out these grand birds.' The unnamed duke is most likely the first Duke of Westminster, Hugh Grosvenor (1825–1899), who had extensive landholdings, including an estate close to one of Lord Lilford's estates. This correspondence indicates that releasing unwanted young Eagle Owls into the wild was being considered, and perhaps already practised, as long ago as 1887. Lord Lilford was responsible for introducing Little Owl *Athene noctua* to Britain and held collections of live birds, which included two free-flying Lammergeiers *Gypaetus barbatus*.

Current situation and likelihood of escape

Eagle Owls (including the Indian form *B. b. bengalensis*) are commonly held in captivity in Britain and there is no formal requirement to register captive Eagle Owls. However, an Article 10 certificate is required by the Convention on International Trade in Endangered Species (CITES) to permit any commercial use (chiefly sale, advertisement, import and display). These certificates are normally issued just once for each bird, and will cover all transactions involving that individual (even after its death in the case of taxidermy specimens). In the ten-year period prior to June 2007, a total of 3,370 certificates were issued by Defra for Eagle Owls held in Britain, while a further 158 certificates were refused. The majority of Article 10 certificates issued relate to the sale of young, captive-bred Eagle Owls so it is likely that the actual number in captivity is considerably higher than this (in captivity the species is long-lived, perhaps up to 60 years; www.raptorfoundation.org.uk). In addition, there are likely to be imported Eagle Owls in Britain that will be covered by Article 10 certificates issued in another EU member state and so will not appear in the above figures.

Eagle Owls continue to be imported to Britain in surprisingly large numbers. CITES figures reveal that during 1983–89, a total of 380 European Eagle Owls were imported (Thomsen *et al.* 1992). Since 1997, however, certificates have not been required for movements between EU member states, and since 1st July 2007 the importation of wild-caught birds into the EU has been banned.

The Independent Bird Register (IBR) was established in 1994, primarily to reunite owners with lost birds of prey. By 2007, the IBR had over 56,000 rings in circulation, including 440 fitted to Eagle Owls, at which time it estimated the number of captive Eagle Owls in Britain to be 3,000–4,000 (N. Fowler pers. comm.); this seems compatible with the statistics on Article 10 certificates discussed above.

Since the IBR was established, there have been 73 reports of registered Eagle Owls that were lost but not subsequently (reported as) recovered, while a further 50 registered birds escaped and were recovered. A total of 123 registered escapees over 13 years equates to 9–10 per annum and to 28% of the 440 total. This seems particularly high, but is probably due to many having been flown for falconry. If the same escape rate applied to all captive British Eagle Owls over the same 13-year period, that would translate to over 800 escapes or around

Table 1. Summary of Independent Bird Register (IBR) Eagle Owl *Bubo bubo* data for 1994–2007.

IBR lowest estimate of British captive population	3,000
Number of birds registered with IBR	440
Number of registered birds that escaped and were not refound, in 13 years	73
Number of registered birds that escaped and were refound, in 13 years	50
Number of unregistered birds reported to IBR in 13 years	83
Total number of registered birds escaping in 13 years	123
Percentage of registered birds escaping in 13 years	28%
(28% of the estimated captive population in Britain)	(839)

65 per year. There are clearly numbers of unregistered captive birds in Britain escaping or being deliberately released as, since 1994, 83 unregistered Eagle Owls were found and reported to the IBR (table 1).

European population estimates

Hagemeijer & Blair (1997) estimated the European (wild) population at 10,353–12,926 (11,308) breeding pairs in 32 countries, but excluding the Russian population of 2,000–20,000 (6,325) pairs. They stated that 'Altogether, some 60% of the European population is in decline.' More recently, BirdLife International (2004) put the European total at 19,000–38,000 pairs (but including Russia and Turkey). Its estimates for individual countries varied considerably, e.g. Spain 2,500– 10,000 pairs, emphasising the difficulty of establishing population totals for this species. For the countries we consider as potential source populations for naturally occurring Eagle Owls in Britain (those bordering the North Sea), the BirdLife estimates (pairs) are as follows: Norway (1,000–2,000), Denmark (22), The Netherlands (1–2), Belgium (25–30) and France (1,000–1,200). There are other important populations in Fennoscandia, in Sweden (500–1,000) and Finland (2,000–3,000).

Eagle Owls have benefited from large-scale reintroduction or reinforcement programmes in Europe. In Germany, Eagle Owls were restricted to four mountainous areas during the 1960s. During the 1970s and 1980s, 1,500 birds were released and the species is now a widespread breeder in Mittelgebirge and Schleswig-Holstein (Radler & Bergerhausen 1988). The breeding populations in Belgium and The Netherlands are believed to originate from this source, while the breeding population in Sweden is thought to be derived largely from releases of captive-bred birds (Snow & Perrins 1998).

Eagle Owls breeding in the wild in Britain

Scotland

In Orkney, Baikie & Heddle (1848) stated: 'Is now extremely rare. Low (1813), though he speaks of it, never himself saw a specimen. Since then, however, one was killed in Sanday, by Mr Strang, in 1830. It is said to be occasionally seen in Rousay, and is believed still to breed in the Hammers of Birsay.' Low's earlier work (published posthumously, Anderson 1879) made no reference to breeding Eagle Owls in Orkney. Moreover, Low (1813), having never seen an Eagle Owl, published a description from Pennant (1761–66), which incorrectly stated that the eyes were bright yellow, and also failed to mention ear tufts: 'In size it is almost equal to the eagle; irides bright yellow; the head and whole body finely varied with lines, spots, and specks of black, brown, ash-colour, and ferruginous; the wings long; the tail short, marked with dusky bars; the legs thick, covered to the ends of the toes with a close and full down, of a pale yellowish brown; the claws great, much hooked, and dusky.' There are no further details about any of these Orkney records. It seems likely that these rumours were confusing Eagle Owl with another species, possibly Long-eared or even Short-eared Owl (the latter is a relatively common breeder), particularly in the light of Low's misleading description.

Reports from Shetland are equally unconvincing. Edmondston (1809) stated that the 'Great Horned Owl' was formerly common and may have bred, but that it was now very scarce, although he had 'repeatedly seen five or six together'. Saxby (1874) believed that Edmondston had been deceived, although Saxby himself saw the 1871 record (Balta and Huney, Unst, in March), but did not give any description.

Elsewhere in Scotland, Drummond-Hay (1886) stated that: 'One was also shot at Faskally, Perthshire, a few years ago, but this bird was ascertained to have escaped from confinement; indeed, it is not unlikely that the

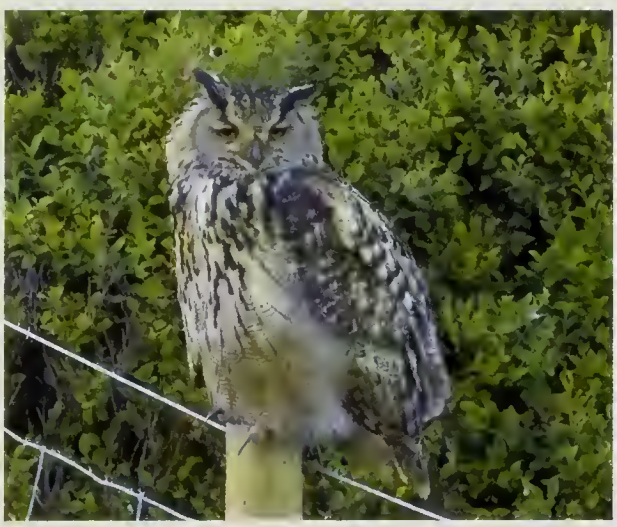
Aberdeen bird may also have been an escape, as Mr Harvie-Brown in a note to me says it occurs in a semi-wild and domesticated state in Glenshee, at Mr Paterson's, Dalnaglar; and any shot or reported are probably escapes, whether in Braemar, Forfar, or Perth.' Breeding in the wild occurred in Moray & Nairn in 1984 and 1985. A single egg failed to hatch in 1984, but one chick was reared in 1985 (Cook 1992; Holling *et al.* 2007). These breeding birds were thought to originate from a deliberate but unofficial introduction attempt.

England

In May 1993, a local raptor worker was shown an Eagle Owl nest by a gamekeeper in the north Peak District moorlands of Derbyshire. The nest was already abandoned, containing four cold eggs, but there were several subsequent Eagle Owl sightings in this general area during the same season. Pellets collected near the nest showed that the bird(s) had fed on Mountain Hare *Lepus timidus*, Rabbit *Oryctolagus cuniculus*, Hedgehog *Erinaceus europaeus*, Red Grouse *Lagopus lagopus* and Common Pheasant *Phasianus colchicus*. There have been a number of Eagle Owl sightings in the Peak District moorlands since 1993, including two owls together in 2006, close to the original nest-site. However, there was no further evidence of nesting and one bird was picked up injured in 2006, and subsequently died (W. Underwood pers. comm.).

In North Yorkshire, a pair has bred successfully since 1997 (Holling *et al.* 2007), the birds having been present from at least 1996, and the female initially having the remains of jesses, which were later lost. Between 1997 and 2005 a total of 23 young were raised by this pair, all of which were ringed. Two of these, both fledged in 2004, have been recovered: one found dead in Shropshire in 2005, the other found dead in Borders in 2006. This pair suffered persecution, the eggs being deliberately smashed on three occasions. In December 2005, the female was found dead; it had been shot, although this was not thought to be the ultimate cause of death. This female was replaced by another (ringed) female in 2006, which was subsequently seen with the male, but no eggs were found; the male was still at this site into 2007.

In the Forest of Bowland, Lancashire & North Merseyside, a single Eagle Owl wearing jesses was reported in October 2005. In 2006, another appeared and a nest was found containing four eggs, which failed to hatch. The pair nested again in 2007, more than 1 km from the 2006 nest-site, and raised three chicks. This breeding attempt was widely publicised and the pair watched by many observers (plates 241 & 242). Analysis of the prey remains revealed that the diet was almost entirely of Rabbit, with much smaller numbers of Hedgehog, Red Grouse and Common Pheasant. The remains of a breeding female Hen Harrier *Circus cyaneus* were also found near the nest, although feathers reported to be those of an adult male Hen Harrier proved to be from a Common Gull *Larus canus* (*Brit. Birds* 100: 629; Peter Grice pers. comm.). These birds moved to a less accessible nest-site elsewhere in the Forest of Bowland in 2008, laying three eggs and rearing two chicks. In 2003, another pair bred in northern England but the eggs were infertile; only one bird was recorded in 2004 and there were no further reports (Holling *et al.* 2007).



Paul Doherty

Paul Doherty

241 & 242. These Eagle Owls *Bubo bubo* bred successfully in the Forest of Bowland, Lancashire & North Merseyside, June 2007.

Away from northern England, a pair appeared in southern England in 2004 and successfully reared three young in 2005 (B. O'Dowd pers. comm.). There have been no reports of breeding at this site since, although at least one bird was still present in 2007.

Holling *et al.* (2007) tabulated other records during 1996–2005, all of which were of single birds. Although not representing the total number of birds present, these figures make clear the increase in birds being reported in 1996, and then again from 2004 onwards.

Other reports

During our research, we came across numerous reports of individual birds, and several pairs, at large in the British countryside. Some were said to have survived for a number of years, but no formal details were forthcoming and we could find no further evidence of breeding. Formal reporting and recording of all known birds is essential for assessing the species' true status accurately. For details of BOURC's rationale for determining population sustainability and admissibility to Category C, see Dudley (2005).

Eagle Owls in falconry

Armstrong (1975) provided evidence that, as early as the sixteenth century, raptors were being imported into Britain for falconry, although we have found no specific reference to Eagle Owls being brought in for this purpose. Harting (1898) mentioned that Eagle Owls were used by falconers in France, at least in the mid eighteenth century. Eagle Owls are powerful raptors that can be trained to hunt a range of prey, and are particularly effective at dusk and at night. A small number of modern falconers use Eagle Owls in this way and, since 2004, some hunts in Britain have begun to use them for taking foxes *Vulpes vulpes* driven by hounds (e.g. www.owlpages.com/news.php?article=351). It is also well-established that hunters may use a tethered or disabled Eagle Owl to lure other large birds of prey to the ground, where they can be captured or killed (Zuberogoita *et al.* 2008). The medieval trade links between Britain and the Middle East make it possible that Eagle Owls were imported into Britain, perhaps for falconry, at a much earlier date than the first documented reference by Ray (1678).

Eagle Owl in the archaeological record

Stewart (2007) summarised the known archaeological record for the species in Britain and reviewed 13 fossil records claimed to be Eagle Owl. He noted that separation of Eagle Owl and Snowy Owl remains can be extremely difficult and concluded that four (of the 13) specimens were Eagle Owl or 'a species of the genus *Bubo* very closely allied with modern Eagle Owl *Bubo bubo*... present in Britain for up to 700,000 years, through to the end of the last ice age some 10,000 years ago and into the Holocene'. The most recent seems to be Mesolithic in age, or about 10,000 years BP, from Demen's Dale, Derbyshire.

Discussion

If Eagle Owls had been present in Britain up to around 10,000 years BP, what caused their demise? Mikkola (1983) suggested that persecution was responsible for their absence during the last 1,000–2,000 years, but offered no explanation for their absence between 2,000 and 10,000 years BP. The following would seem a more plausible theory. After the last ice age and up to around 9,000 years ago, Britain was still connected to mainland Europe, until rising sea levels engulfed the land bridge (http://en.wikipedia.org/wiki/Land_bridge). Until that point, humans and other terrestrial animals used the land bridge to recolonise land revealed by the retreating ice sheet. Eagle Owls would have been driven southwards by the glaciers of the last ice age, and some birds would have recolonised Britain across the land bridge as the ice retreated. Recent and historical evidence suggests that Eagle Owls are relatively slow in expanding their range (often the case for large, relatively sedentary predators), and the species is known to be reluctant to cross large stretches of water (see below). It is possible that, by the time the land bridge with Europe was lost, only a small population of Eagle Owls had re-established in Britain and that further colonisation was perhaps hampered by low density on the mainland and certainly by the necessity for a sea crossing.

Likelihood of natural vagrancy

Long-eared and Short-eared Owls are regular winter migrants to Britain from Scandinavia, while Snowy Owl, Hawk Owl *Surnia ulula* and Tengmalm's Owl *Aegolius funereus* are irruptive species that have reached Britain, although the last two are extremely rare. Great Grey Owl *Strix nebulosa*, Pygmy Owl *Glaucidium passer-*

inum, Ural Owl *S. uralensis* and Eagle Owl are by comparison sedentary, non-irruptive species that would be no more likely to turn up in Britain than would a Tawny Owl *S. aluco* in Ireland. These species clearly find sea crossings a significant barrier to dispersal.

Ringing recoveries confirm that Eagle Owl is largely sedentary in Europe, and that movements are associated mainly with post-juvenile dispersal and altitudinal shift. Cramp (1985) listed known movements of ringed birds as follows:

- 12 recoveries of Norwegian-ringed birds, 8–220 km (mean 95 km) from ringing site, with a tendency to head towards the coast;
- 75% of recoveries of chicks ringed in Sweden were within 50 km of the nest, with none farther than 86 km (Olsson 1979);
- recoveries of birds from west-central Europe with similar recorded movements to those of Scandinavian birds, range 11–205 km;
- 52 captive-bred birds released into the wild dispersed 0–110 km.

More recent data from the ringing schemes in Finland and Sweden provide valuable insights into Eagle Owl dispersal. In Finland, an average of 342 Eagle Owls have been ringed each year in the seven years to 2007 (Johanna Oja pers. comm.). One Finnish-ringed bird has been recovered in Estonia; a crossing of the Gulf of Finland would involve at least 30 km over the sea but this bird may have travelled round the eastern end of the Gulf of Finland, rather than across it. One ringed in southwest Finland in 1986 was recovered near Stockholm, Sweden, in 2000. However, 14 years between ringing and recovery is a long time and it could conceivably have avoided a sea crossing and gone round the northern end of the Gulf of Bothnia. A more likely possibility is that it used the numerous islands in the Åland archipelago and island-hopped across to Sweden, thus avoiding sea crossings of more than 20 km.

By 2003, 6,663 Eagle Owls had been ringed in Sweden and there had been 1,805 recoveries, giving a 27% recovery rate (Thord Fransson pers. comm.). One hatched in central Sweden in 1977 was found in western Finland in 1985; like the Finnish bird mentioned above, it may well have travelled via the Åland archipelago. There is also one record of a bird ringed in central Sweden being recovered on the island of Gotland in the Baltic, involving a sea crossing of at least 40 km. The median distance travelled from hatching place for birds recovered during summer (May to August), at least one summer after ringing, is 52 km (range 0–528 km, n=66). It is also notable that there are no recoveries of Swedish-ringed Eagle Owls in Denmark, despite the short distance and minimal sea crossing involved.

Elsewhere in Europe, Glutz von Blotzheim & Bauer (1985) noted a bird in the Alps moving 400 km. Other work in the Alps using satellite-tracking found that, in Switzerland, Eagle Owls in their first winter covered distances of 4–35 km per night and crossed mountain ranges up to 3,000 m high. These birds 'settled' between 10 km and 100 km from their place of origin (Aebischer *et al.* 2005).

It has often been suggested that records of Eagle Owl from the east coast and from North Sea oil installations are proof that the species crosses the North Sea. The North Sea Bird Club (NSBC) monitors birds on oil platforms and associated structures/vessels in the North Sea. Migrants from Scandinavia are recorded regularly, including many vagrant species; owls are recorded regularly (between January 1979 and February 2006, NSBC recorded 406 Long-eared Owls, 426 Short-eared Owls and four Snowy Owls), yet it has no records of Eagle Owl. Some of the 79 records assessed by BOURC were on the east coast during autumn, and these are arguably more likely to involve natural vagrants than records from elsewhere in the country. Despite the declines in many European populations, Hagemeijer & Blair (1997) reported some evidence of a resurgence in western Europe since 1970, linked to reintroduction programmes but also exploitation of new habitats (e.g. clear-fells) and food sources (e.g. rats *Rattus* associated with rubbish dumps). If these trends continue, the likelihood of wild birds reaching Britain will increase. However, the number in captivity, the frequency of escapes and the limited evidence of sea crossings support the view that current British records are most likely due to escapes, illegal releases (it is illegal to release into the wild any bird which is not normally resident in, or a regular visitor to, Britain), or their offspring; there is currently no clear evidence that wild birds are involved.

The BOU must have a very strong case for adding any species to the British List. In the case of Eagle Owl, there are two potential routes: 1) admission to Category C, based on the criteria of a self-sustaining population (originating

from a captive source) being determined, or 2) natural occurrence (with strong supporting evidence, e.g. ringing recovery or stable-isotope analysis). Any such record must reach a balance of probability which is overwhelmingly in favour of natural vagrancy. Currently, the known records do not meet either of these criteria.

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Tim Melling, c/o RSPB, Westleigh Mews, Wakefield Road, Denby Dale, West Yorkshire HD8 8QD
Steve Dudley, British Ornithologists' Union, PO Box 417, Peterborough PE7 3FX
Paul Doherty, 28 Carousel Walk, Sherburn in Elmet, North Yorkshire LS25 6LP

Appendix 1. Summary of all historical occurrences of Eagle Owl *Bubo bubo* in Britain 1678–1990, with BOURC comments on acceptability following review.

Date	Location	Comment	BOURC view (see key)	Reference
1678	St James's Park, London	First record in captivity in Britain (and known in captivity in France in same year)	–	125
Pre-1684	Orkney	Report	1	136, 117, 149, 10, 113, 107, 54, 115, 133, 11, 128
Pre-1752	Sussex	Report	1	86, 153
Pre-1768	Yorkshire	Report	1	117, 92, 57, 102, 80, 31, 133, 83, 114, 130, 9, 100
Spring 1770	Kent	Report	1	92, 120, 157, 115, 80, 133, 111, 81, 8, 147, 78
Pre-1772	Fife	Killed	1	118, 119, 92, 57, 120, 65, 115, 80, 111, 82, 126, 139
Pre-1774	Shetland	Report	1	2, 50, 51, 41, 80, 133, 129, 52, 155, 11, 9
29th December 1782 or 1784	Herstmonceaux, East Sussex	Shot	1	93, 120, 59, 102, 115, 80, 133, 19, 157, 111, 81, 155, 130, 152, 9, 47, 135, 53
Pre-1813	Orkneys	Report	1	98, 102, 80
1813	Shetland	Report	1	130, 11, 9, 146
1820	Honiton, Devon	Report	1	108, 109, 102, 157, 115, 80, 133, 121, 44, 111, 81, 155
c. 1824	Horton, near Bradford, Yorkshire	Shot	1	31, 72, 111, 81, 114, 28, 100
1828	Shardlow, Derbyshire	Report	1	63, 20, 115, 80, 133, 153, 111, 81, 89, 155, 130, 9
1830	Sanday, Orkney	Killed	1	7, 65, 115, 80, 71, 23, 18, 130, 11, 9, 22, 146
Summer 1832	Near Harrogate, Yorkshire	Taken alive; considered an escape	2	71, 31, 111, 114, 28, 100
Pre-1833	Durham	Report	1	134, 102, 71, 133, 145
Winter 1833	Near Oxford, Oxfordshire	Shot	1	101, 115, 80, 133, 6, 111, 81, 90, 155, 124
1836?	Swansea, Glamorgan	Report	1	115, 80, 133, 111, 27
1837	Off Flamborough Head, Yorkshire	Captured on board ship	2	84, 71, 31, 81, 114
Spring 1841	Hornsey, Middlesex	Specimen	2	18, 62
1842	Scotland	Report	1	3
Autumn 1843	Near Goring, Berkshire	Report (seen from train)	1	101, 80, 6, 81, 90, 124
Pre-1844	Derbyshire?	Specimen (unlabelled)	1	20
c. 1845	Handley Common, Dorset/Wiltshire	Report	1	137, 155, 130, 122
March 1845	Clifton Castle, Yorkshire	Report	2	110, 71, 31, 111, 114, 100
3rd November 1845	Hampstead, Middlesex	Report	2	74, 79, 115, 80, 133, 111, 81, 62

Date	Location	Comment	BOURC view (see key)	Reference
November 1845	Greetland, Yorkshire	Report	1	71, 31, 81, 114, 100
1848	Stainton le Vale, Lincolnshire	Report	2	71, 36, 111, 155, 138
Pre-1849	Near Melbourne, Derbyshire	Report	1	21, 80, 153, 111, 81
1849	Easton, Norfolk	First known captive breeding in Britain	–	68
1853	Norfolk	Taken alive, considered an escape	3	88, 115, 24, 151, 71, 133, 111
1855	New Forest	Report	1	91, 155, 130, 9, 32, 33
December 1859	Embleton Beach, Durham	Obtained	3	111, 15, 16, 60
Pre-1863	Brodie, Morayshire	Report	1	141, 83, 34
Autumn 1863	Near Haroldswick, Shetland	Report	1	131, 80, 132, 71, 52, 11, 22, 146
November 1863	Near Llanidloes, Montgomeryshire	Report	3	12, 56
1864	Somerton, Norfolk	Shot	2	71
February 1866	Methlick, Aberdeenshire	Seen on 2nd February 1866, but was later 'collected'	2	65, 115, 80, 133, 85, 111, 81, 9
c. 1868	Steventon, Herefordshire	Caught; kept alive for three years, taken to Ludlow Museum	3	55
1869	Northrepps, Norfolk	Report; tame	3	71
c. 1871	Near Harpenden, Hertfordshire	Report	3	45, 148
March 1871	Balta and Huney, Shetland	Report	1	132, 71, 52, 81, 130, 11, 9, 22
October 1872	North Sutherland	Report	1	75, 71, 81, 15, 60
17th January 1873	River Tummel near Pitlochry, Perthshire	Report	2	66, 71, 81, 82
Autumn 1873	Near Bridgnorth, Shropshire	Killed	2	35, 71, 55, 81, 130, 155, 9
5th November 1875	Hummersea, Yorkshire	Shot	2	103, 114, 28, 100
Pre-1876	Seaton Carew, Durham	Report	1	71, 145
July 1876	Rombolds Moor, Ilkley, Yorkshire	Report	1	25, 31, 81, 114, 28, 100
12th April 1879	Near Stamford, Lincolnshire	Shot; female	2	42, 129, 130, 73, 9, 138, 96
30th October 1879	Scarborough, Yorkshire	Report	1	30, 31, 36, 81, 114, 130, 28, 100
Winter 1879–80	Easington, Yorkshire	Report	1	37, 38, 114, 130, 28, 9, 100
1880–1900	Near Blackpool, Lancashire	Shot; known locally in captivity	3	77
23rd December 1881	Bayfordbury Estate, Near Hertford, Hertfordshire	Report; one escaped locally three months earlier	2	95, 127
February 1883	Duntroon Hill, Kilmartin, Argyllshire	Caught in rabbit trap	5	83, 155, 130, 11, 9, 22, 146
1st January 1885	Fixby, nr Huddersfield, Yorkshire	Report	1	72, 76, 114, 28, 100
1887	Near Onslow, Shropshire	Report	3	55

Date	Location	Comment	BOURC view (see key)	Reference
October 1888	Spurn, Yorkshire	Report	1	36, 37, 38, 114, 28, 100
May and October pre-1890	Borders of Essex	Report	1	29
c. 1890	Kincardineshire	Shot	1	142, 9, 40
Winter 1891	Paultons, near Romsey, Hampshire	Report	2	112, 91, 156, 155, 130, 9, 32, 33
1908	Nottinghamshire	Report; birds known to have been released in the county about same time	3	49
October 1915	Near Redcar, Cleveland	Report	1	1, 28, 143
26th November 1931	Newton Lodge, North Uist, Hebrides	Report	1	4, 142, 11, 9, 22, 43
23rd April 1933	Morchard Bishop, Devon	Shot; abraded tail and primaries	2	26, 22
Autumn 1938	Kintyre	Report; pair; tame	2	61, 9
13th January 1939	Near Cuckfield, Sussex	Shot	3	47, 135
21st April to mid July 1941	Newton Stewart, Kircudbrightshire	Report; displaying; Short-eared Owl not eliminated	1	13, 11, 9
1941	Fannyside Moor, Dumbartonshire	Report	1	61
1942	Fannyside Moor, Dumbartonshire	Report	1	61
17th December 1943	Yarker Bank plantation, Wensleydale, Yorkshire	Report	1	5, 150, 28, 9, 22, 100
February 1947	Fannyside Moor, Dumbartonshire	Report	1	5
1949	Fannyside Moor, Dumbartonshire	Report	1	5
14th April 1954	Shropshire	Killed; specimen; Great Horned Owl	4	154, 22
1975–85	Scotland	Report; several escaped or deliberately released	2	146
14th March 1981	Near Windsor Great Park, Berkshire	Report	2	per BBRC
10th–12th September 1981	North Warnborough, Hampshire	Report; tame	2	per BBRC
27th July 1982	Leigh-on-Sea, Essex	Report; same as Little Wakering below	2	39
5th August 1982	Little Wakering, Essex	Report; same as Leigh-on-Sea above	2	39
1983–84	Kent	Report; six birds	2 or released individuals	per P. J. Grant
1984 onwards	Moray	Report	2 or released individuals	34
16th October 1987 to May 1989	Chichester, Sussex	Report; known escape	2	per J. T. R. Sharrock
9th December 1990	Willenhall, West Midlands	Report	2	per BBRC

BOURC view
1 Insufficiently documented/identification unconfirmed
2 Identification confirmed; presumed escape
3 Contemporary doubt; presumed escape
4 Identification incorrect
5 Insufficiently documented/identification confirmed

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Unusual nest-site of Lammergeier in Sardinia

Although the Lammergeier *Gypaetus barbatus* usually nests in high, inaccessible mountain areas, it is not exclusively a bird of such remote environments, and nest-sites may be located between 700 and 4,500 m asl (Glutz von Blotzheim *et al.* 1971; Hiraldo *et al.* 1979). Habitat selection in the Western Palearctic was discussed by Glutz von Blotzheim *et al.*, Hiraldo *et al.*, Cramp & Simmons (1980) and Terrasse (2001), but little has been published on nest-site selection. Donázar *et al.* (1993) examined the influence of habitat type on population density and reproductive success, but did not describe nest-site preferences.

Nest-site selection in Sardinia

The Lammergeier was exterminated as a breeding bird in Sardinia during 1968–70 (Grussu 2001). Before this, the Swiss naturalist Carl Stemmler visited an occupied Lammergeier's nest containing a single chick in the Urzulei region, in June 1926. Stemmler (1932) described the species' reproductive biology and photographed the pair with the chick (plate 243). Stemmler's notes and photographs were used recently to relocate this old nest-site. The nest-site lies in the deepest part of the valley of the Codula di Luna, among jagged crags and surrounded by open areas with scattered woodland. The nest-site itself is located in a recess in a calcareous cliff, the cliff being c. 25 m high. Below this lies a steep, rock-covered slope with scattered trees including Holm Oak *Quercus ilex* and Prickly Juniper *Juniperus oxycedrus*. The nest recess is situated c. 4.5 m above the base of the cliff and faces SSW. Stemmler noted that the nest measured 2 × 3 m, with a depth of c. 20 cm. It was constructed from branches and thinner twigs, and the nest cup was lined with hair from goat and sheep.

Despite the availability of other apparently suitable nest-sites on adjacent cliff-faces, this

Carl Stemmler

243. Adult and well-grown juvenile Lammergeier *Gypaetus barbatus* at nest in Codula di Luna valley, Urzulei, Sardinia, June 1926.

Antonio Fadda & Maurizio Medda

244. The breeding site in the Codula di Luna valley, Urzulei, Sardinia, where Carl Stemmler photographed breeding Lammergeiers *Gypaetus barbatus* in 1926. Some large branches from the old nest of 1926 are still present.

recess was clearly preferred; possibly as it offered better protection against bad weather. Human disturbance at this remote site is only occasional and would probably have been less so when the site was occupied. In May 2005, we noted that the nest-site still contained small branches from the old nest (plate 244), suggesting that it had been used subsequently, either by Lammergeier or by one of the other large predators still present in this valley: Griffon Vulture *Gyps fulvus* (present until c. 1990), Golden Eagle *Aquila chrysaetos*, Common Buzzard *Buteo buteo* or Common Raven *Corvus corax*.

Nest-site selection at other sites

In the Pyrenees, R. Heredia (unpublished data) noted that some Lammergeier nests are situated 8–10 m above the ground, and also described a site that was readily accessible on foot, although the nest itself was in a cave at the foot of a 50-m cliff. J.-F. Terrasse (unpublished data) commented on a nest in the Navarra region, situated 7–10 m from the ground and built on a small crag adjacent to a higher cliff of c. 30–40 m. In addition, at a site near Pamplona, a nest is located 12–15 m above the ground on a crag adjacent to an asphalt road. This nest was occupied but unsuccessful in 1986; the adults returned and possibly nested again in 1987, although the outcome was unknown (J. Elosegui Aldasoro unpublished data).

In nearby Corsica, Lammergeier nests are usually located on high cliffs, mostly 15–200 m above ground, although one nest is just 10 m above the ground; but all these nests are inaccessible to humans (G. Faggio & J.-F. Seguin unpublished data). Glutz von Blotzheim *et al.* (1971) observed that nest-sites in central Asia may also be sited in low rocks and easily accessible, while Hiraldo *et al.* (1979) described a tree nest in Kashmir just 4 m above ground.

Discussion

The nest-site at Codula di Luna is unusual in several respects. It is situated on the lower third of the cliff-face and, at just 4.5 m above the ground, is exceptionally low. Owing to the particular configuration of the rock around the nest recess, it is accessible to mammalian predators including Red Fox *Vulpes vulpes* and Wild Cat *Felis silvestris*, as well as to human disturbance. At just 600 m asl, the breeding site is exceptionally low.

Donázar *et al.* (1993) found that, in the Spanish Pyrenees, most nests are located close to the midpoint of the cliff-face. Here, Lammergeiers appear to be particularly selective in their choice of breeding cliff. In particular, they show a preference for nest-sites in the most inaccessible part of the highest available cliff; pairs with such nest-sites were more productive than those nesting in more accessible locations, presumably owing to lack of disturbance.

The accessibility of the nest-site at Codula di Luna left it open to disturbance and predation, but its attraction must have outweighed these potential threats. Whether disturbance resulted in repeated nest failure or whether other factors were involved is not known.

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Marcello Grussu
Gruppo Ornitologico Sardo, C.P. 209/ C, 09045 Quartu Sant'Elena, Cagliari, Italy

From the Rarities Committee's files: October Greenish Warblers

Prior to 1990, Greenish Warblers *Phylloscopus trochiloides* of the western form *P. t. viridanus* occurred rarely but regularly in Britain in October, and records in that month appeared to be increasing in line with observer numbers. October records totalled one in the 1950s, two in the 1960s, four in the 1970s and five in the 1980s. However, after 1990 (when two October records were accepted), only one further October Greenish was recorded in the subsequent decade, despite the species occurring more frequently in Britain. In the present decade, there are just two records, both in 2005 (Fraser *et al.* 2007).

By 1990, however, the much rarer East Asian form 'Two-barred Greenish Warbler' *P. t. plumbeitarsus* had been found in Britain. The first for Britain was on Gugh, Isles of Scilly, on 21st–27th October 1987 (Bradshaw 2001), and subsequent accepted records were at Wells, Norfolk, on 15th–16th October 1996 (Kemp 1996), on Bryher, Scilly, on 27th–28th September 2003 (Dodgson 2003) and at Filey, Yorkshire, on 16th–18th October 2006 (Thomas 2006). In addition, a Greenish Warbler at Holme, Norfolk, on 14th–19th October 1976, previously accepted as an Arctic Warbler *P. borealis*, is now considered likely to have also been a 'Two-barred Greenish' (Stoddart 2003), although the standard of its documentation falls short of that necessary for it to be accepted as a first for Britain. These British records show a strong (but not exclusive) cluster in the third week of October. However, a further four European records since 1990 – in The Netherlands on 17th September 1990 and 2nd October 1996, in Sweden on 5th July 1991 and in Finland on 1st–2nd October 2002 – indicate a wider spread of possible dates. Clearly, *plumbeitarsus* is emerging as a regular, though still very rare, vagrant to Britain and northwest Europe.

Are these two trends related? In other words, could there be any more *plumbeitarsus* among those pre-1990 Greenish Warblers currently accepted by BBRC, particularly among the October records? If not, and given the species' apparent rarity in October now, could any of these earlier records have been misidentified?

Methods and results

A review of all accepted October records of Greenish Warbler was undertaken by AS at the

Hugh Harrop

245. First-winter Arctic Warbler *Phylloscopus borealis*, Bressay, Shetland, September 2005. Important components of the face pattern are the solid dark loral line and the dark-mottled ear-coverts. In addition, the supercilium does not reach the forehead and is narrow both above and behind the eye. Also easily seen are the grey-sullied breast-sides and flanks, indistinct double wing-bars, long primary projection and pale, orange-toned legs.

request of the BBRC Chairman. Given the tendency of *plumbeitarsus* to show Arctic Warbler-like characters (including mottled ear-coverts, two greater-covert wing-bars and a supercilium that does not reach the forehead), it was also necessary to include Arctic Warblers in the review; any misidentified *plumbeitarsus* is perhaps more likely to have been called an Arctic Warbler than a Greenish. The review sought to establish whether, based on the evidence available, any previously accepted Greenish or Arctic in October might warrant recirculation to BBRC, either as a putative 'Two-barred Greenish Warbler' or as another species. BBRC has previously undertaken major reviews of both Greenish and Arctic Warbler records, focused largely (in the former case) on distinguishing records of Greenish Warbler from those of eastern Chiffchaffs *P. collybita tristis/abietinus* and (in the latter case) distinguishing records of Arctic Warbler from those of Greenish. The current review did not seek to re-open these deliberations, but to see whether any further light could be shed on an emerging pattern of wing-barred *Phylloscopus* warbler records in October.

Modern record assessment is greatly assisted by photographic evidence in many cases. This was rarely so before 1990, however, even with trapped birds. In some cases, field descriptions may be a less reliable source of detailed evidence than photographs and it was clear that this review was unlikely to highlight any 'difficulties' with a record unless either a photograph or a full set of reliable biometric data existed.

All available post-1957 records were reviewed, amounting to 13 October records of Greenish and 32 of Arctic Warbler (which occur later in the autumn, on average). Of these, files for six Greenish and 11 Arctic Warbler records included photographs or biometrics (though none had both) and these were prioritised for review. Each record was assessed against the characters now widely understood for separating Greenish (of both the forms *viridanus* and *plumbeitarsus*) and Arctic Warbler (e.g. Svensson 1992, van der Vliet *et al.* 2001).

From the available evidence, there is no suggestion that 'Two-barred Greenish Warblers' have been overlooked among the records currently accepted as either Greenish or Arctic Warbler. Apart from the bird at Holme in October 1976 (see above), this can be said definitively for all records accompanied by photographs. The extent to which previous *plumbeitarsus* may have been overlooked as Yellow-browed Warbler *P. inornatus* is, however, unknown. For example, the first British *plumbeitarsus* (Gugh 1987) masqueraded briefly as a Yellow-browed (Bradshaw 2001).

The evidence is less conclusive in terms of whether other species can be eliminated from

Hugh Harrop

246. First-winter Greenish Warbler *Phylloscopus trochiloides viridanus*, Wester Quarff, Shetland, October 2005. Note the weak smudgy loral line, the broad supercilium above and behind the eye and the pale, relatively unmarked ear-coverts. On many individuals, the supercilia continue further onto the forehead than seen here and appear to meet above the bill, although (as this bird demonstrates) this feature is not absolute. Also visible here are a subtle lemon wash to the underparts, a single 'wispy' wing-bar on the outer greater coverts only, medium-length primary projection and dull-coloured legs.

Tom Tams

247. 'Two-barred Greenish Warbler' *Phylloscopus trochiloides plumbeitarsus*, Filey, Yorkshire, October 2006. Though resembling *viridanus* Greenish Warbler in structure, leg colour and breadth of supercilium, this form shows a strong double wing-bar, that on the greater coverts being bold and straight. It also generally shows a stronger loral line and more well-marked ear-coverts, and the supercilia do not reach the forehead – all features more reminiscent of Arctic Warbler *P. borealis*.

the October Greenish Warbler records as a whole. The level of documentation of older records is, by modern standards, thin. Nonetheless, there is no definitive evidence that any were misidentified and, in line with wider BBRC policy on historical reviews, the identifications should therefore stand.

Discussion

It seems that the pattern of increased occurrence in Britain and northwest Europe of 'Two-barred Greenish Warbler' may be genuine. Such an increase would be in line with the recent (albeit very modest) increases in northwest Europe of a number of other partly sympatric Siberian species such as Siberian Rubythroat *Luscinia calliope*, Siberian Blue Robin *L. cyane*, Rufous-tailed Robin *L. sibilans* and Eastern Crowned Warbler *P. coronatus* (Harrop 2007). Possible mechanisms for this phenomenon have been widely discussed (e.g. Gilroy & Lees 2003).

With such a small sample size, the apparent dearth of October Greenish Warblers after 1990 may well be statistically insignificant. Moreover, if one or two of the pre-1990 birds *were* misidentified, the apparent decline in the graph of occurrences would disappear! Overall, the October status of *viridanus* Greenish Warblers seems reasonably well established – they are rare in late autumn, rarer than Arctic Warbler and almost as rare as *plumbeitarsus*. The task of identifying one of the larger wing-barred *Phylloscopus* warblers in mid to late autumn is clearly not a task to be undertaken lightly!

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Andy Stoddart
7 Elsden Close, Holt, Norfolk NR25 6JW

Notes

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Mute Swans eating carrion

On 12th September 2007, I watched three Mute Swans *Cygnus olor* eating from the carcase of a Feral Pigeon *Columba livia*. The corpse, floating in the River Wensum in central Norwich, was identified by its wings and size, despite having no head or feathers remaining on its body. Initially, just one swan was pecking away at the body but it was soon joined by two more. This was no idle pecking, either: they were really having a go at the corpse and twice I saw a swan raise its head with a long thin piece of meat, roughly 20 cm long, perhaps a piece of intestine, which was then swallowed.

Even though *BWP* states that '... small animals also occasionally but regularly taken, including frogs, toads, tadpoles, molluscs, worms, insects and larvae' and among a wide range of items occasionally taken 'whole fish ... and raw meat', I found this incident surprising.

Chris Durdin
RSPB Eastern England office, 65 Thorpe Road, Norwich NR1 1UD

Hobby taking fish from Common Tern

At dusk on 5th August 2007, at the edge of the Taukum desert, c. 200 km north of Almaty, Kazakhstan, I saw a Hobby *Falco subbuteo* chasing a Common Tern *Sterna hirundo*. About 10 m from contact, the tern called, jinked in flight and dropped a small fish that it was carrying. The Hobby immediately swooped down, caught the fish in a talon and flew off with the catch. Hobbies were common in the area, with several pairs seen feeding fledged young. Common Terns were also present in good numbers, feeding in small rivers and a nearby lake. I could not identify the fish, except that it was a freshwater species (I was 2,500 km from the nearest ocean).

I was amazed to witness kleptoparasitism in the Hobby and the fact that a fish was the stolen item made the event even more interesting.

Tim Earl
Les Landes Cottage, Rue des Landes, St Pierre du Bois, Guernsey GY7 9SH

EDITORIAL COMMENT Kleptoparasitism has been recorded before in the Hobby (e.g. *BWP* states that small mammals are part of the Hobby's diet, often as a result of food-piracy on Common Kestrel *F. tinnunculus*; and *Ornithos* 13: 385–387 mentions kleptoparasitism by Hobby on Hen Harrier *Circus cyaneus*), but the event and especially the prey type recorded here are interesting.

Moorhen exploiting bird feeders

For many years, I have put out food for Moorhens *Gallinula chloropus* nesting on a pond in my Northamptonshire garden. In winter 2006/07, a multipurpose feeding station was set up in the garden, following which both adult Moorhens were soon observed flying up onto the open seed tray to feed. They quickly learnt to reach from this tray to peck at peanuts in a wire-mesh feeder, and to stand on the water bowl and reach a plastic cylindrical seed feeder. In an attempt to restrict their use of the latter feeder, it was moved out of their reach – successfully at first, as both birds would overbalance when trying to reach it. However, in late July 2007, one of the pair learnt to grip the plastic lower perch and surround to the feeder, and pull it. This would set the feeder swinging, and the Moorhen was able to feed intermittently as it swung within reach! Typically, this procedure would be repeated several times before the bird flew down to feed its young (plate 247). This learnt behaviour appeared to

be restricted to just one member of the pair; the technique was not adopted by the other bird, although it continued to try (unsuccessfully) to reach the feeder. Moreover, during winter 2007/08, as up to ten Moorhens (the two adults plus offspring from two 2007 broods) gathered around the feeding station, only one adult remained capable of this extraordinary feeding technique.

Dr R. Colin Welch
The Mathom House, Hemington, Oundle, Northamptonshire PE8 5QJ

Colin Welch

248. Moorhen *Gallinula chloropus* exploiting 'swinging' bird feeder, Northamptonshire, August 2007.

Common Kingfisher catching and attempting to eat a shrew

On 6th October 2007, while watching a Common Kingfisher *Alcedo atthis* feeding along a flood relief channel at King George V Reservoir, Essex, I was surprised to see the bird return to the concrete bank carrying a small mammal. The body size of the prey slightly exceeded the length of the kingfisher's bill, while its tail length was roughly equivalent to it. These comparisons, together with the pointed head shape, suggest its likely identity as a Pygmy Shrew *Sorex minutus*. Having beaten the prey against the perch several times, holding it by the tail, the kingfisher spent several minutes juggling and attempting to swallow it, before carrying it further down the channel and out of sight. To my knowledge, mammals have not been previously recorded in the diet of this species.

Tristan Bantock
101 Crouch Hill, London N8 9RD

House Martins destroying Spotted Flycatcher nest

Over the past few years, the number of House Martin *Delichon urbicum* nests in my Suffolk garden has increased from one to three in summer 2007, in which year a pair of Spotted Flycatchers *Muscicapa striata* also nested. Soon after the flycatchers had completed their clutch, on a small ledge of the office wall, I discovered that the nest had been pulled out and lay on the ground. I blamed the local Magpies *Pica pica*. The flycatchers rebuilt on a ledge on another west-facing wall but this nest disappeared too. Then one day, while working in the garden, I noticed a Spotted Flycatcher mobbing a House Martin that appeared to be pulling a nest off the second nesting ledge. Subsequently, I also observed a House Martin pulling nesting material off the office ledge. To my knowledge, no Spotted Flycatchers were raised in the garden in 2007, but the House Martins each raised two broods.

David Hosking
Pages Green House, Wetheringsett, Stowmarket, Suffolk IP14 5QA

EDITORIAL COMMENT Angela Turner has commented that House Martins often steal nest-lining material (e.g. *BWP*) and that this may have been the case here.

Grey Wagtail catching minnows

In early May 2007, I had erected a hide overlooking the nest of a Grey Wagtail *Motacilla cinerea* in Ayrshire. The nest, hidden in a deep recess of a wall immediately above the River Garnock, contained large young and I noticed that the female occasionally brought in a minnow *Phoxinus phoxinus*. The female was 'fishing' in shallow water in the river and bringing a mixture of minnows and insects to the young. The river was very low at the time and minnows were stranded in pools only 5–7 cm deep.

Wagtail chicks do not stay in the nest for long (the chicks fledged two days after plate 248 was taken) and, since small fish will presumably be fed only to large chicks, there is only a short window of opportunity (perhaps 4–5 days) for such a photograph.

Mark Hope

249. Female Grey Wagtail *Motacilla cinerea* delivering a minnow *Phoxinus phoxinus* to nestlings, Ayrshire, May 2007.

Mark Hope
3 Grahamston Avenue, Glengarnock, Ayrshire KA14 3AF

Letters

Rare seabirds

Seabirds have vast powers of endurance, enabling them to cope with uncertain weather and food supplies, and when they go astray it is liable to be a very long way. Some species may travel on inland until they drop in places where observers are scarce, and it becomes a matter of chance whether they are picked up and eaten, fed to livestock, or taken to the local landowner, market, taxidermist or ornithologist with no information where they came from. There is plenty of proof that this happens, ranging from ancient cave deposits to recent invasions of common species such as Little Auk *Alle alle* and Leach's Storm-petrel *Oceanodroma leucorhoa*. Mike Imber pointed out to me that the main inland concentrations during the latest invasion of the latter (Gantlett 2006) occurred inland from the estuaries of the Dee and Severn, in areas that also produced not only the Kermadec Petrel *Pterodroma neglecta* in Cheshire that has been discussed recently, but also a Red-billed Tropicbird *Phaethon aethereus* near Malvern, Worcestershire (Gurney 1894).

I contend that the current level of proof demanded of both the origin and the identity of such records is leading to a bias in knowledge about seabird distribution. In consequence, what appear likely records of, for example, Red-billed

Tropicbird, Yellow-nosed Albatross *Thalassarche chlororhynchos*, and Audouin's Gull *Larus audouinii* (Bourne 1992) have been struck from the record when these past reports should at least have been mentioned. Another example is that, until recently, the only record away from breeding islands of any member of the widespread genus *Pterodroma* (which are now reported several times a year) to appear on the European List was a Black-capped Petrel *P. hasitata* that came down in rural Norfolk near the greatest ornithologist of his day, Alfred Newton (1852), and nobody dared to challenge him.

Records committees must be aware not only of the credibility of records, but also of that of their own committees. We have now reached a situation where some of those interested in seabird distribution regard such lists as prejudiced sources. Whereas they previously contained many dubious records from ports, taxidermists and collectors, they now seem increasingly incomplete, with growing numbers of suppressed reports – not only of sight records but from such places as markets, which may once have provided the best indication of what was really present (Gurney 1870; Stubbs 1913; Raven 1929). These markets have produced not only a Trindade Petrel *Pterodroma arminjoniana* but also South Polar Skuas *Stercorarius maccormicki* (Bourne & Lee 1994) from Leadenhall Market in London, which seem more likely to have come from Britain than anywhere else. While such records may not be as complete as one would wish, it also seriously falsifies the record to ignore them completely.

Dr W. R. P. Bourne
Ardgath, Station Road, Dufftown, Moray AB55 4AX

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Predictions of future vagrants

Most authors of accounts of new Palearctic passerine vagrants mention my 1980 predictions (*Brit. Birds* 73: 388–397). Their origin was an overlay of sympatric breeding ranges, particularly as mapped in Flint *et al.* (1968), pored over in my personal belief that, particularly in years of high productivity, species would in part disperse so as to achieve new distribution or to recover ground lost in the last ice age. My forecasts of Siberian birds and other groups were revised in popular articles and lectures up to 1996. However, none was updated by the full catalogue of European rarities of Mitchell & Young (1999) or illuminated by the arguments for 'reversed migration' and 'pseudo-vagrancy' made, respectively, by Vinicombe & Cottridge (1996) and Gilroy & Lees (2003).

Authors who now address the approach vectors of new British birds ought to give the more recent reviews due credits. I particularly commend the work of Keith Vinicombe. He does not explain every stream of rarities and agrees with me that the arrivals of central Asian species virtually at 'right angles' to their standard directions is a tough nut. Nevertheless, his studied forecasts outclass my adventurous thoughts.

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D. I. M. Wallace
Mount Pleasant Farm, Main Road, Anslow, Burton on Trent, Staffordshire DE13 9QE

Obituaries

David Lewis Davenport (1946–2008)

If weather conditions indicated that it was likely to be a good year for spring passage of Pomarine *Stercorarius pomarinus* or Long-tailed Skuas *S. longicaudus* past Balranald, North Uist (Outer Hebrides), the chances were that one of the people watching and recording these often impressive movements would have been David Davenport. That was no accident, for, almost single-handedly, David identified and elucidated the spring movements of these species along the west coasts of Britain & Ireland and, in the case of Pomarine Skua, eastwards up the English Channel. What is now recognised as the norm was simply unknown before David got to work on it.

David Davenport was born in Gillingham, Kent, on 16th October 1946, the middle of three brothers, all of whom, from their school days, developed a keen and lifelong interest in birdwatching. David cut his birdwatching teeth on the North Kent Marshes and displayed an early interest in migration and the link between bird movements and weather conditions. In December 1964, at Stodmarsh, Kent, and with his elder brother, Llew, and Chris Wheeler, he had the remarkably good fortune to see Britain's first Pallas's Sandgrouse *Syrrhaptes paradoxus* since the last 'invasion', in 1908 (*Brit. Birds* 60: 416–419). It was David who first spotted the bird. It was not long before he gravitated to Dungeness, where he began to spend time seawatching and quickly realised that this activity had tended to stop too early in the season to give a full picture of spring migration. When he began to watch later in the season, this revealed, among other things, the regular passage of small numbers of Pomarine Skuas flying up-Channel. He ultimately reported his findings in *BB* in 1975 (*Brit. Birds* 68: 456–462), reviewing all available records from the southern coasts of Britain & Ireland.

That paper in *BB* also referred to a record of Pomarine Skuas off Balranald in 1971 and, in a prescient comment, he noted that better coverage might lead to the discovery of a regular passage off the west coasts of Ireland and Scotland. Rather than waiting for local observers to take the hint and go and look, the next year he headed north to North Uist and, during a couple of weeks camping there, he revealed just such a passage. This was the first of many visits to Balranald but he also checked out Ireland, spending two weeks at Slyne Head (Co. Galway) and confirming that skua migration could indeed be witnessed off western Ireland. Subsequently, many of his spring visits to Balranald also revealed a similar passage of Long-tailed Skuas and all these findings were published in *Irish Birds* in 1981 (*Irish Birds* 2: 73–79) and in *Scottish Birds* ten years later (*Scott. Birds* 16: 85–89). These two papers, together with his original *BB* paper, continue to be the standard references for this aspect of skua migration and he was the author for these two species in *The Birds of Scotland* (Forrester *et al.*, 2007, SOC). By good fortune, he was

Jeffrey Davenport

250. David Davenport, Kent, 2007.

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able to see a copy just before he died. In the course of these observations, David developed a remarkable ability to predict exactly when good skua passage was likely to occur and, by carefully studying the daily weather maps, timed his departure from Kent to a nicety, such that he would set off on the long drive north, catch the ferry from Oban and arrive at Balranald just before the movement commenced! He eschewed modern communications (no e-mail, no mobile phone), but he was an active correspondent with skua aficionados both home and abroad.

David lived the whole of his life in or near the Medway towns and, apart from skuas, his main birding focus was always on Kent, where his contribution to the Kent Ornithological Society was immense – in many roles in relation to the *Kent Bird Report* and as a co-author of the *Birds of Kent* published by the Society in 1981. He was a prolific author and, apart from papers on skuas, published many others, often relating to seabirds, which appeared in the *Kent Bird Report* and elsewhere. At the time of his death he had drafted many species accounts for the forthcoming new Birds of Kent. He had outstanding eyesight and never found it necessary to use a telescope – indeed, he could often pick things up at sea with the naked eye that most people could find only with the aid of binoculars. He had hearing to match and once he had heard a bird call or song it was then seemingly permanently etched in his memory for instant recall. His memory for facts and dates was also prodigious and that undoubtedly helped him in analysing weather conditions and relating them to what had happened previously. David was a wonderful companion and seawatching with him was always hugely enjoyable, not just because you always saw more when he was around but because there was always a light-hearted atmosphere – David could be provoked into laughter by almost anything and his laughter was extraordinarily infectious! He never married and died on 27th April 2008, aged just 61, shortly after it was discovered that he was suffering from prostate cancer.

Peter Oliver

Richard Patrick (Derek) Goodwin (1920–2008)

With the death of Derek Goodwin on 15th May 2008, we have lost a most remarkable ornithologist, who certainly knew more about birds in general, and especially bird behaviour, than any of his countrymen, and probably more than anyone else in the world. This was the result of keeping and breeding birds from a very early age; extreme acuteness of observation of birds in the field; 34 years on the staff of the Bird Room at the Natural History Museum; a deep knowledge of the literature, ancient and modern; and an extraordinary memory which lasted until old age.

He was born in Woking on 26th February 1920, and was an only child, his mother dying when he was in his teens. On leaving school, needing to make money, he took an uninteresting clerical job, but the war started soon after. He joined the army and, as a private in the 149th Anti-tank Regiment, arrived in Egypt in June 1941. He survived the siege of Tobruk (1941–42) and was involved in the 1942 advance that followed the Alamein success in the Western Desert. For rescuing a wounded comrade under fire his colonel recommended him for a MM or DCM (Military Medal, Distinguished Conduct Medal); but apparently because there had been so many recommendations for bravery in that particular engagement, he did not receive the medal. (He told me this in one of the last letters I had from him.)

Early in 1943, his great knowledge of pigeons having become known to the army authorities, he was transferred to the Middle East Pigeon Service, based at Maadi near the Nile, where 'I exchanged the risks and rigours of a gunner's life in the desert for the safety and relative luxury of a "loftman" in the MEPS, a change that may well have saved my life.' His observations of birds in Egypt and Libya were vividly recalled in two articles in *Essex Birds* (autumn/winter 1989 and spring/summer 1990).

In August 1945 he returned home. Here one of those chance events took place that set the future course of one's life. He visited the zoological department of Gamages, the big London store, and saw some old copies (from the 1920s) of the *Avicultural Magazine* for sale, one of which contained an article on bronzewing pigeons (*Henicophaps/Phaps*), which he bought. Some months later, after demobilisation, he wrote to Phyllis Barclay-

Smith, editor of *Avic. Mag.*, who had a room at the NHM. She suggested that he should visit her; he did so, and she introduced him to J. D. Macdonald, who was in charge of the Bird Room. To Derek's great surprise, Macdonald offered him a job as a 'temporary assistant'. In those days, the lack of paper qualifications was no bar to getting a permanent job at the museum, if one proved to be competent and suitable. Of course Derek was, and he ended his professional career as a Principal Scientific Officer. The *Avicultural Magazine* remained his favourite bird journal throughout his life, and he contributed many papers of great interest.

When I visited him at his home in 1950, soon after getting to know him at the Bird Room, he was living at Virginia Water with his father, a retired Regimental Sergeant Major (from the First World War). He had pigeons of several kinds in his aviaries in the garden, also Golden Pheasants *Chrysolophus pictus* and Black-headed Jays *Garrulus lanceolatus*, which he successfully bred for the first time, and was making a detailed study of the native Eurasian Jays *G. glandarius* in the neighbouring woodland. I was impressed by how he swarmed up a honeysuckle-tangled tree trunk to check the contents of one of his Jay nests, and later learnt that he had been an intrepid tree and rock climber when he wanted young Stock Doves *Columba oenas*, or young Rock Doves *C. livia* from Scottish coastal cliffs.

His many years at the museum led to his becoming familiar, as preserved specimens, with the world's birds; and to his writing, in addition to taxonomic papers, monographs on three of his favourite families: *Pigeons and Doves of the World* (1967), *Crows of the World* (1976) and *Estrildid Finches of the World* (1984). He produced two other notable books on birds, *Bird Behaviour* (1961) and *Birds of Man's World* (1978). At the same time, he was the member of staff at the museum who most often answered the calls of visitors. Several people have told me how helpful he was with information or advice when they had called in there. As well as his books, he contributed many articles to *British Birds*, which included 'Notes and display of the Magpie' in 1952 (*Brit. Birds* 45: 113–122, notable also for some very early Robert Gillmor illustrations) and 'The problem of birds escaping from captivity' in 1956 (*Brit. Birds* 49: 339–349). A formal association with *BB*, as a founder member of what became the Behaviour Notes Panel, began in January 1960. He remained a member of the Notes Panel until early in 2000, at which point he became one of *BB*'s few Honorary Subscribers.

His knowledge of the bird literature was deep and wide-ranging. He taught himself German, necessary then because so much of the important literature, especially on bird behaviour, was in German; corresponded for many years with German ornithologists with interests similar to his; and became very fond of German poetry. He was in fact a most prolific letter-writer, with pen friends at home and abroad, some of whom he had never met. His phenomenal memory was often apparent in his letters. At the age of 80, for instance, in a letter discussing how to sex pigeons (not always easy), he wrote: 'So clearly did the first pigeons that I had when aged from 10 to 20 years impress themselves on me that some, whose sex I never knew at the time, I now see clearly, from memory of their heads and expression, which sex they were.'

His deep appreciation of the beauty of birds – and of butterflies, an important secondary interest – was one of the main things that sustained him throughout a long and far from easy life. It was also a factor in his passionate disagreement with some organisations involved in bird conservation that clouded his last years. He could not accept that the beauty of a bird should not be taken into account, and argued that three of the most beautiful of the world's birds – Golden Pheasant, Lady Amherst's Pheasant *C. amherstiae* and Mandarin *Aix galericulata* – all of which are to a greater or lesser degree threatened in their native countries, should be cherished and helped in this country as much as any of our native species, and are much more desirable than the very widespread, unthreatened White-tailed Eagle *Haliaeetus albicilla* and Northern Goshawk *Accipiter gentilis*. His 'self-portrait at 76', which he wrote for his entry in *Who's Who in Ornithology* (light verse was another of his talents), makes the point more light-heartedly:

> There was an old man who said: 'My!
> What a beautiful bird I espy.'
> When they asked: 'Is it rare?'
> He replied: 'I don't care,
> So long as it pleases my eye.'

David Snow

Reviews

WYE VALLEY

By George Peterken. HarperCollins, New Naturalist Series 105, London, 2008. 466 pages; numerous colour photographs and other illustrations. Hardback: ISBN 978-0-00-716068-6, £44.99. Paperback: ISBN 978-0-00-716069-3, £24.99.

This is the fourth book in the series to deal with an Area of Outstanding Natural Beauty (or its Scottish equivalent). In fact, it goes well beyond the strict boundaries of the AONB by including most of the Forest of Dean to the east, a considerable area to the west (around and to the north of the Monnow catchment) and the interesting foreshore of the Severn, from Lydney down to Caldicot. It deals only incidentally with the Wye above Hereford.

This is an extraordinary area, famed by poets and topographers since the eighteenth century. Wordsworth's 'wreaths of smoke' did not, as he allowed himself to fancy, come from hermits in the gorge, but from forges or charcoal burners, whose industry was part of the scene to which tourists were drawn in their search for the picturesque, or even the sublime. Almost all our rivers lose their excitement as they approach the sea, but just as the Wye seems to follow this pattern in the placid country below Hereford, it plunges like some Cretan torrent into a savage gorge, to emerge under Chepstow Castle into the mudflats.

The author of this enthralling study, a well-known forester, has the many-dimensional task of presenting the Wye as it now is and as it has developed over eons of time. He moves easily from geology and the prehistoric family whose footsteps have been found below the ooze, to the Cistercians of Tintern and the problems of twentieth-century development in agriculture, plantation, tourism and urban sprawl. Before the Severn was bridged, this was a remoter place, even after the arrival of the railways; now Chepstow can be two hours from London.

The trees, flowers and fungi have long been studied, most notably by the famous Woolhope Club, one of whose jokey menu cards is illustrated. Many interesting plants have been saved only by the reserves which have been developed from small, unworkable fields. In the woods, now little managed, there are famous trees, such as the Service-tree *Sorbus domestica* which was first noticed by a ninth-century Welsh monk.

As a recording area for natural history, this is particularly complicated, as two countries and three counties are concerned. For birds, despite the famous Peregrine Falcons *Falco peregrinus* of Symonds Yat and the newly arrived Goosanders *Mergus merganser*, much of the interest is concentrated in the Forest of Dean, with its Northern Goshawks *Accipiter gentilis* and Pied Flycatchers *Ficedula hypoleuca*. There are two main sections on ornithology.

This is a very readable work, even for those who may be inclined to skip chapters where background knowledge and training are needed. Among its various delights are the Lesser Horseshoe Bats *Rhinolophus hipposideros* of St Briavel's Common, the 'tsunami' of 1607 and the huge caverns beneath the hooves of the Chepstow racehorses.

There are perhaps more general questions on the present purpose of the series, which was launched on a post-war flood of natural history interest, especially among the young. It has, unfortunately, become a matter of investment rather than practical use; one hears of bookcases full of reversed spines lest they fade in the sunlight. This cannot have been intended, though it has been encouraged by the publishers for many years. I cannot imagine what induced them to abandon right-hand justification or to adopt the odd, indented subheading, both of which, to my thinking, spoil one's enjoyment of the text.

David Ballance

BIRDSOUNDS OF NORTHERN SIBERIA

By Christoph Zöckler. BirdSounds.nl, 2007. MP3-CD of 97 species. Product Code 111047. €29.95. Available from www.birdsounds.nl

This recording covers 97 species that breed in the most remote northern regions of Arctic Siberia, from the Taimyr Peninsula in the west to Chukotka in the east. Christoph Zöckler, who compiled this selection and, indeed, made the majority of the recordings featured, is no stranger to the region, having participated in no fewer than eight expeditions to it.

Northern Siberia and the birds that breed there hold a special place in the imagination of many western ornithologists. Eagerly I placed the disc in my CD player only to realise that this is an MP3-CD. Reluctantly leaving the comfort of the sitting room, I listened to it on a computer. Within moments, any discomfort was forgotten and I was transported to the open tundra, frozen lakes, upland and mountain tundra and northern limits of the taiga forest.

The recording begins with some beautiful, eerie calls of divers (Gaviidae) and ends with the songs of many exciting passerines, including Pechora Pipit *Anthus gustavi*, Siberian Rubythroat *Luscinia calliope* and Pallas's Reed Bunting *Emberiza pallasi*. For me, however, it was the evocative songs of the waders that stole the show. Some of these familiar to British

birders were rendered exotic by their strange and wonderful songs. Others, such as the mysterious Pintail Snipe *Gallinago stenura*, became even more wondrous as I listened, trying to imagine how they behaved and what their summer homes must be like.

Technically, the quality of the recording varies from species to species. On a few tracks there is some background noise, such as light wind on the microphone, but this is hardly surprising on the exposed open tundra. In others, additional species are audible in the background, but these are clearly described in the accompanying booklet. In some cases, the background noise has been edited but fortunately this does not affect the sound or tone of the species in question. Personally, I like the background accompaniment of other species, insects and even the occasional gust of wind, as they add to the feeling of being in the open tundra. Some of the less successful recordings are of species that are more widely known, such as Bluethroat *L. svecica*, Redwing *Turdus iliacus* and even Eurasian Bittern *Botaurus stellaris*, which seem to have been added for the sake of completeness.

At the end of the disc are four longer sequences entitled 'Soundscapes'. These help to capture the essence of various habitats and are particularly enjoyable. In stark contrast are the fascinating but increasingly frightening recordings of mosquito (Culicidae) intensity from level 1 to level 5.

In short, this is a superb collection of songs and calls of birds nesting in northern Siberia. For most western observers, many of the species' vocalisations were previously unknown, unavailable or represented only in the form of their non-breeding calls.

James McCallum

THE BIRDS OF ZAMBIA

By Robert J. Dowsett, Dylan R. Aspinwall and Françoise Dowsett-Lemaire.
Tauraco Press, 2008.
606 pages; 38 colour and 19 black-and-white photographs; 720 maps.
ISBN 978-2-87225-005-9.
Paperback, £29.99.

Following on from their impressive *Birds of Malawi* (Tauraco Press, 2006), this is another fine work from the formidable Dowsetts that advances our knowledge of the African avifauna. It is, in fact, the sixth account of the birds of Zambia in about 70 years but goes far beyond its predecessors in describing and mapping the distribution of over 750 species. The work on the distribution maps started in the early 1970s, when the late Dylan Aspinwall was a major driving force behind Zambian ornithology. An atlas project was started in 1975 and records were included up to 2007. Over time, these records have been added by a succession of ornithologists, many of whom have been posted to the country for professional reasons – not least the Dowsetts. The result is a particularly extensive assessment of status and distribution which benefits from being very up to date, particularly through an upsurge in local activity in the late 1990s.

Accounts are given for all known species on the Zambian list and colour maps are provided for all 626 known breeders and around 100 migrants. Vagrants are included but do not benefit from a map. Each account covers distribution, ecology, status, breeding dates, and taxonomy. But the maps are the real prize, with 303 squares covering 30 × 30 minutes each (about 53 km × 55 km).

Zambia is a large country and is three times the size of the UK, although at 750,000 km^2 it is still only a third of the size of the Democratic Republic of the Congo. Despite a reasonable road network, much of it is remote and difficult to visit. Many of the 19 national parks are quite isolated, and in total they cover 8.5% of the country and around 95% of the bird species.

The species overlap between Zambia and other neighbouring countries (particularly Angola and the Democratic Republic of the Congo) is considerable, but by comparison it is a relatively safe destination. Of particular interest are 64 species that are confined to the Zambezian region of endemism – 57 of which occur in Zambia itself, within its woodlands, dry forests and flooded dambos. Sixteen pages of colour photographs illustrate the habitats of some of the country's key species, including its only endemic, the near-threatened Chaplin's Barbet *Lybius chaplini*, and also Africa's most localised parrot, the vulnerable Black-cheeked Lovebird *Agapornis nigrigenis*.

An extensive introduction describes all of the main habitat types and climatic considerations. There is also a great deal of information on the pioneers of Zambian ornithology, including those who have achieved so much in the last decade. As might be expected from the authors, this book is authoritative and clear, providing concise information in a way that allows it to be interpreted quickly. A gazetteer of around 800 sites is included together with references from over 900 sources.

To date, relatively few bird-tour companies have given much prominence to Zambia – perhaps because of the lack of endemics. Those choosing to organise their own visits have been looking for detailed distributional data. Now they have it in a book that is a great example of comprehensive but efficient coverage.

Keith Betton

A PHOTOGRAPHIC GUIDE TO THE BIRDS OF JAPAN AND NORTH-EAST ASIA

By Tadao Shimba. Christopher Helm, A&C Black, London, 2007. 504 pages; colour photographs; distribution maps. ISBN 978-0-7136-7439-2. Paperback, £24.99.

This is the first book to cover the Japanese avifauna in English for over 25 years, but, just like Siberian Blue Robins *Luscinia cyane* in Britain, the second will soon follow the first: *Birds of East Asia* by Mark Brazil is due to appear this winter (from the same publisher).

I'm not a huge fan of photographic guides, but this compact book crams an awful lot of photos and information into its 500 pages. Not only does it cover all the species likely to be seen in Japan, but it also incorporates the Korean Peninsula, northeastern China and the Russian Far East. Nearly 600 species are represented by over 1,500 colour photos. There are generally several photos of each species, and a helpful feature is that all are labelled with age/sex, date and location, and with the race depicted where appropriate. The vast majority were taken within Japan.

The photos are very good, but given that this is a 'pocket guide' the small page size does not do the photos justice. The bird is often relatively small in the image, and the design looks cramped. Additional detail for each species includes a brief identification summary, description of voice and a helpful pointer to similar species, usually with separating features to look for. There are also distribution maps, which, although not precise, given the huge area covered, do give a good indication of ranges, and a short summary of the species' status in Japan – just in case you think you've found a first! So, the plus points are superb photographs, small size and the fact that it's in English (though a table listing the Japanese names next to the English names is also included), but those wanting to drool over the pictures or who need detailed ID notes will probably be left feeling short-changed.

The best for 25 years, this will be an automatic buy for those visiting the region shortly, or those who live there, but I suspect that it will probably be quickly relegated to second best when a true ID guide is published in the winter. Nevertheless, this book represents good value for money, so most birders will probably opt to have both – just in case! Even if you have not visited the areas covered, the array of mouth-watering 'Sibes' might make it a useful photo-reference for European birders, but at a time when the internet is becoming THE reference tool for birders seeking out photos, how long will photographic guides such as these retain a place in their libraries?

Russell Slack

A FIELD GUIDE TO THE BIRD SONGS AND CALLS OF BRITAIN AND NORTHERN EUROPE

By Dave Farrow. Carlton Books, London, 2008. 224 pages; many colour illustrations; two CDs. ISBN 978-1-84442-042-1. Hardback, £19.99.

Space was made available by the publisher for just 200 species, so it must have been hard to decide which birds to omit, particularly when northern Europe had to be covered in addition to Britain. Those selected for this guide are generally those with distinctive songs and calls, but the restriction of numbers has resulted in some surprising omissions. No Canada geese *Branta canadensis/hutchinsii*, no Barnacle Goose *B. leucopsis* and, more importantly, no White-fronted Goose *Anser albifrons*. Although restricted as a breeding bird to Iceland, Great Northern Diver *Gavia immer* is included, and yet Red-throated *G. stellata* and Black-throated Divers *G. arctica* are not. The decision to leave out Fulmar *Fulmarus glacialis* is odd when birds like Kittiwake *Rissa tridactyla* are included. And where is Northern Goshawk *Accipiter gentilis*? Coverage of passerines is, however, much more comprehensive and includes Parrot *Loxia pytyopsittacus* and Scottish Crossbill *L. scotica*.

The recordings have been acoustically cleaned up to maximise their effectiveness in aiding identification. A total of 100 species is included on each disc. Mostly they are in stereo, although not to the extent that you would particularly notice. Dave Farrow contributed just over a third of the tracks, while Jan-Erik Bruun and Hannu Jannes provided most of the remainder. An index to the recordings is given in the order they are played. As a sound enthusiast, I would have liked some information on where and when they were made, although perhaps not many users would look for that level of detail.

The book contains information on the species featured, with a page on each one, including a colour illustration by either Brin Edwards or Mike Langman. Information is given on identification and habitat, together with a description of the song and/or call. An introductory section gives tips on fieldcraft, together with an overview of bird sounds and how they are used by birds. Explanations of acoustical terms are given too.

For anyone looking for a basic, introductory set of recordings, this provides much of what is needed at an attractive price. It does, however, include a number of northern species that have never appeared in Britain while ignoring several that breed here regularly. This guide is small enough to carry around in the field. By comparison, the new Mitchell Beazley guide is far too hefty for that – but for an extra £5.00 that gives you recordings of a further 50 species and is more useful if visiting southern Europe. Neither book is comprehensive in its coverage.

Keith Betton

THE BIRDS OF ALDERNEY

By Jeremy G. Sanders. The Press at St Anne, Alderney, 2007. 320 pages; numerous line-drawings; three maps. ISBN 978-0-946760-61-9. Hardback, £25.00.

This is the first-ever avifauna of Alderney, the smallest of the three main Channel Islands. It covers more than 130 years of recording, from published and unpublished sources, including contributions from over 100 amateur observers. The author has made the biggest contribution to this, having made records almost daily over the last quarter of a century.

The book opens with a general description of the island, including a succinct account of the changes in land use over the last two centuries. This is nicely illustrated by Carmen Watson's sketches, which are liberally sprinkled throughout the book. Next follows a chapter entitled 'The Birds', which contains a brief review of various categories such as seabirds, coastal wading birds, inland breeding birds (of which there are few) and migrants. Emphasis is rightly put on the important seabird populations, with the dramatic expansion of the Northern Gannet *Morus bassanus* colony, from one pair in 1940 to over 7,400 at the time of writing, and the equally dramatic decline of the Puffin *Fratercula arctica*, from an estimated 100,000 individuals in 1949 to about 250 today, discussed at length. The introductory sections are completed with a review of ornithology on Alderney. A number of eminent ornithologists have visited the island, often on several occasions or at length, including William Eagle Clarke in 1898, and Peter Conder regularly from 1950 until 1993.

The systematic list comprises 230 pages and 277 species, although the total is given as 273 on the dust jacket. Entries vary from a few lines for vagrants to detailed accounts for various seabirds, including almost ten and 17 pages respectively for Gannet and Puffin. Many of the records included are cited to the observers responsible. Most accounts for the scarcer migrants and winter visitors consist of a narrative of all the available records, although they lack analysis and are often vague, e.g. for Garden Warbler *Sylvia borin* we are told that spring migrants are normally recorded in April and May, and autumn migrants in September and early October. There is a good selection of records of vagrants, including species common in southern England, e.g. Green Woodpecker *Picus viridis* (one undated record for 1961 and one in May 1969), and three not on the British List. The author attempts to clarify the criteria for the inclusion of records of rarities, some of which have been submitted to various bodies since the 1950s. He states that he has particularly taken into account the opinions of the Alderney County Bird Recorders, and that records that he does not consider reliable have not been included. Interestingly, he has included two spring records of Booted Eagle *Aquila pennata* seen by the author – full descriptions were taken but we are not told what phase they were, and no information is given about whether the records were assessed by a committee; a hearsay record of a Dipper *Cinclus cinclus* referring to the winter of 1861/62; a record of an Arctic Warbler *Phylloscopus borealis* in October 1998 said to be 'unconfirmed'; and two recent records of Red-headed Bunting *Emberiza bruniceps*. As these examples show, the author has missed the opportunity to create a definitive list of species reliably recorded on the island, although that was probably not his intention when he set out to write the book. The final section, entitled sketches of Alderney's birds, consists of series of illustrations of various species with brief text, largely a repetition of the other parts of the book. This confirms the author's dilemma – whether to compile an authoritative book on the birds reliably recorded on the island, or to write a volume appealing to a wider, less-specialised audience. Unfortunately, he has fallen between the two stools.

For anyone interested in the birds of Alderney, this is an essential reference, but I await the publication of a definitive *Birds of the Channel Islands* with interest!

John Clark

Short reviews

A GUIDE TO THE BIRDS OF ANGUILLA

By Steve H. Holliday, Karim V. D. Hodge and Damien E. Hughes. RSPB, Sandy, 2007. 122 pages; many colour photographs, maps. ISBN 978-1-905601-10-3. Paperback, £19.50.

This guide is an introduction to the birds of this UK Overseas Territory. Sandwiched between an introductory section and a checklist of the birds of the archipelago are species descriptions – though only 60 of the 132 species in the checklist are treated in any detail – and 21 pages of site descriptions, with maps. All proceeds from the sale of the guide will support the work of the Anguilla National Trust.

BIRDWATCHING GUIDE TO OMAN

By Dave E. Sargeant, Hanne & Jens Eriksen. Al Roya Publishing, Muscat, Oman, 2008. 256 pages; 64 maps and 135 colour photographs. ISBN 978-9948-03-643-2. Paperback, £22.99.

Second edition of this guide (for review of first edition see *Brit. Birds* 95: 33), which is completely revised and updated in the light of large-scale changes to Oman's infrastructure and tourism facilities since 2001. All maps have been re-drawn and incorporate GPS co-ordinates. Some birding sites covered in the first edition have disappeared but new ones have been added; species status and site lists are updated to include observations to the end of 2007.

SUSSEX WILDLIFE

By David Mortimer.
Snake River Press, Alfriston, Sussex, 2008.
96 pages; few illustrations and a stylised map.
ISBN 978-1-906022-09-9. Hardback, £8.99.

Recalling the King Penguins of the 1950s, although with illustrations more akin to Thomas Bewick's woodcuts of 150 years earlier, this compact book is part of the 'Sussex Guide' series by Snake River Press, which includes such titles as *20 Sussex Gardens* and *20 Sussex Walks*. Four pages are devoted to each of the author's 20 favourite wildlife reserves, although this rigid format is sometimes restrictive. The accounts are perhaps best described as guided commentaries and, with no site maps and only one or two lines of directions, those after a 'where to watch' guide should look elsewhere.

All aspects of wildlife are covered, with perhaps most emphasis given to flowers and insects, while the birds mentioned are sometimes inaccurate or rather optimistic. For example, Little Terns *Sternula albifrons* no longer breed at Pagham Harbour, and have not done so since 1990, while Wood Warblers *Phylloscopus sibilatrix* are only likely to be encountered with considerable good fortune on passage at Park Corner Heath. The use of scientific names is erratic and the redstarts referred to as breeding on the cliffs at Hastings County Park would be Black *Phoenicurus ochruros*, these having done so there sporadically in the past. Despite these shortcomings, most readers should find something of interest in each account, even if the reserve is already well known to them. I found the brief histories of some sites particularly educational.

Richard Fairbank

GUIDE TO BRITISH OWLS AND OWL PELLETS

By Leanne Thomas, illustrated by Chris Shields. FSC Publications, Shrewsbury, 2008. Fold-out laminated brochure, colour illustrations, black-and-white line drawings. ISBN 978-1-85153-235-3. £2.75.

Produced by the Field Studies Council in co-operation with the Hawk & Owl Trust, this well-designed fold-out brochure is a simple introduction to the five species of owls breeding regularly in Britain (Barn *Tyto alba*, Little *Athene noctua*, Tawny *Strix aluco*, Long-eared *Asio otus* and Short-eared *A. flammeus*) and their pellets. There are brief but useful discussions on such matters as hunting methods, population status, conservation and the dissection of pellets. Typical examples of owl pellets, and other pellets with which they may be confused (such as those cast by Common Kestrels *Falco tinnunculus* and Eurasian Sparrowhawks *Accipiter nisus*), are illustrated, as well as a selection of whole skulls, jaws, teeth and other assorted remains. This inexpensive, clearly written and nicely illustrated work will undoubtedly be of great assistance to its main target audience of students and their teachers.

Pete Combridge

HOBBIES AND OTHER FALCONS... NEAR MY HOUSE

By Brian L. Kington. Published privately, Coleshill, 2007. Many colour photos and line-drawings.
No ISBN. Paperback, £10.99 inc. p&p from the author, 22 Burman Drive, Coleshill, B46 3NB.

Brian Kington is a raptor enthusiast, and this slim paperback tells the story of his quest for insights into the lives of three species of falcon which occur close to his home in the English Midlands. Most of the booklet (roughly 80%) is devoted to the Hobby *Falco subbuteo*, while the 'other falcons' given less space are Merlin *F. columbarius* and Peregrine Falcon *F. peregrinus*. This is no scientific treatise, and I suspect that not everyone will necessarily agree with some of the author's views and ideas, but many raptorphiles, especially those interested in Hobbies, will find this booklet both interesting and enjoyable.

Pete Combridge

BIRDWATCHER'S POCKET COMPANION

By Malcolm Tait. Pavilion Books, London. 2008.
143 pages. ISBN 978-1-862057-97-5.
Hardback, £6.99.

This is a small (9 cm x 14 cm) gift book that you can give to a friend for a birthday or Christmas. It is full of questions, answers, unusual facts and quirky lists. For instance, which birds should you look out for when thirsty? Wine-throated Hummingbird *Atthis ellioti* and Claret-breasted Fruit-dove *Ptilinopus viridis* are two suggestions, although I was surprised that there was no mention of the pint-sized Stout Cisticola *Cisticola robustus*... Apart from the zany entries, there are facts such as the UK birds that are declining fastest. But the funny entries win – including a list of songs such as *Be My Plover* by Alice Cooper!

Keith Betton

BIRDS

Edited by Mavis Pilbeam. The British Museum Press, London, 2008. 96 pages; colour illustrations. ISBN 978-0-7141-5063-5. Hardback, £9.99.

This attractively presented anthology takes images of birds from the collections of the British Museum (ranging from those of Thomas Bewick to the Japanese artist Kitagawa Utamaro) and matches them with a poem about the species illustrated; the writers chosen include Shakespeare, Tennyson and John Clare.

IDENTIFYING BIRDS BY COLOUR

By Moss Taylor and Norman Arlott. Collins, London, 2008. 224 pages, one or two colour paintings per species. ISBN 978-0-00-720679-7. Paperback, £12.99.

Over 250 species covered, grouped according to colour, claiming to be the easiest way for beginners to identify birds. Maybe...

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Surprise crash in Farne Islands' Puffin population

The population has been increasing for 60 years – and has a plentiful supply of sandeels *Ammodytes* – but England's largest Puffin *Fratercula arctica* colony has declined by a third since 2003. Results from a three-month survey of Puffins on the Farne Islands, off Northumberland, have shown that the number of breeding pairs has fallen by 34%, from 55,674 to 36,500 pairs. The Farnes has the largest Puffin colony in England and the fourth-largest in the UK.

David Steel, National Trust Head Warden on the Farnes, said: 'The results from this survey have completely surprised us as we were predicting another rise in the numbers of breeding pairs. Stocks of sandeels, the staple food of Puffins in the summer, are in good supply around the Farnes, and there is a lack of ground predators, creating a good environment for Puffins to breed.'

All eight islands surveyed showed a decrease in population, with four islands showing a dramatic decrease of up to 50%. Monitoring work shows that good numbers of young Puffins are fledging successfully each year but are not coming back to the islands in subsequent years. Presumably, fewer birds are surviving the winter than are needed to maintain current numbers.

Staple and Brownsman Islands, where the majority of Puffins can be found, have seen the numbers of breeding pairs fall by more than 30% since 2003. Possible factors behind the decline are not yet properly understood but factors at sea during the winter are implicated, for example an intensification of storms, which could affect the foraging ability of Puffins.

Prof. Mike Harris, Emeritus Research Fellow at the Centre for Ecology & Hydrology, who has studied Puffins for 36 years on the Isle of May, said: 'The dramatic decline on the Farnes, along with that found earlier this year on the Isle of May, leaves no doubt that the North Sea has lost a substantial proportion of its Puffins. With poor survival of adult birds a likely factor in the decline, we urgently need to know more about Puffins during the eight months of the year that they spend in the open sea.'

Results from the survey carried out on the Isle of May showed that Puffins had declined from 69,300 to 41,000 pairs. For more information see: www.ceh.ac.uk/news/news_archive/2008_news_item_16.html

Bird crime figures continue to soar

Reported crimes against birds of prey reached an all-time high in 2007, increasing by a massive 40% on the previous year. As a result, the RSPB is urging the Government to make wildlife crime a higher priority for the UK's police forces.

In its annual *Birdcrime* report, the RSPB revealed that it received 262 reports of incidents of illegal shooting, trapping and nest destruction of birds of prey during the course of 2007. This compared with 185 reports in 2006, a figure which prompted the Society to launch a campaign calling for an end to the illegal killing of birds of prey. There were also 49 reports of raptors being poisoned, including 17 Red Kites *Milvus milvus* – the highest number recorded in a single year – and one-half of the only breeding pair of Golden Eagles *Aquila chrysaetos* in the Scottish Borders.

Data from the report identifies four counties that were the worst in England for reported persecution of raptors: North Yorkshire, with 78 reports, Northumberland (22) and Shropshire and Cumbria (both with 16). Reports of crimes against all wild birds were at record levels for the second year running, with 1,208 separate incidents reported. Part of the reason for the dramatic rise in reported crimes may be improved sharing of data between the RSPB, the police, RSPCA and the newly formed National Wildlife Crime Unit, but the RSPB believes that the true figure is much higher still, with many undetected and unreported crimes in remote areas.

Ian West, Head of Investigations at the RSPB, said that the number of reports are 'still only... the tip of the iceberg' and he urged the Home Office to make it clear to police forces that wildlife crime needed to be given a higher priority.

World Heritage status for Socotra and Kazakhstan

UNESCO has recognised two important biodiversity hotspots on the fringe of the Western Palearctic for inclusion in its list of World Heritage Natural Sites.

The Socotra Archipelago, in the Indian Ocean off Yemen, was cited for its rich and distinct flora and fauna and high level of endemism. More than a third of Socotra's 825 plant species, 90% of its reptile species and 95% of its land-snail species do not occur anywhere else in the world. The site also supports globally significant populations of

land- and seabirds (192 bird species, 44 of which breed on the islands while 85 are regular migrants), including a number of threatened species.

Globally threatened species include Socotra Cormorant *Phalacrocorax nigrogularis*. Bird species restricted to Socotra include the Near Threatened Island Cisticola *Cisticola haesitata*, Socotra Warbler *Incana incana*, Socotra Starling *Onychognathus frater*, Socotra Sunbird *Nectarinia balfouri* and the Vulnerable Socotra Bunting *Emberiza socotrana*. Also restricted to the island is the Socotra Grosbeak *Rhynchostruthus socotranus*, part of the complex of species which Yemen recently appointed as its national bird, the Golden-winged Grosbeak. A further 11 subspecies are endemic to the island. Surveys by BirdLife have shown that all have healthy populations.

'This is an important step on the way to developing Socotra sustainably, with benefits for both the population of the island and its biodiversity,' said Yemen's Environment Minister Abdul-Rahman al-Iryani, who opposes plans by other ministries for damaging road developments on the island. The minister believes that ecotourism will make an important contribution to Socotra's economy.

Meanwhile, two of Kazakhstan's most important steppe-wetland Important Bird Areas (IBAs), Naurzum and Tengiz-Korgalzhyn, have been designated as Central Asia's first natural World Heritage Sites.

Markus Varesvuo

251. Sociable Lapwing *Vanellus gregarius* is a key species for Tengiz-Korgalzhyn, one of Kazakhstan's newly designated World Heritage Sites.

The two sites, listed as 'Saryaka – Steppe and Lakes of Northern Kazakhstan', are located in the steppe zone of Kazakhstan and are two of the most important IBAs in Central Asia. Both are crucial migration stopover sites for several million birds each year on the African–Eurasian flyway. They also hold large breeding populations of many globally threatened species.

Naurzum is particularly important for Lesser White-fronted Goose *Anser erythropus* (Vulnerable), Red-breasted Goose *Branta ruficollis* (Endangered) and the Critically Endangered Siberian Crane *Grus leucogeranus*. The Tengiz-Korgalzhyn is used by an estimated two million waterbirds during migration, and is also a key site for global breeding populations of Dalmatian Pelican *Pelecanus crispus* (Vulnerable), Black-winged Pratincole *Glareola nordmanni* (Near Threatened) and Sociable Lapwing *Vanellus gregarius* (Critically Endangered).

'Tengiz-Korgalzhyn is under threat because of a need for fresh water for the growing capital city [Astana], as well as for waste-water dumping. This nomination marks a great and important day for conservation in Kazakhstan and will help to protect these globally significant wetlands and threatened steppe habitat,' said Vitaliy Gromov, Director of the Association for the Conservation of Biodiversity of Kazakhstan (ACBK), BirdLife's project partner in Kazakhstan.

Spoon-billed Sandpiper joins Champions League

WildSounds, the wildlife book and sound guide supplier, has become the latest Species Champion to join BirdLife's Preventing Extinctions Programme; the company will sponsor the charismatic Spoon-billed Sandpiper *Eurynorhynchus pygmeus*, one of six Critically Endangered species highlighted at last month's Birdfair. Populations of this wader have crashed over the last decade, and recent surveys of its breeding grounds in the remote Russian province of Chukotka suggest that the situation is now absolutely critical.

BirdLife launched the Preventing Extinctions Programme at the 2007 Birdfair in an attempt to save all 190 of the world's Critically Endangered birds from extinction. To do this, BirdLife is appointing individuals and organisations best placed to carry out the recovery of threatened species as official Species Guardians, at the same time as recruiting companies, institutions and individuals as Species Champions to provide the funds necessary to pay for this urgent work.

Another of the six species showcased at this year's Birdfair – Azores Bullfinch *Pyrrhula murina* – gained its Species Champion in January when it was adopted by *Birdwatch* magazine. *Birdwatch* readers are now being urged to fund the conservation of Europe's rarest songbird (which is also known as the Priolo) via the online donation site www.justgiving.com/priolo. But even before this additional assistance is forthcoming, the Priolo appears to have turned the corner on the only island on which it is found – São Miguel, in the Azores. An EU-funded project on the island over the past five years, by the RSPB and SPEA (BirdLife in Portugal), has yielded

encouraging results by clearing invasive alien plants – and by planting native trees that provide the food that the birds depend on. A new survey of São Miguel, in which 200 1-km squares were checked, logged 78 Azores Bullfinches, which should result in a final estimate of several hundred birds: a marked increase on the 200 individuals estimated five years ago.

And the other Palearctic species highlighted at the Birdfair – Sociable Lapwing – has also secured Species Champions. Swarovski Optik and the RSPB have become joint sponsors of work to protect and track the bird on its breeding grounds in Kazakhstan and during its annual migration. Sociable Lapwing was listed as Critically Endangered by BirdLife in 2003 after numbers plunged by 95%. This was attributed mainly to the trampling of nests by cattle and the decline of the Saiga Antelope *Saiga tatarica*, which grazed breeding areas and kept vegetation in check.

Since then, Sociable Lapwings have been seen in Turkey, Syria and Sudan, including a flock of 3,200 birds in southeast Turkey last October. The species became one of the smallest birds to carry a satellite-tracking device and individuals were subsequently recorded flying 8,000 km to Sudan and back on migration. The tags weighed just 9.5 g. Each tag costs £1,500 and data collection costs another £50 per month. Swarovski and the RSPB will help to pay for research and tracking work and complement earlier funding from the UK Government's Darwin Initiative. Scientists hope to find more nesting sites in Kazakhstan, safeguard those areas and find ways of protecting the birds on migration.

Dr Rob Sheldon, the RSPB's Sociable Lapwing Project Leader, said: 'The bird's problems seem to be linked more to its migration and wintering grounds than to its breeding sites, and this new funding means we can step up our monitoring work to find out more about where these birds go and the problems they face on their migration routes.'

The new obs is coming

As reported in last month's N&c (p. 452), a new bird observatory for Fair Isle is in the offing. An appeal for funds was launched jointly by long-time Fair Isle devotee Bill Oddie and current FIBOT chairman Roy Dennis at last month's Rutland Birdfair, and it is hoped that work on the project will start next spring. The first job will be to pull down the old observatory, which dates back to 1968 – after much deliberation, the FIBO directors decided that the present site was significantly better than all the alternatives. The observatory will be closed to visitors for a period while the building work is under way, although wardening staff will maintain the daily census and seabird studies and researchers will be found alternative accommodation. A completely new, ecofriendly and modern design will replace the ailing 60's-style monolith. Gone will be the cramped dorms and communal showers, although the staff and directors will be at pains to transfer the friendly atmosphere and warm welcome to the new building.

Roy Dennis said: 'The Observatory has a crucial role to play in bringing people to Fair Isle and providing a base for birdwatching and scientific research. We believe that the time is ripe for a new and exciting ecofriendly building suited to the 21st century. We recognise that raising the funds will be a challenge for a small trust, but we are certain that it is not only possible but also essential for the economic well-being of the Fair Islanders.'

A majority of the funding will come from public bodies, with Shetland Islands Council already having pledged over a quarter of the £4-million cost. However, the Trust, which is an independent charitable body and totally self-funded, is also relying on the support of the army of birders who have visited Fair Isle in the 60 years since George Waterston founded the observatory in 1948. This support is vital to the project and Fair Isle devotees are urged to get involved – visit the FIBO website www.fairislebirdobs.co.uk and find out more.

Breeding Hen Harriers and waders can co-exist

In a timely publication to coincide with the opening of the grouse-shooting season, RSPB Scotland researchers have shown that breeding Hen Harriers *Circus cyaneus* on heather moorland do not have an impact on upland waders. Instead it's the Meadow Pipit *Anthus pratensis* population that suffers.

Numbers of Eurasian Curlews *Numenius arquatus* and Northern Lapwings *Vanellus vanellus* actually increased at the same time as Hen Harriers flourished in the absence of illegal persecution during a study on a grouse moor in southwest Scotland during the 1990s. The new research 'The impact of raptors on the abundance of upland passerines and waders' was published in the August edition of *Oikos*. The paper examines the populations of Hen Harriers on Langholm Moor between 1992 and 1999, alongside five potential prey species including Curlew, Lapwing, Eurasian Golden Plover *Pluvialis apricaria*, Meadow Pipit and Sky Lark *Alauda arvensis*. During that time there was no illegal killing of Hen Harriers and other birds of prey at Langholm, under the aus-

pices of the Joint Raptor Study, in order to investigate the impact that raptors had on the number of Red Grouse *Lagopus lagopus*.

Hen Harriers increased from two breeding females in 1992 to a maximum of 20 in 1997 (and 13 in 1999). Peregrine Falcons *Falco peregrinus* also increased, from three to six breeding pairs, during the same period. By 1999, autumn Red Grouse stocks fell to a level where grouse shooting was considered economically unviable and ceased. Since then, several commentators have speculated or claimed relationships between numbers of raptors and other bird species. Curlew and Lapwing numbers actually increased during this period, rising by 106% and 66%, respectively. Between 1994 and 1999, Golden Plovers declined by 47% at Langholm, but there was an 89% decline at nearby sites where raptors had not increased.

None of these population changes are believed to have been caused by harriers. Indeed, they strongly suggest that harriers are not a problem for upland waders. However, numbers of Meadow Pipits and Sky Larks declined at Langholm by 61% and 51%, respectively, during the study. These declines were greater than on nearby moorland areas where raptor numbers had not increased. This evidence, together with observed predation rates, suggests that harriers limited the abundance of Meadow Pipits, their principal prey.

Dr Arjun Amar, Research Biologist with RSPB Scotland and lead author of the study, said: 'These analyses lay to rest the idea that letting Hen Harrier numbers increase at Langholm meant that other species like Curlew, Lapwing and Golden Plover were wiped out. On the contrary, populations of some of these species actually rose.'

The publication of this research is timely, with the second phase of work at Langholm now under way. The Langholm Moor Demonstration Project has now begun, with the backing of Scottish Natural Heritage, RSPB, GWCT, Natural England and Buccleuch Estates. The hope is that by using techniques such as diversionary feeding, a way can be found to allow birds of prey to flourish on the moor, whilst at the same time running an economically viable grouse shoot.

Italian hunters to target protected songbirds

The northern Italian regions of Lombardy, Emilia-Romagna and Veneto have announced the hunting regulations for autumn 2008 and have widened the scope of quarry species substantially. In addition to those species which may be hunted throughout Italy (Sky Lark, Blackbird *Turdus merula*, Fieldfare *T. pilaris*, Song Thrush *T. philomelos* and Redwing *T. ilacus*), these regions have announced the lifting of the ban on hunting bird species which are afforded protection throughout Europe.

Lombardy has said that it will permit the shooting of hundreds of thousands of Italian (House) Sparrows *Passer domesticus italiae*, Tree Sparrows *P. montanus*, Common Chaffinches *Fringilla coelebs* and Bramblings *F. montifringilla*. In addition, from 21st September onwards, Common Starlings *Sturnus vulgaris*, which are a huntable species under EU law but are on the Italian list of protected species, may also be shot. In Emilia-Romagna, Starlings, Italian and Tree Sparrows may also be shot from the end of September onwards, while hunting of Great Cormorant *Phalacrocorax carbo* and Collared Dove *Streptopelia decaocto* will also be permitted. Veneto surpasses all other regions with its liberal regulations. Besides Starling, Chaffinch and Brambling, Meadow Pipit – a species which has suffered large population declines – may also be hunted.

Each region has different regulations with regard to the numbers of birds that may be killed. On average, each of the 150,000 hunters in the three affected regions is permitted to shoot three individuals of every species on each of the 55 days of the hunting season. Theoretically, this amounts to almost 25-million protected birds! The German Committee Against Bird Slaughter (CABS, www.komitee.de/en/), together with its Italian partner organisation Lega Abolizione Caccia (LAC), is examining what legal steps are necessary in the individual regions. The first legal complaints against the relaxation of the hunting laws in Lombardy are in preparation.

RSPB teaches a lesson about the birds and the bees

RSPB Scotland and the Bumblebee Conservation Trust (BBCT, www.bumblebeeconservationtrust.co.uk) have joined forces to create the world's first bumblebee sanctuary. The flower meadow was created by BBCT on RSPB Scotland's Vane Farm nature reserve, beside Loch Leven in Perth & Kinross. Many visitors have seen the rare and beautiful Blaeberry Bumblebee *Bombus monticola*, lured down from nearby hills, and it is hoped that one day the critically endangered Great Yellow Bumblebee *B. distinguendus* will also return.

Dr Dave Beaumont, Head of Reserves Ecology for RSPB Scotland, said: "Bumblebees are often referred to as keystone species, because the loss of their pollination services could have a devastating impact on the whole ecosystem. By ensuring we have healthy bumblebee populations on our reserves, we ensure that the habitat itself is healthy, which in turn is good for the birds.'

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mainly new arrivals between early July and early August 2008.

Headlines An unprecedented influx of Two-barred Crossbills into the Northern Isles; elsewhere, up to three Black Storks, three Pacific Golden Plovers, a good spread of American waders and two Lesser Grey Shrikes were notable. Seabird passage was light, apart from reasonable numbers of Cory's Shearwaters in late July/early August, and tern movements included a light overland passage of Black Terns *Chlidonias niger* in late July, 1,270 Common Terns *Sterna hirundo* off Dungeness (Kent) on 3rd August and 5,100 Sandwich Terns *Sterna sandvicensis* at Gibraltar Point (Lincolnshire) on 10th August. Two pairs of Cattle Egrets bred successfully in Somerset, while juvenile Great Spotted Woodpeckers *Dendrocopos major* in Co. Dublin and Co. Wicklow in late July or early August represent the first confirmed breeding records for this species in the Republic of Ireland.

American Wigeon *Anas americana* Loch of Strathbeg (North-east Scotland), 1st–2nd August. Ferruginous Duck *Aythya nyroca* Cainhoe Lakes (Bedfordshire), 15th July; Chew Valley Lake (Avon), 21st July to 10th August. Lesser Scaup *Aythya affinis* Balgray Reservoir (Clyde), 21st–29th July and 5th–8th August.

Zino's/Fea's Petrel *Pterodroma madeira/feae* At sea, off Slyne Head (Co. Galway), 28th July. Cory's Shearwater *Calonectris diomedea* In Ireland, high counts included 750 off Galley Head on 1st August and 141 off Cape Clear Island (both Co. Cork) on 2nd. In Cornwall, 205 were seen off Porthgwarra in 13 hours on 29th July and 170 in 11.5 hours on 30th July; and at least 710 were seen off Lizard Point on the latter date. In Devon, 102 off Berry Head on 30th July and 205 off Prawle Point the same day. Great Shearwater *Puffinus gravis* Recorded in small numbers off Co. Cork, with eight off Galley Head on 1st August the highest count. Wilson's Storm-petrel *Oceanites oceanicus* From pelagic trips off Scilly, at least three on 10th July, two on 21st July, singles 2nd, 3rd and 10th August; 18 km northwest of Padstow (Cornwall), two, 27th July.

Cattle Egret *Bubulcus ibis* In Somerset, two pairs have successfully bred (www.somersetbirds.net). Elsewhere, presumed long-stayers were at Goldcliff Pools NR (Gwent), 11th July; West Bexington (Dorset), 12th July; Lodmoor, 17th July, then Radipole Lake (both Dorset), 18th July; Sidlesham Ferry, 19th July, presumed same as Pagham Harbour (both West Sussex), 23rd July; Oare Marshes (Kent), 26th July; Earls Barton GP (Northamptonshire), 30th July; Godmanchester (Cambridgeshire), 31st July; Poole Harbour (Dorset), 10th August. Great White Egret *Ardea alba* Rainham Marshes (Greater London), 14th July; Coombe Hill Meadows (Gloucestershire), 14th July; Pennington Marsh (Hampshire), 16th July; Portland Bill (Dorset), two, 23rd July; Cresswell Pond (Northumberland), 26th July; Trimley Marshes (Suffolk), 27th July; Loughor (Glamorgan), 27th July; Fota Island (Co. Cork), 28th July; Reculver (Kent), 1st August. Black Stork *Ciconia nigra* Various localities in Kent between Chartham and Sandwich, 18th–19th July, presumed same as Bocking

Richard Stonier

252. Great Shearwater *Puffinus gravis*, off Scilly, mid August 2008.

Stef McElwee

253. Juvenile Black Stork *Ciconia nigra*, Clara Vale, Durham, August 2008.

Churchstreet, 21st July and Shoebury (both Essex), 23rd July; Witcham (Cambridgeshire), 26th July; Cramlington (Northumberland), 31st July, presumed same nr Greenside (Durham), 8th–9th August, and Blayney Row (Northumberland), 10th August. Glossy Ibis *Plegadis falcinellus* Marshside RSPB reserve (Lancashire & N Merseyside), long-stayer to 26th July, also visiting Inner Marsh Farm (Cheshire & Wirral), 16th–17th July and Martin Mere (Lancashire & N Merseyside), 18th July with presumably the same Spurn/Patrington Haven area (East Yorkshire), 27th July. In Ireland, one, Ennis (Co. Clare), 23rd–27th July; two, Garristown (Co. Meath), 5th August.

Black Kite *Milvus migrans* Ewhurst Park (Hampshire), 14th July; Rainham Marshes 31st July. Red-footed Falcon *Falco vespertinus* Steep Down (West Sussex), 21st July; Queensferry (Lothian), 26th July; Glen Moriston (Highland), 9th August.

American Golden Plover *Pluvialis dominica* Add Estuary (Argyll), 21st July; Elmley Marshes (Kent), 30th July and 7th–10th August. Pacific Golden Plover *Pluvialis fulva* North Ronaldsay (Orkney), 27th July to 6th August; Aberlady Bay (Lothian), 2nd August; Havergate Island (Suffolk), 3rd August. Semipalmated Sandpiper *Calidris pusilla* Minsmere (Suffolk), 18th July; North Uist (Outer Hebrides), 20th July. White-rumped Sandpiper *Calidris fuscicollis* Minsmere, 13th–20th July; Tacumshin Lake (Co. Wexford), 16th–19th July; Cley (Norfolk), 22nd–27th July and 4th August; Cresswell Pond, 28th July and 3rd August; Wyre Estuary (Lancashire & N Merseyside), 31st July to 1st August; Spurn, 2nd August. Baird's Sandpiper *Calidris bairdii* Ballycotton (Co. Cork), 1st–2nd August. Buff-breasted Sandpiper *Tryngites subruficollis* Alkborough Flats (Lincolnshire), 15th and 19th

Gary Thoburn

254. Lesser Grey Shrike *Lanius minor*, Middlebere, Dorset, August 2008.

July; Doonfoot (Ayrshire), 6th–9th August; North Ronaldsay, 6th–8th August. Long-billed Dowitcher *Limnodromus scolopaceus* Shannon Lagoons (Co. Clare), 26th July. Spotted Sandpiper *Actitis macularius* Amble Dam (Cornwall), 6th–7th August. Lesser Yellowlegs *Tringa flavipes* Southwold (Suffolk), 12th–13th July.

Bonaparte's Gull *Chroicocephalus philadelphia* Castlemaine Harbour (Co. Kerry), 30th July to 3rd August. Caspian Tern *Hydroprogne caspia* Old Moor RSPB reserve (South Yorkshire), 15th July; Collingham Pits (Nottinghamshire), 23rd July; Kirkby-on-Bain GP (Lincolnshire), 25th July; Formby Point (Lancashire & N Merseyside), 4th August. Whiskered Tern *Chlidonias hybrida* Sizewell (Suffolk), 27th July. White-winged Black Tern *Chlidonias leucopterus* Rye Harbour (East Sussex), 14th–20th July; Crosby Marine Park (Lancashire & N Merseyside), 7th August; Slapton Ley (Devon), 9th August.

Snowy Owl *Bubo scandiacus* One on St Kilda (Outer Hebrides) throughout. Alpine Swift *Apus melba* Kilcoole (Co. Wicklow), 31st July. European Bee-eater *Merops apiaster* Witham (Essex), 22nd July; Rose Hill (Oxfordshire), two, 28th July; Stromness, 29th July, presumed same Shapinsay (both Orkney), 1st August; Sourton Cross (Devon), 6th August. Citrine Wagtail *Motacilla citreola* North Ronaldsay, 2nd–10th August.

Lesser Grey Shrike *Lanius minor* Middlebere (Dorset), 2nd–10th August; Tiree (Argyll), 6th August. Woodchat Shrike *Lanius senator* Two Tree Island (Essex), 13th July; Soyland (West Yorkshire), 24th July. Rose-coloured Starling *Sturnus roseus* Hayle (Cornwall), 8th–10th and 21st July; Mull Head (Orkney), 14th July; Alness (Highland), 15th July; Arklow (Co. Wicklow), 16th July; Wester Quarff (Shetland), 20th July; Scarfskerry (Highland), 22nd July; Brough of Deerness (Orkney), 28th July; Mull (Argyll), 30th–31st July and 6th–8th August. European Serin *Serinus serinus* Pegwell Bay (Kent), 27th July. Two-barred Crossbill *Loxia leucoptera* In Orkney: Evie, 20th July; Mull Head, 28th July; Stenness, 29th July; Rendall, 29th–31st July; Crafty, 30th July to 1st August; Stronsay, 3rd August; North Ronaldsay, two, 6th–8th August; South Ronaldsay, four, 7th August. On Fair Isle: 27th July, two 28th–30th July, four 1st August, one 2nd, two 5th, nine 6th–9th August. In Shetland: Sandgarth, 28th–29th July; Esha Ness, 30th July to 3rd August; Scalloway, 30th July; Unst, 5th and 10th August; Fetlar, 6th August; Sumburgh Head, six, 6th August, eight on 7th, 13 on 8th, 18 on 9th and two on 10th August; Yell, 9th August. In the Outer Hebrides: St Kilda, 2nd–7th August; Harris, 7th–8th August.

Hugh Harrop

255. Male Two-barred Crossbill *Loxia leucoptera*, Sumburgh Head, Shetland, August 2008.

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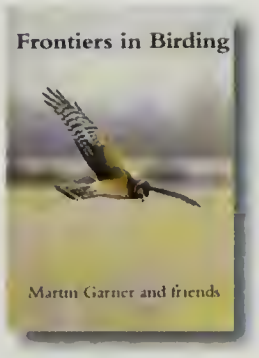

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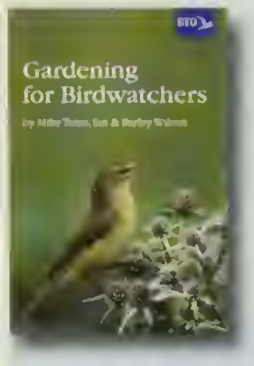

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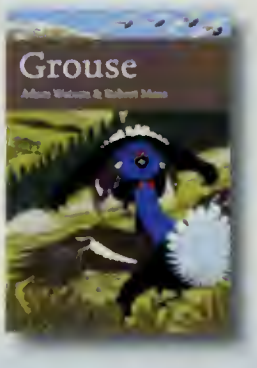

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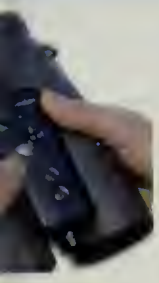

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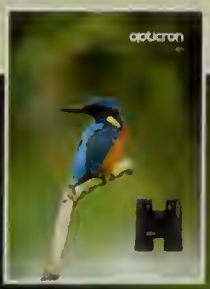

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Regular features

Report on rare birds in Great Britain in 2007

Nigel Hudson and the Rarities Committee

This is the fiftieth annual report of the British Birds Rarities Committee. This is not an insignificant milestone and, as last year's introduction alluded, there are a number of changes in personnel responsible for the production of this report. After eight years as a voting member, this is my first report as Chairman. It is a tall order to follow Colin Bradshaw, the longest-serving Chair in BBRC's history, who was at the helm for nearly 11 years. Colin's efforts to move the Committee forward should not be underestimated. He has been instrumental in co-ordinating the transition from a paper-based to an electronic system and he endeavoured to ensure that the Committee's processes and procedures were made more publicly available. Although his efforts did not always meet with universal approval, they were always well intentioned and his legacy is a stronger Committee, more able to cope with rare-bird recording in the twenty-first century. Colin also worked closely with Pete Fraser to allow a relatively smooth transition in personnel from the late Mike Rogers, BBRC Secretary for more than 25 years, to our new permanent Secretary, Nigel Hudson. Pete continued to assist with data collation this year and we are extremely grateful for the significant work he has done in his role as Statistician and temporary Secretary. Nigel has continued the process of transforming the Committee's assessment procedures and the switch to an electronic system and has made significant progress in terms of the reliability of our statistics. Sharp-eyed readers will notice some important differences from last year's report in some of the figures given in the individual species accounts as a consequence. The work done by Colin, Pete and Nigel over the last year has been outstanding and this report reflects the benefit of their collective efforts.

The improvements in our procedures for electronic circulation of records have certainly paid dividends, helping to ensure that the 2007 series of records were processed at least one month earlier than in recent years. Improved systems to generate the report, which Nigel has developed, have been instrumental in enabling the report to be published in the October issue of *BB*. We are also confident in the accuracy of the data published here, owing to improved efficiency at acknowledging receipt of records (including a request to clarify dates, observers and other details), along with the opportunity for records to be checked via the widely publicised Work in Progress files uploaded to the BBRC website (www.bbrc.org.uk) and a draft of the report circulated to all County Recorders in July. Once again, the BirdGuides team (www.birdguides.com) were extremely helpful in providing links to photographs that had been uploaded to their site with permission to circulate around BBRC, and with providing details of rare bird occurrences and various other requests. We welcome the interest of other birding websites in supporting the work of the Committee and anticipate this becoming an even more valuable resource for the 2008 report. The BBRC website now includes an online submission form to accompany records supported by photographs and we are working to provide a similar form to enable the online submission of non-photographed rarities. We would remind observers that if you are submitting a photographed rarity but using the traditional recording form, it assists us greatly if the photographs are submitted separately and not embedded in the recording form or Word or other documents.

We have been receiving a steady flow of

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formal and informal submissions of rare races that are now considered by BBRC (see *Brit. Birds* 99: 619–645 and the BBRC website www.bbrc.org.uk). A few appear for the first time in this report (e.g. 'Baltic' Lesser Black-backed Gull *Larus fuscus fuscus* and 'Black-bellied Dipper' *Cinclus cinclus cinclus*) or as entries in their own right for the first time ('Eastern Subalpine Warbler' *Sylvia cantillans albistriata* and 'Hornemann's Arctic Redpoll' *Carduelis hornemanni hornemanni*). We also reiterate our requests for 2008 records of 'Siberian Chiffchaffs' *Phylloscopus collybita tristis* (*Brit. Birds* 101: 165–166, 477). All post-2007 records will be reviewed against criteria set out in the original request in an effort to establish whether records attributable to this race are statistically rare enough to be considered by BBRC. The results will be published in due course, but our analysis can only be as complete as the data provided, so we encourage formal submissions of any outstanding or forthcoming claims for 2008. We also thank those observers who have submitted records from previous years. Although these will not be considered as part of the formal exercise, they have provided useful reference material for the panel to consider.

Decisions are still awaited on a number of other races while acceptance criteria are clarified. This can be a time-consuming process, incorporating skin searches and analysis of images of birds of known taxa, but we intend to publish this research in *BB* in due course. Electronic communications have assisted us greatly here also, and permit more efficient interaction with BOURC members, where appropriate. In relation to the latter aspect of BBRC's work, a number of files have been passed on to BOURC this year, including those for the following records: the Yellow-nosed Albatross *Thalassarche chlororhynchos* at various sites in June–July 2007; the Madeiran Petrel *Oceanodroma castro* from Scilly in July 2007; the Pacific Divers *Gavia pacifica* from 2007; the Glaucous-winged Gull *L. glaucescens* from winter 2006/07; the Chinese race of Pied Wagtail *Motacilla alba leucopsis* in Durham from 2005; and the Brown Flycatcher *Muscicapa dauurica* in Yorkshire in October 2007.

To add to this impressive selection of pending potential firsts for Britain, Great Blue Heron *Ardea herodias* appears in this report for the first time; 'Wilson's Snipe' *Gallinago gallinago delicata* is now formally accepted following a revised decision on the Scilly bird of winter 1998/99, which was previously regarded as not proven (*Brit. Birds* 98: 630 & 692) but has been accepted after review and valuable input from Killian Mullarney and Ian Lewington; and Hooded Merganser *Lophodytes cucullatus* returns to Category A, following a spell in Categories E and D. The last species illustrates the value of documenting records of potential vagrants currently placed in Category D, to allow BBRC to review the identification and BOURC to consider origins. Despite the request in last year's introduction (*Brit. Birds* 100: 694), many Category D records are still not being documented. As indicated last year, BOURC has recently established a programme of reviewing all Category D species (*Ibis* 150: 219–220) and this process is made significantly easier if there is formal documentation to support the claims. Once again, we request that observers submit *all* Category D records and would ask observers or County Recorders to flag up records to the BBRC Secretary of known or suspected escaped individuals of Category D species, as this will assist further with assessing the patterns of occurrence of such species.

Some assessments and reviews are still taking place. You can view progress on many of these files on the Work in Progress section of the BBRC website, but some reviews have not yet been reported through that forum. These include that of the 'orange-billed' and Elegant Tern *Sterna elegans* records during 2002–05. That assessment is still ongoing, following research by BBRC members investigating the appearance and identification of similar birds elsewhere in Europe. Reviews of the British records of Redhead *Aythya americana*, the Druridge Bay Slender-billed Curlew *Numenius tenuirostris*, the 'southern skuas' *Stercorarius* and Royal Terns *Sterna maxima* (following the removal of the 1965 Kent record – see *Brit. Birds* 100: 694–695) are now under way. One significant obstacle here has been the transfer of detailed and complex paper files, with associated images and reference material, to electronic format, but this has now been achieved. Jimmy Steele has prepared assessment criteria for the review of North Atlantic Little Shearwaters *Puffinus baroli* and we are currently contemplating the logistics of completing this mammoth task. Jimmy has also presented criteria for assessment of Iberian Chiffchaffs *Phyl-*

loscopus ibericus, to establish whether sound recordings of the song remain a prerequisite for acceptance. Provisional conclusions are that in some cases it may be possible to consider accepting a bird (preferably in spring) that has merely been heard calling (rather than in song), but sound recordings would still prove invaluable to support the identification. For the time being, however, BBRC considers the acceptance of silent Iberian Chiffchaff unlikely. We are also revisiting the identification criteria for Black-headed *Emberiza melanocephala* and Red-headed Buntings *E. bruniceps* in non-adult male plumages and autumn records of 'Eastern' Black-eared *Oenanthe hispanica melanoleuca* and Pied Wheatears *O. pleschanka*; several 2007 records are pending the outcome of this analysis.

Finally, we are endeavouring to catch up on a number of pended records from previous years to ensure that an outcome is achieved. We apologise to those observers and County Recorders who may have been exasperated by the apparent delay in decisions in these cases, but are confident that we can resolve the majority of them in the coming months.

So, to this year's report. We have processed c. 700 submissions this year, almost 20% up on 2006, showing that our almost total conversion to electronic procedures is having a positive effect. The following box gives a breakdown of these submissions.

	2007	2006
Acceptances: current year	527	362
Not proven: current year	81	61
Acceptances: previous years	57	107
Not proven: previous years	32	55
TOTAL	697	585
Updates & corrections	49	31

The number of taxa represented in the accepted records was 130, very similar to last year's 128. We have included this analysis for the first time to enable an assessment of the number of records processed by the Committee and to allow comparisons in future years to establish whether our modified procedures continue to deliver improvement.

Currently, we have another 70 submissions for 2007, split 50/50 between those which are proving difficult to assess and those received too late for inclusion in this report. We again urge that records are submitted *as soon as possible* after the sighting to ensure inclusion in the BBRC report for the year in question. Some significant 2007 records that have not been reported include a Short-toed Eagle *Circaetus gallicus* in Somerset in May, an American Herring Gull *L. smithsonianus* in Cornwall in April and the photographed 'Balearic' Woodchat Shrike *Lanius senator badius* in Cornwall in May.

We are also aware of c. 60 records in 2007 that have been reported but for which we have received no submission. Many of these were seen only briefly and we can fully appreciate why observers might choose to report such sightings to the bird information services, in the hope that the bird is relocated, while not feeling that they saw enough to confirm the identification to a standard acceptable to BBRC. This will always cause some discrepancy between those records reported and those actually considered by the Committee.

If we take 50% of these non-reported sightings to be genuine records, that means that there should have been about 800 submissions in total for 2007. Since almost 700 records have been processed by BBRC and 70 more are being processed, this leaves just 30 that have not been received. In other words, BBRC is assessing more than 95% of national rarities. We are of course looking to improve this proportion still further, but suggest that those who continue to question the relevance of BBRC might reconsider their views in the light of these numbers.

As ever, the report does contain a number of mouth-watering rarities, including the first Great Blue Heron, second 'Baltic' Lesser Black-backed Gull, third Mourning Dove *Zenaida macroura*, third and fourth Audouin's Gulls *L. audouinii*, fourth and fifth 'Hudsonian' Whimbrels *N. phaeopus hudsonicus*, fifth White-tailed Lapwing *Vanellus leucurus*, sixth Blue Rock Thrush *Monticola solitarius* and seventh Siberian Rubythroat *Luscinia calliope* and Siberian Thrush *Zoothera sibirica*; as well as an influx of Buff-bellied Pipits *Anthus rubescens* and invasions of both Glossy Ibises *Plegadis falcinellus* and Cattle Egrets *Bubulcus ibis*. Given the recent confirmation that Cattle Egrets bred successfully in Somerset in 2008, it will be interesting to see how this species fares in the coming years, and whether its stay on the BBRC list is nearing an end.

Acknowledgments

Once again, we wish to thank all the observers and photographers who sent details of their rarity observations to BBRC, either directly or via County Recorders and BirdGuides. We also continue to express a significant amount of gratitude to county and regional recorders and their records committees for the invaluable work that they undertake in supporting the BBRC function. Thanks also to all those individuals who updated information on earlier sightings through correspondence following the posting of Work in Progress files throughout the year. While they may not be acknowledged in the report, their contribution remains very significant for improving the accuracy of the information provided. BBRC continues to be supported financially by Carl Zeiss Ltd, and has done so now for 27 years – more than half the Committee's history. BirdGuides has continued to assist, particularly by enabling the submission of photographs for consideration by BBRC. We would also like to thank the following for their help in various ways this year: David Allan, James Dean, Dick Forsman, Steve Heinl, Steve Howell, Peter Kennerley, Nils Kjellén, Yann Kolbeinsson, Ian Lewington, Killian Mullarney, Pete Ryan and Jean-Claude Stahl. Previous BBRC members have assisted the Committee with a number of duties during the course of the year, including Alan Dean, John Martin, Jimmy Steele, Andy Stoddart and Grahame Walbridge. John Marchant continued in his role as Archivist and Reg Thorpe in his role as Summariser.

Adam Rowlands

Systematic list of accepted records

The principles and procedures followed in considering records were explained in the 1958 report (*Brit. Birds* 53: 155–158). The systematic list is set out in the same way as in the 2006 report (*Brit. Birds* 100: 694–754). The following points show the basis on which the list has been compiled:

1. The details included for each record are (1) county; (2) locality; (3) number of birds if more than one, and age and sex if known (in the case of spring and summer records, however, the age is normally given only where the bird concerned was not in adult plumage); (4) if photographed or sound-recorded (and this evidence assessed by the Committee); (5) if trapped or found dead and where specimen is stored, if known; (6) dates(s); and (7) observer(s), in alphabetical order.
2. In general, this report is confined to records which are regarded as certain, and 'probables' are not included. In cases of the very similar Eastern *Phylloscopus orientalis* and Western Bonelli's Warblers *Ph. bonelli*, however, we publish indeterminate records, and this also applies to those of frigatebirds *Fregata*, Zino's/Fea's Petrel *Pterodroma madeira/feae* and Booted *Hippolais caligata* and Sykes's Warblers *H. rama* (see also *Brit. Birds* 94: 395).
3. The sequence of species, English names and scientific nomenclature follow *The British Birds List of Birds of the Western Palearctic*; see www.britishbirds.co.uk/bblist.htm
4. The three numbers in parentheses after each species name refer specifically to the total number of individuals recorded in Britain (i) to the end of 1949, (ii) for the period since 1950, but excluding (iii) those listed here for the current year. The decision as to how many individuals were involved is often difficult, but a consensus view is represented by 'possibly same' (counted as different in the totals) or 'probably/presumed same' (counted as the same in the totals). An identical approach is applied to records of a particular species recurring at the same, or a nearby, locality after a lapse of time. In considering claims of more than one individual at the same or adjacent localities, the Committee requires firm evidence before more than one is accepted.
5. The breeding and wintering ranges for each species are given in parentheses at the end of each species account.
6. The following abbreviations have been used in the main text of the report: CP = Country Park, GP = Gravel-pit, NMS = National Museums of Scotland, NR = Nature Reserve, Resr = Reservoir, SF = Sewage-farm.

Red-breasted Goose *Branta ruficollis* (9, 64, 2)

Cumbria Newton Marsh, adult, 13th–16th December, photo (per www.birdguides.com); see also Dumfries & Galloway.

Dorset Poole Harbour area, adult, 18th November 2006 to 25th January, photo (*Brit. Birds* 100: 696); presumed same Ferrybridge, 15th February, photo; see also Hampshire/Sussex.

Dumfries & Galloway Caerlaverock WWT reserve, adult, 13th–25th November (B. Morrell *et al.* per P. N. Collin); presumed same Cummertrees and Caerlaverock WWT reserve, 23rd December (per www.birdguides.com) and Caerlaverock WWT reserve, 26th December to 6th February 2008, photo (A. W. Reid *et al.*); see also Cumbria.

Hampshire Keyhaven, adult, 26th–31st January (R. Cook *et al.*); presumed same Needs Ore, 31st January to 13th February (M. Rafter *et al.*), Sinah, Langstone Harbour, 16th–17th February (D. Cooper, G. Madison, P. Spencer *et al.*), Black Point, Chichester Harbour, 21st–27th February, photo (K. Crisp, A. C. Johnson), and Warblington and Black Point, Chichester Harbour, 10th November to 6th March 2008, photo (M. Gillingham, C. L. Stares *et al.*); see also Dorset/Sussex.

Lincolnshire Saltfleet/Donna Nook area, two, adults, 13th October 2006 to 23rd January, photo (*Brit. Birds* 99: plate 358; 100: 696, plates 49, 333); note extended dates; see also Norfolk.

Norfolk Warham Greens, two adults, 10th March, photo (per G. Dunmore); presumed same Wells, 11th–21st March, photo (*Brit. Birds* 100: plate 138), Lynn Point, 25th–28th March, photo, and Snettisham RSPB reserve, 30th March to 2nd April, photo; see also Lincolnshire.

Sussex West Wittering and East Head, Chichester Harbour, adult, 24th February to 7th March, photo (D. I. Smith *et al.*); presumed same 30th November to 5th March 2008, photo (per C. Melgar); see also Dorset/Hampshire.

Upper Forth Haugh of Blackgrange, adult, 3rd–12th February, photo (J. B. Bell, R. Dawson *et al.*); presumed same 15th April (per C. Henty).

2006 **Lincolnshire** Covenham, two, adults, 12th October, photo (G. M. Orton, J. R. Walker); earlier sighting for Saltfleet birds (*Brit. Birds* 100: 696).

2002 **Perth & Kinross** Powmill, adult, 16th–18th February (J. S. Nadin *et al.*); presumed same as Findatie, etc. (*Brit. Birds* 96: 555).

(Breeds Taimyr Peninsula, Siberia. Migrates SW to winter in coastal regions of W Black Sea in Romania & N Bulgaria. Small numbers regularly winter in The Netherlands, Greece & Turkey. Some may still use former wintering areas along Caspian Sea.)

Black Duck *Anas rubripes* (0, 31, 1)

Cornwall Colliford Resr, adult male, 23rd May, photo (S. C. Votier); presumed returning bird from 2003 and other years (*Brit. Birds* 97: 563).

Highland Loch Sunart, adult male, 16th–17th June, photo (D. & J. Wozencroft).

(Breeds E North America from Labrador S to North Carolina & W to Manitoba. Most are resident or dispersive but N breeders migrate to winter in coastal SE USA.)

Blue-winged Teal *Anas discors* (10, 223, 0)

2006 **Essex** Hanningfield Resr, adult, 20th August, photo (*Brit. Birds* 100: 697); note revised ageing.

(Breeds from S Alaska, across much of temperate Canada to SC USA. Migratory, wintering in S USA, Mexico, Caribbean & N South America.)

Lesser Scaup *Aythya affinis* (0, 102, 25)

Avon Blagdon Lake, adult male, 11th–20th March, photo (R. Mielcarek, N. Milbourne *et al.*); see also Somerset. Blagdon Lake, adult male, 30th September to 21st November, photo (R. Mielcarek, N. Milbourne *et al.*).

Berkshire Woolhampton GP, adult male, 28th October to 15th November, photo (C. D. R. Heard, K. E. Moore *et al.*).

Caithness Toftingall Loch, adult male, 12th–13th May, photo (I. Outlaw, J. Smith *et al.*). St John's Loch, two adult males, 7th–8th October (J. Smith *et al.*).

Dumfries & Galloway Caerlaverock WWT reserve, adult female, 27th November 2006 to 13th March,

photo (B. Morrell per P. N. Collin) (*Brit. Birds* 100: 698, plate 51). Caerlaverock WWT reserve, adult male, 12th March, photo (B. Morrell per P. N. Collin).
Fife Loch Gelly, adult female, 28th–29th May, photo (W. McBay, J. S. Nadin).
Gloucestershire Cotswold Water Park, male, 19th–20th February, photo (K. Milsom, P. J. Taylor *et al.*); see also Wiltshire.
Greater Manchester Heaton Park, adult male, 9th June to 3rd September, photo (R. & S. Adderley *et al.*); presumed returning bird from 2006 (*Brit. Birds* 100: 698).
Leicestershire & Rutland Eyebrook Resr, first-summer male, 24th April intermittently to 3rd May, photo (K. Earnshaw, D. Gray, S. M. Lister *et al.*). Rutland Water, adult male, 16th–22nd September, photo (R. G. Bayldon, M. G. Berriman *et al.*).
Lothian St Margaret's Loch, Edinburgh, first-winter male, 30th March to 16th April, photo (K. Gillon *et al.*).
Northumberland Linton Pond, two, male & female, 26th May, photo (G. Bowman, M. Lowther, L. A. Robson *et al.*) (plate 256).
Outer Hebrides Loch Sandary, North Uist, first-winter male, 17th November 2006 to 9th January, photo (*Brit. Birds* 100: 698); presumed same 30th April, photo (S. E. Duffield). Coot Loch, Benbecula, male, 16th January to 19th April, photo (S. E. Duffield, J. Kemp *et al.*); presumed same Loch Fada, Benbecula, 21st January, and Loch Mor, Benbecula, 25th January. Coot Loch, Benbecula, adult male, 4th February to 19th April and 21st December to 18th March 2008, photo (S. E. Duffield *et al.*); presumed same Loch Bailfinlay, Benbecula, 15th April, photo.
Oxfordshire Sonning Eye GP, male, 3rd January to 26th February, photo (H. Netley *et al.*). Appleford, first-winter male, 30th December to 17th February 2008, photo (A. H. J. Harrop, I. Lewington *et al.*).
Perth & Kinross St Serf's Island, Loch Leven, first-winter male, 14th February to 6th March (K. D. Shaw, J. J. Squire *et al.*). Findatie, Loch Leven, adult male, 25th February to 8th March, photo (C. Pendlebury, K. D. Shaw *et al.*). Vane Farm, Loch Leven, first-summer male, 22nd–30th April, photo (J. S. Nadin, K. D. Shaw, J. J. Squire *et al.*). Burleigh Sands, Loch Leven, adult male, 8th December (K. D. Shaw).
Shetland Loch of Funzie and Papil Water, Fetlar, female, 11th November to 7th January 2008, photo (B. H. Thomason *et al.*).
Somerset Cheddar Resr, adult male, 24th–31st March, photo (N. Milbourne *et al.*) (*Brit. Birds* 100: plate 141); presumed same Burtle Road Fishery, 2nd–7th April, photo (J. J. Packer *et al.*); see also Avon. Torr Resr, adult male, 12th October, photo (A. & B. A. Taylor, J. Vickers); presumed same 10th November, photo; see also Wiltshire.
Warwickshire Draycote Water, first-winter male, 26th November to 5th March 2008, photo (T. Marlow, R. C. Mays *et al.*) (*Brit. Birds* 101: plate 61).
Wiltshire Cotswold Water Park, male, 13th–25th February, photo (S. B. Edwards, R. Turner *et al.*); see also Gloucestershire. Stourton, adult male, 20th October intermittently to 1st March 2008, photo (J. P. Martin *et al.*); see also Somerset.
2006 Cambridgeshire Ouse Washes, first-winter male, 29th January to 12th March, photo (*Brit. Birds* 100: 698); note revised dates.
2006 Outer Hebrides Loch Sandary, North Uist, first-winter male, 26th November, photo (J. Kemp, B. Rabbitts *et al.*); presumed same Loch Hosta, North Uist, 14th–18th December, photo, and Baleshare, 30th December to 26th February 2007, photo.
2006 Staffordshire Tittesworth Resr, adult male, 1st July, photo (P. G. Barratt, W. J. Low, N. Smith *et al.*) (*Brit. Birds* 100: 698); note revised observers.
2005 Devon Roadford, first-winter male, 19th–29th November, photo (D. Churchill, J. Tidball *et al.*); earlier sighting for 2006 Devon bird (*Brit. Birds* 100: 698).

The year 2007 marked the twentieth anniversary of the first Lesser Scaup in Britain, a first-winter male at Chasewater, West Midlands, in 1987, which ended a somewhat tortuous period of uncertainty in terms of identifying this species as a vagrant. The following decade produced a steady trickle of records, with a notable surge in 1996 when seven were recorded and the first accepted female in 1997.

The increase in records of this species has continued unabated to an impressive 25 for 2007, with a strong showing of first-winter birds, particularly males. This clearly indicates that genuine new arrivals, combined with increasing observer awareness, are fuelling the growth in records. It should be

John Malloy

256. Male and female Lesser Scaup *Aythya affinis*, Linton Pond, Northumberland, May 2007.

axiomatic that the fullest possible documentation remains essential because of the ever-present problem of hybrids.

Occasional multiple arrivals (including pairs), coupled with the appearance of some *Aythya* hybrids, has raised the question of whether Lesser Scaup has already bred in the Western Palearctic. The returning adult female Lesser Scaup at Caerlaverock was part of a small flock which included one possible hybrid offspring. Others have been suspected elsewhere.

Inevitably some have (already) begun to question how long this species will remain on the BBRC list. There are simple rules governing this. For a species to be considered for removal, there must be at least 150 records in the last ten years, with ten or more records in at least eight of those years. Conceivably, that point could be reached as early as 2010.

So, for those keen on adding it to their self-found list before then, or those searching for Norfolk's first, the peak season is unsurprisingly December to March, although the species has occurred in all months and an increasing number are being found in autumn. The geographic spread indicates that almost any eutrophic lake or pond with a few other *Aythya* ducks will always be worth a second look.

(Breeds from C Alaska through Canada to Hudson Bay & S to Washington & South Dakota. Isolated populations E of Great Lakes. Winters along both coastlines of USA, in E from New Jersey to Mexico, W Indies, C America to N Colombia.)

King Eider *Somateria spectabilis* (58, 130, 7)

Argyll Ormsary, adult male, 1st April, photo (A. & S. Smout), presumed same Machrihanish, 12th May, 7th–12th June, 7th July, photo (E. Maguire, C. Mathew *et al.*), and Rhunahaorine Point, 24th May, photo (T. Charmin, E. Maguire).

Fife Leven, first-winter male, 29th December, photo (M. A. Wilkinson).

Highland Clachtoll, adult male, 7th February, photo (A. & D. Haines); presumed same 12th February, photo (A. Summers).

Moray & Nairn Burghead, first-winter male, 7th April to 23rd May, photo (S. M. Lister, J. Jennings *et al.*).

North-east Scotland Peterhead, adult male, 28th October 2006 to 22nd April (*Brit. Birds* 100: 699); note revised dates; presumed same 26th October (M. Innes). Girdle Ness, Aberdeen, female, 23rd November to 30th December, photo (H. Addlesee *et al.*). Girdle Ness, Aberdeen, first-winter male, 1st December to 28th March 2008, photo (R. King, A. Whitehouse *et al.*).

Orkney North Ronaldsay, first-winter male, 3rd–14th April, photo (P. A. Brown *et al.*).

Shetland Symbister, Whalsay, adult male, 1st January, presumed same 17th March (J. Dunn, B. Marshall); presumed returning bird from Dales Voe, Mainland in 2006 (*Brit. Birds* 100: 699). Mousa Sound, adult male, 2nd January to 25th February, presumed same 10th November to 23rd March 2008 (P. M. Ellis *et al.*); presumed returning bird (*Brit. Birds* 100: 699). Tresta Voe, Mainland, adult male, 7th April (H. R. Harrop, R. A. Haywood); presumed returning bird from 2006 (*Brit. Birds* 100: 699); presumed same Walls, Mainland, 28th April (B. H. Thomason), and Tresta Voe, Mainland, 6th June, photo (A., J. & N. Moncrieff). Wester Quarff, Mainland, adult male, 7th–27th April and 25th August to 11th October (R. A. Haywood *et al.*); presumed returning bird from Clift Sound in 2006 (*Brit. Birds* 100: 699).

2006 **North-east Scotland** Blackdog, Aberdeen, adult female, 27th May, photo (A. Webb *et al.*).

2005 Dorset Portland Bill and Chesil Beach, first-winter male, 27th March (J. Down, P. Harris, C. White).

1955 Kent Shellness, Sheppey, first-winter male, 27th December; previously accepted (Naylor) but now reviewed by BBRC and considered not proven.

An average year for this species with the usual scatter of records from Scotland, plus some returning birds and leftovers from 2006. More unusual is the belated 2005 record from Portland Bill and Chesil Beach. With accepted records for Cornwall in previous years, and one from Devon in 2008 under consideration, it is perhaps surprising that it took so long for this species to be added to the Dorset list. King Eider has been recorded several times even farther south than this, and also inland in Europe. To the end of 2003 there were three records from Spain, six from the English Channel and Atlantic coasts of France and one from the French Mediterranean coast off the Camargue in 1999. It has also been recorded inland in the Czech Republic, Hungary, Switzerland and Austria, while the most southerly European sightings are from Italy, where it has appeared on six occasions. Farther west there are one or two records from the Azores, highlighting the species' vagrancy potential to all areas of Europe.

(Breeds from Kanin Peninsula E across Arctic Siberia, including Novaya Zemlya & W Svalbard, Arctic Alaska, N Canada & N Greenland. European population winters along ice-free coasts of White Sea, N Norway & Iceland. Pacific population winters in Bering Sea.)

Harlequin Duck *Histrionicus histrionicus* (6, 10, 1)

Outer Hebrides St Kilda, adult male, 18th June, photo (W. T. S. Miles, S. Money, I. Win) (pl. 257 & 258). This brief visit by a stunning drake to one of the most remote parts of Scotland represents the first June record for Britain. Prior to this, none had arrived between 18th April and 15th October and the latest sighting in spring was of the female that lingered on Lewis, Outer Hebrides, until 20th May 2004. Adult males typically leave the breeding areas to moult on the coast from mid June to mid July (*BWP*), so this may well have been a lost individual searching for a moulting flock. It maintains Scotland's monopoly of accepted records during BBRC's recording period, the majority along the west coast or in the Northern and Western Isles. There are three historical records from England between 1862 and 1915 or 1916, and an accessible bird south of the border would prove immensely popular. Although the photographic evidence was of record shots only, this was clearly a stunning adult male, the first record in this plumage for at least 42 years, females having accounted for 60% of sightings since 1950. Harlequin Ducks have become slightly more frequent in recent years, with 73% of the post-1950 total occurring within the last 20 years.

The source of our Harlequin Ducks remains unknown; the largely resident Iceland population is the closest, but those from Greenland and eastern Canada migrate to moult off the coast of southwest Greenland. Boertmann *et al.* (2006) estimated a moulting population of 5,000–10,000 males in the waters around southwest Greenland in July 1999 and suggested that the (unknown) wintering population here may be significant. This supports the idea that the British vagrants may originate from southwest Greenland, rather than the less migratory Icelandic population as suggested previously (*Brit. Birds* 98: 637).

(Atlantic population breeds Iceland, S Greenland, & E Canada from S Ellesmere Island to Labrador & Gulf of St Lawrence. Pacific population breeds NE Russia from Lake Baikal E to Kamchatka & S Sakhalin, Alaska & W Canada south to Oregon, USA. Resident Iceland. Other populations disperse to coasts S of breeding range.)

Ilka Win

257 & 258. Adult male Harlequin Duck *Histrionicus histrionicus*, St Kilda, Outer Hebrides, June 2007.

Black Scoter *Melanitta americana* (0, 7, 1)

Caernarfonshire Llanfairfechan, adult male, 24th September 2006 to 9th April (*Brit. Birds* 100: 700); note extended dates.

Lancashire & North Merseyside Leighton Moss, male, 16th May, found exhausted and later released at Jenny Brown's Point, photo (J. Beattie, K. Kellett, T. Wheeler *et al.*) (*Brit. Birds* 100: plate 184; plate 259).

This, the eighth British and first English record of a species that remains a true mega-rarity, is one of the more bizarre records of the year. Railway workers found the bird on a railway line adjacent to the Eric Morecambe Pool at Leighton Moss RSPB reserve and some 1.5 km from the sea. We can only imagine how it arrived in such an incongruous setting. Its true identity was not realised immediately as it travelled, via staff at Leighton Moss, to a local vet, where reference to the *Collins Bird Guide* suggested that it might indeed be a rare bird. The decision was made for it to be released back at sea. Unfortunately, Morecambe Bay (which has one of the largest tidal ranges in Britain) was in the midst of a spring tide and, once the bird headed away from Jenny Brown's Point on the outgoing tide, its chances of being seen again were pretty slim.

James Beattie

259. Male Black Scoter *Melanitta americana*, Jenny Brown's Point, Lancashire & North Merseyside, May 2007.

Speculation as to whether this may have been the bird seen in recent winters off the North Wales coast is understandable, if a little tenuous (and it is treated in our statistics as a new bird). In excess of 50,000 Common Scoters *M. nigra* winter between North Wales and Morecambe Bay, most of which never come within telescope viewing range. This situation is replicated off some other British coastlines, and clearly suggests that there may be more Black Scoters 'out there' than we are recording. All records in the Western Palearctic have so far been of adult males (Britain 8, The Netherlands 3, Denmark 1, Germany 1, Spain 1). Some females and immatures may, however, be more readily identifiable than generally realised, though the features are particularly subtle. Garner (2008) highlighted a number of features (the shape and pattern of colour on the bill and pattern of dark on the nape may provide key clues), but these are only for those expectant and prepared.

(Breeds on Siberian tundra from Yana River E to Alaska, & N Canada to Newfoundland. In N Atlantic, winters along coasts of E USA, N to South Carolina, & inland on Great Lakes. Elsewhere, winters in ice-free seas along both coasts of N Pacific Ocean, S to N Japan & California.)

Bufflehead *Bucephala albeola* (1, 11, 1)

Highland Glenbeg, Ardnamurchan, 7th June, photo (M. Hows, A. Jenkins); see also Outer Hebrides.

Outer Hebrides Loch na Muilne, Isle of Lewis, 8th–9th June, photo (M. S. Scott, J. Walsh); see also Highland.

Shetland Loch of Snarravoe, Unst, adult male, 12th November 2006 to 20th January, photo (*Brit. Birds* 100: 700, plate 335).

(Forested regions of North America from C Alaska throughout W & C Canada to Hudson Bay, S to Montana & NE California. Winters throughout North America, from Aleutian Islands & coastal Alaska S along both seaboards to N Mexico, with small numbers wintering inland.)

Barrow's Goldeneye *Bucephala islandica* (0, 3, 0)

Upper Forth Callander and Loch Venachar, adult male, 19th November 2006 to 27th April, photo (*Brit. Birds* 100: 701, plates 52, 336).

(Resident W Pal. population breeds Iceland. Two North American populations: larger breeds S Alaska & W Canada, S to N California, wintering on adjacent coastal lowlands; smaller breeds Labrador, winters along coast S to New York.)

Hooded Merganser *Lophodytes cucullatus* (0, 3, 0)

2006 **Shetland** Haroldswick and Burrafirth, Unst, adult male, 15th April to 2nd May, photo (*Brit. Birds* 99: plate 161; 100: plate 364); previously included in Category D (*Brit. Birds* 100: 752) but now accepted into Category A of the British List.

2002 **Northumberland** Newbiggin-by-the-Sea, first-winter, 7th–25th March, photo (M. A. Maher, S. J. McElwee, A. Priest *et al.*); previously included in Category D (*Brit. Birds* 96: 606) but now accepted into Category A of the British List; note also revised observers.

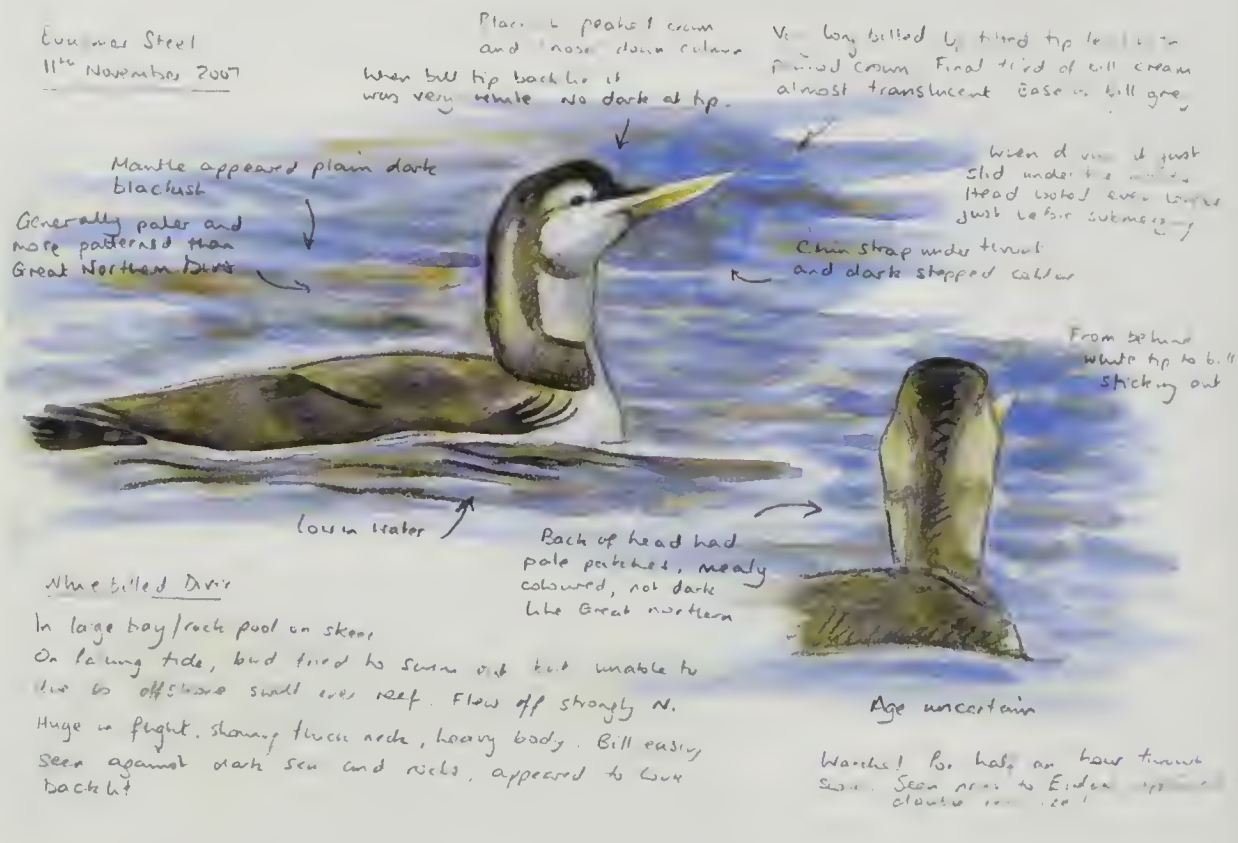
2000 **Outer Hebrides** Oban Trumisgarry, North Uist, first-winter or female, 23rd October to 1st November, photo; previously included in Category D (*Brit. Birds* 95: 524) but after assessment by BOURC now accepted into Category A of the British List. This becomes the first British record and full details will appear in *BB* shortly.

Hooded Merganser has had a rather difficult relationship with the British List. Originally in Category B on the basis of an old record from 1830–31, it was temporarily elevated to A in 1987–92 (on the basis of a record from Buckinghamshire in 1983), then moved back to B before being removed completely in 1999 and placed in Category E. It was subsequently admitted to Category D in 2001, on the basis of the Outer Hebrides record reported here. Two more records were accepted by BBRC into Category D, those in Northumberland in March 2002 (*Brit. Birds* 96: 606) and Shetland in 2006 (*Brit. Birds* 100: 752), before the species was finally admitted to Category A by BOURC earlier this year – again on the basis of the Outer Hebrides record, but also with the knowledge of the other two and aided by an accumulating body of circumstantial evidence.

This saga is a good illustration of the appropriate use of Category D. 'D' does not stand for 'Dodgy'! It is a holding category for potential admission to Category A of species for which there is a record but also significant doubt about natural vagrancy. Such records can be reviewed and elevated to Category A if further supporting data are forthcoming or if a pattern emerges that confirms the natural vagrancy potential. In this case, multiple records from the Azores and Iceland since 2000 and an increasing population wintering on the eastern seaboard of North America strengthened the case for genuine vagrancy substantially. The circumstances of the three British candidates also helped. The arrival of the Outer Hebrides female/immature coincided with an influx of Nearctic ducks. The first-winter in Northumberland in early March 2002 coincided with the arrival of four other first-winter Hooded Mergansers, all on Atlantic islands in the preceding four months (two on Iceland, and singles on Tenerife, Canary Islands, and Flores, Azores). This was a unique event and these were the first confirmed first-winters recorded in Europe. The stunning adult male in Shetland in 2006 also conformed to a recent pattern of overshoot vagrancy of adult birds to Iceland in spring.

The problem for BBRC in years to come will be to distinguish between vagrants and escapes. Hooded Merganser is still relatively common in captivity in Britain, but making judgements about origins is an imperfect science. Just because a species is in Category A does not mean that every subsequent record is acceptable as a vagrant. BBRC needs to judge each record on an individual basis. This is a familiar situation, faced in every cycle of record assessment for a range of rare wildfowl. For this particular species, establishing the absence of a ring with certainty (photographs of the legs would help) and accurate ageing of female-type birds (best done by accurate assessment of the tertials) may both be helpful, though neither guarantees vagrancy by any means. Ultimately every decision will be somewhat subjective, but hopefully informed by a detailed body of evidence.

(Breeds S Alaska, E across S Canada & N USA to Newfoundland, & S to Oregon, Virginia & locally almost to Gulf coast. Winters coastally, from S limit of breeding range to California & Florida.)



Stewart Sexton

Fig. 1. White-billed Diver *Gavia adamsii*, Boulmer, Northumberland, 11th November 2007.

White-billed Diver *Gavia adamsii* (7, 305, 27)

Borders St Abb's Head, juvenile, 11th November (F. Evans, D. K. Graham); see also Northumberland.

Cleveland Hartlepool Headland, adult, 13th October (C. Dodsworth, G. Iceton, G. Lawler *et al.*); see also Durham.

Cornwall Hayle Estuary, adult, 25th February to 27th March, photo (N. Casburn *et al.*) (*Brit. Birds* 100: plates 114, 140 & 141).

Durham Whitburn Coastal Park, two single adults north, 13th October, photo (P. Hindess, M. Newsome *et al.*); see also Cleveland.

Norfolk Eccles on Sea, Walcott and Sheringham, second-winter, 6th November (P. J. Heath, A. J. Kane, A. J. L. Smith *et al.*); presumed same Cley, 9th November (R. Millington, D. Wileman).

Northumberland Boulmer, 11th November (T. Cadwallender, S. Sexton) (fig. 1); presumed same Cullernose Point, 11th November (T. Farooqi); see also Borders.

Orkney North Ronaldsay, adult, 26th–27th April (J. K. Batten, P. A. Brown, R. J. Simpson). North Ronaldsay, adult, 27th April (J. K. Batten, P. A. Brown).

Outer Hebrides Tiumpan Head, Isle of Lewis, two, 25th February, photo (T. ap Rheinallt); presumed same 27th April, photo (T. ap Rheinallt). Skigersta, Isle of Lewis, three, adults, 13th–14th April, photo (B. Doe, J. Regan). Aird an Rùnair, North Uist, adult, 6th May (S. E. Duffield, B. Rabbitts).

Shetland Kirkabister, Mainland, adult, 21st–31st January, 1st–3rd May and 14th November (per P. V. Harvey); presumed returning bird (*Brit. Birds* 100: 701). Kirkabister, Mainland (second bird), 31st January (R. A. Haywood); presumed same 10th November (M. S. Chapman). Dury Voe, Mainland, adult, 17th March to 29th April, photo (M. S. Chapman *et al.*); possibly one of Kirkabister birds. Skuda Sound, Unst, juvenile, 18th–25th February (P. V. Harvey, M. Heubeck, R. M. Tallack *et al.*). Burrafirth, Unst, adult, 13th–14th April, photo (R. M. Tallack *et al.*). Burrafirth, Unst, adult, 30th April to 1st May, photo (R. M. Tallack *et al.*). Norwick, Unst, 21st May, photo (R. Coomber *et al.*). Sound Gruney, Fetlar, adult, 30th April, photo (B. H. Thomason). Sand of Sand, Fetlar, adult, 1st May, photo (B. H. Thomason). Hamars Ness and Sound Gruney, Fetlar, adult, 14th November to 5th February 2008, photo (G. F. Bell, R. M. Fray, D. P. Hall *et al.*); presumed same as one of previous two. Symbister, Whalsay, adult female, 11th–29th March, died and skin now at NMS, photo (C. Hutchison, B. Marshall *et al.*). Kettla Ness, Burra, juvenile, 26th April (R. A. Haywood). Kettla Ness, Burra, adult, 28th April

(R. A. Haywood); presumed same 30th April, photo. Mousa Sound, 27th April (M. Heubeck, R. M. Mellor).

Sussex Selsey Bill, adult, 30th September to 17th November, photo (C. Fentiman *et al.*).

Yorkshire Flamborough Head, adult, 10th November (R. Harrington, A. Malley, B. Richards).

2006 Outer Hebrides Skigersta, Isle of Lewis, four adults, 24th March intermittently to 29th April, photo (*Brit. Birds* 100: 701); note revised dates; presumed same as Cellar Head, Isle of Lewis, four adults, 16th April (S. D. Housden, M. S. Scott, K. D. Shaw).

2006 Shetland Kirkabister, Mainland, adult, 23rd–25th October 2006 (*Brit. Birds* 100: 701); note revised dates.

2005 Moray & Nairn Cummingston, adult, 3rd–7th May (*Brit. Birds* 100: 701); note revised dates.

(In W Pal., rare & sporadic breeder along Arctic coasts of European Russia, E from Yamal Peninsula & Novaya Zemlya. Also breeds in coastal regions of Siberia, N Alaska & Canada E to Mackenzie River & Baffin Island. Winters at sea, in E Atlantic, S to S Norway, but distribution poorly known.)

Black-browed Albatross *Thalassarche melanophris* (1, 22, 0)

Outer Hebrides Sula Sgeir, adult, 8th–10th May, photo (M. S. Scott *et al.*); presumed returning bird from 2005 & 2006 (*Brit. Birds* 100: 25, 702).

(Breeds on islands in S South Atlantic & Indian Oceans. In non-breeding season, disperses N throughout southern oceans as far as Tropic of Capricorn.)

Zino's/Fea's Petrel *Pterodroma madeira/feae* (0, 31, 1)

Durham Whitburn Coastal Park, 11th September (R. Ahmed, P. Hindess, T. I. Mills *et al.*).

2005 Yorkshire Flamborough Head, 23rd October (A. M. Clewes, A. Malley, B. Richards *et al.*).

(Zino's confined to central mountains of Madeira where entire world population is c. 65–80 pairs; non-breeding range unknown. Fea's breeds in Madeira archipelago (Bugio) & Cape Verde Islands. In non-breeding season disperses throughout N Atlantic.)

North Atlantic Little Shearwater *Puffinus baroli* (3, 58, 1)

Cornwall St Ives, 15th August (P. A. J. Morris, N. R. Stocks *et al.*).

(N Atlantic range restricted to warmer waters of Madeira, Canary Islands, Cape Verde Islands & possibly the Azores. Outside the breeding season found at sea near breeding sites within N Atlantic.)

Little Bittern *Ixobrychus minutus* (261, 219, 3)

Devon Yelland, adult male, 12th May, found dead, photo (R. Jefferey *et al.*).

Norfolk Titchwell RSPB reserve, male in song, 18th–27th June, photo (J. & S. Jex *et al.*). Titchwell RSPB reserve, juvenile, 19th–20th October (A. Saunders *et al.*).

(Widespread, patchy and declining in Europe N to 53°N. To E, breeds to 60°N in Russia, & E to Kazakhstan & NW China. W Pal. population migratory, wintering mainly in E Africa, S from Sudan & Ethiopia. Other populations largely resident or dispersive in N Indian subcontinent, sub-Saharan Africa & Australia.)

Squacco Heron *Ardeola ralloides* (69, 62, 8)

Cambridgeshire Ouse Washes, adult, 11th August, photo (J. Bird, B. Lascelles *et al.*); presumed same Earith GP, 11th–20th August, photo (*Brit. Birds* 100: plate 285; plate 260).

Dorset Lodmoor RSPB reserve, adult, 28th May (D. Foot, M. Forster); presumed same Radipole, 6th–7th June, 30th June to 3rd July, photo (per J. A. Lidster), and Abbotsbury, 27th June, photo (S. A. Groves).

Greater London Crossness Southern Marsh, Thamesmead, adult, 29th May to 8th June, photo (D. T. McKenzie *et al.*).

Isles of Scilly Porth Hellick, St Mary's, first-summer, 13th–30th May, photo (R. Mawer, K. Webb *et al.*) (*Brit. Birds* 100: plate 185).

Kent Palmarsh GP, Hythe, first-summer, 2nd June (I. A. Roberts); presumed same Oare Marshes, 3rd–5th June, photo (C. & M. Perkins *et al.*), and Ham Marsh, 16th–18th June, photo (G. J. A. Burton per B. & M. Wright). Dungeness, adult, 9th June, photo (R. Butcher *et al.* per J. M. Warne).

Suffolk Minsmere RSPB reserve, adult, 13th July, photo (J. A. Rowlands *et al.*).

Kevin Durose

260. Adult Squacco Heron *Ardeola ralloides*, Earith Gravel-pits, Cambridgeshire, August 2007.

Worcestershire Upton-on-Severn, 15th June, photo (C. Morgan per M. Wilmott); presumed same 25th June, photo.

The eight accepted records here make 2007 the best year ever, and there may possibly be others not yet submitted. The Worcestershire bird was the first for that county, with the majority being found during the peak period of mid to late spring.

A large population decline in Europe during 1970–90 (BirdLife International 2004) was responsible for a noticeable dip in British records during the 1980s. Since 1989 the species has been a more regular vagrant, with just two blank years (1991 and 1993) and with the best four years on record all since then. Expanding populations in Spain and southern France in particular have been linked with the increases here, but greater observer coverage is also a factor. However, in common with the situation with other southern herons, our warming climate should ensure that this species continues to feature in BBRC reports.

(W Pal. breeding population small and fragmented, centred on Mediterranean basin, from S Spain to Black Sea & E to Kazakhstan, with large population in Danube Delta. Northern populations migratory, wintering in N tropical Africa. African population largely resident.)

Cattle Egret *Bubulcus ibis* (3, 169, 90)

Avon Chew Valley Lake, 11th–13th October, photo (R. M. Andrews, R. Mielcarek *et al.*).

Berkshire Lower Farm GP, 14th October, photo (S. Graham *et al.*).

Caithness Scrabster Mains, 22nd September to 3rd October, photo (S. Laybourne *et al.*).

Cambridgeshire St Neots and Abbotsley, 26th–29th December, photo (S. L. Bain *et al.* per M. L. Hawkes).

Cheshire & Wirral Stapley, 13th December, photo (P. Arrowsmith, C. Hull); presumed same Poynton, 22nd December to 12th April 2008, photo (C. R. Linfoot, J. W. Rayner, C. Wallwoth *et al.*). Neston, 23rd December to 10th January 2008, photo (A. H. Pulsford, P. Woollen *et al.*).

Cornwall Sancreed and Drift, 18, 20th November to 31st December, photo (D. S. Flumm *et al.*). Siblyback Resr, four, 4th–12th December, photo (S. C. Votier *et al.*). Halsetown, St Ives, five, 22nd December to 17th January 2008, photo (C. Buckland, P. Freestone, M. Halliday *et al.*) (plate 261). Gannell Estuary, Crantock, Newquay, eight, 27th December to 6th January 2008 (S. G. Rowe *et al.*). Treator, Padstow, two, 27th December, photo (S. G. Rowe *et al.*).

Devon Otter Estuary, 23rd October 2006 to 19th April (*Brit. Birds* 100: 704); note revised dates. Seaton Marshes, 14th–21st October, photo (G. Haig, J. McCarthy *et al.*). Teigngrace, 6th–23rd December, photo (M. R. A. Bailey *et al.*). Dishcombe, 24th December (S. Hatch). Powderham, Exe estuary, 26th December to 27th January 2008, photo (L. Lock *et al.*). Bideford, 29th December, photo (D. Churchill *et al.*).

Dorset Radipole, two, adults, 15th April, photo (C. Courtaux, A. Taylor). Arne Moors, three, 2nd–12th November (M. Singleton *et al.*); presumed same Lytchett Bay, Poole Harbour, when total of four birds, 3rd November (M. Gould, S. Robson *et al.*), Radipole, 4th November (P. Baker), and Bestwall, Wareham Moors and Poole Harbour, 4th–12th November (B. Spencer *et al.*). Upwey and Buckland Ripers, six, 24th November to 20th March 2008 (J. Lowther *et al.* per K. Lane). Upton CP, Poole, 27th November to 6th December (L. Kirton *et al.* per K. Lane). Abbotsbury, 13th December (S. A. Groves).
Dumfries & Galloway Cardoness, 24th December to 11th January 2008, photo (P. N. Collin, M. Hannay, F. Simpson) (*Brit. Birds* 101: plate 62).
East Glamorgan Kenfig, 5th November, photo (D. G. Carrington, N. Donaghy *et al.*); see also Gower.
Essex Great Bentley, 18th December (P. Brayshaw).
Gloucestershire Saul Warth and Frampton-on-Severn, 9th December to 22nd June 2008, photo (G. Hodgson *et al.*).
Gower Eglwys Nunydd Resr, 6th–7th November, photo (P. Bristow, M. C. Powell *et al.*); see also East Glamorgan.
Greater London/Essex Rainham Marshes, adult, 20th–21st May, photo (M. Dent *et al.*). Rainham Marshes, 17th–23rd October, photo (D. Smith *et al.*).
Greater Manchester Pennington Flash, 2nd December, photo (P. Alker, N. Dowson *et al.*).
Hampshire Harbridge, 27th December to 27th March 2008, photo (N. R. & S. Jones *et al.*).
Isles of Scilly Porth Hellick, St Mary's, 18th–22nd November (N. Hudson *et al.*). Old Town and Higher Moors, St Mary's, 18th–24th December, photo (M. Goodey *et al.*). Old Grimsby, Tresco, three, 18th–21st December, photo (A. White *et al.*); presumed same Pig Field, St Martin's, 18th December (V. Jackson per N. Hudson), Old Town and Higher Moors, St Mary's, 18th–19th December, photo (W. Scott *et al.*), and Garrison, St Mary's, 22nd December (per www.birdguides.com).
Kent Sevenoaks Wildlife Reserve, 31st January (M. Coath). Grove Ferry, two, adult & juvenile, 21st–24th July, photo (M. Wilson *et al.*) (*Brit. Birds* 100: plate 240).
Lancashire & North Merseyside Martin Mere WWT reserve , 14th December, photo (A. Bunting).
Outer Hebrides Steinish and Laxdale, Isle of Lewis, 13th–14th August, photo (T. ap Rheinallt, M. S. Scott, R. D. Wemyss).
Somerset Holyweil Lake, 11th–14th December, photo (B. Gibbs *et al.*). Wet Moor, 29th December to 11th February 2008, photo (D. J. Chown, B. Gibbs *et al.*).
Suffolk North Warren, adult, 26th–30th July, photo (J. A. Rowlands, D. Thurlow *et al.*).
Sussex Pulborough, adult, 26th May (G. J. Beck, A. Cook). Lewes Brooks, three, adults, 29th May (A. Parker). East Lavant and Chichester GP, two, 7th December to 24th March 2008, photo (M. Collins *et al.*); presumed same Combe Haven, 31st December to 20th January 2008 (S. J. Message *et al.*).
Yorkshire Spurn, 25th November, photo (J. M. Turton *et al.*).
2006 **Dorset** Stanpit Marsh, two, 9th–17th September, photo (A. Hayden *et al.*) (*Brit. Birds* 100: 705); note revised observer. Christchurch Harbour, 23rd December (M. S. Andrews).
2006 **Essex** Abberton, 29th October, photo (R. Coote, R. Palmer, K. Rees *et al.*).
2006 **Sussex** Pagham Harbour, three, 6th January to 6th April (B. F. Forbes, D. I. Smith *et al.*).
2006 **Yorkshire** Fairburn Ings, 15th October, photo (J. Glendinning *et al.*).
2005 **Kent** Elmley RSPB reserve, 22nd September to 22nd November, photo (C. Drake per B. E. Wright).

The unprecedented influx of Cattle Egrets in late 2007 was one of the major events of the year, breaking all previous records for this species. Following a scatter of records in October, the main influx into the southwest began in early November, with arrivals continuing throughout December and into 2008. The arrival was centred on Cornwall, with over 40% (37/90) of all birds recorded there; Devon and Dorset together accounted for a further 21% of records (fig. 2).

Away from the southwest, most sightings came from the western counties of England with just a few birds making it to the eastern side of the country and (surprisingly) only one in Wales. These included the first records for both Greater Manchester and Glamorgan. There have been flocks of Cattle Egrets recorded in Britain before, with eight in Hertfordshire in May 1992 and again in Sussex in the early part of 2006; nonetheless, the group of 18 together in Cornwall is particularly noteworthy.

There had been just three previous records in Scotland, so the birds in Caithness, Dumfries & Galloway and the Outer Hebrides swiftly doubled that country's tally. Also interesting was the juvenile,

Nic Hallam

261. Cattle Egret *Bubulcus ibis*, St Ives, Cornwall, December 2007.

together with an adult, in Kent in late July. The juvenile sported a dark bill, a character that is gradually lost at an age of 2–3 months as the yellow bill colour is acquired, and perhaps suggests that it had not travelled far since leaving the nest. Even if this bird had not fledged in Britain, the successful breeding by two pairs in Somerset during 2008 emphasises the comment in last year's report that this species may soon become a more regular feature of the British avifauna.

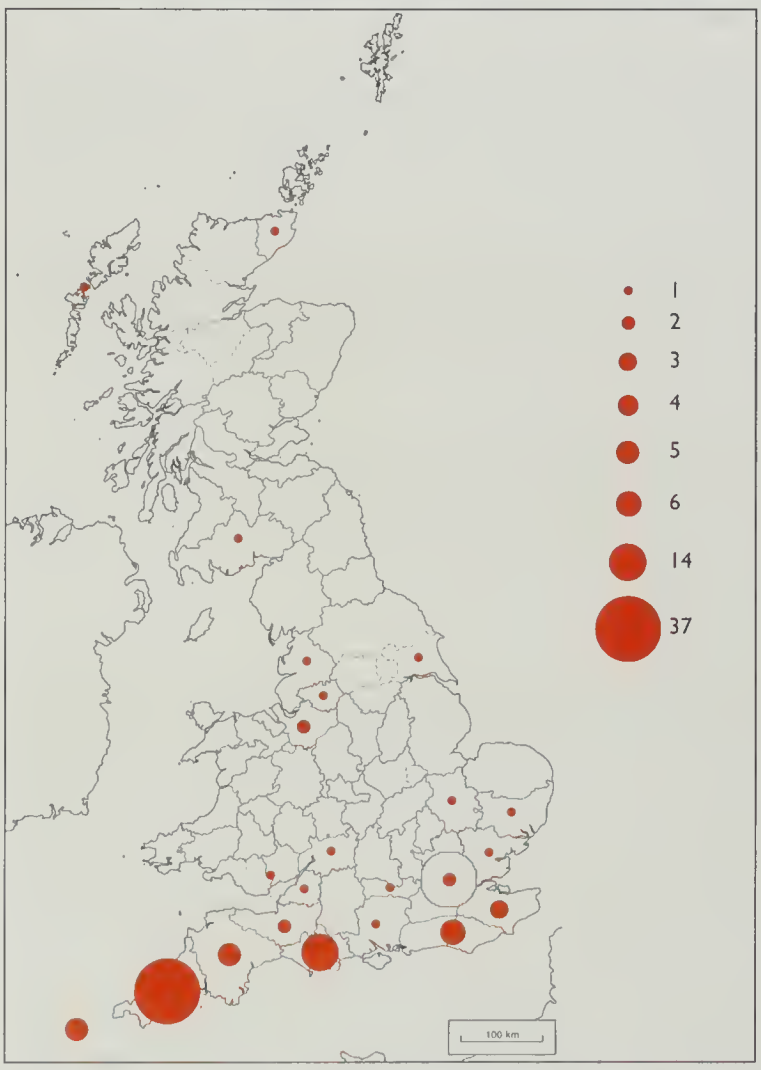


Fig. 2. Distribution of Cattle Egrets *Bubulcus ibis* in Britain in 2007.

Although it is difficult to know precisely what factors may have influenced this arrival, meteorological events in the western Mediterranean seem likely to have played a part, as with the influx of Glossy Ibises earlier in the year. Cattle Egrets are highly adaptable and well known for their ability to colonise new regions and the increasing records in Britain reflect flourishing breeding populations in the Iberian Peninsula. A large increase in that region during 1970–90 was followed by continued growth to 2000 (BirdLife International 2004).

(In Europe, common and widespread in S Spain & Portugal with small, expanding populations in France & Italy. N populations disperse outside breeding season, mostly into Africa. Widespread resident throughout much of Africa, S USA, N & C South America. Distinctive race, *coromandus*, sometimes treated as a full species, breeds S & SE Asia N to S China & Japan, Australia.)

Great Blue Heron *Ardea herodias* (0, 0, 1)

Isles of Scilly Lower Moors, St Mary's, juvenile, 7th December, photo (E. A. Fisher *et al.*) (*Brit. Birds* 101: plate 33; plate 262).

The identification of Great Blue Heron in a vagrancy context has been well covered previously (Gantlett 1998) and the species' occurrence in the UK has long been anticipated. Nonetheless, Ashley Fisher still deserves great credit for pulling this one out of the bag as the tail-end of autumn edged into winter. He clearly had an active 'search image' for this species and was able to confirm the identification and spread the news very quickly, allowing most of the resident Scilly birders to catch up with this individual. Despite the bird being a one-day wonder, the finder also submitted excellent documentation in support of the claim. Foul weather could not prevent several dozen would-be observers reaching St Mary's the following day but all were to be disappointed as, to most people's surprise, it was never seen again.

Great Blue Herons have reached British waters on at least two previous occasions but each was fed aboard ship and thereby fell foul of ship-assistance rules. One was transported to Avonmouth in November 1968 and another died within 250 km of the Isles of Scilly in May 1982. Both were arguably no less 'wild' for accepting human assistance in a presumably desperate situation, but this is not the place for a discussion of the philosophy of ship-assisted vagrancy. Records from France, the Canary Islands, the Cape Verde Islands, and the Azores (about 23 in total) suggest that unassisted vagrants do reach the Western Palearctic. There was no reason to believe that the 2007 Scilly bird had been aboard ship; indeed, the prevailing weather conditions (a near-continuous southwesterly airflow across the Atlantic created by two low-pressure systems) would have been very helpful for an unassisted crossing.

Most Great Blue Herons breeding in the northern parts of their range vacate the breeding areas during September and October and, although their movements are not well understood, ringing has shown that many winter as far south as the Caribbean. In contrast, a few are recorded annually in December in Canada and they winter farther north than any other North American heron. The northern limits of the regular winter range extend along the Pacific coast to southeast Alaska, into Massachusetts on the Atlantic coast and inland as far as southern Montana. They can suffer high mortality during severe winter weather and presumably move to avoid it when possible (Blus & Henny 1981). Might the late date of the Scilly bird suggest that it was dodging severe weather rather than being simply a late migrant? The first major winter storm of the season struck the northern third of

Will Wagstaff

262. Juvenile Great Blue Heron *Ardea herodias*, Lower Moors, St Mary's, Isles of Scilly, December 2007.

North America over the first weekend of December 2007, bringing a combination of snow, freezing rain, and rain to everywhere from Washington State to New York (and into Canada) as a low-pressure system combined with cold Arctic air moved across the country. Portions of Michigan reported up to 25 cm of snow on 2nd December, so it is tempting to suggest that the Scilly bird was escaping from this weather system when it went off course.

Historically, populations were adversely affected by shooting (mainly for plumage) and egg-collecting early in the twentieth century, then latterly by loss of wetland habitat and pollution (Bent 1926; DeGraaf & Yamasaki 2001). Better protection of the birds and their habitats has allowed the species to recover throughout much of its range. The North American Breeding Bird Survey indicates that the population has been increasing significantly (at about 2% per annum for the Eastern Region and at 1.3% survey-wide) since the mid to late 1960s. Further vagrancy might well be as likely now as at any time in the past century.

(Breeds S Canada from British Columbia to Nova Scotia, S through USA to C America, & West Indies to N Venezuela. Northern populations migratory, wintering to S of breeding range.)

Black Stork *Ciconia nigra* (23, 140, 9)

Anglesey Alaw Estuary, adult, 31st July to 31st August, photo (K. G. Croft *et al.*).
Cornwall Redruth, St Just, Penzance and Sennen, 8th August (D. S. & G. H. Flumm, B. K. Mellow, J. Parker, D. Pointon).
Devon Colyton, adult, 8th–9th June, photo (S. Waite *et al.*); presumed same Holsworthy, 9th June, photo (R. Kirkwood), and Northam and Northam Burrows, 10th–12th June, photo (C. & D. Churchill, D. Paull *et al.*).
Dorset Abbotsbury and Burton Bradstock, adult or near adult, 7th August (S. A. Groves); presumed same The Fleet area, 8th–10th August (D. & G. Walbridge *et al.*).
Hampshire Steep Marsh, adult, 12th July (D. Offer).
Isle of Wight Arreton, adult, 13th June (D. T. Biggs, J. M. Cheverton).
Kent Sandwich, adult, 4th July (I. & S. Hunter).
Lancashire & North Merseyside Leyland, 2nd May, photo (J. Clarke).
Wiltshire Liddington, adult, 6th August (S. B. Edwards).
2006 Yorkshire Wykeham, adult, 23rd May (A. Ashworth); presumed same Filey, 23rd May (*Brit. Birds* 100: 706), which also should have read 'see also Durham, Highland, Moray & Nairn, Northumberland, Orkney.'

(Breeds from C Iberia & E France through C Europe to Russia and, in small numbers, into N Greece & Turkey. To E, breeds widely in small numbers in forested temperate regions of Russia & Siberia to Russian Far East. Most are migratory, wintering in Africa, S & SE Asia.)

Glossy Ibis *Plegadis falcinellus* (341, 92, 29)

Avon Chew Valley Lake, first-winter, 2nd–3rd November, photo (A. H. Davis, G. Thoburn *et al.*); see also Devon, Somerset.
Cheshire & Wirral Neumann's Flash, seven, 5th May (A. P. Josephs); see also Cornwall.
Cornwall Helford Passage, 17, 20th April (per www.birdguides.com); see also Gloucestershire. Lizard, seven, 21st April to 3rd May (W. R. Wilkins, L. P. Williams *et al.*); presumed same Hayle, Kimbro Pool, 24th April (W. R. Wilkins, L. P. Williams); see also Cheshire & Wirral.
Devon West Alvington, 22nd April to 1st May, photo (M. Foss, D. Horton *et al.*). Braunton Burrows, adult, 29th April (I. K. Moore). West Alvington, first-winter, 18th–21st November, photo (D. Horton *et al.*); see also Avon, Somerset.
Gloucestershire Frampton-on-Severn and Slimbridge, 17, 20th April to 15th May, photo (R. G. Baatsen, J. Overfield *et al.*) (plate 263); see also Cornwall.
Kent Dungeness RSPB reserve, adult, 9th May, photo (R. Turley, D. Walker *et al.*).
Lancashire & North Merseyside Lytham, Warton Bank, Marshside RSPB reserve and area, 14th October 2006 to 5th July 2008, first-winter to second-summer, photo (*Brit. Birds* 100: 706, plate 241).
Somerset Catcott Lows and Greylake RSPB reserve, first-winter, 3rd–16th November, photo (B. Gibbs, M. Jackson *et al.*) (*Brit. Birds* 101: plate 34); see also Avon, Devon.
Sussex Breach Pool, Pagham Harbour and Ferry Pool, Sidlesham, 30th April to 1st May (I. Lang,

Steve Seal

263. Glossy Ibises *Plegadis falcinellus*, Slimbridge, Gloucestershire, April 2007.

S. Ricks *et al.*); presumed same Pannel Valley, Icklesham, 3rd May (P. Jones).

A record-breaking annual total of at least 29 individuals. Most arrived in the southwest during late April and some of these may then have dispersed as far north as Cheshire & Wirral. Since they arrived in the same year as an equally unprecedented 90 Cattle Egrets, it may be that weather conditions stimulated numbers of both species to stray northwards out of the Mediterranean basin during 2007, even though annual totals of the two species are not closely correlated (fig. 3). Since 1980, there have been more-than-average numbers of Cattle Egrets in seven years but only in two of those years (1986 and 2007) were the numbers of Glossy Ibises above average. Although populations in southeast Europe have been undergoing a slow decline in recent years (BirdLife International 2004), colonies in the western Mediterranean have been stable or (notably in Spain) expanding, so perhaps the numbers seen in Britain are simply a reflection of these trends. This suggestion is supported by a bird ringed as a chick in the Coto Doñana, Spain, which spent two months in Lincolnshire in early 2008, having arrived via Co. Wexford.

Glossy Ibis has certainly been commoner in recent decades, with three in the 1960s, 15 in the 1970s, 28 in the 1980s and 20 in the 1990s. Going even further back, however, double-figure influxes are not

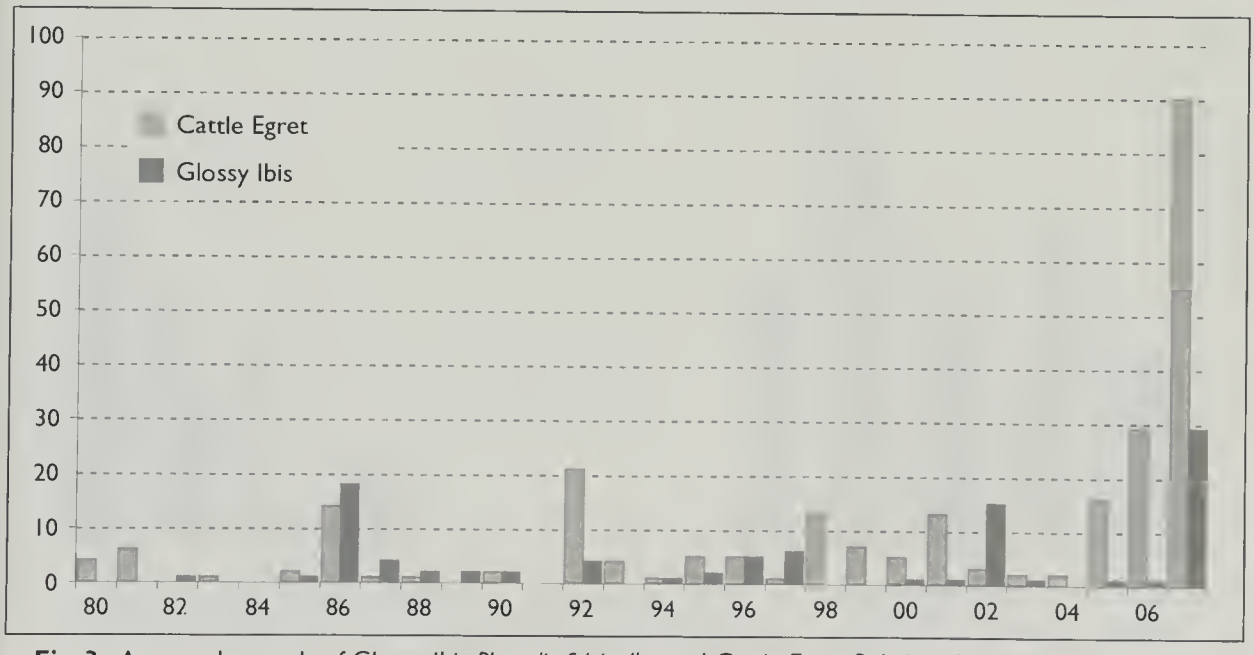


Fig. 3. Accepted records of Glossy Ibis *Plegadis falcinellus* and Cattle Egret *Bubulcus ibis* in Britain since 1980.

unprecedented. At least 12 such influxes occurred between 1900 and 1945, and a minimum of 80 birds appeared between 1906 and 1909. Glossy Ibis is doubtless being recorded more effectively now, by mobile birders with good optics and via a well-oiled recording system, than in the nineteenth and early twentieth centuries, so there may have been even more birds reaching Britain 100–200 years ago. Whatever the long-term trend, it is certainly welcome to see more of these odd, somewhat prehistoric-looking birds roaming around the country at the moment.

(Regularly breeds France & Spain; otherwise, European breeding range centred N & W of Black Sea in Ukraine & Romania, with small, declining population in Balkans. To E, breeds from Volga River to Kazakhstan. Palearctic population migratory, most wintering in E Africa, but W European population wintering Morocco & Mediterranean basin. Resident or dispersive populations occur in Africa, S Asia, Australia, E USA & the Caribbean.)

Pallid Harrier *Circus macrourus* (2, 22, 1)

Shetland Loch of Spiggie, Mainland, juvenile, 23rd August to 8th September, photo (R. M. Mellor *et al.*) (*Brit. Birds* 100: plates 288 & 289).

(Fragmented range on steppe grasslands from Ukraine E through Russia to 100°E & S to Kazakhstan & NW China. Occasionally breeds to W of main range in Europe. Migratory, wintering throughout much of E & C Africa & the Indian subcontinent.)

Gyr Falcon *Falco rusticolus* (0, 153, 3)

Cornwall Stepper Point, juvenile white-morph, 16th January to 12th March, photo (A. Davies, C. Selway *et al.*) (*Brit. Birds* 100: plate 115; plate 264); presumed same Pentire Point, Wadebridge, 13th–21st March (per www.birdguides.com).

Outer Hebrides St Kilda, adult white-morph, 17th February, photo (S. Money *et al.*). St Kilda, white-morph, 20th May, found dead, photo (S. Bain, J. Harden, W. T. S. Miles *et al.*).

2006 Durham Barnard's Castle, adult white-morph, 12th January, photo (per M. Newsome).

2006 Shetland Fetlar, white-morph, 27th December to 21st January 2007 (N. Coutts, B. Thomason *et al.*).

2002 Isles of Scilly St Martin's and St Mary's, juvenile white-morph, 15th–23rd December (M. S. Scott *et al.*).

Gyr Falcons are monotypic but polymorphic. White-morph birds breed in the high Arctic, dark-morph birds breed in Canada and do not occur in Europe, while grey-morph birds breed closest to Britain, in Fennoscandia and Iceland (where many birds are intermediate between grey and white morphs) (Forsman 1999). Non-white morphs have occurred in Britain since at least the nineteenth century (when they were referred to as 'Iceland Falcon', as opposed to the white-morph 'Greenland Falcon') but are surprisingly rare, with only 11 records published in BBRC reports (note that the

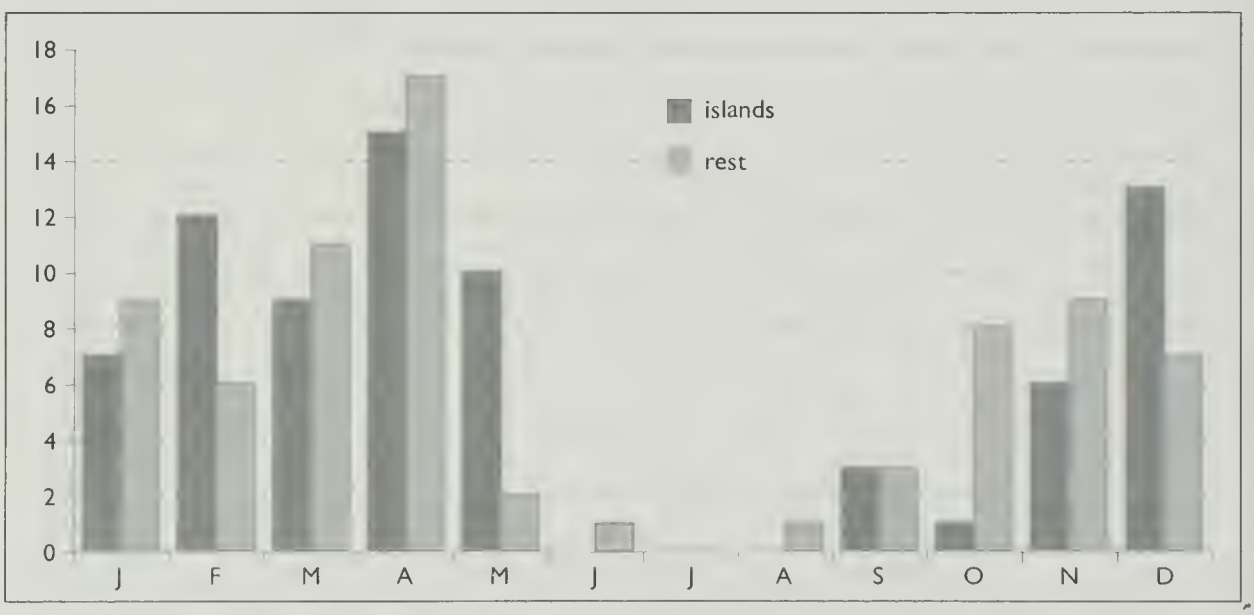


Fig. 4. Accepted records of Gyr Falcon *Falco rusticolus* in Britain since 1950 by month of discovery, showing those in Shetland, Orkney and the Outer Hebrides separately from those at other sites.

plumage phase has not always been published alongside records and at least one other grey-morph bird has occurred, but not been published as such).

Being more difficult to identify, non-white morphs tend to be controversial, perhaps especially since all the twitchable birds have been white morphs, but two grey-morph Gyrs have been found dead: in Anglesey in 1972 and Orkney in 1999. Recently, identification has become even more difficult, since eliminating falconer's hybrids has become a very real problem. Saker *F. cherrug* × Gyr hybrids appear to be quite frequent in captivity and birds do escape – one which escaped in southern Scotland spent several months in Shetland in 2004 (*Shetland Bird Report 2004*).

Kevin Durose

264. Juvenile white-morph Gyr Falcon *Falco rusticolus*, Stepper Point, Cornwall, March 2007.

What appears to be a good-candidate grey-morph bird was photographed in the Outer Hebrides in November 2007. Initial investigations suggest that it resembled birds of the Icelandic population but the record was submitted only shortly before this report went to press.

However, even white-morph birds may not be straightforward. Although some are conspicuous, even reported by members of the public, not all of them are finally tracked down to a roost site like the Cornish bird in 2007. For example, the Shetland bird above was seen only briefly on five occasions during a month, and descriptions of birds like these are often necessarily brief. These elusive individuals do, however, tend to occur at times and in places where Gyr Falcons may be expected.

Since 1950, just over 150 Gyr Falcons have been seen in Britain. Almost exactly half of these have been in the Scottish archipelagos of Shetland, Orkney and the Outer Hebrides. Of the remainder, 30 have been seen in the rest of Scotland, 20 in southwest England between Devon and Scilly, 20 elsewhere in England and just four in Wales. Perhaps surprisingly, the pattern of occurrence of these two groups is remarkably similar, suggesting that birds away from the Scottish islands are probably also wild birds; even the bird in Durham in 2006, which hit a window in a garden in the Pennines, circumstances that led to some debate about its provenance. What is also noticeable is the clear spring passage, peaking in April in Britain as a whole, but extending into May in the Scottish islands (fig. 4). Overall, more than a third of all records are in March and April.

(In Europe, most numerous in Iceland & Norway, smaller populations breeding N Sweden, Finland & Arctic Russia. To E, breeds across Arctic Siberia, Alaska, N Canada & Greenland. European birds mostly resident but high Arctic breeders from N Canada & Greenland migratory, occasionally wintering S to NW Europe.)

John Carter

265. Male Little Crake *Porzana parva*, Burrafirth, Unst, Shetland, June 2007.

Little Crake *Porzana parva* (63, 36, 1)

Shetland Burrafirth, Unst, male, 29th May to 19th June, photo (A. I. & S. J. McElwee *et al.*) (*Brit. Birds* 100: plates 186, 219; plate 265).

(Fragmented distribution across temperate steppe of W Pal., from Austria through Ukraine & European Russia to W Siberia, C Kazakhstan & NW China. Small numbers occasionally breed to N & W, reaching The Netherlands, Finland & Spain. Most winter in NE & E Africa, although some W to Senegal.)

Black-winged Stilt *Himantopus himantopus* (130, 241, 1)

Sussex Pannel Valley, Icklesham, 4th June, photo (P. Jones *et al.*).

2005 Essex Old Hall Marshes, two, 31st May (*Brit. Birds* 100: 709); published as new birds but should be presumed same as 11th May (*Brit. Birds* 100: 35).

2005 Suffolk Orfordness, two, male & female, 16th–30th May, photo; revised dates, mating seen and empty nest found (*Brit. Birds* 100: 35).

(Breeds along Atlantic coast of France & locally throughout Mediterranean basin to Black Sea. To E, breeds from S Siberia & C Asia to NW China & S to Hong Kong. Most European birds winter in sub-Saharan Africa and, increasingly, in SW Iberia. Asian breeders winter across S & SE Asia & S China. Other distinctive races occur in Australasia, the Americas & Hawaii.)

Killdeer *Charadrius vociferus* (4, 45, 1)

Shetland Bannamin, West Burra, first-summer female, 6th April to 5th May, photo (R. A. Haywood *et al.*) (*Brit. Birds* 100: plate 142; plate 266); presumed same Exnaboe and Virkie, Mainland, 14th May to 19th November, photo (R. Riddington *et al.*).

The only record for the year seemed typical at first; found in early April by Russ Haywood on his local patch at Banna Minn, it had apparently gone the next day. However, it was relocated just over a week later, when it seemed to be paired up with a male Ringed Plover *C. hiaticula*, and it remained in the area for almost a month. It was then relocated some 19 km SSE in south Mainland Shetland (this time found by the *BB* editor while out jogging!). Yet again, it was apparently paired with a male Ringed Plover (the same one?), and was observed in a broken-wing distraction display on more than one

Hugh Harrop

266. First-summer female Killdeer *Charadrius vociferus*, with Ringed Plover *C. hiaticula*, Bannamin, West Burra, Shetland, April 2007.

occasion. It remained in the area until November, although from mid June it was increasingly to be found at the Pool of Virkie, the nearest thing in Shetland to an estuary.

Even more incredibly, it reappeared in the Virkie area on 6th March 2008, just under four months after it had last been seen there. It was more wide-ranging after its return, however, and was recorded on the islands of Mousa and Noss in April.

In 2007, the bird spent 227 days in Shetland, an unprecedented stay for this species in Britain, although some autumn or winter arrivals have been present for up to two months. There are no other summering records and all previous sightings have been between late September and early May. This was only the second for Shetland and, apart from twelve in Scilly and five in the Outer Hebrides, the 50 British records are surprisingly widespread geographically.

(Breeds S Alaska, S Canada & throughout USA to Mexico. Northern breeders migratory, wintering S USA & Mexico to Columbia. Other races resident in Caribbean & South America.)

Pacific Golden Plover *Pluvialis fulva* (2, 60, 1)

Yorkshire Spurn, 17th July, adult, photo (A. A. Hutt, I. Smith *et al.*).

(Breeds across Siberian tundra from Yamal Peninsula E to Chukotskiy Peninsula, including New Siberian islands, & W Alaska. Small numbers winter regularly Kenya & Persian Gulf, main wintering range from Indian subcontinent to S China & S Japan, S through SE Asia to Australia, New Zealand & islands in C Pacific.)

White-tailed Lapwing *Vanellus leucurus* (0, 4, 1)

Dumfries & Galloway Caerlaverock WWT reserve, adult, 6th–8th June, photo (R. Hesketh *et al.* per P. N. Collin) (*Brit. Birds* 100: plate 187; plate 267); see also Lancashire & North Merseyside.

Lancashire & North Merseyside Leighton Moss, adult, 10th–17th June, photo (E. & J. McLachlan *et al.* per S. J. White); see also Dumfries & Galloway.

This striking lapwing, with its long yellow legs, black-and-white wings and lilac-tinged, grey-brown body, is not easily overlooked, so with only five records ever it remains a genuine rarity. This is also the case throughout continental Europe, where it remains an extreme vagrant to the west of its mostly Central Asian breeding haunts. Isolated records in Europe predominate but a pattern of occasional influxes is starting to form. The first British record, at Packington, Warwickshire, in July 1975, formed part of such an incursion into Europe, involving eight birds from no fewer than seven European countries, as far apart as Sicily in the south and Finland in the north. A more recent influx, which brought about 50 individuals to the Black Sea coast of Romania between 30th April and 16th July 2000, resulted in breeding by seven pairs at three sites in that country in 2000, with further attempts in the two subsequent years. Sadly, no birds were found in Britain that year, though one did venture as close as The Netherlands. Observers who have witnessed the rather catholic nesting requirements in

David H. Hatton

267. Adult White-tailed Lapwing *Vanellus leucurus*, Caerlaverock WWT reserve, Dumfries & Galloway, June 2007.

Romania will appreciate that lack of habitat is not a limiting factor in any potential westwards spread.

This year's bird, the first for 23 years, reinforced the belief that late spring and summer is the time to look for this species.

(Occasionally breeds along Black Sea coast of Romania. To E, main breeding range from Armenia & E Caspian Sea, E along Syr Darya & Amu Darya through Turkmenistan & Uzbekistan to S Kazakhstan, & S to Iraq & N Iran. Resident in Iraq & S Iran, but N populations winter Pakistan to N/C India, & also S Egypt & N Sudan.)

Semipalmated Sandpiper *Calidris pusilla* (0, 82, 3)

Cambridgeshire Ouse Fen, 19th May, photo (I. D. Ellis, R. M. Patient, R. Thomas *et al.*).
Isles of Scilly Porth Hellick, St Mary's, adult, 15th–18th August, photo (B. Geldenhuis, R. Mawer, K. Webb *et al.*).
Pembrokeshire Gann Estuary, juvenile, 14th–27th October, photo (D. Astins, P. Grennard *et al.*).
2006 Cleveland Saltholme Pools, adult, 5th–11th July, photo (C. Sharp *et al.*) (*Brit. Birds* 100: 711); note revised observers.

(Breeds on tundra of W Alaska, E across Arctic Canada to S Baffin Island & coastal Labrador. Has bred extreme NE Siberia. Migrates across Great Plains & E seaboard of USA to winter in C America & coasts of tropical South America to Brazil & Peru.)

Least Sandpiper *Calidris minutilla* (4, 28, 1)

Outer Hebrides Butt of Lewis, Isle of Lewis, juvenile, 12th October, photo (A. & J. Drake) (plate 268).

(Breeds in C & S Alaska, E across N Canada to Labrador & Newfoundland. Winters in S USA, C America, the Caribbean & South America, S to Brazil & N Chile.)

Anthony Drake

268. Juvenile Least Sandpiper *Calidris minutilla*, Butt of Lewis, Lewis, Outer Hebrides, October 2007.

Baird's Sandpiper *Calidris bairdii* (1, 199, 8)

Argyll Loch a' Phuill, Tiree, first-summer, 30th–31st May, photo (J. Bowler).
North-east Scotland Ythan Estuary, juvenile, 30th September (H. E. Maggs *et al.*).
Outer Hebrides Butt of Lewis, Isle of Lewis, juvenile, 10th September (M. S. Scott). Loch Paible, North Uist, juvenile, 18th September, photo (B. Rabbitts *et al.*), presumed same 24th–25th September, photo (R. Baynes, D. Henshilwood).
Perth & Kinross Loch Leven, juvenile, 12th–17th October, photo (J. J. Squire *et al.*).
Shetland Pool of Virkie, Mainland, adult, 21st July, photo (T. Habermann, R. Riddington *et al.*). Sandwick, Mainland, juvenile, 8th September, photo (R. A. Haywood *et al.*). Eshaness, Mainland, juvenile, 10th–17th September, photo (M. S. Chapman, R. W. Tait *et al.*) (*Brit. Birds* 100: plate 290).

(Breeds in extreme NE Siberia on Chukotskiy Peninsula & Wrangel Island, E across N Alaska & Arctic Canada to N Baffin Island & NW Greenland. Migrates through North American interior to winter in South American Andes, from S Ecuador to Tierra del Fuego.)

Sharp-tailed Sandpiper *Calidris acuminata* (4, 22, 2)

Kent Oare Marshes, adult, 10th–11th August, photo (T. P. Laws, M. A. Warburton *et al.*) (*Brit. Birds* 100: plate 291).

Yorkshire Sammy's Point, adult, 8th September, photo (J. Grist *et al.*).

These two records, the first since 2004, are typical of this species' appearances in Britain, both being adults and turning up during the well-established peak period. Over 80% of all records have been of adults and the shortage of juveniles is mirrored by a number of other East Asian wader species. The reasons why juveniles are quite so rare remain unclear. Similarly, almost 80% of all records have been in August–September, with just three in October and single birds in July, April and, more surprisingly, January. Apart from 1985, with three, and 1973, with two, 2007 is the only other year to produce more than a single record. These two bring the total to five since 2000, a slightly better showing than the three during the 1990s.

Prior to 1985, Kent had not recorded this species, but since then it has become established as the joint-best county, the Oare Marshes bird being its fourth. Norfolk can match this total but the last record was in 1892, so the county is surely overdue a visit! There are three records from Cleveland but the general spread of records shows a distinctly southern bias, plus an interesting cluster in North Wales and just four records from Scotland.

The relatively small population size and primarily north–south track of the species' migration route probably accounts for its continued rarity here and it remains a highly desirable find for wader watchers.

(Breeding range restricted to Siberian tundra from Yana River to Kolyma River delta, possibly further E. Migrant through coastal Alaska, China & Japan to winter New Guinea, Australia & New Zealand.)

Broad-billed Sandpiper *Limicola falcinellus* (15, 206, 2)

Cleveland Saltholme Pools, adult, 27th May to 1st June, photo (C. Bielby *et al.*).

Norfolk Breydon Water, 21st–22nd May, photo (I. N. Smith *et al.*).

2006 Lothian Aberlady Bay, juvenile, 19th–20th August, photo (K. Gillon, E. Ogston, I. Thomson *et al.*).

(Nominate European race breeds in boreal forest bogs of N Norway, Sweden & Finland, and into Arctic Russia, where distribution uncertain. It migrates through E Mediterranean, Black & Caspian Seas to winter in Persian Gulf, W India & Sri Lanka, with small numbers in coastal E Africa. E race *sibirica* breeds from Taimyr Peninsula to Kolyma River delta, and winters from Bay of Bengal through coastal SE Asia to Australia.)

Common Snipe *Gallinago gallinago* North American race *G. g. delicata*, 'Wilson's Snipe' (0, 1, 0)

1998 Isles of Scilly Lower Moors, St Mary's, 9th October to 7th April 1999, photo (B. Bland *et al.*).

The tortuous journey of Wilson's Snipe onto the British List has been relatively well documented. This bird was initially reported as a Wilson's Snipe in *Birding World* and *Birdwatch* but BBRC was concerned that some of the key identification features (axillary pattern, width of white tips of secondaries, outer-tail-feather pattern) were in the overlap zone between *delicata* and nominate *gallinago*. We were then left with the task of examining the shape and measurements of the outer-tail feather from the published photographs. Our initial analysis, based on museum specimens at the Natural History Museum, suggested that the shape was also in the overlap zone. BBRC felt that, for the first record of Wilson's Snipe, it had to be 100% and that this fell just short of the mark. It was thus published as unacceptable in our report of 2004 (*Brit. Birds* 98: 692).

Killian Mullarney subsequently suggested a new way of interpreting the photographs and Ian Lewington modelled this methodology with specimens, again at the NHM. This analysis was strongly in favour of the identification of the Scilly bird as *delicata* and it has subsequently been accepted as such by both BBRC and BOURC. Although the process of acceptance has been arduous, it has allowed us to be fairly confident about the way we should proceed with such records in the future and we have devised the following list of statements to sum up the current situation:

- owing to the variability of *gallinago*, there is overlap in most identification features of *delicata*;
- safe identification is only possible for those *delicata* whose plumage lies outside this overlap zone;

- some *delicata* will not be safely identifiable in the field in Britain;
- any record of *delicata* in Britain would require prolonged views and high-quality photographs;
- if *delicata* proves to be a regular vagrant in Britain, it is possible that, in future, identification may be possible using a suite of 'soft' features' (as our understanding of identification criteria improves).

AOU considers *delicata* and *gallinago* to be separate species because of differences in winnowing display sounds and morphology. These represent two of a significant number of Nearctic/Palearctic sister taxa that are worthy of consideration by BOURC's Taxonomic Sub-committee. A paper discussing the separation of *delicata* from *gallinago* recently appeared in *British Birds* (Reid 2008).

(Breeds throughout North America from N Alaska & N Canada S to N California & North Carolina. Winters SW Canada & throughout USA & C America to N South America.)

Great Snipe *Gallinago media* (562, 150, 1)

Norfolk Blakeney Point, 21st August (J. R. McCallum *et al.*).

(Scarce & local breeder in Norway & Sweden, which hold most of declining European population. Smaller and fragmented population breeds from Poland to Estonia. Also breeds E through European Russia, W & N Siberia to Yenisey River. Winters in sub-Saharan Africa.)

Long-billed Dowitcher *Limnodromus scolopaceus* (6, 179, 6)

Anglesey Alaw Estuary and Inland Sea, first-winter, 28th November 2006 to 1st April, photo (*Brit. Birds* 100: 715, plate 116).

Cornwall Hayle Estuary, adult, 14th–17th July, photo (P. Freestone, M. Halliday, J. H. Johns).

Devon Bowling Green Marsh, juvenile/first-winter, 1st October to 29th March 2008, photo (M. Knott *et al.*).

Essex Stour Estuary, Mistley and Manningtree, 9th March to 15th April, photo (T. Nicholson, M. Nowers *et al.*) (*Brit. Birds* 100: plate 143; plate 269); see also Suffolk.

Kent Oare Marshes, juvenile/first-winter, 2nd October 2006 to 12th April, photo (*Brit. Birds* 100: 715). Bough Beech Resr, juvenile, 29th September to 2nd October, photo (per www.birdguides.com); presumed same Minnis Bay, 3rd October (T. Hodge, D. Smith), and Oare Marshes and Elmley, 5th–16th October, photo (C. D. Abrams *et al.*).

Lincolnshire Branston Fen, juvenile, 24th September to 14th October, photo (per www.birdguides.com).

Kit Day

269. Long-billed Dowitcher *Limnodromus scolopaceus*, with Black-tailed Godwits *Limosa limosa*, Mistley, Essex, March 2007.

Norfolk Titchwell RSPB reserve, juvenile, 21st–25th September, photo (B. Lewis *et al.*); presumed same Salthouse, 2nd October (A. J. Gardiner).

Suffolk Stour Estuary, Brantham, 9th March to 15th April, photo (T. Nicholson, M. Nowers *et al.*); see also Essex.

2006 Essex Old Hall Marshes and Alresford Creek, 31st March to 30th April (J. Dean, H. Vaughan *et al.*); presumed returning bird from 2005 (*Brit. Birds* 100: 42).

2006 Yorkshire Nosterfield, 1st May, photo (A. M. Hanby, G. Rickers *et al.*).

(Breeds primarily Arctic Siberia, where breeding range expanding W to Lena River delta. North American range restricted to coastal tundra of W & N Alaska, E to Mackenzie River. Migrates through USA to winter coastal S USA to N/C America.)

Whimbrel *Numenius phaeopus*
North American race *N. p. hudsonicus*, 'Hudsonian Whimbrel' (0, 3, 2)

Cumbria Walney Island, first-summer, 14th June to 19th August, photo (T. Phizacklea, C. Raven *et al.*) (plates 270 & 271).

Fair Isle Buness, adult, 29th–31st August, photo (D. N. Shaw *et al.*) (*Brit. Birds* 100: plates 292 & 293).

This is one of the rarest North American waders to reach Europe. These two individuals are only the fourth and fifth British records of this highly distinctive race of Whimbrel, following two in Shetland (Fair Isle, May 1955, Out Skerries, July to August 1974) and one in Gwent (Goldcliff Pools, May 2000). The only other European records come from Ireland, in Co. Kerry in October 1957 and Co. Wexford in September 1980.

The South Walney bird, aged as a first-summer based upon the timing and extent of wing moult, occurred at a time when young birds of both *N. p. hudsonicus* and European *N. p. phaeopus* would normally remain in their tropical wintering grounds. Quite why it took up residence in northern England for two months remains a mystery, but the fact that it was in primary moult might explain the missing migratory urge to continue on further north. The Fair Isle bird was a worn adult, perhaps on its way back south after spending the summer on the breeding grounds of *phaeopus* in northern Europe.

North American *hudsonicus* exhibits a range of morphological differences from the European form, making it rather more than just a Whimbrel with a brown rump. Although the dark rump may be the most eye-catching feature, the combination of tawny-brown underwings, blacker coronal bands standing out starkly within a more contrasting face pattern, buff-washed underbody (indeed a virtual absence of pure white anywhere), and an obviously pale base to the lower mandible create a very different appearance from European *phaeopus*. In addition, some observers commented on the proportionately longer bills that these two birds showed when seen alongside their European counterparts. These differences in appearance, together with significant differences between the mitochondrial DNA-sequences of *hudsonicus* and the East Asian form *N. p. variegatus*, led Zink *et al.* (1995) to suggest strongly that the three forms might best be considered as sister species. Such a split is currently being considered by BOU's Taxonomic Sub-committee.

(Breeds on tundra of W & N Alaska & N Canada E to Hudson Bay & Greenland. Migrates through Canada & USA to winter in coastal regions of S USA, S to Chile & Brazil.)

Ian Wilson

270 & 271. First-summer 'Hudsonian Whimbrel' *Numenius phaeopus hudsonicus*, Walney Island, Cumbria, July 2007.

Terek Sandpiper *Xenus cinereus* (0, 66, 1)

Fair Isle South Harbour, 13th June, photo (P. A. A. Baxter, P. J. Marsh, D. N. Shaw *et al.*) (*Brit. Birds* 100: plate 221).

(European range restricted to small population in N Gulf of Bothnia, Finland, & Belarus. To E, breeds widely but locally throughout N Russia to E Siberia. Winters widely along coasts of S & E Africa to Persian Gulf, Indian subcontinent, SE Asia & Australasia.)

Spotted Sandpiper *Actitis macularius* (1, 136, 11)

Bryan Thomas

272. Juvenile Spotted Sandpiper *Actitis macularius*, Porth Hellick, St Mary's, Isles of Scilly, August 2007.

Avon Chew Valley Lake, adult, 7th–9th August, photo (K. E. Vinicombe *et al.*).

Cornwall Hayle Estuary, juvenile/first-winter to first-summer, 5th October 2006 to 3rd May, photo (*Brit. Birds* 100: 716, plate 117; 101: plate 160).

East Glamorgan Lisvane Resr, Cardiff, juvenile/first-winter to first summer, 20th October to 28th April 2008, photo (P. Bristow *et al.*).

Isles of Scilly Porth Hellick, St Mary's, juvenile, 27th August to 25th September, photo (B. Thomas, W. H. Wagstaff *et al.*) (plate 272).

Lincolnshire Messingham Sand Quarry, adult, 31st May, photo (D. Nicholson *et al.*).

Outer Hebrides Loch Ordais and Bragar, Isle of Lewis, first-winter, 27th September, photo (M. S. Scott).

Shetland Lamba Ness, Unst, juvenile, 21st September to 4th October, photo (H. Moncrieff, M. G. Pennington, K. D. Shaw *et al.*). Burravoe, Yell, juvenile, 25th September to 11th October, photo (D. Preston *et al.*) (*Brit. Birds* 100: plate 321).

Upper Forth Kinneil Lagoon, adult, 24th December to 14th April 2008, photo (G. Owens, R. Shand *et al.*).

Warwickshire Draycote Water, adult, 20th July, photo (R. Norris *et al.*).

Yorkshire Skelton Lake, New Swillington Ings, adult, 26th May, photo (P. R. Morris *et al.*). Wykeham Lakes, 6th–19th July, photo (N. W. Addey, J. Harwood, D. Mansell *et al.*).

(Breeds over much of North America from W Alaska to Newfoundland & S to California, Texas & North Carolina. Some winter in coastal USA to S of breeding range but most winter in C America, Caribbean & N South America, S to N Argentina & Chile.)

Solitary Sandpiper *Tringa solitaria* (6, 25, 1)

Outer Hebrides St Kilda, 27th–31st August, photo (S. E. Duffield *et al.*).

(Breeds C & S Alaska through subarctic Canada to Quebec & Labrador. Migrates throughout USA and winters Caribbean & C America, S to Argentina.)

Greater Yellowlegs *Tringa melanoleuca* (6, 19, 3)

Hampshire Farlington Marshes, 26th–27th September, photo (K. Crisp, J. Crook *et al.*).
Lincolnshire Frieston Shore RSPB reserve, adult, 9th April and 19th May, photo (S. Keightley *et al.*); presumed same Gibraltar Point, 30th–31st May, photo (E. J. Mackrill, J. P. Shaughnessy, K. M. Wilson *et al.*).
Shetland Foula, juvenile, 11th October, photo (M. A. Maher, B. H. Thomason, M. A. Wilkinson *et al.*).

The three here make 2007 the joint-best year ever for this rare *Tringa* (there were also three in 1985) and, with only 28 records to date, it remains one of the rarest of American waders to reach Britain. The pattern of occurrence, as shown in fig. 5, is revealing. The graph shows the month of first arrival and, while May is clearly the peak month to be checking all fly-over Greenshanks *T. nebularia*, the spread of 19 new arrivals in autumn as opposed to just nine in spring suggests that some individuals at least are capable of a direct transatlantic crossing.

Offshore autumn migration of a proportion of southbound Greater Yellowlegs was described by Brady (1990–1991), and some individuals may therefore be vulnerable to displacement by fast-moving Atlantic depressions. Three previous records, from Scilly in August and September and Cornwall in October, support this hypothesis, as do five Irish records: from Co. Cork in August, Antrim, Kerry and Londonderry in September and Donegal in October. However, McNeil & Cadieux (1972) found that Greater Yellowlegs do not generally store enough fat for long transatlantic flights, which leads to the idea that British and Irish birds may be arriving via Greenland and perhaps Iceland, as described by Vinicombe & Cottridge (1996). In this way, overshooting spring birds may account for records on the Outer Hebrides in April and Argyll and Highland in May, while reverse migrants in the autumn could account for records from Argyll, North-east Scotland, the Outer Hebrides and Shetland. The Cumbrian bird of October–November 1994 was thought to be the same individual seen later in Belgium and perhaps provides the best evidence to date of this theory. Drawing a line back from Belgium and through Cumbria leads to the Hudson Bay area, via Greenland, on a great-circle route.

The spread of remaining records in Britain serves only to confuse the picture, and is perhaps best explained by birds that have arrived on this side of the Atlantic in previous years and are now migrating along the East Atlantic Flyway. Four midwinter records from Ireland suggest that this may be a good time to check for this species among Greenshanks in the sheltered estuaries of the south-west. An accessible, long-staying Greater Yellowlegs would certainly be welcomed by many birders, as this year's trio put in typically brief appearances.

The identification of Greater Yellowlegs has been well-served in the literature, but can still be surprisingly tricky on lone individuals where the crucial differences in size and structure are more difficult to evaluate accurately. In breeding plumage, Greater shows heavier black barring on the underparts than Lesser Yellowlegs *T. flavipes*, and sometimes barring extending across the belly. In non-breeding plumage, a good starting point is the size and structure of the bill and whether it shows a distinctly paler base. Lesser Yellowlegs has an attenuated rear end, while that of Greater is blunter, owing to relatively shorter primaries. Vocalisations are usually distinctive, with Greater Yellowlegs having a clearer, more ringing 'dee-dee-dee' flight call compared to the sharper, more clipped double 'tu-tu' of Lesser Yellowlegs. The number of notes is not diagnostic, however, and observers should pay close attention to the exact tone, as well as the more easily assessed number of notes.

(Breeds from S Alaska across subarctic Canada E to Labrador & Newfoundland. Migrates throughout USA to winter in coastal S USA, C America, Caribbean & South America.)

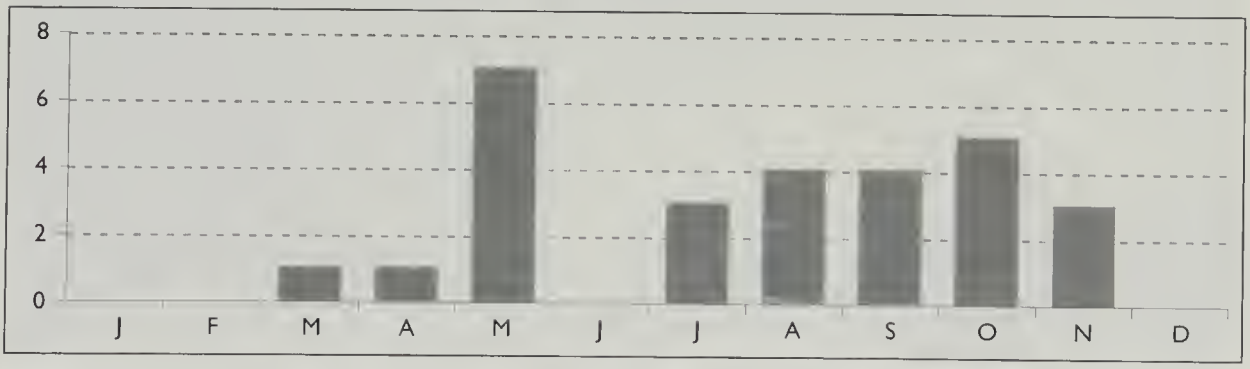


Fig. 5. Accepted records of Greater Yellowlegs *Tringa melanoleuca* in Britain by month.

Simon Stirrup

273. First-winter Lesser Yellowlegs *Tringa flavipes*, Thornham, Norfolk, January 2007.

Lesser Yellowlegs *Tringa flavipes* (19, 256, 10)

Angus & Dundee Montrose Basin, first-winter, 10th November to 9th March 2008, photo (N. Mitchell *et al.*).
Argyll Loch Gruinart, Islay, 6th–14th May, photo (J. Armitage, I. Brooke, J. How per J. Dickson).
Essex Hanningfield Resr, juvenile, 22nd September, photo (D. Acfield *et al.*).
Herefordshire Stretton Sugwas, 28th April to 5th May, photo (S. P. Coney, P. H. Downes *et al.*).
Isles of Scilly Porth Hellick, St Mary's, 15th October (T. Francis).

Nic Hallam

274. Juvenile Marsh Sandpiper *Tringa stagnatilis*, Farmoor Reservoir, Oxfordshire, August 2007.

Lancashire & North Merseyside Leighton Moss, adult, 24th–27th July, photo (J. Fenton *et al.* per S. J. White).
Norfolk Thornham, first-winter, 13th January to 10th February, photo (J. Bhalerao, A. Morgen *et al.*) (*Brit. Birds* 100: plate 81; plate 273).
Orkney Loch of Tankerness, Mainland, juvenile, 19th and 28th September, photo (K. E. Hague); presumed same Shapinsay, 6th–8th October, photo (P. Hollinrake, S. J. Williams *et al.*).
Outer Hebrides Peninerine, South Uist, juvenile, 1st September, photo (S. E. Duffield, T. Fountain).
Suffolk Tinker's Marshes, juvenile, 25th–26th September (P. Hobbs *et al.*); presumed same Minsmere RSPB reserve, 30th October to 9th November, photo (B. Buffery *et al.*); and Southwold Town Marsh, 21st December to 9th February 2008, photo (B. J. Small *et al.*).

(Breeds throughout much of subarctic Alaska & Canada, east to James Bay. Migrates through USA, where some overwinter, but majority winter from Caribbean & C America to Chile & Argentina.)

Marsh Sandpiper *Tringa stagnatilis* (6, 122, 2)

Oxfordshire Abingdon SF, juvenile, 3rd–4th August, photo (R. Burgess, N. J. Hallam *et al.*); presumed same Farmoor Resr, 5th August, photo (G. Soden *et al.*) (*Brit. Birds* 100: plate 246; plate 274).
Suffolk Trimley Marshes, 31st August, photo (P. Oldfield).

(Occasionally breeds Finland & Baltic countries to Ukraine & W Russia. To E, breeds commonly in forest-steppe region of Siberia to Mongolia & NE China. Winters throughout sub-Saharan Africa, especially E Africa, & Indian subcontinent E to S China & SE Asia; also Australia.)

Wilson's Phalarope *Phalaropus tricolor* (0, 216, 4)

Buckinghamshire Willen Lake, adult female, 24th–26th August, photo (A. V. Harding, A. Ploszajski *et al.*); see also Durham/Yorkshire.
Cambridgeshire Grafham Water, adult female, 4th–9th May, photo (C. D. Addington *et al.*) (*Brit. Birds* 100: plate 157); presumed same Nene Washes, 10th–11th May, photo (J. P. Taylor *et al.*).
Dorset Stanpit Marsh, juvenile/first-winter, 6th–8th September, photo (D. H. Taylor *et al.*).
Durham Bishop Middleham, adult female, 15th–18th August, photo (D. Charlton, S. Evans *et al.* per M. Newsome) (*Brit. Birds* 100: plate 294); see also Buckinghamshire/Yorkshire.
Worcestershire Upton Warren, juvenile/first-winter, 23rd–26th September, photo (P. Goacher, A. Warr *et al.*) (*Brit. Birds* 100: plate 322).
Yorkshire Catterick, adult female, 18th–19th August, photo (S. Clifton, R. Marshall *et al.*); see also Buckinghamshire/Durham.

(Breeds interior W Canada south to California and throughout mid-west states of USA; also S Ontario. Most migrate through interior USA and winter in South America from Peru S to Argentina & Chile.)

Laughing Gull *Larus atricilla* (1, 173, 5)

Cambridgeshire Grafham Water, second-summer, 24th June, photo (J. Leadley *et al.*) (*Brit. Birds* 100: plate 222). Fidwell Fen, first-winter, 26th October (B. Green, D. Poyser).
Devon R. Teign, Exmouth, Topsham and Countess Wear area, first-winter to second-winter, 13th January to 15th December, photo (M. Knott *et al.*).
Outer Hebrides Coot Loch, Benbecula, second-summer, 7th May, photo (S. E. Duffield, J. Kemp, B. Rabbitts).
Shetland Firths Voe and Swinister Voe, Mainland, first-winter, 8th–22nd December, photo (M. S. Chapman *et al.*).
2006 Cornwall Hayle Estuary, first-winter, 1st May, photo (L. P. Williams); presumed same as Newlyn (*Brit. Birds* 100: 716).
2006 Devon Pottington, adult, 5th January, photo (D. Churchill, M. S. Shakespeare, J. Turner).
2006 Outer Hebrides Traigh Athmor, North Uist, adult, 6th June (J. Boyle, M. Finn).
2005 Cornwall Hayle Estuary, adult, 6th November (A. & J. D. Greensmith).

(Locally common from Nova Scotia, S along E seaboard of USA to Florida & Gulf coast, the Caribbean, & C America to N Venezuela. Southern populations largely resident but N breeders winter within southern breeding range.)

Franklin's Gull *Larus pipixcan* (0, 53, 6)

Cornwall Hayle Estuary, first-winter, 2nd–6th March, photo (C. C. Barnard *et al.*) (*Brit. Birds* 100: plate 118). Crowdy Resr, adult, 1st–4th April, photo (S. G. Rowe). Camel Estuary, adult, 9th April, photo (K. S. Archibald, S. C. Votier).
Devon Topsham, adult, 10th June (K. & V. Fox). Braunton, River Caen, 29th August, adult, photo (L. & S. Bruce *et al.*).
Oxfordshire Farmoor Resr, adult, 10th–11th November, photo (N. J. Hallam *et al.*).
2005 Gloucestershire Newnham-on-Severn, adult or second-winter, 22nd March (*Brit. Birds* 100: 48); note revised year, not 2004.

(Breeds locally throughout interior provinces of temperate W Canada, E to Great Lakes & S to mid-west USA. Winters along Pacific coast of South America, from Guatemala to Chile.)

Audouin's Gull *Larus audouinii* (0, 2, 2)

Devon Seaton Marshes, adult or third-summer, 14th August, photo (G. M. Haig, S. Waite *et al.*).
Kent Dungeness, second-summer, 16th May, photo (R. Butcher, D. Walker *et al.*).
These records represent the third and fourth for Britain and include the second record for Dungeness. Despite being first recorded in 2003, it appears that this species may appear increasingly frequently. Gutiérrez & Guinart (2008) discussed the possible origin of our vagrant Audouin's Gulls, indicating that they may well arrive from the central and eastern Mediterranean populations, rather than the larger Spanish colonies. They also noted that second-summer birds are most likely to be recorded as vagrants (and now three of the four British records are of that age class), so it appears unlikely that younger birds are being overlooked. The older Devon bird may either have been a non-breeder that had wandered from the species' breeding range or could represent post-breeding dispersal.

(Breeds throughout Mediterranean basin from Spain E to Greece & Turkey, with majority at Ebro Delta & Chafarinas Islands, Spain. Majority winter along the Atlantic seaboard of Africa, from Morocco to Senegal & Gambia.)

Lesser Black-backed Gull *Larus fuscus*
Northeast European race *L. f. fuscus*, 'Baltic Gull' (0, 1, 1)

Gloucestershire Hempsted, adult, 18th–20th April, ringed as a pullus in Finland in 2004, photo (J. D. Sanders).
1981 Suffolk Orfordness, adult, found dead, 24th October, ringed as a pullus in Finland in 1978 (per BOURC).
The identification, and assessment of claims, of Lesser Black-backed Gulls of the nominate race *fuscus* (sometimes known as 'Baltic Gull') has had a chequered and complicated history in Britain. Prior to this record, there had been a number of recent claims (many of them looking very promising) that were ultimately considered not proven. Discussion within BBRC almost always revolved around two issues: firstly, our confidence about whether the field characteristics were fully resolved; and, secondly, if they were, whether they could be applied with any degree of certainty to the records received. These same questions can be found in the minds of any gull enthusiast looking for *fuscus* among their local Lesser Black-backs. With uncertainty about the first issue, we were left with even more of problem with the second.

Lars Jonsson's groundbreaking article (Jonsson 1998) confirmed the difficulty involved in identifying 'Baltic Gull' in adult and immature plumages. This has been followed by several recent papers, including Winters (2006), which contain as many questions as answers. These articles question the precision with which it was once thought possible to assign the three forms of Lesser Black-backed Gull. This had often been done simply on the mantle tone of adults, which was thought to grade from the paler grey of the western form (*graellsii*), eastwards through a darker grey intermediate form (*intermedius*), to almost black in the Baltic region of Scandinavia (*fuscus*). We now know that this picture is far too simplistic, with complications such as very dark, *fuscus*-like birds in *intermedius* populations, and intergrade populations between *graellsii* and *intermedius* (like those on Orfordness, in Suffolk).

Other subtle elements, such as the timing of moult, are also relevant but even these are now ques-

tioned or open to different interpretations. Further problems are apparent with non-adult birds, and BBRC ultimately made the decision that, given the lack of clarity, it would adopt the protocols widely used by other records committees (e.g. the Dutch CDNA) and would accept only ringed birds of known provenance. This may seem harsh, but for the time being it remains a cautious but workable approach. Nonetheless, BBRC also encourages observers to submit well-documented claims of unringed birds as they add to the overall picture and improve our understanding; they are also archived, in case future assessors become more confident.

Jonsson (1998) expressed concerns over the validity of records of ringed *fuscus* in the UK, noting that some pulli ringed as *fuscus* have been misidentified Herring Gull *L. argentatus* chicks. He went on to raise doubts about the provenance of the (then) five British ringing recoveries, commenting that 'the identity of all 12 reported recoveries of *fuscus* from the North Sea area can be questioned.' Some are questionable for the circumstances in which they were found, others for the date. The record which now stands as the first for Britain concerns a fourth-calendar-year bird ringed as a pullus in Finland in July 1978 and found off the Suffolk coast on 24th October 1981. Jonsson commented that this report lacked 'basic information regarding the circumstances of the findings, and the exact localities are also very vague.' However, this record has since been examined by BOURC, who concluded that it should be retained as the first for Britain.

The discovery of the bird in Gloucestershire by John Sanders is admirable and a clear reward for many hours spent watching gulls. This bird had been ringed as a pullus at Pietersaari, Vaasa, Finland, on 5th July 2004 and its colour ring provided the essential evidence of its origin.

(Breeds along Baltic coasts of Sweden and Finland, inland to N & E Finland, rarely N Norway and W Russia. Migrates S across E Europe, Black Sea, E Mediterranean and Middle East to winter coastal E Africa & W Rift Valley Lakes.)

American Herring Gull *Larus smithsonianus* (0, 14, 2)

Argyll Gott, Isle of Tiree, first-winter, 20th March, photo (J. Bowler); presumed same Loch Bhasapol, Isle of Tiree, 25th May, 7th June, photo (J. Bowler).

Outer Hebrides Stinky Bay, Benbecula, first-summer, 19th June, photo (J. B. Kemp).

2004 Outer Hebrides Stornoway, Isle of Lewis, juvenile, 6th March to 17th April, photo (M. S. Scott).

This is the first BBRC report in which American Herring Gull appears as a separate species, following the BOURC decision to treat 'herring gulls' from North America, northern and central Siberia as a distinct species (Sangster *et al.* 2007; Collinson *et al.* 2008) – although this split has not been adopted by the AOU. All British records involve nominate *smithsonianus* from North America (rather than the East Asian *L. s. vegae* and *L. s. mongolicus*) in their often distinctive 'first-cycle' plumage.

With two records in 2007, and this late-accepted one from 2004, there have now been 16 accepted British records, although there are almost as many claims currently in circulation (including some adults and subadults) and it is hoped that a more complete pattern of occurrence of this species will be available soon. This compares with 72 records from Ireland to the end of 2006 (Milne 2008). Including the first for Britain, in Cheshire & Wirral then Lancashire & North Merseyside in 1994, more than half of the accepted records have been discovered in late February or March. There is an expected westerly bias to these occurrences with nine records from southwest England (including three each from Cornwall and the Isles of Scilly), five from northwest Scotland and two from northwest England.

Following several detailed papers concentrating on the identification of immature *smithsonianus* as a vagrant in western Europe (Mullarney 1990; Dubois 1997; Diggin 2001; Hoogendoorn *et al.* 2003; Lonergan & Mullarney 2004), birders are better prepared and more confident in locating juveniles and first-winters, yet it is notable that two observers are responsible for discovering and documenting more than a third of the accepted British records.

Advances have been made in defining criteria for the identification of adult *smithsonianus* (Adriaens & Mactavish 2004) and BBRC welcomes submissions for birds matching these criteria. However, as with first-cycle birds (particularly following cautionary notes regarding the identification of such birds; Adriaens *et al.* 2008), adults and subadults of this species will always require a detailed submission, preferably including photographs.

(Breeds S Alaska E across C & N Canada to S Baffin Island, Labrador, Newfoundland & NE coastal region of USA. Many resident, others winter S to S USA & Mexico. Other races breed Mongolia to C Siberia, & NE Siberia.)

Ross's Gull *Rhodostethia rosea* (1, 88, 0)

Argyll Ormsary, first-winter, 14th December 2006 to 15th January, photo (*Brit. Birds* 100: 718; plate 275); presumed same Portavadie, 13th–25th February (per J. Dickson) (*Brit. Birds* 100: plate 55).

(Locally common on tundra of NE Siberia from Lena River E to at least Kolyma River. In Canada, rare and local breeder in W Hudson Bay region, perhaps elsewhere. Siberian birds migrate E past Point Barrow, Alaska in September to unknown wintering area assumed to lie near edge of pack ice, perhaps in Bering Sea or N Pacific, S to N Japan.)

Graham Catley

275. First-winter Ross's Gull *Rhodostethia rosea*, Ormsary, Argyll, January 2007.

Bonaparte's Gull *Chroicocephalus philadelphia* (8, 141, 10)

Angus & Dundee Ferryden, adult, 19th November 2006 to 4th March, photo (*Brit. Birds* 100: 717). Fishtown of Usan, adult, 11th November to 10th February 2008, photo (per www.birdguides.com) (*Brit. Birds* 101: plate 37).

Devon Plym Estuary, second-winter, 6th–14th January, photo (S. C. Votier *et al.*), presumed returning bird from Ernesettle Creek 2006 (*Brit. Birds* 100: 717); presumed same River Otter, 31st January to 3rd February, photo (M. Knott *et al.*). Seaton Marshes, first-summer, 30th April, photo (S. Waite *et al.*).

Isles of Scilly Porthcressa and Porth Mellon, St Mary's, first-winter, 7th December 2006 to 23rd February, photo (*Brit. Birds* 100: 717).

Moray & Nairn Loch Spynie, first-summer, 23rd–26th May, photo (D. A. Gibson *et al.*).

Norfolk Hickling Broad, first-summer, 12th–26th May, photo (G. Etherington, O. J. Richings *et al.*). Breydon Water, first-winter, 28th November (P. R. Allard).

North-east Scotland Rattray Head, adult, 20th October, photo (A. Biggins, A. Perkins). Peterhead and Ugie Estuary, Aberdeen,

Nic Hallam

276. First-summer Bonaparte's Gull *Chroicocephalus philadelphia*, with Black-headed Gull *C. ridibundus*, Farmoor Reservoir, Oxfordshire, May 2007.

adult, 25th November to 25th March 2008, photo (C. N. Gibbins *et al.*).
Outer Hebrides Col Beach, Isle of Lewis, adult, 8th April, photo (R. Pass, C. Shaw). South Uist, first-summer, 19th June to 2nd September, photo (S. E. Duffield, J. Kemp, B. Rabbitts *et al.*).
Oxfordshire Farmoor Resr, first-summer, 1st–9th May, photo (N. J. Hallam *et al.*) (*Brit. Birds* 100: plate 158; plate 276).
2006 Cornwall Hayle Estuary, first-winter, 3rd December (L. P. Williams).
2005 Cornwall Helston Park Lake, adult, 11th February (D. Parker).

(Breeds widely across N North America from W & C Alaska through Canada to James Bay. Winters locally on ice-free rivers & lakes in N USA, & S along both coasts of USA to Mexico & Caribbean.)

Ivory Gull *Pagophila eburnea* (81, 51, 0)

2006 Ayrshire Benslie, Irvine, juvenile, 31st December to 4th January 2007, died in care, photo (per F. Simpson); presumed same as Troon (*Brit. Birds* 100: 718, plate 56).

(In Europe, breeds only in Svalbard. Elsewhere, restricted to islands in the high Arctic between Franz Josef Land & Arctic Canada, with small numbers in N & SE Greenland. Wintering range poorly known, but apparently within or close to edge of pack ice.)

Gull-billed Tern *Gelochelidon nilotica* (51, 270, 2)

Ceredigion Dyfi Estuary, Ynys-hir and Ynyslas, adult, 2nd–7th August, photo (R. Jones *et al.*).
Cleveland Hartlepool Headland, 29th September (J. R. Duffie, I. J. Foster, R. C. Taylor *et al.*).
2006 Durham Lizard Point, Whitburn, two, adults, 9th May (P. Hindess); presumed same as Cleveland and Northumberland (*Brit. Birds* 100: 719).
2006 Northumberland St Mary's Island, two, 9th May (A. Cowell, A. S. Jack) (*Brit. Birds* 100: 719); note revised observers.

(Small population in N Germany & Denmark. Widespread though local in Spain but colonies are isolated and small elsewhere in Europe. To E, breeds discontinuously from Turkey & SW Russia through Kazakhstan, Mongolia & NW China, with isolated population in NE China. European population winters coastal W Africa, S to Gulf of Guinea. Asian populations winter Persian Gulf to Indian subcontinent & SE Asia. Other races occur Australia & the Americas.)

Caspian Tern *Hydroprogne caspia* (26, 254, 4)

Bedfordshire Marston Vale CP, adult, 20th May, photo (S. Northwood, P. Smith *et al.*).
Derbyshire Willington GP, second-summer, 11th June (R. M. R. James).
Lancashire & North Merseyside Knott End-on-Sea, adult, 2nd July, photo (C. G. Batty *et al.*); presumed same Fairhaven Lake, 5th July (C. I. Bushell per C. Batty).
Northumberland Big Waters, adult, 14th July, photo (J. C. Day, A. J. Johnston *et al.*) (*Brit. Birds* 100: plate 245); presumed same Bothal Pond (A. D. McLevy) and Blyth Estuary (S. T. Holliday *et al.*), both 14th July.

(Isolated and declining European population breeds Baltic coasts of Estonia, Sweden & Finland to head of Gulf of Bothnia. To E, fragmented populations from Black Sea coast of Ukraine across steppe-lake region of C Asia to NW Mongolia & E China. European birds winter W Africa to Gulf of Guinea, Asian birds winter on coasts to S of breeding range. Other populations in Australia, S Africa & North America.)

Whiskered Tern *Chlidonias hybrida* (23, 129, 4)

Argyll Machrihanish, 9th July (E. Maguire, J. McGlynn).
Cumbria Siddick Ponds, adult, 20th June, photo (J. Manson, N. White *et al.*).
Leicestershire & Rutland Eyebrook Resr, adult, 18th June, photo (A. S. & R. G. Brett); see also Yorkshire.
Staffordshire Belvide Resr, adult, 8th June, photo (S. Nuttall *et al.*).
Yorkshire Pugney's CP and Wintersett Resr, adult, 17th June, photo (P. Smith *et al.*); presumed same Broomhill Flash, 17th June (G. J. Speight *et al.*); see also Leicestershire & Rutland.

(Breeds in small, scattered colonies through S & E Europe from Iberia to Poland. Numerous and widespread from N Black Sea E to W Kazakhstan, with Volga/Ural River complex holding most of European population. Winters tropical W & C Africa & from Nile Delta to E Africa. Other populations in Indian subcontinent, E Asia, S Africa & Australia.)

Brünnich's Guillemot *Uria lomvia* (1, 38, 2)

North-east Scotland Girdle Ness, Aberdeen, 7th November, photo (A. J. Whitehouse *et al.*).
Shetland Scousburgh, Mainland, 25th March, found dead, photo, specimen in NMS (R. Riddington *et al.*).

A recent analysis of all European records outside the normal range (incorporating both live birds and those picked up dead on beached bird surveys, like the one reported here from Shetland) found that most arrivals in Britain are closely correlated with severe Atlantic weather systems (Van Bemmelen & Wielstra in press). This supports the theory that birds which turn up here have been displaced from distant wintering grounds rather than being from a small population wintering in British waters.

(Apparently declining, but huge colonies remain in Greenland, Iceland, Svalbard & Novaya Zemlya, with tiny population in NE Norway. Outside Europe, breeds on islands off N Siberia into Bering Sea, S to Kuril, Komandorskiye, Aleutian & Pribilof Islands. Also W Alaska & N Canada from Baffin Island to Hudson Bay, Labrador coast & W Greenland. Winters among open leads in pack ice or at sea from Barents Sea S to N Norway, S Greenland, & along Labrador coast S to NE coastal USA. Other populations winter in N Pacific, S to N Japan.)

Mourning Dove *Zenaida macroura* (0, 2, 1)

Outer Hebrides Carnach, North Uist, first-winter, 29th October to 7th November, photo (A. & A. MacDonald, B. Rabbitts *et al.*) (*Brit. Birds* 101: plate 15; plate 277).

If the Outer Hebrides recorder, Brian Rabbitts, was surprised to be summoned to a neighbour's garden on North Uist in November 1999 to identify Britain's first Mourning Dove, he must have been astounded when, on 1st November 2007, he discovered Britain's second little more than 3 km from the scene of the first (Rabbitts 2007, 2008).

Other accepted Western Palearctic records of this Nearctic species prior to 2007 are restricted to singles on the Isle of Man in October 1989, Iceland in October 1995 and the Azores in November 2005, while a bird in Sweden in June 2001 may have been of captive origin and was placed in Category D of that national list.

Remarkably, the day after the 2007 North Uist Mourning Dove was first identified (it had been noticed by a local crofter on 29th October), Ireland's first Mourning Dove was discovered on Inishbofin, Co. Galway (McGeehan 2007). McGeehan noted that the weather was favourable for an Atlantic crossing by an American landbird during 27th–29th October 2007, with a strong westerly airflow

John Carter

277. First-winter Mourning Dove *Zenaida macroura*, Carnach, North Uist, Outer Hebrides, November 2007.

reaching western Scotland and northwest Ireland, and the strongest winds of the period being recorded in the Outer Hebrides.
(Breeds SE Alaska & S Canada from British Columbia to Nova Scotia, S throughout USA to Panama & West Indies. Some northern populations remain in S Canada while others winter S to Panama.)

Great Spotted Cuckoo *Clamator glandarius* (3, 39, 1)

Kent Dungeness, 6th–7th March, photo (O. Gabb, R. E. Turley *et al.*).

(Common summer migrant to Spain, rare and local breeder Portugal, S France & E to Greece. W Asian population uncommon, breeding discontinuously from C Turkey, Cyprus, Israel & Jordan to N Iraq & SW Iran. Palearctic breeders winter in sub-Saharan Africa but range uncertain owing to African populations.)

Eurasian Scops Owl *Otus scops* (45, 37, 0)

Oxfordshire Thrupp, male, 15th May to 5th June (per www.birdguides.com); presumed returning bird from 2006 (*Brit. Birds* 100: 723).

(Common summer migrant to N Africa & S Europe, from Iberia N to C France & E to Greece. Also breeds across Ukraine, S Russia & S Siberia to W Mongolia, Kazakhstan & Iran. Most winter N equatorial Africa, but some remain in S Europe.)

Snowy Owl *Bubo scandiacus* (194, 169, 12)

North-east Scotland Nr Braeriach, Cairngorms, 5th April, photo (I. Maw).
Outer Hebrides Lewis, adult male, intermittently at Bru, Borve and Uig, 1st January to 12th October, presumed same as Bru 2006 (*Brit. Birds* 100: 725, plate 119) (M. S. Scott *et al.*). Lewis, immature male, Borve, 20th February to 26th March, photo (M. S. Scott *et al.*). Paiblesgarry, North Uist, 3rd–5th April, photo (A. MacDonald, B. Rabbitts *et al.*). Solas and Aird an Rùnair, North Uist, male, 21st April to 3rd June, photo (J. Boyle, B. Rabbitts *et al.*). Hirta, St Kilda, adult, 5th April, photo (T. Avent *et al.*). Hirta, St Kilda, first-year, 24th–31st May, photo (E. Mackley, W. T. S. Miles *et al.*). Hirta, St Kilda, adult female, 4th–19th June, photo (W. T. S. Miles, S. Money *et al.*). Hirta, St Kilda, adult male, 4th–29th June, photo (W. T. S. Miles, S. Money *et al.*). Hirta, St Kilda, subadult male, 8th July to 1st August, photo (E. Mackley, W. T. S. Miles *et al.*). Hirta, St Kilda, subadult male, 10th July to 5th August, photo (W. T. S. Miles, S. Money *et al.*).
2006 Outer Hebrides Aird Uig, West Lewis, immature male, 9th September, photo (A. & V. Williams); presumed same as Bru, Lewis (*Brit. Birds* 100: 725, plate 59).
2005 Argyll Arileod, Isle of Coll, adult male, 27th January, photo (B. & B. MacIntyre, S. D. Wellock).
2005 Outer Hebrides North Harris, Isle of Lewis, 19th March (R. Reid).

(Occasionally breeds N Scandinavia & Iceland, depending on availability of small mammals. Outside Europe, erratic circumpolar breeder across tundra & N islands of Arctic Russia, Siberia, Alaska, Canada & N Greenland. Most disperse S in winter but some resident or nomadic if food available.)

Hawk Owl *Surnia ulula* (8, 1, 0)

1966 Cornwall Gurnard's Head, 14th August, photo; previously accepted (*Brit. Birds* 61: 363) but now considered not proven following review.
This species has not featured in a BBRC report since 1998, which saw the removal of the 1959 report from Beasdale Fells, Lancashire and North Merseyside, from the list of accepted records. The last accepted record was as long ago as 1983 (*Brit. Birds* 77: 538). With the removal of yet another individual from the totals, it becomes even rarer than previously thought, with just two post-nineteenth century records remaining.

The Cornish record was reassessed as part of BOURC's work to establish the racial identity of the Hawk Owls on the British List. Given the southwest location, it had earlier been thought most likely to have been of the North American race *S. u. caparoch*. But when this record was examined again, there was clearly not sufficient evidence to assign it to a particular race or indeed even to species. This now leaves the Shetland bird from 1983 as the only post-1950 record; this well-documented individual was part of an invasion that included over 1,000 in southern Sweden, suggesting strongly that it was of the nominate race *S. u. ulula*.

The first British record of Hawk Owl was of the American race, caught on a ship off Cornwall in

March 1830, so both the Eurasian and North American races presently remain on the British List, subject to the outcome of the ongoing BOURC review. Separation of the two forms is possible given good views. North American *caparoch* is darker above than European breeders, while the pattern of the underparts also differs – *caparoch* shows tawny-brown barring on the flanks and lower belly which equals or is wider than the white barring, compared with the thinner, blackish barring of nominate *ulula*.

Racial identification is clearly possible, although the finder of the next British Hawk Owl might be forgiven for just enjoying the moment!

(Breeds from N Scandinavia E across N Russia & Siberia to Kamchatka, & S to NE Kazakhstan, Mongolia, NE China & Sakhalin. Resident, some disperse to S & W of breeding range outside breeding season. North American race *S. u. caparoch* breeds N North America and has occurred in Britain.)

Pallid Swift *Apus pallidus* (0, 65, 1)

Cornwall Wadebridge, 12th June (C. Selway).

2006 **Isles of Scilly** Bryher, 23rd July (J. Askin, J. K. Higginson); previously not proven (*Brit. Birds* 100: 753) but now accepted after additional information submitted.

(Locally common throughout Mediterranean basin from Iberia to Greece, but rare or absent from many regions. Outside Europe, breeds locally from Mauritania & Canary Islands across NW Africa & Middle East to Arabian Peninsula & coastal S Iran. Most winters N African tropics, but some remain in S Europe.)

European Roller *Coracias garrulus* (195, 110, 2)

Breconshire Usk Resr and Glasfynydd Forest, second-summer, 29th–30th July (A. Davis, M. Hogan); see also Carmarthenshire/Gower.

Carmarthenshire Usk Resr and Glasfynydd Forest, second-summer, 29th–31st July (R. Evans, M. Hogan, J. Lloyd); see also Breconshire/Gower.

Gower Bryn Common, second-summer, 6th–7th August, photo (B. Stewart *et al.*); see also Breconshire/Carmarthenshire.

Yorkshire Easington, unaged, 15th–16th July, photo (A. M. Hanby *et al.*).

2005 **Sussex** Eridge, 11th June (I. & P. Russell).

(Declining, yet remains widespread and numerous in NW Africa & Spain. In E Europe, occurs locally N to Estonia & E to Ukraine. More common from Turkey & S Russia to S Urals, SW Siberia, S Kazakhstan & W China. Winters locally in equatorial W Africa but most in E Africa from Kenya to Zimbabwe. Another race breeds Iran, Afghanistan & N Pakistan, and winters in E Africa.)

Calandra Lark *Melanocorypha calandra* (0, 13, 1)

Mike Pennington

278. Calandra Lark *Melanocorypha calandra*, Baltasound, Unst, Shetland, May 2007.

Shetland Baltasound, Unst, 12th May, photo (B. H. Thomason *et al.*) (*Brit. Birds* 100: plates 189 & 190; plate 278).

(Abundant on steppe grasslands of Iberia & Morocco but uncommon and local throughout much of Mediterranean basin. To E, breeds Ukraine, Turkey & SW Russia to Kazakhstan, NW China & Afghanistan. European & S Asian populations resident or nomadic, while N Asian populations disperse S of breeding range, wintering S to Persian Gulf coast of Iran.)

Crag Martin *Ptyonoprogne rupestris* (0, 7, 0)

2006 Surrey Badshot Lea, 22nd October (K. P. Duncan, D. W. Smith).

This late-autumn record was seen relatively briefly by the two observers, although it did provide the opportunity for repeat viewing and was not simply a straightforward 'fly-by'. This type of record often provides BBRC members with a very difficult decision – the detail described is compatible with the views but, as a consequence of the circumstances, it does not represent comprehensive documentation of all the salient features of the species.

There are some similarities between this and the first four records of this species in Britain, which all involved birds on single dates, each seen by no more than three observers (the first two records, in 1988, were seen by single observers). The two in 1999 proved the exception to this; they were seen only on single dates at any one location (although one relocated from Leicestershire to Yorkshire), but lingered long enough to be enjoyed by many observers. The pattern of previous records, both geographically and temporally, suggests that this species could be found anywhere in the UK between mid April and late October. The 2006 Surrey record is the latest for the UK, but coincided with the arrival of parties of four and three birds on 20th and 22nd October, respectively, in Sweden (the latter group lingering until 1st November) and was followed by an arrival of up to six birds in The Netherlands between 5th and 24th November, which represented the first confirmed Dutch records. Interestingly, vagrancy to the north of the breeding range appears to have increased since the first British record in 1988. In Denmark, the species was first recorded in May 1988 and there have been five subsequent records between May and mid November, with the last in 2000 (when three were seen in May). There have been two accepted records in Finland (June 1988 and May 2003) and two in Sweden (in October 1996 and 2001) prior to the 2006 arrival described above. Crag Martin was first reported in Norway in June 2007, although this record has yet to be accepted.

(Breeds NW Africa & Iberian Peninsula N to S Germany & E through Mediterranean & C Asia, N to Baikal region of S Siberia, S to Tibetan Plateau & E to NE China. S European population mostly resident but Asian populations migratory, wintering in NE Africa, & NW India to NC China.)

Blyth's Pipit *Anthus godlewskii* (1, 17, 3)

Fair Isle Boini Mire, first-winter, 27th October, trapped, photo, died later (M. T. Breaks, D. N. Shaw *et al.*).

Isles of Scilly Old Grimsby, Tresco, first-winter, 16th–23rd October, photo (D. Acfield, A. White *et al.*) (*Brit. Birds* 101: plates 38 & 279).

Bryan Thomas

279. First-winter Blyth's Pipit *Anthus godlewskii*, Old Grimsby, Tresco, Isles of Scilly, October 2007.

Shetland West Voe of Sumburgh, 17th–18th October, photo (R. Martin *et al.*).

(Breeds S Transbaikalia, N Mongolia & extreme NE China. Winters locally throughout Indian subcontinent S to Sri Lanka.)

Olive-backed Pipit *Anthus hodgsoni* (1, 300, 10)

Norfolk Wells Woods, 27th–29th October, photo (J. J. Gilroy, J. R. McCallum *et al.*).
Shetland Pool of Virkie, Mainland, 4th October (G. Bruneau, P. A. Crochet *et al.*). Hametoun and South Ness, Foula, 4th–5th October (R. G. Hook, K. B. Shepherd *et al.*). Hametoun, Foula, 4th–5th October (R. G. Hook, K. B. Shepherd *et al.*). Hametoun, Foula, 4th–6th October, photo (R. G. Hook, K. B. Shepherd, N. & P. J. Wright *et al.*). Hametoun, Foula, 5th October (K. D. Shaw *et al.*). Sandwick, Mainland, 6th October, photo (K. Osborn *et al.*). Ham, Foula, 7th–16th October, photo (R. G. Hook, K. B. Shepherd *et al.*). Hametoun, Foula, 14th October (T. P. Drew, M. Garner, M. A. Wilkinson *et al.*).
Yorkshire Thorngumbald, Hull, 22nd April, photo (L. Hinchcliffe *et al.*).

(European range restricted to N Urals. Widespread across C & E Siberia to N China, Kamchatka, Kuril Islands & Japan. Winters widely across S China, Taiwan & throughout N & C parts of SE Asia. Those in Himalayas & mountains of W/C China winter throughout Indian subcontinent.)

Pechora Pipit *Anthus gustavi* (4, 71, 4)

Pembrokeshire Goodwick Moor, Fishguard, 19th–23rd November, photo (S. Berry, R. Dobbins, A. Rogers *et al.*) (*Brit. Birds* 101: plate 39).
Shetland Out Skerries, 28th September (S. Dunstan, S. Piner). Foula, 3rd–6th October, photo (R. G. Hook, K. B. Shepherd, P. J. Wright *et al.*). Toab, Mainland, 12th–14th October, photo (R. M. Fray, A. J. Mackay, M. N. Reeder *et al.*) (plate 280).
One of the highlights of the year for many birders was the discovery of this striking pipit in a small area of woodland in Fishguard, Pembrokeshire. Staying for five days, it put on a delightful show for the crowd, and represented the first record for Wales. Pechora Pipit remains a major prize for birders everywhere, and fig. 6 reveals that despite the relatively large number now seen in Britain, there is no realistic alternative to the far north if you want to add this species to your 'self-found' list. Shetland, including Fair Isle, accounts for 66 of the 79 British records, but the recent trend is for birds on this archipelago to be found away from Fair Isle. The increasing coverage afforded in recent years to Mainland Shetland and other islands in the group is paying dividends and, with five records in the last seven years, Foula has almost overtaken Fair Isle as the premier site in Europe to find this bird.

Although Pechoras have a well-deserved reputation for being silent and very skulking, the occasional bird will be mobile and more vocal. Time spent learning the distinctive flight call (a short, stony 'tsep', given either singly or repeated rapidly two or three times – it can be surprisingly similar to that of Grey Wagtail *Motacilla cinerea*) may be a good investment for coastal birders. The first British mainland record, and the first away from Fair Isle, was initially discovered on call flying over the Warren at Spurn, Yorkshire, way back in 1966. It was then trapped in one of

Hugh Harrop

280. Pechora Pipit *Anthus gustavi*, Toab, Shetland, October 2007.

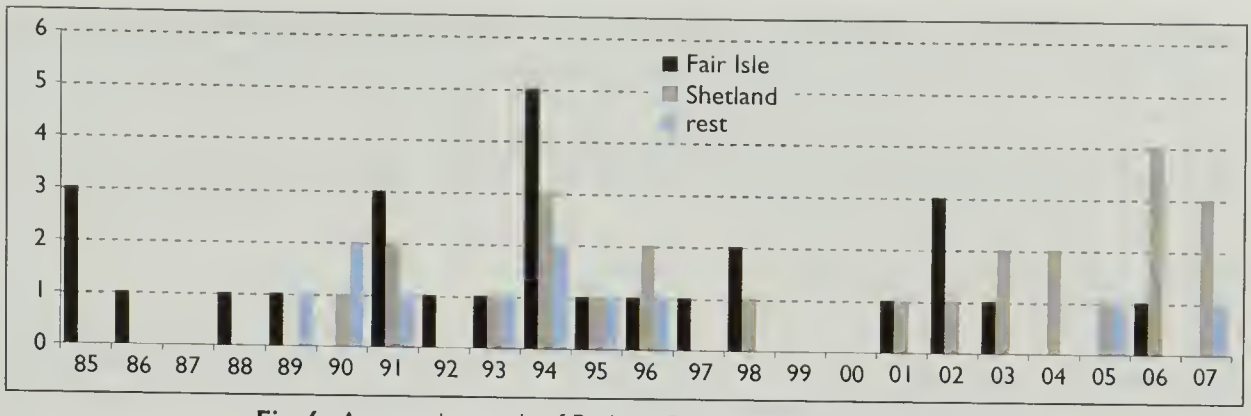


Fig. 6. Accepted records of Pechora Pipit *Anthus gustavi* since 1985, showing those for Fair Isle, Shetland excluding Fair Isle and the rest of Britain separately.

the Heligolands farther down the peninsula. Perhaps this is the more likely great event of 1966 to repeat itself!

(Breeds within narrow region of scrub-tundra & taiga of subarctic Eurasia, from Pechora region of NE Russia across Siberia to Chukotskiy Peninsula & Kamchatka. Migrates through E China & Taiwan to wintering areas in Philippines, N Borneo & N Sulawesi. Isolated race, *menzbieri*, breeds NE China & Amur River region of SE Russia.)

Buff-bellied Pipit *Anthus rubescens* (1, 4, 6)

At sea Sea area Hebrides 200+ km NW of Outer Hebrides, 19th–20th September, died on board ship (in British waters), photo (S. Cook).

Fair Isle Sukka Mire, first-winter, 23rd–25th September, photo (A. L. Cooper, M. A. Ward *et al.*); presumed same Vaasetter, 1st–7th October, photo (D. N. Shaw *et al.*).

Isles of Scilly Carn Friars, St Mary's, 25th September to 2nd October, photo (P. Buxton *et al.*) (*Brit. Birds* 100: plate 324). Second individual, Carn Friars and Porth Hellick Beach, St Mary's, 27th September, presumed same Abbey Pool and Pentle Bay, Tresco, 27th September to 2nd October, photo (E. A. Fisher, R. L. Flood, P. Fraser *et al.*).

Outer Hebrides Borve, Benbecula, 18th October, photo (S. E. Duffield *et al.*).

Oxfordshire Farmoor Resr, 8th–10th October, photo (N. J. Hallam, I. Lewington *et al.*) (*Brit. Birds* 100: plate 325; plate 281).

An unprecedented influx, which more than doubles the previous total. The arrival also produced the first inland record, another remarkable record from Oxfordshire's rarity hotspot, as well as the first multiple occurrence. Presumably, more reached northwest Europe than were discovered but this is a subtle and unobtrusive species likely to be found only by the most diligent rarity-hunters and, given the spread of records from Shetland to Scilly, it seems inevitable that more were missed. As all these birds were photographed, British observers should

Kit Day

281. Buff-bellied Pipit *Anthus rubescens*, Farmoor Reservoir, Oxfordshire, October 2007.

now have a much more refined 'search image' of this somewhat variable species. Future autumns may therefore show whether the events of 2007 reflect an unusual combination of weather and migration slot or whether the species is more regular than we have so far thought.

(North American race *A. r. rubescens* breeds W Greenland, N & NW Canada, & Alaska, winters W & S USA, Mexico & C America. Asian race *japonicus* vagrant to W Pal., breeds NE Siberia W to Baikal region, winters N Pakistan & NW India to S & E China, S Korea & S Japan.)

Citrine Wagtail *Motacilla citreola* (0, 185, 10)

Fair Isle Setter, first-winter, 13th–27th August, photo (D. N. Shaw *et al.*) (*Brit. Birds* 100: plate 295). Utra Scrape, first-winter, 24th August to 11th September, photo (M. T. Breaks *et al.*). Easter Lother, first-winter, 25th August to 11th September, trapped, photo (M. M. Breaks *et al.*). Da Water, two, first-winters, 27th September (S. J. Davies, M. A. Ward *et al.*).

Isles of Scilly Carn Friars, St Mary's, first-winter, 15th September, photo (M. Anderton per R. Mawer, B. Thomas *et al.*), presumed same Higher Town, St Martin's, 16th September, photo (J. L. Hodgkins, M. G. Telfer), and Tresco, 16th–25th September, photo (A. White *et al.*).

Orkney Birsay, West Mainland, male, 15th–16th June, photo (K. Fairclough *et al.*). Brides Ness, North Ronaldsay, first-winter, 28th September (G. M. Buchanan, P. A. Thomson); presumed same Westness, North Ronaldsay, 30th September (A. E. Duncan).

Shetland Sandwick, Mainland, first-winter, 25th September (R. A. Haywood). Symbister, Whalsay, first-winter, 3rd–8th October, photo (A. Seth, P. Stronach *et al.*).

(Nominate race breeds in N Russia, from E Kola & Kanin Peninsula across N Siberia to Taimyr Peninsula & S to C Siberia. To south, small numbers now breed regularly in Belarus, Baltic countries and occasionally S Finland; otherwise from Ukraine & S Russia, E across Kazakhstan & Mongolia to N China. Black-backed race *calcarata* breeds S/C Asia to Tibetan Plateau. Winters throughout Indian subcontinent, S China & SE Asia to peninsular Thailand.)

Dipper *Cinclus cinclus*
North European race *C. c. cinclus*, 'Black-bellied Dipper' (–, –, 1)

Fair Isle Wirvie Burn and Finniquoy Gully, first-winter, 5th December to 13th March 2008, trapped, photo (D. N. Shaw *et al.*).

This is the first time that this subspecies has appeared in the report, following its inclusion in the list of races to be considered by the RIACT subcommittee (Kehoe 2006). Nominate *cinclus* ('Black-bellied Dipper') is one of three races of Dipper on the British List. The other two breed in Britain: the endemic *C. c. gularis* ('British Dipper') over most of the British range and *C. c. hibernicus* ('Irish Dipper') in western Scotland, as well as in Ireland.

The slightly parochial British view of Dippers is that identifying subspecies is quite straightforward. However, *BWP* is rather more circumspect, stating that 'racial identifications between 'chestnut-bellied' and 'black-bellied' forms are specious... geographical variation [is] highly complex, [with] some populations even varying within [the] same mountain range.' It may well be that the taxonomy will be revised in the future and that variation in Europe is clinal, with dark-bellied birds in cooler and wetter climates and chestnut-bellied birds inhabiting warmer and drier areas (*BWP*). There is even marked individual variation within populations in Britain (Tyler & Ormerod 1994; Forrester *et al.* 2007), while there are also some differences according to age and sex, with males and older birds being darker on average (*BWP*).

All this makes racial identification less than straightforward, especially as nominate *cinclus* may have some restricted chestnut on the belly, while it appears that some birds within the presumed range of *hibernicus* in western Scotland may lack any chestnut. Moreover, although it has been suspected that some chestnut-bellied birds in eastern Britain could be Continental birds of the race *aquaticus*, proving this could be very difficult given the complex variation within and among populations.

The occurrence of 'Black-bellied Dippers' from northern Europe is, however, not doubted. There is strong circumstantial evidence; most of the birds seen in areas where the species is a vagrant, such as Shetland (over 50 records) and Norfolk (over 135 records), lack chestnut on the belly (Taylor *et al.* 1999; Pennington *et al.* 2004). More significantly, there are also two ringing recoveries: a bird ringed in Sweden in March 1985 was found in Fife in April 1987 (Forrester *et al.* 2007) and another ringed as a

chick in Norway in May 2004 wintered on Mainland Shetland in 2005/06 (*Shetland Bird Report 2005*). It is interesting to note that neither of these birds was in their first-winter when they were located in Britain.

For the moment, BBRC will take the pragmatic view that birds with little or no chestnut on the belly in eastern Britain are likely to be nominate *cinclus*, but other claims may have to await further investigations on the variation of plumage shown by all the races likely to occur in Britain.

(Breeds Scandinavia, Baltic countries & W Russia. Outside the breeding season, resident or dispersive to S & W of breeding range.)

Thrush Nightingale *Luscinia luscinia* (1, 165, 2)

Fair Isle Shirva, 13th May, photo (D. N. Shaw *et al.*). Utra, 28th September, photo (J. Ginnever, W. T. S. Miles *et al.*).

(Widespread throughout E Europe with dramatic population increase during 20th century. Range still expanding NW into SW Norway, and locally abundant in S Scandinavia & Baltic countries. C European range extends from Denmark, SE to Romania & Ukraine, and through temperate European Russia to S Siberia. Winters E Africa, from S Kenya to Zimbabwe.)

Siberian Rubythroat *Luscinia calliope* (0, 6, 1)

Shetland Foula, male, 5th October, photo (R. G. Hook, K. B. Shepherd, N. D. Wright *et al.*).

(Breeds throughout Siberia from Ob River E to Anadyr & Kamchatka, with small numbers W to European foothills of Ural Mountains. S limit reaches N Mongolia, Ussuriland, NE Hokkaido & NE China, with isolated population on E slopes of Tibetan Plateau. Winters from Nepal E through Himalayan foothills to NE India, Burma & N Indochina to C Thailand, S China & Taiwan.)

Red-flanked Bluetail *Tarsiger cyanurus* (2, 38, 8)

Caernarfonshire Bardsey Island, adult male, 1st October, trapped, photo (B. Stammers *et al.*) (*Brit. Birds* 101: plate 41, plate 282).
Cornwall Cot Valley, 3rd November, photo (B. R. Field, J. R. Smart *et al.*).
Norfolk Weybourne, first-winter, 29th September, trapped, photo (M. Taylor *et al.*).
Shetland Out Skerries, first-winter, 2nd–3rd April, photo (K. & P. Flint *et al.*). Scatness, Mainland, 13th–14th October, photo (J. J. Gilroy *et al.*) (*Brit. Birds* 101: plate 42).
Suffolk Corton, 28th September (J. A. Brown).
Yorkshire Easington, first-winter, 31st March, later found dead, photo (M. G. Stoyle *et al.*). Flamborough Head, first-winter male, 20th–23rd October, trapped, photo (I. Marshall *et al.*).

This is no longer the extreme rarity that it once was, but it is surely still near the top of almost everyone's dream find list. Just 15 years ago, in 1993, one on Fair Isle in September was only the 12th for Britain, and another at Winspit, Dorset, which stayed for ten days later in the same autumn, drew huge crowds as the first widely twitched bird. Since then, records have been almost annual (none in 1996 and 2000) and have averaged more than two a year, while the eight this year constitutes a new high. The increase seems likely to be linked to recent expansion in the west of the species' range in Finland, where breeding was first recorded in 1949 but where there may have been as many as 500 pairs by the beginning of the present century (*BWPC*; BirdLife International 2004).

The classic migration hotspots along the east coast are the best places to find a bluetail, and there are records from most recording areas from Shetland to Kent, although surprisingly there is none from Orkney and these are the first from Yorkshire. There are also five records from southwest England from Dorset to Cornwall, although Scilly still awaits its first. These apart, the male on Bardsey in 2007 was only the second away from the east coast, following an extraordinary inland record of one trapped near Loughborough, Leicestershire, in October 1997.

The Bardsey individual was also unusual in that it was an adult male, although there have been a few other autumn males: the first for Britain involved a sight record of one at North Cotes, Lincolnshire, on 19th September 1903; one was in Suffolk in October 1994; singles were in both Northumberland and North-east Scotland in September 1998; and one was on Fair Isle in September 2004.

Most autumn records have to go down as 'first-winter or female', as reliable separation of these age

Steve Stansfield

282. Adult male Red-flanked Bluetail *Tarsiger cyanurus*, Bardsey Island, Caernarfonshire, October 2007.

classes is difficult. Other than two of the adult males listed above (Bardsey and North-east Scotland), which were also caught, all autumn birds which have been trapped and for which age has been reported have been first-winters. Several recent submissions have noted blue on parts of the plumage other than the tail, but it is not clear whether this makes them first-year males or adult females, as both can show traces of blue.

The two spring records in 2007 are only the third and fourth at this season. As they were so early in the year, it seems highly likely that they were both birds that had wintered somewhere in western Europe and were heading north. This may have also been the case for one of the previous spring records, a male on Holy Island, Northumberland, on 23rd April 1995. The first spring record, and the fifth for Britain, was on Fetlar, Shetland, from 31st May to 1st June 1971 and it seems more likely that this was a spring overshoot.

The earliest autumn arrival remains the Fair Isle bird from 1993, which was on 16th September, while the Cornwall bird in 2007 is only the third to be seen in November: the latest was at Gibraltar Point, Lincolnshire, on 15th–16th November 2002.

(Small population breeds NE Finland but main range extends through cool temperate forests of N Eurasia from E Russia & Siberia to Kamchatka, N Japan & NE China. Winters S China, Taiwan & S Japan through SE Asia to N peninsular Thailand. Distinctive race *rufilatus* of Himalayas & W China, sometimes treated as distinct species, descends to lower elevations during winter.)

Common Stonechat *Saxicola torquatus*
Eastern race *S. t. maurus*, 'Siberian Stonechat' (1, 322, 2)

Northumberland Newbiggin-by-the-Sea, first-winter, 29th September (S. J. McElwee, J. G. Steele).
Yorkshire Spurn, 2nd–6th October, photo (A. M. Hanby *et al.*).
2006 Cornwall Bray's Cott, Goonhilly Down, 12th–26th November, photo (S. F. Elton, S. Rogers *et al.*).

(Breeds widely across N Asia from N Urals S to N Caspian Sea, Mongolia & N China, E to Kolyma basin, Okhotsk coast & N Japan. Winters from N Indian subcontinent to S China & SE Asia. Other races occur S Asia & Africa.)

Desert Wheatear *Oenanthe deserti* (9, 89, 6)

Cheshire & Wirral Crewe, male, 12th–14th December, photo (P. Farrington, A. H. Pulsford).
Cornwall Land's End, female, 17th October (R. Andrews, K. Dalziel, J. Hawkey).
Denbighshire Towyn, male, 20th November, photo (M. Hughes, S. Morris).
Greater Manchester Irlam Moss, first-winter male, 8th–9th March, photo (J. Hamer, D. Steel *et al.*) (*Brit. Birds* 100: plate 121).
Norfolk Horsey, first-winter male, 24th November to 10th December, photo (per G. E. Dunmore) (*Brit. Birds* 101: plate 43).
Yorkshire Cromer Point, Burniston, male, 26th November to 2nd January 2008, photo (N. W. Addey, M. Chamberlain, K. Walker *et al.*) (*Brit. Birds* 101: plates 63 & 283).

Iain Leach

283. Male Desert Wheatear *Oenanthe deserti*, Cromer Point, Burniston, Yorkshire, November 2007.

Over 100 Desert Wheatears have now been recorded in Britain since the first, a male, shot in Clackmannanshire on 26th November 1880. The late-autumn to early winter period has since proved to be THE time to expect this species. There have been fewer than ten spring records and the first-winter male in Manchester in early March recalls the very popular first-summer male in April 1989 at Barn Elms, Greater London, only 10 km from the centre of the capital. Both of these spring males showed weak breast colour and quite a strong pinkish-buff or yellow-buff tone to the upperparts, inviting speculation that they may be of the North African form *homochroa* rather than from the eastern part of the species' range, where most of our late-autumn records are assumed to come from. A number of the very early British records, which were shot, were specifically assigned to race, though the reliability of these attributions perhaps needs to be confirmed for the modern era.

(Breeds widely but discontinuously across arid and desert regions of N Africa from Morocco to Middle East, N to S Caucasus, & across C Asia from C Iran & N Pakistan to Mongolia & N China. Some N African birds resident, but many winter in Sahara & Sahel region of N Africa from Mauritania E to Ethiopia & Somalia. Asian breeders winter Arabian Peninsula to NW India.)

Blue Rock Thrush *Monticola solitarius* (0, 5, 1)

Radnorshire Elan Valley, male, 11th April, photo (A. & S. Bridgman, P. Jennings, R. Spencer).

An exciting and most unexpected find for rarity-starved Radnorshire, and a salutary lesson in what surely goes missing within the inland counties and more remote areas of Britain. Previous records have all been in the western parts of Britain: Argyll, Cornwall (two), Gwynedd and the Isles of Scilly. It is interesting to speculate on the likely origins of these birds. There are five races of Blue Rock Thrush, including the largely resident or altitudinal migrant *M. s. solitarius* of Mediterranean Europe, North Africa and the coastal Levant, and the migratory *M. s. longirostris* of eastern Turkey to Iran, Turkmenistan, Tajikistan, Afghanistan and northern Pakistan (Clement & Hathway 2000). The first record, a male at Skerryvore Lighthouse, Argyll, died and the frozen corpse was examined by BOURC. Although they were reluctant to assign it conclusively to one particular race, biometrics fitted best with the slightly smaller *longirostris* (*Brit. Birds* 88: 130–132). Further records have not been examined in the hand, and attributing individuals in the field to any particular race is unwise owing to variation in plumage, but a Central Asian origin is perhaps as likely as a southern European one. It

certainly gives hope to east-coast birders that the next may well turn up there rather than in the south-west (as does the first for The Netherlands, in Zeeland in September 2003; *Dutch Birding* 26: 374).

(Resident or dispersive throughout Mediterranean basin from NW Africa & Iberian Peninsula, to N Italy & E to Greece & Turkey. Other races extend through mountains of C & SW Asia to Himalayas, E China, Taiwan & Japan. Winters within or to S of breeding range.)

White's Thrush *Zoothera dauma* (25, 36, 3)

Hugh Harrop

284. White's Thrush *Zoothera dauma*, Sumburgh, Shetland, October 2007.

Fair Isle Kenaby, first-winter, 2nd October, found dead, photo (S. J. Davis, D. N. Shaw *et al.*).

Shetland Sumburgh, Mainland, first-winter, 13th October, photo (M. D. Warren *et al.*) (*Brit. Birds* 101: plate 44, 284).

Yorkshire Thorngumbald, Hull, 21st October, found dead, photo (G. E. Dobbs, P. Radcliffe *et al.*).

(Palearctic race *Z. d. aurea* widespread in C & S Siberia from Yenisey River to Ussuriland, S to N Mongolia, extreme NE China, Korean Peninsula & Japan. Small population extends W to foothills of European Urals. Winters widely across S China, Taiwan & S Japan to Indochina & C Thailand. Nominate race resident or altitudinal migrant in Himalayas, SW China & Taiwan.)

Siberian Thrush *Zoothera sibirica* (0, 6, 1)

Shetland Hametoun, Foula, first-winter male, 28th September, photo (P. R. Gordon *et al.*) (*Brit. Birds* 100: plate 326; plate 285).

This is the first Shetland record of this stunning *Zoothera* and adds to the geographic spread of records, which now extends the length and breadth of Britain. It is the seventh British record, following birds on the Isle of May on 1st–4th October 1954; at Great Yarmouth cemetery, Norfolk, on 25th December 1977 (some Christmas present that!); on South Ronaldsay, Orkney, on 13th November 1984; on North Ronaldsay, Orkney, on 1st–8th October 1992; at Burnham Overy, Norfolk, for the afternoon of 18th September 1994; and on Gugh, Isles of Scilly, from 5th to 8th October 1999 (together

Pete Gordon

285. First-winter male Siberian Thrush *Zoothera sibirica*, Hametoun, Foula, Shetland, September 2007.

with a White's Thrush *Z. dauma* – a unique Western Palearctic *Zoothera* double act). Looking to our more immediate neighbours, there are two Irish records, from Cape Clear (Co. Cork) and Loop Head (Co. Clare), two nineteenth-century records from The Netherlands and three records from Belgium, the last being in 1912. However, with other European records coming from Norway, Sweden, Germany, Poland, France, Switzerland, Italy, Hungary and Malta, it can only be a matter of time before one arrives on the mainland and stays around long enough for all to see. Even in places where the species can be expected (e.g. at Beidaihe, in eastern China), birds can be surprisingly elusive, uttering a Song Thrush *Turdus philomelos*-like 'sip' when flushed. But when a male sits out in full view, there can be few finer sights in birding. For those who found the Foula bird this was surely the stuff of dreams, and with a handful of Olive-backed Pipits *Anthus hodgsoni*, Pechora Pipit *A. gustavi*, Lanceolated Warbler *Locustella lanceolata* and a stunning male Siberian Rubythroat *Luscinia calliope* on the same island within the space of just one week, it must at times have felt more like eastern China than the north of Scotland. Just rewards for persistence.

(Breeds C & E Siberia from Yenisey & Lena Rivers, S to NE Mongolia, & E to NE China, Amurland, Sakhalin, & N Japan. Winters C Burma, Indochina & Thailand S to Singapore, Sumatra & Java.)

Swainson's Thrush *Catharus ustulatus* (0, 24, 1)

Shetland Houbie, Fetlar, 28th September to 4th October, photo (I. Robinson, B. H. Thomason, M. D. Warren *et al.*) (*Brit. Birds* 100: plate 328; plate 286).

(Breeds across S Alaska & Canada to S Labrador & Newfoundland, generally to S of range of Grey-cheeked Thrush *C. minimus*, S to N California, New Mexico, Great Lakes & West Virginia. Migrates across E USA to winter from Mexico S to NW Argentina.)

Hugh Harrop

286. Swainson's Thrush *Catharus ustulatus*, Houbie, Fetlar, Shetland, September 2007.

Grey-cheeked Thrush *Catharus minimus* (0, 46, 2)

Fair Isle Hill Dyke, first-winter, 30th September, photo (D. N. Shaw *et al.*) (*Brit. Birds* 100: plate 327).
Isles of Scilly Porth Loo, St Mary's, 12th–22nd October (J. A. Lidster *et al.*).

(Breeds extreme NE Siberia E throughout Alaska & N Canada to Labrador & Newfoundland. Migrates across E USA to winter in N South America.)

Dark-throated Thrush *Turdus ruficollis* (3, 59, 4)

Clyde Islands Rothesay, Isle of Bute, first-winter male *T. r. atrogularis*, 18th January to 26th March, photo (R. W. Forrester, I. McMillan *et al.*) (*Brit. Birds* 100: plate 82).
Fair Isle Steensie Geo, first-winter female *T. r. atrogularis*, 23rd April, photo (M. T. Breaks *et al.*) (*Brit. Birds* 100: plate 159).
Shropshire Walcot Mill, first-winter female *T. r. atrogularis*, 8th April (G. Holmes, A. Latham *et al.*).
Yorkshire Buckton, first-winter female *T. r. atrogularis*, 25th–27th March, photo (M. Thomas, D. Waudby *et al.*).

(Western, black-throated *T. r. atrogularis* breeds C & N Urals, E across SW Siberia & E Kazakhstan, to NW China, winters Iraq to N India, E through Himalayan foothills to Bhutan. Nominate red-throated race breeds to E, in C Siberia & N Mongolia, wintering in E Himalayas & S fringe of Tibetan Plateau from Nepal to SW China, & N to NE China.)

Iain Leach

287. First-winter American Robin *Turdus migratorius*, Bingley, Yorkshire, February 2007.

American Robin *Turdus migratorius* (0, 23, 1)

Yorkshire Bingley, first-winter, 5th January to 13th February, photo (J. Crawshaw, M. Doveston, A. Jowett *et al.*) (*Brit. Birds* 100: plate 83; plate 287).

(Breeds throughout North America from tree line of Alaska & N Canada, S to S Mexico. Winters from S Canada to S USA & C America, S to Guatemala.)

Pallas's Grasshopper Warbler *Locustella certhiola* (1, 34, 2)

Fair Isle Gilsetter, first-winter, 28th September, trapped, photo (W. T. S. Miles, R. J. Nason, L. C. Shaw *et al.*).

Shetland Out Skerries, 2nd October, photo (M. J. McKee, T. Warrick).

(Breeds across Siberia from Irtysh River in W Siberia, N to 64°N, & E to Yakutia & Sea of Okhotsk, & to the south from SW Siberia & NE Kazakhstan through Mongolia to Ussuriland & N & NE China. Winters from Sri Lanka & NE India to S China, & S throughout SE Asia.)

Lanceolated Warbler *Locustella lanceolata* (7, 103, 6)

Fair Isle Skadan, 27th–28th September, photo (M. Culshaw, P. A. Harris, P. V. Harvey *et al.*). Plantation, first-winter, 27th September, trapped, photo (P. A. Harris, D. N. Shaw *et al.*). Pund/Upper Stoneybrek, 29th September to 3rd October, photo (M. T. Breaks *et al.*) (*Brit. Birds* 100: plate 329; plate 288). Gilsetter, first-winter, 2nd October, trapped, photo (P. A. A. Baxter *et al.*). Upper Leogh, 2nd–3rd October, photo (G. Bruneau, P. A. Crochet, S. J. Minton *et al.*).

Shetland Foula, 7th–9th October, photo (K. B. Shepherd, P. J. Wright *et al.*).

(Singing males regular in eastern Finland. To E, discontinuously from C Urals E across much of Siberia to Kamchatka, Kuril Islands, Hokkaido & NE China. Winters in Indian subcontinent, from Nepal E through NE India into SE Asia & Philippines.)

Rebecca Nason

288. Lanceolated Warbler *Locustella lanceolata*, Upper Stoneybrek, Fair Isle, September 2007.

River Warbler *Locustella fluviatilis* (0, 32, 1)

Fair Isle Observatory, 11th June, trapped, photo (M. T. Breaks *et al.*) (*Brit. Birds* 100: plate 223).

(Breeds C & E Europe from Germany to C Finland, & E through C Russia to W Siberia. Southern limit extends to Croatia & Ukraine. Migrates through Middle East & NE Africa to winter in E Africa.)

Savi's Warbler *Locustella luscinioides* (many, c. 636, 2)

Kent Oare Marshes, male in song, 18th–20th May (G. J. A. Burton, M. Wright *et al.*).
Norfolk Hickling Broad, male in song, 14th–27th May (A. Blackman, P. J. Heath, A. Musgrove *et al.*).

(Breeds W Europe, from Iberia to The Netherlands; range contracting to SE but expanding to NE, into Baltic countries. To E, occurs through temperate Russia S through Ukraine to Black Sea coasts, & E across C Asia to NW China & W Mongolia. European birds winter in W Africa from Senegal to N Nigeria; Asian birds winter in NE Africa.)

Paddyfield Warbler *Acrocephalus agricola* (1, 63, 4)

Fair Isle Gully, 9th June, trapped, photo (P. A. A. Baxter, M. Hughes, D. N. Shaw *et al.*).
Kent Bockhill, St Margaret's at Cliffe, adult, 28th–29th September, photo (J. M. Warne *et al.*) (plate 289).
Shetland Quendale, Mainland, 9th–14th October, photo (R. M. Fray, A. J. Mackay, M. N. Reeder *et al.*).

Lee Fuller

289. Adult Paddyfield Warbler *Acrocephalus agricola*, Bockhill, St Margaret's at Cliffe, Kent, September 2007.

Sussex Pannel Valley, Icklesham, first-winter, 7th October, trapped, photo (P. E. Jones).

(In Europe, restricted to Black Sea coasts from N Bulgaria & Danube delta E to Ukraine. To E, breeds widely across steppes of S Russia & SW Siberia, Kazakhstan, NW China & W Mongolia, S to Uzbekistan & N Pakistan. Winters throughout Indian subcontinent N of Sri Lanka.)

Blyth's Reed Warbler *Acrocephalus dumetorum* (9, 67, 13)

Durham Whitburn Coastal Park, 2nd–4th October, photo (J. P. Cook *et al.*).
Fair Isle Barkland, first-winter, 30th September, photo (P. A. A. Baxter *et al.*).
Isle of May 5th October, trapped, photo (A. R. Mainwood, J. Osborne).
Norfolk Blakeney Point, 8th June, photo (J. R. McCallum, P. Nichols, A. Stoddart *et al.*).
Northumberland Woodhorn, first-winter, 29th September, photo (T. R. Cleeves, S. J. McElwee, J. G. Steele *et al.*) (*Brit. Birds* 100: plate 330). Holy Island, 3rd–4th October (M. J. Carr, P. Howard *et al.*).
Shetland Skaw, Unst, 31st May, photo (A. I. & S. J. McElwee *et al.*) (*Brit. Birds* 100: plate 191; plate 290), presumed same Burrafirth, Unst, 1st June, photo (R. M. Tallack *et al.*). Skaw, Whalsay, adult, 3rd–8th June, trapped (J. Dunn, J. L. Irvine, B. Marshall *et al.*). Symbister, Whalsay, first-winter, 1st–5th October, photo (A. Seth, P. Stronach *et al.*). Helendale, Mainland, 12th–13th October, photo (J. J. Gilroy, A. Lees, S. Mitchell *et al.*). Norwick, Unst, first-winter, 13th–14th October, photo (I. Mcdonald, J. J. Sweeney *et al.*).
Yorkshire Spurn and Kilnsea, first-winter, 6th–10th October, trapped, photo (L. J. Degnan, P. R. French, G. C. Taylor *et al.*). Flamborough Head, 6th–10th October, photo (R. Baines, P. Cunningham, N. Parker *et al.*).

This species is fast becoming a regular fixture in the BBRC report, although the 13 in 2007 is exceptional. This trend of increasing sightings means that birders now have the species on their radar during autumn and are on the lookout for it, though very seldom will they come across one. With the Northern Isles traditionally accounting for the majority of records, this year's crop, including six along the northeast coast, some staying for several days, was much appreciated by mainland birders.

Blyth's Reed Warbler was formerly an extreme rarity. The first record, in 1910, was followed by a remarkable seven in 1912 and one in 1928. Subsequently, there were no further occurrences for over 50 years and it was not until 1979 that BBRC was called upon to assess this species for the first time. Fig. 7 highlights the astonishing rise in numbers in the last ten years.

It is likely that a combination of factors is responsible for this increase. Although westward range expansion into northeast Europe is important, it is likely that the clarification of identification features and increasing observer awareness play just as significant a role. This is a common summer visitor to European parts of Russia which has spread north and west in the last 50 years to colonise southern Finland and the Baltic countries, with first proven breeding in Estonia in 1938, in Latvia in 1944 and in Finland in 1947. Blyth's Reed Warbler is now fairly common as a breeding species in these areas, numbers being stable or perhaps increasing slightly, with population estimates of the order of 5,000–8,000 pairs in Finland, 3,000–6,000 pairs in Latvia and 2,000–3,000 pairs in Estonia (Hagemeijer

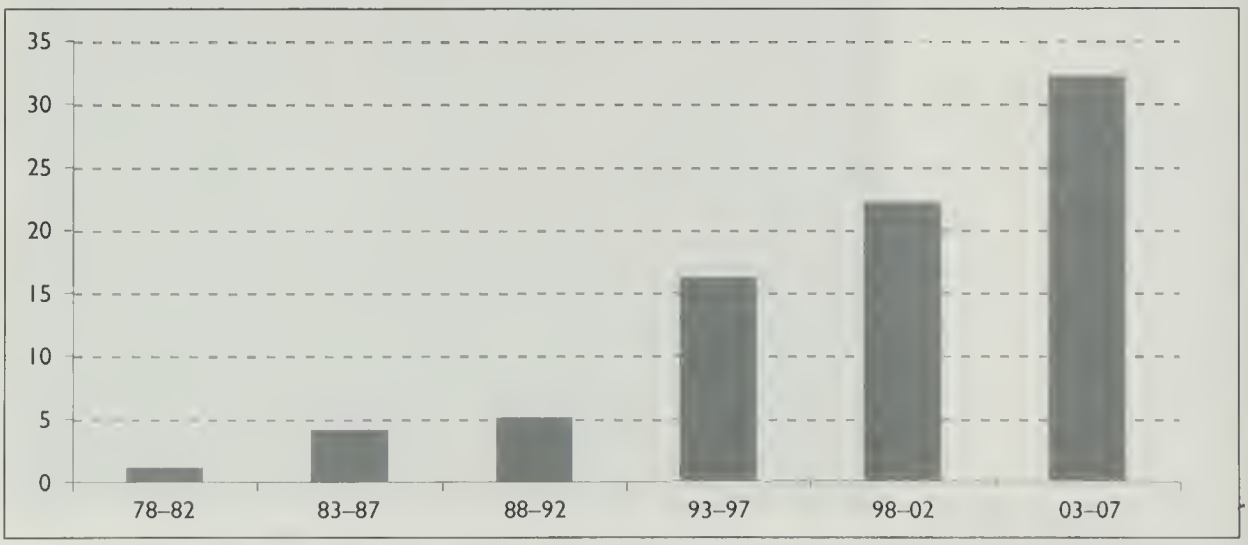


Fig. 7. Accepted records of Blyth's Reed Warbler *Acrocephalus dumetorum* in Britain since 1978.

& Blair 1997). This east European population has no doubt led to the occurrence of occasional spring overshoots in Britain. After the first spring record, at Spurn in 1984, and a further spring bird in 1989, a total of six were found during the 1990s and a further ten since 2000.

Stef McElwee

290. Blyth's Reed Warbler *Acrocephalus dumetorum*, Skaw, Unst, Shetland, May 2007.

The European range is deserted by late August and birds are very rare in early September throughout Finland, and the Baltic countries. Autumn birds must therefore surely come from larger core populations further east, brought here by and associated with conducive weather conditions.

The identification of this plain and rather nondescript bird remains a challenge, most easily accomplished in spring when birds are in song. With increasing familiarity, however, observers are now also confidently identifying autumn birds in the field, and recent BBRC decisions have reflected this increasing knowledge. A cautious approach is still prudent, however, and a combination of careful observation and good views remains important as brief and incomplete views can give a misleading impression. The main identification features are well covered in recent books, especially Beaman & Madge (1999), and papers (e.g. Golley & Millington 1996). But knowing what to look for is usually only half the battle. It is actually seeing the features, and then waiting to recheck them, that is often the biggest problem with this secretive species. That all is not likely to go smoothly is illustrated by occasional problem birds which may defy common agreement (e.g. Bradshaw 2001); in fact, two steps forward and one step back is typical of the way advances are made with difficult identification issues. It goes without saying that observers should strive to note as many of the main features as possible, including call, the prominent fore-supercilium, the often dull tones to the upperparts (lacking contrasting rufous hues in the rump), short primary projection, and emargination on the fourth and sometimes the fifth primaries. At least the last of these is more easily determined from high-quality photos or on trapped birds in the hand.

(Breeds widely throughout S Finland, Baltic countries & European Russia to 64°N. To E, extends across C Siberia to Lake Baikal & upper Lena River, S through W Mongolia & NW China, Kazakhstan & Tajikistan to N Pakistan. Winters throughout Indian subcontinent S to Sri Lanka & E into NW Burma.)

Great Reed Warbler *Acrocephalus arundinaceus* (8, 216, 3)

Kent Lydd, male in song, 10th–20th June, photo (J. E. Tilbrook, B. E. Wright *et al.*).
Shetland Virkie, Mainland, male in song, 14th–15th June, photo (P. V. Harvey *et al.*).
Staffordshire Barton GP, male, 20th May (I. Moore, S. A. Richards *et al.*).
2006 Kent Sandwich Bay, male in song, 15th June, photo (per www.birdguides.com).
2005 Surrey Frensham Great Pond, male in song, 30th April, sound recording (S. P. Peters).

(Breeds discontinuously throughout much of continental Europe from Iberia to Greece, N to S Sweden & Finland, & E across S Russia, Turkey & Caucasus to W Siberia. C Asian race *zarudnyi* breeds from Volga to NW China & W Mongolia. Winters throughout C & S Africa.)

Booted Warbler *Hippolais caligata* (1, 107, 3)

Norfolk Blakeney Point, male, 2nd June, sound recording, photo (J. J. Gilroy *et al.*). Scolt Head, 24th August (N. M. Lawton, M. Rooney, N. Williams).

Outer Hebrides Castlebay, Barra, 11th September, photo (T. P. Drew, M. A. Wilkinson).

2005 Caernarfonshire Bardsey Island, 30th August, photo (S. D. Stansfield *et al.*).

(Range expanding W, now breeding in S Finland. To E, breeds C Russia & W Siberia to Yenisey valley, C & N Kazakhstan to W Mongolia & W Xinjiang province, China. Winters N & peninsular India, S to Karnataka.)

Booted/Sykes's Warbler *Hippolais caligata/rama* (0, 3, 0)

2006 Highland Tarbat Ness, 19th August (R. L. Swann).

Subalpine Warbler *Sylvia cantillans* Southeast European race *S. c. albistriata*, 'Eastern Subalpine Warbler' (0, 17, 4)

Caernarfonshire Bardsey Island, first-summer male, 4th May, trapped, photo (M. Archer, R. J. Else, S. D. Stansfield). Bardsey Island, first-summer male, 24th–25th May, trapped, photo (R. J. Else, S. D. Stansfield *et al.*).

Cornwall Penlee, nr Rame Head, male, 16th April, photo (C. Buckland, K. Pellow *et al.*).

Orkney North Ronaldsay, first-summer male, 30th April to 11th May, trapped, photo (P. A. Brown *et al.*).

(Breeds SE Europe from Slovenia & Croatia S to Greece, Aegean Islands, Crete & W Turkey. Migrates through Middle East to winter along S edge of Sahara S to Sudan.)

Sardinian Warbler *Sylvia melanocephala* (0, 73, 1)

Shetland Spiggie, Mainland, female, 26th–30th September, photo (N. Alford, N. Stocks *et al.*).

(Largely resident or dispersive throughout Mediterranean basin, from NW Africa & Iberia to S France, N Italy & E to W Turkey & Israel. Some winter in N Africa from Sahara S to Mauritania & S Libya.)

Arctic Warbler *Phylloscopus borealis* (11, 270, 3)

Shetland Out Skerries, 23rd–27th September, photo (P. Bridges, D. Waudby *et al.*). Symbister, Whalsay, 9th October, photo (J. L. Irvine, B. Marshall *et al.*). Baltasound, Unst, first-winter, 10th November, photo (M. G. Pennington, R. M. Tallack, B. H. Thomason *et al.*).

2006 Isles of Scilly Telegraph, St Mary's, 13th October (P. Kinsella, R. A. Lambert *et al.*).

(Breeds locally in N Scandinavia, becoming widespread across N Russia E to extreme NE Siberia, S to Baikal region, Ussuriland & NE China. Other races breed in Alaska, & Kamchatka through Kuril Islands to N Japan. Migrant through E China to winter widely in SE Asia to Java, Philippines & Sulawesi.)

Hume's Warbler *Phylloscopus humei* (0, 90, 3)

Caernarfonshire Penrhyn Bay, 18th November, photo (M. Hughes *et al.*).

Norfolk Holkham Meals, 6th–11th October, photo (A. I. Bloomfield, R. Millington, A. J. L. Smith *et al.*).

Sussex Belle Tout Wood, Beachy Head, 30th December to 14th January 2008, sound recording, photo (J. F. Cooper, R. D. M. Edgar, S. T. Underdown *et al.*).

(Breeds in Altai Mountains to W Mongolia, S through Tien Shan & Pamirs to NE Afghanistan, NW Himalayas & mountains in NW China. Winters S Afghanistan to N India, E to W Bengal. Another race breeds in C China from Hebei to S Yunnan, W to lower slopes of Tibetan Plateau.)

Western Bonelli's Warbler *Phylloscopus bonelli* (1, 83, 0)

2006 Argyll Balephuil, Tiree, 8th September, photo (J. Bowler).

2000 Isles of Scilly Vine Farm, Bryher, 2nd May (J. K. Higginson).

(Breeding range centred on SW Europe from Iberia to N France, S Germany, Italy, Austria, & locally in mountains of N Africa. Winters along S edge of Sahara, from Senegal & S Mauritania to N Cameroon.)

Eastern/Western Bonelli's Warbler *Phylloscopus orientalis/bonelli* (0, 75, 0)

2006 Shetland Baltasound, Unst, first-winter, 13th–18th October, photo (D. M. Foster, M. G. Pennington *et al.*).

Iberian Chiffchaff *Phylloscopus ibericus* (0, 13, 2)

Devon Beer Head, male in song, 28th April, sound recording (G. Haig, S. Waite *et al.*).
Norfolk Colney Lane, Norwich, male in song, 21st April to 7th June, sound recording, photo (D. Andrews, O. J. Richings, W. Soar *et al.*) (*Brit. Birds* 100: plate 160; plate 291).
2001 Kent Dungeness, male in song, 14th–17th April, sound recording (*Brit. Birds* 97: 614); note revised year.

Kevin Durose

291. Male Iberian Chiffchaff *Phylloscopus ibericus*, Colney Lane, Norwich, Norfolk, April 2007.

(Breeds locally in French Pyrenees & S throughout W Iberia. N African range restricted to NW Morocco & N Algeria to NW Tunisia. Wintering range poorly known.)

Penduline Tit *Remiz pendulinus* (0, 203, 7)

Greater London/Essex Rainham Marshes, two, 22nd December 2006 to 26th March, photo (*Brit. Birds* 100: 744).
Isles of Scilly Lower Moors, St Mary's, 12th October (J. A. Lidster *et al.*); presumed same 21st October (R. A. Schofield *et al.*).
Kent Swanscombe, 30th January (M. Sutherland).
Suffolk Minsmere RSPB reserve, 4th–6th November (M. Deans, D. Fairhurst *et al.*). Dingle Marshes, four, male, female & two juveniles, 12th–25th November, photo (P. D. Green, J. A. Rowlands *et al.*).

(Widely but locally distributed throughout C & E Europe, from Denmark, Germany & Italy NE to C Sweden & Estonia. Absent from much of NW Europe but locally numerous in Spain. To E, breeds from S Russia to Volga River. Largely resident or dispersive in Europe. Other races, sometimes regarded as separate species, occur in C Asia & from S Siberia to NE China, & winter NW Indian subcontinent, S China & S Japan.)

Isabelline Shrike *Lanius isabellinus* (0, 76, 1)

Yorkshire Buckton, first-winter, 29th September to 5th October, trapped, photo (R. Hearn, M. Thomas *et al.*) (*Brit. Birds* 100: plate 332; plate 292).
The bird at Buckton proved to be very popular, being easily combined with a trip to see the Brown Flycatcher *Muscicapa dauurica* at nearby Flamborough (as stated in the introduction, the latter record is currently being assessed by BOURC). The shrike also has great merit as one of the most fully documented records of this species in Britain to date.

A more detailed comment on BBRC's ongoing investigation into the identification of the different forms of Isabelline Shrike can be found in the 2005 report (*Brit. Birds* 100: 92–94). As stated there, first-winters generally seem to fall into two groups (*phoenicuroides* and *isabellinus*), and the Yorkshire bird had the following distinctive characters: a whitish supercilium, flaring behind the eye; fine dark barring on the forehead and flanks; cold, earthy brown-toned upperparts contrasting with almost white underparts; dark-centred tertials and wing-coverts; dark bars on the uppertail-coverts; and a dark ear-covert patch. Collectively, these all point to a seemingly clear example of what is assumed

Mark Thomas

292. First-winter Isabelline Shrike *Lanius isabellinus*, Buckton, Yorkshire, October 2007.

to be a young *L. i. phoenicuroides* ('Turkestan Shrike'). Its rather greyish cast and lack of obvious rufous above pointed towards it belonging with greyer birds included within '*karelini*': a poorly understood and highly variable form closely allied to *phoenicuroides* but possibly just a distinctive colour morph of that taxon. However, this last point nicely illustrates the problems facing the Committee: in some images there appears to be a strong rufous wash to the crown and the mantle is less grey-brown; on others – notably those of the bird in the hand – it appears much greyer and more uniform above (see plate 292). Such variance in images can sometimes make a true and critical assessment of colour and tone very difficult.

Like the Dutch and, more recently, the French, we should perhaps review the records of young birds in autumn; however, although the features seem clear-cut in theory, there are many birds that will not be easily assigned to one of the two groups. BBRC is looking at a more satisfactory way of categorising more obvious 'types' of first-winter as well as the less clear individuals.

(Breeds widely across arid regions of C Asia from Caspian Sea and W Iran E to Tajikistan, Afghanistan, N Pakistan, S Mongolia & NW China, with isolated subspecies in Zaidam depression, N Tibetan Plateau. Winters NE & E Africa, S Arabian Peninsula, S Iran & NW Indian subcontinent.)

Lesser Grey Shrike *Lanius minor* (21, 153, 2)

Fair Isle Barkland, female, 27th May to 18th August, photo (K. Bailey, P. A. A. Baxter *et al.*) (*Brit. Birds* 100: plate 224).

Norfolk Holkham, first-winter, 1st–8th October, photo (E. Hunter, D. & J. Moreton *et al.*).

(European range centred E of Balkans to E Poland, with small numbers W through N Mediterranean to S France & NE Spain. To E, breeds locally from Black Sea coasts, across S Russia & Kazakhstan to NW China & SW Siberia. Migrates through E Africa to winter in S Africa, from Namibia to S Mozambique & N South Africa.)

Blackpoll Warbler *Dendroica striata* (0, 36, 2)

Isles of Scilly Garrison, St Mary's, first-winter, 9th–20th October, photo (S. Richards *et al.*) (plate 293). Higher Moors, St Mary's, first-winter, 10th–23rd October, photo (per www.birdguides.com) (*Brit. Birds* 101: plate 45).

Two typical first-autumn birds on Scilly. These islands are now responsible for over half of the 38 British records since the first, in 1968. There has only ever been one in spring, at Seaforth, Lancashire

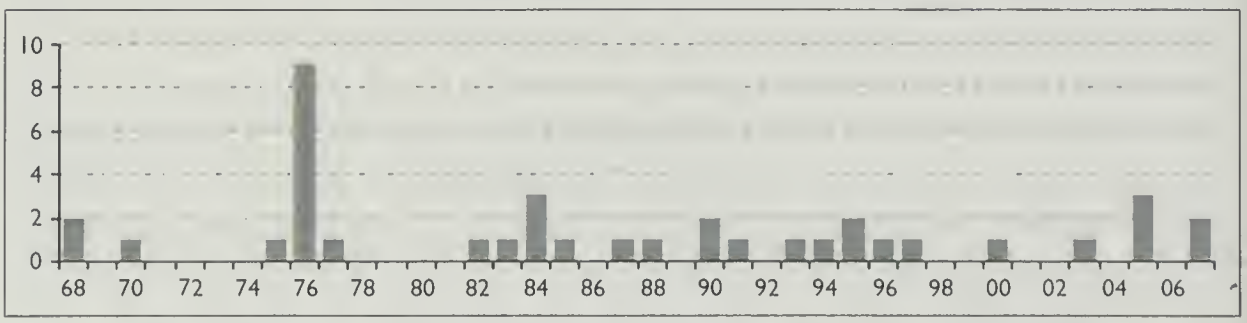


Fig. 8. Accepted records of Blackpoll Warbler *Dendroica striata* in Britain, 1968–2007.

Steve Young/Birdwatch

293. First-winter Blackpoll Warbler *Dendroica striata*, Garrison, St Mary's, Isles of Scilly, October 2007.

& North Merseyside, in June 2000; a location which clearly suggests a ship-assisted crossing.

Blackpoll Warbler remains the most frequent Nearctic wood-warbler in Britain by some distance, with more than double the number of records of the next most frequent, Yellow-rumped Warbler *D. coronata*, with 17. If the unprecedented nine in 1976 is discounted, the occurrence of the species has been remarkably consistent since 1968, with nothing to suggest any effect of the increasingly frequent Caribbean hurricanes of recent years (fig. 8).

The relative frequency of Blackpoll on this side of the Atlantic has traditionally been linked to a late-autumn transoceanic migration strategy making it vulnerable to displacement by westerly storms. Interestingly, Rose-breasted Grosbeak *Pheucticus ludovicianus*, which has a similar transoceanic migration route, is also among the more frequent Nearctic passerines reaching Britain. It is believed that, in mid to late autumn, Blackpoll Warblers from across their North American breeding range congregate on the eastern seaboard from Newfoundland to North Carolina before embarking on a non-stop flight to South America across the western Atlantic and Gulf of Mexico (Nisbet *et al.* 1995). With no opportunity to make landfall during bad weather, these migrants are highly susceptible to being displaced eastwards by late-autumn weather systems. Butler (2000) demonstrated a correlation between autumn storms over the western Atlantic and lower numbers of breeding Blackpolls the following year. It is sobering to realise that conditions bringing this species to Britain cause measurable declines in the breeding population – and for each one reaching Britain thousands must perish at sea.

(Breeds widely across North America from W Alaska E throughout Canada to Newfoundland, S to Maine. Migrates through E USA to winter in South America from Panama to Chile & E Argentina.)

White-throated Sparrow *Zonotrichia albicollis* (1, 29, 2)

Hampshire Southampton, 12th–13th May, photo (per www.birdguides.com).
Northumberland Inner Farne, Farne Islands, 11th June, trapped, photo (R. Mason, D. Steele *et al.*).

With two records in 2007 there have now been 32 accepted records of this New World sparrow since the first, in 1909. Numbers reported in Britain are clearly increasing, with the present decade set to show more than twice the number of records of any previous decade.

The majority (78%) have occurred in spring, with discovery dates from 5th May to 17th June. Two-thirds of the spring records have been in Scotland, including 11 in Shetland alone at this season. The five autumn arrivals show a more even geographic spread, while the remaining two records both

concern wintering individuals at inland localities: in Norfolk/Suffolk from 16th November 1968 to 1st January 1969 (when found dead) and in Lincolnshire from 5th December 1992 to 28th March 1993.

There is widespread acceptance that at least a proportion of White-throated Sparrows arriving in Britain are ship-assisted (Elkins 2008). Durand (1972) and Cook (1998) described how, on a transatlantic voyage, multiple White-throated Sparrows joined and seemingly departed a ship a significant distance from land. It can be speculated that such a journey is undertaken by many of the Nearctic landbirds, particularly the granivores, that reach Europe. Nonetheless, only a small number of British White-throated Sparrows have been found close to international seaports, such as the bird in May 2007 reported here. The overwhelming majority are actually found at migration hotspots, presumably having resumed their migration after making landfall here.

(Breeds North America from SE Yukon E to Newfoundland, S to Great Lakes & N USA to New Jersey. Winters SE USA, from Massachusetts S to Florida, Texas & into N Mexico & California.)

Dark-eyed Junco *Junco hyemalis* (0, 24, 6)

Cornwall Illogan, 12th May, photo (G. Mills).
Highland Unapool, age uncertain, 23rd June, photo (H. M. & J. A. MacDonald).
Norfolk Langham, first-summer male, 14th July, photo (A. & D. Curtis *et al.*) (*Brit. Birds* 100: plate 247). Terrington St Clement, 14th–17th July, photo (S. Bowman, R. Marsh).
Orkney North Ronaldsay, adult male, 19th June (R. J. Simpson).
Outer Hebrides St Kilda, 30th May, male in song, photo (S. Dennis, W. T. S. Miles, S. Money *et al.*) (fig. 9).

A record year for this charming and easily identified American sparrow. Spring has always been the peak time for records of this species (as with other vagrant Nearctic seed-eaters; see Elkins 2008), but this year's influx extended from mid May to mid July. Dark-eyed Juncos are among the earliest spring migrants in Canada so perhaps only the two birds in May (both in the far west) were direct transatlantic arrivals. Those found in June and July are more likely to be birds which have moved on after an earlier, undiscovered, landfall. The June records are at coastal sites and suggest continued movement but the discovery of two in inland Norfolk within minutes of one another in July is one of the year's most remarkable coincidences. Their route to Norfolk is of course unknown, but neither showed any

Will Miles

Fig. 9. Dark-eyed Junco *Junco hyemalis*, St Kilda, Outer Hebrides, May 2007.

signs of having been in captivity and the 'unusual' summer dates surely just reflect the survival of birds which had already arrived in Britain earlier in the spring. Once here, gardens with feeders are perhaps as good a place for finding them as any other.

(Breeds throughout North America from tree line of N Alaska & Canada, S to S California, N Texas & N Georgia. British records are of forms previously recognised as Slate-coloured Junco, breeding throughout N & E of range, S to Georgia. Northern populations migratory, wintering to S of breeding range.)

Pine Bunting *Emberiza leucocephalos* (2, 45, 1)

Fair Isle Barkland, first-winter male, 25th October to 10th November, photo (M. T. Breaks *et al.*) (plate 294).

Are we missing a trick in finding Pine Buntings in Britain? This record, the ninth for Fair Isle and 48th for Britain, was, typically, a male and again showed a faint trace of yellow in the primary fringes and small underwing-coverts. The presence of limited yellow on males was discussed in detail in the 2003 BBRC report (*Brit. Birds* 97: 620–621), and is no longer considered a bar to acceptance.

Italy boasts regular wintering Pine Buntings, and there are smaller numbers in southern France. According to Occhiato (2003), Pine Buntings arrive in Italy from the second half of October, but chiefly in the first half of November. Maximum numbers occur from mid December to mid February. Birds leave the wintering grounds during the first week of March with fewer records into April. The occurrence patterns pretty much mirror those of Pine Bunting records in Britain, with one glaring exception: females! In Italy, 70% (of 110 individuals) were first-winter birds and there was an overall ratio of two females to every one male. In The Netherlands the ratio is approximately one female to every three males and many of these concern birds trapped at ringing stations (Arnoud van den Berg pers. comm.). Just across the North Sea in Britain, the ratio is approximately one female to every five males. It would thus seem a reasonable assumption that rarity hunters in Britain may be overlooking female Pine Buntings. Females (especially first-winters) can be dowdier buff- and brown-looking 'Yellowhammer types', not especially likely to catch the eye. Given the widespread inland wintering localities of many of our male Pine Buntings, the targeting of game-cover crops and winter Yellowhammer *E. citrinella* flocks may not be a bad pursuit. But remember to think female… you're not likely to miss the males!

Paul Baxter

294. First-winter male Pine Bunting *Emberiza leucocephalos*, Barkland, Fair Isle, October 2007.

(Breeds temperate Russia from W Urals to upper Kolyma River, S to S Siberia, SE Kazakhstan, Mongolia, lower Amur River & Sakhalin. Isolated population breeds Qinghai & Gansu provinces, C China. Small isolated wintering populations regular W Italy & C Israel. Otherwise winters S of breeding range from Turkestan E through Himalayan foothills to C & E China, N of Yangtze.)

Chestnut-eared Bunting *Emberiza fucata* (0, 1, 0)

2004 Fair Isle Skadan, first-winter male, 15th–20th October, photo (P. A. Harris, H. E. Maggs, D. N. Shaw *et al.*) (*Brit. Birds* 100: 100; 101: 235–240); note revised observers.

(Nominate form breeds Baikal region of Siberia, E to NE Mongolia & Russian Maritime Region, NE China, Korean Peninsula & Japan. N populations migratory, wintering S Japan, Taiwan & S China, S to N Thailand. Other races largely sedentary or dispersive in W Himalayas to SE China.)

Black-headed Bunting *Emberiza melanocephala* (6, 176, 3)

Devon Pennsylvania, Exeter, male, 21st–22nd June, photo (G. D. Rendle).
Highland Canna, adult male, 8th July, photo (D. Aiton, H. Chisholm).
Isles of Scilly Wingletang, St Agnes, adult female, 5th June (F. D. G. Hicks, M. Hicks, D. Page).
2005 **North-east Scotland** Loch of Strathbeg RSPB reserve, adult male, 13th–18th October, photo (D. Funnell, S. Paterson *et al.*).

(Breeds from C Italy to Greece, Turkey, N Iraq & W Iran, N through Caucasus to Ukraine & S Russia. Winters in W & C India.)

Rose-breasted Grosbeak *Pheucticus ludovicianus* (0, 22, 1)

Isles of Scilly St Agnes, first-winter male, 23rd–29th October, photo (P. Read, W. B. Spurrell, J. Wise *et al.*) (*Brit. Birds* 101: plates 46, 295).

(Breeds C Canada to Nova Scotia & through mid-west & NE USA to Maryland. Migrates through E USA to winter from C Mexico through C America to N South America.)

Bryan Thomas

295. First-winter male Rose-breasted Grosbeak *Pheucticus ludovicianus*, St Agnes, Isles of Scilly, October 2007.

Baltimore Oriole *Icterus galbula* (1, 21, 1)

Caithness John O'Groats, male, 24th–27th May, photo (J. Logue, A. & Y. McLean) (*Brit. Birds* 100: plate 192; plate 296).

The appearance of a stunning male Baltimore Oriole on a bird feeder in Caithness was one of the major surprises of the spring. This is only the third spring record of this species (following a male on Bodmin Moor, Cornwall, in May 1968 and a male in Haverfordwest, Pembrokeshire, in May 1970) and, perhaps surprisingly, only the fourth for Scotland. The Caithness bird was in its third calendar-year or more, as males do not attain full plumage until their second post-breeding moult. Older females can approach males in colour but are more subdued; the head and mantle are not solidly black and the underparts and rump are a paler orange. As it was so far north, it is conceivable that the Caithness bird was a newly arrived spring overshoot; conversely, given its age, it may have arrived in a previous year and spent the intervening time unnoticed, migrating normally on the wrong side of the Atlantic. If so, and given that Baltimore Orioles can live for over 11 years, perhaps we may see it again, as this is another species (see Dark-eyed Junco, above) for which garden feeders are a good bet.

John Logue

296. Male Baltimore Oriole *Icterus galbula*, John O' Groats, Caithness, May 2007.

(Breeds S Canada from C Alberta E to C Nova Scotia, S throughout E USA from N Texas to W South Carolina. Migrates to winter from S Mexico to Colombia & Venezuela.)

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Appendix 1. Late records of former BBRC species, removed from the list prior to 2007

Brent Goose *Branta bernicla*

North American and East Siberian race *B. b. nigricans*, 'Black Brant'

2004 Hampshire Gosport, adult, 29th December to 17th February 2005, photo (T. Carpenter, J. Clark *et al.*).

(Expanding west in Arctic NE Siberia to Lena delta, where overlaps with nominate race. Majority breed in Arctic Alaska & E to Victoria Island, Canada. Migratory, wintering on Pacific coast of North America, S to Baja California. Formerly, large numbers wintered coastal N China, Korean Peninsula & Japan, but now rare.)

Green-winged Teal *Anas carolinensis*

1959 Norfolk Lower Bure Marshes, adult male, 15th June (H. Smith per P. Allard).

(Widespread breeder throughout N America from Alaska to Newfoundland, S to N USA. Winters British Columbia, Canada, & throughout USA and Mexico to southern C America and W Indies.)

Ferruginous Duck *Aythya nyroca*

2005 Perth & Kinross Vane Farm, Loch Leven, 6th–7th September (T. P. Drew, D. Jones, K. D. Shaw *et al.*).

(Main breeding range in temperate steppe-forest from Poland & Hungary E through Ukraine to Caspian Sea, but distribution patchy. Other populations in S Spain, Kazakhstan, W Mongolia & Tibetan Plateau. Migratory, most winter in E Mediterranean, Black & Caspian Seas, NE Africa & Indian subcontinent.)

Great White Egret *Ardea alba*

2002 Cheshire & Wirral Budworth Mere, 7th January to 23rd March, photo (*Brit. Birds* 100: 28); note revised year, not 2005 and presumed same as Great Budworth, 11th January 2002 (*Brit. Birds* 96: 551).

(Small but increasing breeding population in The Netherlands & France. Elsewhere in Europe, highly fragmented breeding range from E Austria to Ukraine but generally rare. W Pal. population migratory, most wintering N Africa & E Mediterranean, although recent trend to overwinter in C & NW Europe. Other populations breed across much of Africa, Asia, Australia & the Americas.)

Black Kite *Milvus migrans*

2005 Yorkshire Low Barden Resr, adult, 21st June (A. A. Gough); previously considered not proven (*Brit. Birds* 100: 102) but now accepted after additional information submitted.

(Breeds throughout continental Europe, most in Spain, France & Germany, with smaller populations elsewhere, except maritime NW Europe & Scandinavia. To E, breeds European Russia to W Kazakhstan. 'Black-eared Kite' *M. m. lineatus* breeds C Kazakhstan E to Japan. Nominate race winters Africa & NW Indian subcontinent. Other races migratory, dispersive or resident, in sub-Saharan Africa, Indian subcontinent, E & SE Asia & Australia.)

Red-footed Falcon *Falco vespertinus*

1990 Essex Barling, adult, 5th May; note revised ageing (*Brit. Birds* 86: 473).

1989 Essex Bradwell-on-Sea, adult male, 21st May (*Brit. Birds* 83: 458); note revised ageing; presumed same Old Hall Marshes, 1st June to 15th July (note revised dates), and Colne Point, 2nd June (previously reported as different bird with incorrect age/sex) (*Brit. Birds* 83: 458). Langenhoe, subadult male, 5th June; note revised ageing and that previously reported incorrectly as same as Bradwell (*Brit. Birds* 83: 458).

White-rumped Sandpiper *Calidris fuscicollis*

2005 Orkney North Ronaldsay, adult, 12th–21st September (P. Brown, P. Donnelly, R. J. Simpson *et al.*). North Ronaldsay, juvenile, 18th–20th September (P. Brown, A. E. Duncan, R. J. Simpson *et al.*). North Ronaldsay, adult, 19th–23rd September (P. Brown, A. E. Duncan, R. J. Simpson *et al.*). North Ronaldsay, seven, juveniles, 12th–25th October (J. Bird, P. Brown, P. Donnelly, D. Hatton *et al.*). Note revised observers and ageing for all of the above (*Brit. Birds* 100: 713).

(Breeds in N Alaska & Arctic Canada, from Mackenzie River E to S Baffin Island. Overflies W Atlantic to winter in S South America.)

Greenish Warbler *Phylloscopus trochiloides*

2004 Shetland Mousa, 10th June (S. E. Duffield, H. Moncrieff *et al.*).

(The European & W Siberian race *viridanus* expanded W during 20th century to E Poland, Baltic countries & S Finland, with sporadic breeding in Germany, Sweden & Norway. To E, breeds through Russia & W Siberia to Yenisey River, S through NW Mongolia to N Afghanistan & NW Himalayas. Winters throughout Indian subcontinent. Other races occur throughout Himalayas to SW China, wintering from Indian subcontinent to Indochina & N Thailand.)

Radde's Warbler *Phylloscopus schwarzi*

2005 Sussex Beachy Head, 7th October (M. & R. Charlwood).

(Breeds in S Siberia from Novosibirsk region E to Ussuriland & NE China. Migrates through E China to winter in N Burma, Indochina & C Thailand.)

Appendix 2. Category D species accepted (see *Ibis* 136: 253)

Ross's Goose *Anser rossii*

Cleveland Saltholme Pools, adult, 5th October, photo (M. A. Blick *et al.*).
Norfolk Holkham, adult, 29th September to 31st December (M. A. Ward).
2004 Perth & Kinross Vane Farm, Loch Leven, adult, 13th–20th April, photo (L. Mercer, J. S. Nadin, K. D. Shaw *et al.*) (*Brit. Birds* 98: 693); note revised observers.

(Breeds in scattered colonies on tundra of Canadian Arctic, from Perry River region of Northwest Territories to N Manitoba, including Southampton Island, E to N Ontario. Most migrate across C USA to wintering grounds in S USA, with increasing numbers regular on Atlantic seaboard, & N Mexico.)

Falcated Duck *Anas falcata*

2006 Devon Exe Estuary, 18th November to 11th January 2007, photo (*Brit. Birds* 100: 751, plate 363); note revised dates.
The Committee is undertaking further research on the age of this bird, as the critieria used to age it as an adult have been questioned.

(Breeds E Siberia from Yenisey River & Baikal region E to Sea of Okhotsk & S to NE China & Hokkaido, Japan. Winters from S Japan to SE China, locally W to Nepal.)

Marbled Duck *Marmaronetta angustirostris*

Gloucestershire Frampton-on-Severn, male, 9th April to 21st June, photo (R. G. Baatsen).
Suffolk Dingle Marshes, juvenile, 24th August (per D. F. Walsh); presumed same Lowestoft, 27th August to 8th October, photo (per D. F. Walsh); presumed same Minsmere RSPB reserve, 28th August (per D. F. Walsh).
2006 Dorset Stanpit Marsh, first-winter, 23rd September to 29th October, photo (D. Smith, D. Taylor).

(Breeds N Morocco & S Spain, & Turkey E to S Kazakhstan. Migratory and dispersive outside breeding season. Many Spanish breeders move NE in late summer to Ebro Delta, NE Spain. Some winter N Africa, with small numbers reaching Senegal, Mali & Chad. Asian population winters mostly Iran.)

White Pelican *Pelecanus onocrotalus*

2006 Various localities Two individuals, both adults. Bird 1 was seen initially in Kent, between 30th July and 4th September, moved north to Angus (where last seen on 15th September) via Essex and Yorkshire (per www.birdguides.com). Bird 2 was seen initially in The Netherlands on 7th–31st May, moving to Germany on 2nd–15th July before returning to The Netherlands from 20th July to 13th August. It arrived in Britain on 16th August, when it was tracked along the coast from north Norfolk to Lincolnshire. It was relocated in Lancashire the following day and remained there until 24th August before moving through Cleveland to Northumberland on 26th August, remaining in the last county until 12th September. It was at Findhorn Bay, Moray, on 17th–19th September (A. Lawrence, I. Phillips, R. Proctor *et al.*) then passed through Flintshire and Denbighshire on 22nd–23rd September, reaching Anglesey on 23rd where it remained until 6th October. On 7th October it flew over Conwy to Lancashire before continuing to Cumbria the following day and finally Northumberland,

where it was ultimately taken into care (per www.birdguides.com). CDNA accepted this individual as the ninth Dutch record (*Dutch Birding* 29: 350).

We received a formal submission only for Bird 2 and only from Moray. However, in future it would be useful to receive documented claims of this species in Britain to enable consideration of origins by BOURC, especially given the recent support for vagrancy within Europe provided by Jiguet *et al.* (2008).

(In Europe, breeding confined to Danube Delta in Romania & Ukraine, which holds c. 50% of entire Palearctic population. Small numbers breed Greece & Turkey, Volga Delta & throughout C Asia. N breeders migratory, European population wintering S to E Africa. Asian populations winter in Indus Delta, Pakistan, & locally in NW India. Other populations breed locally in E & South Africa.)

Appendix 3. Category E species accepted (see *Ibis* 136: 253)

Lesser White-fronted Goose *Anser erythropus*

Norfolk Holkham Freshmarsh, adult, 24th October to 1st November, photo (S. M. Lister, R. J. Pacey). **1986 Devon** Bowling Green Marsh, adult, 1st January, photo (D. Paull *et al.*).

(Rare and declining throughout entire breeding range from N Scandinavia to NE Siberia. Reintroduction scheme in Swedish Lapland boosts numbers wintering in The Netherlands. Migratory, wintering in scattered groups in The Netherlands, Hungary, S Black & Caspian Sea areas, N Kazakhstan & Yangtze valley, China.)

Appendix 4. List of records not accepted

This list contains all current records not accepted after circulation to the Committee. It does not include a) those withdrawn by the observer(s) after discussion with the Secretary; b) those which, even if circulated, were not attributed by the observer(s) to any definite species; c) those mentioned in 'Recent reports' in *British Birds* if full details were unobtainable; or d) certain escapes.

In the vast majority of cases, the record was not accepted because we were not convinced that the identification was fully established; only in a very few cases were we satisfied that a mistake had been made.

2007 Blue-winged Teal Hornsea Mere, Yorkshire, 19th October. **Lesser Scaup** Oban, Argyll, 21st October. **Black Scoter** Reculver, Kent, 3rd September. **White-billed Diver** Thurlestone, Devon, 24th March. Isle of Lewis, Outer Hebrides, 8th April. North of Iona, Argyll, 3rd May. West Burra, Shetland, 26th May. West Burra, Shetland, 17th June. Peterhead, North-east Scotland, 3rd September. Isle of May, 16th October. **North Atlantic Little Shearwater** Flamborough Head, Yorkshire, 11th August. **Squacco Heron** North Warnborough, Hampshire, 3rd June. Welney, Norfolk, 11th July. **Cattle Egret** Lea Farm GP, Berkshire, 21st May. Budleigh Salterton, Devon, 19th November. **Black Stork** Nr Bath, Avon, 5th June. Nr Martham, Norfolk, 5th June. Monkton Deverill, Wiltshire, 20th–26th July. Calne, Wiltshire, 13th August. Berrington Pool, Shropshire, 29th July. **Booted Eagle** *Aquila pennata* Grove Ferry, Kent, 16th September. **Baird's Sandpiper** Culross, Fife, two, 2nd August. Garnock Estuary, Ayrshire, 30th August. Goldcliff Lagoons, Newport Wetlands, Gwent, 3rd October. **Sharp-tailed Sandpiper** Dinham Flats, Cornwall, 22nd September. **Broad-billed Sandpiper** North Farmbridge, Essex, 4th October. **Great Snipe** Houbie, Fetlar, Shetland, 29th September. **Lesser Yellowlegs** Isle of Mull, Argyll, 21st May. **Marsh Sandpiper** Loch Scridain, Mull, Argyll, 12th October. **Laughing Gull** Greenfield, Denbighshire, 4th January. **Franklin's Gull** Aberystwyth, Ceredigion, 19th January. Wells-next-the-Sea, Norfolk, 1st November. Blagdon Lake, Avon, 15th December. **Audouin's Gull** Sker Point, East Glamorgan, 12th September. **American Herring Gull** Chew Valley Lake, Avon, 29th December to 8th February 2008. **Ross's Gull** Landguard, Suffolk, 1st January. Pwllheli, Caernarfonshire, 10th January. **Bonaparte's Gull** Glan y Mor Elias, Caernarfonshire, 15th June. Whitburn Coastal Park, Durham, 3rd August. **Ivory Gull** Marwick Bay, Orkney, 15th April. **Gull-billed Tern** Landguard, Suffolk, two, 1st May. Dungeness, Kent, 16th June. Salthouse, Norfolk, 20th August. **Whiskered Tern** Aird an Rùnair, North Uist, Outer Hebrides, 17th May. Hamble-le-Rice, Hampshire, 2nd October. **Forster's Tern** *Sterna forsteri* Blakeney Point, Norfolk, 24th August. **Brünnich's Guillemot** Burrow Gap, Holkham, Norfolk, 11th November. Cley, Norfolk, 12th November. **Mourning Dove** Borrodale House, Arisaig, Highland, 7th November. **Tengmalm's Owl** *Aegolius funereus* Bishop's Cleeve, Gloucestershire, 9th

April. **Chimney Swift** *Chaetura pelagica* Holkham Freshmarsh, Norfolk, 6th July. Fulford, Yorkshire, 24th–25th July. **Pallid Swift** Bryher, Isles of Scilly, 20th May. **Pacific Swift** *Apus pacificus* West Kirby, Cheshire & Wirral, 16th September. **White-rumped Swift** *Apus caffer* Cresswell Pond, Northumberland, 16th September. **Little Swift** *Apus affinis* St Agnes, Isles of Scilly, 23rd–24th May. **Barn Swallow** *Hirundo rustica*, North American race *H. r. erythrogaster* St Kilda, Outer Hebrides, 3rd June. **Cliff Swallow** *Petrochelidon pyrrhonota* Carn Gwaval, St Mary's, Isles of Scilly, 3rd October. **Blyth's Pipit** Lundy, Devon, 14th–16th October. **Olive-backed Pipit** Wirvie Burn, Fair Isle, 12th October. Sumburgh, Shetland, 18th October. **Citrine Wagtail** Eshaness, Mainland, Shetland, 27th September. Foula, Shetland, 29th September. **Red-flanked Bluetail** Loch of Strathbeg RSPB reserve, North-east Scotland, 17th October. **Pied Wheatear** *Oenanthe pleschanka* Budby South Common, Nottinghamshire, 22nd October. **Blue Rock Thrush** Selsey Bill, Sussex, 30th April. **Veery** *Catharus fuscescens* Gugh, Isles of Scilly, 24th October. **American Robin** Welwyn, Hertfordshire, 8th October. **River Warbler** Burton-in-Kendal, Cumbria, 14th April. **Savi's Warbler** Netherfield, Nottinghamshire, 18th May. **Blyth's Reed Warbler** St Mary's Island, Northumberland, 2nd–3rd October. Hametoun, Foula, Shetland, 4th October. **Western Bonelli's Warbler** Chalton, Hampshire, 23rd August. **Masked Shrike** *Lanius nubicus* Isle of Mull, Argyll, 10th June. **Nutcracker** *Nucifraga caryocatactes* Tewkesbury Golf Course, Gloucestershire, two, 22nd October. **Arctic Redpoll** *Carduelis h. hornemanni* Funzie, Fetlar, Shetland, 27th September. **Cretzschmar's Bunting** *Emberiza caesia* Marwick Bay, Orkney, 1st June. **Black-headed Bunting** Downend, Devon, 15th September.

2006 **Blue-winged Teal** unknown location, Devon, 15th June. **White-billed Diver** Whitburn Coastal Park, Durham, 12th December. **Eleonora's Falcon** *Falco eleonorae* Otterburn, Northumberland, 3rd June. **Whiskered Tern** Rockland Broad, Norfolk, 25th–26th May. **Pallid Swift** St Mary's, Isles of Scilly, 8th August. **Savi's Warbler** Catfield Fen, Norfolk, 23rd May. **Blyth's Reed Warbler** Blakeney Point, Norfolk, 22nd September. St Mary's, Isles of Scilly, 26th October.

2005 **Pacific Diver** Eriskay, Outer Hebrides, 19th October. **Cattle Egret** Stoneycross, Hampshire, 21st July. **Bonaparte's Gull** Cardiff Bay, East Glamorgan, 4th November. **Laughing Gull** Fetlar, Shetland, 9th November. **American Herring Gull** Exmouth, Devon, 16th December. **Pallid Swift** Eccles on Sea, Norfolk, 2nd November. **Red-rumped Swallow** *Cecropis daurica* Garreg Llwd, Radnorshire, 7th June. **Buff-bellied Pipit** St Kilda, Outer Hebrides, 20th September. 'Siberian Stonechat' London Wetland Centre, Greater London, 24th March. **Pied Wheatear** Bredon Hill, Worcestershire, 5th November. **Booted Warbler** Noss, Shetland, 2nd September. **Short-toed Treecreeper** *Certhia brachydactyla* St Margaret's, Kent, 30th April.

2003 **American Herring Gull** Garrison, St Mary's, Isles of Scilly, 24th April.

2002 **Pallid Harrier** Lydd, Kent, 5th May. **American Herring Gull** Isle of Barra, Outer Hebrides, 2nd June. **Elegant Tern** *Sterna elegans* St Ives, Cornwall, 28th July. **Savi's Warbler** Strumpshaw Fen RSPB reserve, Norfolk, 19th May to 1st July. **Long-tailed Tit** *Aegithalos caudatus caudatus* Skinningrove, Cleveland, 13th October.

1991 **Ring-necked Duck** *Aythya collaris* Great Pool, Tresco, Isles of Scilly, 23rd September.

1988 **Collared Flycatcher** *Ficedula albicollis* West High Down, Totland, Isle of Wight, 12th April.

1983 **Semipalmated Sandpiper** Peterborough SF, Cambridgeshire, 5th–7th August.

1968 **Nutcracker** Wendover, Buckinghamshire, 9th September.

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Raptors under siege

Bird-of-prey conservation has faced no fewer than three major setbacks in the past month: Defra has confirmed that a bare minimum of raptor species will require registration for captive-breeding in future; one of the first Red Kites *Milvus milvus* reintroduced to Northern Ireland has been found shot dead; while English Hen Harriers *Circus cyaneus* have had one of their worst-ever nesting seasons.

N&c has previously reported the widespread unease among conservation and law enforcement officers at Defra's proposal to 'reduce bureaucracy' by slashing the list of bird species that will require registration under Schedule 4 of the Wildlife and Countryside Act 1981 (*Brit. Birds* 101: 167). The Department has now confirmed that it will leave just nine of our rarest raptors on the Schedule from October 1st (see www.defra.gov.uk/wildlife-countryside/gwd/birdreg/index.htm).

Duncan McNiven, Senior Investigations Officer at the RSPB, has commented: 'Whilst we can take some comfort from the fact that bird registration would probably have been scrapped altogether if we had not put up such a huge fight, it is disappointing that we are to lose 50 species from the Schedule, including rare birds like the Red Kite, although it is a relief that Golden Eagle *Aquila chrysaetos* and Northern Goshawk *Accipiter gentilis* will remain listed. The Government claims to have retained nine species on the Schedule by also including Peregrine *Falco peregrinus* and Merlin *F. columbarius*. It is true that (technically) Peregrine and Merlin are retained on the Schedule but, as those falcons with CITES certificates are deemed "registered for the purposes of Schedule 4", once those birds are sold on they will simply become untraceable as the new owners will not have to apply for new certificates. This defeats the whole purpose of registration, which was to make birds traceable in the event of suspected criminal activity.'

One of the species removed from Schedule 4 is Red Kite. RSPB Northern Ireland released 27 kites in July at the start of a three-year reintroduction programme – the first of its kind in Northern Ireland. Within weeks, one of the birds was found shot dead near Leitrim in Co. Down; tests carried out by the Police Service of Northern Ireland suggest that the bird may have been killed deliberately. Both of its wing tags and its identifying leg ring had been removed before the bird was recovered by the RSPB.

The RSPB has also expressed deep concern at the continuing plight of the Hen Harrier in England. Breeding data for 2008 released by Natural England show that there were just 10 successful nests from 19 attempts and 31 young harriers fledging. The bulk of these were in the Lancashire stronghold of Bowland, where 25 chicks fledged from eight successful nests (seven on United Utilities land and one on a driven grouse moor). In the rest of northern England there were five nesting attempts with two successes, yielding six fledged harriers, five of which came from just one nest in Northumberland. In 2007 there were 14 successful nests from 23 attempts; since 1994 the number of successful nests in England has never exceeded 15. This is despite estimates that the country's uplands could support at least 200 breeding pairs.

Sir Martin Doughty, Chair of Natural England, said: 'Bowland is a snapshot of what should be a national situation. We will continue to work with landowners countrywide to increase the Hen Harrier's range.'

Spoonbills nest in Scotland

Hot on the heels of the news that Cattle Egrets *Bubulcus ibis* have nested successfully in Somerset (*Brit. Birds* 101: 454) comes the news that Eurasian Spoonbills *Platalea leucorodia* have nested in Scotland for the first time. In fact, it is only the third confirmed breeding record in Britain since 1668.

The Scottish birds bred in the Kirkcudbright area of Dumfries & Galloway, in southern Scotland (see www.rbbp.org.uk). A pair had been present since June and then three recently fledged young birds were seen begging for food from the adults in early September, confirming that they were locally reared. No nest has been found. Although this is the first successful nesting in Scotland, nest-building and display were recorded at Mersehead, also in Dumfries & Galloway, in 2000.

The previous breeding records both occurred a decade ago. In 1998, the first confirmed breeding for 330 years occurred in Suffolk: two eggs were laid but lost, thought to have been predated. Two young birds seen at the site later in the year were thought to have been visitors from the Continent. And then, in 1999 in Lancashire & North Merseyside, the first successful breeding in modern times was reported: three eggs were laid, two hatched and both young birds subsequently fledged. Nest-building was also recorded in both Norfolk and Suffolk that year but no eggs were laid.

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And Bitterns are booming too

The wet winter weather of 2007/08 was certainly good for ducks – and for Eurasian Bitterns *Botaurus stellaris* too. The Bittern Monitoring Programme has revealed that the species has enjoyed its best nesting season for at least 130 years, and it's largely due to the amount of water in its reedbed home. RSPB and Natural England surveyors logged 75 'booming' males in English reedbeds, an increase of 47% on 2007 and a staggering 581% increase in the numbers recorded in 1997, when the UK population plummeted to just 11 booming males, all in England. The number of English counties supporting booming Bitterns has also increased, to ten, from eight in 2007 and four in 1997.

The monitoring team believes that this year's bumper population is directly linked to the very wet winter, which provided ideal feeding conditions for female Bitterns, allowing them to attain good breeding condition. Overall, the Bittern population is increasing because of large-scale re-creation and management of reedbeds. Dr Pete Brotherton, Head of Biodiversity for Natural England, said: 'This year's figures are a fantastic achievement and show that we can bring species back from the brink of extinction. You would probably have to go back at least 130 years to find a better year for this booming bird.'

More on Spanish seabirds

For those interested in knowing more about seabird monitoring south of British waters, and particularly about seabird movements along the coast of the Iberian Peninsula (involving species such as Balearic Shearwater *Puffinus mauretanicus* or Audouin's Gull *Larus audouinii*), the website of the Iberian Seabird Group (Grupo Ibérico de Aves Marinas, GIAM) contains information about seabirds in Spain, beached bird surveys and the GIAM bulletin. One of the recent papers (Ocio & Sánchez 2007, Presencia de la gaviota de Audouin *Larus audouinii* fuera de su área biogeográfica tradicional de reproducción, migración e invernada en la península ibérica y Europa occidental, *Boletín del GIAM* 28: 2–6; www.seo.org/media/docs/BoletinGIAM28_2007.pdf) was important background for the recent note on Audouin's Gull (*Brit. Birds* 101: 443–447). GIAM also collaborates with the Iberian seawatching network, RAM (www.telefonica.net/web2/redavesmarinas), which co-ordinates simultaneous counts along Spanish coasts, linked with similar networks in The Netherlands, Belgium, France, Germany, Portugal and the UK through the www.trektellen.nl network. Bulletins available through the RAM website present interesting data on migration timing and numbers, including for scarcer species such as Great *P. gravis* or Sooty Shearwaters *P. griseus*. With 40 trektellen locations already in Britain, having a look at what happens farther south can be an interesting way to understand occurrence patterns in northwest Europe, as in the case of Audouin's Gull. And, talking of Audouin's Gull, this summer brought another British record, a third-summer in Lincolnshire in August (see plate 297).

Steve Young/Birdwatch

297. Third-summer Audouin's Gull *Larus audouinii*, Chapel St Leonards, Lincolnshire, August 2008.

(Contributed by Ricard Gutiérrez)

Geordie birders are 50 years old

The Northumberland & Tyneside Bird Club (www.ntbc.org.uk) is marking its 50th anniversary with a one-day conference and social gathering on 25th October. The speakers are: David Parkin, Professor of Genetics at Nottingham University and former Chairman of BOURC; Prof. Colin Bradshaw, recently retired Chairman of BBRC; Mike Hodgson, former Club Chairman and County Recorder; and Mick Marquiss, Population Ecologist formerly with the Centre for Ecology & Hydrology. All are welcome: tickets for the event, at Newcastle upon Tyne Civic Centre, are £15 each (including the evening buffet). Contact Jo Bentley at NTBC@jo.bentley.waitrose.com

Bird Atlas 2007–11

Fieldwork for the second winter of the BTO/SOC/BirdWatch Ireland Atlas 2007–11 starts on 1st November. Excellent coverage was achieved in the first winter and already some notable changes in distribution are emerging. At this early stage it is much easier to pick out those species that are expanding in range than those that may be contracting, owing to incomplete coverage across Britain & Ireland. In addition to the well-known range expansions for Little Egret *Egretta garzetta*, Common Buzzard *Buteo buteo* and Common Raven *Corvus corax*, species such as Marsh Harrier *Circus aeruginosus*, Common Stonechat *Saxicola torquatus*, Cetti's Warbler *Cettia cetti* and Dartford Warbler *Sylvia undata* show considerable expansion since the last Winter Atlas, in 1981–84.

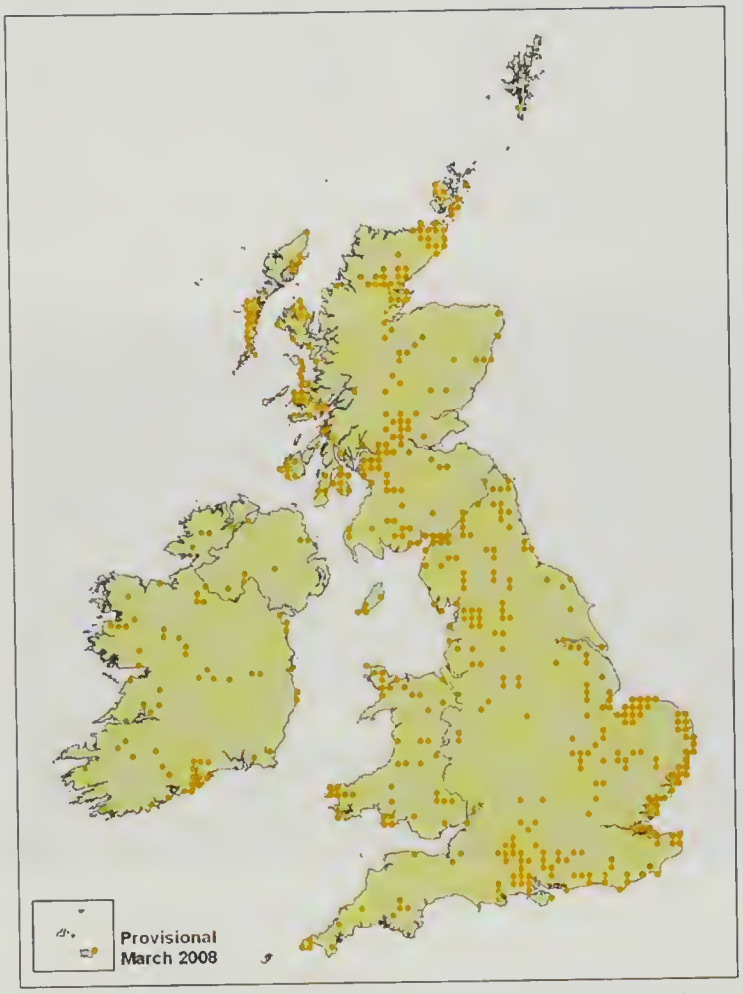

Fig. 1. Distribution of Hen Harrier *Circus cyaneus* (November 2007 to February 2008) in 10-km squares across Britain & Ireland.

Can you help to fill in the gaps? Did you see a Hen Harrier *Circus cyaneus* last winter (November–February) that is not shown on the map (fig. 1.)? It's not too late to submit your sightings, online or on paper, to the Bird Atlas. Do please look out for Hen Harriers over the coming winter and submit your records. The general pattern of distribution is similar to that in the last Winter Atlas, but there are still many gaps – or do they not winter there any more?

Help with fieldwork is required in all areas over the coming winter. The two complementary methods are *Timed Tetrad Visits* and *Roving Records*. Just two timed visits are required per tetrad (2 x 2 km square) in winter and two in the breeding season; each tetrad needs coverage in just one of the four years of fieldwork; and we hope to achieve timed counts in at least eight tetrads in every 10-km square. These counts provide information on the relative abundance of species at the 10-km level. In order to achieve comprehensive distribution maps, *Roving Records* are required from each 10-km square (or tetrad in those 35+ counties undertaking local atlases). You can find out more by visiting www.birdatlas.net or by contacting the Atlas Coordinator, Dawn Balmer, at the BTO (tel. 01842 750050, e-mail birdatlas@bto.org).

New recorder for Avon

After 22 years' hard slog, Harvey Rose passed on the recordership for Avon (that is the four unitary authorities of Bristol, South Gloucestershire, BANES and North Somerset) to John Martin on 1st October. John can be contacted on avonbirdrecorder@googlemail.com and at 34 Cranmoor Green, Pilning, Bristol BS35 4QF.

Lifeline for farmland birds – but not yet

The UK Government is belatedly stepping in to help farmland birds now that set-aside and its environmental benefits have been phased out. From 2009/10, farmers in England will not be paid subsidies unless they leave a small part of their farm for wildlife, creating feeding and nesting sites for species such as Sky Lark *Alauda arvensis*, Linnet *Carduelis cannabina*, Yellowhammer *Emberiza citrinella* and Corn Bunting *E. calandra*, all of which have declined by almost 50% in the last 40 years.

The move, announced by Environment Secretary Hilary Benn, will help to replicate the environmental benefits of set-aside (an over-production measure where up to 15% of the farm was left uncultivated), which was scrapped in 2007. But the new measure will not be effective until the cropping year 2009/10. Farmers will also be asked to voluntarily manage small patches of land less intensively.

Gareth Morgan, RSPB's Head of Agriculture Policy at the RSPB, said: 'This is a massive step forward for the environment. Set-aside was never supposed to help wildlife but, with so much other land farmed so heavily, it became a sanctuary for many species. It's a great shame [that this] has come too late for this year but, with the Government's green farming schemes, it is still the most comprehensive plan for English wildlife for a long time.'

The Government has a target for reversing farmland bird declines by 2020 but new figures show that 13 of the 19 species making up the farmland bird index for England continue to decline. Tree Sparrow *Passer montanus*, Yellowhammer and Corn Bunting are among the biggest losers, all highly dependent on set-aside. Farmers' subsidies are already dependent on the condition of their land and the RSPB believes that payments should be linked to wildlife as well. This will now happen.

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mainly new arrivals between early August and early September 2008.

Headlines Cape Clear Island was undoubtedly the place to be in late August, with Yellow Warbler (Ireland's third), Northern Waterthrush (Ireland's second) and Solitary Sandpiper, the last two sharing the same muddy pool for a while. Ireland's fourth Yellow Warbler was on Mizen Head at about the same time, while the fifth Audouin's Gull for Britain lingered along the Lincolnshire coast, although it was sometimes elusive. Otherwise, about a dozen White-winged Black Terns were seen and a good variety of waders included six Baird's Sandpipers (including one well inland), four Pacific Golden Plovers, four Semipalmated Sandpipers, three Marsh Sandpipers, two Wilson's Phalaropes, and single Great Snipe and Stilt Sandpiper (as well as the Solitary). No fewer than seven Fea's Petrels were reported, mostly from Ireland, where a Black-browed Albatross was seen off Co. Kerry. During the first week of September there was also a widespread scatter of Grey Phalaropes *Phalaropus fulicarius* and Sabine's Gulls around the coast, plus a few inland. The Two-barred Crossbill influx in the Northern Isles was still evident, at least early in the period.

Black Duck *Anas rubripes* Blanketnook (Co. Donegal), 23rd August; Ventry (Co. Kerry), 7th September.

Black-browed Albatross *Thalassarche melanophris*, 110 km west of Slea Head (Co. Kerry), 7th September. **Zino's/Fea's Petrel** *Pterodroma madeira/feae* Bridges of Ross (Co. Clare), 13th and 19th August; Galley Head (Co. Cork), 15th and 26th August; Dunowen Point (Co. Cork), 16th August; Annagh Head (Co. Mayo), 24th August; Porthgwarra (Cornwall), 25th August. **Wilson's Storm-petrel** *Oceanites oceanicus* Singles from pelagics off Scilly, 15th and 28th August; Bridges of Ross, 15th and 16th August; Cape Clear Island (Co. Cork), 17th August; Old Head of Kinsale (Co. Cork), 18th August; two seen from pelagic off Inishbofin (Co. Galway), 24th August; Porthgwarra, 26th August.

Cattle Egret *Bubulcus ibis* In Dorset: 13 at Radipole Lake on 16th and presumably one of same at Lodmoor, 21st August; Ballard Down 17th, presumed same Poole Harbour 19th–20th and 27th, presumed same Wareham Moors, 21st, Swineham GP 24th and Brownsea Island 25th August. Elsewhere: Cley/Blakeney (Norfolk), 12th–15th August; Dungeness (Kent), 17th August; Colyford Common, 22nd–23rd August, Buckfastleigh (both Devon), 28th August; Catcott Lows, two adults and a juvenile, 28th August, then Shapwick Heath (both Somerset), 30th August, with a single there 1st September; Kiwelly Marsh (Carmarthenshire), 5th September. **Great White Egret** *Ardea alba* Blashford Lakes (Hampshire), 16th–25th August, 8th September; Lough Corrib (Co. Galway), 17th–18th August; Leighton Moss (Lancashire & N Merseyside), 21st August; Horseshoe Point (Lincolnshire), 27th August; Ellesmere (Shropshire), 27th August to 9th September; Burniston (Yorkshire), 1st September; Scaling Dam Reservoir (Cleveland), 1st September; Rainham Marshes (Greater London), 9th September.

Eric Dempsey

298. Wilson's Storm-petrel *Oceanites oceanicus*, off Inishbofin, Co. Galway, August 2008.

Black Stork *Ciconia nigra* Long-stayer Newburn/Clara Vale (Durham/Northumberland) to 14th August; presumed same Cawood/Wharfe Ings area 26th–29th August, Melbourne 30th August and Easington/Spurn 1st–2nd September (all Yorkshire); Great Yarmouth (Norfolk), 3rd September. Glossy Ibis *Plegadis falcinellus* Allerton Bywater, 17th–23rd August, Swillington Ings, 27th August to 4th September and Fairburn Ings, 6th September (all Yorkshire); Salthouse (Norfolk), 1st September.

Black Kite *Milvus migrans* Sunk Island (Yorkshire), 22nd August; Warden Point (Kent), 23rd August; Arklow (Co. Wicklow), 23rd August.

Red-footed Falcon *Falco vespertinus* Harris (Outer Hebrides), 11th August.

American Golden Plover *Pluvialis dominica* Elmley Marshes (Kent), long-stayer to 17th August, again 4th September; Blackrock Strand (Co. Kerry), 20th August; Tiree (Argyll), 5th–6th September; Ballycotton (Co. Cork), 7th September. Pacific Golden Plover *Pluvialis fulva* Anthorn (Cumbria), 19th–24th August; North Ronaldsay (Orkney), 22nd August to 7th September; Spurn, 31st August; Dornock (Dumfries & Galloway), 6th–8th September. Semipalmated Sandpiper *Calidris pusilla* Pilmore Strand (Co. Cork), 21st–22nd August; Lissagriffin (Co. Cork), 26th August; Dawlish Warren (Devon), 26th August to 6th September; Mullet Peninsula (Co. Mayo), 29th–30th August. White-rumped Sandpiper *Calidris fuscicollis* Titchwell (Norfolk), 2nd–6th September; The Cull (Co. Wexford), 4th September. Baird's Sandpiper *Calidris bairdii* South Uist (Outer Hebrides), 14th–20th August; Paxton Pits (Cambridgeshire), 27th August to 1st September, 6th–7th September; St Kilda (Outer Hebrides), 3rd September; Blackrock Strand, 6th–7th September; Carrahane (Co. Kerry), 7th September; Mullet Peninsula, 7th September. Stilt Sandpiper *Calidris himantopus* Coombe Hill Meadows (Gloucestershire), at least 19th–21st August. Buff-breasted Sandpiper *Tryngites subruficollis* North Ronaldsay, 11th and 17th–19th August; Tiree (Argyll), 26th August, two on 30th August, one to 1st September; Loop Head (Co. Clare), 27th–29th August; Bryher, 28th–31st August, St Agnes, 1st–4th and 7th–9th September and St Mary's, 6th September (all Scilly); Pilmore Strand, 31st August; Ballycotton, 2nd and 7th September; Orford Ness (Suffolk), 3rd September; Carrahane, 8th September. Great Snipe *Gallinago media* South Gare (Cleveland), 7th September. Long-billed Dowitcher *Limnodromus scolopaceus* Dundalk Docks (Co. Louth), 19th–28th August. Solitary Sandpiper *Tringa solitaria* Cape Clear Island, 27th–30th August. Lesser

Gary Thoburn

299. Juvenile Semipalmated Sandpiper *Calidris pusilla*, Dawlish Warren, Devon, August 2008.

Yellowlegs *Tringa flavipes* Guardbridge (Fife), 3rd September; Burnham Lagoon (Co. Kerry), 4th–6th September. Marsh Sandpiper *Tringa stagnatilis* Hickling Broad (Norfolk), 18th–30th August; Heybridge GP (Essex), 24th–30th August; Bowling Green Marsh (Devon), 31st August to 1st September. Wilson's Phalarope *Phalaropus tricolor* Grindon Lough (Northumberland), 13th–17th August; Loch of Strathbeg (North-east Scotland), 1st September.

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300. Solitary Sandpiper *Tringa solitaria*, Cape Clear Island, Co. Cork, August 2008.

Audouin's Gull *Larus audouinii* Huttoft Bank, 15th August, same Chapel Point area, 17th–23rd August, and Sandilands, 17th and 19th August (all Lincolnshire). Bonaparte's Gull *Chroicocephalus philadelphia* Ballycotton, 30th August. Sabine's Gull *Xema sabini* High counts included 21 past Bridges of Ross, and ten past Brandon Point (Co. Kerry) on 2nd September. White-winged Black Tern *Chlidonias leucopterus* Inverness, 11th and 13th August, presumed same nr Balloch (both Highland), 22nd August; Loch of Strathbeg, 11th August; Thamesmead (Greater London), 11th August, two on 12th and one 14th August; Sandilands, 17th August; Covenham Reservoir (Lincolnshire), 20th–21st August; Wilstone Reservoir (Hertfordshire), two, 30th August; Dungeness, 31st August to 9th September, two on 7th September; Seaforth/Crosby Marine Park (Lancashire & N Merseyside), 31st August to 2nd September; Blithfield Reservoir (Staffordshire), 3rd–8th September; Shotwick Lake (Flintshire), 3rd–8th September.

Snowy Owl *Bubo scandiacus* Mullet Peninsula, 26th August to 4th September. Alpine Swift *Apus melba* Gimingham then Mundesley (both Norfolk), 8th September. European Bee-eater *Merops apiaster* Port Erin (Isle of Man), 29th August. Red-rumped Swallow *Cecropis daurica* Mersea Island (Essex), 7th September.

Red-throated Pipit *Anthus cervinus* Tynemouth (Northumberland), 7th September. Citrine Wagtail *Motacilla citreola* Fair Isle, 16th–22nd August, two 23rd August, and another 1st–8th September; Landguard (Suffolk), 29th August; St Mary's, 2nd–6th September; Vidlin (Shetland), 3rd September; St Kilda (Outer Hebrides), 7th September; South Uist (Outer Hebrides), 7th September; Sullom (Shetland), 8th September. Thrush Nightingale *Luscinia luscinia* Fair Isle, 13th and another 18th–19th August.

Aquatic Warbler *Acrocephalus paludicola* Marazion (Cornwall), 24th August; Rainham Marshes, 3rd and 5th–8th September; Weston Sewage-works (Somerset), 6th September. Paddyfield Warbler *Acrocephalus agricola* Whalsay (Shetland), 17th August. Booted Warbler *Hippolais caligata*

Deryk Shaw

301. First-winter Citrine Wagtail *Motacilla citreola*, Fair Isle, August 2008.

Hugh Harrop

302. Booted Warbler *Hippolais caligata*, Sumburgh, Shetland, August 2008.

Lee Gregory

303. Yellow Warbler *Dendroica petechia*, Cape Clear Island, Co. Cork, August 2008.

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304. Northern Waterthrush *Seiurus noveboracensis*, Cape Clear Island, Co. Cork, August 2008.

Kingsdown (Kent), 16th August; Sumburgh (Shetland), 20th–21st August. **Subalpine Warbler** *Sylvia cantillans* South Shields (Durham), 7th–9th September. **Greenish Warbler** *Phylloscopus trochiloides* Stronsay, 17th, North Ronaldsay (both Orkney), 18th August; Farne Islands, 18th–19th August, East Chevington, 7th September, Bamburgh, 7th September, Druridge Pools, 7th September, Newton-by-the-Sea, 8th September (all Northumberland); Loch of Strathbeg, 20th August, Sands of Forvie, 20th August, Cruden Bay Woods, 20th August (all North-east Scotland); Hartlepool (Cleveland), 7th–8th September; Whitburn (Durham), 7th–8th September.

Lesser Grey Shrike *Lanius minor* Middlebere (Dorset), long-stayer to 15th August. **Rose-coloured Starling** *Sturnus roseus* Islay (Argyll), 12th–13th August; Grantown-on-Spey, 11th–17th August, presumed same Cromdale (both Highland), 20th August; Gwithian, 16th August, Hayle, 20th August, St Agnes, 30th–31st August (all Cornwall); Deerness (Orkney), 25th–27th August; Portland Bill (Dorset), 31st August to 2nd September. **Two-barred Crossbill** *Loxia leucoptera* The influx that started in late July continued: North Ronaldsay, long-stayer to 11th August; Fetlar, 12th August, Sumburgh Head, 11 still on 11th August, then three on 14th and five on 16th August, Voe, 18th August (all Shetland); Fair Isle, at least eight to 12th August, then five 17th and four 18th August, and one 8th September.

Yellow Warbler *Dendroica petechia*, Cape Clear Island, 24th–30th August; Mizen Head (Co. Cork), 26th–28th August. **Northern Waterthrush** *Seiurus noveboracensis*, Cape Clear Island, 27th–30th August.

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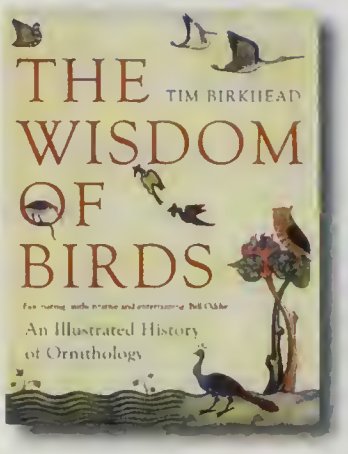

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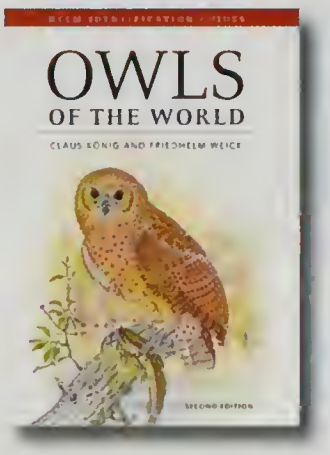

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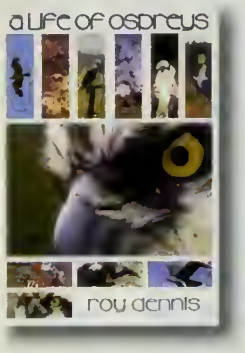

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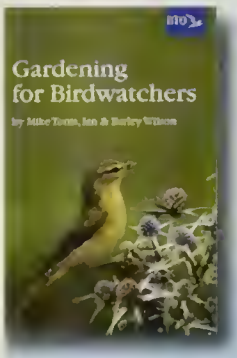

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Tristan da Cuhna and Gough Island

Eurasian Sparrowhawks

British Birds

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Front-cover photograph: Leach's Storm-petrel *Oceanodroma leucorhoa*, River Mersey, October 2008. *Chris Galvin*

British Birds

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Regular features

Important Bird Areas:

Tristan da Cunha and Gough Island

Peter Ryan

ABSTRACT The Tristan da Cunha archipelago and nearby Gough Island are the only cool-temperate oceanic islands in the South Atlantic. They are globally important breeding sites for eight million pairs of seabirds, including four endemic breeding species. The islands also are home to seven landbird species, all of which are found nowhere else. Tristan da Cunha and Gough are regarded as separate Endemic Bird Areas (EBAs) because of their unique landbirds. They share many of the same seabirds, although Spectacled Petrel *Procellaria conspicillata* is found only on Inaccessible, and virtually all Tristan Albatrosses *Diomedea dabbenena* and Atlantic Petrels *Pterodroma incerta* breed on Gough, following catastrophic declines on Tristan. Inaccessible and Nightingale Islands have been little affected by people; they remain free of introduced mammals, and Inaccessible is home to the smallest surviving flightless bird in the world, the Inaccessible Rail *Atlantisia rogersi*. Tristan has been less fortunate, as rats, mice and a host of other alien species have been introduced there by humans. Both Tristan Moorhen *Gallinula nesiotis* and Tristan Bunting *Nesospiza acunhae* became extinct shortly after the island was colonised by humans, and most seabird populations are either extinct or have been greatly reduced. Gough is plagued by introduced House Mice *Mus musculus*, which are slowly eroding its claim of being the greatest seabird island in the world. Urgent action is needed to remove mice from Gough, and there is potential to restore parts of Tristan if Black Rats *Rattus rattus* and mice are eradicated.

The Tristan da Cunha archipelago and Gough Island are remote volcanic islands in the central South Atlantic Ocean, roughly midway between the southern tip of Africa and South America. In addition to the main island (also called Tristan da Cunha, but hereafter referred to simply as 'Tristan', lying at 37°6'S 12°16'W and with a land surface area of 96 km²), Tristan da Cunha includes Inaccessible (14 km²) and Nightingale (4 km²), plus Nightingale's outlying islets of Stoltenhoff and Alex Island. The three main islands are only 20–30 km apart, but separated by water more than 500 m deep, and have always been separate islands. Gough Island (40°20'S 10°0'W, 65 km²) lies 380 km SSE of Tristan da Cunha, and its climate is distinctly cooler, wetter and windier than that of the northern islands. All four islands are the mountainous summits of massive shield volcanoes that rise up from the abyssal depths of the South Atlantic. Nightingale is the oldest and smallest island, with rocks

In this paper, common and scientific names of seabirds which are not part of 'The *BB* List of Western Palearctic Birds' follow Shirihai (2007) at the request of the author.

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dating back some 18 million years, whereas the oldest rocks on Tristan are only 200,000 years old. Inaccessible and Gough are of intermediate ages, roughly 3–4 million years old (Ryan 2007).

Despite lying on the edge of the 'Roaring Forties', the islands' climate is cool temperate rather than subantarctic. Mean air temperatures at sea level on Tristan are 15°C (range 2–25°C) and 12°C on Gough (ranging between -3 and +25°C). The weather is characterised by the regular passage of cold fronts that sweep across the islands from the west, bringing abundant rainfall (average 1,670 mm per year on the coast of Tristan and 3,000 mm on Gough), and snow at higher elevations. Even on clear days, the islands' peaks (more than 2,000 m on Tristan and 850 m on Gough) are frequently blanketed in dense, orographic cloud. As a result, precipitation is greater at high elevations.

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Fig. 1. The Tristan da Cunha archipelago and Gough Island.

The islands have never been connected to a continental landmass, so their terrestrial fauna and flora have had to disperse over several thousand kilometres of ocean. They have achieved this by flight (birds and some insects), 'hitching' (e.g. seeds attached to a bird's feathers or feet), windborne dispersal (e.g. seeds and spores), or rafting on floating debris. Human introductions have recently added to the means of establishment on the islands, as discussed below. The prevailing westerly winds and currents have resulted in most colonists arriving from South America, even though the islands are slightly closer to Africa. Because some organisms are more able to disperse than others, the terrestrial biota is 'disharmonic', missing many of the usual components of terrestrial ecosystems such as ants (Formicidae), amphibians, reptiles and terrestrial mammals (Ryan 2007). The few organisms that make the arduous journey, and are able to survive there, often evolve into endemic species.

Although the islands were discovered by Portuguese explorers in the early 1500s, the lack of safe anchorage discouraged colonisation until the early 1800s, when Tristan da Cunha was annexed by Britain. The current population of some 270 people constitutes the world's most isolated human community, more than 2,400 km south of St Helena. Inaccessible and Nightingale are uninhabited, while there is a South African weather station on Gough. Access is possible only by sea. Fishing is the main economic activity, supplemented by small-scale tourism and sales of stamps. The islands are a UK Overseas Territory, governed by an Administrator appointed by the UK Foreign Office and an Island Council.

EBA and IBA status

Tristan da Cunha and Gough qualify as Endemic Bird Areas because they are home to seven endemic landbirds (as described in this paper), with five confined to the Tristan da Cunha EBA (Inaccessible Rail, Tristan Thrush, and Inaccessible, Nightingale and Wilkins' Buntings), Gough Bunting endemic to the Gough EBA and Gough Moorhen occurring on both Tristan and Gough (see Stattersfield *et al.* 1998). Although seabirds were not included by BirdLife in their EBA analysis, Atlantic Yellow-nosed Albatross breeds only on Tristan da Cunha and Gough, Tristan Albatross and Atlantic Petrel are virtually endemic to Gough, and Spectacled Petrel is endemic to Inaccessible. All four main islands are listed as Important Bird Areas as they support globally significant populations of numerous bird species (Fishpool & Evans 2001).

305. Edinburgh of the Seven Seas, the settlement on Tristan, with a fishing boat anchored offshore. The tongue of black rock along the shore on the left of the photo is part of the lava flow from the 1961 eruption that led to the entire population being evacuated to the UK. *Peter Ryan*

306. The east coast of Gough Island is characterised by deeply incised valleys termed 'glens'. The right-hand beach was a favoured landing site for sealers, and was the base for the Gough Scientific Expedition in 1956, but the South African weather station is located farther south, away from the influence of the mountainous interior. *Peter Ryan*

307. The Ponds on Nightingale Island, with Stoltenhoff in the middle distance and the 2,060-m peak of Tristan protruding above the haze. The Ponds are swamps formed in hollows on top of Nightingale Island. The woodland around the Ponds is home to almost the entire population of Wilkins' Buntings *Nesospiza wilkinsi*. *Peter Ryan*

308. Fern bush is a distinctive vegetation community which occurs on parts of all four main islands in the archipelago (photographed here on Gough). A key part of this community is the Island Tree *Phylica arborea*, the only large, woody plant on the islands, and which has played a role in the evolution of the endemic buntings *Nesospiza*. *Peter Ryan*

Peter Ryan

309. Sooty Albatrosses *Phoebetria fusca* are the most aerial of albatrosses, soaring effortlessly around the islands' cliffs. Preliminary courtship apparently takes place in flight, with pairs engaging in synchronised gliding displays.

Island habitats

Marine erosion has outpaced fluvial erosion, resulting in narrow beaches and steep coastal cliffs subject to occasional rock falls and slumping. Sandy beaches are rare, mainly confined to Tristan. Offshore, the bottom drops away steeply from most islands, providing little habitat for inshore-feeding seabirds. A band of giant kelp *Macrocystis pyrifera* occurs 50–200 m offshore in many places, especially off the more sheltered, eastern shores (Ryan 2007).

The terrestrial vegetation changes with altitude. Nightingale, the smallest and lowest island of the group, is almost entirely blanketed in tall tussock grass, *Spartina arundinacea*. Tussock grass also covers the coastal cliffs of Inaccessible, and this vegetation once occurred in the lowlands of Tristan, but has been replaced by short, heavily grazed pastures dominated by introduced grasses and other plant species. The drier, well-drained slopes on Tristan (and locally on Inaccessible) are carpeted in ferns, especially the widespread *Blechnum penna-marina*. On Gough, *Spartina* shares the coastal cliffs with a smaller tussock grass, *Parodiochloa flabellata*. Areas disturbed by seals and penguins are characterised by sedges and an array of weedy species, including two species of *Cotula* daisies endemic to the islands.

Away from the coast, tussock grass gives way to fern bush, a diverse community characterised by Island Trees *Phylica arborea* and spectacular, cycad-like Bog-ferns *Blechnum palmiforme*. The Island Tree is the only large, woody plant on the islands, and has played an important role in the evolution of the endemic buntings *Nesospiza*. Fern bush is confined to the area around the Ponds on Nightingale (see plate 307), but covers most of the plateau of Inaccessible and the lower base of Tristan, where it extends up to 800 m above sea level. On Gough, fern bush occurs almost to sea level, but peters out around 450 m. At higher elevations, strong winds and cooler temperatures inhibit the growth of tall

vegetation. Fern bush gives way to wet heath, a short vegetation more typical of the sub-antarctic islands, dominated by grasses, sedges and ferns. Higher still, and on exposed ridges, wet heath grades into feldmark and other alpine communities, dominated by dwarf, cushion-forming plants.

Soils are generally shallow and poorly developed, but slow rates of decomposition promote the accumulation of peat. Deep layers of peat have formed in some areas, but regular slips occur on steeper slopes, triggered by extremely heavy rain (up to 300 mm in a day). Open water is scarce, confined to a few small ponds and crater lakes. Depressions typically are filled by bogs. Although some *Sphagnum* bogs occur on Tristan, most bogs are covered in a dense floating mat of the sedge *Scirpus sulcatus*. On Gough, however, the higher rainfall promotes the formation of extensive *Sphagnum* bogs in upland areas.

Breeding seabirds

As on most oceanic islands, there are relatively few bird species. Seabirds predominate, there being 22 breeding species, many of which occur in huge numbers (Appendix 1). Four species and two subspecies breed nowhere else. Since access to the islands is possible only by sea, taking 5–6 days from Cape Town, visitors have the opportunity to become well acquainted with most of the seabirds during the journey.

Penguins

Just one species of penguin breeds on the islands, the Northern Rockhopper Penguin *Eudyptes moseleyi*. Recent genetic and vocal analyses have confirmed the suspicions of field biologists that this species is quite distinct from the Southern Rockhopper Penguin *E. chrysocome*. Besides occurring on Tristan da Cunha and Gough, Northern Rockhoppers are found only on Amsterdam and St Paul, cool-temperate islands at similar latitudes in the central Indian Ocean. Tristan da Cunha and Gough support some 80% of the world population. As for the Southern Rockhopper, numbers have decreased historically, and Cuthbert *et al.* (in press) suggest that it qualifies as Endangered. Northern Rockhoppers are seasonal visitors, arriving in late winter (August), laying in September, and fledging chicks in December–January. After a brief recovery period, the adults return to the island to moult, then disappear out to sea for the winter.

Albatrosses

Three species of albatross breed on the islands, of which two are endemic. The Tristan Albatross *Diomedea dabbenena* is genetically the most distinctive of the Wandering Albatross *D. exulans* complex (Nunn & Stanley 1998). It differs from the more widespread southern form in being smaller and substantially darker in all plumages. It breeds in wet-heath vegetation, where it is sufficiently open for the birds' running take-offs and landings. Adults return in November–December, lay in January and the chicks fledge in November. Successful breeders typically take a year off after breeding and so raise one chick every two years at most. It was once quite common on Tristan and Inaccessible, but was a favourite food source of the early settlers, who quickly wiped out the Tristan population and, with the help of feral pigs, managed to do almost the same on Inaccessible. Currently, only 1–2 pairs survive on Inaccessible, confined to the highest ridge on the island. The rest of the population, estimated at 2,200 pairs, breeds at Gough (Cuthbert *et al.* 2004).

At the other end of the albatross size spectrum, the Atlantic Yellow-nosed Albatross

Birding on Tristan: when, where and how

Tristan is the most remote community in the world. Access is only possible by ship, and takes roughly a week each way from Cape Town. Most tourists are restricted to brief visits on cruise ships. Up to ten cruises call at the islands each year. They offer a chance to see all the islands, with landings possible at Nightingale and Inaccessible from the smaller, natural history cruises. However, visits are brief, and inclement weather may prevent landing, even on Tristan. All vessels must first call at Tristan before visiting the outer islands. The best time to visit the islands is in summer (between September and April), when the weather is more settled. The period from October to December is the best time for birds, but the weather is perhaps more favourable for landings later in summer.

There is accommodation on Tristan, but independent visitors need to apply to the Administrator for permission to visit. Berths are limited on the fishing vessels that visit the islands 6–8 times per year. Once on Tristan it is usually possible to arrange a day trip to Nightingale and perhaps Inaccessible. Gough is closed to tourists. For further information about visiting the islands, consult Ryan (2007) and the Tristan website www.tristandc.com

Peter Ryan

310. Adult Northern Rockhopper Penguins *Eudyptes moseleyi* are readily distinguished from Southern Rockhoppers *E. chrysocome* by their extravagant head plumes.

Peter Ryan

311. Tristan Albatrosses *Diomedea dabbenena* are slightly smaller than Wandering Albatrosses *D. exulans*, and take much longer to attain equivalent plumage stages. This is a typical breeding female.

Peter Ryan

312. A pair of Atlantic Yellow-nosed Albatrosses *Thalassarche chlororhynchos* courting on Second Pond, Nightingale Island. The four ponds are covered in a dense mat of *Scirpus sulcatus* that provides nesting sites for some 1,200 pairs of albatrosses.

Peter Ryan

313. An Antarctic Tern *Sterna vittata* of the large, pale Tristan race *S. v. tristanensis*.

Thalassarche chlororhynchos is also endemic to the islands. Smaller and more agile than Tristan Albatross, it breeds at lower elevations. Most nests are in fern bush, often sheltered under tree canopies, but some are in quite dense tussock grass and others occur right down to the beach on the south side of Nightingale. Unlike Indian Yellow-nosed Albatrosses *T. carteri*, they typically breed singly or in loose aggregations, but concentrations occur around some open areas such as the Ponds on Nightingale. Most pairs breed annually, arriving in late August, laying in September–October, and fledging chicks in March–April. The population is hard to count, but the largest numbers are thought to occur on Tristan, mainly in the inaccessible southeast quadrant. The last formal assessment suggested that numbers were decreasing on all islands, and as a consequence it was listed as Endangered (Cuthbert *et al.* 2003). Recent data are more optimistic, however, suggesting some recovery since 2000 (author's unpublished data).

The islands are also the global stronghold of the exquisite Sooty Albatross *Phoebetria fusca*. Together with its close relative, Light-mantled Sooty Albatross *P. palpebrata*, it has the highest aspect ratio of any bird (in other words it has very long, narrow wings), and is supremely adapted to exploit strong winds. Conversely, it is cumbersome on land, and breeds on cliffs, where it can land and take off right at the nest. Combined with its dark plumage, its cliff-nesting habits make counting difficult, but perhaps 6,000 pairs breed on the islands each year, with the majority on Gough. It breeds in summer, laying a few weeks after the Atlantic Yellow-nosed Albatross, and takes slightly longer to raise its chick. As with Tristan Albatross, successful pairs seldom breed in successive years (Ryan 2007).

Southern Giant Petrel

Southern Giant Petrels *Macronectes giganteus* formerly bred on Tristan, but their sole legacy is the name 'Nellie Hump', given to a prominent ridge above the village. They are now confined to Gough, where there are three colonies at mid elevations along the west coast, and a few pairs at sea level on the east coast, near to the last population of Southern Elephant Seals *Mirounga leonina* on the island. The Southern Giant Petrel population on Gough has increased in recent years, probably linked to growth in Subantarctic Fur Seal *Arctocephalus tropicalis* numbers (Ryan 2007).

Tristan Skua

The confusing 'brown skua' complex that breeds around the southern oceans is represented by Tristan Skua *Stercorarius antarctica hamiltoni*, which is endemic to Tristan da Cunha and Gough. It is widespread and fairly abundant, breeding on all the islands, albeit in small numbers on Tristan where it is still persecuted as a potential predator of poultry and lambs. On the other islands, its diet is dominated by small seabirds, especially prions *Pachyptila* and storm-petrels (Hydrobatidae), although it will tackle larger species, including Great Shearwaters *Puffinus gravis* and Spectacled Petrels *Procellaria conspicillata*. Breeding pairs typically defend territories with sufficient numbers of burrowing petrels to support their brood of two chicks. Competition for territories is fierce, with roughly half the population forced into non-breeding 'clubs'. In the 1980s, Bob Furness demonstrated the demand for

Conservation

Visitors must be extremely vigilant not to introduce any new species to the islands, or to move species between islands, including native species (given the evolution of island-specific populations). Be sure to clean your boots, clothing and field equipment (e.g. camera bags, backpacks, tripod legs) before arriving on the islands, and when moving between islands. Turn out all your pockets and clean the seams. Pay special attention to seeds trapped in velcro on waterproofs and packs. Rats and mice pose the greatest threat to the islands' birds. When leaving from Tristan to the outer islands, make sure that your equipment is rodent-free. Day visitors are not allowed to take food to Inaccessible, specifically to reduce the risk of rodents getting ashore. Fire is another hazard, so no smoking is allowed on the outer islands.

Few birders will have the privilege to visit Tristan and Gough, but you can still help to promote the islands' conservation. Recent studies by New Zealand experts suggest that it is technically feasible to eradicate mice from Gough and rats from Tristan. Given the massive impacts of these introduced predators, it is vital to ensure that funds are made available for eradication programmes. Birders can help by supporting calls to the British Government to fund rodent eradications at Tristan and Gough. For further information, visit www.rspb.org.uk/ourwork/conservation/projects/tristandacunha/publications.asp

breeding opportunities on Gough by removing one member of a breeding pair every day for two weeks. In each case, the vacancy was filled within a day (Furness 1987).

Terns

Unlike the other seabirds, Brown Noddy *Anous stolidus* and the endemic race of Antarctic Tern *Sterna vittata tristanensis* seldom venture far offshore while breeding. It is interesting to see how these two terns interact at the very edges of their ranges. The noddy is a largely tropical species that reaches its southern limit on Gough, whereas Antarctic Tern reaches its northern limit on Tristan. Both are southern-summer breeders, with Brown Noddy laying before Antarctic Tern. A few Antarctic Terns remain around the islands in winter, but all the noddies have left the islands by May and return in September. Although many noddies breed on cliffs with the Antarctic Terns, some pairs also breed in trees.

Burrow-nesting seabirds

The remaining 14 breeding seabirds are all petrels that nest in burrows, and are largely nocturnal visitors to the islands. As a result, it is easy to overlook the sheer abundance of these birds. They greatly outnumber all other birds, with roughly three million pairs breeding in Tristan da Cunha and five million pairs on Gough (Appendix 1). Their nocturnal behaviour is one important mechanism for reducing the risk of predation by Tristan Skuas and the only species that visits regularly during the day is the large Spectacled Petrel. Great Shearwaters arrive at dusk when incubating, but become more daring once their chicks hatch. Seeing more than a million Great Shearwaters mass offshore at Nightingale each afternoon, then come crashing ashore at dusk, is one of the world's great seabird spectacles. Even that is perhaps surpassed by the sight of tens of thousands of petrels flying overhead by spotlight at night on Gough. Broad-billed Prion *Pachyptila vittata* is the most abundant species on Gough, which supports over two million pairs, but around the weather station there are also large numbers of Atlantic *Pterodroma incerta* and Soft-plumaged Petrels *P. mollis*, Common Diving-petrels *Pelecanoides urinatrix* and White-faced Storm-petrels *Pelagodroma marina*. Great Shearwaters are abundant and Little Shearwaters *Puffinus assimilis* locally common in tussock grass along the coast, whereas Kerguelen Petrels *Pterodroma brevirostris* are common farther inland. Venturing out at night on Inaccessible or Nightingale offers a similar spectacle, although the species differ somewhat: there are no Atlantic Petrels and White-bellied Storm-petrels *Fregetta grallaria* outnumber White-faced Storm-petrels in most habitats. The main island of Tristan stands in stark contrast to the other three islands, with virtually no nocturnal seabirds, thanks to the combined impacts of human exploitation and introduced predators.

Most petrels breed in the austral summer, although Grey Petrel *Procellaria cinerea*, Great-winged Petrel *Pterodroma macroptera* and Atlantic Petrels lay in autumn or early winter, with chicks fledging the following summer. This strategy proved costly on Tristan, where they were much sought-after as food during the lean winter period by the islanders and introduced predators alike. As a result, only a handful of pairs survive on Tristan, the last remnants of what were presumably vast populations before the island's colonisation. Petrels are now suffering the same fate on Gough, where starving House Mice *Mus musculus* have taken to eating seabird chicks each winter (see below). This has been well documented for the endemic Atlantic Petrel, with fewer than 20% of pairs managing to raise a chick each year, compared with typical breeding success of 60–70% in other *Pterodroma* petrels (Cuthbert 2004; Wanless 2007). Despite its still substantial population on Gough, the Atlantic Petrel is now listed as Endangered.

Two species of burrowing petrel are confined to a single island in the group. The diminutive Grey-backed Storm-petrel *Oceanites nereis* is a widespread subantarctic species that reaches its northern limit on Gough. The other is the Spectacled Petrel, which breeds on the plateau of Inaccessible – the only breeding site in the world for this species. This may not always have been the case. Historical records from the Indian Ocean, coupled with the presence of sub-fossil remains of a large *Procellaria* petrel on Amsterdam Island, suggest that it may have bred there prior to the introduction of mammalian predators (Ryan 1998). Spectacled Petrels on Inaccessible also came perilously close to extinction when feral pigs roamed the island, but fortunately the pigs died out before the last petrels were eaten, and the population

Peter Ryan

314. Spectacled Petrels *Pracellaria canspicillata* breed only on the higher parts of the plateau of Inaccessible Island. Their colonies create distinctive boggy patches among dense stands of Bog-ferns *Blechnum palmiforme*.

Peter Ryan

315. The Great Shearwater *Puffinus gravis* is the most abundant bird at the islands, despite no longer breeding at the main island of Tristan. In areas of dense tussock grass, some pairs lay on the ground.

has recovered well, despite ongoing at-sea mortality due to longline fisheries. Recent surveys suggest that the population is still increasing, with some 10,000 pairs breeding on Inaccessible each summer (Ryan *et al.* 2006).

Another species that has been confirmed breeding on only one island in the group is Sooty Shearwater *Puffinus griseus*. A few pairs have bred on Tristan, but the species has also been observed among Great Shearwaters gathering off Inaccessible prior to coming ashore, and a few may breed among the vast numbers of Great Shearwaters at other islands. However, the most enigmatic seabird is the white-bellied race of Black-bellied Storm-petrel *F. tropica melanolenca*, reported to breed on Gough (Brooke 2004). It is not known for certain whether one or two species of *Fregetta* storm-petrel breed on Gough; most authors have ignored the problem, and treat all white-bellied birds as White-bellied Storm-petrel, but the status of Black-bellied Storm-petrel does need to be resolved (Shirihai 2007). Unfortunately, the *Fregetta* storm-petrels breed quite late in the summer, and few people have had a chance to examine many birds on Gough, given that the annual relief of the weather station takes place in spring. It has become increasingly rare in spring, thanks no doubt to the unwanted attentions of mice on the island.

Landbirds

The seven extant landbirds, described below, are all endemic to the islands. In addition, two further landbird populations (a moorhen and a bunting) became extinct on Tristan sometime during the nineteenth century, one or both of which are likely to have been additional endemic species.

Moorhens

Some authorities consider that Gough Moorhen *Gallinula comeri* and the now-extinct Tristan Moorhen *G. nesiotis* were conspecific, but both taxa became flightless and must thus have evolved from independent colonisations by vagrant Common Moorhens *G. chloropus*. It provides an interesting example of how the same suite of adaptations evolves in parallel when birds are exposed to similar conditions – in this case, selection for reduced wings and more robust legs and feet (Olson 1973). It is intriguing to speculate why the moorhen on Tristan became extinct when, in 1956, eight Gough Moorhens released at Sandy Point successfully colonised Tristan and are now widespread and relatively abundant wherever sufficient cover exists. One possibility is that feral cats played a key role in the disappearance of the original population; this aggressive predator has since died out on Tristan.

Inaccessible Rail

Probably the most sought-after of the islands' birds is the Inaccessible Rail *Atlantisia rogersi*, which is confined to Inaccessible Island. It was described only in 1923, even though scientists on the *Challenger* expedition were alerted to the bird by the Stoltenhoff brothers when they were rescued from the island in 1873. It is abundant, occurring virtually throughout the island, including on the near-vertical sea cliffs, but is more often heard than seen, as it spends most of its time creeping mouse-like through the island's dense vegetation (Fraser *et al.* 1992). Its territorial call is a high-pitched trill, possibly suggesting a distant *Rallus* ancestor. It has been on the island for so long that its wings have reduced to little more than vestigial stumps, and its plumage has become soft and fur-like. Loss of flight is common in many island rails, and serves to reduce the energetic demands of growing and maintaining large wings and associated musculature. Quite why the Inaccessible Rail evolved such small size is unknown. It is the smallest surviving flightless bird in the world, and is permanently at risk should mammalian predators ever reach the island.

Inaccessible Rails are most vocal in spring, when pairs defend territories vigorously. However, they are easy to locate year-round, because pairs remain in contact with regular 'chik' or 'chik-ik' calls. They lay two eggs in a ball-shaped nest woven from grass and sedge leaves that is accessed via a tunnel through the surrounding vegetation. The chicks leave the nest shortly after hatching. When threatened by a Tristan Thrush *Nesocichla eremita*, the parents raise their vestigial wings and squeal loudly, but thrushes still kill many chicks. Unwary adults occasionally fall victim to Tristan Skuas.

Tristan Thrush

Tristan Thrush is an aberrant *Turdus* with streaky brown, neotenous plumage, reduced wings, enlarged legs and feet and an unusual brush-tipped tongue to aid it in lapping up egg contents. It occurs on Tristan, Inaccessible and

Peter Ryan

316. A Gough Moorhen *Gallinula comeri* on Tristan. The endemic flightless moorhen originally found on Tristan apparently became extinct in the nineteenth century.

Peter Ryan

317. Weighing just 40 g, the Inaccessible Rail *Atlantisia rogersi* is the world's smallest flightless bird. This individual is sunning itself after a protracted rainy spell.

Peter Ryan

318. According to new research, Wilkins' Bunting *Nesospiza wilkinsi* is confined to Nightingale Island, where its population has probably never exceeded a few hundred individuals.

Peter Ryan

319. The small-billed Nightingale Bunting *Nesospiza questi* is barely half the mass of Wilkins' Bunting *Nesospiza wilkinsi*.

Nightingale, with different subspecies on each island, and is the only landbird to have survived the onslaught of settlers and introduced predators on Tristan, albeit in small numbers. A supreme opportunist, it is quick to explore any possibility, including the arrival of people. It can become something of a nuisance to campers on the outer islands, as a noisy, squabbling group soon gathers to peck at anything left lying around. It feeds on a wide range of prey, from berries and invertebrates to eggs, chicks and meat scavenged from skua kills (Fraser *et al.* 1994). On the eastern plateau of Inaccessible the birds have even learnt to hunt adult White-bellied Storm-petrels, holding them down with their feet while bludgeoning them to death with their bills (Ryan & Moloney 1991). The absence of the thrush on Gough has resulted in Gough Bunting taking on the opportunist's role, although not to quite the same extent. The thrush is larger than the Tristan da Cunha buntings, with a longer bill and strong legs and feet, which are used to pull up mossy vegetation in search of insects (Ryan & Cuthbert in press).

Buntings

The buntings evolved from vagrant South American grass-finches. Only one species, Gough Bunting *Rowettia goughensis*, occurs on Gough, but several forms have evolved on Tristan da Cunha in what was presented as a classic example of simple adaptive radiation by David Lack (Lack 1947): birds with different bill size exploit different niches on both Inaccessible and Nightingale, with small-billed birds eating mainly grass and sedge seeds, while large-billed birds crack open the woody fruits of the Island Tree.

Subsequent work on Inaccessible revealed a more complex situation. In 1982/83 Mike Fraser found that there were two, altitudinally segregated colour morphs of small-billed buntings, while further investigation in the late 1980s found extensive hybridisation between large- and small-billed forms on the eastern plateau (Ryan *et al.* 1994). Genetic analyses then established that there was very little difference between populations, with the main difference being between *islands* rather than between small- and large-billed forms (Ryan *et al.* 2007).

Nevertheless, despite limited genetic differentiation, the two forms on Nightingale behave as good species, with marked vocal and morphological differences and no evidence of hybridisation. Accordingly, the author's view is that two species should be recognised on Nightingale: the common, small-billed, Nightingale Bunting *Nesospiza questi* and the rare Wilkins' (or Grosbeak) Bunting *N. wilkinsi* (Ryan 2008). On Inaccessible, there are three genetic lineages, corresponding to the three ecomorphs. However, given the high levels of intergradation, at least locally, and incomplete genetic assortment, they are best treated as a single species, Inaccessible Bunting *N. acunhae*, with three subspecies: Lowland *N. a. acunhae*, Upland *N. a. fraseri* and Dunn's Bunting *N. a. dunnei* (Ryan 2008).

The extinction of buntings on Tristan brings another taxonomic dilemma, because this population is known only from the type specimen, described by Cabanis in 1873. Given the proliferation of island-specific forms in this group (Ryan *et al.* 2007; Ryan 2008), it is possible that the Tristan population was specifically distinct from those on Inaccessible and Nightingale but there is simply too little material to make an objective judgement. All we can say is that the type specimen most closely resembles the birds found on Inaccessible, and thus the Tristan population is currently treated as *N. acunhae*.

Non-breeding seabirds and vagrants

More seabird species visit the waters around the islands than actually breed there, as 29 non-breeding species have been recorded (Ryan 2007). The small breeding population of Southern Giant Petrels is augmented by non-breeding giant petrels, including some Northern Giant Petrels *M. halli*. They are joined behind visiting ships by Cape Petrels *Daption capense*, White-chinned Petrels *Procellaria aequinoctialis* and Wilson's Storm-petrels *Oceanites oceanicus*, as well as occasional Southern Fulmars *Fulmarus glacialoides*. The Black-browed Albatross *Thalassarche melanophris* is the commonest of the non-breeding albatrosses, of which small numbers of six other species have been recorded. Most non-breeding seabirds breed elsewhere in the southern oceans, but some northern-hemisphere species visit in summer, notably Cory's Shearwaters *Calonectris diomedea*, Leach's Storm-petrels *Oceanodroma leucorhoa* and Long-tailed Skuas *Stercorarius longicaudus*. The other species are rare visitors or vagrants to the islands.

The islands are well off the beaten track, but they nonetheless attract a fair number of vagrant land and freshwater birds, testament to the large numbers of birds that become lost at sea. At least 28 species have been recorded, mostly from Tristan (Ryan 2007). This is not just a function of there being more observers on Tristan. The island probably attracts more vagrants because of its larger size and height and, once ashore, there are relatively few predatory skuas to eat or harass birds. The most regular vagrants are Cattle Egret *Bubulcus ibis* and American Purple Gallinule *Porphyrio martinica*. In both species, it is mainly young birds that arrive after the breeding season in South America, sometimes in small flocks, and may persist on Tristan's Settlement Plain for several months. Other regular vagrants include Barn Swallow *Hirundo rustica* and a variety of shorebirds. Other vagrant passerines are extremely unusual, with single Eastern Kingbird *Tyrannus tyrannus* and Willow Warbler *Phylloscopus trochilus* being the only confirmed records.

A wealth of biodiversity

Birds dominate the island's fauna, but they are not the only wildlife group that makes the islands globally important for biodiversity conservation. In addition to 11 endemic bird species, there are 27 endemic flowering plants, 14 endemic ferns, and more than 100 endemic macro-invertebrates (Ryan 2007). Levels of endemism among cryptogams and smaller invertebrates are not known, but are likely to be high.

The only native mammals on the islands are Subantarctic Fur Seals and Southern Elephant Seals that come ashore to breed and moult. Gough was the main refuge for the fur seal during the height of commercial sealing and, with some 300,000 animals, still supports 80% of the global population (Ryan 2007). Much smaller numbers of fur seals breed on Tristan da Cunha, but their populations are increasing at all three islands, possibly to the detriment of Northern Rockhopper Penguins at their stronghold on Alex Island, adjacent to Nightingale (Cuthbert *et al.* in press). The elephant seals have not recovered from intense exploitation for blubber, and only a few survive, breeding on the sheltered northeast coast of Gough. Fortunately, their numbers remain healthy farther south in the Atlantic Ocean.

There are no other terrestrial vertebrates, but the seas around the islands support a diverse marine community of fish, including one endemic species, the Klipfish *Bovichtus diacanthus*. At least 15 cetaceans have been reported

Peter Ryan

320. Tristan Thrushes *Nesocichla eremita* are dietary generalists, but eggs are a sought-after component of their diet. This individual of the large, dark race *procax* on Nightingale Island has managed to break into an abandoned Atlantic Yellow-nosed Albatross *Thalassarche chlororhynchos* egg.

from the islands' waters, including several strandings and sightings of the extremely poorly known Shepherd's Beaked Whale *Tasmacetus shepherdi* (Ryan 2007). Historically the islands were an important breeding ground for Southern Right Whales *Eubalaena australis*, but their recovery was set back by illegal Soviet whaling following the temporary evacuation of Tristan in 1961 (owing to volcanic eruption and lava flows) (Best 1988). Marine invertebrates and seaweeds are poorly known, but levels of endemism are high among at least some groups, including bivalves and red seaweeds (Rhodophyta) (Ryan 2007).

Threats to birds

With the exception of a few marginal species such as Sooty Shearwater, virtually all populations of breeding birds are of global conservation importance. In addition to the 11 endemic species (Appendix 1), the islands support more than half the global populations of Northern Rockhopper Penguin, Sooty Albatross, Broad-billed Prion, Great Shearwater, Kerguelen and Soft-plumaged Petrels, and White-bellied Storm-petrel (Brooke 2004). Many of these species are classified by IUCN as Globally Threatened, with two Critical, five Endangered, six Vulnerable and three Near Threatened species breeding on the islands (Appendix 1). The landbirds are most at risk from introduced predators, whereas the seabirds face threats both from predators on land and from modern fishing methods at sea.

Introduced predators such as feral cats, dogs and pigs have occurred on the islands at various times, but currently the only feral mammal populations are Black Rats *Rattus rattus* on Tristan, and House Mice on Tristan and Gough (Ryan 2007). Rats are well known to have a very serious impact on island birds, and they doubtless play a major role in suppressing the numbers of burrowing petrels on Tristan. But until recently, mice were considered to affect mainly invertebrates and plants. This myth was shattered when Rich Cuthbert and Erica Sommer discovered that the very low breeding success of Tristan Albatrosses and Atlantic Petrels on Gough in 2000/01 was due to mouse predation of chicks (Cuthbert & Hilton 2004). That mice were the culprits was confirmed by Ross Wanless and Andrea Angel, who obtained extraordinary video footage of mice attacking live chicks of both these species and of Great Shearwaters (Wanless *et al.* 2007).

Mice arrived on Gough among sealers' supplies sometime during the 1800s, and have spread across the entire island. Numbers peak in summer, with densities of up to 300 mice per hectare, but then crash in winter, when food is limited. Most bird predation occurs in winter, but some birds and eggs are taken in summer, including Gough Buntings. Populations of Tristan Albatross (Cuthbert *et al.* 2004) and Gough Bunting (Ryan & Cuthbert in press) are decreasing, and both species have just been raised to Critically Endangered (BirdLife

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321. An immature Gough Bunting *Rowettia goughensis* adopts the alert, sky-pointing posture when a Tristan Skua *Stercorarius antarctica hamiltoni* flies over. This large passerine takes up to four years to acquire adult plumage (Ryan & Cuthbert in press).

International 2008). Other burrow-nesting seabirds are almost certainly affected, but it is hard to quantify the impact of the mice.

Many of the islands' seabirds also are at risk from various threats at sea. Immediately around the islands they are dazzled by powerful lights on ships at night, and risk colliding with vessels (Ryan 1991). Visiting ships are required to dowse all non-essential lights, but this is not always enforced. The main threat at sea for albatrosses and many large petrels is incidental mortality on fishing gear, especially longlines. All three albatrosses, giant petrels, Spectacled and Grey Petrels, and Great Shearwaters are killed on longlines. This fishing-related mortality is particularly serious for species that are also affected by mouse predation, such as Tristan Albatross and Grey Petrel. Considerable effort is being made to reduce this problem through implementation of bird-friendly fishing techniques, but better policing of high-seas fleets is a priority. There is a huge Exclusive Economic Zone around the islands, but also very little ability to ensure that only licensed fishers using approved techniques operate in their waters.

A final threat to all birds is the spectre of global climate change. Temperature increases, which have already been detected (Jones *et al.* 2003), are likely to alter vegetation dynamics and potentially increase the invasiveness of introduced species. For seabirds, shifts in global circulation patterns may be catastrophic because they rely on predictable food supplies within commuting distance of the islands while feeding their chicks. Given the paucity of islands in the South Atlantic, there are few options for them to shift their breeding sites to follow frontal zones and other areas of enhanced productivity. This may in part account for the decreases in rockhopper penguins across much of their range (Hilton *et al.* 2006).

Conservation measures

The Tristan community is well aware of the global importance of its biodiversity heritage. Already more than 40% of the islands' meagre land area is set aside for conservation. Gough and Inaccessible are nature reserves and together form a natural World Heritage Site, including the coastal waters out to 12 nautical miles. Although Nightingale is not formally protected, it is managed as a multi-use reserve, with limited exploitation confined to two seabird species: Northern Rockhopper Penguin (eggs only) and Great Shearwater. On the main island of Tristan, all penguin colonies are nature reserves, and only Tristan Skua and (the introduced) Gough Moorhen are not protected.

Alien species pose the greatest threat to the islands' fauna and flora. Great care must be taken not to introduce any new species to the islands, or to move species between islands. Rats, mice and other predators are the greatest threat to birds. Given the global importance of Gough for seabirds, there is an urgent need for extraordinary measures with regard to mice.

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322. Tristan Skuas *Stercorarius antarctica hamiltoni* defend their territories vigorously against intruders.

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323. A large Tristan Albatross *Diomedea dabbenena* chick killed by House Mice *Mus musculus* on Gough Island. In some parts of Gough, fewer than 10% of chicks survive the onslaught of mice each winter.

Feasibility studies have concluded that eradication of mice from Gough, and rats (and perhaps mice) from Tristan, is technically feasible by spreading poison bait across the island by helicopter. The challenge now is to secure the funding to actually conduct these operations. Continued vigilance also is needed to ensure that Inaccessible and Nightingale remain predator-free, especially given the presence of both rats and mice on Tristan. All goods being moved between the islands must be packed in rodent-free areas, and inspected carefully prior to leaving Tristan.

Plants and invertebrates also can have serious impacts on the islands' ecosystems. For the last decade, considerable effort has been made to eradicate Procumbent Pearlwort *Sagina procumbens*, a common European weed, from Gough. This seemingly innocuous plant has taken over vast tracts of other subantarctic islands, displacing native vegetation and changing ecological processes, and it would be disastrous if it were to reach the uplands of Gough. Efforts are also ongoing to remove New Zealand Flax *Phormium tenax* from Inaccessible and Nightingale, given its potential to dominate the native vegetation.

One of the main obstacles to effective conservation management on the islands is the lack of human capacity (Glass & Ryan 2003). With a permanent population of only 270 people, spanning the full spectrum from children to pensioners, there are few people available for full-time conservation work. The formation of a Natural Resources Department on Tristan in the mid 1990s was a great step forward, but its small staff lacks the ability to meet all the islands' conservation obligations, with most of their energy devoted to managing the commercially important lobster fishery. Since 2000, the RSPB has been instrumental in securing funds for conservation on the islands, and promoting the development of local expertise. A Biodiversity Action Plan has been developed and a Conservation Officer post created. However, difficulty of access to the islands remains a serious stumbling block to the implementation of required conservation measures. For birds, the main conservation needs are as follows:

- to enforce strict quarantine measures for Tristan and the outer islands;
- to remove mice from Gough and rats and mice from Tristan; and
- to ensure bird-friendly fisheries throughout the ranges of Tristan's vast seabird populations.

Acknowledgments

I thank my field colleagues, especially Andrea Angel, Marie-Helene Burle, John Cooper, Rich Cuthbert, Cliff Dorse, Coleen Moloney, Erica Sommer, Ross Wanless, Barry Watkins and Johnny Wilson. Logistical support at Tristan and Gough is supplied by Tristan's Department of Agriculture and Natural Resources, the South African Department of Environmental Affairs and Tourism and Ovenstone Fishing. I'm especially grateful to James and Trevor Glass, Clarence October and Cecil Poleman. Financial support comes from the UK Overseas Territories Environment Programme, the RSPB, the South African National Antarctic Programme, National Geographic, WWF-UK and the University of Cape Town. Geoff Hilton and Sarah Sanders from the RSPB have been extremely helpful in facilitating research at the islands since 2000. Permission to work at the islands was given by successive Administrators and Island Councils of Tristan da Cunha.

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324. The Atlantic Petrel *Pterodroma incerta* is the most abundant of the endemic seabirds, with more than a million pairs on Gough Island. Nonetheless, it is Endangered owing to mouse predation of its chicks.

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Peter Ryan, Percy FitzPatrick Institute, University of Cape Town, Rondebosch 7701, South Africa

Peter Ryan is an Associate Professor at the University of Cape Town. His PhD was on the evolution of Tristan da Cunha's buntings and he has been an honorary Tristan Conservation Officer since 1989. He works closely with the RSPB to help to improve the conservation status of the islands and their birds.

Appendix 1. Breeding birds on Tristan da Cunha (Tristan, Inaccessible and Nightingale) and Gough Island. 'Breeding population' gives the estimated number of pairs breeding each year on Tristan da Cunha (including Inaccessible and Nightingale) and Gough Island from Ryan (2007). For biennial breeding species, the population estimates are less than the total breeding population, but the proportion breeding each year is known only for Tristan Albatross. Many of the estimates for burrowing petrels and shearwaters are crude.

		Breeding population		Global threat status
		Tristan da Cunha	Gough	
Northern Rockhopper Penguin	*Eudyptes moseleyi*	150,000	50,000	Endangered
Tristan Albatross †	*Diomedea dabbenena* *	2	1,400	Critical
Atlantic Yellow-nosed Albatross	*Thalassarche chlororhynchos* *	25,000	5,000	Endangered
Sooty Albatross	*Phoebetria fusca*	1,000	5,000	Endangered
Southern Giant Petrel	*Macronectes gigantens*	extinct	230	Near Threatened
Broad-billed Prion	*Pachyptila vittata*	200,000	2,000,000	
Spectacled Petrel	*Procellaria conspicillata* *	10,000	–	Vulnerable
Grey Petrel	*Procellaria cinerea*	50	10,000	Near Threatened
Great Shearwater	*Puffinus gravis*	2,500,000	1,000,000	
Sooty Shearwater	*Puffinus grisens*	5	–	Near Threatened
Little Shearwater	*Puffinus assimilis*	12,000	10,000	
Kerguelen Petrel	*Pterodroma brevirostris*	100	20,000	
Soft-plumaged Petrel	*Pterodroma mollis*	12,000	400,000	
Great-winged Petrel	*Pterodroma macroptera*	500	10,000	
Atlantic Petrel	*Pterodroma incerta* *	50	1,500,000	Endangered
Common Diving-petrel	*Pelecanoides urinatrix*	15,000	10,000	
Grey-backed Storm-petrel	*Oceanites nereis*	–	10,000	
White-faced Storm-petrel	*Pelagodroma marina*	6,000	10,000	
White-bellied Storm-petrel ††	*Fregetta grallaria*	50,000	10,000	
Tristan Skua	*Stercorarius antarctica hamiltoni* *	200	1,000	
Antarctic Tern	*Sterna vittata tristanensis* *	350	500	
Brown Noddy	*Anous stolidus*	400	200	
Inaccessible Rail	*Atlantisia rogersi* *	5,000	–	Vulnerable
Gough Moorhen	*Gallinula comeri* *	2,000	3,500	Vulnerable
Tristan Thrush	*Nesocichla eremita* *	1,300	–	Near Threatened
Gough Bunting	*Rowettia goughensis* *	–	500	Critical
Inaccessible Bunting	*Nesospiza acunhae* *	10,000	–	Vulnerable
Nightingale Bunting	*Nesospiza questi* *	4,000	–	Vulnerable
Wilkins' Bunting	*Nesospiza wilkinsi* *	50	–	Endangered

* Endemic species or subspecies.
† Successful breeders seldom breed in successive years, so the actual population is larger than this.
†† Identity of the *Fregetta* storm-petrels on Gough island remains unresolved; some or all may be a white-bellied morph of Black-bellied Storm-petrel *F. tropica* (see Shirihai 2007 for details).

Highlights from a long-term study of Sparrowhawks

Ian Newton

Richard Allen

ABSTRACT The numbers of Eurasian Sparrowhawks *Accipiter nisus* that breed in any landscape depend primarily on the amount of woodland, but within that woodland breeding densities vary with the prey supply. In continuous woodland, pairs space themselves regularly, but more widely in areas where prey are scarce. In particular areas, providing that the environment remains stable, breeding numbers remain fairly stable from year to year, because of density-dependent recruitment to a limited number of good territories. Lifetime production of young varies greatly among individuals, depending largely on longevity (maximum 10–11 years) and age of first breeding (1–3 years). In one area with a stable breeding population, it was calculated that 72% of all females that left the nest died before they could breed, another 6% attempted to breed but produced no young; while the remaining 22% produced between one and 24 young during their lives. On the pattern prevailing, 5% of the most productive individuals in one generation produced more than half the young in the next generation. During the lifetimes of individual females, annual survival probability and breeding success increased up to mid-life, and then declined in old age. The quality of nesting places varied, as assessed by both occupancy and nest success. Over a period of years, good places were occupied more often than poor ones and produced more young per nesting attempt. The best places seemed to be strongly competed. Most birds were present at individual nesting places for one year only, but some stayed for several years. During their lives, many individuals moved from poor to good places. The quality of nesting places changed slowly over time, as Sparrowhawks favoured, and bred most successfully in conifer stands aged 20–35 years.

Markus Varesvuo

325. First-year female Eurasian Sparrowhawk *Accipiter nisus* in flight.

This paper is based on a study of Eurasian Sparrowhawks *Accipiter nisus* (hereafter 'Sparrowhawks') conducted over a period of 27 years, mostly in southern Scotland, but also in other parts of Britain. It provides a review of information published more fully elsewhere (the references are cited below), in which more statistical detail may be found. Many of the data discussed here derive from Eskdale, a 200 km^2 area centred on the town of Langholm, in Dumfries & Galloway, but other comparative data are drawn from 13 other areas elsewhere in Britain. The many people involved in this study are mentioned in the acknowledgments.

The Sparrowhawk is a relatively small bird of prey too familiar to require description, but a few points of natural history will help to set the scene. The species nests in forest and woodland, hunts in both wooded and open country, and eats almost entirely other birds, especially small songbirds. It breeds commonly in suitable habitat across Eurasia, from Britain & Ireland to Japan. In the colder parts of its range it is migratory, but in Britain & Ireland it is resident year-round. As in other birds of prey, the female is the larger sex, but in the Sparrowhawk this dimorphism is extreme: in the breeding season the female weighs about twice as much as the male. Linked with this size difference, the sexes differ in their feeding habits, the females generally hunting in more open habitat and taking some larger prey species than males (Marquiss & Newton 1982; Newton 1986). While the females are responsible for egg and chick care, the males provide most of the food for breeding, doing practically all the hunting from before laying until the young are about half-grown, after which the females also hunt to feed the brood.

Everywhere that the species has been studied, it has been found to be predominantly monogamous, at least for each breeding season, and pairs nest solitarily, each well separated from other pairs. Usually, pairs nest in the same restricted localities year after year: the same places in the same woods. They build a new nest each year near old ones, so that regular nesting places can be recognised by groups of characteristic flattish nests of different ages. The presence of these old nests makes it possible to find the nesting places at any time of year. When occupied, such nesting places are defended, so could equally be called 'nesting territories'.

Most clutches consist of 3–6 eggs (range 1–7) and, although the birds may lay a repeat clutch if the first fails at an early stage, no more than one brood is raised each year. In the areas where these studies were made, about half the nests produced young and the others failed for one reason or another, but the proportions of successful nests varied greatly from year to year, and from area to area. When the work began, the birds had recently recovered from the

organochlorine-pesticide impacts of earlier years and, in the areas concerned, residues in eggs had fallen to levels insufficient to affect breeding success.

Every year, within the study areas, all the woods and forests were searched in an attempt to find all the nests, record breeding performance (laying dates, clutch and brood sizes), and ring the young. In addition, many of the breeding adults were trapped at the nest each year and ringed. This enabled the same individuals to be followed year after year – in many cases throughout their lives. Females were much easier to catch than males, so provided more information. In most years in the Eskdale study area, the female at every known nest was caught and identified. Other observers searched in the same way for nests in other areas, providing information on nest spacing and success in a total of 14 different study areas throughout Britain.

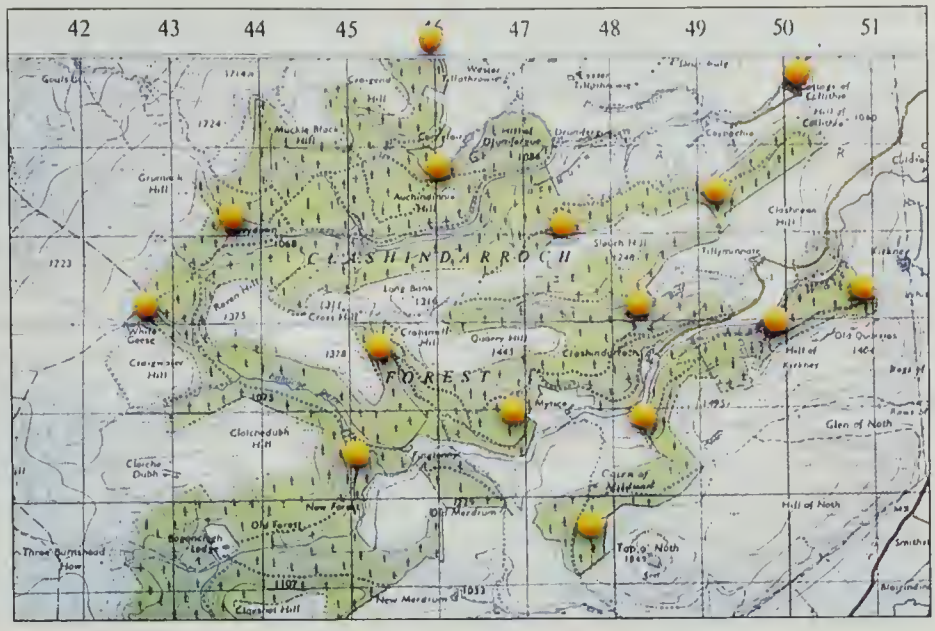

Fig. 1. Regular spacing of nesting places in Clashindarroch Forest, North-east Scotland, 1973–76, based on nests found by Neville Bousfield.

Nesting densities

In each of the areas studied, a common pattern emerged: in areas of more or less continuous woodland, the nesting places of different pairs were regularly spaced, as shown in fig. 1. However, the spacing of the nesting territories, as measured by nearest-neighbour distances, varied greatly from area to area. In some areas, nesting territories in continuous woodland were as close as 0.6 km, in others up to several kilometres apart. In all 14 study areas, nesting places were always uniformly spaced within woodland, but the distances between them varied greatly from one area to another.

In each area, the average nest spacing was related to the local food supply (fig. 2). The abundance of small birds that form the food of Sparrowhawks was measured in the spring of

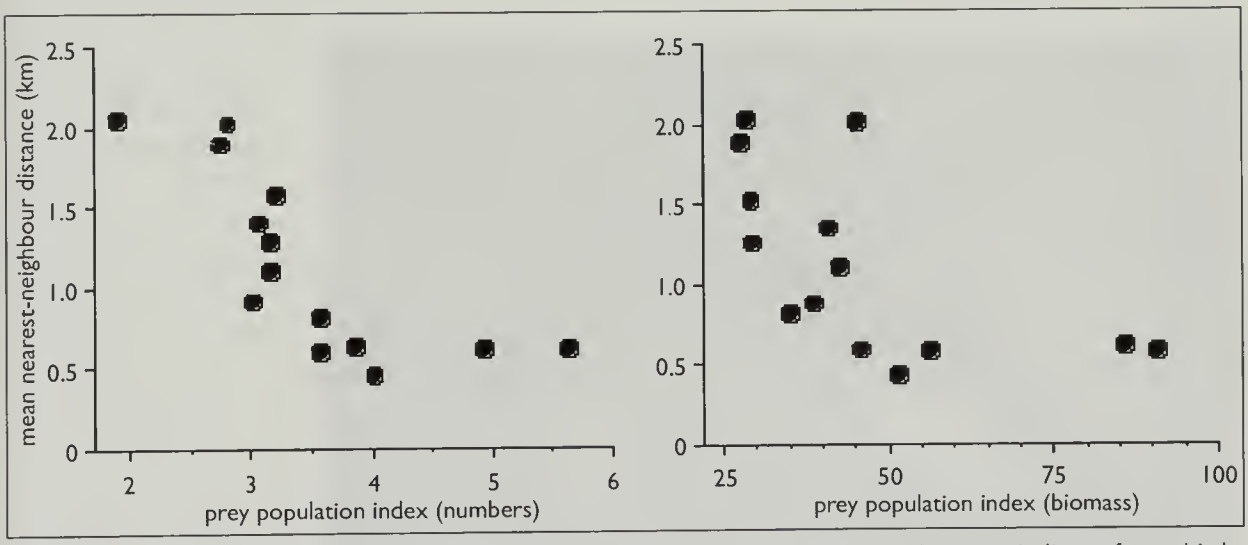

Fig. 2. Spacing of Sparrowhawk nesting places in continuous nesting habitat in relation to indices of prey-bird densities in 14 different areas. Prey densities assessed by ten-minute point counts in 10–12 randomly selected localities in the woodland of each area, and Sparrowhawk nest spacing from nearest-neighbour distances. Sparrowhawk nearest-neighbour distances decrease (so densities increase) with increase in prey densities and biomass. Relationship between spacing and prey numbers: $r = -0.77$, $P<0.01$; between spacing and prey biomass: $r = -0.61$, $P<0.05$. From Newton *et al.* (1986).

one year by 'point counts' in randomly selected localities in the woodland of each area. Comparing areas, a clear pattern emerged: as the densities of prey increased, so the average nearest-neighbour distance of Sparrowhawk nesting places declined. In other words, the hawks were nesting closer together, at greater densities, in areas where their food supply was most plentiful. This relationship held whether food was expressed as numbers or as biomass of prey counted.

So it seemed that, in well-forested areas, the densities of Sparrowhawks were related to the densities of their food supply. However, in some of our study areas, as in many other parts of Britain, woods were few and far between, and although small-bird prey were abundant in the open land between the woods, Sparrowhawks were evidently held below the level that the food supply would support by shortage of nesting sites. In general, then, Sparrowhawks were limited by two factors: food supply or nesting places, and shortage of one or the other could limit the breeding density in different areas.

Year-to-year stability in nesting densities

By taking a wide range of prey, consisting of both resident and migratory bird species, the Sparrowhawk is largely buffered against shortage of any one species, and is normally able to maintain fairly consistent breeding densities from year to year. This is in contrast to some other birds of prey, such as Common Kestrels *Falco tinnunculus* or Short-eared Owls *Asio flammeus*, which specialise on cyclically fluctuating rodents, and vary greatly in breeding density from year to year (Newton 2003). In the areas studied, providing that the environment remained reasonably stable, the numbers of Sparrowhawk nests also remained fairly stable from year to year. For example, in Eskdale, the average number of nests found per year was 34, but throughout the whole 25-year period annual numbers remained within 15% of the average level, with no long-term upward or downward trend (fig. 3).

How did the Eskdale breeding population remain so stable from year to year, and what was the proximate mechanism? Because I trapped most of the breeding birds each year, I could distinguish new breeders nesting in the area for the first time from established breeders that were present in the nesting population from previous years. Comparing the figures between years, it emerged that, in years when many old breeders were left from the previous year, few new breeders were added to the nesting population (fig. 4). But in years when few previous breeders were left, then many new breeders were added. The recruitment of new breeders each year was density dependent with respect to the numbers of old breeders left from previous years. This pattern held because the total number of available territories in this area remained fairly constant from year to year. A new bird could breed chiefly when an old one died and left a vacancy. This was evidently the mechanism by which stability in breeding numbers was achieved – by competition for a limited number of territories, themselves limited by the local environment. Surplus non-breeders were available each spring to fill any gaps that arose, but indirect evidence indicated that the numbers of unattached non-breeders varied much more from year to year than the numbers of breeders (Newton & Rothery 2001). On average, the number of unattached females was estimated at around 0.3 for every nesting female.

Bobby Smith

326. Adult female Eurasian Sparrowhawk *Accipiter nisus* incubating.

Compared with the fluctuations found in many other bird species, Sparrowhawk breeding numbers in Eskdale showed a remarkable degree of stability. Yet such stability is typical of many birds of prey nesting in stable environments, with a consistent supply of food and nest-sites (Newton 2003). In some of our other study areas, however, the amount of suitable nesting habitat changed markedly during the study, as older woodland was felled or young woodland grew to a stage suitable for Sparrowhawks, while at the same time small-bird densities changed through these and other developments in land use. In each of these areas, the numbers of nesting Sparrowhawks changed accordingly, decreasing or increasing as the case may be.

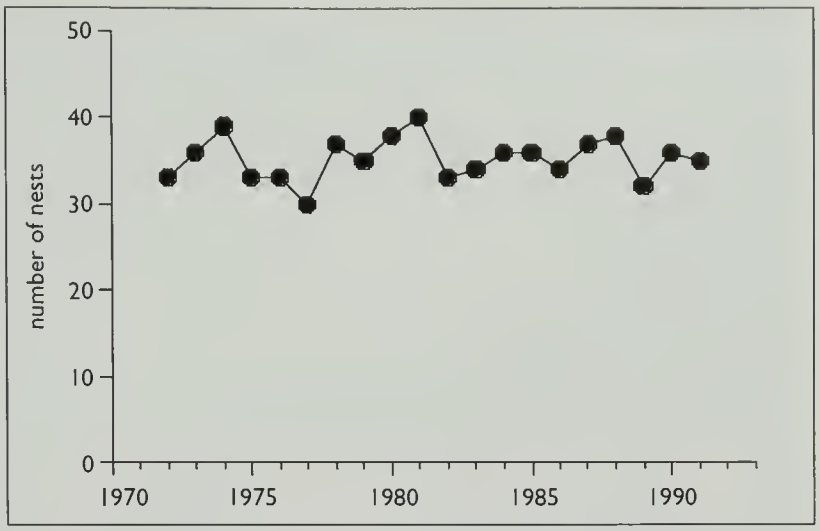

Fig. 3. Annual nest numbers in the Eskdale study area, Dumfries & Galloway, 1972–91.

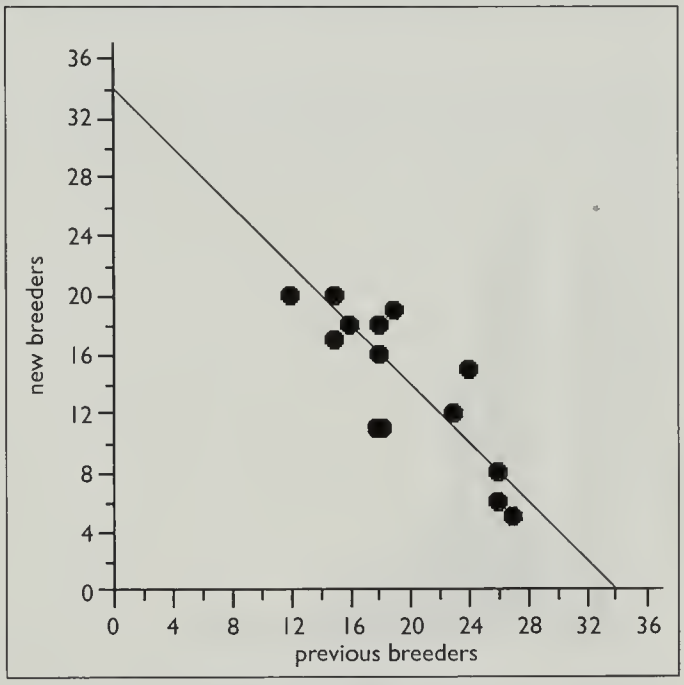

Fig. 4. Number of new females recruited to the Eskdale breeding population each year in relation to the number of established breeders present from previous years. The average population over the whole period was 34 pairs, so on the diagram, the line joins 34 on one axis to 34 on the other axis; it shows the relationship expected if the number of new breeders added each year had exactly compensated for the number of old breeders that were lost. The points show the actual figures obtained in different years, all of which lie close to the line. The graph reveals the mechanism by which the stability of numbers was maintained in relation to a fairly fixed number of territories determined by the habitat of the area. From Newton (1991b).

Lifetime reproduction

Much information was collected on the success of individual Sparrowhawk nests, but for exactly 200 individuals, I recorded lifetime reproductive success; that is, the total numbers of young raised during their entire lives. My assumption was that all the nests of these females occurred within the study area. For the majority of females, this was a reasonable assumption, but a minority may have attempted nesting outside the area in one or more years, and hence unknown to me.

There is great potential for bias in estimates of lifetime success, because it is much easier to record the lifetime production of a short-lived individual than of a long-lived one. This is simply because the longer a bird survives, the more difficult it is to keep track of it year after year. So the first question I had to ask was 'In terms of their lifespans, how typical are my 200 females of the female population as a whole?' Sparrowhawks are not especially long-lived. The oldest bird in Eskdale, and the oldest recorded in Britain at that time, lived to be 11 years of age, but it bred for the last time in its tenth year.

The pale columns in fig. 5 show the expected age composition of the breeding population at Eskdale as a whole, based on knowledge of mortality rates at different ages and of ages of first breeding (see later). The dark columns show the age composition of those 200 females whose lifetime success I knew. There is no significant difference between these distributions, so I could assume that my sample of females was representative, in terms of their lifespans, of the female population as a whole. In other

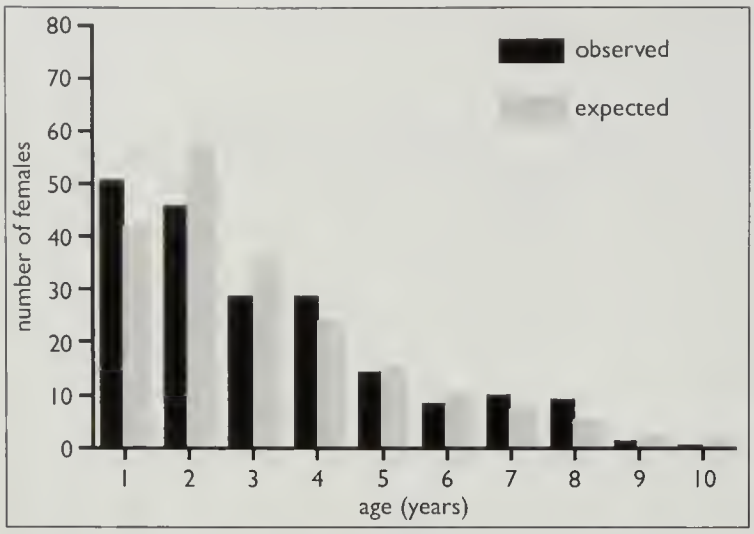

Fig. 5. Age composition of the Eskdale breeding population. Pale columns show the expected age composition calculated from knowledge of mortality rates at different ages, together with the ages of first breeding. Dark columns show the age composition of 200 females whose lifetime reproductive rates were known. The two distributions did not differ statistically, so it could be assumed that the 200 females were representative, in terms of their lifespans, of the female population as a whole. Updated from Newton (1985).

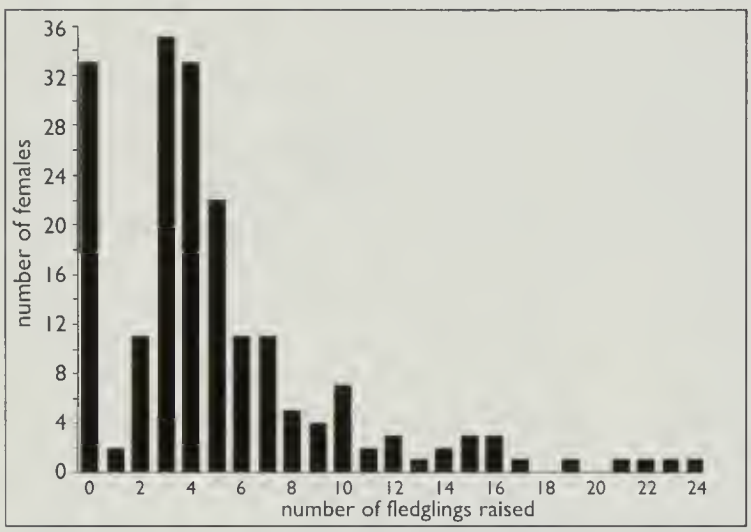

Fig. 6. Lifetime fledgling productions of 200 female Sparrowhawks. Mean per female = 5.3 young (range 0–24). Updated from Newton (1989).

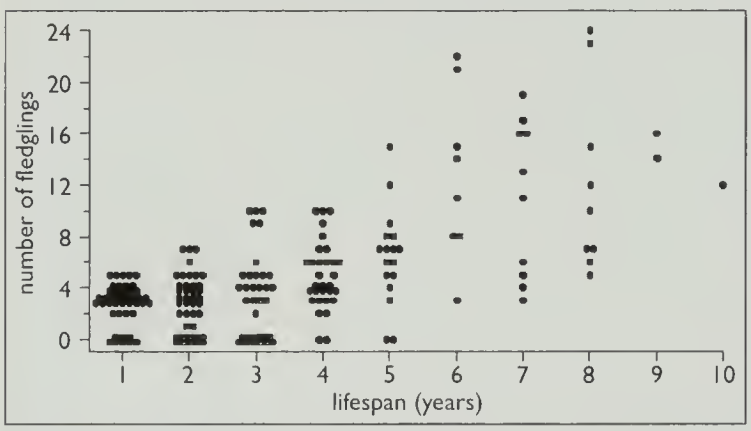

Fig. 7. Lifetime productions of different female Sparrowhawks in relation to their individual lifespans. Each dot shows the number of fledglings raised by a particular female. Relationship between lifetime production (y) and duration of lifespan (x): $y = 0.127 + 1.42x$, $r^2 = 0.425$, $P = 0.0001$. Updated from Newton (1989).

words, my sample of females was not biased with respect to longevity.

The numbers of young raised by these breeding females during their lives varied from nil to 24 (fig. 6). About 16% of females attempted to breed (laid eggs), but still produced no young and therefore left no descendants. The remaining females produced between one and 24 young during their lives. About 45% of females raised 3–5 young during their lives. This was because most broods consisted of 3–5 young, and many females raised only one brood during their lives. But the main point of interest is the great variation in the number of young produced by different breeding females.

What causes such large variation in lifetime production? One obvious factor is the lifespan of the individual concerned, as shown in fig. 7. The general trend was for females that were longer-lived to produce most young. Nevertheless, in any one age group, there was great variation. Some females lived to be seven or eight years of age, and still produced no more young than some of the one-year birds. And the oldest individual, which lived to be ten years, produced only 12 young. Overall, however, a broad relationship was apparent between total production of young and lifespan.

Another factor that influenced the number of young produced per lifespan was the age of first nesting. Some females began to nest in their first year of life, but others did not start until they were two or three years of age. This delay probably resulted from competition for good nesting places, in which old birds took precedence over young ones; and also, in the case of males, because some individuals were unable, in the scarcity of their first spring, to catch enough prey to feed a female in addition to themselves.

Taking all this information on breeders, together with other information on survival up to breeding age, I

was able to calculate the numbers of young produced by individuals in an entire cohort (or generation) of female Sparrowhawks (fig. 8). The main points to emerge were that a large proportion – 72% of all the young females that left the nest – died before they could breed. Another 6% attempted to breed; they laid eggs but failed to produce young. Overall, then, 78% of individuals left no descendants. Only 22% of individuals in each generation produced young, but in greatly varying numbers. Together they produced enough young during their lives to replace themselves and all the other non-productive individuals. With such a skewed pattern of distribution, only 5% of females produced more than half the young in the next generation, a pattern that was presumably repeated generation after generation.

Ian Newton

327. Adult female Eurasian Sparrowhawk *Accipiter nisus* and chicks at a nest in a larch *Larix* plantation.

Age-related variation in survival and breeding success

The information on lifetime reproductive success was obtained by following the same individuals throughout their lives. Another type of analysis asked how the performance of the birds – their survival and breeding success – changed during the course of their lives. The sample available for analysis was much bigger than for lifetime success because it included birds of known age that were studied for only part of their lives. Again the data refer to females, as too few records were obtained for males to examine this aspect in detail.

Fig. 9 shows four aspects of performance in relation to age. Fig. 9a shows survival to the

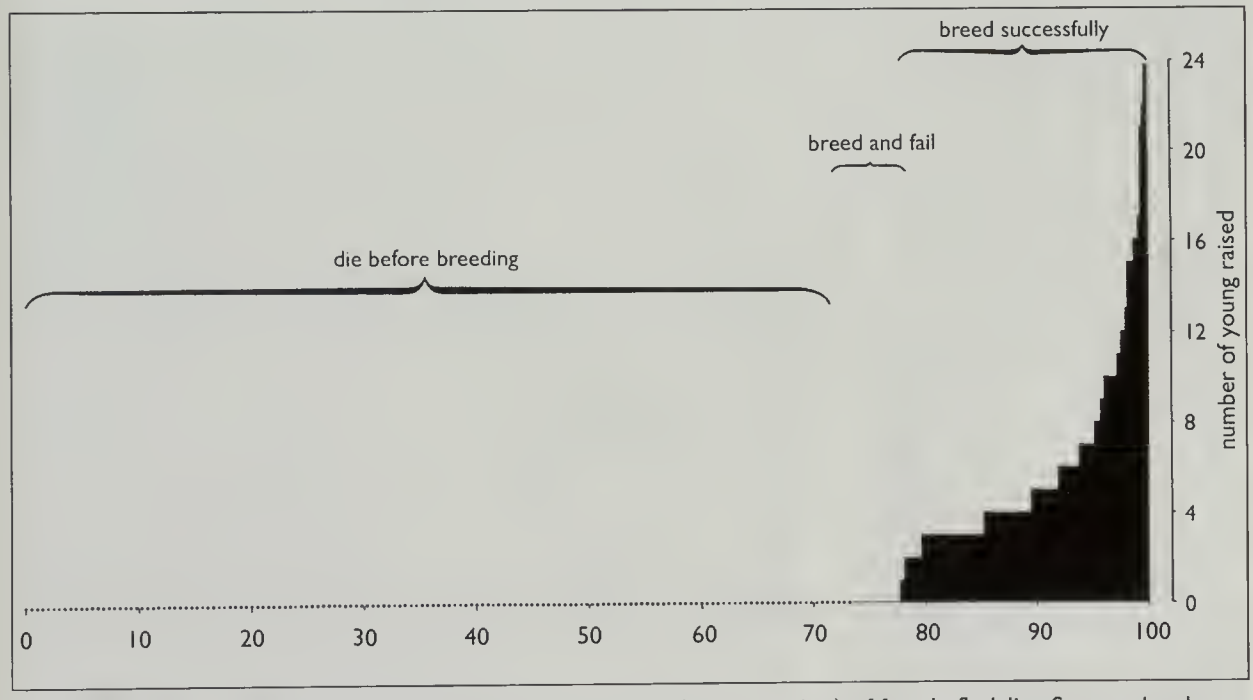

Fig. 8. Lifetime reproductive success of a whole cohort (or generation) of female fledgling Sparrowhawks. Individuals are arranged along the x-axis in order of their lifetime productions. About 72% of fledglings died before they could breed, and another 6% attempted to breed (laid eggs) but produced no young, while the remaining 22% produced 1–24 young during their lives. The 5% of individuals at the right-hand end of the graph produced more than half the total number of young. Updated from Newton (1989).

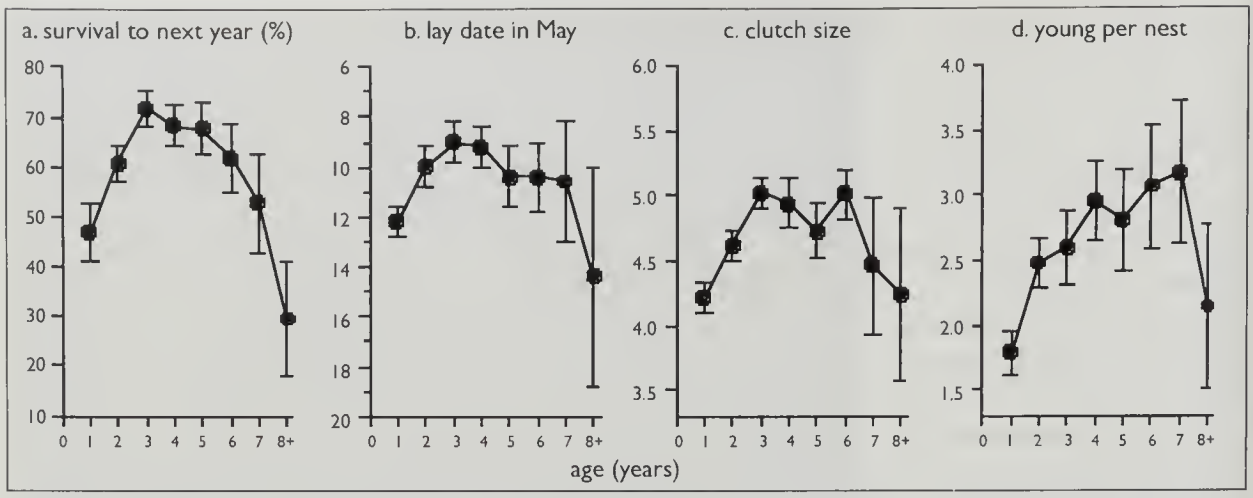

Fig. 9. Performance in relation to age in female Sparrowhawks. The shape of the curves differs, according to the aspect of performance measured, but all show improvement in the early years of life and deterioration in the later years. From Newton 1989; see also Newton & Rothery (1997).

next year of females of different ages. Females that were in their first year of life had less than a 50% chance of surviving to the next year, but their annual survival rate increased into mid life, reaching more than 65% in the third, fourth or fifth years, and then declined with increasing age. Females of eight or more years old showed a lower annual survival than even the one-year-olds.

The three other graphs in fig. 9 show different aspects of breeding performance. Fig. 9b shows the laying date (of first egg). In the Sparrowhawk, an early laying date is advantageous because the earlier a bird lays its eggs in the breeding season, the more likely it is to produce young. Females start in their first year by laying late in the season; they get progressively earlier to middle life and then progressively later with increasing age. Fig. 9c shows the clutch size; again, young birds lay small clutches, but as they get older they lay larger clutches and then smaller again. Fig. 9d shows the average number of young produced per nesting attempt; this figure increases until quite late in life before declining.

The shapes of these curves differ according to the aspect of performance that is measured, but all show the same broad pattern of

Markus Varesvuo

328. Female Eurasian Sparrowhawk *Accipiter nisus* drowning a Magpie *Pica pica* in a woodland pool.

improvement in the early years of life, which one might attribute to increasing experience and social status, followed by deterioration in later life. Such senescence has proved extremely difficult to demonstrate in birds, partly because birds can be aged only in the early years of their life so a long-term study is needed in order to follow ringed birds throughout their lives, but also because so many birds of all ages die each year that very few individuals reach old age. Hence, a very large sample of young birds needs to be ringed in order to provide enough individuals of known age in the older age groups. Studies on relatively few bird species have yet yielded this type of information.

Bobby Smith

329. Adult female Eurasian Sparrowhawk *Accipiter nisus* with small downy chicks.

Bobby Smith

330. First-year female Eurasian Sparrowhawk *Accipiter nisus* with well-grown young.

Variation in habitat quality

This section is concerned with variation in habitat, specifically in the quality of nesting places. A view over any wooded landscape in Britain is likely to encompass several Sparrowhawk nesting places. Typically, not all nesting places in an area are occupied every year, for some previously used ones are likely to remain unused in particular years.

Over a period of years, in our study areas, the birds showed marked preferences for certain nesting places, which were occupied much more often than expected by chance at the population levels found, and they avoided other places, which were occupied much less often than expected by chance. In other words, it could be demonstrated statistically that the birds favoured some patches of nesting habitat over others, and in any one year the available nesting places were not occupied at random (Newton & Marquiss 1976; Newton 1991a).

The basis of this preference became apparent from examination of nesting success. All the Eskdale nesting places were graded from 1 to 5, depending on how often they were used in a 15-year period. A 'Grade 1 nesting place' was occupied in one, two, or three (not necessarily successive) years in the period. A 'Grade 2 nesting place' was occupied in four, five or six years, and so on through to a 'Grade 5 nesting place', which was occupied in 13, 14, or 15 years in a 15-year period. The resulting scores gave a simple measure of frequency of occupancy, from low to high. Nesting places that were available for less than 15 years (because of forest growth or felling) were graded similarly, but based on the proportion of available years in which they were used.

Markus Varesvuo

331. Adult female Eurasian Sparrowhawk *Accipiter nisus* in flight.

Comparing nesting places, a clear association was apparent between frequency of use and nest success. In high-grade places, laying dates were earlier than in low-grade places, and a greater proportion of nests produced young (table 1). Overall, the average number of young raised per nesting attempt showed more than a two-fold decrease between the highest and lowest grades of nesting place (from 2.7 to 1.2). It seemed, then, that Sparrowhawks preferred to nest in those nesting places where their chances of raising young were highest.

The age composition of breeders was not the same in the different grades of nesting places, as the lower-grade places held significantly more first-year birds. Such first-time breeders would be expected to show poorer breeding success than older ones (see above). However, allowing for age, a significant difference in success was still evident between the different grades of nesting place, and both first-year and older females nested more successfully in the higher-grade places than in the lower-grade ones (Newton 1991a).

There were three main causes of failure: many birds built a nest, but then did not lay eggs; other birds laid eggs and then deserted them; while yet other birds lost their eggs or chicks to predators (chiefly Red Squirrels *Sciurus vulgaris* and Eurasian Jays *Garrulus glandarius* as predators of eggs, and Tawny Owls *Strix aluco* as predators of chicks; Newton 1986). Unidentified and other causes of failure, such as nest collapse or clutch addling, are grouped together in one category in table 2. These various causes of failure were all more common in low-grade nesting places than in high-grade ones. However, most could have been manifestations of a single underlying problem, namely food shortage. Birds short of food could not produce eggs; or produced eggs but then abandoned them. Yet other birds left their eggs and chicks unguarded as they went hunting, thereby exposing them to predation. So, although the nests failed from various proximate causes, most could have arisen from insufficient food. Evidence for this view came from various findings, including nests at which supplementary food was provided in the pre-laying and laying periods (Newton & Marquiss 1981).

Not all grades of nesting place contributed equally to the production of the next generation of Sparrowhawks. Table 3 shows the numbers of young females produced per nesting attempt in each of the five grades of territory. Because the sex ratio among nestling Sparrowhawks was equal (Newton & Marquiss 1979), the average number of young females produced per nesting attempt on territories of different grade could be taken as half the mean number of young produced (from table 1). Moreover, analysis revealed that about 30% of fledgling females survived to nest themselves, either inside or

outside the study area, and at ages one, two or three years (Newton 1985), with no obvious difference between females from different grades of nesting place (Newton 1991a).

The average annual mortality rate of female Sparrowhawks was calculated by several methods at around 32% (Newton *et al.* 1983). So if the population was to remain stable, each female had to produce on average about 0.32 young females per attempt (or year) to offset the adult mortality.

All the three lower grades of nesting place produced too few females to offset adult mortality. These places apparently acted as 'sinks', dependent on continuing immigration. Grade 4 nesting places produced approximately the right number of young females to offset adult mortality, but Grade 5 places produced more than the critical number and so acted as sources, producing a surplus of birds able to occupy other areas. So the overall message was that, while the poor nesting places in the area produced insufficient young to offset annual adult mortality, the best places produced a surplus. In the absence of net immigration, the population was heavily dependent on the best nesting places in order to maintain its numbers over time. Although the above calculations were done for females, for which most information was available, the same would be expected of males because of the equal sex ratio at fledging and the monogamous breeding system.

Turnover of territory occupants

This situation where some territories were successful and produced young year after year, while others usually failed, prompted the question 'Was the high productivity of some territories due to the high quality of the nesting territories themselves or to the quality of the particular birds that occupied them?' In the case of Sparrowhawks, consistent year-to-year

Table 1. Breeding performance of Sparrowhawks *Accipiter nisus* in nesting places of different grade, Eskdale 1972–86.

Grade of nesting place*	Number of nests recorded	Percentage of nests in which young were raised	Mean laying date in May (± se)	Mean number of young raised per nest (± se)	Percentage of yearling females
1	26	31	13 ± 2	1.19 ± 0.37	36
2	54	48	8 ± 2	1.57 ± 0.30	21
3	161	47	7 ± 1	1.60 ± 0.15	19
4	150	60	6 ± 1	2.11 ± 0.16	14
5	123	72	6 ± 1	2.67 ± 0.18	12

* Graded according to number of (not necessarily successive) years occupied in a 15-year period. Grade 1: occupied 1–3 years, Grade 2: occupied 4–6 years, Grade 3: occupied 7–9 years, Grade 4: occupied 10–12 years, Grade 5: occupied 13–15 years. Significance of variation among grades of nesting place in the proportion of nests that were successful: $\chi^2_4 = 26.87$, $P<0.001$; and in the proportion of yearlings among nesting females: $\chi^2_4 = 5.84$, but on Spearman's rank test (two-tailed) on percentages, $r_S = 1.0$, $P<0.05$. On the mean number of young raised per nest, $r_S = 1.0$, $P<0.02$.

Table 2. Causes of breeding failure among Sparrowhawks *Accipiter nisus* in nesting places of different grade.

		Percentage of nests which failed through			
Grade of nesting place	Number of nests recorded	Non-laying	Desertion of eggs	Predation of eggs or chicks	Other causes*
1	26	19	15	8	27
2	54	19	9	2	22
3	161	19	9	1	24
4	150	14	10	1	15
5	123	10	5	1	12

* Mostly unidentified, but also including nest collapse, egg addling and human interference. Lack of significance in variation between grades in frequency of different classes of failure: $\chi^2_{12} = 5.66$, n.s.

Table 3. Mean contribution to future nesting population made by Sparrowhawk *Accipiter nisus* breeding attempts in different grades of nesting place. Nesting places of grades 1–3 could be regarded as 'sink' habitat because they produced insufficient young to offset the annual adult mortality, and places of grade 5 could be regarded as 'source' habitat because they produced more than enough young to offset the annual adult mortality.

Grade of nesting place	Mean number of young females raised per nest[1]	Mean number of females that survive to nest[2]	Balance between mean annual production and mean annual mortality[3]
1	0.595	0.179	Negative
2	0.785	0.236	Negative
3	0.800	0.240	Negative
4	1.055	0.317	Even
5	1.335	0.401	Positive

[1] Calculated from table 1, as half the mean number of young produced per nesting attempt, and on the knowledge of an equal sex ratio (Newton & Marquiss 1979).
[2] Calculated as 30% of the number reared (Newton 1991a).
[3] The annual mortality of breeding females was estimated by different methods at 29–36% (mean 32%), so that to replace itself each female must produce about 0.32 young females per year (Newton *et al.* 1983).

Table 4. Fidelity to nesting place among female Sparrowhawks *Accipiter nisus* trapped in successive years.

Adjusted grade of nesting place*	Number (%) which stayed on same place	Number (%) which moved to a different place of same or higher grade	Number (%) which moved to a different place of lower grade
1	0 (0)	2 (100)	–
2	3 (38)	5 (62)	0 (0)
3	23 (59)	16 (41)	0 (0)
4	29 (76)	4 (11)	5 (13)
5	44 (83)	1 (2)	8 (15)

* For each record, grades of relevant nesting places were recalculated to exclude the movement periods of the individuals concerned (see text). Females caught in more than two successive years figure more than once, as the unit of observation was on 'bird year'. The variation between grades of nesting place in tendency to stay was statistically significant ($\chi^2_4 = 35.1$, $P<0.001$).

success could not be attributed entirely to the individual occupants because most held particular territories for only short periods.

Because the birds were ringed, I knew how long many individuals spent in each nesting place. In both sexes, the majority of individuals were present in particular nesting places for only one year, but some were present in the same place for several years, up to six in males and up to eight in females (fig. 10). In general, however, there was high turnover of birds at nesting places; and although some places were occupied continuously for 15 or more years, this was caused by a succession of different individuals occupying the same places in quick succession, but each staying for a short time.

Part of the turnover of birds at nesting places was caused by mortality. On average, more than 30% of individuals died each year, creating gaps for new birds to enter the breeding population. But in addition, some birds changed nesting place from year to year, creating other openings. Of all the individuals caught in two successive years, about two-thirds had stayed on the same territory from one year to the next, and about one-third had moved to a different territory. This held for both sexes (fig. 11). Whenever birds changed nesting places they usually also changed mates; on relatively few occasions did both partners re-pair at a different nesting place, and then only when the move was to an adjacent place (Newton 2001).

In addressing the question why some birds

changed nesting places between years, it again emerged that habitat quality was involved. In fig. 12, the nesting places are again listed in five grades, poor to good (1–5). The top graphs show the numbers of males and females that moved away from nesting places of different grades, and the lower graphs show the grades of nesting places that those same individuals moved to. Birds moved *away* from all grades of nesting place but mostly *to* places of higher grade. About 70% of individuals that changed nesting place from one year to the next moved to a place that was as high or higher in grade than the one it occupied the year before. This was a significantly larger proportion than expected if birds had resettled on nesting places at random ($\chi^2_4 = 14.6$, $P<0.01$).

So it seemed that the nesting places varied greatly in quality. Birds competed over the good places, and during their lives many individuals moved from poor to good ones. The poor places were occupied irregularly, mainly by young birds which, if they survived, later moved to a better one.

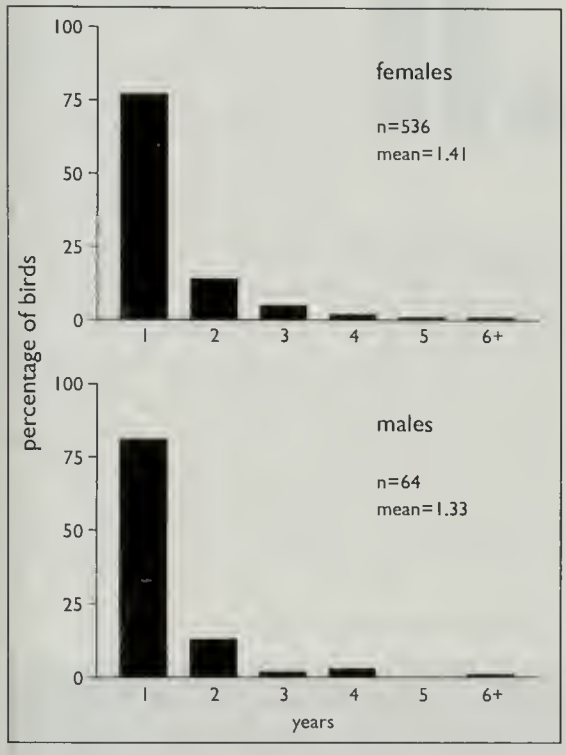

Fig. 10. Residence periods of individual Sparrowhawks in particular nesting places. Most individuals stayed in a particular territory for only one year, but others stayed for several years. Mean periods of residence were about 1.4 years for both sexes. From Newton (2001).

Temporal trends in habitat quality

The sections above were concerned with spatial variation in quality of nesting places (as judged by occupancy and nest success), and their role in the regulation of breeding density. But there was also a temporal component, as nesting places changed through time. Over the years, the trees in the nesting habitat became larger and (through thinning) further apart, so that the nesting habitat gradually gained a more open structure. It became clear that nesting territories which were favoured over periods of 10–15 years were not necessarily favoured in later years. Taking the data from Eskdale over a 15-year period (1972–86), I checked whether nesting places that were most used in years 1–5 were also most used in years 6–10 and in years 11–15. While frequency of occupancy was correlated over these three 5-year periods, all regression slopes were less than unity, implying a decline in occupancy over time. The same was evident in the history of individual nesting places, as many growing stands became suitable for use during the course of the study. In the early years after they were first occupied, such

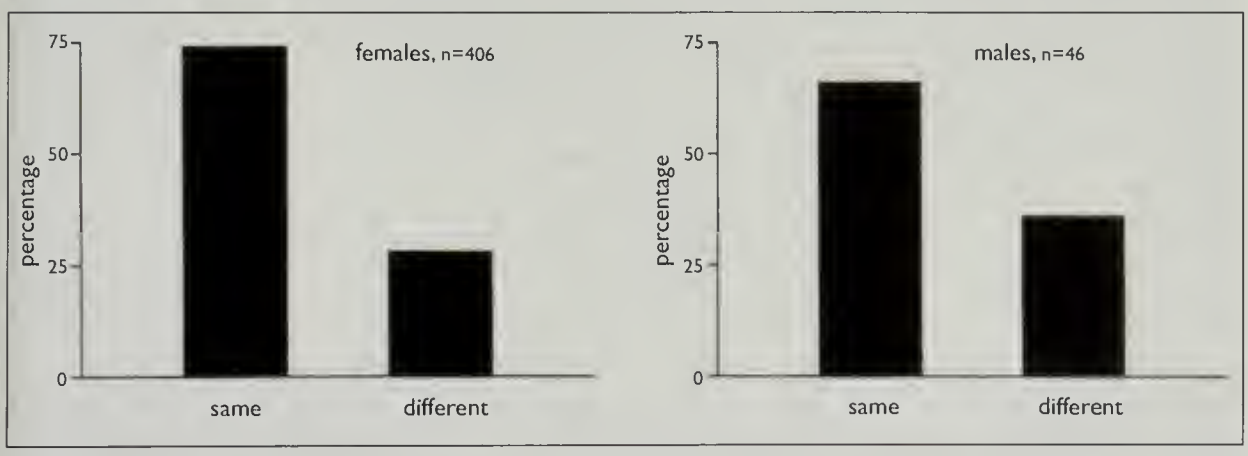

Fig. 11. Proportion of Sparrowhawks caught in consecutive years that were in the same nesting place in both years or in different nesting territories. In both sexes, about one-third of individuals changed nesting places between years, most at the same time changing mates. Lack of significant difference between the sexes: $\chi^2 = 0.80$, $P = 0.37$. From Newton (2001).

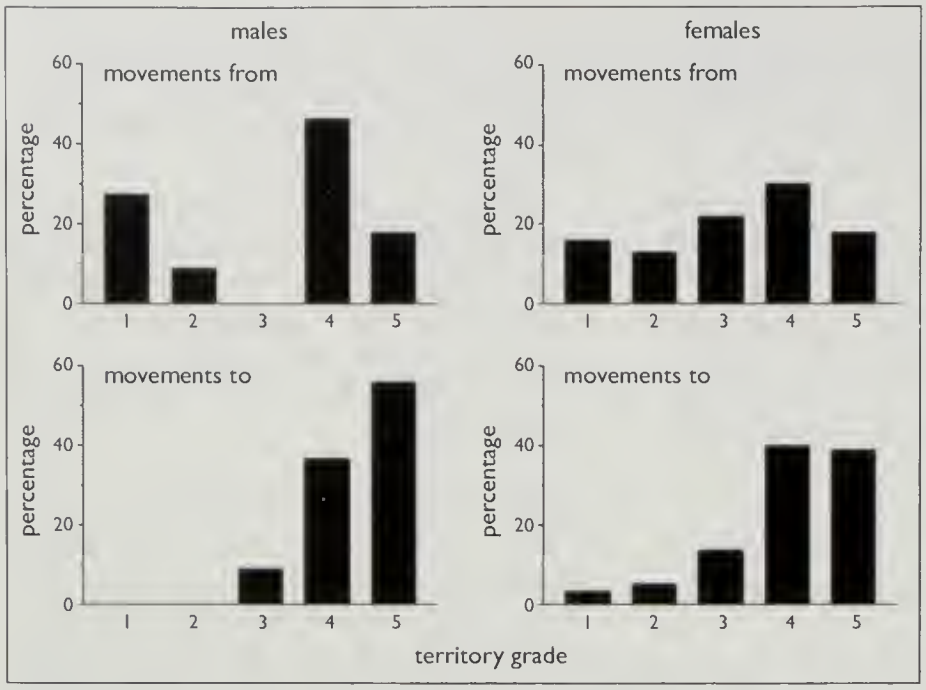

Fig. 12. Frequency of nesting-place changes in relation to grade of nesting place, 1 (poor) to 5 (good). Birds moved away from all grades of nesting place (upper graphs), but moved mostly to higher-grade places (lower graphs). The grading of territories for this analysis was based on occupancy in years other than those in which the move occurred. This was because each movement contributed to the score of a nesting place and greater statistical independence in the data was obtained by excluding the two years involving each movement. From Newton (1991a).

stands were used frequently and nest success was high, but as the years passed and they became more open and mature, they were used less often and nest success deteriorated, until they were abandoned altogether as nesting sites. At the same time, young stands nearby were continually taken up, and the process was repeated. Clearly, Sparrowhawks favoured forest at a certain growth stage, largely avoiding both younger (too short and dense) and older (too tall and open) stands. Stability in the Eskdale population as a whole was achieved largely because the forest was managed consistently over the years on a long-term rotation (40–60 years). Each year some patches were clear-felled and replanted, while others were thinned, so that at any one time the area contained a mosaic of tree stands of various ages, and a fairly stable age structure over time. Sparrowhawks occupied particular stands for periods of 15–20 years during their mid-growth stages, at around 20–35 years.

Rebecca Nason

332. Adult male Eurasian Sparrowhawk *Accipiter nisus* with prey, a partially plucked Collared Dove *Streptopelia decaocto*.

Discussion

In the sections above, I outlined how Sparrowhawks maintained their individual survival and reproductive success in a heterogeneous environment. Both individual quality (notably age) and habitat (territory) quality interact to influence the performance of individuals, and also operate in the regulation of breeding density. From here on, I shall mention some uncertainties in the findings, and some aspects of environment that have changed since these studies were made.

Habitat quality could be assessed only from the performance of the birds that occupied it. However, breeding success did not depend solely on the habitat, but also on the particular individuals that lived there. If the best birds (the most competent breeders) occupied the best habitat, the effects of habitat and bird quality on observed performance would be confounded.

In Eskdale, both habitat and occupant probably contributed to recorded performance, because young birds (with low nest success) more frequently nested in habitat classed as low grade. However, evidence that habitat influenced success independently of occupant was of three kinds: (1) among birds of a single age group, breeding was more successful in the habitat classed as high grade; (2) high occupancy and nest success was maintained on some nesting places over periods of 10–15 years, despite frequent changes in occupants (mean residence period 1.4 years); and (3) a 'repeatability' analysis, comparing productivity of the same nesting places with different females, and of the same females in the same or different nesting places, revealed that habitat contributed to nest success over and above any effect of occupant (Newton 1988). Hence, the variation in recorded performance between nesting places of different grade was almost certainly due partly to habitat, but was probably greater than could be attributed to habitat alone. In other words, effects of habitat and bird quality were probably additive, with 'good' birds occupying the 'good' nesting habitat.

While performance up to fledging clearly varied according to grade of nesting place, post-fledging survival was apparently similar for young produced on all grades of nesting place (as far as could be judged from subsequent ring-recoveries; Newton 1991a). This was perhaps not surprising because, within four weeks of leaving the nest, the young dispersed and were free to compete on their own merits. Unfortunately, it was not possible to compare the survival of breeding adults from different grades of nesting place. As birds more often moved away from low-grade nesting places, it was usually unknown whether their disappear-

Markus Varesvuo

333. First-year female Eurasian Sparrowhawk *Accipiter nisus* in snow.

ance was due to death or to movement from the study area. The analysis of source and sink habitat was therefore done on the assumption that breeder survival was similar across all grades of nesting place. If this was not the case, and breeders survived less well in low-grade habitat, the effect would be to widen the recorded differences between source and sink habitat; that is, the source habitat would have contributed more to the maintenance of the population, and the sink habitat less, than was evident from reproductive data alone.

Quality of nesting habitat could be explained mainly in terms of woodland structure, as Sparrowhawks preferred, and bred most successfully in, fairly dense conifer woods, of around 20–35 years of age, as mentioned above. This may have been because woods of this age provided a more available food supply, less risk of predation, or more shelter from inclement weather. Because most nest failures could be attributed, directly or indirectly, to food shortage, prey availability may have declined with increasing age of forest. Overall densities of prey did not decline in conifer stands between 20 and 50 years of age (Moss 1978; Moss *et al.* 1979), but prey may have been more easily caught in dense woods, if only because the hawks could gain a closer approach. Male Sparrowhawks provided most of the food in the breeding season. Several, which were equipped with radio tags, showed a marked preference for hunting in woodland as opposed to open country, and within woodland they preferred the younger, denser stands. I can think of no reason for this preference other than increased capture success, but this was not measured. No Northern Goshawks *Accipiter gentilis* or other significant predators of adult Sparrowhawks were present in any of the study areas in the years when the data were collected.

Possibly the preference of Sparrowhawks for young woods was an inherent response, evolved in the past to avoid predation. The Goshawk is a major predator, and prefers older, more open stands than the Sparrowhawk (Newton 1986). Moreover, as Goshawks have colonised some of the study areas in recent years, Sparrowhawks seem to have declined, and become more restricted for nesting to the denser of the various stands they would have used formerly. However, these changes have not been assessed in detail. In addition, in many of our study areas, Tawny Owls occasionally took Sparrowhawk chicks. These predators also hunt more in open stands than in dense ones, possibly because, with better ground vegetation, open stands provide more-abundant rodent prey. Hence, security from predation may be an important factor in the choice of nesting habitat. However, aspects other than forest structure also seemed to influence occupancy and nest success, notably the position of the nesting place in the landscape, and the abundance of prey in the wider area. In addition, Sparrowhawks generally preferred to nest in coniferous over broadleaved areas, but in most of our study areas broadleaved woods were too few to allow a detailed assessment.

Bobby Smith

334. A window casualty. Many Eurasian Sparrowhawks *Accipiter nisus* now die from collisions with large windows, a cause of mortality which has risen in recent years as Sparrowhawks increasingly inhabit towns and cities.

Most of this work was done at a time when ecological conditions for Sparrowhawks in many parts of Britain were ideal. Study areas were chosen in which Sparrowhawks had recovered from the organochlorine-pesticide impacts of earlier years. Many forest areas were planted in the 1950s–1960s, so that they reached a stage suitable for Sparrowhawks during the 1970s–1990s. The management was mainly by thinning every five years or

so. Since then, much of this forest has grown beyond a stage at which it is ideal for Sparrowhawks, and the management has changed, so that many forest areas are not now thinned, but clear-felled at a young age, providing pulp wood. Other forests are now more varied in spatial structure, with a mosaic of stands of different ages, only some of which are suitable for Sparrowhawks. Nesting places are therefore fewer, and less regularly spaced, than in the past. In addition, some areas have now been colonised by Goshawks which, as mentioned above, may put further constraints on the range of forest habitat that Sparrowhawks are likely to occupy. Moreover, in the wider countryside, many prey species have declined through changes in woodland or farmland management. In view of all these changes, it is surprising that the BTO's Breeding Bird Survey has yet revealed no overall decline in Sparrowhawk numbers nationwide.

In contrast to these changes in rural areas, Sparrowhawks have increasingly occupied towns and cities. They were apparently absent from urban areas in earlier times, but in any case were generally scarcer as a result of human persecution (mainly by gamekeepers) and then organochlorine-pesticide impacts. However, not only have Sparrowhawks now recovered from these past impacts, but the urban environment has changed in their favour, with more widespread planting of trees and shrubs, the influx of a greater range of songbirds to serve as prey, and the increased feeding of such birds by householders. All of these changes are likely to have greatly increased the attractiveness of towns and cities to Sparrowhawks. Perhaps more important, however, is the development of a more tolerant attitude in the human population, for it is hard to imagine that any Sparrowhawks that attempted to breed in towns in the early years of the twentieth century would not have been killed or had their nests robbed. This is perhaps another example where predation (in this case by people) has influenced habitat use by a prey species. While the earlier idea that Sparrowhawks were limited by availability of either food or nesting places remains broadly true, it is becoming increasingly apparent that predators (natural or human) can greatly alter what the prey species (in this case the Sparrowhawk) perceives as acceptable habitat, and can thereby influence its numbers and distribution.

Acknowledgments

Many people took part in this study, including for several years Mick Marquiss, Andy Village and Ian Wyllie, together with Mac Hotson for the entire 27 years in Eskdale. Other observers contributed data on nest spacing and success in their home areas, in particular: Neville Bousfield (Aberdeenshire), Ted Green (Berkshire), Geoff Horne and Derek Ratcliffe (Cumbria), Ted Robson and Geoff Shaw (Derbyshire), Willie Murray and Herman Ostroznik (Dumfriesshire), Brian Etheridge (Morayshire), Alan Heavisides, Colin Jewitt, Brian Little, Eric Meek, Steve Petty and others (Northumbria), Roy Dennis, Nick Picozzi and Doug Weir (Speyside). In addition, Richard Mearns made the point counts of prey in the woods of each study area, Peter Rothery helped with many of the statistical analyses, and Mick Marquiss made constructive comments on the manuscript.

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Prof. Ian Newton, Monks Wood Research Station, Abbots Ripton, Huntingdon, Cambridgeshire PE28 2LS

Conservation research news

Compiled by Jenny Bright and Will Kirby

Signs of hope for Corn Buntings in Europe

The decline of the Corn Bunting *Emberiza calandra* in recent decades, estimated at 86% between 1967 and 2005, has been among the most dramatic of any species in the UK. A similar pattern of decline, including range contraction and local extinctions, has occurred across much of western Europe. As with other farmland species, the population decline has been related to changes in farming practice, such as loss of overwinter stubbles and greater harvesting efficiency, in turn leading to a lack of seed-food availability in the winter months. Pesticide use is also implicated and may have affected populations by reducing the amount of insect food available for chicks in the breeding season. However, three recent studies, two in Scotland and one in Denmark, offer some hope that there may be practical and effective ways of halting these patterns of decline and starting a process of recovery.

In Scotland, the Corn Bunting population is now as low as 800 territorial males, and is largely concentrated in two areas: the east-coast lowlands from Fife to Inverness, and the Outer Hebrides. In the first study, Jeremy Wilson and his colleagues investigated the species' decline in the Outer Hebrides. The population here is likely to have persisted owing to the continuation of traditional cereal-harvesting methods. Cereal strips are grown on the machair for winter stock feed, the crop is then stored in stacks of ripe sheaths, and is finally removed to outdoor feed-stands for cattle over the course of the winter. This process provides spilled grain for Corn Buntings throughout the winter. However, since the 1980s, these methods have gradually been replaced by early harvesting of cereals, which are then stored as arable silage in plastic bales, leaving little or no spilled grain. Surveys of Corn Buntings showed a 62% decrease since 1995 and population declines were greater in areas where a higher proportion of cereals was harvested for arable silage.

Since 2002/03, the RSPB, Scottish Natural Heritage (SNH) and the Western Isles Council have provided financial support to crofters employing traditional harvesting methods. However, the ease and cost-effectiveness of arable silage means that these traditional methods are unlikely to persist in the long term, and the authors suggest that the possible benefits to Corn Buntings of later harvesting of arable silage should be assessed. If successful, this could be implemented as an agri-environment option along with other options designed to increase winter seed abundance.

The effectiveness of such targeted management intervention mechanisms is demonstrated in the second study, led by Allan Perkins. In Scotland, agri-environment measures likely to benefit Corn Buntings are available under the Rural Stewardship Scheme (RSS), and similar measures will be available under the new Scottish Rural Development Programme. However, since the RSS is competitive, the RSPB, with support from SNH and the Farming and Wildlife Advisory Group (FWAG), launched an additional targeted programme in eastern Scotland in 2001, the Farmland Bird Lifeline. This provided funding for a suite of management options, predominantly aimed at providing insect food for chicks in summer (e.g. conservation headlands), and seed food in winter (e.g. spring sowing). Monitoring in 53 tetrads between 2002 and 2004 found no significant change in Corn Bunting numbers on farms with management intervention, whereas on farms with no intervention Corn Buntings decreased by 43%. The authors specifically recommend long-term monitoring to assess

whether these short-term effects, due to the Farmland Bird Lifeline, could result in longer-term recovery achieved through agri-environment agreements.

Turning to the wider European situation, Tony Fox and his colleagues showed that, almost uniquely in Europe, an upturn in the Danish Corn Bunting population appears to have started in about 1990. The increase in breeding numbers has been modest, at 2.2% per annum on a country-wide basis, but locally there have been increases of greater than 7% in some central and western regions. Winter counts have also increased, by up to 11% per annum, and show a strong upwards trend. Perhaps the most encouraging factor in this population rise is that it has happened without specific conservation recovery action, leading the authors to conclude that Corn Buntings may be able to survive and even increase under prevailing circumstances of intensive food production.

Despite the overall increase in Corn Bunting numbers in Denmark, the pattern has shown marked differences at the county or regional level, with decreases in the south-east being offset by increases farther north and west. This gave the authors the chance to compare differences in agricultural practices in regions with both increasing and decreasing populations. Areas that have experienced the greatest increases are, in general terms, those where mixed farming persists, especially those with extensive grass and spring barley. In contrast, Corn Buntings are much less abundant in predominantly arable areas where autumn-sown wheat is more abundant. A further interesting correlation exists with the timing of the increase and the implementation of set-aside across the European Union. Although designed to cut agricultural production, set-aside has also been shown to provide benefits to farmland birds by promoting practices such as leaving overwinter stubbles, which can provide a good source of winter food. While the authors remain cautious about drawing too many conclusions from these simple correlations, this study provides a pointer towards future, more targeted research that could establish specific agri-environment measures to help to maintain and increase Corn Bunting numbers across Europe.

So, although the current situation for Corn Buntings throughout Europe remains a depressing one, these recent studies do advance our understanding of the underlying causes behind the declines and, even more importantly, provide clear pointers as to the sorts of management prescriptions and mechanisms that, if widely adopted, may lead to recovery.

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David Tipling

335. Corn Bunting *Emberiza calandra*, in song, Outer Hebrides.

Letters

Breeding seabirds on the Isles of Scilly

The excellent and informative paper by Heaney *et al.* (2008) stated that 'The [Isles of Scilly] Puffin *Fratercula arctica* population is of great regional importance and, along with colonies in the Channel Islands and Co. Kerry, marks the southwestern limits of the species' Eurasian breeding range.' However, Puffins also breed to the southwest of the Channel Islands, on the northern coast of Brittany, principally at the reserve of Les Sept-Iles (Siorat & Bentz 2006).

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Jeremy G. Sanders
The Alderney Ornithological Group, PO Box 24, Alderney GY9 3AP

I enjoyed reading the recent paper by Heaney *et al.* (2008), but I should like to correct one statement, namely that the 'islands support a greater diversity of breeding seabirds than any other island group or mainland site in England'. The Farne Islands in Northumberland support in excess of 100,000 pairs of seabirds of 15 species, as shown below (where possible using data for the same year as Heaney *et al.*, i.e. 2006).

Species	No. pairs
Fulmar *Fulmarus glacialis*	240
Great Cormorant *Phalacrocorax carbo*	170
Shag *P. aristotelis*	1,120
Lesser Black-backed Gull *Larus fuscus*	545
Herring Gull *L. argentatus*	505
Great Black-backed Gull *L. marinus*	7
Black-headed Gull *Chroicocephalus ridibundus*	342
Kittiwake *Rissa tridactyla*	4,713
Sandwich Tern *Sterna sandvicensis*	1,635
Common Tern *S. hirundo*	122
Arctic Tern *S. paradisaea*	2,250
Roseate Tern *S. dongallii*	1
Common Guillemot *Uria aalge*	32,596*
Razorbill *Alca torda*	322
Puffin *Fratercula arctica*	55,674**

Source: *Birds in Northumbria* 2006.

(* = no census in 2006, 2007 estimate was 32,596 pairs; ** = no census in 2006, 2003 estimate was 55,674 pairs, 2008 estimate was 36,500 pairs)

Andy Mould
10 Fairfield, Longbenton, Newcastle upon Tyne NE12 8UF

EDITORIAL COMMENT Andy Brown, one of the co-authors of Heaney *et al.* (2008), has commented as follows: 'In terms of the number of species present, we would be happy to concede to a draw: our total excluded Roseate Tern, a species which has nested on Scilly with regularity in the recent past and which we note no longer breeds annually on the Farnes. Scilly does, however, support regular breeding populations of shearwaters and storm-petrels, higher-order taxa missing altogether from the Farnes. Either way, both island groups are of outstanding international importance for seabirds and both are superb places to visit. We trust that the steps taken to control non-native mammals on Scilly will soon bear fruit, allowing the archipelago to compare a little more favourably with the Farnes in terms of the sheer numbers of nesting seabirds.'

100 years ago – the first colour photographs of live birds?

'I think they were the first colour plates of live birds and I showed them at the RPS [Royal Photographic Society] in London.' So wrote Lilian Bland in her unpublished memoirs.

The Focal Encyclopedia of Photography described the first practical system of colour photography. It was named 'Autochrome' by its inventors Auguste and Louis Lumière in 1903. Manufacture began in Lyon in 1907. 'It was always about 50 times less sensitive than contemporary black-and-white materials. In its grain pattern and its palette, Autochrome resembled French impressionist paintings with its lovely textures and pastel hues.'

Lilian Bland wrote about her summer of 1908: '... I was off to the Highlands to photograph sea birds, with a large trunkful of negatives and Lumière colour plates. At Glenfinnan I was met by two of Miss Blackburn's boatmen who groaned over my trunk and asked if it was full of gold bars... My friend lived with her old parents... on a small farm... Early in the morning she would row me out to the larger of two small islands where the sea birds bred... and there she would leave me with plenty of food for the day. I would lie for hours studying the Great Black-backed Gulls [*Larus marinus*] soaring, using their tails as balancing rudders to the shifting breeze – how lovely it would be to fly.

'The colour plates needed slow exposure, so Miss B. would rout me out before sunrise to row over and be ready before the wind got up. I think they were the first colour plates of live birds and I showed them at the RPS in London.

'Along the shore were... the black-and-white Oystercatchers [*Haematopus ostralegus*] with their brilliant orange beaks... The previous year the site of a Nightjar's [*Caprimulgus europaeus*] nest had been found, so we walked up to the knoll to see if she had come back. She had, and rose like a silent moth from under our feet, and under a stalk of heather were two eggs like pebbles. To get good pictures I had to make a hide of fern and heather, and got a complete series of the parents and the young being fed, but oh, how I suffered, devoured wholesale by the Highland midges. Nothing could keep them off. There were small islands on one of the lakes which were fringed with the giant osmunda ferns and stunted trees... This was the nesting place of an Osprey [*Pandion haliaetus*] which one of the Keartons had photographed the year before.'

Pages from *The Photographic Journal* do indeed show that Miss L. E. Bland of Carnmoney, Belfast, exhibited 12 pictures at the RPS Annual Exhibition in 1908, including those of European Nightjar, Tawny Owl *Strix aluco*, Oystercatcher, Lesser Black-backed Gull *Larus fuscus* and Common Gull *L. canus*. The RPS is not able to say whether Lilian Bland was the first to photograph live birds in colour, but nor do they know of any other claim. Regrettably, the whereabouts of the photographs, if they are extant, is not known.

In 1910, Lilian Bland's desire to fly like the birds came true, when she became the first British woman to design, build and fly her own aeroplane – but that is another story.

I am grateful to Dr Jane Fletcher, RPS Curator of Photographs, for information about Autochrome and the entries in *The Photographic Journal* concerning my great aunt, Lilian Bland.

Rev. Edward Pratt
7 Bay Close, Swanage, Dorset BH19 1RE

Looking back

One hundred years ago:

'YELLOW-BROWED WARBLERS IN YORKSHIRE. On September 23rd, 1908, I shot in Holderness, Yorkshire, on the sea coast, a male (apparently adult) of the Yellow-browed Warbler (*Phylloscopus superciliosus*). The yellow bars on the wings attracted my attention, as the bird fluttered up from some buckthorn bushes, the flight much resembling that of the Willow-Wren [*P. trochilus*]. A thick sea-fog prevailed, following a night of heavy rain, the wind being slight, and from the south-east. The bird was identified in the flesh by Mr. H. F. Witherby, who kindly prepared the skin for me. The gizzard was full of small flies and other minute insects. ARTHUR R. GALE.' (*Brit. Birds* 2: 201, November 1908)

Reviews

PETRELS NIGHT AND DAY

By Magnus Robb, Killian Mullarney and The Sound Approach. The Sound Approach, Poole, Dorset, 2008. 300 pages, 17 full-page colour plates; many colour photographs; and sonograms of most of the 127 sound recordings presented on two CDs.
ISBN 978-90-810933-2-3.
Hardback, £34.95.

This is the second volume in The Sound Approach project, masterminded by Mark Constantine, who fashioned the first introductory volume and project style. *Petrels Night and Day* is written by Magnus Robb, with sound recordings by Magnus and others and colour plates by Killian Mullarney. The book covers 15 forms of shearwater and petrel (Procellariidae) and 10 forms of storm-petrel (Hydrobatidae) that are encountered in the northeast Atlantic. These 25 taxa are dealt with in 12 chapters: gadfly petrels (*Pterodroma*), Bulwer's Petrel *Bulweria bulwerii*, the three *Calonectris* shearwaters, 'Little' shearwaters (*Puffinus*), Manx Shearwater *Puffinus puffinus*, Mediterranean shearwaters (Yelkouan *P. yelkouan* and Balearic Shearwater *P. mauretanicus*), Fulmar *Fulmarus glacialis*, White-faced Storm-petrel *Pelagodroma marina*, European storm-petrels (*Hydrobates*), Leach's Storm-petrel *Oceanodroma leucorhoa*, band-rumped storm-petrels (*Oceanodroma*), and Swinhoe's Storm-petrel *O. monorhis*. All 22 northeast Atlantic breeders (if we include Swinhoe's) are dealt with thoroughly via an informative text, high-quality sound recordings and sonograms, ample-sized colour photographs, and superb colour plates. Each of the three southern-ocean breeders, Great *Puffinus gravis* and Sooty Shearwaters *P. griseus* and Wilson's Storm-petrel *Oceanites oceanicus*, is introduced mainly through colour plates incorporated within the chapter of a near relative.

Petrels Night and Day comprises an impressive set of elements, as summarised above, but the book as a whole is so much more than the sum of its parts. It is unique, it is enigmatic, and it offers a truly engaging experience. This book combines the arts and sciences in a way that I have barely encountered previously in ornithology and never before with tubenoses.

For each taxon, Magnus Robb creates a vivid impression of his experiences of the remote locations he visited to record them. The reader travels with him, learning the history of the petrels, meeting the people of the islands, sitting down for dinner with them, scrambling across rocky terrain, overhanging hair-raising cliff faces, witnessing spectacular, moody scenery; and then, seemingly always in the remotest of spots, witnessing the sounds of petrels by night – some eerie, some sorrowful, and some downright amusing to the human ear. Stunning colour photographs, many occupying a full page, suggest images for Robb's narrative. The reader is left with a sense of having been there; followed by a realisation that you have not, and then an urge to go there as soon as possible.

Each species account flows smoothly from social and aesthetic experiences to analytical and factual discussion of the sounds of petrels by night through sound recordings and sonograms. Sonograms assist the listener by allowing better understanding of the structure and texture of petrel calls and facilitating comparison with calls of similar forms. The reader/listener is encouraged to take this step forward and by so doing to get to grips with the taxonomic propositions of the book.

Some identification nuggets for petrels by day are scattered throughout the text, but consolidated and amplified in the colour plates. Indeed, the plates alone offer a handy identification kit, with some new criteria and guidance on how to separate some of the more difficult species groups, such as the *Calonectris*, 'Mediterranean' and 'Little' shearwaters. Some colour plates show all likely confusion species side by side. An example is shearwaters in typical flight profile comparing Manx, Yelkouan, Balearic, Sooty and Cory's Shearwaters *C. diomedea*. Such guidance extends to the four newly proposed and highly cryptic band-rumped storm-petrel species (see below). As with the text, the colour plates incorporate wonderful vignettes that transport the reader into the situation: a Cory's Shearwater on a nest in a cave or a flock of swimming Bulwer's Petrels 'exploding' from the sea surface in all directions when approached too closely.

This book proposes several taxonomic changes. Fea's Petrel *Pterodroma feae* becomes two species: Fea's Petrel and Desertas Petrel. The three forms of Cory's Shearwater are treated separately, as are two forms of what we currently call European Storm-petrel *Hydrobates pelagicus* ('British' and 'Mediterranean'). Band-rumped Storm-petrel *Oceanodroma castro* becomes a complex four-way split: 'Grant's', 'Madeiran', 'Monteiro's' and 'Cape Verde'). A basis for this taxonomy exists already in the literature, variously discussed in terms of biometric differences, spatial and temporal separation, different breeding habitats, and some DNA work. *Petrels Night and Day* makes a further, compelling case through a detailed study of vocalisations. Those of us trained with the eye might argue that these forms look so similar that it is hard to accept that they are distinct species. Those trained with the ear might well retort that since reproductive activity happens in the dark, it is 'how you sound' that counts, not 'how you look'. Speciation is much more likely to be reflected in sounds than looks. This argument offers an explanation for the apparently disproportionate number of cryptic tubenoses.

If accepted, there are wide-ranging consequences of these taxonomic developments. They are certainly exciting for researchers and pave the way for a variety of further studies (breeding biology, life history, and indeed further studies of vocalisation). For field observers, however, the new taxonomy is something of a headache. For example, the following table summarising the proposed split of Band-rumped Storm-petrel highlights both the cryptic nature of the proposed species and several gaps in knowledge pertaining even to rudimentary field identification. Whether these taxa can be separated reliably in the field is debatable and any solutions are probably some way off. We should not, however, blame the messenger for the 'bad news'.

There are very few points where I take issue with the text. Regarding the field identification of Zino's Petrel *P. madeira*, I do not follow the argument that it is reasonably 'safe' to identify clearly large-billed *Pterodroma* petrels in Madeiran waters as Desertas Petrel, but not so clearly small-billed ones as Zino's. And I find it presumptuous to suggest that the large-billed *Pterodroma* petrels in British waters in autumn are most likely Fea's Petrels from Cape Verde rather than Desertas Petrels from Bugio, Madeira, based on differences in timing of breeding (Fea's in the northern winter, Desertas in early autumn) and relative population size (there are more Fea's). The occurrence of a large-billed *Pterodroma* in August could just as easily be explained by northward incubation foraging flights of Desertas Petrel as it could by a roaming, off-duty Fea's Petrel.

This book is sumptuously produced. Magnus Robb has composed a magical and informative blend of text and sound, Killian Mullarney has crafted endearing and instructive artwork, and Mark Constantine has started something completely different and much welcomed in The Sound Approach. In this era of largely boring field guides and dry journal ornithology, The Sound Approach offers a new and exciting brand of learning and in this book applies it to perhaps the most enigmatic of bird groups. We are offered an opportunity to liven up and get animated with *Petrels Night and Day*. I say we take it!

Robert L. Flood

	Grant's	Madeiran	Monteiro's	Cape Verde
Breeds	Azores, Madeira, Selvagens, Canaries, Berlengas	Madeira, Selvagens, Canaries (rare)	Azores	Cape Verde
Pairs	3,000–5,000	2,000–4,000	300	Low thousands?
Breeding dates	Aug to Mar	Late Mar to Oct, one month later Selvagens	Late Mar to Oct	Oct to Jun, possibly two seasons, changeover Mar
Tail	Little or no tail fork	Short tail fork sometimes visible	Tail longer than Grant's, fork twice as deep	Probably little or no tail fork
Wing	Narrower than Cape Verde	—	—	Broader than Grant's
Upperwing-covert bar	Ends well short of carpal joint	Indistinct, ends short of carpal bar	Extends to carpal joint, relatively pronounced	Indistinct, ends short of carpal bar
Uppertail-covert band	Narrow	Narrow but variable	More prominent than Madeiran	Broad
Bill	—	Rather heavy	—	Proportionately long
Biometrics	Large, shorter wing & tail than Monteiro's	Smaller in wing, tail, & tarsus than Grant's	Large, longer wing & tail than Grant's	Smaller than Grant's & Monteiro's
Primary moult, adult	Feb to early Aug	Presumed Aug/Sep to Feb	Aug to Feb	Presumed Mar to Dec

LOST LAND OF THE DODO: AN ECOLOGICAL HISTORY OF MAURITIUS, RÉUNION AND RODRIGUES

By Anthony Cheke and Julian Hume. T. & A. D. Poyser, A&C Black, London, 2008. 464 pages; 39 colour plates; many black-and-white illustrations. ISBN 978-0-7136-6544-4. Hardback, £45.00.

Despite the wealth of detailed information it contains, this is an eminently readable, at times enthralling, account of the ecological history of the Mascarene Islands. The first author is a specialist in the chronology of extinction events and this is reflected in the way the book is set out. The early chapters cover the geography of the islands and what is known about their pristine state, followed by a detailed account of the impacts of the first visitors from Europe and subsequent human settlement. Later chapters cover the more recent history of the islands and the increasingly rapid ecological degradation brought about by a burgeoning human population. Scattered throughout the book are 38 excellent boxed accounts of the islands' most important species and species groups (many now

extinct), including illustrations and direct quotes from contemporary accounts by early visitors.

The scale of early human exploitation and its impact on the islands' unique assemblage of wildlife makes for a sobering read. Large numbers of Dodos *Raphus cucullatus* were apparently killed solely for their gizzards (enough to provide two men with a tasty meal!) and Giant Tortoises, including *Cylindraspis triserrata* on Mauritius, and *C. vosmaeri* and *C. peltastes* on Rodrigues, for their livers, the rest of the carcases being discarded. A recurring theme is the ease with which birds and other creatures that had evolved in the absence of predators could be slaughtered. Even birds still capable of flight often did not try to escape from humans. A technique commonly used with several species, including the huge Broad-billed Parrot *Lophopsittacus mauritianus*, was to catch one individual and make it call out, as this would draw in others that could then easily be caught by hand. Many of the flightless birds such as the various rails, the Dodo-like Rodrigues Solitaire *Pezophaps solitaria* and the Dodo itself could simply be approached on foot and clubbed to death. Early visitors in the seventeenth century, no doubt numbed by weeks at sea, could barely contain themselves, relishing the sport of catching and killing such exotic creatures, as well as the prospect of a more varied and (apparently) healthy diet than they had been used to.

By way of contrast, the penultimate chapter, by Carl Jones, provides at least some grounds for optimism. This is a thought-provoking account of the innovative conservation efforts that have prevented a small number of the surviving native species from going the same way as the Dodo. Work to restore populations of the Mauritius Kestrel *Falco punctatus*, Pink Pigeon *Nesoenas mayeri* and Echo Parakeet *Psittacula echo* will be familiar to many, although it is perhaps less appreciated that all were, at one time, down to a mere handful of individuals in the wild – they are now far more secure, though much still remains to be done. Work on these birds has at times been hindered by local politics and a lack of resources; even some conservationists have taken the view that funding might be better spent on more straightforward projects. Jones is clear in his belief that work on these high-profile, though difficult, species has had great value. In particular, it has encouraged wider conservation initiatives such as attempts to restore native vegetation and the establishment of Conservation Areas as well as a National Park on Mauritius.

The authors use numbered endnotes throughout the text and all the reference sources and explanatory notes are in a block towards the end of the book. This sensible approach has ensured that the book will be of great value to the more serious students of the ecological history of these islands, without breaking up the text in a way that could have been off-putting for the more general reader. Almost every statement made is fully referenced and the explanatory notes make up nearly a quarter of the book, demonstrating the huge amount of research that has gone into this volume. Julian Hume's distinctive colour plates provide an evocative and rather chilling insight into what has been lost from the islands, none more so than the artistically licensed Dodo on the front cover, eyeing the approach of a landing party in the bay below with apparent trepidation! There are also many black-and-white line drawings from historical accounts by early visitors, some of which have not seen the light of day for centuries. The inclusion of more than the handful of photographs (limited to one of the appendices) would, to my mind, have further enhanced some of the accounts of more recent events as well as giving a better flavour of the islands today.

Although the geographical focus of this book is relatively narrow, the whole gamut of conservation issues affecting threatened birds across the world are dealt with, making the book of far wider interest than might be initially apparent from the title. These include direct over-exploitation by humans, deforestation and the associated problems of erosion and drought, the adverse effects of intensive agriculture and, perhaps most significant of all, the ecological damage caused by invasive introduced species including rats, pigs, cats, snakes (even monkeys!), not to mention a whole host of invasive plants. Sir Peter Scott was clearly not exaggerating when he reflected after a visit in the 1970s that 'Mauritius illustrates many of the earth's environmental problems in microcosm.' Some lessons have been learnt in recent decades, and if this has come too late for most of the Mascarene Islands' special wildlife, one can only hope that it will help to inform decisions made in other parts of the world.

Ian Carter

THE GREATER FLAMINGO

By Alan Johnson and Frank Cézilly. T. & A. D. Poyser, A&C Black, London, 2007. 328 pages; colour and black-and-white photographs; maps, line-drawings. ISBN: 978-0-7136-6562-8. Hardback, £40.00.

There are several instances in ornithology where if you mention a particular species then the name of an individual immediately comes to mind, for example the Mauritius Kestrel *Falco punctatus* and Carl Jones, the Peregrine Falcon *Falco peregrinus* and Derek Ratcliffe, the House Sparrow *Passer domesticus* and Denis Summers-Smith. Belonging to this select list is certainly the pairing of the Greater Flamingo *Phoenicopterus roseus* and Alan Johnson.

Alan arrived at the Tour du Valat research station in the Camargue, France, in 1962 and before long became fascinated by

Greater Flamingos. He was soon involved in a detailed study of them, which is still continuing under the leadership of his co-author, Frank Cézilly. Prior to Alan's work, Luc Hoffman, the founder of the research station, had been monitoring the colony for several years, counting the number of breeding pairs, noting their success and marking the chicks. He also became aware of the constraints on the population, especially erosion of the breeding island and disturbance from many sources, especially aircraft.

Alan's arrival coincided with the cessation of Flamingo breeding in the Camargue, but when it resumed, in 1969, there began a much-needed programme of conservation management by the staff of Tour du Valat: the vital building of a nesting island, reducing human disturbance by full-time wardening, and persuading the authorities to ban aircraft from overflying the colony. This management was backed by a detailed research programme aimed at revealing the life history, population dynamics and movements of the flamingos. This programme was gradually extended, through example and Alan's enthusiastic advocacy, to the neighbouring countries of Spain and Italy, and then across the Mediterranean to Tunisia. Now, all the scientists and amateur ornithologists studying this population of the Greater Flamingo, from Doñana in the west to Lake Tengiz, Kazakhstan, in the east, keep in close touch and co-ordinate their studies.

The two authors bring to this book the results of their combined total of over 65 years of research, with the result that they have produced an exhaustive (in the best possible sense) account of the Greater Flamingo, covering the history of its discovery in the Camargue, through its ecology, distribution and numbers, movements, feeding ecology and behaviour, breeding biology and conservation and management. Naturally, although Alan's studies have concentrated on the Camargue, there are plenty of examples and comparisons drawn from other parts of the range.

While the breeding of the Greater Flamingos in the Camargue is an undoubted conservation success story, with the number of nesting pairs, rarely more than 3,000–4,000 in the 1950s and 1960s, climbing to over 20,000 by 2000, this very success has brought about its own particular problem, with local farmers claiming that the birds are eating significant amounts of newly sown rice, a conflict which as yet has no satisfactory solution. Man the conservationist can celebrate a major conservation success, but Man the creator of artificial habitats then complains when these are utilised by protected species.

This excellently produced and illustrated book concludes with a thought-provoking chapter on what the future might hold for the Greater Flamingo, and an inventory of the more important breeding sites in Europe, Asia and Africa.

Malcolm Ogilvie

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100 BIRDS TO SEE BEFORE YOU DIE

By David Chandler and Dominic Couzens. Carlton Books, London, 2008. 224 pages; over 200 colour photographs. ISBN 978-1-84442-019-3. Hardback, £19.99.

I was intrigued by the title of this book and that was really why I agreed to review it. It was not quite what I had anticipated – and against all my expectations I thoroughly enjoyed browsing through it and reading those bits which took my fancy. It's not all about rare or endangered species (although it includes birds which are both). Perhaps the authors' words in their introduction sum it up best: '...our approach has been to take a much more rounded look at the planet's avian diversity and to create a wish-list that celebrates the wonder, beauty and amazing lifestyles of the world's avifauna.'

They have succeeded in their aim, in my view, and have produced well-researched and easily readable accounts of the 100 species they have selected. Inevitably, there is a high degree of subjectiveness in choosing those 100 birds and, equally inevitably, none of us will agree with all the choices (where are Golden Eagle *Aquila chrysaetos*, Kori Bustard *Ardeotis kori* and Blackburnian Warbler *Dendroica fusca*, for instance?). It hardly matters. You will find many selections of which you heartily approve, and can enjoy yourselves arguing about the rest!

The photographs are very good – and some of those of the many species I've never seen are positively mouth-watering. One deserves a mention because it's not very good, that of the incredible Standard-winged Nightjar *Macrodipteryx longipennis*. Blurred and indistinct, it nevertheless perfectly recaptures the wonderful hot evening in Sierra Leone when I first saw this bird, and I really like it because of that.

The species order is a countdown from 100 to the most desirable bird of all at number one, and that final selection, above all else, surely conveys all the fun, the pleasure and the (perhaps) absurd hopes our great hobby brings us. It is, of course, Ivory-billed Woodpecker *Campephilus principalis*. Why not?

Mike Everett

THE BIRD BOOK

By Rob Hume and Peter Hayman. Kyle Cathie, London, 2008. 464 pages; over 250 British and European species covered, with over 650 paintings; distribution maps. ISBN 978-1-85626-805-9. Paperback, £8.99.

A straightforward, small-format guide.

NOMADS OF THE STRAIT OF GIBRALTAR

By Fernando Barrios Partida. Grafisur, Tarifa, Spain, 2007. 429 pages; numerous colour photographs. ISBN 978-84-934263-4-2. Hardback, £36.99.

My earliest birding memories are of flocks of raptors over Gibraltar, my home town, which fuelled a lifelong interest in ornithology. Fernando Barrios is a native of nearby Algeciras and he too was captivated from childhood by the spectacle of migrating birds, the 'nomads' of the title. This book is his tribute, both in words and through very many outstanding photographs, to this remarkable area – and his successful attempt to bring its natural wonders to a wider public.

The main part of the text is a series of essays on: the natural parks of the Strait and Los Alcornocales; an introduction to migration in general and at the Strait; White Stork *Ciconia ciconia* migration; raptors and other migrants; and 'Misadventures and deaths', describing the hazards faced by migrants locally. A chapter on birds and wildlife on the Rock of Gibraltar has been contributed by an invited author, Dr John Cortes of the Gibraltar Ornithological and Natural History Society. There are concluding sections on identifying soaring-bird species and advice on watching migration at the Strait.

Bird books arouse a variety of emotions and this one made me homesick. Barrios has succeeded spectacularly in conveying his enormous enthusiasm for his subject and his area. When your home patch is the Strait of Gibraltar, you won't lack for exciting subject matter, but he is a very readable author and a skilled observer who fills page after page with compelling images and insightful comment.

The photographic skills of the author are renowned locally and some of his best work illustrates the book. There are many atmospheric shots of landscapes, his trademark close-ups of raptors in flight, dozens of beautiful portraits of flora as well as fauna and plenty of shots of migration in action: soaring flocks, birds struggling in from the sea, great gatherings of grounded migrants awaiting improvement in the weather and tragic images of those which didn't make it. The drowned Griffon Vulture *Gyps fulvus* washed up in a sandy cove (p. 326) is an evocative reminder that many large birds fall victim to the debilitating crosswinds which they may face over the sea. A Short-toed Eagle *Circaetus gallicus* (p. 332) lying a few metres from its right wing, severed by a wind turbine, is a highly topical reminder of how hazardous this technology can be: the Strait has one of the largest windfarms in the world. Like many a nature photographer, Barrios is prepared to go to great trouble to get results. However, I doubt whether anyone else has thought of hiding inside a giant White Stork model, propelled by his own two legs clad appropriately in red pantyhose, in order to try and mingle with a crowd of resting storks (p. 234). It didn't work.

This is a highly anecdotal and somewhat idiosyncratic book, very strong indeed on evocative accounts of remarkable events, but not a systematic treatment of the subject. This is not intended to be a criticism. Others have written authoritative but much drier accounts, replete with graphs and tables, placing the details of migration at the Strait on record. Here instead is a book that genuinely conveys the feel of the area. If you know the Strait, it is a magnificent souvenir that will make you want to return there soon. If you have yet to visit, it will provide powerful encouragement to do so. In any case, it is an entertaining and worthwhile read.

Ernest Garcia

THE BIRDS OF THE HUDDERSFIELD AREA

By Paul and Betty Bray. Huddersfield Birdwatchers' Club, 2008. 420 pages; many maps and drawings. No ISBN number. Paperback, £16.00 (incl. p&p, from 2 Bankfield Park Avenue, Taylor Hill, Huddersfield HD4 7QY).

Huddersfield has had a long and distinguished ornithological history; the first species list was published in 1859 and the Mosleys' book of 1912–15 was probably the first local British avifauna to illustrate distribution by coloured maps. HBC has published records since 1966. The area studied covers over 600 km^2, south from the River Calder as far as the northern edge of the Peak District, and west to the Oldham fringe of Greater Manchester, thus covering parts of three present recording areas. The town lies near the northern boundary. Much high moorland lies along the Pennine Way, and there are a number of reservoirs, including Blackmoorfoot (see below).

This scholarly account incorporates the maps from the already published *Atlas* of 1987–92. In addition to the annotated list of 261 species recorded up to the end of 2004, there are admirable introductory chapters on geology and climate, habitats and ornithological history. The drawings, in contrasting pointilliste and impressionistic styles, are by Stuart Brocklehurst and Michael Pinder. The price has been kept to a modest level by eschewing colour but the binding will easily crack. The following paper books can both be obtained from the same source (all incl. p&p): *Birds of Blackmoorfoot Reservoir 1985–2003*, by Mike Denton (£4.50) and *The Huddersfield List to December 2007* (£1.00).

David K. Ballance

THE BIRDS OF GWENT

By W. A. Venables, A. D. Baker, R. M. Clarke, C. Jones, J. M. S. Lewis, S. J. Tyler, I. R. Walker and R. A. Williams.
Christopher Helm, A&C Black, London, 2008. 416 pages; 82 colour photographs; 83 line-drawings; numerous maps and tables.
ISBN 978-0-7136-7633-4.
Hardback, £40.00.

This book has been a pleasure to review. It exudes quality from the moment you pick it up and are struck by John Gale's atmospheric paintings of Dippers *Cinclus cinclus* and Hawfinches *Coccothraustes coccothraustes* on the dust jacket. It has been compiled on behalf of the Gwent Ornithological Society (GOS) by a team of eight authors and supported by seven additional contributors led by Al Venables. Yet the whole text reads so seamlessly that you would think that it had all been written by a single erudite writer.

The book follows on from the two previous GOS publications: the first *Birds of Gwent* (1977) and the *Gwent Atlas of Breeding Birds* (1986). In the 313-page systematic list, changes in status since these volumes appeared are identified and, in particular, comparisons are made between the results of the 1986 atlas and the survey carried out in 1998–2003. Indeed, it is the breeding birds which demand greatest attention in the book. Gwent has a wide variety of habitats: newly created coastal wetlands, fast-flowing rivers, Sessile Oak *Quercus petraea* woods, coniferous plantations and heather-clad moorlands, as well as pastoral farmland. This diversity has produced an amazing 122 confirmed breeding species and a further 15 probably or possibly breeding during the atlas survey period, compared with 112 and eight respectively for the 1986 atlas, a 14% increase in number of species. A chapter of conclusions and comparisons, which follows the species accounts, informs readers that 33 species occur in at least 10% more tetrads than they did at the time of the last atlas, while 36 have declined by this amount. The former includes several birds of prey, Common Raven *Corvus corax*, Goosander *Mergus merganser* and species such as Siskin *Carduelis spinus*, Common Crossbill *Loxia curvirostra* and European Nightjar *Caprimulgus europaeus*, which are taking advantage of the increase in forestry restocks. The roster of declining species is a typical list of farmland and woodland species, which largely reflects the current UK situation rather than any particular changes in Gwent. The breeding avifauna also includes eight colonists which have bred for the first time since 1994, most of these being associated with wetland habitats.

Wintering birds are less important than the breeding species but the county does support internationally or nationally important populations of several wildfowl and waders. WeBS count data for key species are tabulated for each important site.

Most county avifaunas feature a mouth-watering selection of vagrants, but for Gwent this is the least significant aspect of its avifauna. Nonetheless, details are given of all occurrences of rarities and I was reminded of the famous American Bittern *Botaurus lentiginosus* at Magor in late 1981. Was it really over a quarter of a century ago? The bittern is included in the excellent selection of 82 colour photographs, although as is often the case with books of this ilk, the balance between bird and habitat pictures could perhaps have been tipped further in the direction of the habitats.

The systematic list is preceded by introductory sections comprising a brief history of Gwent ornithology, an overview of the county, its geology and bird habitats, a 20-page guide to important bird locations, and details of the methodology and overall results of the two breeding atlases. The book concludes with a series of appendices including population estimates, ringing data and a gazetteer, a comprehensive bibliography and three indices.

As indicated at the start of this review, this is a scholarly work which clearly sets out the importance of Gwent as a stronghold for many breeding birds. It is an essential purchase for all those with an interest in the status and distribution of Gwent, Welsh and UK birds, and for collectors of county avifaunas it maintains the recent very high standard of the genre.

John Clark

GARDENWATCH: MAKING THE MOST OF WILDLIFE ON YOUR DOORSTEP

By Sarah Whittley. New Holland, London, 2008. 128 pages; many colour photographs and illustrations.
ISBN 978-1-84773-112-8.
Hardback, £14.99.

Published in association with the BTO, this book provides advice on attracting wildlife to your garden, and how to watch, identify and record it.

BLACK'S NATURE GUIDES

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BIRDS OF BRITAIN & EUROPE
By Volker Dierschke. ISBN 978-1-4081-0155-1.

All published by A&C Black, London, 2008. All paperback and priced at £9.99, and all crammed with detailed illustrations and colour photographs.

A LIFE OF OSPREYS

By Roy Dennis. Whittles Publishing, Dunbeath, 2008. 211 pages; many colour photographs. ISBN 978-1904445-26-5. Paperback, £18.99.

As might be guessed from the title, this book is very much a personal account of a lifetime's involvement in Osprey *Pandion haliaetus* conservation. It is full of observations and anecdotes from decades of fieldwork and richly illustrated by many of the author's photographs. Short extracts of handwritten notes from his diaries add to the personal feel. The main focus is very much on the recovery of the Osprey in Scotland, from the return of the first birds at Loch Garten in the 1950s (close to where the author now lives), through to the present day and a resurgent population of around 200 pairs. Recent exciting developments in England and Wales are described and there is a lively account of the reintroduction project at Rutland Water, with which the author is closely associated. There are also chapters on the history of the Osprey in Britain, conservation, breeding ecology and migration. The last includes the results of recent work based on satellite-tracking, which has led to significant new insights into migratory behaviour. We now know, for example, that some young birds from Britain take a southwesterly heading on their first autumn migration and can end up far out to sea in the Atlantic, often, though not always, with predictable results.

As an acknowledged authority on the species, Roy Dennis has travelled extensively in search of Ospreys and has been involved in numerous conservation projects around the world, including recent reintroduction attempts in Spain and Italy. He is passionate about the need for direct human intervention in order to restore the fortunes of species that have suffered at the hands of humans in the past. For the heavily persecuted Osprey, modern interventions include the construction of artificial nest-sites and nest protection to deter egg-collectors, in addition to the well-publicised translocations. Based on an assessment of the available habitat in Britain and the fact that Ospreys are perfectly capable of breeding in close proximity to people (provided they are left unmolested), it is suggested that the current population might be only one-tenth of its true potential. Clearly there is more work to be done and further translocation projects in southern Britain are seen as a high priority.

The book does not attempt a comprehensive overview of what is known about the Osprey throughout its world range, and lacks a full review of the literature available for this well-studied species. Almost all of the data included are from studies in Scotland and the fledgling populations in England and Wales. There are very few references, which may frustrate readers wishing to follow up areas of particular interest and there is no index, which makes it difficult to locate specific information quickly. Nevertheless, the book contains a wealth of well-presented information about this iconic species and is a thoroughly enjoyable and absorbing read.

Ian Carter

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

RSPB awarded £500,000 for farmland birds

With time running out for the UK Government to meet its 2010 target of reversing biodiversity decline, government agency Natural England has given the RSPB more than half a million pounds for farmland bird conservation. A further £200,000 was awarded to the Society to fund reedbed restoration for the Eurasian Bittern *Botaurus stellaris*.

Farmland birds in England have declined more than any other group in recent times. Of the 40 species on the Red List of the UK's Birds of Conservation Concern, over one-third are reliant on farming. These birds were placed on the Red List in 2002 because of declines of more than 50% over the previous 25 years, or because of large historical declines. The RSPB's £536,700 will be spent on three key projects: Cirl Bunting *Emberiza cirlus* reintroduction to Cornwall; Twite *Carduelis flavirostris* recovery in the South Pennines, its last toehold in England (the 2008 population was fewer than 100 pairs at just 15 colonies); and boosting core farmland bird populations in the Fens, Sherwood and the borders of Lancashire and Cheshire. Dr Mark Avery, the RSPB's Conservation Director, said: 'The declines of wildlife in England have been among the greatest anywhere in Europe, and farmland species have suffered more than most. The RSPB has an excellent record of researching why farmland birds are declining and then putting in place recovery plans.'

Responding to the news of the award for reedbed restoration, Dr

Sue Armstrong-Brown, RSPB's Head of Countryside and Species Conservation, said: 'The Bittern has just enjoyed its best year for over 120 years and with 75 booming males recorded in the breeding season, it's difficult to believe it could be in trouble. However, many of its best nesting sites are threatened by sea-level rise. This is the first-ever grant towards climate adaptation for a bird in England.'

As well as the money given to the RSPB, Natural England has awarded £5.5m to various conservation groups from its Countdown 2010 biodiversity action fund. Other beneficiaries include the Shark Trust, Froglife and several county wildlife trusts.

Time to push the Bald Ibis panic button?

Researchers have concluded that the tiny Syrian colony of the Critically Endangered Bald Ibis *Geronticus eremita* should be supplemented with juveniles taken from the expanding semi-wild population at Birecik in Turkey. Breeding failed at the Palmyra colony in 2008 for the first time since the discovery of a relict population of ibises in Syria in 2002. And if no young birds are produced in 2009, then juveniles from Turkey will be introduced to the Syrian colony.

This was the strategy drawn up at a recent workshop of ibis workers held in Palmyra. Workshop attendees included community representatives, local hunters and Bald Ibis Protected Area staff. The proposed captive Bald Ibis aviary will be established within the Talila Wildlife Reserve, part of the al-Badia desert steppe east of Palmyra, managed by the Syrian Government and funded by the UN's Food and Agriculture Organisation.

The RSPB's Chris Bowden explained that captive breeding was a last resort. 'If fewer than two pairs of Bald Ibis attempt to breed next year, we will hit the emergency button. The Birecik birds are genetically similar, and so are the obvious source for supplementation.' Juvenile birds would be taken from Birecik to form a captive breeding colony, using adapted compounds that were previously used for captive breeding of Arabian Oryx *Oryx leucoryx*. 'On the face of it, it seems straightforward to do, but the birds are socially particularly complex, and there are risks of disease. The project will require very careful implementation,' he added.

Oriental Bird Club winter meeting

The OBC winter meeting and AGM will be held at the Wilkinson Room, St John the Evangelist, Hills Road, Cambridge, on Saturday 8th November 2008. The venue is a short walk from Cambridge railway station and doors open at 10.30 am. Talks will include 'The past, present and future of Gurney's Pitta' by Paul Donald, 'Eastern birds on the Eastern Fringe' by Jimmy Steele, 'Monsoon migrations: extraordinary journeys across the Indian Ocean' by Charles Anderson and 'The saga of Richard Meinertzhagen' by James Parry. Full details will be posted on the OBC website www.orientalbirdclub.org and the meeting is open to all interested birdwatchers.

Neotropical Birding 3

The Neotropical Bird Club, a UK-registered charity that promotes bird research and conservation in Central and South America, has recently announced publication of the third issue of its widely acclaimed magazine, *Neotropical Birding*. In response to popular demand, *NB* will be published twice yearly from 2009 alongside a single, substantially enlarged volume of the Club's journal *Cotinga*. *NB* is the only magazine dedicated to providing articles of practical use for those birding in the Caribbean, South and Central America. It provides up-to-date information on some of the best places to go birding in the Neotropics and contains articles on the identification of some of the more tricky species. More information is available on the NBC website www.neotropicalbirdclub.org

7th EOU Conference 2009

The council of the European Ornithologists' Union and the local organisers cordially invite you to join the 7th conference, to be held at the University of Zurich during 21th–26th August 2009. Information on the conference location, accommodation, deadlines, registration fees, etc. are available at www.eou2009.ch.

BB Bookshop

For the first time since December 2001, we are delighted to announce that the *BB* bookshop will again be run by Subbuteo Natural History Books. Each month, the bookshop page will contain a small but varied selection from the comprehensive range of titles available from Subbuteo.

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Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mainly new arrivals between early September and early October 2008.

Headlines After the Northern Isles grabbed most of the headlines in September, the focus of interest switched abruptly to Ireland and southwest England in October. All in all, a sensational month for rare birds, with the following among the highlights:

In the Northern Isles, the rarest birds included: Brown Flycatcher, Siberian Thrush, Red-flanked Bluetail and two or three White's Thrushes on Fair Isle; Cretzschmar's Bunting, Buff-bellied Pipit and Red-flanked Bluetail on North Ronaldsay; Eastern Olivaceous Warbler, Bobolink and Red-flanked Bluetail on Foula; and Sykes's Warbler on mainland Shetland. Ireland weighed in with Little Blue Heron, Scarlet Tanager, American Redstart, White's Thrush and Western Sandpiper. And in the southwest of England, there was an Alder Flycatcher, Buff-bellied Pipit, two Common Nighthawks, Blackpoll Warbler, two or three Red-eyed Vireos and a Grey-cheeked Thrush.

Almost a 'full set' of rare eastern warblers was recorded with, in addition to the above, five Pallas's Grasshopper (including two on the English mainland), four Lanceolated, three Paddyfield, five Blyth's Reed, three Booted, three Arctic, ten Radde's, one Dusky and five Western Bonelli's.

In addition, there was an Eleonora's Falcon in Essex, a Greater Sand Plover in Scotland, Crag Martin in Sussex, Buff-bellied Pipit on St Kilda, White's Thrush in Cleveland, Zitting Cisticola in Kent and Brown Shrike in Yorkshire.

Ferruginous Duck *Aythya nyroca* Singles were reported in Buckinghamshire, Leicestershire & Rutland and Somerset. **Lesser Scaup** *Aythya affinis* Loch Leven (Perth & Kinross), 23rd September; Queen Mother Resr (Berkshire), 8th October. **King Eider** *Somateria spectabilis* Trondra (Shetland), 4th–5th October.

Eric Dempsey

336. Juvenile Little Blue Heron *Egretta caerulea*, Letterfrack, Co. Galway, September 2008. The first for Ireland.

Zino's/Fea's Petrel *Pterodroma madeira/feae* Galley Head (Co. Cork), 10th September; Carnsore Point, 14th September, seen passing Hook Head (both Co. Wexford) some 55 minutes later; Pendeen (Cornwall), 3rd October. **Wilson's Storm-petrel** *Oceanites oceanicus* Seen from pelagics off Co. Kerry: 12 on 21st and 15 on 26th September.

Cattle Egret *Bubulcus ibis* In Somerset up to three at two localities, with others in Carmarthenshire, Devon (two), Dorset and Sussex (four). **Little Blue Heron** *Egretta caerulea* Letterfrack (Co. Galway), 24th September to 9th October. **Great White Egret** *Ardea alba* Long-stayers in Hampshire and Shropshire, in addition to others in Ceredigion, Devon, Essex, Greater London, Gwent, Lancashire & N Merseyside, Leicestershire & Rutland, Nottinghamshire, Staffordshire, Suffolk (two), Warwickshire and Yorkshire. **Glossy Ibis** *Plegadis falcinellus* Ouse Washes, 28th September to 10th October, also roosting at Fen Drayton (both

Cambridgeshire); Fairburn Ings/Swillington Ings (Yorkshire), long-stayer to 8th October.

Honey-buzzard *Pernis apivorus* The biggest influx since 2000, with some 500–700 during 13th–25th September. First noticeable along the English east coast, and particularly East Anglia, on 13th, with many drifting inland by 14th. Large totals on 13th included 44 in Suffolk (with a single flock of 18 at Minsmere), and 41 in Norfolk; on 14th, another 66 in Norfolk (including 13 at Burnham Overy), 31 in Lincolnshire (including 16 at Gibraltar Point), nine over Cambridgeshire and nine over Greater London. Numbers then slowly tailed off, but there were ten in both Durham and Dorset (including six at Portland Bill) on 20th September. Black Kite *Milvus migrans* Hill Head (Hampshire), 25th September. Red-footed Falcon *Falco vespertinus* A long-stayer at Tophill Low (Yorkshire), with others in Cambridgeshire, Cleveland, Dumfries & Galloway, Hampshire, Norfolk (two) and Northamptonshire. Eleonora's Falcon *Falco eleonorae* Maldon (Essex), 13th September.

Greater Sand Plover *Charadrius leschenaultii* Ythan Estuary (North-east Scotland), 12th–19th September, presumed same Dunbar (Lothian), 19th–20th September. American Golden Plover *Pluvialis dominica* At least three in Shetland and the Outer Hebrides, with singles in Argyll, Co. Cork,

Stef McElwee

337. Adult Greater Sand Plover *Charadrius leschenaultii*, Dunbar, Lothian, September 2008.

Michael McKee

338. Adult Gull-billed Tern *Gelochelidon nilotica*, Tiree, Argyll, September 2008.

George Reszeter

339. First-winter male Alder Flycatcher *Empidonax alnorum*, Nanjizal, Cornwall, October 2008. The first for Britain; identified as this species rather than Willow Flycatcher *E. traillii* when trapped.

Rebecca Nason

340. White's Thrush *Zoothera dauma*, Fair Isle, October 2008.

Deryk Shaw

341. First-winter male Siberian Thrush *Zoothera sibirica*, Fair Isle, September 2008. The eighth for Britain.

Martyn Wilson

342. Zitting Cisticola *Cisticola juncidis*, Swalecliffe, Kent, September 2008. The sixth for Britain, and second bird in Kent in three years.

Co. Kerry, Scilly, Co. Wexford and Co. Wicklow. **Semi-palmated Sandpiper** *Calidris pusilla* Ballycotton (Co. Cork), 12th–18th September; Carrahane (Co. Kerry), 13th September; Rogerstown, 16th September and North Bull Island (both Co. Dublin), 25th September. **Western Sandpiper** *Calidris mauri* Omey Strand (Co. Galway), 13th–14th September. **White-rumped Sandpiper** *Calidris fuscicollis* Carrahane, 15th–17th September; Lough Foyle (Co. Derry), 19th–20th September. **Baird's Sandpiper** *Calidris bairdii* Carrahane, 4th–28th September; Blackrock Strand (Co. Kerry), 6th–25th September; Leam Lough (Co. Mayo), 7th September; Ballycotton, 12th–20th September; Bellanoch (Argyll), 15th September; Tacumshin Lake (Co. Wexford), 20th September. **Stilt Sandpiper** *Calidris himantopus* South Uist (Outer Hebrides), 14th–15th September; Glascoe Dubh (Isle of Man), 17th September; Campfield Marsh (Cumbria), 22nd September to 1st October. **Broad-billed Sandpiper** *Limicola falcinellus* Wallasea Island (Essex), 2nd–6th October. **Buff-breasted Sandpiper** *Tryngites subruficollis* A long-stayer in Northumberland, with others arriving throughout the period in Argyll (two), Cornwall (two or three), Fair Isle, Hampshire, North-east Scotland (two), Orkney (two), Outer Hebrides and Scilly (one or two). **Great Snipe** *Gallinago media* Quendale (Shetland), 12th September; Flamborough Head, 13th September and Speeton (both Yorkshire), 17th–18th September. **Long-billed Dowitcher** *Limnodromus scolopaceus* Lough Donnell (Co. Clare), 23rd September; Rahasane (Co. Galway), 27th–28th September. **Spotted Sandpiper** *Actitis macularius* North Ronaldsay

Deryk Shaw

343 & 344. Pallas's Grasshopper Warbler *Locustella certhiola*, Spurn, Yorkshire (left) and Fair Isle, both September 2008. Two of the five recorded in the period, three in Shetland, two on the English east coast.

(Orkney), 30th September. Lesser Yellowlegs *Tringa flavipes* Eden Estuary (Fife), 10th–14th and 23rd September; Cross Lough (Co. Mayo), 12th September; Tacumshin Lake, 24th–28th September; Barra (Outer Hebrides), 2nd October. Wilson's Phalarope *Phalaropus tricolor* Alkborough Flats (Lincolnshire), 16th–21st September, also visiting nearby Blacktoft Sands (Yorkshire); South Uist, 21st September; Cley, 7th October, then Salthouse (both Norfolk), 9th October.

Gull-billed Tern *Gelochelidon nilotica* Tiree (Argyll), 29th September to 3rd October. Whiskered Tern *Chlidonias hybrida* Shotwick Lake (Flintshire), 10th September. White-winged Black Tern *Chlidonias leucopterus* Long-stayers in Flintshire, Kent and Staffordshire, with new arrivals in Bedfordshire, Cheshire & Wirral, Greater Manchester, Hampshire and Kent.

Common Nighthawk *Chordeiles minor* St Mary's (Scilly), 6th October, found dead; Church Cove area (Cornwall), 7th–8th October. European Bee-eater *Merops apiaster* Lavernock Point (Glamorgan), 27th September. Alder Flycatcher *Empidonax alnorum* Nanjizal (Cornwall), 8th–9th October.

Crag Martin *Ptyonoprogne rupestris* Beeding Hill (Sussex), 21st September. Red-rumped Swallow *Cecropis daurica* Bryher (Scilly), 13th September; Holme (Norfolk), 17th September.

Olive-backed Pipit *Anthus hodgsoni* Spurn (Yorkshire), 24th September. Pechora Pipit *Anthus gustavi* Fetlar (Shetland), 30th September; North Uist (Outer Hebrides), 4th–5th October. Red-throated Pipit *Anthus cervinus* Reported from Cornwall (two), Fair Isle,

Hugh Harrop

345. Paddyfield Warbler *Acrocephalus agricola*, Virkie, Shetland, September 2008; one of three seen in Shetland during the period.

Brydon Thomason

346. Eastern Olivaceous Warbler *Hippolais pallida*, Foula, Shetland, September 2008. The 12th record for Britain.

Gwynedd, Hampshire, Norfolk, Shetland (two), Suffolk and Yorkshire. Buff-bellied Pipit *Anthus rubescens* St Kilda (Outer Hebrides), 19th September to at least 7th October; Bryher, 3rd and 6th–7th October; North Ronaldsay, 3rd–5th October. Citrine Wagtail *Motacilla citreola* North Ronaldsay, 10th September; Quarff (Shetland), 12th September; Lough Beg (Co. Derry), 13th–18th September; Rattray Head (North-east Scotland), 14th September; St Mary's, 16th–18th September; Whalsay (Shetland), 17th September; North Uist, 28th September to 1st October; Barra, 1st October, found dead 3rd; Fair Isle, 6th October.

John Carter

347. Sykes's Warbler *Hippolais rama*, Sumburgh, Shetland, September 2008. The tenth for Britain, and fifth for Shetland.

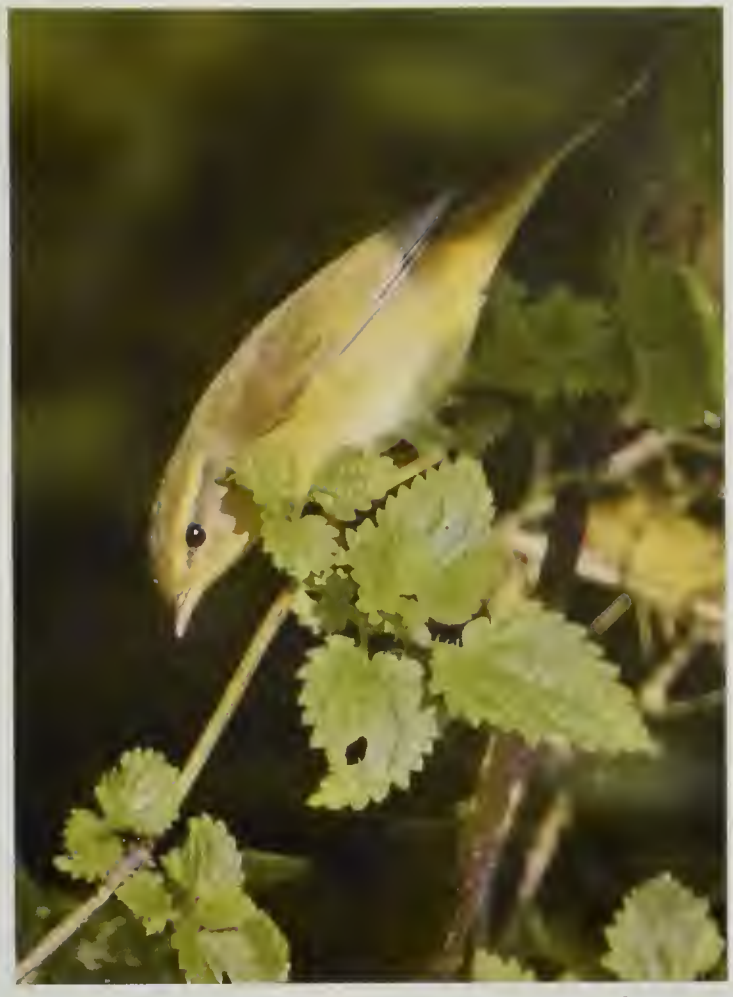
Thrush Nightingale *Luscinia luscinia* Fair Isle, 13th–15th September; Holme, 14th–17th September; Fetlar, 15th September; Virkie (Shetland), 22nd September. Red-flanked Bluetail *Tarsiger cyanurus* Fair Isle, 24th September; Foula (Shetland), 25th September; North Ronaldsay, 25th–26th September. White's Thrush *Zoothera dauma* Inishbofin (Co. Galway), 28th September; one, or possibly two, Fair Isle, 1st October, with another there on 8th; Hartlepool Headland (Cleveland), 8th October. Siberian Thrush *Zoothera sibirica* Fair Isle, 25th September. Grey-cheeked Thrush *Catharus minimus* Portland Bill (Dorset), 8th October.

Zitting Cisticola *Cisticola juncidis* Swalecliffe (Kent), 13th September. Pallas's Grasshopper Warbler *Locustella certhiola* Spurn, 14th September; Fair Isle, 23rd September, with another 1st October; Donna Nook (Lincolnshire), 25th September; Foula, 2nd October. Lanceolated Warbler *Locustella lanceolata* Sumburgh Head (Shetland), 12th September; Fair Isle, 13th–19th September, and two on 23rd. Aquatic Warbler *Acrocephalus paludicola* Steart (Somerset), 19th September; Slapton Ley (Devon), 20th and 28th–29th September. Paddyfield Warbler *Acrocephalus agricola* Unst (Shetland), 11th September; Fair Isle, 13th September; Virkie, 20th–21st September. Blyth's Reed Warbler *Acrocephalus dumetorum* Sumburgh Head, 24th September, Quendale, 24th September, Foula (all Shetland), 24th September to 2nd October; West Runton, 26th–27th September, Wells-next-the-Sea (both Norfolk), 5th–6th October. Eastern Olivaceous Warbler *Hippolais pallida* Foula, 23rd–26th Sep-

tember. Booted Warbler *Hippolais caligata* Margate (Kent), 26th September; Spurn, 27th September; Lundy (Devon), 28th September. Sykes's Warbler *Hippolais rama* Sumburgh, 25th September.

Subalpine Warbler *Sylvia cantillans* South Shields (Durham), long-stayer to 14th September; Nanquidno (Cornwall), 5th October. Greenish Warbler *Phylloscopus trochiloides* A long-stayer in Northumberland, with others in Cleveland, Co. Cork, Cornwall and Norfolk. Arctic Warbler *Phylloscopus borealis* Exnaboe (Shetland), 14th–19th September; Fair Isle, 25th September; Out Skerries (Shetland), 26th–27th September. Yellow-browed Warbler *Phylloscopus inornatus* A widespread influx from 23rd September, some of the larger concentrations on 24th September including at least 45 on Fair Isle (with 32 there on 25th), about 20 on North Ronaldsay and seven at Flamborough Head. Radde's Warbler *Phylloscopus schwarzi* Wells-next-the-Sea, 24th–25th September, Burnham Overy, 25th–26th September, Holkham Pines, 26th–28th September, Weybourne (all Norfolk), 6th October; Shingle Street (Suffolk), 26th–29th September; Flamborough Head, 26th September; Sandwich Bay (Kent), 26th September; Foulness (Essex), 27th September; Great Orme Head (Conwy), 28th September; St Martin's (Scilly), 9th October. Dusky Warbler *Phylloscopus fuscatus* St Margaret's at Cliffe (Kent), 26th–27th September. Western Bonelli's Warbler *Phylloscopus bonelli* Lundy, 14th September; Fair Isle, 17th–18th September; Nanjizal (Cornwall), 18th September; St Mary's, 18th September; Lunna (Shetland), 27th September.

Brown Flycatcher *Muscicapa dauurica* Fair Isle, 24th–25th September. Penduline Tit *Remiz pendulinus* Hengistbury Head (Dorset), 29th September.



Bill Baston

348. Radde's Warbler *Phylloscopus schwarzi*, Shingle Street, Suffolk, September 2008; one of ten reported during the period.

Brown Shrike *Lanius cristatus* Flamborough Head, 24th–25th September. Lesser Grey Shrike *Lanius minor* Sheringham, 24th–26th September then Weybourne (both Norfolk),

Hugh Harrop

349. Western Bonelli's Warbler *Phylloscopus bonelli*, Lunna, Shetland, September 2008.

Mark Breaks

350. First-winter Brown Flycatcher *Muscicapa dauurica*, Fair Isle, September 2008. The third for Britain, and second for Fair Isle.

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351. First-winter male Scarlet Tanager *Piranga alivacea*, Garinish, Co. Cork, October 2008; the fourth for Ireland.

Jason Atkinson

352. Male Cretzschmar's Bunting *Emberiza caesia*, North Ronaldsay, Orkney, September 2008. The fourth for Britain, following spring birds on Fair Isle in 1967 and 1979, and Stronsay, Orkney, in 1998.

27th–28th September; Ripple (Kent), 27th September. Woodchat Shrike *Lanius senator* Singles were reported from Cleveland, Dorset, Norfolk and Orkney.

Rose-coloured Starling *Sturnus roseus* Reported from Argyll, Cornwall (up to four), Dorset, Fair Isle, Kent, Lothian, Shetland, Suffolk and Yorkshire. Red-eyed Vireo *Vireo olivaceus* Cross Lough, 13th September with another/same at Annagh Plantation (both Co. Mayo), 16th–18th September; St Agnes, 8th–9th October, possibly same Gugh, 9th October, with another on St Mary's (all Scilly), 8th–10th October. Arctic Redpoll *Carduelis hornemanni* Unst, 1st–8th October, with two on 6th; Foula, 1st–3rd October; Fair Isle, 1st–2nd October; Yell (Shetland), 3rd–5th October with a second bird on 6th. Two-barred Crossbill *Loxia leucoptera* Fair Isle, 12th–14th September; Whalsay, 13th–14th September.

Blackpoll Warbler *Dendroica striata* St Agnes, 8th–9th October. American Redstart *Setophaga ruticilla* Mizen Head (Co. Cork), 18th September. Common Yellowthroat *Geothlypis trichas* Southampton Docks, on board MV *Aurora*, 19th–23rd September (fed on board). Scarlet Tanager *Piranga olivacea* Garinish (Co. Cork), 7th–10th October.

Cretzschmar's Bunting *Emberiza caesia* North Ronaldsay, 19th–21st September. Yellow-breasted Bunting *Emberiza aureola* Fetlar, 12th–14th September. Black-headed Bunting *Emberiza melanocephala* Barra, 21st September. Bobolink *Dolichonyx oryzivorus* Foula, 28th September.

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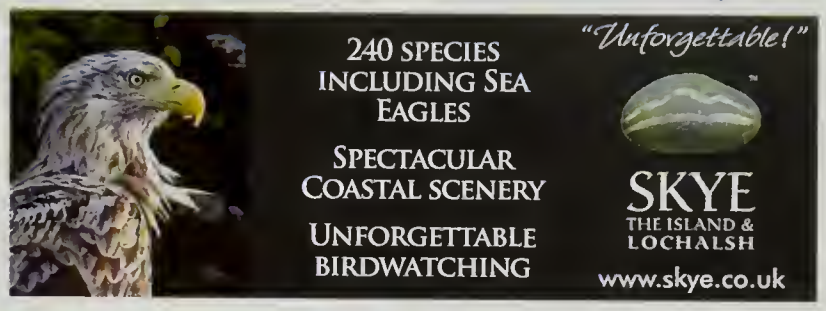

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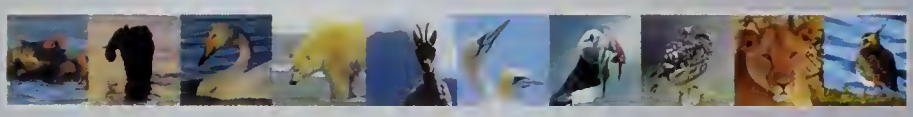

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Bulwer's Petrel

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EDITORIAL

Spindrift, Eastshore,
Virkie, Shetland ZE3 9JS
Tel: 01950 460080
Papers, notes, letters, illustrations, etc.
Roger Riddington
E-mail: editor@britishbirds.co.uk

'News & comment' information
Adrian Pitches, 22 Dene Road,
Tynemouth, Tyne & Wear NE30 2JW
E-mail: adrianpitches@blueyonder.co.uk

Rarity descriptions
Nigel Hudson, Post Office Flat,
St Mary's, Scilly TR21 0LL
E-mail: secretary@bbrc.org.uk

CIRCULATION & PRODUCTION

4 Harlequin Gardens,
St Leonards on Sea,
East Sussex TN37 7PF
Tel & fax: 01424 755155

Design & Production
Mark Corliss
E-mail: m.corliss@netmatters.co.uk

Subscriptions & Administration
Hazel Jenner
E-mail: subscriptions@britishbirds.co.uk

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George Reszeter

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Regular features

Birds and habitat change in Britain

Part 1: a review of losses and gains in the twentieth century

Robert J. Fuller and Malcolm Ausden

Yellow Wagtail *Motacilla flava* — *Richard Allen*

ABSTRACT We identify 18 trends in habitat quantity or quality considered to be important drivers of change in bird populations in the twentieth century. The trends are grouped into changes in (i) farmland (including the uplands), (ii) woodland/forestry, (iii) coastal and inland wetlands and (iv) miscellaneous (urbanisation and recreation). Shifts in habitat quality were just as significant to birds as changes in habitat extent. Many of the trends had complex effects on birds, benefiting some species but creating pressures for others. Overall, habitat changes in lowland and upland farmed landscapes have been detrimental to birds. Expansion of conifer plantations had mixed effects, replacing long-established bird communities with new ones. The decline in coppicing and recent changes in lowland woodland structure caused several species to lose habitat but few have gained. Two striking changes affecting wetland birds have been the modernisation of sewage treatment systems and the increase in man-made waterbodies. Eight habitat-related issues are identified that are likely to be especially significant to birds in the first half of the twenty-first century.

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Introduction

Most birders are interested in changes in our avifauna, whether in terms of migration patterns, breeding distributions or population sizes. The fact that avifaunas change over time creates one of the great fascinations of birding. We know a huge amount about the changes in the bird populations of Britain during the twentieth century. By comparison we know virtually nothing about those in previous centuries, though we can be certain that bird populations have always been in a state of flux for many reasons. Nonetheless, changes in the British avifauna during the twentieth century were probably on an exceptional scale. Considerably more species became established as breeders during the century than were lost, but this is not a useful way to assess change in the avifauna. A far larger list of species has shown huge changes in distribution and status over the course of the century as a result of improved protection or habitat change. In this, the first of two articles on birds and habitat change, we review major trends in habitat that were of particular significance for Britain's birds in the last century. In the second article we discuss the conservation response to these changes and explore some of the challenges likely to face birds and their habitats over the next 50 years (Ausden & Fuller in press)[1]. The scope of the articles is terrestrial and coastal. Changes in the marine environment are not covered as they merit an article devoted entirely to the effects of fishing pressure, pollution and climate change.

The availability of suitable habitat is fundamental in limiting the abundance and distribution of most species of plants and animals within their natural ranges. In Britain, the entire land surface has been completely transformed by human activity over thousands of years and consequently the existing species are by necessity tolerant of, even adapted to, these anthropogenic conditions. During the twentieth century, it became all too evident that the capacity of humans to alter these 'cultural landscapes' had moved on to a new level. The scale of social, cultural and technological change during that century is hard to comprehend. Rapid growth in human populations was coupled with unprecedented exploitation of natural resources. Loss of semi-natural habitat, intensified agricultural production, and new and insidious forms of pollution were paralleled by the emergence of environmental and conservation movements with considerable power themselves to influence land use. As some habitat types contracted, others became more widespread. Much has been lost but it is also true that new opportunities for wildlife have been gained.

This account is limited by considerable uncertainties and is not intended to be a comprehensive review. It is offered as a personal view of some of the key issues as we see them. Rather little is known about exact population trends of many bird species in the first half of the twentieth century, although qualitative trends are available (Gibbons *et al.* 1996). The earliest systematic survey is the Heronries Survey, which began in 1928, and in 1947 a national wildfowl count scheme was established (Cranswick *et al.* 1997). It was not until the mid 1960s that widespread terrestrial birds were monitored (Marchant *et al.* 1990). Since then, there has been a remarkable expansion in monitoring effort and of research aimed at understanding the habitat needs of birds and their responses to habitat change (Robinson in press). Though invaluable in other ways, much of this work has come too late to inform us about how bird numbers and distribution were affected by the huge environmental changes of the first seven decades of the twentieth century.

Habitat concepts and definitions

The concept of 'habitat' is multi-faceted and here we use it in several ways. Strictly, it relates to the specific environment in which an organism lives. For a terrestrial bird species, this environment may be described in terms of climate and microclimate, soil type and hydrology, topography, plant composition and vegetation structure. Within suitable habitat, the density of a species may vary in space and time in response to many factors, including food supplies, nest-sites, predators and competitors (Newton 2007). This definition of habitat is species-centred and recognises the individuality of species requirements. On the other hand, 'habitat' is familiarly used in a less exact way to denote different and distinctive environments, based on a combination of vegetation, land use, landform and hydrology. Examples are lowland heath, upland moorland,

[1] Part 2 of 'Birds and habitat change in Britain' will appear in *British Birds* early in 2009.

grazing marsh, saltmarsh, oak *Quercus* woodland and parkland. Recognising habitat types in this way provides a convenient terminology for naturalists and ecologists (e.g. Cramp & Simmons 1977, Ratcliffe 1977, Crick 1992), but it has limitations. Vegetation transitions and gradients are difficult to represent in static classifications of habitat types. It also cannot do justice to variations in ecological conditions occurring within and between patches of the same habitat type and which are crucially important in determining habitat suitability for many species.

Loss and degradation of habitat are the major causes of biodiversity impoverishment in many parts of the world but these processes cover a continuum of situations and impacts. Many habitat changes that are significant for birds involve changes in suitability or quality rather than outright habitat loss (Sutherland 1998). In this article, we emphasise that changes in habitat quality can be just as important as losses of habitat in driving population changes in birds. Habitat can appear superficially to have changed little, yet its quality for a given species may have declined markedly. Habitat quality is best defined in demographic terms (Johnson 2007). Deterioration in habitat quality for a given species will generally involve a decline in abundance as a consequence of reduced breeding output or increased mortality of adults or juveniles.

Many bird species utilise a wide range of habitat types but these are not necessarily equal in their capacity to sustain high rates of breeding productivity or survival. The density and breeding productivity of a species tends to be greatest in high-quality habitat but there can be exceptions (Bernstein *et al.* 1991; Bock & Jones 2004). For example, in eastern Scotland, breeding productivity of Common Shelducks *Tadorna*

Rob Fuller

Rob Fuller

353 & 354. One of the most dramatic habitat-related events of the twentieth century was a devastating storm that hit southern England in October 1987, felling some 15 million trees. It temporarily increased the amount of dead wood and created gaps in many woodlands (as here at The Mens, Sussex, in March 1988; plate 353, above), and subsequently released regrowth of saplings and bramble *Rubus fructicosus* agg. Any benefits to woodland birds through the creation of nest-sites or increased food appear to have been localised and have not compensated for a wider trend in the simplification of woodland understorey structures as a result of canopy closure and deer browsing, as discussed later in this paper. Plate 354 shows a treefall gap some six years after the storm at Ebernoe Common, Sussex, in December 1993; vigorous regrowth such as this temporarily benefited some warblers and Common Nightingales *Luscinia megarhynchos* at a local scale.

Jens Eriksen

355. At the start of the twentieth century, the Siskin *Carduelis spinus* as a breeding bird in Britain was confined to old pine forests in north-east Scotland. By the end of the century its range had expanded hugely in response to the expansion of conifer plantations and it has adapted well to Sitka Spruce *Picea sitchensis*. It is now found almost wherever there are large areas of mature conifers.

Box 1. Examples of species whose overall breeding population trend during the twentieth century has probably increased as a consequence of changes in habitat conditions[1].

Species	*Likely relevant habitat changes*
Great Crested Grebe *Podiceps cristatus*	Creation of lowland waterbodies. Also benefited from reduced persecution.
Great Cormorant *Phalacrocorax carbo*	Creation of lowland waterbodies.
Feral geese	Creation of lowland waterbodies. Introduction of winter wheat and other overwintered crops and agricultural improvement of grassland. Also benefited from reduced persecution.
Gadwall *Anas strepera*	Creation of lowland waterbodies.
Tufted Duck *Aythya fuligula*	Creation of lowland waterbodies.
Northern Goshawk *Accipiter gentilis*	Afforestation, especially in the uplands. Recolonisation facilitated by reduced persecution and the release of falconers' birds.
Avocet *Avosetta recurvirostra*	Creation of shallow, saline waterbodies ('scrapes') on nature reserves. Also benefited from reduced persecution.
Little Ringed Plover *Charadrius dubius*	Expansion of mineral workings.
Wood Pigeon *Columba palumbus*	Changes in farmland crops, especially increase in oilseed rape.
Collared Dove *Streptopelia decaocto*	Increasing urbanisation and associated artificial feeding.
Goldcrest *Regulus regulus*	Afforestation with conifers in the lowlands and uplands.
Firecrest *Regulus ignicapilla*	Afforestation with conifers in the lowlands.
Coal Tit *Periparus ater*	Afforestation with conifers in the lowlands and uplands.
Greenfinch *Carduelis chloris*	Increase in use of gardens and associated artificial feeding.
Siskin *Carduelis spinus*	Afforestation with conifers in the lowlands and uplands.
Common Crossbill *Loxia curvirostra*	Afforestation with conifers in the lowlands and uplands.

[1] We emphasise that habitat change will often not be the sole cause of the population trend. Note that this table considers only breeding, not passage and wintering birds. Only species where we can be reasonably certain that the overall British long-term trend has been predominantly increasing or decreasing are listed – species such as Eurasian Bittern *Botaurus stellaris* and Marsh Harrier *Circus aeruginosus* that have shown contrasting trends in different time periods are excluded.

Box 2. Examples of species whose overall breeding population trend during the twentieth century has probably decreased as a consequence of changes in habitat conditions. The footnote to Box 1 also applies here.

Species	*Likely relevant habitat changes*
Red Grouse *Lagopus lagopus scoticus*	Increased grazing pressure in the uplands and reduction in grouse-moor management.
Black Grouse *Tetrao tetrix*	Increased grazing pressure in the uplands and marginal uplands. Recently, maturation of conifer plantations has reduced habitat quality.
Grey Partridge *Perdix perdix*	Loss of mixed farming, reduction of winter stubbles, reduced food supply as a consequence of crop management.
Corn Crake *Crex crex*	Changes in grassland management: reduction in low-intensity hay management.
Stone-curlew *Burhinus oedicnemus*	Lowland habitat losses to agriculture: losses of agriculturally unimproved dry acid and calcareous grasslands and the demise of old grazing systems.
European Golden Plover *Pluvialis apricaria*	Afforestation of upland habitats with conifers and changes in upland grazing patterns.
Northern Lapwing *Vanellus vanellus*	Lowland habitat losses to agriculture and intensification of farming. Relevant processes include drainage and related agricultural intensification of wet grasslands, loss of mixed and low-intensity farming, changes in grazing patterns in the lowlands and marginal uplands.
Dunlin *Calidris alpina*	Afforestation of upland habitats with conifers.
Common Snipe *Gallinago gallinago*	Drainage and related agricultural intensification of wet grasslands. Changes in grassland management in the marginal uplands.
Turtle Dove *Streptopelia turtur*	Reduced food supply as a result of changes in crop management. Reduction in quantity of hedgerows and scrub.
European Nightjar *Caprimulgus europaeus*	Loss of lowland heath to afforestation, agriculture and urban development and the demise of old grazing systems and other management of these habitats. Human disturbance is probably locally important.
Wood Lark *Lullula arborea*	Loss of lowland heath and grassland to afforestation, agriculture and urban development and the demise of old grazing systems and other management of these habitats. Human disturbance is probably locally important.
Sky Lark *Alauda arvensis*	Loss of mixed and low-intensity farming, introduction of winter cereals, reduction of winter stubbles and general intensification of farming methods.
Tree Pipit *Anthus trivialis*	Structural change in scrub and woodland vegetation resulting from demise of old grazing systems, reduced management of woodland and maturation of conifer plantations.
Yellow Wagtail *Motacilla flava*	Drainage and related agricultural intensification of wet grasslands. Changes in lowland grazing patterns.
Dipper *Cinclus cinclus*	Acidification of upland streams.
Common Nightingale *Luscinia megarhynchos*	Demise of coppicing. Structural change in scrub and woodland vegetation arising from demise of old grazing systems, reduced woodland management and deer browsing.
Whinchat *Saxicola rubetra*	Changes in grassland management in both lowlands and marginal uplands, in particular reduction in low-intensity hay management and changes in grazing patterns.
Northern Wheatear *Oenanthe oenanthe*	Losses of agriculturally unimproved dry acid and calcareous grasslands and the demise of old grazing systems in the lowlands.
Ring Ouzel *Turdus torquatus*	Changes in grazing patterns and other management of upland heath (although mechanisms poorly understood). The decline is also possibly related to climate change.
Song Thrush *Turdus philomelos*	Loss of mixed and low-intensity farming. Reduction in damp areas within farmland. Losses of hedgerows and other semi-natural habitat in farmed landscapes. Reduction of woodland understorey due to shading and browsing.

Box 2. *continued*

Dartford Warbler *Sylvia undata*	Loss of lowland heathland and acid grassland to succession, afforestation, agriculture and urban development and the demise of old grazing systems and other management of these habitats.
Red-billed Chough *Pyrrhocorax pyrrhocorax*	Changes in grazing patterns and other management of upland and, especially, coastal heath.
Linnet *Carduelis cannabina*	Reduction in food supply within farmland as a consequence of changes in crop management and loss of overwinter stubbles.
Twite *Carduelis flavirostris*	Agricultural intensification and changes in grazing patterns on grassland in the marginal uplands.
Bullfinch *Pyrrhula pyrrhula*	Loss of hedgerows, scrub and woodland to agriculture. Changes in woodland structure caused by shading and browsing.
Yellowhammer *Emberiza citrinella*	Agricultural intensification causing reduction in food supply, especially through the reduction in mixed farming.
Cirl Bunting *Emberiza cirlus*	Agricultural intensification causing reduction in food supply, especially through the reduction of overwinter stubbles.
Corn Bunting *Emberiza calandra*	Agricultural intensification causing reduction in food supply through changes in crop management.

tadorna decreases as nesting density increases (Jenkins *et al.* 1975; Makepeace & Patterson 1980; Pienkowski & Evans 1982). High densities occur in areas of sand dunes adjacent to large estuaries, whereas lower densities occur next to small estuaries and along linear coasts. The high-density populations suffer higher rates of predation on ducklings leading to lower production of young per adult. Arguably, it is the high density of ducks that attracts predators rather than the habitat per se. Nonetheless, this is clearly a situation where individuals in habitats with relatively low densities of birds perform better than those in habitats with high densities.

The recent past: an outline of trends in habitat quantity and quality

We identify 18 trends of particular significance for birds during the last 100 years or so (fig. 1). These concern mostly processes, rather than changes in the status of particular habitat types. The current status of lowland heaths and deciduous woodland, for example, is affected by several of the trends listed here.

These trends do not fall into any neat chronological sequence, many overlap in time, they vary greatly in duration, and cannot be said to have occurred entirely independently of one another. We have arranged them in four broad groups relating to farmland, woodland/forestry, wetlands and a miscellaneous category (urbanisation and recreation). We take the view that the open uplands are predominantly a farmed landscape in that livestock grazing is a principal determinant of their character. Changes in grazing systems show many similarities in both upland and lowland contexts so it seems sensible to treat them together. Strictly speaking, not all are trends because some were episodic events confined to particular periods and did not always leave a clear legacy in the habitat we see today. In most cases, however, the result has been a persistent change in habitat quantity or quality. With one possible exception (erosion of intertidal habitats), all the trends arise directly from human-induced processes. Active changes in land use, driven mainly by economic factors and by government policy, underpin virtually all of the changes outlined here.

With the exception of large grazing mammals, we do not discuss other species as determinants of habitat quality. We note, however, that the following trends could all have implications for habitat quality of some bird species: (i) decreasing activity of gamekeepers, which has altered predator abundance in many areas (Lovegrove 2007); (ii) increases in released gamebirds, which potentially modify vegetation and compete for food (Fuller *et al.* 2005); (iii) increases in several introduced species that may be competitors or predators (e.g. Hewson *et al.* 2004, Jackson *et al.* 2004); (iv) increasing numbers of non-native geese (Austin *et al.* 2007) may modify grassland and wetland vegetation with possible implications for ground-nesting birds and other grazing species; and (v) invasive plant species such as Rhododendron *Rhododendron ponticum* may alter habitat quality (Fuller 1995). We also acknowledge that climate change must now be

Fig. 1. Summary of habitat trends of particular significance to birds in the twentieth century. Approximate main periods when effects occurred are shown by bars. Type of habitat effect is shown as change in either habitat quality (Q) or habitat quantity, or extent (E). Brief description of the ornithological consequences is given on the right. For more details of the nature of effects and the species involved, see the text entries for each trend. T denotes a transient effect.

1900 1950 2000	Effect	Gains (+) and losses (–)
Demise of old grazing systems	Q & E	+ scrub species (T) – heath and grassland species, e.g. Stone-curlew, Wood Lark, Red-billed Chough
Agricultural recession	Q & E	+ wet grassland waders (T), scrub species (T) – arable species (T)
Lowland habitat losses to agriculture	E	+ none? – widespread loss of habitat for woodland, hedge, wet grassland, fen and heathland species
Dutch elm disease	Q	+ woodpeckers (T), species using low hedges, e.g. Common Whitethroat – hole-nesters, reduced diversity of hedgerow bird communities
Agricultural intensification	Q	+ Wood Pigeon – most farmland specialists, i.e. species dependent on fields for food (seeds or invertebrates) or nesting sites
Recent changes in grazing patterns	Q	+ species needing short swards for foraging – effects on food and habitat structure for many species, e.g. grouse, breeding waders
Afforestation of lowland heath and grass	E	+ wide range of woodland and early successional species – Stone-curlew, Common Stonechat, Dartford Warbler
Afforestation in the uplands	E	+ wide range of woodland and early successional species – moorland species, especially waders, Red Grouse, some birds of prey
Demise of coppice management	Q	+ some common hole-nesters – young-growth species, e.g. Common Nightingale, Garden Warbler
Conifers in broadleaved woodland	Q	+ conifer specialists, e.g. Lesser Redpoll (T), Firecrest – broadleaved specialists, e.g. Eurasian Nuthatch, Eurasian Treecreeper, Marsh Tit
Recent changes in woodland structure	Q	+ none? – species needing complex field- and shrub-layer structure
Reedbed changes: decline restoration	Q & E	+ reedbed specialists gained from recent restoration – reedbed specialists lost habitat historically
Creation of reservoirs and mineral workings	E (New)	+ wintering Great Cormorant, grebes and wildfowl, breeding Great Cormorant, Little Ringed Plover, Common Tern, Nightingale and other scrub birds – none
Pollution (eutrophication and acidification)	Q	+ possibly grazing wildfowl where algal mats have increased – local effects on waders, wildfowl(?), Dipper
Trends in sewage disposal	Q & E	+ pipits, wagtails benefited from introduction of filter beds (T) – many waterbirds, pipits, wagtails
Changes in intertidal habitats	E	+ none (though local habitat creation) – waders, wildfowl and seed-eating passerines (saltmarsh loss)
Urbanisation and gardens	Q & E	+ common finches (garden feeding), gulls and corvids (landfill) – heathland species (locally)
Recreational disturbance	Q	+ none – heathland and coastal species, e.g. Ringed Plover, European Nightjar, Wood Lark

affecting habitat quality for birds in diverse and subtle ways. Some possible effects of future, predicted climatic change are considered in Ausden & Fuller (in press).

Changes to habitats on farmed land

Demise of old grazing systems

By the start of the twentieth century, the ancient grazing systems of the uplands involving transhumance (the seasonal movement of people and their livestock in search of grazing) were long extinct (Holl & Smith 2007). In the lowlands, 'high farming', defined by Shrubb (2003) as 'the closely integrated rotations of mixed arable and stock farming', had been well established for over 100 years. Agriculture once worked around the nature of the land, whereas from the eighteenth century, agriculture increasingly adapted the land to suit its purpose (Shrubb 2003). The enclosure of open fields and commons was central to this process. Throughout this period, much grazing land was ploughed. Old systems, such as grazing sheep by day on nearby grass or heath and folding them at night on arable to deposit nutrients within their dung, were gradually disappearing. These open habitats were, therefore, greatly diminished by the end of the nineteenth century and subsequently most of the remaining fragments became completely ungrazed. The resulting growth of scrub and woodland was the culmination of a trend that started much earlier.

While scrub expansion temporarily benefited some species, more significantly the breakdown of ancient grazing systems created further loss of habitat for species that depended on sparse, nutrient-poor swards either for nesting or for feeding (e.g. Stone-curlew *Burhinus oedicnemus*, Red-billed Chough *Pyrrhocorax pyrrhocorax*, Wood Lark *Lullula arborea*, Northern Wheatear *Oenanthe oenanthe*). Other species negatively affected were Dartford Warbler *Sylvia undata* and probably Montagu's Harrier *Circus pygargus*. Scrub removal, especially on heath, has contributed to local increases of some of these species in the last 15 years (Langston *et al.* 2007b).

Agricultural recession in the early decades

Farming underwent a long recession between the 1870s and the Second World War, which was most pronounced in the eastern arable counties (Shrubb 2003). There was widespread contraction of arable farming (involving land abandonment), an increase in grassland and greatly reduced expenditure on field drainage. Wet grassland, currently regarded as a habitat of high conservation value, was probably relatively scarce in the nineteenth century. The range expansion of breeding Common Redshank *Tringa totanus*, Common Snipe *Gallinago gallinago* and Eurasian Curlew *Numenius arquata* in the early decades of the twentieth century owes much to this farming recession (Fuller 2000; Shrubb 2003). Presumably, bird communities favouring grassland and scrub flourished at the expense of species preferring tilled land. Interestingly, the recession did not re-create habitats lost as a result of the earlier Parliamentary enclosures and 'land improvement' – for example, fenland did not reappear (Fuller 2000; Shrubb 2003). The new wet grasslands and other abandoned areas that had emerged by the 1920s and 1930s were soon to be swept away during the war and the decades that followed.

Rob Fuller

356. A mosaic of grassland and scrub at Lydlinch Common, Dorset, May 1996. Such vegetation has become typical of many areas of formerly open grazing land, resulting in widespread declines of many plants, insects and birds associated with the open habitats. However, by the end of the twentieth century, scrub habitats of this type were among the most important habitats for breeding Common Nightingales *Luscinia megarhynchos* in England.

Kit Day

357. Northern Lapwings *Vanellus vanellus* have become less familiar in many parts of Britain as breeding birds, for several reasons linked with changes in farming practices. Wet grassland, a favoured breeding habitat, has been greatly reduced by systematic large-scale drainage. Mixed farming systems are now much scarcer than 50 years ago – these were probably beneficial to the bird, offering a diversity of habitats for nesting and chick rearing. Spring-sown cereals were once favoured nesting crops but these have been widely replaced by autumn-sown cereals.

Lowland habitat losses to agriculture in the post-war decades

The resurgence of agriculture in the 1940s opened up a protracted phase of expansion in the area of efficiently farmed land. This process involved massive removal of hedgerows (both Enclosure Act and ancient hedges), loss of ponds and woodland (much of it ancient), destruction of old orchards, the ploughing of heath and downland, and the drainage of wet grassland (much of which was a product of the preceding recession). The widespread losses of hedgerows were especially conspicuous and attracted much opposition. Destruction of hedges was exacerbated by neglect. In many regions, hedges were no longer managed as dense, stock-proof barriers, which generally provided better habitat for birds than did thin and gappy vestigial hedges. Much of this activity occurred between 1950 and 1980, although it has continued at a much reduced rate to the present day. Not all habitat losses during this period were attributable to agricultural expansion. Urbanisation, road building and forestry also made inroads but agriculture was undoubtedly the major agent of change. As far as we are aware, nobody has documented the full scale of these habitat changes by drawing systematically on all the sources available, though a report by the (then) Nature Conservancy Council indicates the breadth (NCC 1984).

A predominantly farmed countryside that had been tamed more than 2,000 years earlier became further denuded of its more natural elements. Landscapes were simplified. Patches of semi-natural habitat became even more separated from one another; not only did many patches disappear during these decades but many of the hedges and other semi-natural features connecting them vanished too (Peterken & Allison 1989). No species of bird was threatened with extinction by these events. However, we do not hold with Murton & Westwood's (1974) assertion that hedgerow removal was not a serious matter for bird populations on the grounds that they are suboptimal breeding habitats compared with woodland. Hedges vary enormously in structure and in the nature of their bird communities (Hinsley & Bellamy 2000), so they cannot be cast as one homogenous inferior habitat. There is much overlap between the bird communities of woodland and hedgerows but several species using both habitats are far more closely associated with hedges than woods; these include Dunnock *Prunella modularis*, Common Whitethroat *Sylvia communis*, Lesser Whitethroat *S. curruca*, Linnet *Carduelis cannabina* and Yellowhammer *Emberiza citrinella* (Fuller *et al.* 2001). Hedges also provide conduits, cover and food for huge numbers of dispersing and wintering birds. Several bird species are more likely to breed within woods

Rob Fuller

358. The period from the 1950s to the 1980s was one of massive change to the fabric of the English countryside, involving large-scale destruction of hedges, ancient woods and other semi-natural features. Ironically, this has been followed by an increase in hedgerow planting, and field margins managed for biodiversity have become a common sight as a result of agri-environment initiatives, as here in Suffolk in November 2007.

that have large quantities of hedgerow in the surrounding landscape (Hinsley *et al.* 1995).

A depressingly vivid impression of what has been lost was given by Mabey (1980), Shoard (1980) and Moore (1987). The consequences for the uncropped fabric of the countryside and the wildlife that depended on it were enormous but poorly quantified. Compared with the farmland bird declines caused by intensification of the farming systems themselves (see below), the impact of these habitat losses received relatively little attention from ecologists, though it was a period when there was much interest in the ecology of hedges (Pollard *et al.* 1974). Especially in the arable farming counties of eastern England, there can be no doubt that these losses severely reduced the carrying capacity of lowland landscapes for birds and other wildlife. The populations of some of the commoner woodland and hedgerow birds must have decreased considerably in many regions as a consequence of hedgerow destruction. Breeding species such as Redshank and Snipe, which had gained much ground in the pre-war recession, had largely disappeared from wet grassland by 1990 as efficient drainage once more became ubiquitous and was accompanied by further agricultural intensification (Wilson *et al.* 2004). Many of the surviving fragments of semi-natural vegetation now receive special protection and new hedgerows are being widely planted, but it remains a much-depleted countryside compared with that of the 1930s.

Dutch elm disease

In the mid 1960s, an epidemic of Dutch elm disease commenced which had a far greater impact on hedgerow than woodland trees. Within 13 years, about 60% of large elm trees outside woodland were dead and English Elm *Ulmus procera* has subsequently become very rare as a large tree (Rackham 2003). In many regions, elms were one of the commonest trees outside woodland and by the 1990s the disease had killed all large trees in a high proportion of hedgerows. Potential implications for birds included loss of food (elm seeds, foliage insects) for canopy feeders, loss of nest-sites for hole- and canopy-nesters, a temporary increase of food for species such as woodpeckers (Picidae), and the eventual loss of song-posts once elms were felled. Effects of the disease on birds were studied by Osborne (1982, 1983) in the early years of the epidemic, before it had become universal and before many elms had been felled. Nonetheless, he concluded that several common

Markus Varesvuo

359. At the start of the twentieth century, Whinchats *Saxicola rubetra* were widespread in both uplands and lowlands, but by the end of the century they had largely disappeared from the lowlands where they were once typical of hay meadows and rough grassland. This range contraction was probably driven mainly by changes in grassland management. In the uplands the species has experienced deterioration of habitat quality from the improvement of moorland-edge hay meadows and pastures, coupled with more intensified grazing. Although it widely colonised first-generation upland conifer plantations, it is confined to the young stages of growth.

species (including Dunnock, Robin *Erithacus rubecula* and Common Chiffchaff *Phylloscopus collybita*) had probably declined as a consequence of the disease. Further declines could be expected as a result of felling. Large hole-nesters – Common Kestrel *Falco tinnunculus*, Tawny Owl *Strix aluco*, Little Owl *Athene noctua* and especially Barn Owl *Tyto alba* – were probably seriously affected in many areas through felling of elms.

Coming on top of the ongoing, large-scale destruction of hedges, the loss of hedgerow trees would have had a further effect on numbers of birds breeding on farmland through altering hedgerow habitat quality. For several species it must have caused a decline in habitat quality, but possibly for others, such as Common Whitethroat and Linnet, which prefer hedges without trees, it may have had the opposite effect. Overall, however, Dutch elm disease has reduced abundance and diversity of birds using hedges because large hedges with mature trees tend to hold more individuals and more species than other types of hedge (Hinsley & Bellamy 2000; Fuller *et al.* 2001).

Agricultural intensification in recent decades

Farming systems were transformed in the late twentieth century. This process started mainly in the 1960s, some 20 years after the habitat losses described above started. Large declines of most farmland birds in Britain became especially evident in the mid 1970s. The last three decades of the century saw numbers of many species dropping by more than half. These included Grey Partridge *Perdix perdix*, Turtle Dove *Streptopelia turtur*, Sky Lark *Alauda arvensis*, Yellow Wagtail *Motacilla flava*, Common Starling *Sturnus vulgaris*, Tree Sparrow *Passer montanus*, Linnet, Yellowhammer and Corn Bunting *Emberiza calandra* (Gregory *et al.* 2004). There is abundant evidence that these declines were caused primarily by changes in agriculture (Chamberlain *et al.* 2000; Fuller 2000; Donald *et al.* 2001; Robinson & Sutherland 2002; Newton 2004). New forms of agricultural management effectively reduced the quality of farmland for many bird species, mainly by reducing food supplies or suitable nesting habitat or both. A few species have gained, notably Wood Pigeon *Columba palumbus*, which has benefited from the expansion of oilseed rape. The overall effect of agricultural modernisation has been to simplify farmland as a wildlife habitat. There has been loss of habitat heterogeneity at all scales (Benton *et al.* 2003). An unprecedented research effort has resulted in a good understanding of the recent relationships between birds and agriculture (Newton 2004; Vickery *et al.* 2004).

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360. Cereal stubble in the process of being ploughed, Norfolk, autumn 2007. The widespread switch from spring to autumn sowing of cereals that occurred in the 1970s was responsible for reducing the availability of overwinter stubbles. Between the early 1990s and 2007, set-aside payments created a certain amount of stubble on arable farmland, but these have now ceased. Individual stubble fields vary greatly in their quality as feeding habitats; nonetheless, reduction in stubbles has resulted in a major loss of food for seed-eating birds. For some species, notably Greenfinch *Carduelis chloris*, this may have been offset by the increase in garden feeding.

The changes in farming systems that brought about these massive changes in bird populations are described in Stoate (1996), Chamberlain *et al.* (2000), Fuller (2000), Vickery *et al.* (2001), Robinson & Sutherland (2002) and Shrubb (2003). Three areas of technological development underpinned the intensification process: (i) mechanisation, (ii) inorganic fertilisers and (iii) chemical pesticides, especially herbicides. The resulting changes in farming practices and in the nature of farmland as a habitat for birds were numerous and ubiquitous. Large areas of farmland could be managed rapidly and efficiently. Spring sowing of cereals was largely replaced by autumn sowing. Growth of crops and grass was given a massive boost by the new fertilisers. Abundance of arable weeds and their associated invertebrates was massively reduced. Fertility-building leys became much scarcer in arable systems, and crop rotations generally were much simplified. Silage systems almost universally replaced hay. Genuine mixed farming, with closely integrated livestock and arable on the same holding, has diminished. The exact mechanisms by which intensification of farming affected birds were to a considerable extent species-specific.

An important insight to emerge from the research was that intensification had generated pressure points for birds at all times of the year. For some species, breeding productivity was reduced, for others winter food availability was a critical issue. Some species faced increasing problems in both winter and summer, most strikingly the Sky Lark, which was greatly affected by changes in the management of cereal crops (Donald 2004). Sky Larks prefer to nest and forage in short, relatively open crops. The switch to winter cereal crops, together with high input of inorganic fertiliser, produced crops that were taller and denser than had been the case with spring cereals. As a result, breeding densities were generally lower in winter cereals than in spring cereals and numbers of nesting attempts by individual pairs were fewer. The shift to winter cereals has had another important consequence for Sky Larks –

it has resulted in a great reduction in cereal stubbles during winter. Seed-rich stubbles are highly preferred winter feeding habitats of the larks. Breeding populations of Sky Larks have performed better in recent years in areas where there are extensive areas of stubbles (covering at least 10% of the local farmland area), presumably because overwinter survival is relatively high here (Gillings *et al.* 2005).

In the late 1980s, set-aside was introduced as a means of reducing surplus production. This was seen as a great opportunity to reduce the intensification of arable agriculture, even to restore some of the structural complexity that had been destroyed in the preceding decades. In reality, the latter did not happen, but for nearly 20 years, until it was phased out in 2007, set-aside did at least provide substantial areas of stubble that would not otherwise have existed. Although set-aside was highly variable as a bird habitat, some of the stubble provided food for breeding and wintering birds alike (Henderson & Evans 2000).

A major conservation effort is now underway to assist population recovery of farmland birds through agri-environment schemes (Grice *et al.* 2004). While there is general agreement about what types of resources need to be provided, it remains to be seen whether the schemes can deliver sufficient quantities of those resources in the right places. This is discussed further in Ausden & Fuller (in press).

There is often a tendency to equate the modernisation of farming with the lowlands, and with arable systems in particular. But it is important to appreciate that the species composition and structure of virtually all productive grassland was utterly transformed in the post-war decades. This applies throughout the lowlands and the marginal uplands. Since the 1960s, high fertiliser inputs, drainage and silage production all increased the capacity of grassland to carry livestock (see below). The consequences for birds were similar in the lowlands and the marginal uplands. Large reduction in numbers of breeding waders – Northern Lapwing *Vanellus vanellus*, Redshank, Curlew and Snipe – on upland enclosed grasslands in northern England as a result of grassland improvement were documented by Baines (1988, 1989). Many passerines have declined as breeding birds in upland-edge grasslands (Fuller *et al.* 2002; Henderson *et al.* 2004). These species include Sky Lark, Meadow Pipit *Anthus*

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361. Large increases in sheep stocking occurred in many upland regions (on both open moorland and lower enclosed land) in the 1970s and 80s in response to subsidy systems based on headage payments. Large areas of rough grassland in the uplands were drained, fertilised and reseeded to increase their stocking capacity. Such improved grassland, as here in the Pentlands, southern Scotland, in September 2007, was generally a poor habitat for ground-nesting birds. In some areas, intensified grazing has caused large changes in structure and composition of moorland vegetation, also leading to reduced habitat quality for some ground-nesting birds.

pratensis, Yellow Wagtail, Wheatear, Whinchat *Saxicola rubetra*, Twite *Carduelis flavirostris* and Reed Bunting *E. schoeniclus*.

A frequently overlooked aspect of agricultural change concerns orchards. Not only has the total orchard area declined but fruit production is now strongly mechanised, with high chemical inputs and the use of relatively young, vigorous trees. Although hard data are lacking, it appears that bird diversity in modern orchards is considerably lower than in old 'traditional' orchards, which could support a wide range of breeding species including Wryneck *Jynx torquilla*, Lesser Spotted Woodpecker *Dendrocopos minor*, Spotted Flycatcher *Muscicapa striata* and a variety of breeding finches including Hawfinch *Coccothraustes coccothraustes*.

The intensification of agriculture affected mainly species that depend on fields for food, nest-sites or both. A rather different set of species was probably affected by the phase of habitat destruction that started several years earlier (see above). However, both these episodes in British farming had huge impacts on lowland bird populations. We know a great deal about the more recent intensification episode but, unfortunately, systematic monitoring of birds started 20 years too late to allow us to assess the impacts of the habitat losses.

Recent changes in grazing patterns

We have chosen to treat recent changes in grazing patterns as a separate issue from agricultural intensification because they have affected a wide range of lowland and upland environments and also involve wild herbivores. The most striking recent change involved a large increase in sheep, in both the lowlands and the uplands. Sheep numbers in Britain more than doubled between 1950 and 1990, with over half of this increase occurring in the 1980s (Fuller & Gough 1999). This resulted from 'grassland improvement' coupled with a subsidy system based on headage payments that encouraged intense stocking. There was a subsequent reduction, but sheep numbers remained considerably higher in the 1990s than 20 years earlier. Sheep numbers rose in almost all regions but the strongest overall increases were in Wales and northern England; by contrast there was relatively little change in the Scottish Highlands (Fuller & Gough 1999). This situation generated considerable concern about

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362. In many upland regions of Britain there has been a long-term shift in domestic livestock away from mixed systems including cattle, goats, sheep and horses. Cattle are now a rare sight on moorland (this photograph was taken on Skye, Highland, in August 2006) and the increasing dominance of sheep has had large implications for vegetation and associated animal communities.

the impacts on vegetation and birds, especially in the Welsh uplands and northern Pennines, where heavy grazing almost certainly reduced habitat quality for ground-nesting birds, such as grouse (Tetraonidae) and waders.

Birds are potentially affected through three main types of mechanism: alteration of preferred vegetation structures, food supplies and predation risks (Fuller & Gough 1999). Much of the concern about overgrazing in the uplands has focused on the loss of Heather *Calluna vulgaris* and the associated shift to grassland dominated by unpalatable grasses. In an extensive study of nine moorland bird species in southern Scotland and northern England, only Red Grouse *Lagopus lagopus* and Common Stonechat *Saxicola torquata* were found to be linearly associated with Heather cover while Meadow Pipit was most abundant at intermediate levels of Heather (Pearce-Higgins & Grant 2006). Most of the species depended on other aspects of habitat such as vegetation height and dampness. Although some other species not included in this study, notably Merlin *Falco columbarius* and Hen Harrier *Circus cyaneus*, often depend on Heather for nest-sites, it is clear that its loss is important to rather few species. Effects of grazing on vegetation height, vegetation density and vegetation mixtures and mosaics are likely to be at least as important as reduction of Heather (Fuller & Gough 1999). Nonetheless, Heather loss could potentially have an important wider effect on moorland birds if it contributed to a further decline in grouse-moor management, which appears to be beneficial not just to Red Grouse but to several species of breeding waders, notably European Golden Plover *Pluvialis apricaria* (Tharme *et al.* 2001).

Some bird species appear to benefit from greater grazing pressure (Fuller & Gough 1999). Corvids potentially benefit in two ways, firstly through increased carrion and secondly through the short swards, which make it easier to feed on invertebrates. Foraging Golden Plovers and Lapwings also select short swards. In the uplands, breeding Sky Larks are more associated with grass than with Heather.

These recent changes can be viewed as part of a longer-term pattern in upland livestock, with mixed herbivore systems being replaced by sheep (Sydes & Miller 1988). Experiments indicate that this shift has been detrimental to at least one ground-nesting bird. Meadow Pipits breed at higher density in areas with mixed cattle and sheep grazing than in areas with just sheep or no livestock at all (Evans *et al.* 2006). Meadow Pipits also lay larger eggs in areas of low sheep density than in areas of high sheep density or ungrazed areas (Evans *et al.* 2005). Further experimental evidence of the importance of grazing pressure by sheep comes from studies of Black Grouse *Tetrao tetrix* in northern England (Calladine *et al.* 2002). Reduction of sheep densities was shown to result in higher numbers of displaying males and a higher proportion of females rearing broods.

In the Scottish Highlands, intensified grazing pressure has come mainly from Red Deer *Cervus elaphus*, which doubled in numbers in 30 years up to 1990 (Staines *et al.* 1995). Implications for birds may be similar to those of high rates of sheep stocking but deer also have widespread impacts on woodland regeneration. There are several large-scale initiatives underway to create more natural vegetation types in the Highlands and reduction of deer will be a key element in their future success. In the lowlands, deer have also become a major conservation issue within woodlands (see below).

Afforestation and changes in woodland

Afforestation of lowland heathland and acid grassland

In 1919 the Forestry Commission was established with the intention of creating a strategic reserve of timber, an objective that was pursued through the planting of fast-growing conifers. The major period of resulting afforestation was from 1950 to the late 1980s (Mason 2007) but the oldest plantations date from the early 1920s. Most of the plantations are in the uplands but substantial areas of lowland heath and sand dunes were planted. The implications for birds were rather different in the uplands and lowlands, hence they are discussed separately.

The largest lowland forest is Thetford Forest, where planting of the Breckland heaths commenced in 1922. The early consequences for birds are described by Lack (1933, 1939) and Lack & Lack (1951). It may seem obvious today that the consequences for birdlife would be enormous, but these were pioneering observations of how birds responded to massive changes in their environment and of the factors that influenced their habitat preferences. One of

Hugh Harrop

363. The history of the Firecrest *Regulus ignicapilla* as a breeding bird in Britain is closely linked with the planting of non-native conifers in lowland broadleaved woods. Although the species has bred in a variety of coniferous and mixed woodland types, the greatest concentrations appear to be in stands of species such as Norway Spruce *Picea abies* and Douglas Fir *Pseudotsuga menziesii*.

the interesting features from these early papers is the rapidity with which a wide range of species colonised what formed an entirely new and effectively alien habitat. In his 1939 paper, David Lack wrote: 'Since huge areas of Breckland have now been planted, one wonders where this enormous number of colonising birds has come from, and where the dispossessed heathland birds have moved to.' These questions have still not been answered satisfactorily for any major change in land use.

It soon became clear from the observations in Breckland and elsewhere that a few species of the former open habitats would not tolerate the tree planting: Stone-curlew and Dartford Warbler in particular, and Stonechat to a lesser extent. However, many other open-habitat species have taken advantage of these conditions. Substantial proportions of the British Wood Lark and European Nightjar *Caprimulgus europaeus* populations now live in young conifer plantations (Langston *et al.* 2007b). A wide range of species now regarded as birds of conservation concern (Gregory *et al.* 2002) also breed in plantations: Woodcock *Scolopax rusticola*, Turtle Dove, Tree Pipit *Anthus trivialis*, Dunnock, Song Thrush *Turdus philomelos*, Grasshopper Warbler *Locustella naevia*, Willow Warbler *Phylloscopus trochilus*, Firecrest *Regulus ignicapilla*, Linnet, Lesser Redpoll *Carduelis cabaret*, Bullfinch *Pyrrhula pyrrhula* and Yellowhammer. These species all have preferences for particular growth stages (Bowden & Hoblyn 1990; Fuller 1995; Burton 2007). Hence, lowland plantations have come to support a mixture of species that occur more widely in farmland, heathland and woodland.

Afforestation in the uplands

The afforestation of vast tracts of moorland, sheepwalk and bog became especially controversial in the 1980s. The issues surrounding the planting of parts of the Flow Country became one of the great conservation conflicts of the century (Avery & Leslie 1990). As with the lowlands, there is no doubt that many species of open habitats – especially breeding waders and some raptors – have been displaced over substantial areas by forestry. Equally, it is true that many other species have colonised the new forests and that some of these species are nationally scarce, for example Black Grouse and Northern Goshawk *Accipiter gentilis*. Avery & Leslie (1990) gave a very balanced account of

Des Thompson

364. Recently clear-felled forest, Sutherland, August 2007. The twentieth century saw the transformation of huge areas of the British uplands with extensive planting of conifers on medium-altitude slopes and on northern blanket bogs. As a result, more than 60% of Britain's forest area now consists of conifers and Sitka Spruce *Picea sitchensis* is the most abundant species. Initially many of these plantations were even-aged monocultures but the harvesting of first-generation plantations has created the opportunity to diversify the age structure and habitat composition of many forests. In some regions, future management may shift away from 'patch clear felling' towards 'continuous cover forestry' with felling at the scale of individual trees or small groups of trees.

Des Thompson

365. Afforestation has profoundly changed the character of upland landscapes and the bird assemblages living within them (as shown here in Argyll, November 2008). Some moorland birds, especially breeding waders, have lost substantial amounts of habitat. Others, such as Hen Harrier *Circus cyaneus* and Whinchat *Saxicala rubetra*, breed in young forestry. Plantations quickly become unsuitable for these species as the trees grow and in some cases the restocked plantations may be lower-quality habitat than newly planted land. Huge numbers of scrub and woodland birds have colonised the new forests, including species that are declining elsewhere in Britain (e.g. Tree Pipit *Anthus trivialis*, Song Thrush *Turdus philamelas* and Willow Warbler *Phyllascapus trachilus*) and previously localised conifer specialists (Siskin *Carduelis spinus* and Common Crossbill *Laxia curvirostra*). There remains much to learn about the implications for birds, both of afforestation and ongoing changes in forest management.

these gains and losses.

It remains surprising that we do not really know much about the scale of the changes that have occurred in upland bird communities as a result of afforestation. Since the 1980s, relatively little attention has been paid to the issue, perhaps because the heat has been taken out of the debate since the rate of new planting has tailed off in Britain. It would be timely to reassess the situation now that so many of the plantations are in their second or older rotation and many of the forests have been restructured (Mason 2007). The bird communities of the restocks are often very different from those in the initial plantings (Bibby *et al.* 1985). We can now start to take a longer-term view of what these forests offer as bird habitats. There are also many new initiatives aiming to restore native forest vegetation and habitat networks, especially in Scotland (Humphrey *et al.* 2003). In both the uplands and the lowlands there appears to be much variation in bird communities according to region, soils and forest management, but this is poorly documented.

Demise of coppice management

In the early twentieth century, coppice systems were still widespread in woodland (Peterken 1993), but thereafter declined rapidly, becoming largely replaced by plantation forestry. Since the Second World War there has been a six-fold reduction in the area of coppice (Hopkins & Kirby 2007). Rotations are generally much shorter in coppice than in plantations. Consequently, at any one time, a higher proportion of a coppiced wood is under young woodland growth and this has large implications for woodland biodiversity (Hopkins & Kirby 2007). The decline in coppice must have affected the character of bird communities in many woods throughout lowland England. For example, species characteristic of the early years of coppice growth (e.g. Dunnock, Common Nightingale *Luscinia megarhynchos*, Garden Warbler *Sylvia borin*, Willow Warbler) would have had less suitable habitat, while opportunities for hole-nesters probably increased in many woods. Much of the coppice that survived was Sweet Chestnut *Castanea sativa*, a relatively poor habitat for several migrant woodland

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366. Old coppice, Lincolnshire, February 2006. Many formerly coppiced woods now lie abandoned. In the absence of coppicing or other management, such woods remain structurally simple for many decades, with extremely little understorey vegetation. Such simplified structures support a very low density and diversity of birds.

Rob Fuller

367. Managed coppice, Bradfield Woods, Suffolk, May 2006. By comparison with old neglected coppice, actively managed coppice woods provide a variety of vegetation structures and a far higher diversity of birds.

Rob Fuller

368. An oak *Quercus* woodland in Buckinghamshire, June 2004. Since the early 1980s, bramble *Rubus fructicosus* agg. and herbs have almost disappeared from the interior stands of this wood as a result of the combined effects of canopy closure and deer browsing. Most of the remaining bramble occurs along the edges of rides, as can be seen in the background. Territories of species such as Wren *Troglodytes troglodytes* and warblers (Sylviidae) have become increasingly concentrated along the rides and in managed areas of this wood. Such changes in vegetation and bird communities appear to be widespread in woods in southern and central England.

birds compared with mixed coppice (Fuller 1995). Nonetheless, it is unlikely that the demise of coppice was responsible for causing large-scale declines in any species, even for Nightingale (Fuller *et al.* 1999). In national conservation terms, the problems have been far greater for plants and invertebrates than for birds. The recent small-scale revival of 'conservation coppicing' in some woodland reserves has resulted in local changes in woodland bird communities but appears to have done nothing to assuage the decline of the Nightingale.

Conifer plantations in broadleaved woodland

Collapse in the market for coppice underwood more or less coincided with the era of the coniferous plantation. In combination, these brought widespread transformation of ancient woodland. Replacing broadleaves with conifers, or with a mixture of conifers and broadleaves, was especially popular in the decades immediately after 1945. More than one-third of lowland ancient woodland in England was treated in this way and, ecologically, the consequences were monumental (Spencer & Kirby 1992; Peterken 1993). In many cases, the process of killing the original trees and planting anew suddenly created larger, but short-lived, areas of young regrowth than had been maintained by the former coppice systems.

Unlike the situation with the woodland ground flora, for which 'coniferisation' was a disaster, it seems clear that there was no gross impoverishment of bird communities, at least at the whole-wood scale (e.g. Williamson 1972). New habitats were introduced, often alongside the old, which were colonised by many birds. In many woods there were temporary large increases of species that would have been typical of some young coppice growth, including Tree Pipit, Nightingale and several warblers. The changes also introduced some species uncharacteristic of the former broadleaved woods. The young plantations particularly suited Lesser Redpoll, and recent declines of this species in southern Britain may have much to do with the maturation of these plantations (Fuller *et al.* 2005). The communities of birds living in the maturing plantations were also different from those of the older broadleaved stands, including relatively high densities of Goldcrests *Regulus regulus* and Coal Tits *Periparus ater*. The history of the Firecrest as a breeding bird in Britain is closely linked with establishment of conifer plantations, especially of spruce *Picea* and fir *Abies/Pseudotsuga*, on broadleaved sites. This phase of woodland management is now over and many plantations on ancient woodland sites are being removed. It is unfortunate that detailed studies are not being conducted on this process, which may actually reduce the diversity of bird communities in some woods.

Recent changes in woodland structure

In the last two decades new changes have become apparent in woodland bird communities. Populations of several woodland species have declined, especially long-distance migrants and some specialised residents (Hewson *et al.*

2007). There is substantial evidence to link these declines with changes in woodland habitats (Fuller *et al.* 2007), although a range of factors not directly affecting habitat quality may also be relevant (Fuller *et al.* 2005). Two processes appear to have generated large changes in the understorey structures of many lowland woods, leading to a reduction in habitat quality for species that depend on open space or dense, low vegetation. First, woodlands have generally become more shaded and contain less open space (Kirby *et al.* 2005), probably as a consequence of reduced intensity of management. Second, intensified browsing by deer is now widespread and there is experimental evidence that this can reduce habitat quality, especially for migrants such as *Sylvia* warblers and Nightingale (Gill & Fuller 2007). While some of these effects may be offset by restoration of management, deer pressure will remain high for the foreseeable future and we can expect continued habitat simplification in many woods.

Changes to inland and coastal wetlands

The decline and restoration of reedbeds

As we have seen, the emergence of 'industrial agriculture' in the post-war decades led directly to a massive reduction in the extent of wet grassland, with severe consequences for breeding waders. Reclamation for farming also resulted in the loss of other types of wetland. In East Anglia, large areas of reedbed disappeared between the 1940s and 1970s (Boorman & Fuller 1981). Fens, swamps and mires were also under pressure in the twentieth century for other reasons. Peat extraction obliterated lowland raised bogs, while ancient practices of harvesting sedge and reed became defunct. Water-tables dropped with abstraction and drainage of the surrounding countryside, scrub invasion became commonplace with increasing drying out and neglect, and nutrient-rich run-off from farmland caused widespread deterioration of water quality. The ornithological consequences were most severe in reedbeds, where habitat extent and quality declined for reedbed specialists: Eurasian Bittern *Botaurus stellaris*, Marsh Harrier *Circus aeruginosus* and Bearded Tit *Panurus biarmicus*. Recently, a major effort has been made to restore the quality of reedbeds, with a focus on restoring habitat for Bitterns (Brown & Grice 2005; Gilbert *et al.* 2005). This is being achieved, mainly within reserves, by raising water levels and lowering the substrate to provide open water and wet reed, and by managing the reedbeds to prevent succession to scrub. Large-scale habitat creation is also helping to expand the area of reedbeds in areas that should be rel-

Markus Varesvuo

369. Both breeding and wintering populations of the Gadwall *Anas strepera* have increased substantially in Britain during the last century in response to the creation of many lowland waterbodies.

atively safe from rising sea levels (Ausden & Fuller in press).

Creation of reservoirs and mineral workings

The number of waterbodies in lowland Britain increased hugely in the twentieth century, owing to mineral extraction and creation of drinking-water supplies. We have been unable to find any quantification of the rate of increase but most lowland waterbodies in England originated in the last 100 years. As far as we are aware, there has never been an assessment of how this has influenced populations of waterbirds. Most wetland sites supporting a recent average peak count exceeding 40,000 waterbirds in Britain are intertidal habitats (Austin *et al.* 2008). Nonetheless, several reservoirs and gravel-pit complexes individually hold more than 10,000 birds, with Abberton Reservoir (Essex) and Rutland Water (Leicestershire & Rutland) being the two exceptional sites, each with an annual peak exceeding 25,000. The total numbers using artificial standing waters must be huge, though there are large differences in the communities of birds on artificial lakes and more natural wetlands.

Among the species that have particularly high proportions of their wintering populations on artificial waterbodies are Great Crested Grebe *Podiceps cristatus*, Gadwall *Anas strepera*, Shoveler *A. clypeata*, Tufted Duck *Aythya fuligula*, Smew *Mergellus albellus* and Ruddy Duck *Oxyura jamaicensis* (Austin *et al.* 2008). The remarkable increase in Gadwall is especially strongly associated with the use of man-made lakes (Fox & Salmon 1989). Other wildfowl showing population increases in the 1960s and 1970s that may have been helped by the proliferation of man-made wetlands are Shoveler, Tufted Duck and Common Goldeneye *Bucephala clangula* (Kirby *et al.* 1995). The increasing numbers of inland wintering and breeding Great Cormorants *Phalacrocorax carbo* probably has much to do with the expansion of inland food supplies. The rise in winter gull numbers has probably been driven mainly by food supply but it may also have been assisted by the increasing availability of waterbodies offering safe roost sites (Burton *et al.* 2003). Breeding species that have benefited include Greylag *Anser anser* and Greater Canada Goose *Branta canadensis*, Little Ringed Plover *Charadrius dubius* and Common Tern *Sterna hirundo*. The terrestrial habitats at some former mineral workings now hold rich assemblages of breeding birds including Turtle

David H. Hatton

370. Mature gravel-pit at Amwell, Hertfordshire, October 2008. Man-made waterbodies, now spread widely across the English lowlands, have made a huge impact on bird populations. Some of these sites now support remarkably diverse assemblages of birds owing to the complex range of habitats that can occur. Not only have the national populations of several wetland species benefited but the fringing mixtures of emergent vegetation, scrub and woodland can be rich in breeding birds and often provide important post-breeding fattening sites for migrant passerines.

Doves, Nightingales, warblers and finches.

Pollution: eutrophication and acidification

Nutrient enrichment has become a general problem for lowland rivers and waterbodies as a consequence of agricultural run-off and sustained discharges of sewage effluent. While large ecological changes typically accompany elevated nutrient levels, general consequences for wetland birds are unclear, except in extreme cases where food resources are reduced. One such example may be the recent declines in wintering diving ducks – Goldeneye, Tufted Duck and Common Pochard *Aythya ferina* – on Lough Neagh and Lough Beg, in Northern Ireland, one of the most important sites in Britain & Ireland for wintering wildfowl. It is suggested that the most likely cause is eutrophication, causing oxygen depletion and reduction in deep-water chironomid larvae, which are the main food of the ducks (Allen *et al.* 2004). This idea has not yet been tested adequately.

Since the 1960s, dense algal mats have become widespread in coastal intertidal areas as a consequence of eutrophication. These mats potentially affect the distribution and foraging success of waders through complex interactions with invertebrates in the underlying sediments (Raffaelli *et al.* 1998, 1999), although grazers such as Brent Geese *Branta bernicla* may benefit. Evidence exists from a handful of studies that effects on waders are species-specific (Tubbs & Tubbs 1980; Lewis & Kelly 2001). Not all effects appear to be negative, however; Lewis & Kelly (2001) found that while foraging of Black-tailed Godwit *Limosa limosa* was impeded, this was not the case for Redshank.

Acidification of streams has occurred in some upland regions, attributed to acid deposition and afforestation. This affects aquatic invertebrates and fish, and those birds, especially the Dipper *Cinclus cinclus*, that depend on them. Breeding densities and productivity of Dippers are lower on acidic than more neutral streams (Ormerod *et al.* 1991; Vickery 1991, 1992). By contrast, there is no effect of acidification on Common Sandpipers *Actitis hypoleucos* or Grey Wagtails *Motacilla cinerea*, which are less reliant on aquatic invertebrates (Ormerod & Tyler 1991; Vickery 1991).

Nutrient enrichment is also widespread in non-aquatic lowland and upland habitats (Smart *et al.* 2005). Atmospheric nitrogen deposition in infertile terrestrial habitats such as heaths can result in more vigorous growth of grass, reducing habitat quality for species such as Wood Lark that feed in short swards or on bare ground (Langston *et al.* 2007b).

Trends in sewage disposal

Birds have long exploited the feeding opportunities associated with disposal of human excrement. At the start of the last century, much untreated waste was still discharged directly into the sea or watercourses, but there followed a revolution in sewage treatment that created some remarkably rich bird habitats throughout the country (see Fuller & Glue 1980).

The heyday of 'sewage-farms' was in the early decades of the twentieth century. These systems

David Kjaer

371. Changes in water chemistry in some upland regions as a result of afforestation and acid deposition have reduced densities and breeding output of Dippers *Cinclus cinclus* on acidic streams.

Rob Fuller

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simply involved the rotational spreading of sewage on fields or retaining it in lagoons, sometimes accompanied by cultivation. Sewage-farms were strongly attractive to wetland birds throughout the year. Ducks, rails (Rallidae), waders, Black-headed Gulls *Chroicocephalus ridibundus* and wagtails *Motacilla* were typical breeding species. No other inland habitat type consistently attracted such high numbers and diversity of migrating waders and some, such as Wisbech and Nottingham, achieved great fame as migration hotspots. In winter, immense concentrations of ducks, waders, gulls and many ground-feeding passerines could occur.

In bird terms, sewage-farms were the most productive of all the artificial wetlands created by

372. (top) Wisbech sewage-farm, Norfolk (photographed here in September 1974), was constructed in the 1870s and demolished in the 1980s. In the last 30 years of its existence it became one of the premier locations in the country for watching migrant waders, reaching its ornithological zenith in the 1960s.

373. (centre) Tring sewage-works, Hertfordshire, June 1981. This luxuriant summer vegetation, growing on one of the irrigation areas, provided breeding habitat for large numbers of Sedge Warblers *Acrocephalus schoenobaenus* and Reed Buntings *Emberiza schoeniclus*. Few sewage-works now offer extensive wetland habitats of this kind.

374. (bottom) Rotating filter beds at Aston Clinton sewage-works, Buckinghamshire, autumn 1974. This works featured in a paper by Fuller & Glue (1978) that demonstrated the intensive use made of filter beds by a range of feeding passerines, especially in autumn and winter. This site has since been demolished and rotating filter beds generally have become scarce.

humans, but by the 1960s they had been replaced by more sophisticated systems in which the organic content was reduced by micro-organisms. Of these new systems, only rotating filter beds were notable as a bird habitat. Especially in winter, these provided concentrated sources of invertebrate food that could support large numbers of pipits, wagtails and Starlings (Fuller & Glue 1978). Even filter beds have now been largely superseded and modern sewage disposal offers few particular resources for birds. The one exception is where a 'constructed wetland' is used to achieve tertiary treatment of the effluent before final discharge. This was once often achieved through broad-scale irrigation, which created interesting marshes but required considerable space. 'Engineered reedbeds' are now used at many small plants.

Improvements in the quality of sewage treatment have been increasingly driven by the EC Urban Waste Water Treatment and Bathing Water Directives. These affect not only birds at the treatment works themselves but also waterbirds in coastal wetlands receiving the discharges (Burton *et al.* 2002). Close to outfalls, polluted sediments with enriched organic and nutrient status may provide high-quality feeding conditions for some bird species (van Impe 1985). Direct availability of discharged food items (for example from food factories and distilleries) can be important for gulls and some wildfowl, whereas enhanced invertebrate populations may locally benefit waders. Improved treatment has been linked with local declines in waterbirds in several studies. One of the best documented examples concerns seaduck in the Firth of Forth. In February 1978, a sewage-treatment plant commenced operation, Edinburgh's untreated sewage having previously been discharged directly into the Forth. The large flocks of Greater Scaup *Aythya marila* and Goldeneye that were formerly concentrated near sewer outfalls were much reduced after the clean up (Campbell 1984). Reductions in wader populations could also potentially occur at several estuaries if invertebrate densities fall in response to cleaner effluent.

Change in the intertidal habitats of eastern England

Intertidal habitats have a long history of land claim by humans. One of the most recent examples of intertidal habitat loss was the conversion of the mudflats of Cardiff Bay to a permanent freshwater lagoon in 1999. This resulted in reduced body condition and a 44% increase in mortality of displaced adult Redshanks, which was likely to have resulted in a local population decline (Burton *et al.* 2006). In southeast England, major losses of saltmarsh are occurring through erosion. These saltmarshes are internationally important breeding, staging and wintering habitats for many waterbirds and passerines. Rates of erosion are as high as 16 ha per year at some exposed sites (van der Wal & Pye 2004). The potential causes are complex and controversial. At least three factors can be identified as important, although their effects are likely to vary between sites and regions. First, 'coastal squeeze' may occur in some areas whereby saltmarsh is lost at its seaward side owing to rising sea levels, but is prevented from forming at its landward side by the presence of 'hard' coastal defences. Second, changes in the morphology of some estuaries due to dredging

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375. Saltmarsh, north Norfolk, August 2005. Changes to saltmarsh habitats in the twentieth century have been of three main kinds. First, substantial areas have been lost at some estuarine sites to commercial and industrial development. Second, increased grazing pressure on some marshes has reduced habitat quality for some nesting birds, notably Common Redshank *Tringa totanus*. Third, increasing sea-level rise and storminess are causing erosion of marshes in parts of eastern England.

or increased 'canalisation' resulting from land claim may have affected sediment erosion and movement. Third, it appears that since 1970 a combination of high tides, strong wave action and wind speed is implicated in generating severe (lateral) erosion and widening of creeks (van der Wal & Pye 2004; Wolters *et al.* 2005). Interestingly, these papers indicate that in some areas, sediment accretion rates may be sufficiently high to compensate for rising sea levels, but that recently established saltmarshes may be especially vulnerable to storm-related erosion.

There is no clear evidence that saltmarsh losses due to sea-level rise have so far caused reductions in bird populations at a national level. Declines in breeding Redshank have occurred but these seem to be driven by increased grazing pressure (Norris *et al.* 1998). Managed realignment, whereby tidal incursion is allowed to create new intertidal habitat behind the sea wall, is now part of coastal defence policy in eastern England, albeit on a small scale (see Ausden & Fuller in press).

Miscellaneous

Urbanisation and gardens

Semi-natural habitats, for instance heathland, have been lost locally to building development. The main influence of urbanisation on British birds, however, has been through the creation of new environments rapidly exploited by generalist species and through the growth of the 'wildlife gardening culture', which seeks to encourage these species. Garden bird feeding is the most common manifestation of this culture (Gaston *et al.* 2007). It is unclear whether garden bird feeding has benefited national populations, although this seems likely in the case of Greenfinch *Carduelis chloris* and Goldfinch *C. carduelis*. It is increasingly clear, however, that many species exploit the resources offered by gardens in predictable, seasonal patterns that are species-specific (Cannon *et al.* 2005). For some species, gardens and other urban 'greenspace' may now provide resources that have become increasingly diminished in the wider countryside. Breeding thrushes, for example, have contracted from farmland in eastern England to the extent that urban areas can now be regarded as refuges (Mason 2000). Collectively, gardens provide extensive habitats in urban areas that support large numbers of both breeding and wintering birds (Bland *et al.* 2004; Cannon *et al.* 2005; Gaston *et al.* 2005).

While increasingly significant as wildlife habitats, gardens are primarily attractive to adaptable species that can tolerate living in proximity to humans. Urbanisation results in bird communities that are predictable in their composition and composed of generalist species (Devictor *et al.* 2007). There are important questions that need to be addressed about whether gardens and other urban habitats are essentially suboptimal for some species. Are these habitats 'sinks', where populations are maintained by immigration from other habitats, or even 'ecological traps' where the habitat may be attractive to species but breeding output or survival is low due to high predation (by corvids and domestic cats)? Most of our bird species and other wildlife will continue to depend on more natural environments.

Expansion of urban areas is largely driven by an increasing human population. For birds an important indirect effect has been an associated increase in household waste, which has led to more landfill sites. By the end of the 1990s, there were some 4,000 licensed landfill sites in

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376. Estuarine intertidal flats in Britain, like those shown here in the Wash, are internationally important habitats for wintering waders and wildfowl. Loss of intertidal habitats has occurred in some estuaries due to land claim or impoundment, but future changes may be on an even greater scale as sea levels rise.

the UK accepting various types of refuse. Household and industrial food waste in landfill has created huge opportunities for scavenging gulls (Horton *et al.* 1983; Coulson *et al.* 1987) as well as corvids and Starlings.

Recreational disturbance

Concerns about potential effects of human disturbance were elevated as a consequence of the introduction of the Countryside and Rights of Way Act in 2000, which gave rights of access to large areas of upland in the north, and heath and downland in southern England. This stimulated a series of research projects which have given deeper insight to the circumstances in which human recreational activities may cause serious disturbance to birds at both individual and population levels. There had long been concerns that habitat quality for some species on fragmented heathlands close to major population centres was deteriorating under increasing human pressure. Studies of key heathland species have shown that human disturbance can be a significant factor reducing breeding productivity of Nightjar, Wood Lark and Dartford Warbler (Langston *et al.* 2007a; Mallord *et al.* 2007; Murison *et al.* 2007).

In the case of Wood Lark, current disturbance levels were estimated to reduce population sizes in the study areas but the spatial distribution of people across breeding habitat, rather than numbers per se, was a critical factor determining levels of population reduction (Mallord *et al.* 2007). The only other species for which potential population-level impacts of disturbance have been modelled is Ringed Plover *Charadrius hiaticula* (Liley & Sutherland 2007). At an East Anglian study site it appeared that current levels of disturbance were having a strong negative effect on population size: an 85% increase was predicted if all disturbance was removed. Recent work on Stone-curlews indicates that these birds are considerably more sensitive to people walking with dogs than to people without dogs or to vehicles (Taylor *et al.* 2007).

Outdoor recreation is increasingly being encouraged and it is to be expected that disturbance pressures on birds can only intensify on this crowded island. Detailed studies of the implications for birds are few in number and are largely confined to scarce ground-nesting birds. Many key questions remain to be answered if future negative effects on habitat quality are to be minimised (Sutherland 2007).

Conclusions about habitat change

Two broad conclusions can be drawn from this review. First, changes in habitat *quality* have been just as significant to British bird populations in the twentieth century as have changes in habitat extent. Of the 18 trends discussed above, 13 have resulted in altered habitat quality for birds and 10 have affected birds through habitat extent (fig. 1). Of course, some of the trends have affected both habitat quality and habitat extent and it can be difficult to distinguish between processes affecting the two. For example, in the case of waders breeding on wet grassland, conversion to arable farming clearly amounts to habitat loss. However, gradual drying of grassland represents a deterioration of habitat quality that at some point becomes habitat loss when conditions are completely unsuitable. Nonetheless, habitat-quality changes have been widely responsible for changes in the status of birds.

The second conclusion is that frequently one group of species benefits from habitat change while another loses out; it is possible to identify several situations where losses have clearly outweighed gains and a smaller number where the opposite is the case. While we regret the pressures that land-use change has brought for many breeding waders and farmland birds, there have been substantial habitat gains for some waterbirds, garden birds, corvids and gulls. There appears to be a tendency for habitat generalists to have gained at the expense of habitat specialists; although this has not been tested in Britain, such a trend is evident in France (Julliard *et al.* 2003). It is far from easy to weigh up the gains and losses that have occurred across these very diverse shifts in habitat. It is, however, evident that several of the habitat-related processes during the last century were predominantly negative in their effects on our avifauna. These included all the habitat trends occurring on farmed land, with the exception of the agricultural recession before the Second World War. In woodland, the decline of coppice management and the recent changes in woodland structure have no obviously beneficial effects for birds with the possible exception of some common hole-nesters. The effects of conifer plantations are generally more balanced across gains and losses. Among the wetland trends, technical advances in sewage disposal have resulted in the complete disappearance of some remarkable bird habi-

tats, which had a brief but glorious history. But the expansion of artificial waterbodies has strongly benefited a somewhat different range of wetland species.

In summary, it is clear that the twentieth century represented a major turning point for the quality and quantity of habitats for birds in Britain. Throughout the century, developments in agriculture have transformed British farmed landscapes and broadly reduced the opportunities they offer birds and other wildlife. There have also been huge changes in woodland and wetlands, though on balance these have been less clearly negative or positive. As yet, it is hard to assess what the impacts of the inexorable urbanisation of Britain and the increasing recreational use of the countryside mean for bird populations.

Some priority issues for the early twenty-first century

This concluding section aims to provide a bridge between the two parts to this article. Ausden & Fuller (in press) will discuss conservation responses to the habitat changes that materialised in the last century. We outline eight broad habitat-related issues in Appendix 1 that seem likely to be strong agents of change in British bird populations in the first half of the twenty-first century. Other important factors will emerge, some of which will come as surprises – had this exercise been undertaken by ornithologists at the start of the twentieth century, it is very unlikely that they could have predicted all the trends discussed earlier in this article. The issues in Appendix 1 embrace several of the key ecological questions and issues identified by Sutherland *et al.* (2006, 2008).

At the present time, two broad strands of thinking are especially influential in developing environmental policies. One of these is the 'ecosystem approach': the notion that the natural environment provides essential services on which humans depend (Millennium Ecosystem Assessment 2005). These are diverse – for example water quality, flood alleviation, carbon sequestration, recreation, soil structure. Potentially there is much to be gained from aligning conservation with these benefits to society but it remains to be seen whether such an approach by itself will be sufficient to maintain diversity of habitats and species. Climate change is the other major driver of environmental policy. Climate will interact with the issues detailed in Appendix 1 in somewhat uncertain ways. Scenarios for future bird distributions are emerging (Huntley *et al.* 2007) but these are preliminary because climate change will force many shifts in habitat and land use which we are only just starting to appreciate. The experience of the twentieth century tells us not only that habitat change can have profound effects on bird populations but also that these effects can be extremely difficult to predict.

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377. Planting of broadleaved woodland has become more widespread in the lowlands in recent years, with several different purposes. Some are 'farm woodlands' created under schemes to encourage farmers to convert productive farmland to woodland. Currently, however, the focus is on creating woods with wider social or environmental objectives. There is an ongoing drive to plant more woodland in urban and on former industrial land to increase quality of life in these areas. Planting is being increasingly undertaken to restore habitat connectivity and habitat extent. This photo shows recent planting in Lincolnshire in February 2006 which is designed to extend the total area of woodland and to link otherwise isolated ancient woods.

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378. Scots Pine *Pinus sylvestris* and birch *Betula* scrub colonising moorland in Speyside, June 2003. Reduction of grazing pressure from sheep and deer can result in rapid changes in vegetation and bird communities in the uplands. Reduction of hill farming could occur in the future in some upland areas, eventually leading to woodland expansion.

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Prof. Robert J. Fuller, BTO, The Nunnery, Thetford, Norfolk IP24 2PU
Dr Malcolm Ausden, RSPB, The Lodge, Sandy, Bedfordshire SG19 2DL

Appendix 1. Major habitat-related issues likely to affect British bird populations in the early decades of the twenty-first century.

(1) *Management of lowland farmland:* Declines in farmland birds have been a major concern and focus of research in the last 15 years. Recovery mechanisms have been put in place through agri-environment schemes but the desired results are not yet emerging at the national level and it will be hard for voluntary schemes to succeed in the future markets (Ausden & Fuller in press). World food demand will probably drive agriculture to new levels of intensification. New strategies for conserving these species may be needed, perhaps focusing on a wider range of habitats. Many of the so-called farmland birds have populations in habitats that are not intensively farmed and it will be increasingly important to maintain suitable conditions in these areas (Fuller *et al.* 2004).

(2) *Landscape structure and habitat creation:* By far the greatest part of our biodiversity has requirements that cannot be met by manipulating intensive farmland. The time is right to move towards more holistic and landscape-scale approaches to habitat conservation (Adams 2003). Habitat networks and large habitat-creation initiatives are already being developed in several regions. A more integrated approach to conservation that incorporates various types of protected areas within wider complex mosaics of semi-natural habitat may provide buffering against climate change and agricultural intensification. Present understanding of how most species of birds actually use complex landscapes is limited. Increasing attention is likely to be given to questions such as how birds use different types of resources in different seasons and what features facilitate the movement of birds through such landscapes.

(3) *Urbanisation and human disturbance:* It is necessary to consider whether perceptions of 'urban' and 'rural' offer useful models for thinking about landscapes in a conservation context (Adams 2003). The implications of spreading urbanisation and semi-urbanisation – both as physical and as social processes – for birds are far from clear. The countryside is increasingly seen as a recreational opportunity for urban populations and there is a gradual opening up of parts of the countryside for access.

(4) *Grazing issues:* The character of our open upland habitats is largely maintained through grazing and burning but there is considerable uncertainty about the future of grazing in the uplands. Reductions of livestock are likely in some regions, possibly on a similar scale to that evident in parts of southern France, where land abandonment has resulted in scrub and woodland expansion with huge consequences for the composition of bird communities (Sirami *et al.* 2007). Habitat modification by deer browsing will continue to intensify, especially in lowland broadleaved woodland. To what extent are the ecological effects of intensive grazing and browsing reversible?

(5) *Changes in forestry:* Conifer plantations support enormous bird populations but we know little about how their management affects birds. In particular, moves away from clear-felling to continuous cover systems will create very different habitat structures for birds. New habitats are being created within forested areas. These include networks of semi-natural habitats and old trees, and open areas created by the removal of plantations from afforested heathland and blanket bog.

(6) *New energy sources:* Biofuels are competing with food crops for land and this will probably be a major driver of agricultural intensification. Large-scale woodfuel production has the potential to transform the management and structure of much woodland. Tidal energy projects are back on the agenda and will need careful ecological evaluation.

(7) *Changes in hydrology and water flows:* Extremes in water flows are predicted. Despite 2007 being one of the wettest years on record, summer water shortages are likely to become the norm. What will be the consequences of desiccation of semi-natural habitats for vegetation, invertebrates and birds? In contrast, more-frequent periodic severe flooding is expected at any season and higher water flows may prevail in winter. This may bring opportunities for habitat creation coupled with flood prevention.

(8) *Soft-coast dynamics:* Loss of intertidal and other coastal habitats will probably intensify as sea levels rise and extreme high-water events become more frequent. These have been identified as major threats to UK biodiversity (Sutherland *et al.* 2008). Conversely, these processes may bring opportunities for habitat creation through managed coastal realignment and ecological succession.

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379. The Black Grouse *Tetrao tetrix* is a declining species with complex habitat needs, typically living at the boundary of moorland and woodland habitats, though in northern England birds live in open moorland and do not seem to require trees. It depends on a vigorous field layer for both food and nest-sites. Several habitat changes have affected the species. Land improvements, such as drainage and fertilising, designed to increase stocking capacity, and increases in grazing pressure have reduced habitat quality in some regions. There has also been a reduction in habitat extent as moorland habitat has been lost to afforestation. Although the birds will use young plantations, this is a short-term benefit as older plantations generally lack rich field-layer vegetation.

A paper from the British Ornithologists' Union Records Committee

The rise and fall of Bulwer's Petrel

Andrew H. J. Harrop

ABSTRACT This short paper examines two recent reviews of records of Bulwer's Petrel *Bulweria bulwerii* in Britain by BOURC. Four records were assessed, including three specimen records from the nineteenth and early twentieth centuries and a modern-day sighting from Cumbria. None was found acceptable, and the reasons are discussed here.

Bulwer's Petrel *Bulweria bulwerii* was named after Rev. James Bulwer, an amateur Norfolk collector, naturalist and conchologist, who first collected it in Madeira, probably in 1825 during a short expedition to Deserta Grande (Mearns & Mearns 1988). It was first described by Sir William Jardine and Prideaux John Selby, in *Illustrations of Ornithology* in 1828 (Jardine & Selby 1828). The species has had a turbulent history as a British bird. This paper provides a brief summary of records in the British ornithological literature, presents the results of two BOURC reviews, and explains why it has been removed from the British List.

Historical 'status' in Britain

Bulwer's Petrel is a monotypic species of tropical waters, which breeds on islands of the eastern North Atlantic, Indian and Pacific Oceans between 10°S and 40°N (Onley & Scofield 2007). In the Atlantic it breeds on the Azores, Madeira, the Desertas, Great Salvage, the Canary Islands and Cape Verde. Most of those which breed in the Atlantic are believed to move south and west into the tropical Atlantic outside the breeding season (Cramp & Simmons 1977). They feed mainly at night on bioluminescent prey species which migrate to surface waters in the dark (Zonfrillo 1986).

By the early twentieth century, Bulwer's Petrel was acknowledged as a rare visitor to Britain, with five occurrences published in the second edition of the British List (BOU 1915). By the time *The Handbook* was published, seven records were listed for Britain, all in England (Witherby *et al.* 1940), and these were repeated in Bannerman's *The Birds of the British Isles* (1959). Of these seven, four (all from Sussex, between 1904 and 1914) were subsequently rejected as 'Hastings Rarities' (Nicholson & Ferguson-Lees 1962; see plate 380) and a fifth, said to have been picked up at Beachy Head, Sussex, by an unnamed person on 3rd February 1903, escaped this fate only because it occurred outside the area used to define 'Hastings' records (Bourne 1967). The remaining two (both from Yorkshire, in 1837 and 1908), together with one from Scilly in 1897 and a recent record from Cumbria in 1990, formed the basis of the BOURC reviews.

It is of interest that a third Yorkshire bird was reported, without details, from Scarborough in 'spring' 1849 by 'Mr Graham, the talented bird-stuffer of York' (Higgins 1849). David Graham was closely involved with a number of rare-bird records, including the infamous 'Tadcaster rarities' (Melling 2005), so even if there were more details of this record it is unlikely that it would be acceptable.

The background to the BOURC reviews thus comprised a series of records that had attracted varying degrees of doubt. Like other petrels, Bulwer's Petrel is easy to catch on the breeding grounds, which may have tempted some unscrupulous sailors and dealers to present specimens as British for financial or other reward. As noted in the correspondence about

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the rejected 1908 record of Kermadec Petrel *Pterodroma neglecta* (Melling 2008; *Brit. Birds* 101: 211–213, 322–324), fraud of this kind was probably not uncommon during the nineteenth and early twentieth centuries.

The BOURC reviews

The first review, in 1991, considered a record from the Isles of Scilly on 2nd October 1897, following discovery of the specimen in Oldham Museum. The second review, in 2002, considered the records from Yorkshire in 1837 and 1908, as well as the 1990 Cumbria record. The Cumbria record was potentially the first British record eligible for Category A, following separation of the British and Irish lists (BOU 1999). The records are treated chronologically here. None was found to be acceptable (BOU 1992, 2006).

1837 Yorkshire

This bird was said to have been found dead by an unnamed person, either on the banks of the River Ure, near Tanfield, or on the bridge at Tanfield, on 8th May 1837, and brought to Captain Dalton of Slenningford (near Ripon), who had inherited a collection of stuffed birds begun by his father, Colonel Dalton. The specimen was described and illustrated by Gould in his *Birds of Europe* (1832–37) but was not included in *Birds of Great Britain* (1862–73). This led Saunders (1889) to comment that he suspected that later information had cast some doubt on the record.

On 15th November 1887, a week after the Dalton collection had been dispersed by sale, William Eagle Clarke, then curator of the Museum of the Philosophical and Literary Society at Leeds, and local naturalist James Carter traced the specimen, which was exhibited at a meeting of the Zoological Society (Newton 1887). It was said to have been presented to the Yorkshire Museum by Clarke, and is often presumed to be one of the two specimens of Bulwer's Petrel held there. However, the museum has no documentation which actually links the collection details to a specimen, so it has proved impossible to confirm the continued existence of the Tanfield specimen.

The record presented BOURC with a number of problems, which ultimately made it unacceptable. Most importantly, the locality, c. 60 km from the coast, is implausible for a record of Bulwer's Petrel, while the record lacks a credible, detailed account of the circumstances in which it was obtained. It is also notable, and surprising, that Newton (1887) mentioned that 'curiously enough' Colonel Dalton had sent Bewick the specimen of the 'Common Stormy Petrel [*Hydrobates pelagicus*] (also found dead in that neighbourhood) from which the figure in his well-known work was taken.' That two of the petrel specimens used to illustrate seminal works (Bewick 1804 and Gould 1832–37) should really have come from the same inland locality seems improbable. Although the original identification as Bulwer's Petrel is not in doubt, it is uncertain that one of the two specimens now in the Yorkshire Museum is the one illustrated by Gould and subsequently copied by others (e.g. Yarrell 1856, Lilford 1885–97, Saunders 1889) since the bird portrayed in the original figure is positioned differently from the mounted specimen. Although it is possible that the mounted specimen may have been repositioned at some stage, there is no record of this.

1897 Scilly

The bird collection of Oldham Museum contains a specimen of Bulwer's Petrel with a

Andrew Harrop © Ayscoughfee Hall Museum

380. Male Bulwer's Petrel *Bulweria bulwerii*, dated 1914 and possibly Hastings Rarity 27, said to be from Jury's Gap, Sussex; now in the Ayscoughfee Hall Museum, Spalding, Lincolnshire. The same case holds a Wilson's Storm-petrel *Oceanites oceanicus*, dated 1914 (and possibly Hastings Rarity 1).

Stuart Ogilvy © Yorkshire Museum

381. Bulwer's Petrels *Bulweria bulwerii*, Yorkshire Museum, York. The upper bird is labelled 'washed up Scalby Mills Scarborough'. The lower, which is often presumed to be the 1837 Yorkshire specimen, is unlabelled.

label on the base which reads: 'One of two birds that was taken on the fishing boat belonging to John Humphreys, Mousehole. They was [*sic*] purchased on Sunday and was ordered to be set at liberty by Mr. Baily. One got back to sea but the other was recaptured near Scilly, October 2nd 1897.' The specimen was originally in the collection of William Daws of Mansfield, Nottinghamshire (Case No. 141 also contains three European Storm-petrels and a Leach's Storm-petrel *Oceanodroma leucorhoa*). The case was bought intact from the dealer C. H. Gowland in 1932 for £3.00 (Hayhow 1989).

The Committee was unwilling to accept this record for several reasons: the record requires us to believe that two birds (or three if the 'recaptured' bird is considered different) were involved, which is highly unlikely; the date on which the first birds were caught is unrecorded; the likelihood of one being recaptured is remote; and the provenance trail for the Oldham Museum specimen of Bulwer's Petrel was considered too incomplete to exclude the possibility that the label originally referred to one of the other petrels in the case.

1908 Yorkshire

The specimen of this bird, said to have been found 'washed ashore' at Scalby Mills, near Scarborough, on 28th February 1908, is in the Yorkshire Museum (plate 381). It was said to have been in 'somewhat bad condition' and was not recorded until 14 years later, when it was presented to the museum (Collinge 1922).

In this case, the identity of the specimen is not in doubt, but the Committee was unwilling to accept the record mainly because the date seems unlikely for a British record of a warm-water oceanic species, and it is unclear whether the bird was ever alive in British waters. Ship-assistance is a possibility for this species, as shown by a 1993 record from The Netherlands of a bird taken alive from a ship at harbour in Europoort during the last week of November (Moeliker & Kompanje 1996). The delay in reporting the record, combined with the context of a series of dubious records from elsewhere during the same period, also undermined confidence in its reliability.

1990 Cumbria

This record concerned a sighting of a bird flying past South Walney on 17th April 1990 and was thus quite different from the three records discussed above. It presented the Committee with different problems, similar to those discussed by Bradshaw (2002) in relation to a record of Herald Petrel *Pterodroma arminjoniana* in Kent. The difficulties faced both by the observers and by the assessors are illustrated by the fact that initially, before the bird became a potential first British record, the file was circulated four times by BBRC (with input from the specialist Seabird Advisory Panel) before coming to BOURC.

The bird was seen at a range of 600–800 m, in 'excellent light', for an estimated 8–10 minutes, during a north-westerly gale (force 7–8) with occasional squally showers. The three observers provided written documentation, from which the following extracts are taken:

Description 1. The most obvious features were its blackness, its long and pointed wings and its positive pattern of flight. It flew low and purposefully over the waves: three or four lazy, measured flaps with wings held in a forward position preceded a short careening and twisting glide before flapping again. It veered away from a dredger, and as it did so a long, pointed, all-dark tail was clearly seen. At a range of 600 m it flew

in front of a Common Tern [*Sterna hirundo*], and was estimated to be 25% smaller. It displayed a total sooty blackness with no hint of pale.

We mentioned the possibility of Bulwer's Petrel but were not confident because we all felt that a wedge-shaped tail needed to be seen in order to identify that species. However, after reading all the current available literature, we realised that the wedge-shaped tail is not always visible.

Description 2. The most striking feature initially was its long wings, but as it came closer a long tail was also visible giving the bird something of a long-winged Merlin [*Falco columbarius*] look. The flight was very distinctive – skua-like but with touches of Sooty Shearwater [*Puffinus griseus*]. Considering the strength of the wind, it moved very quickly. It flew with a series of strong flaps interspersed with short bouts of sheering and veering. The whole time the bird kept in a straight line (apart from the veering) and purposefully headed out to sea. It also kept a constant height above the water, which must have been only a metre or two.

All I could say about coloration is that the bird appeared all over black with no sign of a covert bar.

While we were watching, we discussed possibilities and the tentative conclusion was that we should check up Bulwer's in the literature.

Description 3. The most obvious features were the long wings and darkness of the bird. It was flying fast with four or five wingbeats followed by a long glide almost like an Arctic Skua [*Stercararius parasiticus*]. After about 30 seconds it flew next to a boat from which it quickly veered away. This is when we could see a long pointed tail, which was not obvious when the bird was first sighted.

We could see no white whatsoever on the bird in question. The wings were very long and angled forward, which reminded me of a Sooty Shearwater. The body appeared fattish but tapered down to a long pointed tail. The tail did not appear wedge-shaped at any time during the observation.

We had been watching the bird for approximately 8–10 minutes when we lost it as it flew out to sea. We all realised that we had seen a small dark shearwater or a large petrel. After consulting identification books and using the notes we made in the field, we realised there were only two species that came close to our bird (Jouanin's Petrel [*Bulweria fallax*] and Bulwer's Petrel). The Jouanin's Petrel has a completely different flight path and is bigger. We therefore came to the conclusion that the Walney bird was a Bulwer's Petrel.

Some of the problems with this record were due to the limited experience of Bulwer's Petrel, both of the observers (no prior experience) and of the assessors (several of whom also lacked prior experience). This resulted in conflicting views about which aspects of the descriptions (and, in particular, the differences between them) were most important. The assessment did not imply any criticism of the observers, who had provided sincere and objective accounts of their experiences, but was more concerned with the quality of evidence required to establish such an exceptional record.

BOURC, which was assessing this record as a potential first for Britain, was unwilling to accept it mainly because the bird was not seen sufficiently well to establish its features beyond doubt. Consequently, the identification (as the observers acknowledged) rested too much on a process of elimination which did not fully exclude other, similar species. When BBRC looked at it in this context (and for a fifth time) in 2004, it agreed that the identification was not proven, and proposed that for a sight record to be acceptable the following features should be seen and recorded:

- size should be assessed accurately through direct comparison with other species
- the long, rounded tail shape should be seen clearly (that is, sufficiently well to exclude the possibility that it might be a folded forked tail)
- the bird's structure, especially wing length, should be described carefully
- colour should be assessed (Bulwer's Petrel shows brown tones, except in poor light and at long range)
- the flight should be carefully described and consistent with that of Bulwer's Petrel

Future records

Although none of the records to date has proved acceptable, Bulwer's Petrel is certainly worth looking for in British waters. There is one accepted record from Ireland, on 3rd August 1975 (Alibone 1980), and one from The Netherlands, on 21st August 1995 (Schaftenaar 1996). It should be noted, however, that in both cases there are elements of the accounts which are surprising: the Irish bird had a tail which was 'distinctly long' but also 'appeared square-ended'; while the Dutch bird's behaviour was atypical for a Bulwer's Petrel (it stayed for nearly three hours along the edge of tidal sandbanks, and foraged by picking up small parts of food with raised wings, spread tail and hanging feet 'quite like a Leach's Petrel'). The photographs of

Göran Ekström

Göran Ekström

382 & 383. Bulwer's Petrel *Bulweria bulwerii*, between Madeira and the Selvagens, July 2005.

the Dutch bird are unfortunately of poor quality, and the identification has been disputed (van den Berg & Bosman 2001). Other records of Bulwer's Petrel in the North Atlantic were discussed by Morrison (1998).

There have also been three accepted records from North America (Alderfer 2006), all during July and August and from localities (in California and North Carolina) at about 35°N and within the 15–20°C isotherm. Since Bulwer's Petrel is primarily a species of tropical waters, it is most likely to occur in Britain during the summer months. The pelagic trips from Scilly perhaps offer the best hope, and already have an excellent track record of producing well-documented records of other rare seabirds, often supported by photographs, which make assessment easier and sometimes prove vital.

Although this species is relatively distinctive, the long-held but perhaps unfounded expectation that it should occur in British waters with some regularity has perhaps been one of the reasons for records which now seem unacceptable. There are other, similar dark petrels, especially Swinhoe's Storm-petrel *Oceanodroma monorhis*, which need to be excluded if identification of vagrants is to be safe (see Garner & Mullarney 2004) and, if the bird is distant, other seabirds, including Brown Noddy *Anous stolidus*, and even non-seabirds may need to be considered (Gutiérrez 2006; Onley & Scofield 2007).

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Andrew H. J. Harrop, 30 Dean Street, Oakham, Rutland LE15 6AF;
e-mail andrew.harrop@virgin.net

Request

Sightings of colour-ringed Tree Sparrows in northwest Norfolk

As part of an ongoing project, a number of Tree Sparrows *Passer montanus* have been colour-ringed at a breeding colony near Thornham, Norfolk, during the last four years. Each bird carries a BTO metal ring on the right leg and a single colour ring on the left leg. This aspect of the study concerns dispersal from the breeding site, and most birds leave the colony between late September and mid October.

In 2006, all birds trapped were fitted with a white colour ring; those ringed in 2007 have a single red colour ring (adults) or a red/white striped ring (juveniles); in 2008, birds were fitted with either an orange or orange/white striped ring.

Any sightings of colour-ringed birds from adjacent areas, such as Holme, Thornham, Titchwell, Choseley, the Ringstead area, or even from further afield are most welcome. Please send details to Keith Herber, e-mail keith.herber@btopenworld.com or tel. 07785 920044.

Looking back

One hundred years ago:

'PALLAS'S SAND-GROUSE IN YORKSHIRE.—Two records of a few birds each have been reported *(antea*, pp. 98 and 134) of *Syrrhaptes paradoxus* in Yorkshire during the recent irruption of this bird. Mr. W. H. St. Quintin now records *(Naturalist*, 1908, p. 420) that a flock of 30 to 40 was noticed early in June near Knapton. A considerable number remained at any rate until the beginning of October. The flock appears never to have broken up into pairs, although it certainly decreased, and there is no evidence that the birds ever attempted to breed.

PRATINCOLE AT THE FLANNAN ISLANDS.—An adult female *Glareola pratincola* was obtained on July 13th, 1908, at this out-of-the-way spot. It is the third example of the species obtained in Scotland (W. Eagle Clarke, *Ann. S.N.H.*, 1908, p. 256).' (*Brit. Birds* 2: 245, December 1908)

Conservation research news

Compiled by Mark Eaton and Ian Johnstone

Rare breeding birds in Britain respond as predicted to climate change

A Climatic Atlas of European Breeding Birds, which was reviewed in *BB* recently (*Brit. Birds* 101: 329), predicts how the breeding ranges of birds may shift in response to changing climatic conditions during the twenty-first century. Following completion of this magnum opus, the same research team at Durham and Cambridge Universities and the RSPB has produced evidence of how our changing climate is *already* influencing the populations of the UK's rarest breeding birds

Rhys Green and his colleagues used data supplied by the Rare Breeding Birds Panel to look at trends for 42 rare breeding species over 25 years (1980–2004), in relation to trends in climate suitability over the same period. They used the models developed in the *Climatic Atlas*, which used measures of temperature and precipitation to predict the European breeding distribution of 431 species. The same climate 'envelope' models were applied to the UK, using meteorological data to derive an average measure of the suitability of the UK climate in each year within the study period for each of the 42 breeding species. From this, 'climate suitability trends' (CSTs) were calculated, indicating whether the climate had become more or less suitable (and at what rate) for each species over the study period. These trends were then compared with actual population trends as reported by the RBBP, along with a number of potential confounding variables, such as whether or not a species is a migrant, to see whether there was a relationship between the two.

Overall, the authors found a significant correlation between the climate suitability and population trends: if the climate modelling suggested that the UK climate had become more suitable for a species, then it was likely to have increased; if the models suggested that the climate had become less suitable, then the species was more likely to have decreased.

BB readers will not be surprised at the detailed findings: southern species such as Little Egret *Egretta garzetta*, Cetti's Warbler *Cettia cetti* and Dartford Warbler *Sylvia undata* had increasing climate suitability trends through the period and did indeed show marked population increases; whereas more northerly breeders such as Temminck's Stint *Calidris temminckii*, Fieldfare *Turdus pilaris* and Redwing *T. iliacus* have declining trends in both climate suitability and population. Of course, knowledge of individual species' circumstances means that we can identify the roles of factors other than climate. For example, although the climate suitability for Cirl Bunting *Emberiza cirlus* has increased, the recent population increase is more likely to be due to the intensive conservation intervention for this species by the RSPB, Natural England and Defra. In a few cases, population trends have occurred that are contrary to changes in climate suitability – a slow increase in the breeding population of Common Cranes *Grus grus*, for example, has occurred in the face of an apparent deterioration in the suitability of the UK climate for this species.

Overall, this work serves as a validation of the climate-modelling approach of the *Climate Atlas*, supporting the value of that work and its indications of the massive influence that our warming climate will have on birds in Britain and Europe. It also serves to underline the fact that these processes are not just something for the future, but have been affecting the UK's breeding birds for several decades. And, of

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course, it demonstrates just one aspect of the value of Rare Breeding Birds Panel data for the conservation of birds in the UK.

Green, R. E., Collingham, Y. C., Willis, S. G., Gregory, R. D., Smith, K. W., & Huntley, B. 2008. Performance of climate envelope models in retrodicting recent changes in bird population sizes from observed climatic changes. *Biology Letters*. DOI 10.1098/rsbl.2008.0052

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Parasites beat birds in estuarine biomass weigh-in

Although, with the possible exception of nits in primary schools, hygiene standards of modern society protect us from infection, parasites are everywhere in nature, where they can have single or multiple hosts that occupy different levels in food chains. For example, some species of two well-known kinds of parasite – trematodes (flukes) and cestodes (tapeworms) – produce larval stages that infect and parasitise the invertebrate prey of shorebirds as intermediate hosts, and continue their life cycles as adult worms in the final, avian host when such infected prey is consumed (the larvae escape digestion). Although infestation reduces the fitness of the host, such parasites have been considered relatively unimportant at the scale of the ecosystem.

To test this assumption, a recent study in California measured the contribution of parasites to estuarine ecosystems, where shorebirds sometimes winter in internationally important numbers. Twenty-three sites in three different estuaries were sampled to measure the parasite biomass burden in each level of the food chain, from tiny invertebrates up to the local top predators – wading birds.

No fewer than 160 different host–parasite combinations were identified, 30 of which involved birds. The results showed that the most substantial contributors to total animal biomass were snails, clams and crabs, which outweighed the local shorebird biomass, for which some were prey. However, although overall parasite biomass was only about 2% of that of host organisms, trematode biomass alone exceeded the wintering bird biomass by up to nine times, emphasising the truly vast numbers of invertebrates that inhabitat the world's estuaries and putting otherwise impressive flocks of shorebirds into their proper context. Some parasites destroy or inhibit their invertebrate hosts' reproductive development, so that more of the hosts' food is available to the parasites for their own reproduction, and a host infected with such a 'parasitic castrator' has the 'effective' genotype of its parasite. This 'effective' parasite biomass of castrated hosts sometimes exceeded that of uninfected hosts as well as that of all wintering birds, showing how much potential bird food within estuaries contains parasites, some being larval stages which may be transmitted to birds.

Because of this, such parasite 'castrators' may have implications for how the numbers of invertebrate host individuals, which may be prey for birds, change over time. Furthermore, it is already known that some shorebirds, such as Oystercatchers *Haematopus ostralegus*, make trade-offs between intake of food and intake of infected parasites in the food – they may choose to feed less efficiently, on smaller prey because such prey harbours fewer parasites. Finding out how much parasites influence bird ecology through these two different mechanisms would be a useful step in managing estuaries with both important wintering bird populations and potentially competing fisheries.

Kuris, A. M., Hechinger, R. F., Shaw, J. C., Whitney, K. L., Aguirre-Macedo, L., Boch, C. A., Dobson, A. P., Dunham, E. J., Fredensborg, B. L., Huspeni, T. C., Lorda, J., Mababa, L., Mancini, F. T., Mora, A. B., Pickering, M., Talhouk, N. L., Torchin, M. E., & Lafferty, K. D. 2008. Ecosystem energetic implications of parasite and free-living biomass in three estuaries. *Nature* 454: 515–518.

Letters

Trailing Greenland Wheatears

We who learnt our migrants from the Witherby *Handbook* and post-war observatories were told to be patient when the target was our first 'Greenland Wheatear' *Oenanthe oenanthe leucorhoa*. 'None before the last third of April and most in May' was the sum of the lessons. I still recall the great excitement on the Isle of May on 21st April 1950 when a bird caught in a mobile box trap passed the wing-length test and three schoolboys secured another *Handbook* race for sure.

Thus I was surprised to understand from the review of the migration of Northern Wheatears through Helgoland (Bairlein 2008) that the median spring date for *leucorhoa* there was as early as 2nd May, and furthermore that it was five days earlier than for nominate *oenanthe*. The pattern is even more marked in males, whose median date was 27th April, and appears to be at odds with the prevailing view in Britain that *leucorhoa* occurs predominantly towards the end of both spring and autumn passage (Wernham *et al.* 2002).

To check the British tradition, I looked at the recent progress of *leucorhoa* through Fair Isle in spring. For 117 birds trapped there during 1998–2005, this is shown in a histogram in Forrester *et al.* (2007). In those springs, no birds reached Fair Isle before mid April and their passage peaks markedly in mid May. The median date is around 12th May, or about ten days later than for the Helgoland birds, staging about 600 km to the south and 325 km to the east. The time lag seems long for an accomplished transatlantic migrant that could conceivably cross the North Sea in a matter of hours.

Middleton (1997) summarised the spring passage of Northern Wheatears on the coast of northwest Norfolk. Intriguingly, the trapping area, between Snettisham and Warham, would have been ignored in the 1950s by the migration stalwarts of the (then) Cambridge Bird Club as being in a 'drift shadow'. Yet the energetic North West Norfolk Ringing Group caught 309 birds there (in Potter traps and spring nets) in the seven springs from 1990 to 1996; of these, 147 proved to be *leucorhoa*. Of 70 males, 53 occurred on or before 30th April, with median date 23rd. Of 77 females, 41 passed in April but their median date is obscured by two late clusters in May. Even so, it is clear that in northwest Norfolk, 150 km south and 550 km west of Helgoland, most *leucorhoa* occur up to ten days earlier than on Helgoland and, remarkably, around three weeks earlier than on Fair Isle. Holding further to their British tradition, the Norfolk *leucorhoa* also moved through much later than nominate *oenanthe*. By 15th April, less than 5% of all the *leucorhoa* had appeared but 75% of *oenanthe* had arrived and/or passed through. Again it seems odd that the Norfolk and Helgoland communities of *leucorhoa*, at a similar latitude, present such marked differences in their order and timing of passage.

Finally, I observe a strange event in the BTO's BirdTrack database for all Northern Wheatears. From 2002 to 2005, their spring records showed a distinctly bimodal pattern of occurrence. Of the two peaks, the second was irregular, being over the four springs respectively about 35, 30, 20 and 45 days later than the first and presumably formed by the main passage through all of Britain of *leucorhoa*. Curiously, the spring records for 2006 and 2007 presented no such bimodal pattern, with forerunning birds having appeared two weeks later than in 2002–05 and contributing with the tardier birds to just a single, broader peak with just small pulses in mid and late May. The plot thickens...

On first reading, I found the field science deployed on Helgoland so exhilarating that the successors to Heinrich Gätke seemed to be putting the followers of his Humberside friend John Cordeaux to shame. Yet our opportunity to explore further what may be separate streams of *leucorhoa* remains by far the greater and as I have begun to demonstrate here, the migrations of both *leucorhoa* and *oenanthe* may well be in a new flux. It would be good to see Britain & Ireland's bird observatories and ringing groups take up the challenge of Helgoland. An update of David Snow's 1953 review of the movements of *leucorhoa*, the bravest of all transatlantic migrants, for the twenty-first century is surely due.

Acknowledgments

I thank Dawn Balmer for drawing my attention to the North West Norfolk Ringing Group's report, and for providing the BirdTrack data.

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D. I. M. Wallace

Mount Pleasant Farm, Main Road, Anslow, Burton on Trent, East Staffordshire DE13 9QE

The Eagle Owl in Britain

Melling *et al.* (2008) raised a number of issues about the status of Eagle Owl *Bubo bubo* in Britain that were not fully addressed in their paper. Their search of the literature 'failed to substantiate' James Fisher's view ('possibly native [from the] eighth to eleventh centuries'), but they did not explain the context of what Fisher had done. Fisher (1966) based his view on finding Eagle Owl, whose name was then Uf or Huf, in three of seven known lists originating from the eighth to eleventh centuries. As Frank Stanford (www.anglosaxonengland.net) has observed, the omission of species like White Stork *Ciconia ciconia* and Eagle Owl from folklore do not necessarily indicate their absence from Anglo-Saxon England. The Red Kite *Milvus milvus* (a conspicuous diurnal species, whereas Eagle Owl is nocturnal and easily overlooked) 'receives little mention but was common enough'. Absence of evidence is not evidence of absence.

There are many problems with ancient writings. Linguistic experts did not realise that reports of the 'llewyn' in the Lake District could refer to the Lynx *Lynx lynx* because they believed it to have been long extinct, yet it is now considered that it persisted until the seventh century (Hetherington *et al.* 2006). The latest-known Eagle Owl in the fossil/archaeological record was dated at 700 BC to AD 43 and is unconfirmed (Stewart 2007) but until we know why there is doubt, it should surely be given some benefit of that doubt.

Mikkola's (1983) view that persecution may have been responsible for the absence of Eagle Owls was cited, but it is important to recognise that this was not a species persecuted by gamekeepers and nor was it regarded as vermin by them. Instead, Eagle Owls were a much sought-after and prized possession. Just as they are used today to capture some of the larger raptors for ringing and radio-tracking, so in the past they were essential in the campaigns that gamekeepers waged against raptors and corvids. They were tethered by keepers on a perch, often on a hilltop, so that buzzards *Buteo*, Northern Goshawks *Accipiter gentilis* and other raptors that attacked them could be shot from a hide below. As related by Bijleveld (1974), the system was amazingly effective – in Germany, 400 Rough-legged Buzzards *B. lagopus* were shot over three Eagle Owls in a single winter sometime before 1854. One Prince kept 15–20 such owls for raptor control. In Hungary, this practice continued on the Duke of Esterhazy's estate until the late 1930s (Potts & Faragó 2000), but by 1958, with the decline of raptors, the long hours of sitting in a hide were not considered worth the trouble (Bijleveld 1974). Had the Eagle Owl been regarded as vermin, a higher proportion of records would have been of birds shot and the dominant BOURC category 'insufficiently documented/identification unconfirmed' would be much diminished.

The Eagle Owl shot at Clifton Castle in March 1845 was almost certainly used by the Duke of Leeds for the purpose of predator control at the adjoining estate of Hornby Castle, from where it escaped. His bird originated 'from the forest at Mar Lodge' (Nelson 1907), presumably as a chick taken from a wild nest, yet no evidence is given for the exclusion of this case from the list of possible breeding records in Scotland. It is also curious that Melling *et al.* did not map their records, which show a marked concentration of birds, including 'presumed escapes', on the northeastern seaboard. Why would Eagle Owls escape from captivity on the east coast but not on the west coast?

It is good that the status of the Eagle Owl

has been reviewed, but the evidence and arguments used suggest that the work of Melling *et al.* needs to be extended. In the meantime, the exclusion of the Eagle Owl from the British List is surely unwarranted?

Dick Potts
Game and Wildlife Conservancy Trust, Fordingbridge, Hampshire SP6 1EF

AUTHORS' RESPONSE The central premise of Dick Potts' letter appears to be that absence of evidence is not evidence of absence. This is true in a strictly logical sense, as one can never prove a negative, but we would quickly grind to a halt and open ourselves to more widespread criticism if we adopted that premise for the British List. BOURC therefore does require evidence of presence to include a species on the List. For example, Great Auk *Pinguinus impennis* has not been recorded alive anywhere on the planet since 3rd June 1844; we cannot *prove* that there is not a colony of Great Auks lurking somewhere, but there is no evidence that they exist. Evidence for the continued existence of Ivory-billed Woodpecker *Campephilus principalis* in the southern United States has been presented, but this is not sufficient to convince the ABA Checklist Committee to change its status from 'extinct'. Essentially, no amount of suggestive evidence is enough to admit a species to a national list if the sum total of the evidence remains inconclusive.

We are accused of not fully explaining James Fisher's view that Eagle Owls were possibly native between the eighth and eleventh centuries. It is important to note that James Fisher himself went no further than to say 'possibly native', and did not even claim that they were 'probably' native. According to Kitson (1998), who reviewed all the old English names of birds, there are more species of owls than there are names. He suggests that the most frequent name *ule* may have applied to Tawny *Strix aluco*, Barn *Tyto alba* and possibly Short-eared Owl *Asio flammeus*. Kitson also stated that *uf* was originally applied to Eagle Owl but the absence of the species from England explains why the word became obsolete. This is hardly sufficient evidence for admission to the British List, and it seems reasonable to assume that James Fisher would have known this background.

Concerning the Meare Lake (Somerset) ulnae fragments, we consulted both Derek Yalden and John Stewart; both advised caution over this record. Despite considerable effort, these bones have not been traced, and doubt was expressed over the identification when the record was first published. It is surely also relevant that no further supportive evidence has been found despite considerable effort by zooarchaeologists working on bird bone assemblages from the Roman period onwards (Stewart 2007).

Potts states that Eagle Owls were neither persecuted by gamekeepers nor regarded as vermin. As we believe that Eagle Owls have not occurred naturally in Britain for 9,000 years, and gamekeepers have been operating for only 200 or so years, this point seems academic. However, *BWP* contradicts Potts' view, stating that the species decreased in many areas (in Europe) during the nineteenth century, owing mainly to human persecution. The 1954 Shropshire bird was shot by a gamekeeper and turned out to be a Great Horned Owl *B. virginianus*. In addition, the recent breeding female in Yorkshire was found dead with shotgun pellets. The eggs were also destroyed on three occasions, which shows that human antipathy towards this species might be greater than Potts suggests. Of the 79 records assessed by BOURC in 1994, 23 (29%) were shot or collected but all of the published records post-date the earliest period of known importation of Eagle Owls to Britain. The only evidence of occurrence prior to this (since the Demen's Dale tarsometatarsus from c. 9,000 years ago) appears to be the medieval glossaries and the Meare Lake ulnae fragments. Records from eastern counties may be more numerous, but this could reflect the sites of importation. A fact that is surely noteworthy is the complete absence of Eagle Owl records from North Sea oil and gas platforms and associated vessels since 1979. There are also no records from Helgoland, 70 km off the German coast, where a bird observatory has operated since the nineteenth century. Immigration to Britain, if it occurs, must be at a negligible rate. Potts provides no hard evidence to the contrary.

Concerning Nelson's record of the bird that originated from the forest at Mar Lodge around 1845, it is notable that Mar Lodge is c. 25 km from a site in Glen Shee where Eagle Owls were known to be breeding in a 'semi-wild and domesticated state' (Drummond-Hay 1886). Drummond-Hay also referred to a bird that was ascertained to be an escape that was captured at Pitlochry, Perthshire, in 1873 (only 34 km from Mar Lodge). The Mar Lodge record is sufficiently close in space and time to

the site of 'semi-wild and domesticated' birds to cast some doubt on its status. Regardless of this, there is no evidence that this bird originated from a wild nest, just conjecture, and Nelson certainly did not draw this conclusion. It is interesting that Nelson (1907) further mentions an Eagle Owl captured on Rombald's Moor in 1876 which was kept in a vivarium 'along with two specimens said to have been taken from a nest near Aberdeen!' The exclamation mark perhaps suggests that he viewed the claim with some incredulity. However, Aberdeen is only c. 22 km from Mar Lodge so it may have been taken from the near-local 'semi-wild and domesticated' stock.

None of the main writers of the nineteenth and twentieth centuries gave credibility to Eagle Owl as a natural breeder (e.g. MacGillivray 1837–40, Yarrell 1856, Witherby *et al.* 1938, Bannerman 1955, Harrison & Reid-Henry 1988). James Fisher's 'possibly native' is the strongest authoritative expression on their natural status.

If new evidence is forthcoming, BOURC will gladly reassess the status of Eagle Owl; but in the absence of such evidence, the Committee is satisfied that Eagle Owl does not merit a place on Categories A or B of the British List.

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Tim Melling, Steve Dudley and Paul Doherty

Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the *BB* Editorial Board. Those considered appropriate for *BB* will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Merlins plucking and eating dead young

In over 30 years of surveying moorland in the North Pennines for breeding Merlins *Falco columbarius*, I have occasionally found the remains of pulli that have perished in the nest, often after periods of prolonged rainfall. In June 2007, there were many failures following two bouts of continuous rain, each of several days' duration. At one site, five young had been plucked, mostly in and around the nest scrape. However, one of the pulli was found on the plucking post, 100 m from the nest. It was fully plucked and partially eaten. I had located this plucking post when the male was incubating eggs and it had been used all season. There seems little doubt that the dead young had been eaten by the adults in this instance. I am not aware of this behaviour having been recorded previously in Merlins.

Dick Temple
White Cottage, Catterick Garrison, North Yorkshire DL9 4PD

EDITORIAL COMMENT Ian Newton has commented that, although the evidence in this case is circumstantial, it seems likely that, as Dick Temple suggests, the young were eaten by the parents. Northern Goshawk *Accipiter gentilis*, Eurasian Sparrowhawk *A. nisus* and Golden Eagle *Aquila chrysaetos* have all been seen to eat their own dead young.

Short-eared Owl sitting on sea surface to avoid Carrion Crows

The recent note by Martin Garner (*Brit. Birds* 100: 755) recalls the following. On 30th January 2008, I flushed a Short-eared Owl *Asio flammeus* from Porthellick Beach on St Mary's, Isles of Scilly, which flew to nearby Porthellick Down. Ashley Fisher joined me and we walked across Porthellick Down encountering the Short-eared Owl, which flew back to Porthellick Beach. Two Carrion Crows *Corvus corone* spotted the owl and mobbed it aggressively at the top of the beach, just above the high tide. After about a minute the owl flew directly into the bay, followed by the crows, then landed on the calm sea surface, floating on its belly like a seabird. The crows circled the floating owl trying to mob it but were unable to manoeuvre effectively and soon gave up. Some 30 seconds after the crows left, the owl lifted off the water effortlessly and flew to a crevice along the nearby rocky shoreline. The owl was on the sea surface for about two minutes.

Robert L. Flood
14 Ennor Close, Old Town, St Mary's, Isles of Scilly, TR21 0NL; e-mail tubenose@tiscali.co.uk

Male Firecrest helping to feed a Goldcrest family

On 24th April 2006, I was carrying out a Breeding Bird Survey in Kent, the route of which passes through a churchyard with a good number of old, large Yew *Taxus baccata* trees, with canopy spread of at least 20 m. While in the churchyard, I heard a Firecrest *Regulus ignicapilla* calling. I returned on 6th May and relocated the Firecrest, now actively singing. My neighbour Stephen Message watched the bird singing on 8th May.

On 23rd June, SM and I were in the churchyard and observed a male Firecrest feeding young, flying back and forth to a Yew tree, carrying food. SM had reasonable views of the young, still in the nest, and noted that they did not look like young Firecrests, as they lacked dark lores and a pale supercilium. I made a number of visits to the site over the following few days and the male Firecrest was seen feeding the young on all visits, with occasional help from a female Goldcrest *R. regulus*. A female Firecrest was never seen; a male Goldcrest was sometimes heard and seen but was never seen feeding the young. The last sighting of young, on 1st July, still clearly indicated Goldcrest, with typical plain face and isolated black eye.

There has been at least one breeding pair of Goldcrests in this churchyard since 1994, when I began to survey this square. The possibility of hybridisation in this case cannot be ruled out (and see below), although the young showed no features of Firecrest and I assumed that the male Firecrest was acting as a foster parent. In 2007, a male Firecrest held territory for a number of weeks at the site but no breeding was confirmed for either the Firecrest or the Goldcrests. In 2008, a male Firecrest was heard singing on 17th February and seen with a pair of Goldcrests on 27th April, but not subsequently; the Goldcrests probably bred.

Charles Trollope
Chaucer Cottage, Iden Green, Cranbrook, Kent TN17 4HB

EDITORIAL COMMENT Two instances of presumed hybridisation between a male Firecrest and a female Goldcrest have been described previously in *BB* (*Brit. Birds* 69: 447–451, 76: 233–234). In the former case, in Suffolk in 1974, the young were not seen well, but in the latter instance, in Buckinghamshire in 1978, one young was seen well and described as identical in plumage to a typical young Goldcrest. It is possible, therefore, that the observations above relate to a further incidence of hybridisation between these two species.

Reviews

FRONTIERS IN BIRDING

By Martin Garner and friends. BirdGuides Ltd, London, 2008. 192 pages; black-and-white illustrations. ISBN 978-1-898110-47-7. Paperback, £19.95.

In my youth, I can remember embracing wholeheartedly a series of articles written by the late Peter Grant and Killian Mullarney, first published in *Birding World* and later brought together in the booklet *The New Approach to Identification*, in 1989. To me, a ringer and a birder, this all made perfect sense and I have to admit to sneering just a little at some members of the older generation who seemed incapable of grasping its basic tenet. Wow, how things have come full circle. We are now in a digital age where it could be argued that the most important pieces of birding equipment are a good digital camera and lens, a computer and access to the internet. And now it's my turn to be sneered at by a new, younger generation, because I am now the one struggling to cope with *this* new approach.

To some extent the real meat of this book is synonymous with the digital age. It will come as no surprise to many readers that it is largely written by Martin Garner, who for some years now has been a pioneer of more obscure identification challenges, and all credit to him for that. As might be expected of something that is 'cutting-edge', many of the ideas put forward are somewhat tentative. Although decent optics, keen observational skills, patience and note-taking will enable some of these to be tested, high-quality photographs will be required to progress many more. The text is ably supported by some fine black-and-white illustrations, notably those by Ian Lewington, but in some cases well-chosen photographs might have worked more effectively.

Eighteen short chapters each look at a particular identification challenge and, where relevant, a brief review of the current taxonomic position is included. A few of these – e.g. Pacific Divers *Gavia pacifica*, races of Great Cormorant *Phalacrocorax carbo carbo* and *P. c. sinensis*, and female Blue-winged *Anas discors* and Cinnamon Teals *A. cyanoptera* – have already been treated in published identification articles, but here they are neatly summarised and updated. Other subject matter is brought to a mainstream British audience for the first time, e.g. 'Pacific Fulmar' *Fulmarus glacialis glacialis* and Cape Gannet *Morus capensis*. Those of most interest to me relate to species where I am fairly sure we are overlooking individuals, and include female-type Eurasian *A. crecca*, Green-winged *A. carolinensis* and Baikal Teals *A. formosa*, the two- (or three-) way split of the Velvet Scoter *Melanitta fusca* complex, Black Scoter *M. americana* and various races of Common Eider *Somateria mollissima*. The chapter on the Canada geese *Branta canadensis/hutchinsii* complex makes interesting reading, following the somewhat controversial two-way split adopted by the BOURC. Here, Garner has utilised the recently published work of Harold Hanson, who spent his life studying Canada geese, and combined it with his own thoughts to produce something that makes much more sense in the context of identification of vagrants reaching Britain than anything published to date.

The book is not all about identification, however. The first half of it covers a whole series of ornithological topics, ten in all. Ken Shaw discusses the art of finding rarities, while Stuart Rivers describes how he and a team of mates 'discovered' Barra – another illustration that, with sufficient commitment and a degree of nous, there are still a few British islands where birders could be rewarded with finding themselves a host of rarities. Ian Wallace reminds us of the seemingly forgotten art of note-taking, although in some cases the notebook will be no match for the digital camera; Dave Farrow does a great job of selling bird sounds; Keith Clarkson shows how rewarding visible migration can be – even in the middle of Yorkshire; and Andy Stoddart takes a look at migration and vagrancy. Rob Hume's chapter on his gull studies in the midlands is wonderfully refreshing, while Steve Votier, Stuart Bearhop and Martin Collinson look at the role of stable isotopes and DNA in relation to today's birding scene – with a very appropriate health warning about the limitations of both. My personal favourite is Jimmy Steele's wonderfully entertaining introduction to his local patch (Newbiggin) while, along with many others, I suspect, I think that Keith Vinicombe's assessment of those species currently sitting on Category D of the British List is far more in touch with the real world than the seemingly arbitrary decisions of the BOURC.

The book is generally very readable and there is something for everyone. For anyone interested in bird identification it really is a must. Wherever you are based you can take this book out with you and find something relevant to test with it – if only your local flock of Teal. Who knows, you might find that the Moorhen *Gallinula chloropus* at the edge of them is of the Amercian race! The only drawback with this book is the price. The production quality is simply not commensurate with the price (originally £29.95, although the revised RRP of £19.95 is more palatable) and it will be a real shame if birders turn down the opportunity to buy it simply because of this. It is my understanding that Martin Garner was aiming to publish further volumes, covering other groups such as waders, gulls and passerines. Then, after a period of field testing, to publish these in a single book. Let's hope that this aspiration comes to fruition because it will surely become a landmark contribution to bird identification in a British context.

Paul Harvey

A SKY FULL OF STARLINGS: A DIARY OF A BIRDING YEAR

By Stephen Moss. Aurum Press, London, 2008. 182 pages. ISBN 978-1-84513-353-5. Hardback. £12.99.

In 2006, Stephen Moss compiled *This Birding Life*, which was a collection of his columns that had appeared in *The Guardian* since 1993, grouped into common themes. That book was never reviewed in *BB*, but has now appeared in paperback. Its style is witty and informative.

For this new book, dedicated to publisher Christopher Helm, Moss kept a diary throughout 2007. Being based in Somerset, he chronicled what he saw in the locations close to his home in Mark. A few trips elsewhere are included – such as the Cairngorms, the north Norfolk coast and Rutland Water (for the Birdfair). The book is written in an easy style with informative anecdotes about everyday birds. Apart from his participation in the Christmas Cup (a BBC Natural History Unit bird race), the author rarely chases a rarity, other than unexpected local surprises such as a Great Grey Shrike *Lanius excubitor*. Mind you, like the rest of us, he'd have liked to have seen that Yellow-nosed Albatross *Thalassarche chlororhynchos* that arrived in Somerset in June 2007!

Overall, this is a relaxing book that brings out the best in normal birding. And there is the challenge. We can all keep a diary like this, noting the behaviour of typical birds. The difference is that few of us can communicate such observations in a way that captures the imagination of others. Ordinary birding has a lot to offer – and this book reminds you of that on every page.

Keith Betton

DARING TO FLY: THE WILDLIFE PAINTINGS OF COLIN WOOLF

By Joanne Woolf. Madwolf Design, Conwy, 2008. 178 pages; colour paintings and some photographs throughout. ISBN 978-0-9556968-0-0. Hardback, £45.00.

This lavishly produced book, filled with the paintings of Colin Woolf from cover to cover, mainly of gamebirds and birds of prey, and supported with texts by his wife Joanne, provides an interesting and near-complete insight into the progressing career of a wildlife artist. It is broken down into three self-explanatory sections: The Artist, The Paintings and The Insight. If I had to describe Colin Woolf's approach to his picture making, it would be 'Thorburnesque', reflecting a style of a bygone century, and pretty popular it is too. This technique doesn't exactly baste my *Meleagris gallopavo* and there are a few paintings where the birds do not sit comfortably in the composition. But that's just my opinion; many people love his craft and will need to put out a particularly large stocking if they have it on their Christmas present list.

Dan Powell

Also received

RSPB HANDBOOK OF GARDEN WILDLIFE

By Peter Holden and Geoffrey Abbot. Christopher Helm, A&C Black, London, 2008. 240 pages; 470 colour photographs illustrating 340 species. ISBN 978-0-7136-8860-3. Paperback, £9.99.

Packed with information on our more familiar garden wildlife, this attractive volume covers a wide range of wildlife, including mammals, birds and invertebrates. Each account covers identification, habits, diet and garden conservation. Additional sections describe how to create a wildlife garden, deal with pests, plant for the seasons, etc.

GARDEN BIRDS AND WILDLIFE

By Mike Toms and Paul Sterry. AA Publishing, Basingstoke, 2008. 224 pages; many colour photographs and illustrations; maps, graphs. ISBN 978-0-7495-5912-0. Hardback, £20.00.

Published in association with the BTO, this is one of the more detailed of the recent cluster of garden wildlife guides, dealing with a range of wildlife in addition to birds (trees and shrubs, wildflowers, mammals and various invertebrates). As well as dealing with identification, the bird entries contain information on distribution and population trends, while a 'fact file' covers diet, habitat, some basic details of breeding ecology, population size and lifespan.

WHERE TO WATCH BIRDS IN NORTHERN AND EASTERN SPAIN

By Michael Rebane and Ernest Garcia. Christopher Helm, A&C Black, London, 2008. 320 pages; many maps and line-drawings. ISBN 978-07136-8314-1. Paperback, £16.99.

Published originally as *Where to Watch Birds in North and East Spain*, this is effectively a second edition of that title. This volume is completely revised, expanded and updated, and includes 11 new major sites. In total, it covers 112 major sites (all of the original sites have updated maps) and 75 additional ones; it is an important guide to a remarkable area containing some of the most diverse communities in Europe.

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Breeding seabirds in deep trouble

The RSPB has confirmed what fieldworkers had already realised: that some of our seabirds had a catastrophic breeding season in northern Britain in 2008. Data from the RSPB's coastal reserves show that three species, Kittiwake *Rissa tridactyla*, Arctic Tern *Sterna paradisaea* and Arctic Skua *Stercorarius parasiticus*, reared virtually no chicks in the far north. Dwindling food supplies, probably linked to climate change, could threaten the future of these species in the UK.

The UK is internationally important for seabirds. Scotland alone supports over three million birds, or 45% of the populations nesting in the EU, and the evidence suggests that repeated annual breeding failures are now substantially reducing the populations of the species worst affected. Recent reports of significant declines in plankton biomass indicate major changes in the depths of Atlantic Ocean ecosystems, which could be affecting our seabirds. Although direct evidence is still lacking, increased sea-surface temperatures in winter, disrupting the food chain, are thought to be driving the declines. There seems to be a trend towards higher temperatures in the northern North Sea in winter than farther south; such changes may be reducing the survival of sandeel *Ammodytes* larvae, ultimately causing a decline in the abundance of this critical prey species for seabirds in the Northern Isles and elsewhere, and chronically undermining their breeding success.

But albatrosses are thrown a lifeline

In the twilight of his presidency, George W. Bush has apparently recognised the importance of protecting globally threatened seabirds, including albatrosses. The US President has brought the Agreement for the Conservation of Albatrosses and Petrels (ACAP) to the US Senate for approval, stating that he believed 'the Agreement to be fully in the US interest'. ACAP is an international treaty protecting seabirds, and the USA will join 12 countries that are already parties to the treaty: Argentina, Australia, Brazil, Chile, Ecuador, France, New Zealand, Norway, Peru, the Republic of South Africa, Spain and the UK. It is hoped that the US Senate will now ratify the treaty and produce laws implementing the agreement.

Eighteen of the world's 22 species of albatross are facing extinction, and ten of these are considered to be Endangered or Critically Endangered – the highest levels of threat under the IUCN Red List of Threatened Birds. The most important threats to albatrosses are accidental deaths in longline and trawl fisheries, and loss of eggs and chicks to introduced predators on breeding islands. Solving these problems will require co-ordinated action by governments, scientists, fishermen, and conservation organisations.

Bald Ibises found poisoned

Following the revelation that semi-captive Bald Ibises *Geronticus eremita* from Turkey could be used to augment the relict wild population in Syria (*Brit. Birds* 101: 635) comes news that three of these Turkish birds have been found poisoned in Jordan. The three dead ibises were found in the Jordanian desert, having been satellite-tracked from their breeding grounds in Birecik, southeast Turkey.

The birds were found about 30 km from the Jordanian capital, Amman, and autopsies have ruled out electrocution and shooting. Scientists are investigating the source of the poison and believe that it may have been laid by chicken farmers in order to kill rodents. 'The deaths are heartbreaking but the birds may not have died in vain. They came from a semi-captive population and the fact that they left the colony proves they haven't lost their migratory instincts,' said Jose Tavares, the RSPB's Country Programme Officer for Turkey. 'The birds flew via Palmyra, in Syria, where a tiny colony hangs on, which means that birds we release from Turkey next year could join the group in Syria.'

The Bald Ibis's migratory habits have baffled conservationists for years but, in 2006, BirdLife and the Syrian Government tracked adult birds from Syria, finding new wintering grounds in Ethiopia. But young birds were never seen on migration and scientists fear that they face unknown threats on an entirely different overwintering route. Sharif Al Jbour, of BirdLife in the Middle East, who found the dead birds, said: 'We know where the adults go but it's crucial we follow the young birds' migration route so that we can protect them in winter and help them return to Turkey and Syria to breed.'

To help solve the mystery, more Turkish birds will be tagged next year and then tracked to see if they join the tiny colony in Palmyra. The tracking project has also raised hopes that a completely wild population can be re-established in Turkey too. www.birdlife.org/extinction

Visible migration of Bitterns

Those with access to an extensive reedbed might well be interested in the results recently published in the French journal *Ornithos* (Vol. 15, No. 3, pp. 181–186) concerning visible migration of Eurasian Bitterns *Botaurus stellaris* in the spring. Although those nesting in Britain are thought to be mainly sedentary, with the young dispersing up to 200 km after fledging, those belonging to the more northerly populations of Europe are long-distance migrants, as their breeding grounds freeze over in the winter. In autumn, particularly if the weather is severe, there is an influx of birds to Britain from the Continent; ringing returns suggest that these come mostly from The Netherlands, Belgium, Sweden and Germany.

Following studies in Bielorussia in autumn and in Italy in spring, where birds were seen leaving reedbeds at dusk and apparently setting off on migration, some serious effort was applied in the springs of 2003 and 2004 at two wetlands in France (the Seine estuary on the English Channel coast and the Vigueirat marshes in the Camargue, both important breeding and wintering areas for the species) to see whether the same behaviour could be observed there. At both sites, observers were not only assessing the number of booming birds at dusk, but were also encouraged to look for signs of migration.

The survey results were impressive, although admittedly incomplete, registering 95 individuals at the Seine in 2003 and 106 at Vigueirat in 2004. Migrants were seen from mid February to mid April, with the majority (90% at the Seine, 77% at Vigueirat) on the move in March. The earliest to leave were 50 minutes before sunset, the latest 58 minutes after sunset, with the peak time for departure being about 31 minutes after sunset, at both sites. Observers noted Bitterns taking off almost vertically from the reeds, uttering a characteristic gull-like call, then circling leisurely over the reedbeds, still calling, for up to half an hour, with more and more birds joining the group. Ultimately, the group of Bitterns would head off together – eastwards in the case of the Seine, between north and east in the case of Vigueirat, implying a final destination in north or east Europe.

Most observed departures took place on evenings with little or no wind and the numbers involved are remarkable, although it is hard to tell whether all the birds were wintering at the sites involved or whether they included migrants from elsewhere. Bitterns are normally thought of as rather solitary, so group migration might be considered surprising, although several other species of heron (e.g. Grey *Ardea cinerea*, Purple *A. purpurea*, Night *Nycticorax nycticorax*) are known to migrate in small groups. The authors (Pascal Provost and Grégoire Massez) suggest that internationally co-ordinated watches at dusk might be a good way of giving us a better idea of quite how many Bitterns there are in Europe in the winter.

(*Contributed by Ken Hall*)

Graham Catley

384. Eurasian Bittern *Botaurus stellaris*, framed by the Humber Bridge, north Lincolnshire, February 2007.

One eighth of Ireland's birds on the critical list

A new report, published in the journal *Irish Birds* by RSPB Northern Ireland and BirdWatch Ireland, has identified alarming declines in a number of bird populations across the island of Ireland. Of 199 species assessed, 25 have been allocated to the 'Red List', which highlights bird populations requiring urgent action to secure their future and includes populations that have declined by over 50% and those that are threatened across the world.

Eleven species have been added to the Red List since the last review, in 1999. Sooty *Puffinus grisens* and Balearic Shearwaters *P. mauretanicus* have been added as species of global conservation concern, while Irish wintering populations of Bewick's Swan *Cygnus columbianus*, Pintail *Anas acuta*, Shoveler *A. clypeata*, and Red Knot *Calidris canutus* have declined by more than half during the last 25 years. These reductions may be linked to climate change, in particular milder winters on the Continent. Golden Eagle *Aquila chrysaetos* has been added to the Red List because it is now re-established as a breeding bird following its historical decline and extinction in Ireland. Breeding populations of European Golden Plover *Pluvialis apricaria*, Common Redshank *Tringa totanus*, Herring Gull *Larus argentatus* and Black-headed Gull *Chroicocephalus ridibundus* have all declined by more than half over the last 25 years.

Four species have been removed from the Red List: both Hen Harrier and Roseate Tern *Sterna dougallii* populations have increased, following past declines (both species appear on the UK Red List), while those of Red-billed Chough *Pyrrhocorax pyrrhocorax* are stable or increasing, although the Corn Bunting *Emberiza calandra* is now extinct as a breeding species, and has not nested in Ireland since 1992.

BirdWatch Ireland's Stephen Newton, a co-author of the report, said of the species on the Red List: 'We will lose many of these birds from our shores if concerted and immediate action is not taken. It is only a few short years since the Corn Bunting went extinct as a breeding species here. Many others are now in danger of following suit. Of particular concern are our seabirds, migratory waterfowl, and farmland birds. Iconic species such as the Barn Owl *Tyto alba*, Corn Crake *Crex crex*, Eurasian Curlew *Numenius arquata* and Yellowhammer *E. citrinella* all face an uncertain future.'

BUBO Listing

If lists are your thing, then you may be interested in an online listing tool called BUBO Listing www.bubo.org/listing, which started off as a fun idea between a few friends but has grown rapidly in popularity. Most users so far are British, but there are also increasing numbers of international users of the site, especially from India, Australia and the USA.

BUBO Listing is entirely free to use. Once you've logged in, you can create lists by selecting region (e.g. British, Western Palearctic, World) and period (life or year). You can also specify self-found only lists if you prefer. You are then presented with a checklist to record your list against; the checklists depend upon the region specified and are all based on published sources (e.g. BOU British list, Clements world list, etc.). Once you've entered a list, you can then compare it with those of other birders. Not only can you see your position in a ranking, you can also use the site to determine your 'top targets', i.e. the species missing from your list that the highest number of other listers have already recorded.

The underlying ethos of the site is one of transparency. With the exception of sensitive records of breeding species, every list entered by every birder is available for everyone else to view.

(*Contributed by Andy Musgrove*)

Lesser Spotted Eagle winners and losers

A Lesser Spotted Eagle *Aquila pomarina* has been satellite-tracked crossing the Strait of Gibraltar. This is the first individual out of 30 satellite-tagged birds that has taken a western route across the Mediterranean, rather than the normal eastern route into East Africa, and this novel migration strategy may have saved the eagle's life. The same research team reported that another of their satellite-tagged Lesser Spotted Eagles has died along the eastern migration route after it was poisoned at a water treatment plant north of Sharm el Sheik, in Egypt.

Prof. Bernd Meyburg said: 'It has been found together with 26 other dead Lesser Spotted Eagles and other birds. I have been informed that the birds have died because they drank polluted water. I have also been informed that a satellite-tracked Black Stork *Ciconia nigra* from Estonia has also been killed there. Apparently, many other raptors and especially White Storks *C. ciconia* are also dead. We spend a lot of money and time in Germany to preserve the last 100 pairs of the Lesser Spotted Eagle and are very concerned about this problem.'

www.Raptor-Research.de

Ringing returns highlight autumn invasion of Kestrels

Several migrant raptors made landfall in the UK this autumn. The easterlies during the early part of the autumn brought a whole raft of vagrants as well as large numbers of Common Redstarts *Phoenicurus phoenicurus* and Pied Flycatchers *Ficedula hypoleuca*, but were also responsible for one of the biggest arrivals of Fennoscandian birds of prey in recent times, involving not just the well-documented movement of Honey-buzzards *Pernis apivorus*, but many Common Kestrels *Falco tinnunculus* too.

In August and September, no fewer than eight Fennoscandian-ringed Kestrels were found along the south and east coasts. They were all picked up in poor condition, with birds being taken to RSPCA centres and raptor trusts. One was even seen following a tractor in its search for food. Since the formation of the Ringing Scheme in 1909, there have been only 19 British recoveries of Kestrels from Norway, 35 from Sweden and 40 from Finland. Kestrels are generally short-distance migrants, but have had a bumper breeding season in both Sweden and Finland this year. With the population thus boosted, young birds in particular may have been forced to move farther than normal.

The arrival wasn't just restricted to Kestrels, with a Norwegian-ringed Peregrine Falcon *F. peregrinus* found in Norfolk (now in care), and two Swedish Ospreys *Pandion haliaetus*. Both Ospreys were found in poor condition, one was discovered dying in Dorset and another was found with a fractured wing in Norfolk. There have been just 16 previous records of Swedish-ringed Ospreys in Britain, with one from Norway and three from Finland.

If you find a ringed bird, you can either report it to the BTO (tel. 01842 750050) or online at www.ring.ac

Pledges to protect raptors signed in the Gulf and Gateshead

Birds of prey received two votes of confidence in late October. An agreement to protect migratory raptors and owls was signed in Abu Dhabi, while the UK's Minister for Wildlife joined a gathering in northeast England, including shooters as well as conservationists, who all signed a pledge to protect England's birds of prey from persecution.

Following a joint initiative by the Governments of the United Arab Emirates and UK, the Memorandum of Understanding will co-ordinate the protection of more than 70 species of migratory birds of prey and owls found in Europe, Africa and Asia. Ibrahim Al-Khader, Head of BirdLife Middle East, said: 'This important agreement will help to ensure that migratory birds of prey and owls have a safer passage during their epic annual journeys.' The new measures will ensure that signatories focus particular conservation efforts on critical 'bottleneck' sites, including those identified as Important Bird Areas by BirdLife.

In Gateshead, another groundbreaking agreement was signed by the RSPB, the British Association for Shooting and Conservation, Natural England and Environment Minister Huw Irranca-Davies among others. The event, co-ordinated by the RSPB, used the Derwent Valley as a backdrop, where the highly successful *Northern Kites* Red Kite *Milvus milvus* reintroduction (the first in an urban area) has taken place.

Dr Mark Avery, the RSPB's Director of Conservation said: 'We know what can be achieved when we get it right and the continuing recovery of Red Kites in England, including here in the Derwent Valley, is a great example. We now need to get it right for other birds of prey like the Hen Harrier *Circus cyaneus*, which is on the verge of extinction in England because of illegal killing.'

The 600th British bird

As 2008 draws to a close, the official British List still stands at 580. However, pending 2007 'firsts' and potential 2008 additions to the list (Citril Finch *Serinus citrinella*, Alder Flycatcher *Empidonax alnorum* and Amur Falcon *Falco amurensis*) could, when coupled with taxonomic revisions, take the list beyond 590 early in 2009.

BOURC's Taxonomic Subcommittee has recently recommended the 'splits' of five species pairs (Black-throated and Pacific Diver *Gavia arctica/pacifica*, Common and Wilson's Snipe *Gallinago gallinago/delicata*, Dusky and Naumann's Thrush *Turdus eunomus/naumanni*, Red-throated and Black-throated Thrush *Turdus ruficollis/atrogularis*, and Greenish/Green Warbler *Phylloscopus trochiloides/nitidus*. This will presumably add five new species to the British List at a stroke.

So the race is on to name the 600th species to appear on the British List! The News & comment sweepstake has had a range of suggestions so far but it's not too late to enter the fray. There may even be a modest prize for the correct guess!

Former N&c stalwart Bob Scott has plumped for Pygmy Cormorant *Phalacrocorax pygmeus* while fellow veteran Eric Meek thinks Semi-collared Flycatcher *Ficedula semitorquata* or Grey-necked Bunting *Emberiza buchanani* could soon complete the set of south-eastern vagrants to arrive in Britain. And who would bet against them landing on Eric's patch in Orkney? Other nominations for the 'UK600' include Eastern Crowned Warbler *Phylloscopus coronatus* and further splits such as Siberian Stonechat *Saxicola (torquatus) maurus*. E-mail your nominations to the N&c address printed inside the cover of *BB*. And a Happy Christmas to all *BB* subscribers – and good birding in 2009.

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mainly new arrivals between early October and early November 2008.

Headlines The rarest (and in some ways the strangest) bird reported here was potentially Britain's first Amur Falcon, in Yorkshire, identified from photographic evidence after the bird had flown. Other main highlights included a very confiding Green-backed Heron in Kent, an equally showy Sociable Lapwing on Scilly and, among a good showing of American passerines, Philadelphia Vireo and Rose-breasted Grosbeak in Co. Clare and two Bobolinks in southwest England. Following the surfeit of rarities in the last two reports, there were still eye-catching numbers of several passerines seen during the period, including ten Olive-backed Pipits, an unprecedented ten Red-flanked Bluetails, five Desert Wheatears, two new White's Thrushes, three Grey-cheeked Thrushes, ten Hume's Warblers and a total of seven Red-eyed Vireos.

Red-breasted Goose *Branta ruficollis* Pennington Marsh (Hampshire), 6th–9th November. **Blue-winged Teal** *Anas discors* Inishmore (Co. Galway), 10th October. **Canvasback** *Aythya valisineria* Nosterfield (Yorkshire), 30th October and 8th November. **Ferruginous Duck** *Aythya nyroca* New arrivals were reported in Essex, Hertfordshire, Leicestershire & Rutland and Somerset. **Lesser Scaup** *Aythya affinis* Appledore (Devon), two, 11th October; Inch (Co. Donegal), 16th October; Hogganfield Loch (Clyde), two, 21st October, with at least one to 9th November; Loch Leven (Perth & Kinross), 22nd October; Holme Pierrepont (Nottinghamshire), 26th October to 8th November; Lough Corrib (Co. Galway), 2nd November; Henley Road GP (Oxfordshire), 3rd November; Helston Loe Pool (Cornwall), 8th–9th November. **King Eider** *Somateria spectabilis* Appledore, 10th October to 9th November; Tugnet (Moray & Nairn), 23rd October; Mousa Sound (Shetland), 29th October to 1st November. **Hooded Merganser** *Lophodytes cucullatus* Tayport (Fife), 26th October to 9th November.

Kevin Durose

385. First-winter Green-backed Heron *Butorides virescens*, West Hythe, Kent, October 2008.

Keith Scovell

386. First-summer male Amur Falcon *Falco amurensis*, Tophill Low, Yorkshire, September 2008.

White-billed Diver *Gavia adamsii* Burniston (Yorkshire), 29th October; Kirkabister, 29th October to 2nd November, with another Bluemull Sound (both Shetland), 2nd November; Newbiggin, one north, presumed same past Hauxley and Bamburgh (all Northumberland), 31st October; Whitburn (Durham), 31st October, with another on 1st November.

Black-browed Albatross *Thalassarche melanophris* Singles flew past Mizen Head (Co. Cork) on 21st October and Uisaed Point (Argyll) on 27th October.

Green-backed Heron *Butorides virescens* West Hythe (Kent), 25th October to 9th November. Cattle Egret *Bubulcus ibis* Among several records from Somerset, the maximum single count was six, at Walton Heath. Other multiple sightings were reported in Sussex (two groups of four), Lancashire & N Merseyside (three), Cambridgeshire (two), Devon (two) and Dorset (two); there were a number of single birds in Cornwall; and other singles in Carmarthenshire, Co. Cork, Cumbria, Oxfordshire, Pembrokeshire and Shropshire. Little Blue Heron *Egretta caerulea* Letterfrack (Co. Galway), long-stayer to 22nd October. Great White Egret *Ardea alba* New arrivals were seen in Co. Cork, Cornwall, Essex, Co. Galway, Greater Manchester, Hertfordshire, Leicestershire & Rutland, Co. Longford, Norfolk, Northamptonshire, Pembrokeshire and Warwickshire. Glossy Ibis *Plegadis falcinellus* Pilmore Strand (Co. Cork), 21st–22nd October; Rainham Marshes (Greater London), 21st October.

Amur Falcon *Falco amurensis* Tophill Low (Yorkshire), from 14th September to 15th October (previously reported as a Red-footed Falcon *Falco vespertinus*).

American Golden Plover *Pluvialis dominica* New arrivals were reported in Anglesey, Cambridgeshire, Co. Clare (two), Co. Cork (two), Cornwall, Lincolnshire, Co. Mayo, Norfolk, Outer Hebrides (three), Oxfordshire and Scilly. Sociable Lapwing *Vanellus gregarius* St Mary's (Scilly), 12th–19th October. Semipalmated Sandpiper *Calidris pusilla* Inishmore, 13th October. White-rumped Sandpiper *Calidris fuscicollis* Reported from Co. Cork (two), Gwent, Co. Mayo, Outer

Tom Tams

387. Adult Sociable Lapwing *Vanellus gregarius*, St Mary's, Isles of Scilly, October 2008.

Hebrides (two or three), Scilly (four or five), and Shetland. Baird's Sandpiper *Calidris bairdii* Burnham Lagoon (Co. Kerry), 7th October; Burnham-on-Sea (Somerset), 20th–21st October; Blackrock Strand (Co. Kerry), 27th October. Wilson's Snipe *Gallinago delicata* St Mary's, 24th October. Long-billed Dowitcher *Limnodromus scolopaceus* Inishmore, 9th–10th October; Dundalk (Co. Louth), 28th October to 2nd November. Lesser Yellowlegs *Tringa flavipes* Christchurch Harbour (Dorset), 11th October; Saltholme Pools (Cleveland), 13th–14th October. Wilson's Phalarope *Phalaropus tricolor* Cley (Norfolk), long-stayer to 16th October.

White-winged Black Tern *Chlidonias leucopterus* Skipwith Common (Yorkshire), 16th October. Forster's Tern *Sterna forsteri* Cruisetown Strand (Co. Louth), 4th October into November.

Snowy Owl *Bubo scandiacus* Scilly, various islands, 29th October to 1st November.

Red-rumped Swallow *Cecropis daurica* Warham Greens (Norfolk), 23rd October. Olive-backed Pipit *Anthus hodgsoni* St Mary's, 12th October; Durleston CP (Dorset), 13th October; Spurn (Yorkshire), 15th October; St Agnes, 20th–23rd October; Gibraltar Point (Lincolnshire), 3rd November; Toab (Shetland), 5th November; Flamborough Head (Yorkshire), 5th

Steve Young/Birdwatch

388. Olive-backed Pipit *Anthus hodgsoni*, St Agnes, Isles of Scilly, October 2008.

Richard Stonier

389. Buff-bellied Pipit *Anthus rubescens*, Bryher, Isles of Scilly, October 2008.

Kevin Durose

390. Red-flanked Bluetail *Tarsiger cyanurus*, Muckleburgh Hill, Norfolk, November 2008.

Graham Catley

391. Female Desert Wheatear *Oenanthe deserti*, Saltfleet, Lincolnshire, November 2008.

November; Bressay (Shetland), 7th November; Fair Isle, 8th November; North Ronaldsay (Orkney), 8th November. Pechora Pipit *Anthus gustavi* North Roe (Shetland), 14th October. Red-throated Pipit *Anthus cervinus* Cape Clear Island (Co. Cork), 12th October; Lundy (Devon), 22nd October; St Agnes, 31st October. Buff-bellied Pipit *Anthus rubescens* North Ronaldsay, long-stayer to 13th October; South Uist, 1st–2nd November.

Waxwing *Bombycilla garrulus* A widespread influx, first apparent in late October, with 25 at Holme (Norfolk), followed by several large flocks in Highland during early November (including 140 Arisaig, 250 Ullapool, 200 Brora and 400 Portree) and up to 80 on Mainland Shetland on 6th November. Smaller numbers were recorded right along east-facing coasts, with small numbers inland and as far west as Ireland.

Red-flanked Bluetail *Tarsiger cyanurus* St Mary's, 21st October, with same/another on 28th October; Muckleburgh Hill (Norfolk), 31st October to 4th November; Ramsgate (Kent), 1st–2nd November; Brancaster (Norfolk), 4th November; Chapel St Leonards (Lincolnshire), 6th November; Blakeney Point (Norfolk), 6th November; Holy Island (Northumberland), 7th–9th November; Saltfleet (Lincolnshire), 8th November; Hollesley (Suffolk), 8th November. Siberian Stonechat *Saxicola torquatus maurus* Out Skerries (Shetland), 10th–12th October; Collafirth (Shetland), 19th–20th October; St Margaret's at Cliffe (Kent), 30th October to 2nd November; Easington (Yorkshire), 1st–6th November; Withernsea (Yorkshire), 1st November. Pied Wheatear *Oenanthe pleschanka* Reighton Sands (Yorkshire), 8th–9th November. Desert Wheatear *Oenanthe deserti* Crosby (Lancashire & N Merseyside), 12th October; Easton Bavents (Suffolk), 4th–9th November; Sandwich Bay (Kent), 7th–9th November; Saltfleet, 8th–9th November; Lynemouth (Northumberland), 9th November.

Steve Young/Birdwatch

392. Grey-cheeked Thrush *Catharus minimus*, St Agnes, Scilly, October 2008.

White's Thrush *Zoothera dauma* Kergord (Shetland), 13th–18th October; Dyce (North-east Scotland), 18th–19th October. Swainson's Thrush *Catharus ustulatus* Galley Head (Co.

Cork), 11th October. Grey-cheeked Thrush *Catharus minimus* St Agnes, 14th and 17th–22nd October, St Mary's, 26th–31st October, Bryher (all Scilly), 4th November. 'Black-throated Thrush' *Turdus ruficollis atrogularis* Holme, 31st October.

Lanceolated Warbler *Locustella lanceolata* Foula (Shetland), 15th October. Paddyfield Warbler *Acrocephalus agricola* Bardsey (Caernarfonshire), 11th October; Lundy, 29th October. Blyth's Reed Warbler *Acrocephalus dumetorum* Norwich (Norfolk), 12th October; St Agnes, 13th, 16th–17th and 21st–29th October; Mizen Head, 31st October to 1st November. Subalpine Warbler *Sylvia cantillans* Bempton (Yorkshire), 31st October to 1st November; Bawdsey (Suffolk), 3rd November. Hume's Warbler *Phylloscopus humei* North Gare (Cleveland), 1st November; Unst (Shetland), 1st–5th November; Lewis (Outer Hebrides), 5th November; Whalsay (Shetland), 5th–7th November; North Ronaldsay, 7th–8th November; St Mary's Island (Northumberland), 7th–9th November; Wells-next-the-Sea (Norfolk), 8th November; Muchalls (North-east Scotland), 9th November; Newbiggin (Northumberland), 9th November; Balmedie (North-east Scotland), 9th November. Radde's Warbler *Phylloscopus schwarzi* St Mary's, two, 11th October; Copeland Island (Co. Down), 12th October; Bish-

Gary Jenkins

393. First-winter 'Steppe Grey Shrike' *Lanius meridionalis pallidirostris*, Grainthorpe Haven, Lincolnshire, November 2008.

John Carter

394. Philadelphia Vireo *Vireo philadelphicus*, Kilbaha, Co. Clare, October 2008.

Gary Thoburn

395. Red-eyed Vireo *Vireo olivaceus*, St Mary's, Isles of Scilly, October 2008.

Gary Jenkins

396. Male Two-barred Crossbill *Loxia leucoptera*, Bilsdale, Yorkshire, November 2008.

opstone Glen (Kent), 12th October; Bolt Head, 12th October, Prawle Point, 12th October, Start Point (all Devon), 16th October; South Gare (Cleveland), 3rd–4th November; Foreness Point (Kent), 4th November; Blakeney Point, 7th November; Easington, 7th–8th November; Scarborough (Yorkshire), 7th November. **Dusky Warbler** *Phylloscopus fuscatus* Spurn, 2nd–6th November; Muckleburgh Hill, 3rd–6th November; Flamborough Head, 3rd–4th November; Bawdsey, 4th November.

Penduline Tit *Remiz pendulinus* Sandwich Bay, 13th October; North Foreland (Kent), 8th November. **Lesser Grey Shrike** *Lanius minor* Rettendon (Essex), 10th–11th October. **Southern Grey Shrike** *Lanius meridionalis* Grainthorpe Haven (Lincolnshire), 7th–10th November. **Rose-coloured Starling** *Sturnus roseus* New arrivals were seen in Cornwall (two), Co. Galway, Kent and Yorkshire.

Philadelphia Vireo *Vireo philadelphicus* Kilbaha (Co. Clare), 13th–14th October. **Red-eyed Vireo** *Vireo olivaceus* Three were on Scilly at the start of the period, on St Agnes to 13th, Gugh to 15th and St Mary's to 13th October. New arrivals were at Land's End (Cornwall), 11th–17th October; Mullet Peninsula (Co. Mayo), 11th October; Wembury (Dorset), 13th October; and St Catherine's Point (Isle of Wight), 18th October. **Arctic Redpoll** *Carduelis hornemanni* North Uist (Outer Hebrides), 12th–13th October; Unst (Shetland), 18th and 20th–21st October; North Roe, 19th October; South Uist, 2nd November. **Two-barred Crossbill** *Loxia leucoptera* Oxenhope (Yorkshire), 29th October; Bilsdale (Yorkshire), 7th–9th November. **Parrot Crossbill** *Loxia pytyopsittacus* Islay, 5th November. **Blackpoll Warbler** *Dendroica striata* St Agnes, long-stayer to 15th October; Marloes Mere (Pembrokeshire), 7th October. **White-throated Sparrow** *Zonotrichia albicollis* Cape Clear Island, 12th–18th October. **Pine Bunting** *Emberiza leucocephalos* Private site, Essex, 24th October. **Rose-breasted Grosbeak** *Pheuticus ludovicianus* Kilbaha, 22nd–23rd October. **Bobolink** *Dolichonyx oryzivorus* Porth Joke (Cornwall), 11th October; St Agnes, 21st October.

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397. White-throated Sparrow *Zonotrichia albicollis*, Cape Clear Island, Co. Cork, October 2008.

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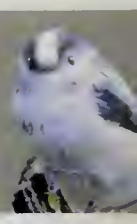

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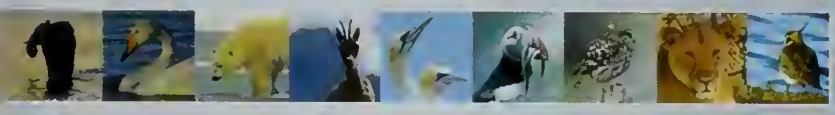

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