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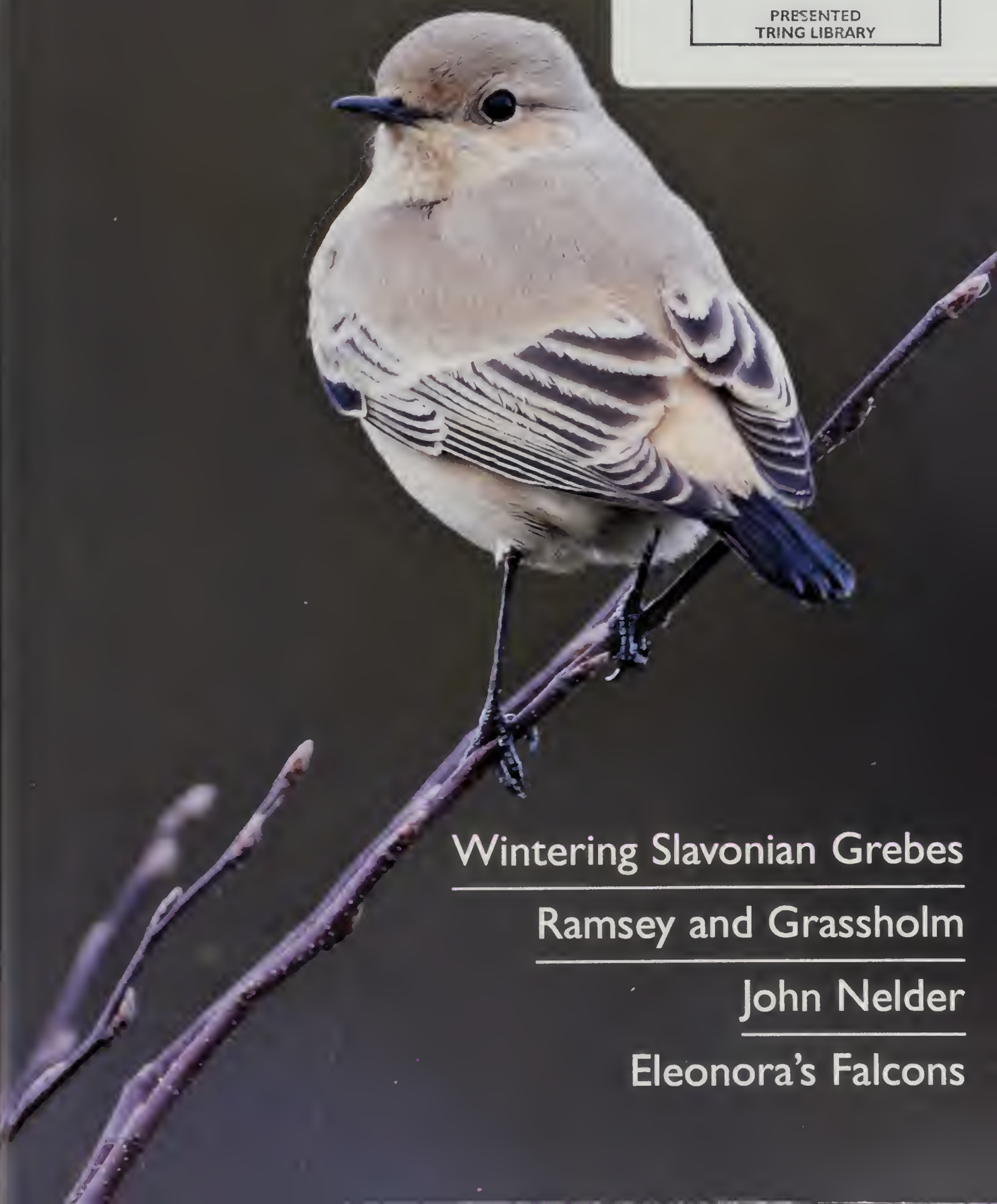

Wintering Slavonian Grebes

Ramsey and Grassholm

John Nelder

Eleonora's Falcons

British Birds Volume 105

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Front-cover photograph: Female Desert Wheatear *Oenanthe deserti*, Abberton Reservoir, Essex, November 2012. *Bill Baston*

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Changes in the wintering population and distribution of Slavonian Grebes in Shetland

Paul V. Harvey and Martin Heubeck

Dan Powell

Abstract In Shetland, wintering Slavonian Grebes *Podiceps auritus* occupy sheltered voes and feed in water depths of less than 20 m over muddy and sandy sediments. Systematic counts found that the wintering population in the islands doubled from just under 100 individuals in 2000/01 to just over 200 in 2011/12; and there is good evidence to assume that it has quadrupled in the past 30 years. In parallel with this increase, Slavonian Grebes now winter in areas where there had previously been no records. This trend is likely to be a result of an increase in the Icelandic breeding population. Recent counts from Shetland, Orkney and the Outer Hebrides indicate that some 600 individuals now winter in these three archipelagos and account for a much greater proportion of the British wintering population (c. 55%) compared with 20 years ago (<20%).

Introduction

The Slavonian Grebe *Podiceps auritus* has a Holarctic breeding distribution, with two subspecies generally recognised (del Hoyo *et al.* 1992). In North America, *P. a. cornutus* breeds from Alaska east through Canada and northern parts of the USA and winters along both Pacific and Atlantic coasts. The nominate subspecies breeds in Iceland, Scotland and from Fennoscandia across to Kamchatka; it winters in European coastal waters, the northwest Pacific, Sea of Japan and Yellow Sea.

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Slavonian Grebes breeding in Iceland, Scotland and northern Norway have larger bills than those breeding to the east of Norway, and have been referred to as subspecies *arcticus* by some authorities (Fjeldså 1973). Measurements of museum specimens suggest that, of these large-billed populations, breeders in northern Norway move farther south along the Norwegian coast in winter. A small number of Icelandic breeders may winter in Iceland, southwest Greenland or the Faroes but most of the population is thought to winter on the coasts of north and west Scotland and northwest Ireland. It is not known where birds from the small breeding population in Scotland winter but it has been assumed that they disperse to local, coastal waters (Fjeldså 1973; Forrester *et al.* 2007). Birds wintering in eastern Scotland, England, Wales and perhaps southeast Ireland are of the small-billed form, breeding in the Baltic region; there is presumably a contact zone between these two forms somewhere in northeast Scotland and the Irish Sea (Fjeldså 1973).

There have been four published estimates of the number of Slavonian Grebes wintering in Britain & Ireland in the past 30 years. Prater (1981) gave a figure of 670, derived from estimates of numbers made by local ornithologists, literature surveys and WeBS (Wetland Bird Survey) data. Chandler (1986) suggested 400 in Britain and 30–40 in Ireland, based on winter atlas fieldwork in 1981–84, and commented that the earlier figure of 670 appeared 'excessive'. Using data collated from county bird reports and other published sources, Evans (2000) estimated a total of 725–730 for Britain & Ireland in 1986/87–1992/93, but indicated that numbers may have increased at some sites since then, while Musgrove *et al.* (2011) estimated 1,100 for Britain alone in 2004–09 using a similar approach.

Slavonian Grebes have been recorded wintering in Shetland since the early nineteenth century (Pennington *et al.* 2004). Attempts to record their distribution and numbers systematically began in the mid 1970s when, in response to oil developments and the threat of inshore pollution, surveys of seabirds and waterfowl wintering in coastal waters were initiated by the Nature Conservancy Council (NCC) and the Sullom Voe Environmental Advisory Group (SVEAG). These surveys continued or were repeated in later years by their successor organisations – Scottish Natural Heritage (SNH) and the Shetland Oil Terminal Environmental Advisory Group (SOTEAG), respectively – and by the Shetland Biological Records Centre (SBRC) and

Mike Lane

410. Winter-plumaged Slavonian Grebe, England, March 2010.

the RSPB. This paper reports on the number of Slavonian Grebes recorded during this period and comments on trends observed.

Survey methods

Their small size and cryptic winter plumage can make Slavonian Grebes hard to detect in unfavourable light and sea conditions. The surveys reported here were begun only on calm mornings but inevitably some counts were made in better conditions than others. Counts were made from boats following standard routes or from land using a telescope at fixed observation points. Boat surveys by SVEAG in the mid 1970s concentrated on Sullom Voe, Yell Sound and the waters between Unst, Yell and Fetlar (referred to here as Bluemull Sound; fig. 1). SOTEAG continued these from 1978/79, and from 1999/2000 extended coverage to the waters of the east-central Mainland (from Bressay north to South Nesting Bay) and around Burra, Trondra and the Scalloway Islands, west of Mainland. Survey routes generally followed the coast at 250 m offshore with the survey boat cruising at 10 knots and 2–3 observers onboard. Until 1998/99, up to 3–4 surveys of Sullom Voe, Yell Sound and Bluemull Sound were made each winter, some in better sea conditions than others. Since 1999/2000 only 1–2 surveys of each of the areas have been conducted each winter, but improved weather forecasting has meant that these were usually in optimal conditions. The boats used have varied over time and between areas, while observer height above sea level has increased from 2 m to 3–4 m. This is not thought to have affected the detectability of Slavonian Grebes significantly, since most were located initially between the boat and the adjacent coastline, which was never more than 250 m away.

All the organisations listed above have conducted counts from land at some stage (see Acknowledgments) and, while geographic coverage has varied between winters, all

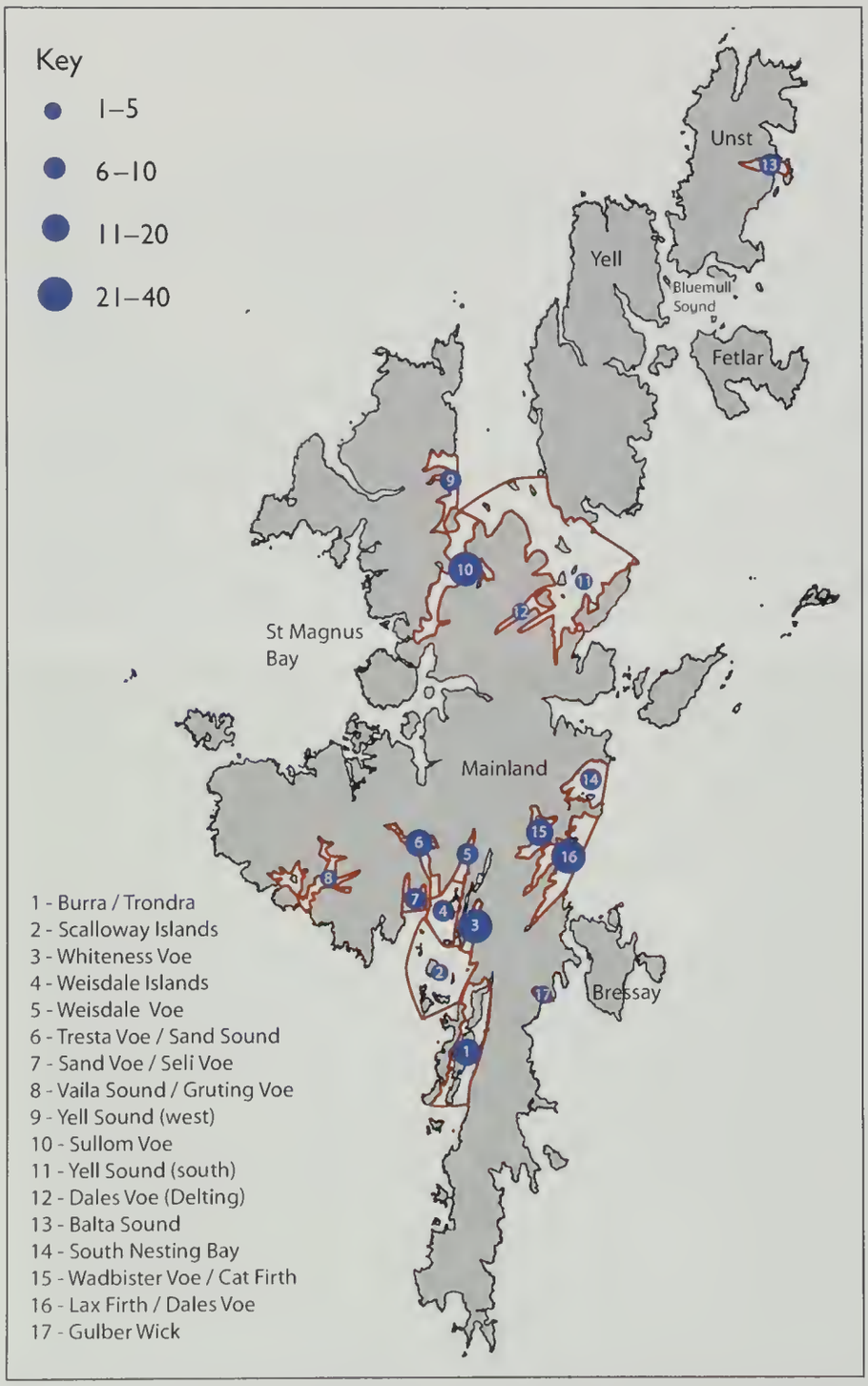

Fig. 1. Map of Shetland showing coasts surveyed during the past decade (red line), Slavonian Grebe wintering locations and numbers in 2011/12.

counts have been made using the same vantage points. The authors have participated in most boat-based and many of the land-based counts since 1978 (MH) and 1986 (PVH). The counts presented here were made between November and early March, and where more than one count was made in a particular area in the same winter, the highest is given.

Roger Riddington

411. Martin Heubeck counting wintering seabirds from *MV Dunter*, Shetland, February 2010. Calm conditions are essential for accurate counts, as are many layers of clothing.

Wintering numbers

Pre-1980/81

The first attempt to census the wintering population was made by Kinnear (1979), who estimated a total of between 50 and 100 individuals, based on counts made from land and by boat in the mid 1970s. The most important wintering sites then were Sullom Voe and Tresta, each regularly holding up to 30–40 birds, with smaller numbers at Dales Voe (Delting), between Cat Firth and Lax Firth, and in Weisdale and Whiteness Voes (Appendix 1). Prater (1981) estimated the Shetland wintering population to be 100 individuals, presumably based on Kinnear's work.

The *Esso Bernicia* oil spill at Sullom Voe Terminal in December 1978 killed an estimated 8–16% of the wintering population of Slavonian Grebes in Shetland (Heubeck & Richardson 1980). That estimate was based on six birds found dead in Sullom Voe and two in Yell Sound; it was surely an underestimate as some corpses will have gone unrecorded on remote and heavily oiled shorelines. Up to 43 Slavonian Grebes were present in Sullom Voe in winter 1976/77, 13 were counted there a month before the spill but none was recorded during boat surveys in late January and February 1979 (and just a single bird was seen on one of three surveys in winter 1979/80). Elsewhere, there were no systematic counts from land in these two winters, but casual observations submitted to the Shetland Bird Club suggested lower numbers in areas unaffected by the *Esso Bernicia* oil than in previous winters.

1980/81–1989/90

One or two Slavonian Grebes were recorded on just four out of 20 surveys of Sullom Voe during the 1980s, while six were found on a survey of the Mainland coast of Yell Sound in February 1983. Although they continued to be reported from known wintering locations in the early 1980s, the impression was of 'exceptionally low' numbers by 1985 (*Shetland Bird Report* 1985), despite three winters of fieldwork for the *Atlas of Wintering Birds* (Lack 1986) and an increasing number of birdwatchers living in Shetland. It seems likely that by 1984/85 wintering numbers in Shetland did not exceed 30 birds. Counts of up to 20 at Tresta in February 1987 and 11 there in December 1987 were the first double-figure winter records anywhere in Shetland in the 1980s, but these numbers were not sustained the following winter when repeated counts of Whiteness Voe, Weisdale Voe and Tresta found a combined maximum of 15 on 6th January 1989 (cf. 31 in 1974/75). Along with the continued low counts in

Sullom Voe, this suggests that the wintering population in Shetland had decreased since the mid 1970s, probably to a low point in the mid 1980s, and that this decrease had occurred in areas unaffected by oil pollution in 1978/79. Some evidence to support the view that numbers in Shetland were at a genuinely very low ebb in the mid 1980s comes from the 1984/85 Winter Shorebird Count, where just 13 Slavonian Grebes were recorded from almost 4,000 km of the coast of west and northwest Scotland, including the Inner Hebrides (Moser *et al.* 1986).

1990/91–1999/2000

Counts from 1990/91 onwards are detailed in Appendix 1. Although the waters from Burra/Trondra north to Tresta were polluted in the January 1993 *Braer* oil spill, no Slavonian Grebes were found dead during extensive beached bird surveys at the time (Heubeck 1997). Most counts in the 1990s were made from land and it is probable that some Slavonian Grebes were missed, particularly in the Burra/Trondra area and from Dales Voe (Lerwick) to Cat Firth. However, these surveys covered all of Shetland's sheltered voes so it is unlikely that any significant concentrations of wintering Slavonian Grebes were overlooked. From 1999/2000, SOTEAG extended its boat-based surveys to cover all stretches of coastline known to be important for grebes, apart from the west-central Shetland voes (fig. 4), which continued to be counted from land.

Evans (2000) gave the mean wintering population in Shetland between 1986/87 and 1992/93 as 38 birds, 5% of the British and Irish total, and suggested that numbers had increased again after a probable decline. Our data indicate little further change during the 1990s, however, with a winter population of 50–60 birds both at the beginning and at the end of the decade (Appendix 1).

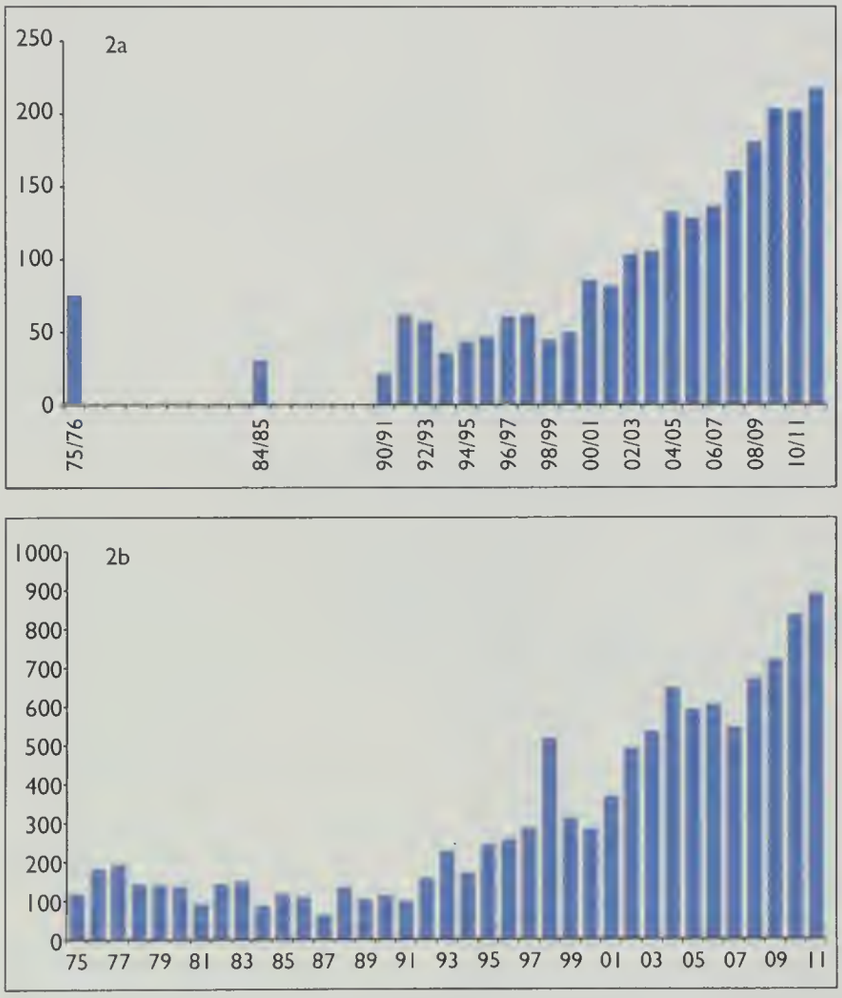

Fig. 2. Estimates of the Shetland wintering population of Slavonian Grebes (2a, see also Appendix 1), and the number of individual Slavonian Grebes recorded on a standardised annual spring count of all wetlands in the Myvatn basin, northeast Iceland, 1975–2011 (2b; source: Myvatn Research Station, A. Einarsson pers. comm.).

2000/01–2011/12

All areas where Slavonian Grebes had previously been found regularly were covered by land- and (mostly) by boat-based surveys in 2000/01, when the estimated Shetland wintering population was 80–100 birds, suggesting a recovery back to the numbers present in the mid 1970s (Harvey & Heubeck 2002). There has been a steady increase since, with 217 birds counted in 2011/12 (Appendix 1; figs. 1 & 2).

In parallel with this increase, small numbers of Slavonian Grebes have begun to winter in areas of Shetland where they had previously been unrecorded or seen only occasionally. Balta Sound (Unst) and Burra and the Scalloway/Weisdale Islands have been used regularly since winter 2001/02, South Nesting Bay

since 2006/07 and Gulber Wick since 2009/10 (Appendix 1; fig. 1), and this appears largely to reflect a process of expansion from core areas into nearby areas of suitable habitat.

Habitat use in Shetland

Work in the southern Baltic found that habitat selection by wintering Slavonian Grebes was significantly influenced by water depth and bottom sediment type (Sonntag *et al.* 2009). The grebes preferred shallow waters, 4–14 m deep, and occurred only over sandy sediments. To investigate habitat use in Shetland, the current distribution of wintering Slavonian Grebes in the islands was, where possible, overlain onto Admiralty charts of inshore waters and maps of marine biotopes (Howson 1999). This revealed that Slavonian Grebes occurred primarily in sheltered voes, in water depths of less than 20 m over sandy or muddy substrates. They are typically encountered in rather predictable locations during survey work, in loose groups of mainly 2–6 individuals.

These habitat requirements might explain some apparent anomalies in their winter distribution in Shetland. For example, the large areas of sheltered water in the voes to the southeast of St Magnus Bay were surveyed from land in the early 1990s and thoroughly by boat in February 2010. The water there is generally deep, with just a narrow coastal fringe of mostly <20 m, and no Slavonian Grebes were found. We believe it most unlikely that any regular sites have gone undetected in recent years, which included four winters of Atlas fieldwork, but if wintering numbers continue to increase then some new areas may be occupied.

Trends elsewhere

According to Musgrove *et al.* (2011), Slavonian Grebes had declined between the early 1990s and 2008/09 in most of the English and Welsh wintering areas and along the Scottish east coast north to the Moray Firth, and they believed that this could relate to declining breeding populations in Sweden and Finland. In contrast, it appeared that numbers had increased in western Scotland, the Outer Hebrides, Orkney and Shetland. Musgrove *et al.* suggested that this increase could, at least in part, be due to improved monitoring in some areas, but the Shetland counts confirm that there has indeed been a genuine increase.

John Coutts

412. An aerial photograph of the coast of west Mainland Shetland on a calm day, looking south from Weisdale Voe and across the area shown in fig. 4. These sheltered, shallow inlets, known as voes, are ideal wintering habitat for Slavonian Grebes.

Shetland's wintering Slavonian Grebes are thought to breed in Iceland, where the population has undergone dramatic change in the past 60 years. Numbers declined from an estimated 1,000–2,000 breeding pairs prior to about 1950 to c. 300 pairs recorded in a national census in 1990–92, with many former sites deserted (Thorarinsson *et al.* 2011). An increase from the early 1990s in the core breeding area around Lake Myvatn (Einarsson 2000) prompted a further census in 2004–05, which located 689 pairs, an increase which has continued since for reasons that are as yet unclear (Thorarinsson *et al.* 2011; fig. 2). This is in contrast to the fortunes of the small Scottish breeding population, which has declined from 70 pairs in the late 1990s to just 22 pairs in 2010 (Holling *et al.* 2012).

A lack of long-term systematic counts (i.e. counts made only in suitably calm conditions rather than on pre-set WeBS core count dates) makes it difficult to assess recent trends in other likely parts of the wintering range of Icelandic breeders. However, the wintering population in Orkney was estimated to be over 300 in 2007 (*Orkney Bird Report* 2008), and 75–100 are considered to winter in the Outer Hebrides at present (S. Duffield pers. comm.), both considerably higher than the mean estimates of 50 and 25 respectively given by Evans (2000). This suggests that the number wintering in Shetland, Orkney and the Outer Hebrides is now in the region of 600 birds, some 55% of the estimated British population, compared with about 120 in the early 1990s, c. 17% of the British population at the time (Evans 2000). Along the west coast of Scotland, excluding the Outer Hebrides, Evans (2000) estimated a maximum wintering total of 106 Slavonian Grebes in the early 1990s. In recent winters, peak non-WeBS counts have totalled over 250 birds at just four sites along this coast: Loch Na Keal, Mull, Argyll, 40 in February 2008; Inner Firth of Clyde, 84 in February 2011; Sound of Gigha, Argyll, 89 in November 2008; Loch Ryan, Dumfries & Galloway, 46 in November 2009 (Holt *et al.* 2011).

The situation is less clear in Ireland. In Northern Ireland, Strangford Loch and Loch Foyle have recently held respective peak counts of 22 (non-WeBS, February 2010) and 60 (WeBS, October 2009), whereas Evans cited respective counts of 30 in March 1992 and 51 in November 1992. The Slavonian Grebe remains a scarce (but probably overlooked) species in the Republic of Ireland, with the only double-figure I-WeBS counts from 2001/02 to 2008/09 at Loch Swilly, Co. Donegal (peak of 42 in January 2006), and Blacksod and Tullaghan Bays, Co. Mayo (peak of 24 in February 2009; H. Boland & O. Crowe pers. comm.). At the same sites there were respective maximum counts of 11 and 13 in the early 1980s (Evans 2000).

Whether Icelandic breeders winter on the east coast of Scotland and, if so, where they overlap with continental breeders remains uncertain. Fjeldså (1973) ascribed two museum specimens from the Moray Firth to the large-billed form '*P. a. arcticus*', while singles from Fife in 1912 and 'Medlothian' (sic) in 1879 (presumably erroneously plotted in the Moray Firth in his fig. 10)

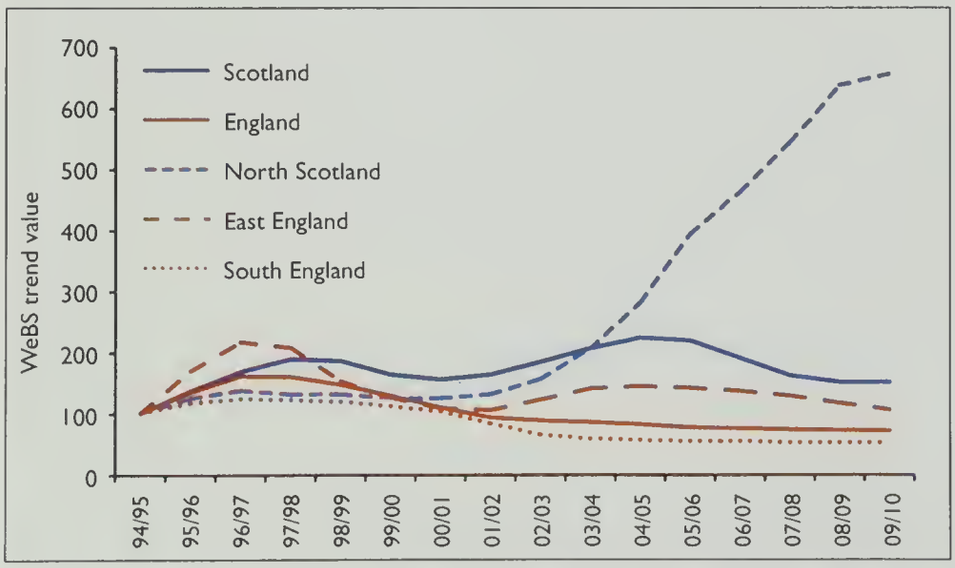

Fig. 3. National and regional indices of wintering numbers of Slavonian Grebes derived from WeBS core counts. North Scotland: Shetland, Orkney, Highland, North-east Scotland. East England: Northumberland to East Anglia. South England: Kent to Cornwall. Source: Chas Holt, BTO.

resembled the small-billed form of *P. a. auritus*. In the Moray Firth, where the situation may be further confused by the presence in winter of a declining number of local breeders, systematic (non-WeBS) counts found mean maxima of 54 birds in 1990/91–1994/95 and 61 in 1998/99–2003/04 (Kaletja-Summers & Butterfield 2006), while WeBS data suggested no subsequent increase (Holt *et al.* 2011).

Regional trends derived from WeBS core counts indicate fluctuating wintering numbers of Slavonian Grebes for Scotland as a whole (fig. 3), but more than a six-fold increase since the mid 1990s in the north of Scotland (North-east Scotland, Highland, Orkney and Shetland). Over the same period, numbers of Slavonian Grebes wintering in England (presumably from the small-billed populations breeding in continental Europe) have declined, particularly along the south coast (fig. 3). The extent to which this reflects population change, or milder winters during which continental birds winter closer to their breeding areas, is unclear.

The Dutch waterbird monitoring scheme shows a marked increase in the Delta region of the Netherlands since the late 1990s (Hornman *et al.* 2012). The origins of this wintering population are not clear but the observed trend could be linked to a shift in the core wintering distribution of birds breeding in Scandinavia and farther east, and perhaps linked with observed declines in southern Britain. Similar climate-driven changes in distribution have been shown for some wader species in northwest Europe (Maclean *et al.* 2008).

In Norway, a national survey of breeding Slavonian Grebes estimated 750–850 pairs in 2007, of which 76% occurred in the northern counties of Nord-Trøndelag, Nordland and Troms (Øien *et al.* 2008). While some local fluctuations could be observed, there were insufficient data to calculate a national trend. Monitoring of the Norwegian wintering population, estimated at 500–1,000 birds for the national winter atlas (Stueflotten 2006), found no national trend from 1980 to 2000 although there had been a significant increase in the southernmost county of Vest-Agder (Lorentsen & Nygård 2001), which Fjeldså (1973) placed in the overlap zone between the large- and small-billed forms. There has been no subsequent published analysis of these winter counts, although the increase in Vest-Agder continued to 2011 (T. Anker-Nilssen pers. comm.). However, in the absence of any ringing or tracking data, the breeding origins of Slavonian Grebes wintering along different parts of the Norwegian coast remain unproven. The Slavonian Grebe remains a scarce wintering species in the Faroes, with no evidence of any recent marked increase in numbers, or of recent breeding colonisation (J-K. Jensen & B. Olsen pers. comm.).

Conservation

The most recent estimate of the British wintering population of Slavonian Grebes is of 1,100 individuals in 2004–09 (Musgrove *et al.* 2011). The authors acknowledged that this may be an underestimate but on the basis of that figure Shetland held 16% of the British total in 2008/09 and possibly 20% by 2011/12. We recommend that targeted coastal surveys are extended to other relevant parts of the Scottish coastline to enable a better understanding of the trends in the internationally important population of Slavonian Grebes wintering in Scotland.

Within Shetland, around 18% of Slavonian Grebes currently winter within a few kilometres of the major oil terminal and gas complex (the latter currently under construction) at Sullom Voe, and while the industry has had an exemplary local record of non-pollution in recent decades, the risk of a pollution incident is ever present. The bulk of the remainder of the population winters in the sheltered voes of west-central and east-central Mainland, with 105 birds counted in 2011/12 between Burra/Trondra and Seli Voe. These inshore waters have been transformed in the last 25 years by aquaculture developments, from the mid 1980s by salmon farming and from 2000 by shellfish farming (principally growing Blue Mussels *Mytilus edulis* on multiple lines of suspended ropes; fig. 4). One exception is Whiteness Voe where, owing to the presence of eelgrass (*Zostera*) beds and on landscape grounds, it has been Shetland Islands Council's policy to exclude aquaculture (as is the case in Sullom Voe, on the grounds of potential oil

pollution), other than two small subsurface sites for King Scallops *Pecten maximus*.

Little or no consideration has been taken of potential impacts on Slavonian Grebes in the licensing process for aquaculture sites, but these could include: disturbance from increased boat traffic (including the use of fast craft to chase Common Eiders *Somateria mollissima* away from mussel lines); physical exclusion from feeding habitat by surface infrastructure that can measure tens of thousands of square metres (grebes avoid swimming between mussel lines); and degradation of the benthos by effluent. Nothing is known about how much movement there is of individual Slavonian Grebes between neighbouring voes in a given winter. However, it is striking that, as wintering numbers increased in the 2000s the relative importance of Tresta (where Works Licences were granted for mussel farms or transferred from fin fish to mussel farms at four sites between 2003 and 2005) diminished from holding an average of 66% of the survey area total in 1999/00–2001/02 to 17% in 2009/10–2011/12. In contrast, that of (aquaculture-free) Whiteness Voe increased, from 23% to 53%, respectively (fig. 5). Given that up to 4% of Britain's wintering Slavonian Grebes now occur in Whiteness Voe, this is another important consideration should any aquaculture development be proposed there in the future.

The Joint Nature Conservation Committee (JNCC) has been undertaking surveys of divers, grebes and seaducks on behalf of the country agencies since 1999/2000. The results from these surveys will help to inform the agencies of sites that might be suitable for designation as marine SPAs under the EC Birds Directive on the Conservation of Wild Birds. The appropriate population threshold for Slavonian Grebes in terms of qualifying under Stage 1 of the UK SPA guidelines is 50 (Stroud *et al.* 2001). The voes of west-central Mainland Shetland, from Burra/Trondra to Seli Voe, in total some 50 km² of sea, have held more than 50 Slavonian Grebes annually since 2002; with 105 birds present in 2011/12 this is now the largest known concentration of the species in the UK (Holt *et al.* 2011). Although further sites of national importance may become apparent once JNCC surveys are

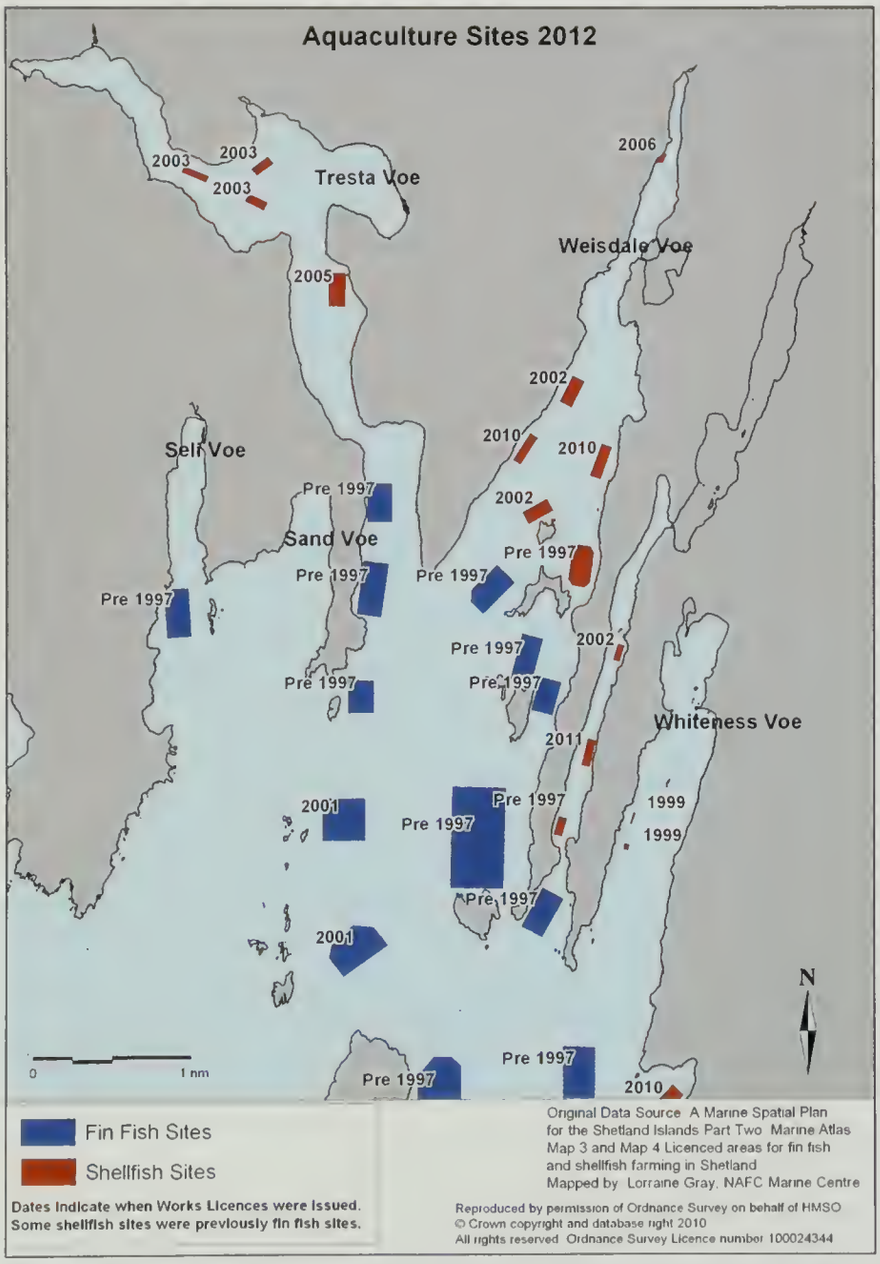

Fig. 4. Map of the west-central Shetland voes showing aquaculture sites and their date of approval.

complete, on the basis of the data available to us we suggest that the area between Burra/Trondra and Seli Voe in Shetland could be considered for designation as a marine SPA now.

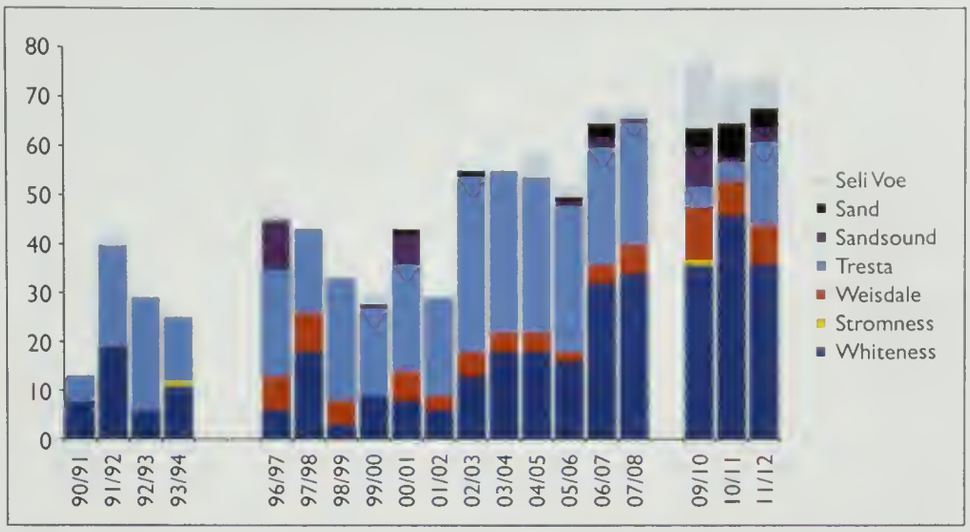

Fig. 5. The number of Slavonian Grebes recorded in different voes during land-based surveys of the west-central Shetland voes, ordered from south to northwest, 1990/91–2011/12. Each survey was completed in a single day.

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Appendix 1. Maximum counts of Slavonian Grebes along selected stretches of Shetland coastline in winter 1974/75 and from 1990/91 to 2011/12.

Note: Counts in parentheses indicate that only part of the coastline was counted in that particular year. 'Most recent count from previous winters' is a figure for areas that were not counted during the winter in question. Thus, the overall total for winter x/y comprises: a) the total counted in winter x/y; plus b) the most recent total from any stretches of coastline not counted in winter x/y.

	1974/75	1990/91	1991/92	1992/93	1993/94	1994/95
Burra/Trondra	0	0	4	0	0	n/c
Scalloway/Weisdale Islands	n/c	n/c	0	0	n/c	n/c
Whiteness to Skelda Voe	31	13	41	29	25	(30)
Vaila Sound to Gruting	0	0	n/c	n/c	n/c	n/c
Balta Sound, Unst	0	0	0	0	0	0
Gluss to Fethaland	1	n/c	0	0	0	0
Sullom Voe	25	2	4	8	5	4
Southern Yell Sound	0	0	0	0	0	0
Lunna to Mioness (inner voes)	4	n/c	2	5	2	4
South Nesting Bay	n/c	n/c	n/c	n/c	0	n/c
Lerwick to Kirkabister	(4)	6	9	14	3	(5)
Bressay	0	0	1	0	0	0
Gulber Wick to Lerwick	0	0	0	0	0	0
Total counted during winter	65	21	61	56	35	43
Most recent count from previous winters	–	0	0	0	0	0
Extrapolated total	65	21	61	56	35	43

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Burra/Trondra	0	n/c	0	n/c	n/c	n/c
Scalloway/Weisdale Islands	n/c	n/c	n/c	n/c	n/c	n/c
Whiteness to Skelda Voe	(34)	46	43	33	30	43
Vaila Sound to Gruting	n/c	n/c	3	n/c	3	n/c
Balta Sound, Unst	0	0	0	0	1	0
Gluss to Fethaland	0	0	0	0	0	3
Sullom Voe	0	4	3	1	0	8
Southern Yell Sound	n/c	0	1	0	0	0
Lunna to Mioness (inner voes)	6	5	7	3	0	n/c
South Nesting Bay	n/c	0	n/c	n/c	0	0
Lerwick to Kirkabister	(6)	5	4	(4)	15	28
Bressay	n/c	n/c	0	n/c	0	n/c
Gulber Wick to Lerwick	n/c	n/c	0	n/c	n/c	n/c
Total counted during winter	46	60	61	41	49	82
Most recent count from previous winters	0	0	0	3	0	3
Extrapolated total	46	60	61	44	49	85

	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07
Burra/Trondra	5	(3)	2	2	3	n/c
Scalloway/Weisdale Islands	2	n/c	4	6	5	n/c
Whiteness to Skelda Voe	29	55	55	59	52	67
Vaila Sound to Gruting	9	n/c	n/c	n/c	n/c	n/c
Balta Sound, Unst	3	1	3	0	1	1
Gluss to Fethaland	0	n/c	0	n/c	n/c	n/c
Sullom Voe	8	6	6	13	7	10
Southern Yell Sound	0	0	0	0	0	0
Lunna to Mioness (inner voes)	5	n/c	9	n/c	n/c	n/c
South Nesting Bay	0	0	0	0	0	3
Lerwick to Kirkabister	20	24	17	34	42	29
Bressay	n/c	0	n/c	0	0	n/c
Gulber Wick to Lerwick	0	0	n/c	0	0	n/c
Total counted during winter	81	89	96	114	110	110
Most recent count from previous winters	0	16	9	18	18	26
Extrapolated total	81	105	105	132	128	136

	2007/08	2008/09	2009/10	2010/11	2011/12
Burra/Trondra	0	(10)	5	n/c	20
Scalloway/Weisdale Islands	4	n/c	14	n/c	11
Whiteness to Skelda Voe	69	n/c	77	73	74
Vaila Sound to Gruting	6	n/c	5	n/c	3
Balta Sound, Unst	3	5	5	4	6
Gluss to Fethaland	8	n/c	(5)	n/c	7
Sullom Voe	19	26	31	18	29
Southern Yell Sound	0	0	0	5	3
Lunna to Mioness (inner voes)	9	n/c	9	n/c	5
South Nesting Bay	4	4	5	5	8
Lerwick to Kirkabister	38	39	44	56	49
Bressay	0	n/c	1	n/c	0
Gulber Wick to Lerwick	0	n/c	2	n/c	2
Total counted during winter	160	84	203	161	217
Most recent count from previous winters	–	96	–	41	–
Extrapolated total	160	180	203	202	217

The bird populations of Ramsey and Grassholm

Greg Morgan

Richard Allen

Northern Gannets around the island of Grassholm

Abstract The year 2012 marks 20 years of RSPB ownership of Ramsey Island, Pembrokeshire, while 2013 marks the 65th anniversary of the purchase of Grassholm. Ramsey is currently better known for its Red-billed Chough *Pyrrhocorax pyrrhocorax* population, which continues to thrive on this diverse island, but the eradication of Brown Rats *Rattus norvegicus* in 1999/2000 means that the island's previously suppressed burrowing seabird populations are slowly recovering. Ramsey's Manx Shearwater *Puffinus puffinus* population in particular has undergone a significant increase as a result. Grassholm supports the fourth-largest Northern Gannet *Morus bassanus* colony in the world. This paper describes the changes in bird populations on both islands during the period of RSPB ownership.

Introduction

This year, 2012, marks the 20th anniversary of the RSPB's purchase of Ramsey Island, while 2013 will mark the 65th anniversary of the Society purchasing nearby Grassholm Island. Ramsey lies off the north Pembrokeshire coast, close to St David's and separated from the mainland by the notorious Ramsey Sound. The island is aligned north–south, 2.5 km long and just 500 m wide at the narrowest point, and covers some 260 ha. The higher of its two summits is Carn Llundain (136 m), the western slopes of which produce some of the highest sea cliffs in Wales. To the northwest of Ramsey is a string of small islets known as the Bishops and Clerks, which also come within the RSPB's reserve boundary. Ramsey lies about 10 km north of neighbouring Skomer and 13 km north of Skokholm, both well known for

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their internationally important seabird populations. Together with Grassholm to the west, all these islands are encompassed within the Pembrokeshire Marine Special Area of Conservation (SAC).

The name Ramsey is of Norse origin and the original *Hrafrens-ey* probably translates as 'Ravens Island' or 'Garlic Island'. Both Common Ravens *Corvus corax* and wild garlic (Ramsons) *Allium ursinum* occur on the island to this day. The Welsh name of Ynys Dewi dates back to the sixth century and translates as 'David's Island', named after the patron Saint of Wales, who was based in the eponymously titled smallest city in the UK.

Centuries of agriculture have sculpted the landscape that visitors to Ramsey see today. The principal vegetation types on the island are maritime grassland, improved grassland and maritime heath. In the north of the island, the grassland is rich in invertebrates, which makes it particularly attractive for Red-billed Choughs *Pyrrhocorax pyrrhocorax*. Ramsey supports up to nine breeding pairs of Choughs, around 3.5% of the Welsh and 1.8% of the UK population (Johnstone *et al.* 2007). The heathland in the south of the island is some of the finest in Pembrokeshire and is managed through livestock grazing and occasional burning. It supports an important population of dung beetles (Scarabaeidae) and provides breeding habitat for Short-eared Owls *Asio flammeus*, Skylarks *Alauda arvensis*, European Stonechats *Saxicola rubicola* and Linnets *Carduelis cannabina*. It also supports one of the last regular breeding populations of Northern Lapwings *Vanellus vanellus* in Pembrokeshire and an important population of Northern Wheatears *Oenanthe oenanthe*. Ramsey attracts good numbers of common and scarce migrants in spring and autumn, and vagrants have included Yellow-rumped Warbler *Setophaga coronata* in October 1994 and Britain's first Indigo Bunting *Passerina cyanea* in October 1996.

The RSPB purchased Ramsey from private owners in 1992. For more than a century prior to that, Ramsey had a relatively small burrowing seabird population compared with neighbouring islands, largely because of the presence of Brown Rats *Rattus norvegicus* and feral cats *Felis catus*. The cats were gradually removed through the 1990s and rats were eradicated in winter 1999/2000. As described below, this has had a significant impact on the breeding populations of ground-nesting birds.

Janet Baxter

413. Ramsey Island, with the Bishops and Clerks to the northwest, September 2009.

Grassholm lies 11 km southwest of Ramsey and is just 9 ha in size. The island is volcanic in origin and is composed of basalt from Silurian lava flows. Most of the island's vegetation is now gone, scorched by the enrichment of guano from the expanding Northern Gannet *Morus bassanus* population. What remains is largely maritime grassland although in summer a lush carpet of Babington's Orache *Atriplex glabriuscula* carpets the valley floor between the north and south gut (inlet), while a thick stand of Tree-mallow *Lavatera arborea* acts as a potential magnet for migrants (Morgan 2012). The name 'Grassholm' is also of Norse derivation, probably from *Graes-holm* – 'green' or 'grassy' island, a reference to the days before Gannets colonised. In Welsh it is 'Ynys Gwales', roughly translated as 'sanctuary' and perhaps a hint at previous settlement. Sheep are known to have been grazed on the island (Howells 1968) but, in the absence of fresh water, it is unlikely that humans would have lived there on anything other than a seasonal basis. No other mammals have been recorded on the island.

The first known estimate of the breeding Gannet population of Grassholm is of 12 pairs in 1872 (see Howells 1968). When the RSPB purchased Grassholm, in 1948, the population stood at around 7,000 pairs but by 2009, when the last full census was carried out, numbers had risen to just under 40,000 pairs (Murray 2009). Grassholm is thus the fourth-largest Northern Gannet colony in the world – behind only Bonaventure, in Quebec (Canada), St Kilda, in the Outer Hebrides, and Bass Rock, Lothian – and accounts for approximately 15% of the British and Irish (and 9% of the world) population of this species (Murray 2009).

Both Ramsey and Grassholm carry the following statutory designations: Site of Special Scientific Interest, National Nature Reserve, Special Protection Area and Important Bird Area. Both islands are part of a Marine Special Area of Conservation and part of the Pembrokeshire Coast National Park. In 2013 CCW is planning to extend the SPA boundary around Grassholm by 2 km out to sea.

Focusing mainly on seabirds, this paper will look at both Ramsey and Grassholm, summarising what is known of their ornithological history, current seabird population trends and what the future might hold. Some 11 species of seabird breed on Ramsey and its associated islets, while nine species breed on Grassholm.

Voyages of Discovery

Janet Baxter

414 & 415. Grassholm in 1976, with c. 20,000 Northern Gannet nests, compared with the situation in 2009, when the population had doubled, to 39,292 AON.

Ramsey and its off-islands

The first full census of seabirds on Ramsey took place in 1965, when the then owner allowed the RSPB to station a warden on the island for the summer. Such an arrangement occurred periodically up to 1977 and a systematic list was produced each year that a warden was present. Prior to this there are few quantifiable data for comparison. The first reference to seabird numbers on Ramsey is from Mathew (1894), in which the descriptive narrative provides an indication of what seabird populations in Pembrokeshire might have been like at that time. Terms such as 'great numbers' in relation to Kittiwakes *Rissa tridactyla* and 'extraordinary numbers' for Common Guillemots *Uria aalge* and Razorbills *Alca torda* leave the reader assuming that populations of these species were healthy. Lockley (1948) included further references to seabird numbers.

Since 1992, systematic seabird monitoring has been carried out by RSPB staff, following the methods set out in Walsh *et al.* (1995). The island is divided into sections and the majority of counts are made from land. The Bishops and Clerks are counted by boat. Whole-island counts for most species were carried out annually until 2002, then on a five-yearly basis for auks and large gulls. Manx Shearwaters *Puffinus puffinus* are monitored on a five-yearly basis, European Storm-petrels *Hydrobates pelagicus* (hereafter 'Storm-petrels') every third year. The last full survey for all species took place in 2012 (except for large gulls and the Storm-petrel, both due in 2013). Manx Shearwaters have been monitored using playback methodology in three full surveys since 1999. Site-specific response rates were calculated in 1999 and 2012 and full counts of suitable burrows were carried out in both those years. The results were analysed following the methodology set out in Smith *et al.* (2001). Storm-petrels have been monitored on the North Bishop and Carreg Rhoson, in the Bishops and Clerks, also using playback methods.

The eradication of rats and feral cats from Ramsey

It is not known exactly when Brown Rats became established on Ramsey but historical references to the numbers of Puffins *Fratercula arctica* on the island (see Lockley 1948) suggest it may have been between the early 1700s and late 1800s, by which time rats were

Table 1. Seabird numbers on Ramsey and the Bishops and Clerks, 1993–2012.

	Count unit	Total 1993 population (Bishops and Clerks total)	Total 2012 population (Bishops and Clerks total)	Range	% change between 1993 and 2012
Fulmar *Fulmarus glacialis*	AOS	216 (0)	284 (4)	215–321	+31%
Manx Shearwater *Puffinus puffinus*	AOS	849[1] (0)	3,835 (0)	849–3,835	+352%
European Storm-petrel *Hydrobates pelagicus*	AOS	102 (102)[2]	152 (147)[4]	100–155	+52%
Shag *Phalacrocorax aristotelis*	AON	12 (6)	15 (5)	12–41	+25%
Lesser Black-backed Gull *Larus fuscus*	AON	255 (52)	206 (6)[3]	221–387	-19%
Herring Gull *Larus argentatus*	AON	205 (57)	277 (75)[3]	196–387	+35%
Great Black-backed Gull *Larus marinus*	AON	16 (12)	25 (12)[3]	16–47	+56%
Kittiwake *Rissa tridactyla*	AON	416 (0)	175 (0)	137–489	-58%
Common Guillemot *Uria aalge*	Individuals	2,091 (0)	4,204 (39)	2,091–4,204	+101%
Razorbill *Alca torda*	Individuals	936 (0)	1,482 (125)	936–1,783	+58%
Puffin *Fratercula arctica*	Individuals	28 (28)	54 (54)	28–54	+93%

[1] 1999 survey, [2] 1995 survey, [3] 2008 survey, [4] 2010 survey
AOS = Apparently Occupied Site; AON = Apparently Occupied Nest

certainly present (Mathew 1894; Howells 1968). The source is likely to have been the many shipwrecks that occurred around Ramsey's coast in that period (Howells 1968). The arrival of rats almost certainly led to the loss of the Puffin as a breeding species on Ramsey and (although never recorded during this time) perhaps the Storm-petrel too. Cats were introduced at varying points in the island's history in an effort to contain the rats. Predictably, feral cats gradually became a problem too but were successfully trapped and removed from the island through the 1990s. One of the initial management priorities when the RSPB secured the island was the removal of introduced mammalian predators and funds to eradicate the rats were secured by 1999. In autumn of that year bait stations were positioned on a 50-m grid across the main island and offshore islets. Bait stations were 50-cm lengths of corrugated plastic drainage pipe, slightly raised at either end and staked into position. The poisoning programme began in early January 2000 using difenacoum, a second-generation anticoagulant. Death usually occurred 3–10 days after a lethal dose thus avoiding bait shyness. Bait stations were checked and replenished daily. In total, 165 kg of bait was used and 'zero bait take' was achieved on 22nd February, seven weeks after poisoning began. Poison was present in bait stations until mid March but no more bait was taken (Bell *et al.* 2000). Monitoring sites were established using chew sticks and extreme vigilance continues today with the addition of ink traps and permanent traps around possible entrance points. No signs of rats have been detected since 2000 and robust quarantine measures are in place to minimise the risk of reintroduction.

The response of key species to the removal of rats from Ramsey

Manx Shearwater

Approximately 90% of the world population (338,000–411,000 pairs) breeds in Britain & Ireland, with the Pembrokeshire islands of Skomer (102,000 pairs in 1998), Skokholm (46,000 pairs in 1998) and Middleholm (3,000 pairs in 1998) accounting for around 40% of the world population (Smith *et al.* 2001; Mitchell *at al.* 2004). Perhaps unsurprisingly then, following the removal of rats from Ramsey, the population of Manx Shearwaters on the island has increased dramatically.

In 1993 the Ramsey population was crudely estimated at 500–1,000 pairs, based on signs of activity outside burrows in areas where birds were heard calling at night. In 1999, the first full survey took place, using methods set out in Smith *et al.* (2001). A full count of all suitable burrows (i.e. more than 0.7 m in length and not doubling back to the surface) revealed 13,800 such burrows. The island was divided into 42 sections and a recording of the calling male was played at 20% of all burrows in all sections. The total number of responses was 74, which was extrapolated, using a site-specific correction factor, to an island population estimate of 849 pairs (Humpidge & Bullock 1999). In 2007, the number of responses had risen to 208 from the 20% of burrows sampled, giving a population estimate of 2,387 pairs (Morgan & Morgan 2008). In winter 2011/12, the number of suitable burrows was recounted, revealing 12,302, and the species was resurveyed in June 2012. A total of 402 responses was extrapolated to an estimate of 3,835 pairs via an updated correction factor for the island (Morgan & Morgan in press; fig. 1).

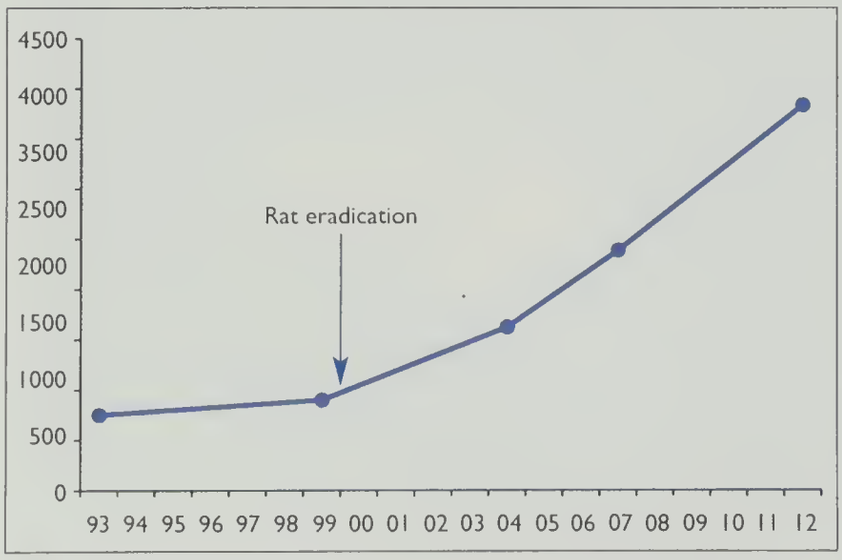

Fig. 1. Breeding pairs of Manx Shearwaters on Ramsey Island, 1993–2012 (surveys in five years during this period).

These figures represent a 350% increase between 1999 and 2012. A similar pattern was observed on Lundy (Devon), following a rat eradication project in 2004 (Brown *et al.* 2011). As on Lundy, it is assumed that although some of the increase on Ramsey will have occurred through improved productivity, given that this species does not begin to breed until it is five or six years old (Brooke 1990), there must be a degree of immigration from neighbouring colonies, probably the massive ones on Skomer and Skokholm. It may be the case that these two islands are at 'burrow saturation' point but the movement of birds to other colonies is perhaps to be expected given work on Skokholm in the 1970s, where it was estimated that around half the females raised there emigrate and, if they survive, eventually breed elsewhere (Brooke 1990).

Dave Boyle

416. Manx Shearwater at a burrow entrance on Skomer. There were nearly 4,000 pairs breeding on Ramsey in 2012, an increase from <1,000 pairs in just 12 years following rat and feral cat eradication.

The 2012 Ramsey survey showed that the greatest increases occurred within the larger of the existing subcolonies but there was also evidence of expansion to new areas – nine sections that yielded a zero response in 2007 contained breeding birds in 2012. The maps in fig. 2 illustrate the changes over the 12-year interval since rat eradication. They also show how the burrows are concentrated

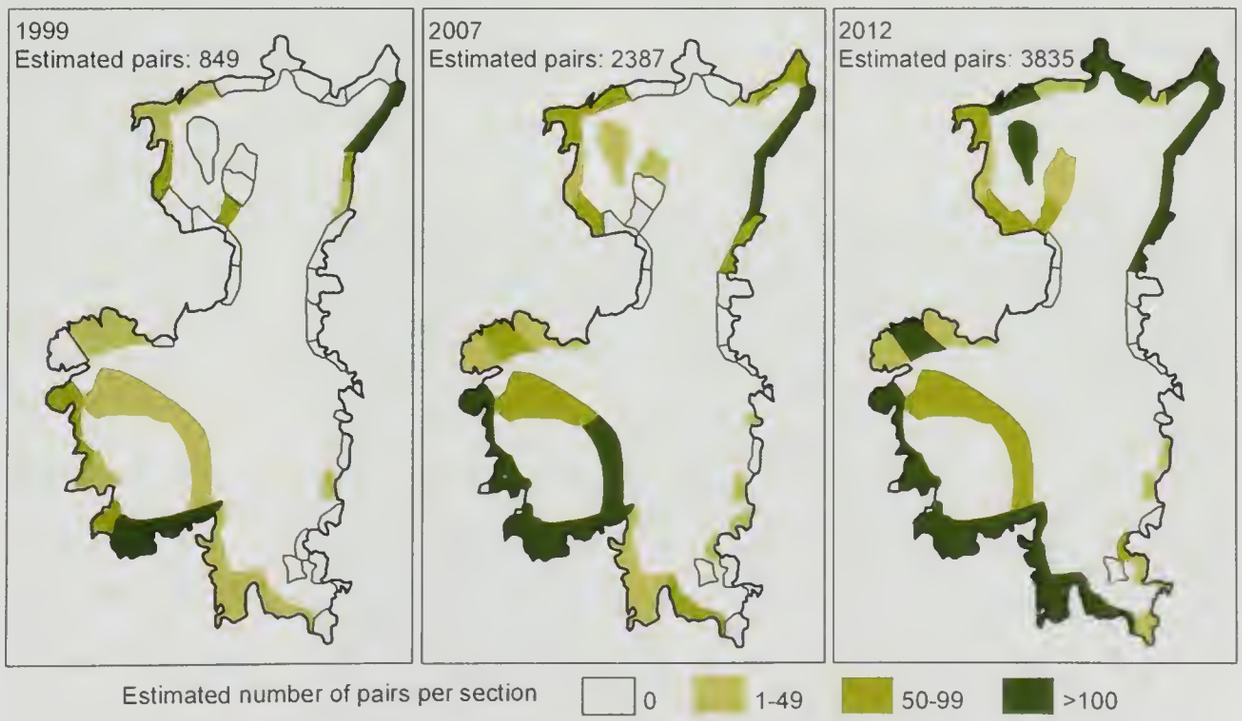

Fig. 2. Ramsey Island Manx Shearwater breeding density maps from the full surveys in 1999, 2007 and 2012. The increase in, and spread of, the island's Manx Shearwater population following the rat eradication programme in winter 1999/2000 is obvious.

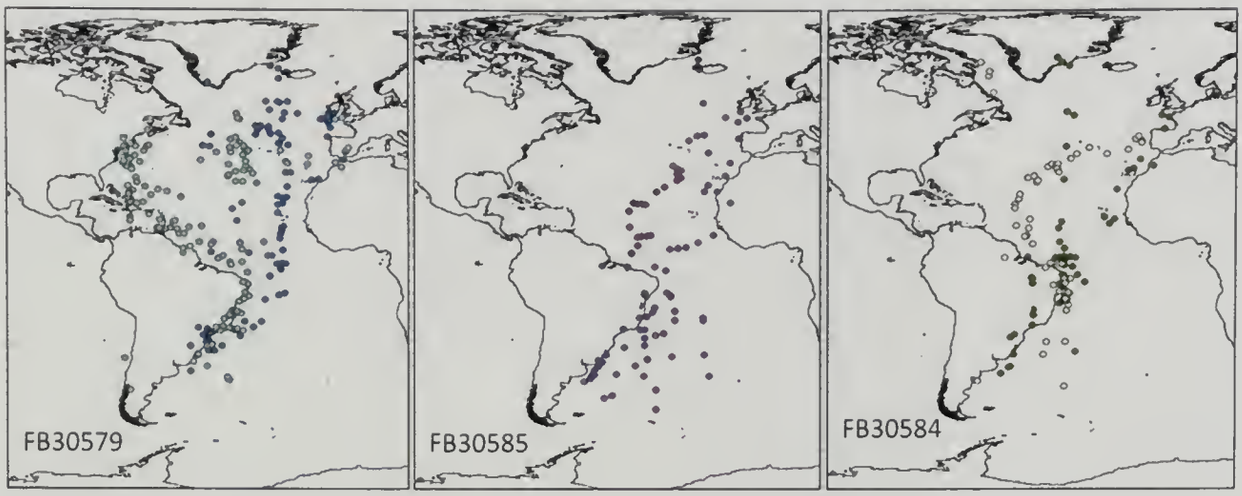

Fig. 3. Migration routes from three individual Manx Shearwaters from Ramsey fitted with geolocators. One bird is represented by each panel, with the southbound migration being shown in a darker colour than the northbound migration (Kirk *et al.* 2011). Note that the error margins associated with estimating latitude and longitude from simple light-level geolocators mean that some fixes erroneously appear inland.

around the coast in the deeper soils, mainly associated with open, Thrift *Armeria maritima*-dominated vegetation communities, but with a significant number occupying areas with Bracken *Pteridium aquilinum*.

Away from the coast of Ramsey, there is little opportunity for the shearwaters to spread inland, as they do on Skomer and Skokholm: in the north of the island, the soils are thin; the central area is damp, with many ponds; and the southern part of the island contains locally important heathland. However, the restoration of drystone walling on the island, resulting in over 8 km of these walls, has doubtless provided more nest-sites. Similarly, many former rabbit warrens with pre-existing burrows could potentially be colonised, so it is possible that expansion of Ramsey's Manx Shearwater population will continue for some years yet.

Since 2009, the OxNav Group from Oxford University has been working on Manx Shearwaters on Ramsey. This is part of a wider, long-term study into the movements and behaviour of the species using colonies across the main breeding range – Skomer, Rum, Copeland, Lundy and now Ramsey (Guilford *et al.* 2008). The shearwaters on Ramsey offer a rare opportunity to study in detail a species' response to a known significant environmental change – the removal of mammalian predators. A fundamental question is how populations can respond to such an event, which may or may not allow compensation for other pressures (changing climate, for example) that may be having a more negative impact. The Ramsey shearwaters appear to be recovering more rapidly than expected (a similar situation exists on Lundy) and a key aim of the Ramsey project is to try to determine whether the birds' recovery is fuelled by immigration, or whether there are also concomitant changes to breeding phenology (such as breeding at an earlier age or greater tolerance in the timing of breeding, because of lower within-colony competition). The work so far has used a combination of ringing pulli at a study colony, to try to establish whether birds are returning to breed earlier than at well-established colonies, and the deployment of geolocators on adult birds to monitor migratory phenology, at-sea behaviour, and, using the combination of immersion and light data, activity routines during breeding itself. Examples of the results of these studies can be seen in fig. 3, which shows the migration routes of three individual Manx Shearwaters.

European Storm-petrel

The Bishops and Clerks have probably supported breeding Storm-petrels for many years, although there is no documented evidence. In 1995 an estimated 102 AOS were found on the two main islets of North Bishop and Carreg Rhoson (Bullock 1995). The next full census, in 2010, estimated a total of 147 AOS (Morgan 2010). However, Storm-petrels were confirmed as breeding on Ramsey for the first time in July 2008. Since then, a total

of seven individual sites have been identified, with chicks heard calling from most, thus confirming breeding. As has been the case with the Manx Shearwater, the removal of ground predators looks set to have a major impact on the population, and for both species Ramsey's drystone walls present nest-site opportunities.

Greg Morgan

417. Nest-site of the first European Storm-petrel recorded breeding on Ramsey Island, in 2008. The nest chamber was within the deep vertical crack, the entrance shown by the arrow.

Puffin

The earliest record of Puffins on Ramsey comes from 1717 when a St David's Cathedral Survey described them as 'breeding commonly on Ramsey' (Lockley 1948). By 1894 the species was confined to a 'colony at the north end' (Mathew 1894), by which time that author also observed that 'rats abound'. There are a few breeding records thereafter but the species had been reduced to 'an odd pair or two in inaccessible cliffs' by the 1940s (Lockley 1948). The decline clearly coincides with the arrival of rats (Howells 1968). Puffins do breed on North Bishop, some 3 km northwest of Ramsey, and the estimate of 30–40 pairs on the islet has remained stable since 1992.

Will Puffins follow the lead of the Storm-petrels and recolonise Ramsey? There is clearly hope. Of the trio of burrow-nesting seabirds, Manx Shearwaters, unlike Storm-petrels and Puffins, managed to cling on in small numbers during the 'rat years', perhaps because of considerable immigration from nearby colonies. The nearby Puffin colonies are relatively small – around 6,000 pairs on Skomer and 2,500 on Skokholm – compared with the pool of Manx Shearwaters, so a slower response to predator removal was perhaps to be expected. There was a noticeable absence of Puffin records away from the Bishops and Clerks in the Ramsey

Greg Morgan

418. North Bishop – home to European Storm-petrels and Puffins. This is the northernmost of the Bishops and Clerks archipelago and lies around 3 km northwest of Ramsey.

Greg Morgan

419. Some 200 foam-filled plastic Puffin decoys have been set out on Ramsey to replicate the appearance of a busy colony in an effort to attract non-breeding birds loafing nearby to the island.

log during the first decade of RSPB ownership and it was not until 2009 that an increase in the numbers of birds coming close in to the main island was noted. Increasing numbers of birds were noted during 2011 and 2012 and since 2010 decoys have been employed to try and lure potential colonisers onto land (plate 419).

Other seabirds

In 2012 the total count of Common Guillemots for the archipelago was 4,204 individuals (table 1), the highest on record, and this represents a steady increase since 1992 (fig. 4). It is difficult to compare modern counts with older ones, but converting the counts of 'pairs' from past years suggests that the number of individuals was in the range 623–1,187 during 1966–73. Today nearly 90% of the population is concentrated on two 100-m cliffs that form the west side of Carn Llundain, on Ramsey. The remainder are scattered around the west and south coasts of the island in small subcolonies, with <1% on the Bishops and Clerks.

About half of Ramsey's Razorbills are concentrated on the two large cliffs on the west of Carn Llundain that hold most of the Guillemots, with the rest spread along the west, south and east coasts, and on the Bishops and Clerks (8%). In 2012, the total was 1,482 individuals, a slight decline from the peak of 1,783 in 2001 (table 1, fig. 4). The Razorbills are more difficult to monitor than the Guillemots, however, with birds often breeding in deep cracks or under boulders, and there will inevitably be some variation due to birds missed in some years. Counts in the 1960s and 1970s suggest a range between 189 (1969) and 1,110 individuals (1973).

Kittiwakes on Ramsey have gradually declined over the past 20 years, which mirrors the Kittiwake's fortunes across the UK as a whole. Productivity over that period has fluctuated greatly, with several years when no chicks were fledged alternating with better years (mean productivity over 15 years since 1995 is 0.48 chicks per occupied nest).

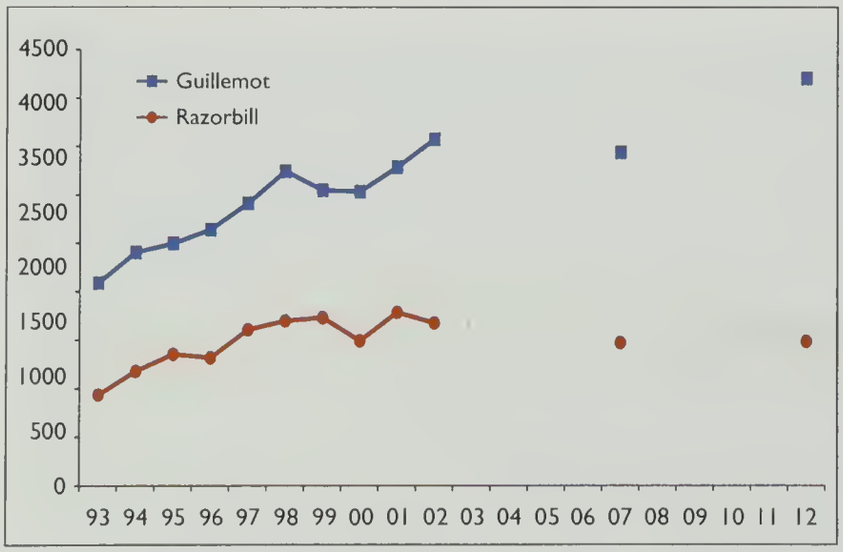

Fig. 4. Changes in whole-island counts of Common Guillemots and Razorbills on Ramsey and Bishops and Clerks since 1992 – counts are number of individuals.

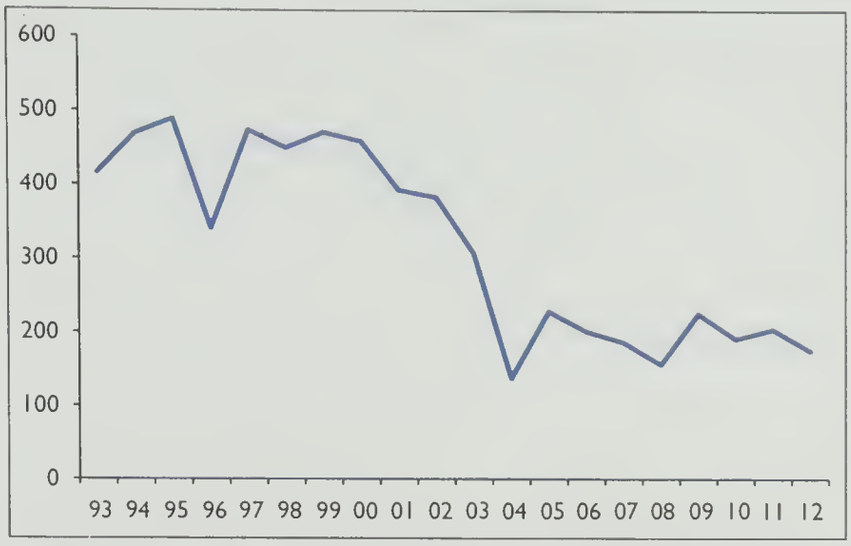

Fig. 5. Whole-island counts of Kittiwakes (AON) on Ramsey, 1993–2012.

Counts in the 1960s and 1970s give a peak count of 473 AON in 1973.

Key breeding landbirds on Ramsey, 1993–2012

Some 45 species of birds have been recorded breeding on Ramsey since 1992 (see Appendix 1). Two species are on the Welsh Red List: Skylark and Linnet (Johnstone *et al.* 2011). Skylark numbers have fallen over this period, from a peak of 28 pairs in 1995 to 13 pairs in 2012 (and were as low as nine pairs in 2008). Linnets have increased, from a minimum of seven pairs in 1993 to 40 pairs by 1999 and to 78 pairs in the last full survey in 2011. Northern Wheatears have also fared well and seem to have benefited from the rat eradication project (fig. 6). The restoration of drystone walling on the island between 1998 and 2008 has doubtless provided more nest-sites for this species; in the early years of that project, freshly predated nests were a common sight for the stone-walling team (Derek Rees pers. comm.), whereas now the sight of second and sometimes third broods are the far more welcome story. The population has been over 100 pairs for the past four years (2009–12) and, at a breeding density of one pair every 2 ha, Ramsey has possibly one of the densest breeding populations of Northern Wheatears in Wales.

The presence of Red-billed Choughs was one of the primary reasons for the RSPB's acquisition of Ramsey in 1992. Eight pairs bred on the island in 1993, and the population has fluctuated between five and nine breeding pairs since (fig. 7). Numbers are unlikely to increase further, since the island is probably at capacity in terms of territory size. Ramsey supports 12% of the Pembrokeshire population (*Pembrokeshire Bird Report* 2011), 3.5% of the Welsh and 1.8% of the UK and Isle of Man population (Johnstone *et al.* 2007). Mean productivity since 1992 has been 2.18 chicks per breeding pair (range 1.00–3.14), with a slight upward trend over that period (fig. 7).

Choughs nest in sea caves and coastal crevices right around the island, but the majority are on the west coast. Historically, Ramsey was the most intensively farmed of the Pembrokeshire islands and this, combined with the island's rugged coastline, has probably contributed to it supporting the largest Chough population of those islands. Livestock grazing and crop cultivation would have helped to maintain an open sward rich in animal dung. Alongside a fluctuating Rabbit *Oryctolagus cuniculus* population, a flock of around 200 Welsh Mountain sheep and five Welsh Mountain ponies are managed

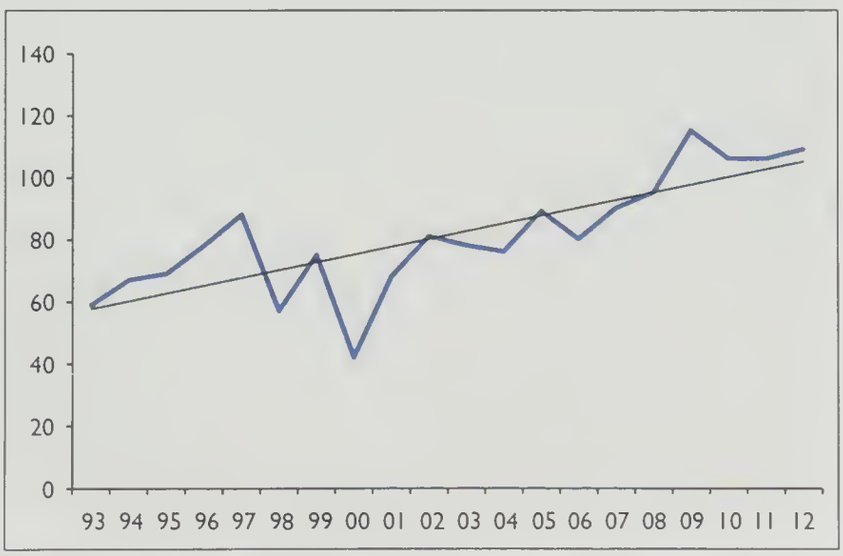

Fig. 6. Breeding pairs of Northern Wheatears on Ramsey, 1993–2012.

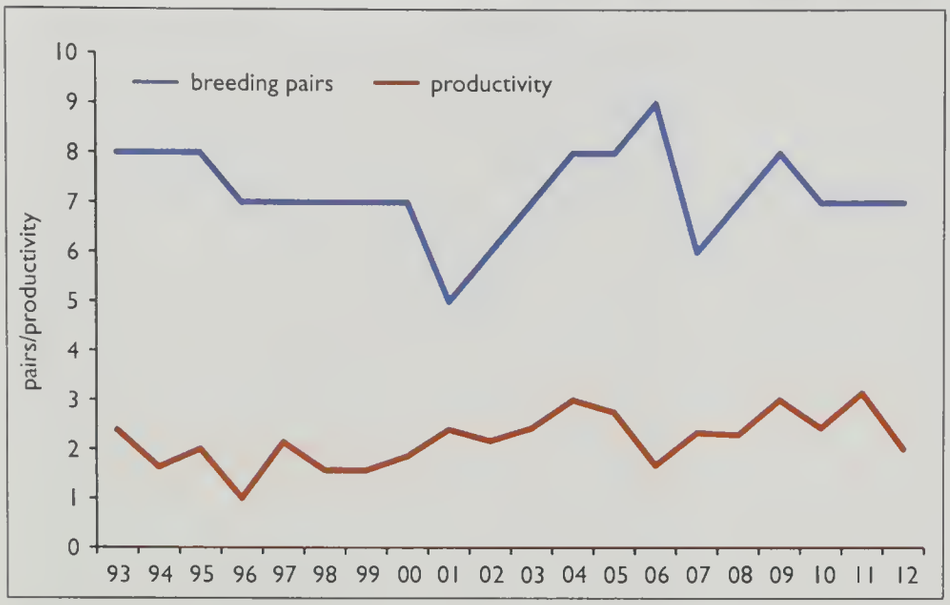

Fig. 7. Breeding pairs and productivity of Red-billed Choughs on Ramsey, 1993–2012.

fourth-largest colony in the world, with a little under 40,000 pairs (fig. 8). All recent surveys have been carried out using aerial photography (Wanless *et al.* 2005; Murray 2009).

The island previously supported a vast Puffin colony, described in 1890 as 'over half a million Puffins', yet by 1946 there were scarcely 50 pairs (Lockley 1948). One possibility for the decline is that the fragility of the colony, caused by over-burrowing, led to a terminal collapse, but there are also reports of sheep being grazed on the island, which might have resulted in widespread burrow trampling. Today, no Puffins remain and the Gannets have spread over much of what was the 'grassy island', transforming it to brilliant white from the tightly packed birds and their guano (with pungent stench to match). A small remnant of the former Puffin colony remains on the east side of the island where the Gannets have yet to reach. The collapsed burrows hint at what it must have once been like across the whole island. They have not gone to complete waste as today a few pairs of Storm-petrels nest

by the RSPB to help keep sward height in suitable condition. A small Red Deer *Cervus elaphus* herd roams free on the island, a relict of a previous farming venture in the 1970s and 80s, and also contribute to the mixed grazing regime.

Large non-breeding aggregations of Choughs form in late summer with Ramsey family parties joined by those from the mainland. In late July and August, flocks of up to 40–50 birds can be seen.

Grassholm

Inevitably, it is the Gannet colony that takes centre stage on Grassholm; as outlined earlier, the colony has grown steadily since the late nineteenth century and is now the

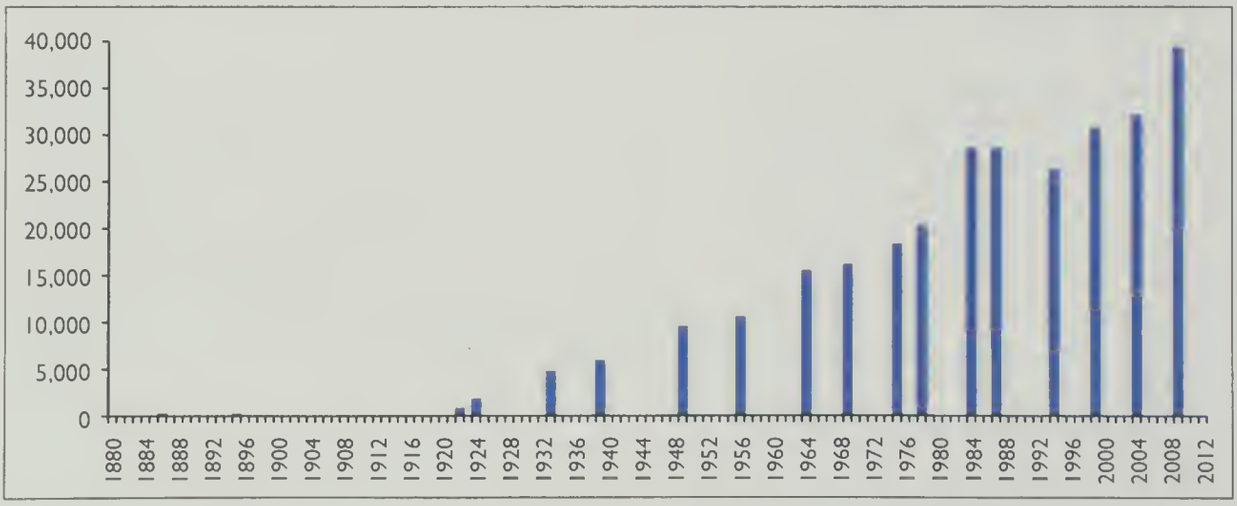

Fig. 8. The breeding Northern Gannet population on Grassholm since the first confirmed records, 20 AOS in 1883 (tentative references exist to possible earlier establishment in 1820). All counts since 1964 have been made by aerial survey. Methods for earlier counts are not recorded (Murray 2009). Counts for 1883–1987 from Lovegrove *et al.* (1994); for 1994 and 1999 from Murray (2000); for 2004 from Wanless *et al.* (2005); and 2009 from Murray (2009).

among the deep tussocks. As well as Gannets, a few other seabirds and other birds breed on the island (table 2); in addition, Peregrine Falcons *Falco peregrinus* breed occasionally.

Table 2. Breeding birds on Grassholm (2012 unless shown).

	Count unit	Population
European Storm-petrel	AOS	Min. 5
Northern Gannet	AOS	39,292
Shag	AON	22 (2007)
Lesser Black-backed Gull	AON	27 (2007)
Herring Gull	AON	27 (2007)
Great Black-backed Gull	AON	11 (2007)
Kittiwake	AON	23
Common Guillemot	Individuals	1,849
Razorbill	Individuals	53
Oystercatcher	Pairs	5
Common Raven	Pairs	1
Rock Pipit	Pairs	2–3

Gannet research on Grassholm

There has been a good deal of research carried out on the Gannets of Grassholm in recent years, much of it linked to developments in miniaturised tracking devices ('bio-logging technology'). Researchers from Plymouth University, Exeter University and British Antarctic Survey have been studying many aspects of Gannet foraging and migration, to explore questions about at-sea distribution and behaviour, during both the breeding and the non-breeding periods. For example, analysis of GPS tracking data and stable isotope ratios has revealed consistent individual differences in the extent to which Gannets use fishery discards (Votier *et al.* 2010). Satellite transmitters have enabled researchers to determine the inter-colony movements of pre-breeding Gannets, which have revealed that, far from being a 'closed community' these 2–4-year-olds travel far and wide before settling to breed (Votier *et al.* 2011). Birds from Grassholm visited colonies as far away as Scotland and France (see fig. 9).

More recently, sexual segregation in foraging behaviour has been identified showing that breeding females tend to forage farther offshore than males, with males also more dependent on discards from the fishing industry (Stauss *et al.* 2012). These results suggest that the response of Gannets to

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420. A close-up of a section of the Grassholm Northern Gannet colony from the 2009 aerial photography census (Murray 2009). The density of nest-sites is well illustrated, along with the colony edge and the 'club' gathering of non-breeders (bottom left).

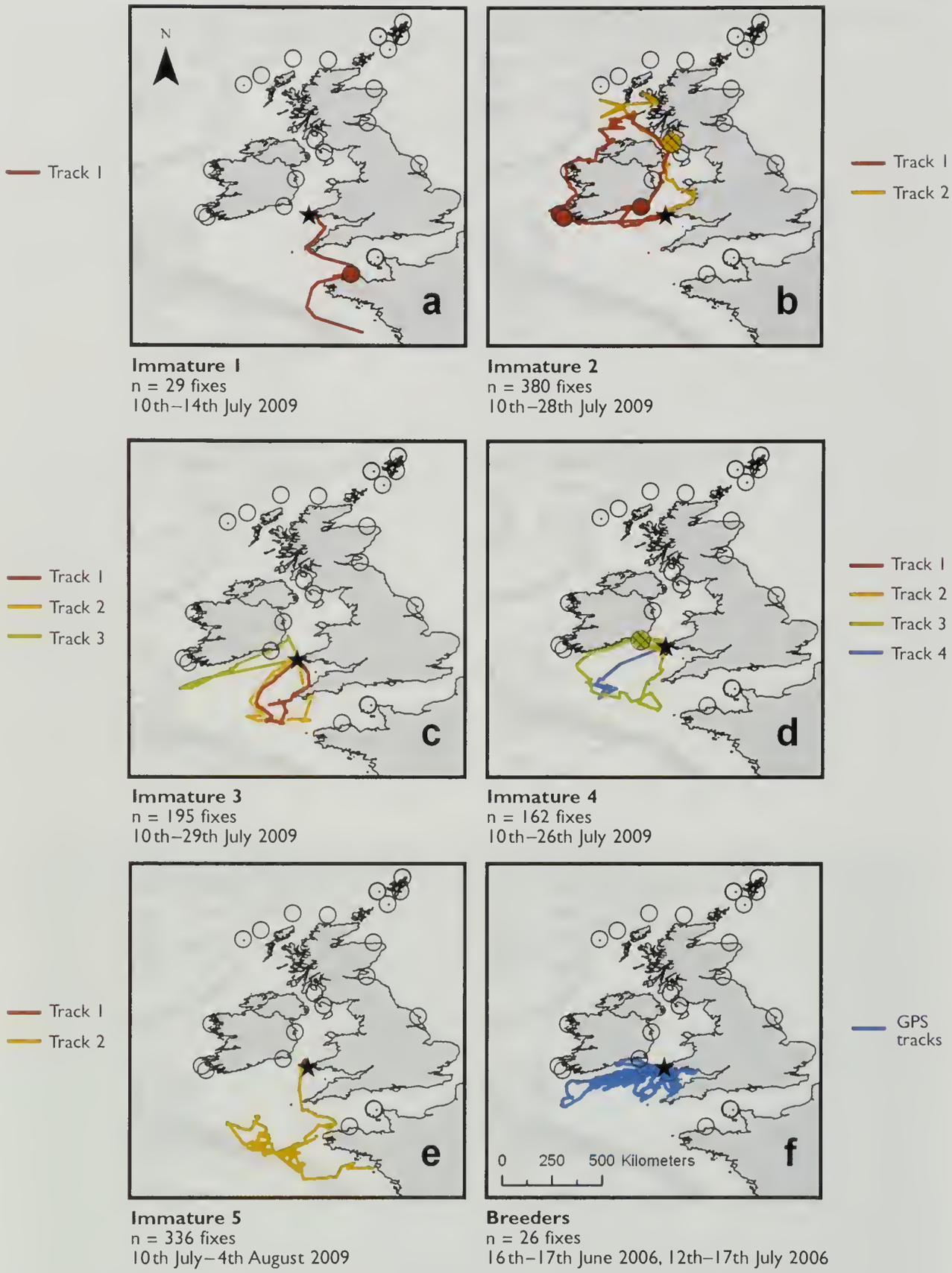

Fig. 9. Satellite-tracked immature Northern Gannets from Grassholm (source: Votier *et al.* 2011). A star symbol represents the study colony, and circles are all other Gannet colonies in Britain, Ireland and France. Panes a–e show at-sea movements and presumed prospecting behaviour of individual immature Gannets caught at Grassholm on 10th July 2009 and tracked until 4th August 2009. Different coloured tracks represent repeat trips after returning to Grassholm, filled coloured circles represent visits to other Gannet colonies, and hatched filled circles represent birds within 10 km of another colony. Pane f shows at-sea movements of 26 individual adult Gannets (including repeat tracks) breeding at Grassholm during June–July 2006. Compared with immatures, breeders tend to travel over a smaller area and do not visit other Gannet colonies. Reproduced from the journal *Marine Biology* (Votier *et al.* 2011), under licence from Springer.

changes in the marine environment (such as via reforms to the Common Fisheries Policy (CFP) or the increased reliance on marine renewables) will differ between males and females.

As well as their value in purely scientific research, these data will be vitally important in a conservation sense, in terms of the designation of Marine Protected Areas. At the time of writing the Welsh Government is proposing three or four Highly Protected Marine Conservation Zones (HpMCZ) for the entire coastline of Wales. These relatively small areas fail to take account of the movements of wide-ranging seabirds such as Gannets, so hard evidence to demonstrate movement patterns is critical.

Discussion

Grassholm's Gannets are clearly thriving and how far the colony will continue to expand is difficult to predict. The prime habitat on the western and northern flanks of the island is fully occupied but there is continuing, although slower, expansion to the east and south of the island. Digital photography has improved the quality and accuracy of aerial surveys and the 2009 survey was probably the most accurate. The apparent increase of c. 7,000 pairs in the five years 2004–09 was partly due to this factor (Murray 2009). The next survey, in 2014, seems likely to show a decrease in the rate of expansion as the amount of suitable new habitat diminishes.

It is obvious that the presence of rats and, to a lesser extent, feral cats has had a significant impact on Ramsey's burrow-nesting seabirds. The strong recovery of Manx Shearwaters and the beginnings of a recovery of Storm-petrels is an immensely satisfying response to the eradication programme. There is clearly scope for both species to increase further, given the count of over 12,000 suitable

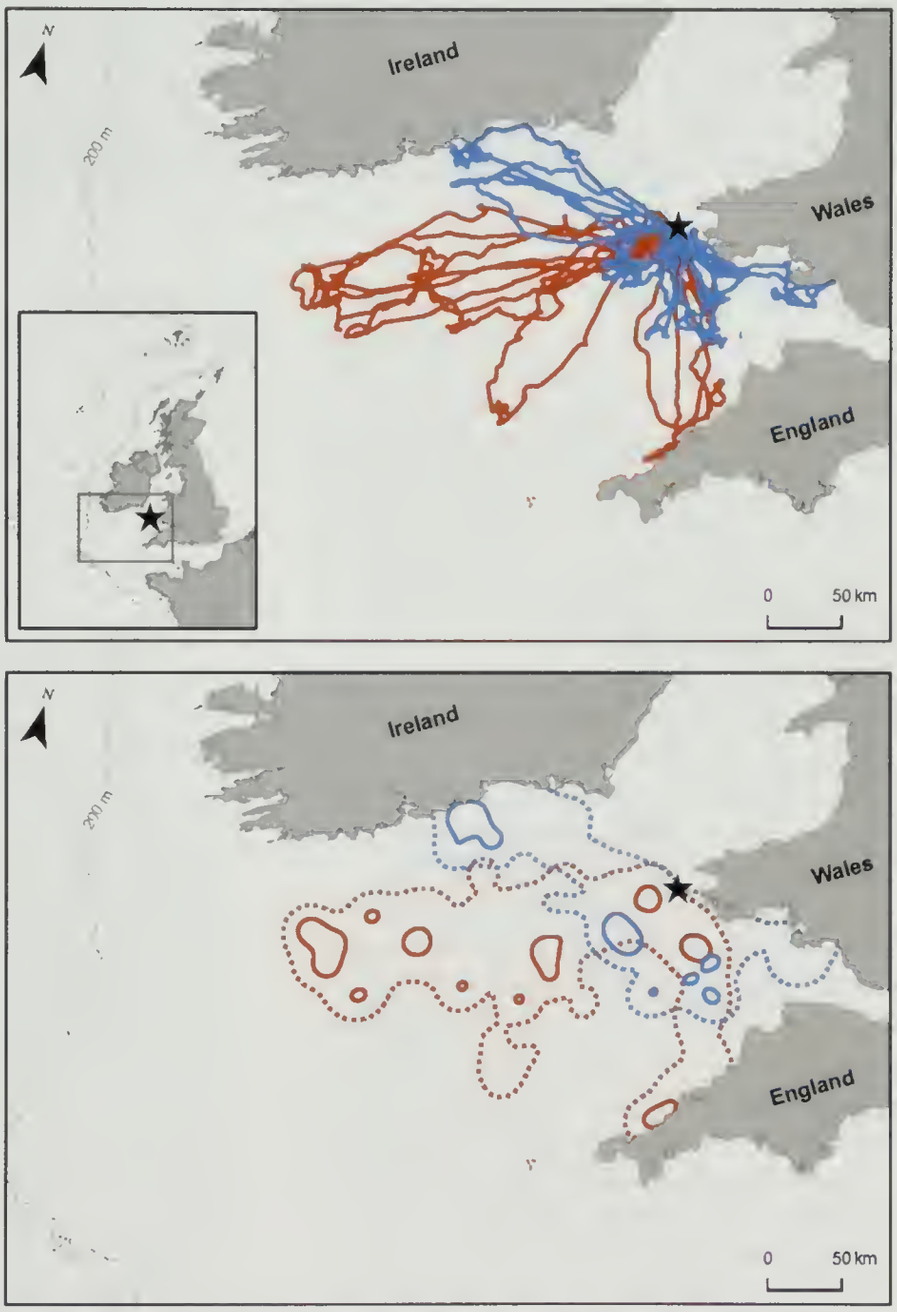

Fig. 10. This figure shows the foraging ranges of male (blue, n=13) and female (red, n=10) Northern Gannets with eggs (one bird) or chicks during the breeding season in 2006. Fig. 10a shows the actual GPS tracks; fig. 10b shows kernel density volume contours (dotted lines show the area within which 95% of fixes occurred; solid lines show core areas, comprising 25% of fixes). Grassholm is marked with a star symbol. Kernel smoothing parameter (h) = 10 km, cell size = 1 km. Reproduced from the journal *Marine Ecology Progress Series* (Stauss *et al.* 2012), with kind permission.

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421. In most years 7–8 pairs of Red-billed Choughs breed on Ramsey; April 2011.

shearwater burrows in 2012 and plenty of room for more to be dug on the island's hill slopes. Although rock crevice and boulder scree is limited on Ramsey, the restored dry-stone and traditional Welsh 'clawdd' walls (with earth layers) can potentially be utilised by Storm-petrels. Landbirds, particularly ground-nesting passerines, have also benefited from the removal of mammalian predators.

The general increase in most other seabirds over the past 20 years on Ramsey mirrors the success of these species on the Pembrokeshire islands in general. This is in stark contrast to the fortunes of the same species in northern Britain, where food shortages, probably as a result of climate-driven changes in marine conditions, have caused repeated years with very poor breeding success over the same time period. At present, the seabird colonies of southwest Wales have been largely unaffected, but it would be unwise to be complacent about the future. For example, Ramsey's Kittiwakes have not fared well in recent years, and larger colonies nearby have also suffered.

With increasing interest in marine renewables in Pembrokeshire waters it is critical that monitoring and research on seabirds should continue. The benefits of renewable energy are clear, but we need good data about the potential impacts on wildlife. The identification of key foraging areas using the technology described above will be an important component when addressing the location of potential future turbine arrays. A test device is to be trialled in Ramsey Sound in 2013 for one year, while plans for a much larger installation in the vicinity are already underway. In addition, the nearby oil and gas terminals offer a potential threat alongside that of plastic pollution in the marine environment; and perhaps the biggest threat of all is that of large-scale changes in the marine environment driven by a changing climate.

At present, seabirds are regarded as an important asset to the local economy and it is encouraging to see that many businesses in St David's are involved in ecotourism, working closely with the RSPB and other organisations to try to ensure a sustainable future. The Pembrokeshire Marine Code has been in existence since 2002 and more recently a code of conduct for kayakers has been produced. Production of such codes has included key stakeholders and adherence levels are high. If the Welsh Government can implement the Marine Act successfully and designate sensibly sized and well-placed Marine Conservation Zones, concentrating on key areas without significant impacts on small sustainable fisheries and tourism, then the future could be a promising one for seabirds in this area.

BOX 1

Access to Ramsey and Grassholm

Ramsey is open to the public seven days a week from April to October (weather permitting). There is no public landing on Grassholm but boat trips around the island operate throughout the summer months. For details contact Thousand Islands Expeditions on 01437 721721 or see www.rspb.org.uk/ramseyisland

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Appendix 1. Summary of the breeding birds of Ramsey and Bishops and Clerks, 1993–2012 (for key seabird species see table 1).

In total, 45 species have bred on Ramsey in the 20 years 1993–2012 (inclusive), 32 of which have bred in every year. Count unit is pairs unless stated otherwise. AOT = Apparently Occupied Territory, AON = Apparently Occupied Nest.

	High	Low	Comment
Canada Goose *Branta canadensis*	2 (2007–2011)	0 (1993–2003)	first bred 2004
Eurasian Teal *Anas crecca*	1 (1998, 2001)	0	just two breeding records
Mallard *Anas platyrhynchos*	5 (2002)	1 (various)	
Great Cormorant *Phalacrocorax carbo*	1 AON (2003)		only breeding record
Common Buzzard *Buteo buteo*	3 (various)	1 (1993)	
Common Kestrel *Falco tinnunculus*	2 (2002)	0 (2005, 2007–09)	breeds most years
Peregrine Falcon *Falco peregrinus*	3 (1997, 2004, 2007, 2008)	0 (1995)	
Oystercatcher *Haematopus ostralegus*	38 (2002)	20 (1993)	
Northern Lapwing *Vanellus vanellus*	26 (1994)	2 (2010, 2011)	
Feral Pigeon *Columba livia*	?	?	
Little Owl *Athene noctua*	4 AOT (2007, 2012)	0	1995 – first since 1970s
Short-eared Owl *Asio flammeus*	2 AOT (2012)	0	2009 – first for over 20 years
Red-billed Chough *Pyrrhocorax pyrrhocorax*	9 (2006)	6 (2002, 2007)	
Magpie *Pica pica*	6 (2008)	0 (2011)	
Jackdaw *Corvus monedula*	67 (1995)	30–35 (1993)	
Carrion Crow *Corvus corone*	8 (1998, 2009)	2 (2000)	
Common Raven *Corvus corax*	4 (2005, 2006, 2010)	0 (2000)	
Great Tit *Parus major*	1 (2012)	0	first breeding record since 1960s
Skylark *Alauda arvensis*	32 (1996)	7 (1993)	
Barn Swallow *Hirundo rustica*	13 (2012)	2 (1993, 1995)	
Common Whitethroat *Sylvia communis*	14 (1995)	4 (1993)	
Wren *Troglodytes troglodytes*	44 (2011)	7 (2001)	
Blackbird *Turdus merula*	18 (2007)	4 (1997, 2001)	
Robin *Erithacus rubecula*	3 (2003)	0	bred in ten years in this period
European Stonechat *Saxicola rubicola*	25 (1995, 2009)	6 (2010)	
Northern Wheatear *Oenanthe oenanthe*	115 (2009)	42 (2000)	
Dunnock *Prunella modularis*	16 (2008)	2 (1997)	
Tree Sparrow *Passer montanus*	1 (2003, 2004)	0	only breeding records
Pied Wagtail *Motacilla alba*	5 (2007, 2008, 2011)	1 (1993)	
Meadow Pipit *Anthus pratensis*	71 (1996)	31 (1993)	
Rock Pipit *Anthus petrosus*	50 (2002)	16 (2010)	
Common Chaffinch *Fringilla coelebs*	1 (2006)	0	only breeding record in this period
Linnet *Carduelis cannabina*	78 (2011)	7 (1993)	
Reed Bunting *Emberiza schoeniclus*	2 (1994)	0	bred in 1993, 1994 and 2001 only

Short papers

John Nelder: statistics, birdwatching and the Hastings Rarities

Abstract John Nelder, who died in 2010, made various contributions to ornithology. The most dramatic was the statistical analysis of the Hastings Rarities, which demonstrated beyond doubt that some of them could not be genuine. It would have been formally impossible to prove that there were too many rare birds recorded in such a short span of years in such a limited area for all the records to be genuine; accordingly, he made no attempt to do so. Instead, with a fine display of forensic statistics, he showed that various other characteristics of the records were so unlikely to have occurred were they entirely genuine that it was unreasonable to accept that they were. The few criticisms of his analysis that were subsequently published were ill-informed and his work remains untarnished. It is possible to estimate a minimum figure for the proportion of the records that were false from the data that he presented; it is 60%.

On 8th October 1924, John Ashworth Nelder was born on the edge of Dartmoor, Devon, where he developed a keen love of nature that lasted all his life. Professionally, he was a statistician, one of the most influential of his generation (Adams *et al.* 2004; Besag 2011). Having read mathematics at Cambridge and taken the diploma in mathematical statistics, he obtained a post at the National Vegetable Research Station, Wellesbourne, in 1949. In 1968 he became Head of Statistics at the Rothamsted agricultural research station in Harpenden; he retired in 1984, though remained actively involved in statistics until his death on 7th August 2010. He was elected a Fellow of the Royal Society in 1981 and served as President of the Royal Statistical Society during 1985–86. (It was little wonder that I quailed when he introduced himself to me at a BTO Open Day in Thetford in the early 1990s saying that he would like to discuss one of my papers with me. There followed a 45-minute tutorial in which he got me to understand some ideas of a subtlety that would normally be far beyond me. It was one of the great experiences of my life.)

As with most amateurs, some of Nelder's contributions to birdwatching were unrelated to his professional work, such as his part, with his wife Mary, in the discovery of Britain's first Siberian Thrush *Geokichla sibirica* (Andrew *et al.* 1955 – the photos in *BB* show the bird being held by John Nelder). But he made his major contributions to ornithology through his statistical expertise. One of those was indirect, in that it provided not just ornithologists but many other scientists with powerful statistical tools that allowed sound and effective analyses of the large and complex datasets that so many studies produce. The development of these tools depended on both novel theoretical insights and on implementing their application on the computers that became available during his career. (He chaired the Royal Statistical Society's Working Party on Statistical Computing during 1967–84.) The statistical package Genstat, developed with Graham Wilkinson, was the first such contribution, based on Nelder's insight that there was a general theory that covered a range of cases which had previously had to be analysed using specific recipes. Later, with Roger Wedderburn, he showed how data both from Normal distributions and from many distributions that were not Normal could be modelled as special cases of a general class, which they called generalised linear models; this led to another powerful statistical package called GLIM, which was later incorporated in Genstat.

Another contribution to ornithology was more direct – Nelder's work on BTO

committees, mainly in the 1960s, at a time when he was simultaneously carving out his statistical career. Quietly and modestly speaking good sense at the meetings and taking away problems to return with a solution at the next meeting, he made many valuable contributions. He was especially influential in the development of the Common Birds Census, of the Trust's statistical expertise and of its use of computers.

The work for the BTO was 'behind the scenes' but another ornithological contribution was centre stage: the statistical analysis of the infamous 'Hastings Rarities' – the extraordinary numbers of records of rare migrant birds (mostly specimens allegedly shot locally) reported from the Hastings area during the early years of the twentieth century (Nelder 1962). He demonstrated that various patterns in the records were inconsistent with them being genuine. He was so proud of this work that he had the paper reprinted in the volume that was published to celebrate his 80th birthday, which otherwise comprised the sort of statistical papers that make one's head hurt (Adams *et al.* 2004). However, although his methods were simple and he explained them clearly, most ornithologists appear still to misunderstand what he did. My purpose here is to explain that and to consider the objections that have been raised to it, none of which holds a drop of water.

Many believe that Nelder proved that the occurrence of so many rarities in such a small area over a limited time was statistically so unlikely as to be effectively impossible. He did not. Any attempt to do that would have been futile, for not only are some areas of the country likely to receive more vagrants than others, or to be better watched, but it is almost inevitable that, even if rare events of any sort occur completely randomly, there will be geographic clusters by chance alone. By suggesting that 'the analysis showed no more than that the rarities were unusual and statistically improbable events', Morris (2010) dismissed Nelder's work (which he would have been right to do if that is what Nelder had actually shown). In fact, the amazing numbers of rarities reported around Hastings were merely the trigger that caused Nelder to examine the data in more detail.

Nelder began by carefully and objectively defining which records to include, what to count as multiple occurrences (i.e. two or more individuals of the same species together), and the criteria for defining three

Gratian Andrew

422. John Nelder and his wife Mary, seen here in 2008 or 2009 with Dougal Andrew (on the right), one of Nelder's frequent birdwatching companions. Coincidentally, this photo also shows the three finders of Britain's first Siberian Thrush *Geokichla sibirica*, on the Isle of May on 2nd October 1954.

classes (I, II and III from rarest to the least rare). Contrary to Palmer's (2000) assertion, he did not contrast the records for the Hastings area with 'those with places high in vagrancy records such as Fair Isle', which would have thrown up differences that could be ascribed merely to real differences in the birds in such distant places. Instead, he contrasted the records for the Hastings area itself (X) with those from immediately adjacent areas, the rest of Kent (YK) and the rest of Sussex (YS). Rather than define the Hastings area in terms of where the concentrations of rarities were, he simply drew a circle of radius 20 miles round the town, thus making any contrasts between area X and the others less marked than they could have been; that is, he was making it more difficult for himself to show that there was anything odd about the Hastings records. (X also included the whole of Romney Marsh, apart from Hythe, because many of the sources did not specify exact locations within that part.) He adopted a similar approach to comparisons of the critical period with later years, simply dividing the 60-year span of 1895–1954 into two 30-year blocks, so that the first block included years before and after the peak of the Hastings Rarities in 1900–16. Again, he was making it more difficult to demonstrate that the records from the first period were odd. Labelling his time periods A and B, he thus had six 'area-eras': XA (the focus of concern), XB, YKA, YKB, YSA, and YSB. He applied formal tests of statistical significance to four characteristics of the data, explaining the methodology clearly.

First, he showed that in XA almost half the rarities were Class I, whereas in the other areas and in XB the proportion was consistently about one quarter. The consistency among the other area-eras is important: had they all differed from each other, the peculiarity of XA would have been less remarkable. This result cannot readily be explained by there being more enthusiastic observers in area X during the first period: as Nelder pointed out, although the number of rarities reported from the rest of Kent more than doubled in the second time period compared with the first, the distribution among the rarity classes remained almost unchanged. He also rejected the possibility (admittedly unlikely in itself) that observers or shooters in X failed to report Class II and III rarities during period A, pointing out that they would have had to be doing more than twice as much shooting or observing as post-war observers in the area to clock up the number of Class I rarities that they supposedly found.

Second, Nelder showed that multiple occurrences made up about a quarter of the records in XA, but only about an eighth of those in the other area-eras (which were again consistent with each other). He argued that it was unlikely that the observers in area X were particularly good at picking up multiple occurrences in period A, compared with period B or compared with the other areas – again, it is the *consistency* of the other area-eras that is important in establishing the peculiarity of XA.

Nelder's third analysis was of the seasonal distribution of the records. This was less conclusive than the other analyses because there was less consistency between the other area-eras in the seasonal patterns. Nonetheless, XA was an outlier, being the only area-era with a preponderance of Class I records in the spring; and, while in both other areas there was an increase in autumn and winter records in the second period, there was none in area X.

The fourth analysis was an examination of how the number of records per year varied. In the rest of Kent and the rest of Sussex during period A, the numbers of Class I rarities were just as one would expect if rarities occurred more or less randomly in individual years, but in area X they were not: some years had far more (and others far fewer) than one would expect by chance. Again, there was something odd about the records for the Hastings area at this time. (During the second period, none of the areas showed a random distribution of records per year, all being equally affected by the reduction in observing and shooting, especially in coastal counties, during the Second World War. There was no such effect in the First World War: 1915 produced the second-highest total and 1916 was still well above the average, although there was then a sharp drop, which in itself is suspicious: see below.)

Nelder concluded that 'the basic assumption of the validity of all the records must be

questioned.' One cannot but agree. The peculiarities that he demonstrated in the records from the Hastings area during the critical period are too odd to be readily explicable unless one allows that some of them were not genuine.

Various approaches have been used in attempts to undermine Nelder's analysis. One has been to misrepresent what he did, as Morris (2010) seems to have done (see above). Harrison's (1968) approach was to say that he did not understand statistics and imply that they are therefore irrelevant, a *non sequitur* of unbelievable proportions; he later maintained 'that, as a substitute for "rigorous scientific proof", statistics are vulnerable in the extreme' (Harrison 1971), a curious reversal of the truth in that statistical analysis is a key part of rigorous scientific proof when it comes to assessing numbers. The only valid approach is to criticise the analyses on technical grounds and Harrison (1971) actually raised two such issues. One was that Nelder's data were incomplete; Harrison (1968) had been able to reveal some further specimens in his own collection (and Collinson & McGowan 2011 revealed some more). However, even if the records not included by Nelder were a biased set, and Harrison did not claim that to be the case, their number was too small to have made any difference. I have, for example, added Harrison's records to Nelder's table 3, the table that compares the distribution over the rarity classes for the Hastings area with that in the other area-eras, leaving out the several cases where he provides no date and the two Little Bitterns *Ixobrychus minutus*, the rarity of which was not classified by Nelder. The chi-squared value for the table increases from 57.4 to 58.4, a trivial difference, though one that strengthens rather than diminishes Nelder's case. The second of Harrison's issues was that the records analysed must have included many that were authentic (as the critics acknowledged). But if Nelder had removed all the records that seemed likely to have been authentic, he would have been roundly and justifiably criticised for using only the data most likely to produce significant results.

There was further technical criticism in Harrison's book, from John Boreham, Chief Statistician to the General Register Office, whom Harrison asked to assess Nelder's paper. However, Boreham made a bad start by stating that he would have 'hoped that statistics could go a little further... and actually assess the probability that Mr. Bristow was a systematic cheat', an extraordinary statement for a professional statistician, because it was technically impossible to do this with the methods generally in use at the time. Even the Bayesian methods that statisticians have increasingly turned to in more recent years are unlikely to be able to deliver such an assessment.

Turning to Nelder's analyses, Boreham suggested that the fact that the Hastings Rarities included a disproportionate number of Class I rarities might be because people collecting in the Hastings area did not bother with the less rare. It is difficult to understand why they would not have done so, for these would have provided a steady income, the occasional extreme rarity representing just a welcome bonus. Furthermore, commercial collecting and taxidermy were going on all over the country, including the counties around Hastings, without the less rare species being neglected. Indeed, Bristow, the taxidermist generally identified as the fraudster (Harrop *et al.* 2012), sold plenty of common birds. Nelder's second analysis, the unusual proportion of multiple occurrences, was not addressed by Boreham. In respect of the third, the peculiarities of the seasonal patterns, Boreham suggested that these were so variable between area-eras that the Hastings area-era was not really exceptional; but he failed to explain away those peculiarities of the data that clearly did set Hastings in the first period apart from the other area-eras. Lastly, he said that the distribution of number of records per year was 'really a comparison of the actual numbers in the Bristow series with the numbers in the other series... a comparison which... Mr. Nelder eschewed.' It is difficult to understand that a statistician of Boreham's apparent eminence could have thought this to be the case. Unfortunately, Boreham, who had a successful career in which he rose to be head of the Government Statistical Service, for which he was knighted, appears to have made his contribution through his strengths as an administrator and an organiser of data-gathering, rather

than as a technical analyst. He would have done well to have stayed out of something that he appears simply not to have understood.

A criticism that Boreham might validly have made is that Nelder made no attempt to estimate what proportion of the records were false. It is true that it is impossible to estimate this but one can estimate a minimum value, at least from the fairly simple case of the proportions in the three rarity classes, for which Nelder gives sufficient details. For example, if we assume all the Class III rarities (the least rare) seen in the first period in the Hastings area (165) to have been genuine and if percentages of the three classes were the same as in the other area-eras, then we would have expected there to have been 81 (Class I), 77 (II) and 165 (III) rather than the 243, 108 and 165 claimed for XA: that is, the number of rarities claimed was 60% beyond expectation. Of course, there is some statistical uncertainty around this figure but note that it is a minimum estimate: if some of the Class III records were also false, then the overall estimate of false records would be even higher.

Further to the common misunderstanding of what Nelder actually did, there is another general misapprehension: that he was recruited to analyse the data by Max Nicholson and James Ferguson-Lees, with whose detailed examination of the Hastings Rarities his paper was published. In fact, the beginnings of their investigations were quite independent. Prof. Hilary Fry recalls (*in litt.*, 11th November 2010) frequent visits to Nelder in the mid 1950s, during which 'I think it was actually I who raised the matter of the improbable number of rarities discovered early last century in the Hastings area... I forget whether John had come across the curiosity independently of me; but it is certainly the case that he asked me to abstract from *The Handbook* preliminary details of all of the Hastings records that I could find. Having done that, passed the result to John and enjoyed several more discussions about it over cream teas, I dropped out of the picture, but distinctly remember being much impressed by the manner in which he immediately started to deal with the data.' Ferguson-Lees's interest had been aroused both by residence in Sussex and by finding, when he was appointed assistant editor of *British Birds* in 1952, the original correspondence between Witherby and Bristow in 1916–17. His records show that 'In 1953, when Max was staying with me, we started to talk about a reinvestigation, but that did not really begin until 1954, when for the first time the *BB* office was provided with secretarial assistance. Two years later, because he had been told that Max and I were working in this field, John Nelder contacted me to say that he had started on a statistical analysis. After several failed attempts, we met in London in February 1957, and then again with Max in April 1957. Thereafter we co-operated fully' (*in litt.*, 12th March 2011).

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Second-calendar-year Eleonora's Falcons attending breeding colonies in Sicily

Abstract Surveys of breeding colonies of Eleonora's Falcons *Falco eleonorae* in the Aeolian and Pelagie Islands, Sicily, showed an unexpectedly high proportion of second-calendar-year (2CY) birds attending breeding colonies. On average, around 20% of all aged birds at breeding colonies were 2CYs. There is evidence that this proportion is increasing at one colony, which may be an early warning signal of colony decline. Some birds attempted to breed in their second calendar-year; the outcome of these pairings is unknown.

The Eleonora's Falcon *Falco eleonorae* breeds on offshore islands throughout the Mediterranean basin, locally along the Atlantic coast of Morocco and in the Canary Islands (Cramp & Simmons 1980; Snow & Perrins 1998; Thévenot *et al.* 2003). More than 80% of the species' world population (of around 12,300 pairs) breeds in Greece (Dimalexis *et al.* 2008). In Italy it is a scarce breeding bird with an estimated population of 500–600 breeding pairs (Spina & Leonardi 2007). Around 150 pairs breed on islands off the coast of Sicily (e.g. Corso 2005, Corso & Gustin 2009a,b, Corso & Penna 2009), the majority in the Aeolian (Lipari) Islands. During observations of breeding colonies, we monitored the age profile of both breeding pairs and attendant non-breeders. The proportion of second-calendar-year (2CY) birds was much higher than expected, as was the number of such birds attempting to breed. If the proportion of adult and young birds at breeding colonies is changing over time, this may provide an early indication of population decline.

Study area and methods

Breeding colonies on the islands of Salina, Alicudi, Panarea and Filicudi in the Aeolian archipelago were visited at least three times a year between August and October, the Salina colony over a 13-year period (1998–2010) and the other colonies over five years (2005 and 2007–10). A colony on Lampedusa (Pelagie Islands) was visited on three occasions in September and October in both 2005 and 2007, and on three occasions between July and October in the years 2008–10 (Corso & Gustin 2009a,b). The total number of birds was recorded during each visit and they were aged whenever possible. Observations at all colonies were made from the coastline and from a small boat using 10× binoculars; a telescope was also used for land-based observations.

The data presented here are taken solely from counts in October, which is at the end of the breeding season and when the total number of birds present is highest. The total number of birds and the maximum number of adult and 2CYs at each site was recorded. In the case of 2CYs, only those individuals seen well enough (in good light and at close range) to establish the age beyond doubt are included. Unmated 2CY birds are generally more active around colonies than breeders, and consequently are detected more readily. However, some 2CY birds do attempt to breed, often with older birds, making it difficult to establish the exact numbers present. The maximum count was taken as the highest number of birds observed simultaneously, usually before dusk or just after rain, when birds were hunting flying ants, dragonflies or migrating passerines.

Ageing criteria

Until they moult, 2CY Eleonora's Falcons retain juvenile primaries, secondaries, tertials and rectrices; with good views they are readily recognised by the conspicuous dark banding on the underside of the flight feathers and the upper surface of the tail (Clark 1999; Forsman 1999; Corso 2004). Adult plumage is acquired during the first complete moult, which begins in the birds' second autumn (when they are 12+ months old). Birds in their third calendar-year differ from 2CY birds by their darker and unmarked tail and uniformly dark tertials, as

Table 1. Number of Eleonora's Falcons at breeding colonies on Salina in October, 1998–2010. Numbers in parentheses show the estimated maximum number of breeding pairs present.

Year	No. breeding pairs	No. birds aged	No. adult birds (≥3CY)	No. 2CY birds	% 2CY
1998	25 (28)	42	39	3	7.1
1999	20 (25)	22	19	3	13.6
2000	25	37	33	4	10.8
2001	20	40	32	8	20.0
2002	19 (22)	29	22	7	24.1
2003	13 (15)	21	13	8	38.0
2004	9 (10)	20	14	6	30.0
2005	8 (10)	21	17	4	19.0
2006	7 (8)	14	9	5	35.7
2007	5	10	8	2	20.0
2008	4 (6)	8	7	1	12.5
2009	4 (6)	8	6	2	25
2010	5	10	7	3	30
mean	12.6	21.7	17.4	4.3	19.9

well as the extent of moult, wing- and tail-shape profiles, and structure (Conzemius 2000; Corso 2004; Ristow 2004).

Results

Salina

The Salina colony was surveyed annually during 1998–2010 (table 1). During the study period the proportion of 2CY birds increased (fig. 1) while the number of breeding pairs declined. In total, 30 2CY birds were observed to be paired and involved in breeding activities over the 13 years; most (90%) were 2CY females paired with adult males. The breeding success of these younger birds is unknown. Overall breeding success at this colony has declined from 1.65 young fledged per breeding pair in 2000 to less than 0.40 in recent years (Corso & Gustin, 2009b, in prep.).

Lampedusa

Numbers of Eleonora's Falcons on Lampedusa have been fairly stable for many years (Corso 2005; Corso & Gustin 2009a,b), although breeding success has generally been rather poor (ranging from 0.8 to 1.5 young fledged per breeding pair; Corso & Gustin 2009b). At this colony, 2CY birds comprised on average 22% of the total in the study years (table 2). At 47.6% in 2007, Lampedusa held the highest percentage of 2CYs recorded from any Sicilian breeding site. In contrast to the results from the Salina colony, the proportion of 2CYs attending the colony declined during the study period (fig. 2) as the number of breeding pairs rose, although the marked year-to-year variation obscures clear trends. In 2005, 19 2CYs were sexed as female and six as male; at least 14 were mated with adults and involved in breeding activities. Over five breeding seasons, no less than 45% of 2CYs were observed attending nests.

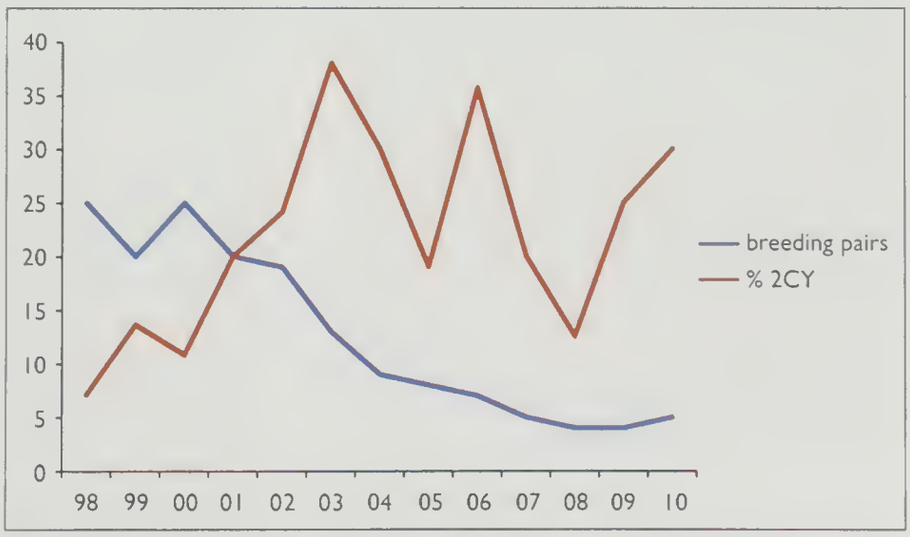

Fig. 1. The number of breeding pairs and percentage of 2CY Eleonora's Falcons at the Salina colony, 1998–2010.

Table 2. Number of Eleonora's Falcons recorded at Lampedusa during October visits in 2005 and 2007–10, together with the number of adult and 2CY birds recorded. Numbers in parentheses show the estimated maximum number of breeding pairs.

Year	No. breeding pairs	No. birds aged	No. adult birds (≥3CY)	No. 2CY birds	% 2CY
2005	40 (51)	90	65	25	27.8
2007	35 (44)	42	22	20	47.6
2008	20 (35)	25	16	9	36.0
2009	32 (43)	86	81	5	5.8
2010	45 (50)	70	60	10	14.3
mean	34.4	62.6	48.8	13.8	22.0

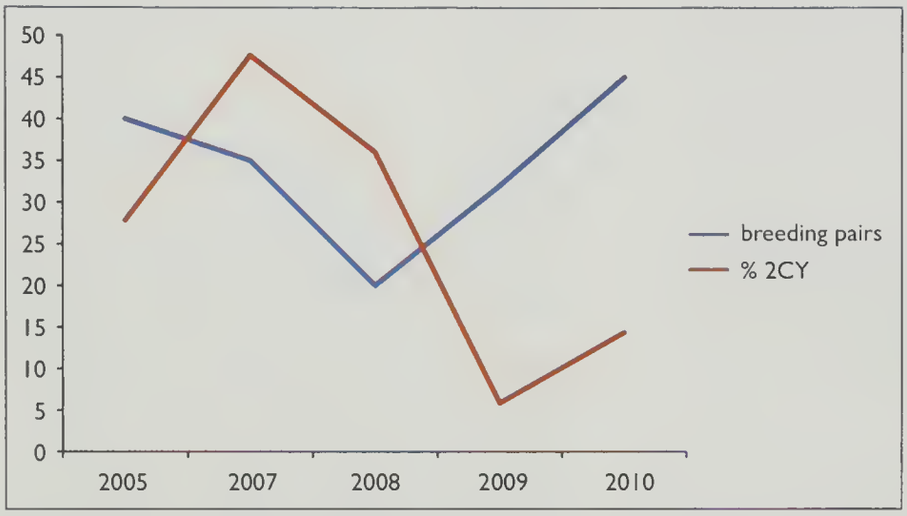

Fig. 2. The number of breeding pairs and percentage of 2CY Eleonora's Falcons at the Lampedusa colony, 2005–10.

Alicudi

Alicudi holds the largest breeding colony of Eleonora's Falcons in the Aeolian archipelago. The number of breeding pairs increased from 1997 (25–28 pairs) to 2009 (40–50 pairs, where the range given shows first the number of pairs counted, and second the number of pairs estimated to be present), although during this time breeding success declined from 1.8 to 0.6 young per breeding pair, a similar pattern to that observed on Salina (Gustin *et al.* 2005; Corso & Gustin 2009a,b). Note that birds are difficult to age accurately at this colony, and thus the sample of aged birds varies (table 3) – but the proportion of 2CY birds increased between 2005 and 2009, coinciding with the continuing rise in number of pairs and the decline of the Salina colony. Disturbance from tourist activities may have prompted birds to relocate from Salina to Alicudi.

Discussion

At a breeding colony in the Aegean Sea, Wink *et al.* (1987) and Wink & Ristow (2000) aged 4.5% of birds as 2CY, while Ristow *et al.* (1989a) found that just 3% of birds were 2CY at a colony in this same region. They considered that the vast majority of 2CY birds in the Aegean colonies were not breeding, although Ristow *et al.* (1989b) reported that 3CYs comprised up to 30% of the breeding population. The proportion of 2CYs attending Sicilian colonies is thus substantially higher than at those Aegean colonies, as is the number of such birds attempting to breed. Ristow & Wink (1985) and Wink & Ristow (2000) found that 2CY Eleonora's Falcons disperse widely during their first summer, often ranging far from breeding colonies, while 3CYs are faithful to their natal colony.

The age structure of a breeding population is likely to affect the overall reproductive success of a colony and Ferrer *et al.* (2003) suggested that changes in the age of first breeding can be used as an 'early warning signal' to detect possible changes in population trends in long-lived species – with an increase in immatures often preceding a population decline. This could be the case for Eleonora's Falcons on Sicily. At least on Salina, at the most thoroughly surveyed colony, the proportion of immatures is rising, while the number of breeding pairs and average breeding success are in decline (table 1).

Table 3. Maximum number of Eleonora's Falcons recorded at five Sicilian breeding colonies during October visits in 2005 and 2007–09, together with a breakdown of the number of adult and 2CY birds recorded.

Breeding site	Year	No. birds aged	No. adults (≥3CY)	No. 2CYs	% 2CY
Panarea	2005	6	6	0	0
Panarea	2007	15	10	5	33.3
Panarea	2008	15	10	5	33.3
Panarea	2009	20	17	3	15
Filicudi	2005	11	11	0	0
Filicudi	2007	27	21	6	22.2
Filicudi	2008	10	7	3	30
Filicudi	2009	25	21	4	16
Alicudi	2005	80	75	5	6.3
Alicudi	2007	57	48	9	15.8
Alicudi	2008	20	16	4	20
Alicudi	2009	30	21	9	30
Total	2005	208	174	34	16.3
Total	2007	151	109	42	27.8
Total	2008	78	56	22	28.2
Total	2009	169	146	23	13.6

Since breeding success in the Aeolian colonies has been quite low in recent years, some (perhaps many) of the 2CYs may originate from other colonies. The proportion of 2CYs also suggests relatively high adult mortality; certainly this seems to be higher at Sicilian than in Aegean colonies, perhaps due to factors such as increased hunting pressure in the central Mediterranean basin or longer sea/desert crossings (Walter 1979). The population of Eleonora's Falcons in Sicily is in decline and we consider it important to raise awareness of potential problems and stress the need for conservation measures at breeding sites, especially the prevention of unnecessary disturbance. We hope that this short paper will highlight these concerns, and reinforce the need for continued monitoring.

Acknowledgments

We wish to thank everyone who helped AC during his studies on the Aeolian Islands, especially Silverio Taranto from Alicudi, without whose help this study would not have been possible. Daniele Aliffi, Pippo Carbone, Carmela Cardelli, Giampaolo Ciccotosto, Pierpaolo Fortunelli, Mauro Leonardi, Pietro Lo Cascio, Lucio Maniscalco, Nino Patti, Angelo Scuderi, Giampaolo and Simone Terranova are thanked for their help while visiting the Aeolian Islands, while the assistance provided by Ottavio Janni, Hans Larsson, Igor Maiorano and Michele Viganò of the MISC group at Lampedusa was invaluable. Francesco Corrà of Swarovski is thanked for providing AC with optical instruments. Thanks also go to Jevgeni Shergelin for help with references and their translation, and to Ottavio Janni for commenting on an earlier manuscript. Most of this study has been possible thanks to LIPU (Lega Italiana Protezione Uccelli). Finally, warmest thanks to the Corso family for their support and understanding. This paper is dedicated to Gilberto Virgona, from Alicudi, who died in September 2012.

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Obituary

Reginald John Hall Raines (1925–2012)

Authoritative yet affable, with lively intellect and wit, John Raines inspired generations of birders by his wizardry. In his teens he worked Nottingham sewage-farm, the 'inland Fair Isle', where three pairs of Black-winged Stilts *Himantopus himantopus* nested in 1945. He tracked visible migration along the Trent and later around Liverpool Bay, and he settled in the Wirral as a family doctor in 1952. His ability to spot and identify an oddity, no matter how distant or fleeting, became legendary. Now we could expect the unexpected. Seldom using a telescope, RJR (as he became affectionately known) might combine two pairs of binoculars around his neck at once: something light plus the mighty Zeiss 15 × 60. 'Give your eyes a treat and look through these!' he would enthuse.

We thought we knew our Wirral pretty well until RJR showed us 'vis mig' at Red Rocks; the Water Rails *Rallus aquaticus*, predators and small mammals flushed out of the Dee marshes by only the highest tides; and close encounters with masses of Pintails *Anas acuta* and Eurasian Teals *A. crecca* on the Mersey, remote beyond oil refinery and ship canal. If we reached Red Rocks first, we might hear a powerful, speeding car, then a sudden stop. Soon, himself, dashing into sedgy pools with two small boys to flush out any skulkers like Spotted Crake *Porzana porzana*. At last, he would announce: 'Well, better go and see who's ailing!', pack his squelching sons into the car and zoom off. In 1959 he founded the annual *Birds of the Wirral Peninsula*, which in 1964 merged with the new *Cheshire Bird Report*, which he also edited later.

After early European forays, he joined an ornithological supergroup on the 1957 expedition to the (then) little-known Coto Doñana, in Spain. Finland, Greece, Turkey and Africa followed. RJR led groups worldwide, amassing slides for his popular lectures.

Regular jaunts included Anglesey, Spurn and the Solway, usually with a full car. Come teatime in some roadhouse, rather elegant for those of us with muddy wellies on sweaty feet, and meagre wallets in grubby anoraks, RJR would wolf his steak then reflect with his diagnostic Collared Dove excitement call: 'Eeair! – I could just go another one of those!'

His experience and learning told. Thus at Spurn in 1966, when AAB spotted a puzzling brown bird (before RJR!), our man could declare 'Oh, it's a Penduline Tit [*Remiz pendulinus*], no doubt about it, I've seen many on the Continent...'. In Finnmark in 1978, says Val McFarland, a strange wader flashed by. 'Caspian Plover!' [*Charadrius asiaticus*] cried RJR, to some scepticism. They pursued it and it was. He was willing to consider even less likely possibilities. Some Cheshire committee member queried that Kermadec Petrel *Pterodroma neglecta* seen on 1st April 1908 (now deleted, *Brit. Birds* 101: 31–38). 'Well', said RJR, with characteristic cackle, 'I might have agreed had I not thought I saw one off Meols in a gale a few years ago!' The meeting was stunned.

We held the fledgling Rarities Committee in low esteem, following some disappointing decisions. 'I spent much time... with the Liverpool tribe led by RJR and got nowhere, except to the bottom of several whisky bottles,' groaned the then chairman, D. I. M. Wallace. Nevertheless, RJR was selected for the Ten Rare Men, and served during 1975–81; his 'knowledge of birds worldwide and ready provision of pertinent material from his extensive photographic collection has been a great asset to the committee's work' (*Brit. Birds* 74: 314). Maybe they decided that this particular Injun was better inside the tent, spitting out.

No trifling twitcher, RJR chronicled behaviour, migration, status and distribution. His logbooks, adorned with evocative watercolours, are in the Nottingham Archives (1941–54) and Hilbre Bird Observatory. His passions embraced all wildlife and his garden. He was generous to the RSPB, WWT and his friends, who fondly recall the Raines household hospitality. His twilight years revived an interest in moths, and he recorded several species spreading north. 'But it's an old man's pastime,' he mourned. Sadly, his sons predeceased him. Following over 60 years of marriage he leaves Joan, daughter Pip and five grandchildren, a family as delightful as himself. Any RJR reminiscence raises the warmest of smiles – we loved him.

David J. Bates, A. A. Bell and Chris W. Murphy

The Eulogist's Lament
When Dr Raines took endless pains
To bless the British List with gains –
Exotic species, family, genus,
Himantopus to *pendulinus* –
Or track fowls on their autumn flight
Southwest from realms of Arctic night,
He filled each youthful generation
With optimistic inspiration.

Now since he's flown, he's sorely missed,
A loss from off our yearly list.
To paper then we must commit
His wizardry and warmth and wit,
And diagnose in too-few words
Field characters for *British Birds*.

DJB

Val McFarland

423. John Raines (left) in Kamchatka, June 2009.

BTO research update

Looking out for birds

Freezing winters: a test for Britain's wintering Little Egrets?

The latest Wetland Bird Survey (WeBS) report, *Waterbirds in the UK 2010/11* (Holt *et al.* 2012), describes how the coldest winter across parts of northwest Europe for 35 years forced many wildfowl and waders from the frozen Continent. As well as influxes of species including European White-fronted Goose *Anser a. albifrons*, Smew *Mergellus albellus* and Goosander *Mergus merganser*, distributional shifts by coastal waders such as Dunlin *Calidris alpina* and Bar-tailed Godwit *Limosa lapponica* were noted in the UK.

Another notable story from the report concerns Britain's wintering population of Little Egrets *Egretta garzetta*. It is a safe bet that publication of Bird Atlas 2007–11 will reveal the species' range expansion (both breeding and wintering) to have been one of the most striking features of the British birding scene since the previous national atlases, but scrutiny of the numbers counted at WeBS sites indicates some interesting differences in terms of regional trends during the last 15 winters.

The pattern of establishment by Little Egrets in Britain is a familiar one. Initial arrival at sites on the south coast has been followed by expansion northwards, as well as a steady rise in the breeding population. The rate of increase in wintering numbers that 15–20 winters ago typified sites in southern England (such as Poole Harbour and Chichester Harbour) is now being experienced at northern estuaries (such as the Dee Estuary and Morecambe Bay). However, in recent years there has been a slight, yet consistent, decline in the WeBS annual indices for the Little Egret in southern England and Wales, and a levelling off in East Anglia (fig. 1). Among potential explanations for this is the possibility that, although numbers of Little Egrets are probably continuing to expand in

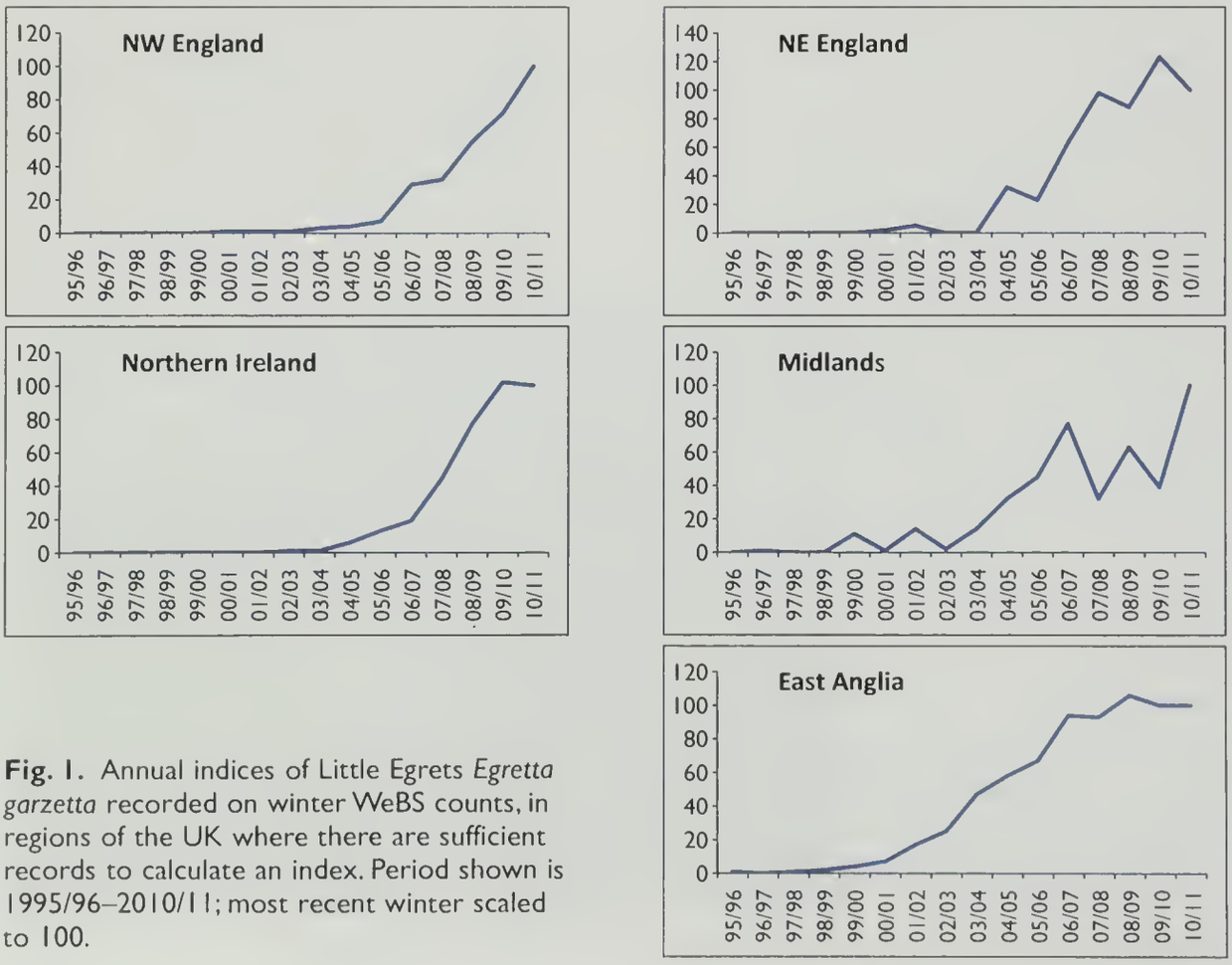

Fig. 1. Annual indices of Little Egrets *Egretta garzetta* recorded on winter WeBS counts, in regions of the UK where there are sufficient records to calculate an index. Period shown is 1995/96–2010/11; most recent winter scaled to 100.

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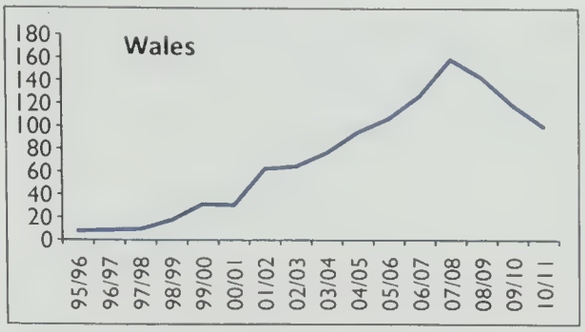

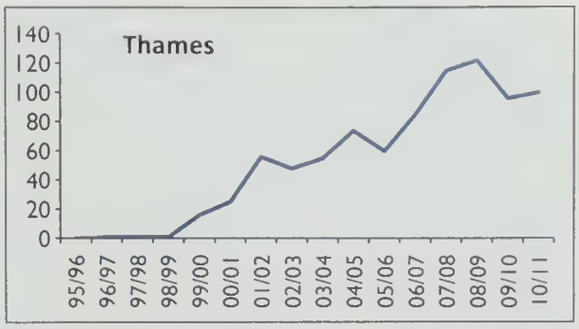

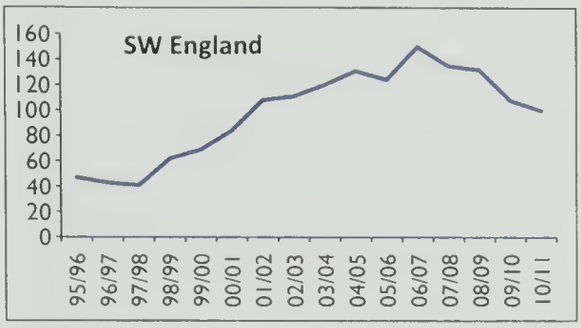

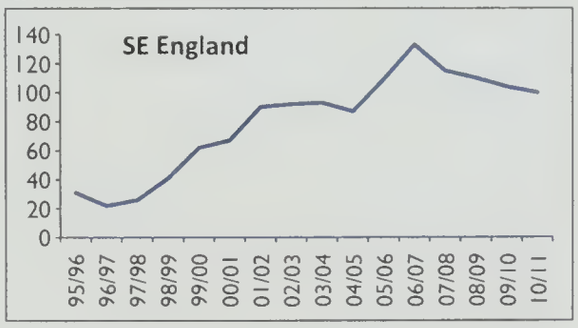

the wider countryside in these regions, many estuaries in the south and southeast have now reached carrying capacity for this species. Alternatively, it may be a response to cold winters: the period of rapid increase in the British wintering population was characterised by mild winters (Musgrove 2002), whereas the period of 2008/09–2009/10, and especially 2010/11, featured harsher conditions. Little Egrets are very susceptible to cold weather on the edge of the wintering range (Voisin *et al.* 2005), and such conditions could have had a direct impact on overwinter survival – and over the course of three winters may have led to a drop in the population. However, if that were the case, we would probably have expected to see similar declines in northern England (where the annual indices have generally continued to rise). Only time, and further monitoring through schemes such as WeBS will help to provide more definitive answers.

WeBS is a partnership between BTO, RSPB and JNCC, in association with WWT. For further information, check www.bto.org/webs (where the report is available) or contact webs@bto.org.

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Chas Holt

Ringing recoveries now mapped online

Many of you will have already come across the BTO online ringing report (www.bto.org/ringing-report). An addition to the traditional paper report published in *Ringing & Migration* each year, it includes summaries of numbers of birds ringed and recovered as well as full details of the more unusual recoveries and longevity records for each year from 2006. The paper ringing report summarises data for the whole of Britain & Ireland, but the big advantage of online publishing is that we can include so much more. In the online report you can find ringing and recovery summaries and information by country, county and species, as well as extra information and ringing totals for the whole scheme going back right to its beginnings in 1909. The detailed information is fascinating, but it can sometimes be hard to visualise the movements reported and put them into context. To help with this, maps of all recoveries to and from countries outside

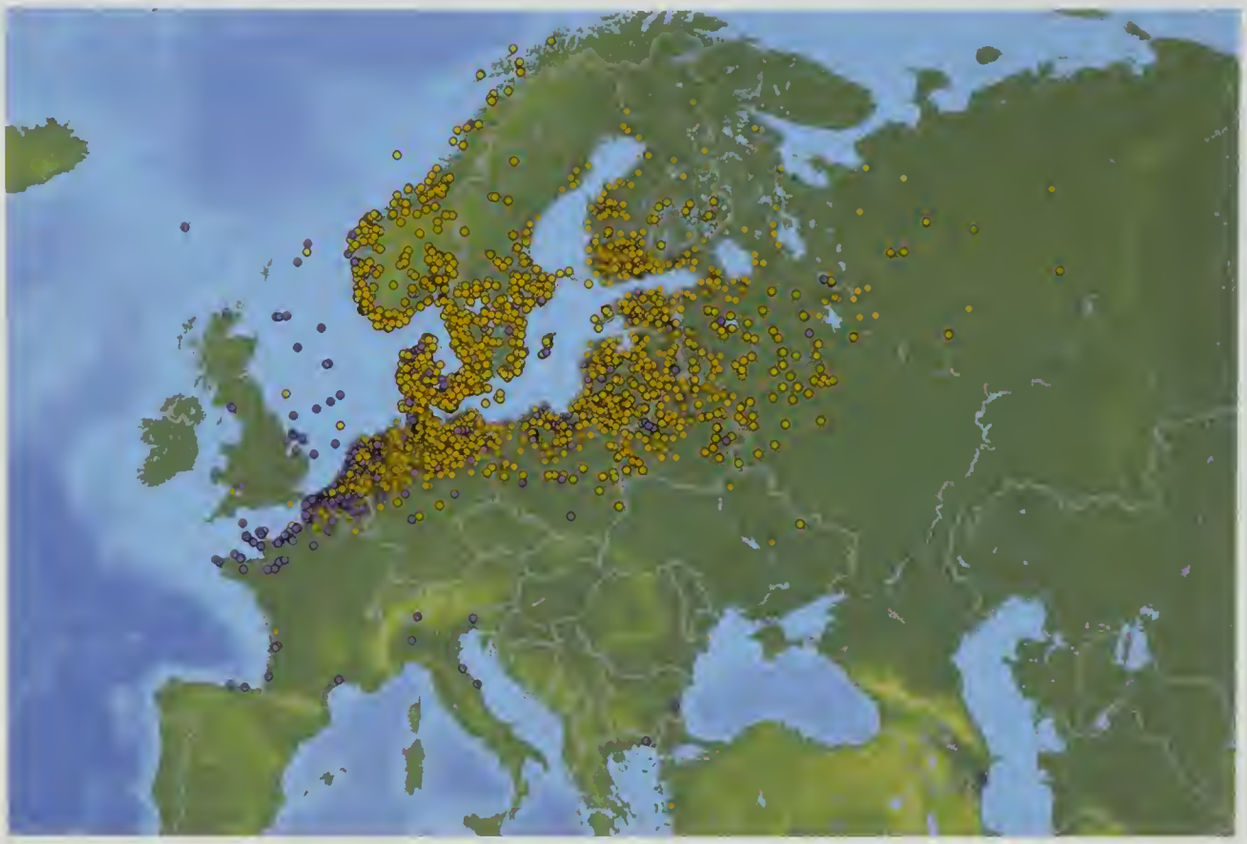


Fig. 2. Map showing foreign locations of Common Starlings *Sturnus vulgaris* ringed or seen in Britain in winter (November–February) and encountered abroad during the summer (May–July, yellow dots) or in another winter (purple dots). Note: dots in the sea are recoveries or sightings on boats or oil platforms.

Britain & Ireland have recently been added for each species so you can see where our migrants come from and go to. For instance, Common Starlings *Sturnus vulgaris* that winter in Britain come from breeding areas that cover a swathe of northern Europe east as far as the Urals (yellow dots on map). They won't necessarily return to the UK in other winters, however; some spend subsequent winters in the Low Countries, but others wander farther afield, as the map shows (purple dots). We will shortly be adding species maps by country and county as well as maps for each species with the foreign recoveries for the year, with background shading summarising earlier recoveries of the species to put a particular year into context.

Jacquie Clark and Rob Robinson

Sir Ludwig Guttmann: founding father of the Paralympic Games, brilliant neurosurgeon and keen birdwatcher

Sir Ludwig Guttmann was instrumental in the development of the spinal injuries unit at Stoke Mandeville Hospital in Buckinghamshire in 1944, and in many ways can be regarded as a founding father of the modern Paralympic Games. BTO Research Officer David Glue encountered Guttmann at Stoke Mandeville in the 1970s and found him to be keenly interested in birds as well. Glue describes Guttmann as a remarkable man, and outlines his work and leisure interests in a piece for *BB*, available on our website at: www.britishbirds.co.uk/news-and-comment/guttmann

Correction The maps in fig. 3 of the paper on Lapland Buntings *Calcarius lapponicus* in the November issue (*Brit. Birds* 105: 669) were inadvertently transposed: the August chart is the lower rather than the upper chart. We apologise for this error. *Eds*

Reviews

Catching the Bug: a Sound Approach guide to the birds of Poole Harbour

Mark Constantine, Nick Hopper and The Sound Approach
The Sound Approach, 2012
Hbk, 287pp; many colour plates and figures
ISBN 978-90-810933-0-9 Subbuteo code M21397
£29.95 *BB* Bookshop price £26.95

I do like The Sound Approach books. They take quite basic, albeit often cutting-edge, questions that 'normal' birders ask, and answer them, substantially by the study of bird sounds. As a concept, it is a stroke of genius. Books such as *The Sound Approach to Birding* (Constantine & The Sound Approach, 2006) and *Petrels Night and Day* (Robb, Mullarney & The Sound Approach, 2008) have broken new ground in redefining the relationship between birders and the birds they watch, providing a popular language for addressing bird observation through the medium of sound. *Catching the Bug* is a retrospective of over 25 years of birding Poole Harbour, Dorset, and its surroundings, and is as much about the birders concerned as the birds themselves. It captures the excitement and frustrations of patch-watching, but its appeal and value goes beyond the boundaries of Poole.

The format follows the established Sound Approach style – high quality, hardback ergonomic disasters with a bookshelf-disrupting landscape format, containing (in this case) 27 more or less self-contained chapters and two CDs. Most of the sound files on the CDs have accompanying sonograms in the relevant parts of the text, allowing the reader to see the detail that birds hear. Some of the chapters carry on where *The Sound Approach to Birding* left off and address generally important issues. Chief among these is the lengthy Chapter 14: 'A flock of birds forever in flight'. Recording the visible migration of landbirds ('vis mig') is the new seawatching and carries even more problematic standards for recording and reproducibility, requiring as it does the rapid identification of fly-by birds, often primarily by their voice, and often at night. Addressing these insecurities about accuracy and reproducibility, the chapter leads the reader through the common calls of the birds most likely to feature in vis-mig studies, demonstrating the usefulness of recording kit and sonograms, and is recommended reading. The wader calls in Chapter 17 fulfil a similar function. Sandwiched between them is another recurring problem – identification of Siberian Chiffchaffs *Phylloscopus collybita tristis* – and, in typical Sound Approach fashion, Chapter 16 describes a visit to Tomsk where the variation in Siberian Chiffchaff vocalisations from the core of the taxon's range were recorded.

Other chapters take the reader on evocative trips to hear European Nightjars *Caprimulgus europaeus*, Woodlarks *Lullula arborea* and Hobbies *Falco subbuteo* on breeding territory, with the top-quality sound recordings and sonograms we have come to expect. There are musings on global warming, the changing status of what used to be southern European breeding birds in England, the accuracy of WeBS counts, a bird race and even a wedding. Single-subject chapters tackle such issues as the status of 'Continental' Great Cormorants *Phalacrocorax carbo sinensis* and 'British' Dartford Warblers *Sylvia undata dartfordiensis*. This latter is an example of how The Sound Approach books work. Starting with a justifiable and quite perceptive question – 'Why aren't English Dartford Warblers an endemic?' – the chapter reaches an answer through the medium of superb artwork, sound recordings and photographs: 'Because there are lots of them in France too.' So much to the good, but how that stretches to 14 pages, I have no idea.

Catching the Bug does seem self-indulgent at times. That may be its strength – apparently everything that occurred to the authors is in here – but a more in-depth analysis of fewer subjects would have made a more satisfying book. I personally could live without all the 'boys' club' stuff, and several chapters left me wondering what the point was. The informal writing style is a characteristic of The Sound Approach books, and is to be welcomed. However, the mildly mocking criticism of another ornithologist for disagreeing with the authors over the criteria for identification of Siberian Chiffchaffs was quite jarring, especially when The Sound Approach to identification ('if the bird itself is telling us it's a *tristis* then that's good

enough for me') ignores the many real complications and unknowns surrounding the problem.

With the resources to publish privately, The Sound Approach team are apparently limited only by their imagination. *Catching the Bug* represents self-publishing at its very best: glorious in its extravagance, educational, inspirational, entertaining, robustly untroubled by concepts of self-effacement or doubt. Some chapters are superficial, and the whole 'birding tribe' aspect a bit vain, but few readers will fail to find something they didn't know. As a whole the book successfully captures the highs and lows of intensive bird study at a single site.

Martin Collinson

Fascinating Birds

By Markus Varesvuo
New Holland, 2012
Pbk, 160pp; 150 colour photographs
ISBN 978-1-7800-9178-5 Subbuteo code M21323
£20.00 *BB* Bookshop price £18.00

The blurb on the dust-wrapper says: 'Marcus Varesvuo has selected his 100 favourite European species...', and these species are illustrated with 150 superb photographs. The majority are taken in his native Finland, and are of the charismatic Finnish species (including seven owls, Hazel *Tetrastes bonasia* and Willow Grouse *Lagopus lagopus*, Siberian Jay *Perisoreus infaustus* and Nutcracker *Nucifraga caryocatactes*), but others were taken elsewhere – Norway, Iceland, Spain, Hungary, Estonia and even Oman and Canada. Some images made me wonder whether they were taken at one or other of the commercial bird photographic locations as they portray birds at sites seemingly familiar from other photographs.

As a photographer, I was raised to follow the mantra that in the ideal natural history photograph the main subject should occupy one-half to one-third of the image, so the habitat is properly shown. Like all 'rules', this one is made to be broken, as it is by many of the images in the book, which are frame fillers! These certainly have impact – a Great Grey Owl *Strix nebulosa* head-on in flight, and a Common Snipe *Gallinago gallinago* on a post gaping (or yawning?) and flexing its upper mandible are both superb examples of this. But in other images, particularly where smaller species are concerned, the bird appears too large in the frame, at least for my taste. Examples are a Whinchat *Saxicola rubetra*, a rather poorly lit Ring Ouzel *Turdus torquatus* tossing a berry down its throat, and a White Wagtail *Motacilla alba* with a mass of moss for its nest.

But not all images are frame fillers, some showing birds that occupy only a small portion of the image – a Willow Grouse in snowy landscape, a Feral Pigeon *Columba livia* with its head just emerging from its nest hole in a Spanish stone wall, and a Hawk Owl *Surnia ulula* on a tree stump, neatly framed by out-of-focus ice-coated twigs and branches.

In all, the book contains a fine collection of images of European bird species – though the Snowy Owls *Bubo scandiacus* were photographed in Canada. A short description accompanies each species, sometimes with information on how the photograph was taken. Technical details are given of all the images, which will be of interest to the photographers; I found myself referring to these details, and, in particular, admiring the quality the author gets when using converters (or extenders), even the highest magnification ×2, which needs careful handling and good technique.

This is a coffee-table book, or one to pull off the shelf periodically for an enjoyable browse; it will make a handsome Christmas present – or 'self-gift' – for any birder with an interest in European, and particularly Finnish, birds.

Richard Chandler

Birds Through Irish Eyes

By Anthony McGeehan, with Julian Wylie
The Collins Press, Cork
Hbk, 328pp; 400 photographs and montages
ISBN 978-184-8891-62-3 Subbuteo code M21403
£35.00 *BB* Bookshop price £31.50

Having been occasional midwife during its several pupations, I have awaited this book with some trepidation. Like the 58 other helpers, including the ever-attentive Julian Wylie, I have so wanted it to dispel the strange self-occlusion that Anthony's totally engaging *Birding from the Hip* (The Sound Approach, 2009) somehow precipitated. No worry; this larger, more professional but still passionate and not unbarbed paeon for 197 Irish birds hits its target's bull. 'Let the birds be' is the book's constant anthem.

Typically, Anthony begins a mite shyly. There is no waving of red flag in the rather subtle introduction and, scene set, and he soon switches to guiding the reader into attentive watching. Then with irresistible and increasing momentum, he offers essay after essay (of between 125 and 1,000 words) of arresting facts, telling quotes and vivid analogies. The portraits and fates of Ireland's core avifauna come off the page in a fashion that pleases eye, charges mind and hurts heart. The media are delightful but the message is stark. Far too many of the Green Isle's once eternal birds are in trauma. And far too often their balloons of conservation are shown to have punctures or specious function.

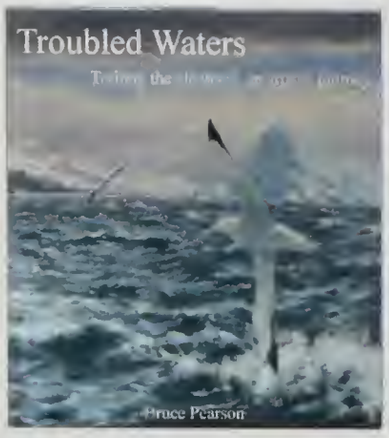
To ensure, however, that his book does not lead the reader into despair, Anthony deploys his customary skills of Keillor-quality prose and lyrical photographs. Of the 400 photographs, three out of four come from his own 'stalk but be sure to compose before expose' perceptions and full mastery of Photoshop. None are less than good; most are sheer brilliant catches of birds doing their things, as explained in well-crafted captions. Strategic comic reliefs (his trademark) promote smiles and chuckles.

As for the anthology in the book, its bedrock is William Thompson's *The Natural History of Ireland* (1849–52). Wisely, Anthony has used it as his trig point from avian compass readings through all Ireland, Europe and across the Atlantic. References to 30 other works that predate the Witherby's *Handbook of British Birds* allow the discussion of population trends to be truly telling. With Clive Hutchinson's *Birds in Ireland* (1989) long outdated, the accounts are timely, while the many mentions of individual bird journeys explain anew Ireland's wide harvest of wintering birds. A singular feature is the courteous listing of personal observations by other purposeful birdwatchers. It is particularly good to see the wisdom of Neville McKee, 'Captain' of Copeland Bird Observatory, freely distilled. Finally, for ancient believers in some subspecies, the best mugshots yet of 'Irish Red Grouse' *Lagopus l. hibernicus*, 'Faroese Common Snipe' *Gallinago g. faeroeensis*, 'Icelandic Redwing' *Turdus iliacus coburni*, 'Irish Jay' *Garrulus glandarius hibernicus*, and indisputable *whistleri* race of Meadow Pipit *Anthus pratensis*. Keep the faith alive.

The essays are leavened with guide texts on moult sequence, the flux of migration and the solution to the eternal puzzle of Willow Warbler *Phylloscopus trochilus* versus Common Chiffchaff *P. collybita*. At their end comes advice on bird gardening and optics choice and of course two witty Anthony McGeehan tales of 'fine days'. The book's last gift is a meticulously researched Irish list. It features 466 certains, five 'honourable' escape-occlusions and four 'dishonourable' introductions. Of the 466, five are extinct, most shockingly the Corn Bunting *Emberiza calandra*, and 117 are vagrants, with the 113 found in the Republic no doubt the reason why the standard joy. Seeking direction of most Ulster birders lies between south and west.

More than all Irish men and women should be moved by this beautiful book and charged to save its subjects. Anthony makes it clear that we all need to do more, quickly.

D. I. M. Wallace



Troubled Waters: trailing the albatross, an artist's journey

By Bruce Pearson
Langford Press, 2012
Hbk, 136pp; many colour paintings
ISBN 978-1-904078-48-7 Subbuteo code M21449
£38.00 *BB* Bookshop price £34.00

Bruce Pearson first visited Bird Island, South Georgia, in 1975, a visit that was to exert a profound influence on his subsequent career as an artist. Over three decades later, he returned to the Southern Ocean to document the interactions between seabirds and fishermen. This book is both a record of these trips and a reflection on the continuing plight of albatrosses and other seabirds.

The book has six main sections, arranged more or less chronologically. The subject matter includes working with the British Antarctic Survey on Bird Island in 1975, returning to the Southern Ocean many years later, and a trip on a longliner off South Africa to document interactions between fisheries and seabirds. The text is engagingly written, and while each chapter has a main theme, there are always interesting diversions along the way, covering topics such as thoughts on art, the practicalities of working in a rough sea from a small yacht, and musings on the relationship between man and the natural world. Each chapter is copiously illustrated, and there are small boxes to describe a range of topics such as albatross taxonomy, aspects of seabird biology, conservation agreements, and techniques for mitigating seabird mortality in fisheries.

But the heart of the book comprises Bruce Pearson's sketches and paintings. These range from detailed specimen studies of Blue Petrel *Halobaena caerulea* and Cape Petrel *Daption capense*, through rapid field sketches of albatrosses and petrels at sea, to atmospheric seascapes that capture perfectly the special atmosphere of South Georgia.

I can trace my interest in the way artists capture wildlife back to Eric Ennion's charismatic illustrations in his early book *The House on the Shore* (Routledge & Kegan Paul, 1959); here were images of birds which were unquestionably alive. Reaction to wildlife art is a very personal thing, but for me the most critical question is: has the artist caught the essence of the bird? In my view there is nobody at present who can capture seabirds in their element as well as Bruce Pearson, and the artwork in *Troubled Waters* is right up there with two of my great favourites of wildlife art, Lars Jonsson's *Birds and Light* (Christopher Helm, 2008) and James McCallum's *Arctic Flight* (Langford Press, 2007).

This is a wonderful book, and there are two reasons for adding it to your bookshelf. The first is that you are helping to support seabird conservation, and the second is Bruce Pearson's consummate artwork. It deserves a place on the bookshelf of anyone interested in seabirds, remote places or wildlife art.

Andrew Clarke

The Swan: a natural history

By Malcolm Schuyl
Merlin Unwin Books, 2012
Hbk, 224pp; many colour photographs
ISBN 978-1-9061-2240-9 Subbuteo code M21209
£20.00 *BB* Bookshop price £18.00

This book ranges widely over a host of subjects relating to swans and their biology, but also to their involvement with humans, including their part in our culture, language, and mythology.

The first chapter deals in a conventional manner with the swans of the world. The next main chapter, 'Swan biology', is largely about the functional anatomy of birds. I found the emphasis a little odd for a book about swans, since much of the text describes things which are true for all

birds. The statements are not wrong – though they can be a bit vague, for example: 'Like most birds swans have evolved so that they can fly.' Many of these statements – and similar ones occur elsewhere in the book – would be fine in a book on birds in general, but seem superfluous in a book specifically about swans.

Chapter 4, 'Swan behaviour', covers most of the subjects one would expect to see here; just over half the chapter takes one through the breeding cycle from pairing to raising the young. There follow chapters on 'Domestication', 'Swan-upping', 'Language and the Swan', 'Swan as a name or symbol in society', 'Swan in culture', followed by shorter pieces on law and conservation.

Overall, it makes for easy reading. Unfortunately, the text contains a significant number of factual errors, such as: 'for defending themselves, they have developed an enlarged carpal bone halfway along the wing'; 'experienced birds lay fewer eggs'; 'they stay together with their parents as a family unit until spring' (true in only some cases); 'the darker (orange) the beak, the older the individual... [and the] knob becomes more pronounced with age'; 'they have been known to dive, but this only occurs when food is difficult to obtain'; 'Swans will also eat a wide variety of aquatic animals... making them omnivorous'; 'In 1482... the Act of Swans... limited the ownership of swans to wealthy landowners provided that they kept them on their own land' (most were kept on rivers, hence the need for the complex system of ownership marks to identify the owner).

If I cannot wax enthusiastic over the text, the same is not true of the photographs. These, for me, are by far the strongest point of this book. Perhaps half the space in the book is given over to colour photographs, including a number of double-page spreads. Mostly these are of Mute Swans *Cygnus olor* in action: in flight, swimming and at rest, feeding, courting, breeding, cygnets hatching and growing up, and much else besides. Swans are very photogenic, but their white plumage does not always make for really good photographs such as close-ups of feathers. The photographs here are of uniformly high quality, well reproduced and make for an excellent browse.

Chris Perrins

The Birds of Scotland Digital

Edited by Ron Forrester, Ian Andrews, Chris McInerny, Ray Murray, Bob McGowan, Bernie Zonfrillo, Mike Betts, David Jardine and David Grundy
Scottish Ornithologists' Club, Aberlady, 2012
CD ROM
£15.00 (£10.00 to current SOC members); available from www.the-soc.org.uk

The two-volume original, with its 1,634 pages, 900 colour photographs and 1,500 maps and charts, was published in 2007 and reviewed in this journal at the time (see *Brit. Birds* 101: 162–163). Five years on, this heavyweight country avifauna, an 'epic' to quote the *BB* reviewer, is now available on a single CD, which contains every photograph, map, diagram and species account in an easily accessible and searchable pdf format.

As I see it, there are three key benefits of the digital version. The first is that little word 'searchable' – it makes an extraordinary amount of information so much more accessible. Second, it contains an 'Errata and additions' supplement, which highlights errors, new information, etc. This is a valuable addition – most recently, it confirmed to me that the records of Lesser Spotted Woodpecker *Dendrocopos minor* in the original have been reviewed and are now considered unacceptable, meaning that the remarkable recent record of that species in Shetland (October 2012) will become the first for Scotland. Third, while you would never have taken the original very far from the shelf, the digital version is easily loaded onto a laptop or tablet and is infinitely more user-friendly.

For the princely sum of £15.00 this product is amazing value – buy it! No doubt some curmudgeons will resent the fact that the original (long since sold out, by the way) was a fairly expensive purchase, while the digital version less than five years later is much cheaper and has some significant advantages over the books. Realistically, though, I imagine that the digital version would never have happened without the books. What's more, the profits from the books (and any from the digital version) will contribute to the Birds of Scotland Fund, which supports ornithological projects and publications in Scotland, and which shows terrific foresight by everyone involved with project 'BS3'. The curmudgeons haven't a leg to stand on.

Roger Riddington

The Bird in Art

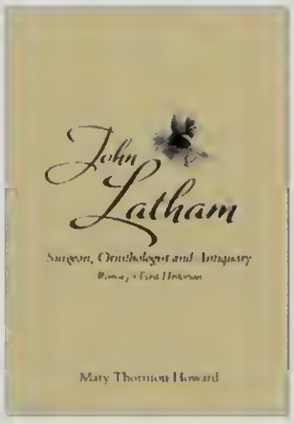
By Caroline Bugler
Merrell Publishers, 2012
Hbk, 276pp; 265 colour illustrations
ISBN 978-1-8589-4568-2 Subbuteo code M21450
£35.00 *BB* Bookshop price £31.50

While there have been many books on bird art over the years, most have been aimed at birdwatchers rather than art lovers. None has really explored the study of the birds in historical art and the wealth of complex meanings associated with them in different cultures. If you are thinking of buying this book, it is important to understand this emphasis as the contents reflect that focus. If you were hoping to see the works of popular bird artists, you will find very few, but you are more likely to see the works of major artists such as Dalí, Dürer, Ernst, Freud, Goya, Klee, Stubbs and Turner.

In total this book shows us some 250 works of art from both the ancient and the modern world. There are nine chapters covering themes such as the 'Christian Bird', the 'Mythical Bird', the 'Eastern Bird', the 'Domestic Bird' and the 'Modern Bird'. I particularly enjoyed the chapter on 'The Bird Observed', which shows how accurate some early illustrations were. Take, for example, the watercolour by Italian artist Pisanello (Antonio Pisano) of five Eurasian Jays *Garrulus glandarius* from about 1440. It is hard to imagine that this is nearly 600 years old – and yet feels quite modern. Probably the best example for me is that of three Ivory-billed Woodpeckers *Campephilus principalis* by John James Audubon from 1829, which adorns the book's front cover. Similarly, I was drawn to John Gould's colour lithograph of three Marvellous Spatuletails *Loddigesia mirabilis*. Interestingly, Gould had never seen a hummingbird alive when he created this around 1850.

This is an attractive book, but one for art lovers rather than birdwatchers.

Keith Betton



John Latham: surgeon, ornithologist and antiquary

By Mary Thornton Howard
Matador, 2012
Pbk, 150pp
ISBN 978-1-78088-127-0. Subbuteo code M21391
£9.99 *BB* Bookshop price £8.99

If you are a well-travelled birder, then it is likely that you will be familiar with the surname Latham. Latham's Snipe *Gallinago hardwickii* is perhaps the most widely known of the four species bearing this name – closely followed by Latham's Forest Francolin *Francolinus lathami*.

John Latham was born in Kent in 1740 and became a renowned doctor, practising for many years at Dartford, Kent, and later settling in Romsey, Hampshire. Apart from helping to establish the Linnean Society, he was a distinguished ornithologist and possessed a fine collection of bird specimens. As a bird collector Latham did not travel the world, but he did receive numerous specimens from many countries, from which he described many species new to science, particularly from Australia. His two main works were *A General Synopsis of Birds* (1781–1802) and *A General History of Birds* (1821–28).

This short booklet explores Latham's life, from his days as a highly successful surgeon to his retirement in Hampshire. It is clear that this was a man who could not resist the opportunity to understand and describe everything around him. He was fascinated by the local history of Hampshire and this booklet quotes liberally from his letters to a wide range of correspondents including Thomas Pennant and Joseph Banks. He died in 1837 having made a considerable contribution to the ornithological world.

Keith Betton

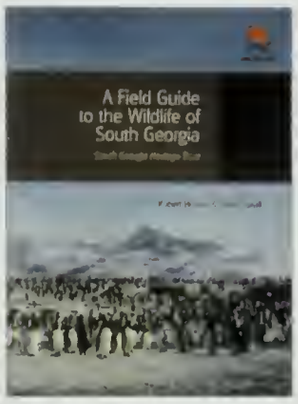
Adventures Among Birds

By W. H. Hudson
HarperCollins/Collins Nature Library, 2012
Hbk, 254pp
ISBN 978-0-00-746640-5 Subbuteo code M21259
£20.00 *BB* Bookshop price £18.00

This is one of three titles issued in the *Collins Nature Library*, a series of reissues of long-lost seminal works of classic British nature writing.

Hudson, born in 1841, grew up in rural Argentina but moved to Britain in the 1870s. This book, first published in 1913, contains a series of chapters which relate his experiences with birds, from his childhood memories of a cardinal on the pampas to, among others, the wild geese of Wells-next-the-Sea in Norfolk, and the birds in a Hampshire village. It is written in the extended prose typical of the time but nevertheless raises issues which remain pertinent today, particularly his opposition to the hunting of birds for sport. It mingles memoir, travelogue, meditation and nature writing along with fiction, as when he imagines being a migrating Redwing *Turdus iliacus* or being in the Lincolnshire fens as they might have been 5,000 years ago. Hudson clearly had a strong affinity with birds, perhaps more so than with people, and this is reflected in this interesting and absorbing read.

John Clark



A Field Guide to the Wildlife of South Georgia

By Robert Burton and John Croxall
South Georgia Heritage Trust/Princeton University Press/Wildguides, 2012
Pbk, 200pp; 368 colour photographs, colour map
ISBN 978-06-91156-61-3 Subbuteo code M21390
£17.95 *BB* Bookshop price £16.00

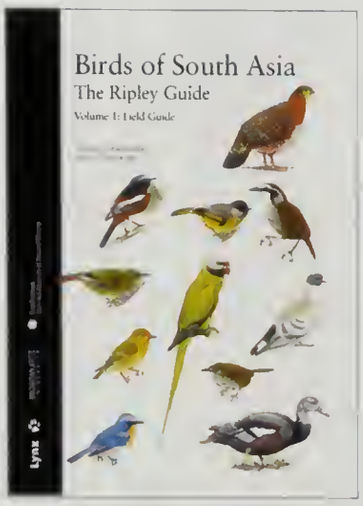
Isolated, mountainous and home to millions of seabirds, South Georgia has long been recognised as one of the world's great places for wildlife. Until recently accessible only to scientists or intrepid yachtsmen, South Georgia is now firmly on the tourist trail, with tens of thousands visiting each year. While few of these are serious birders, many have an interest in wildlife. It is for these that the authors have produced this field guide to the wildlife of the island, on behalf of the South Georgia Heritage Trust (SGHT).

The guide opens with a section describing South Georgia, with brief but informative introductions to the topography, geology, climate and major habitats of the island, all nicely illustrated with well-chosen images. Other subjects covered are the history of exploitation, including whaling and sealing, current fisheries, conservation regulation and the habitat restoration programme being undertaken by SGHT.

There are short sections describing introduced mammals and invertebrates, but the bulk of the guide is taken up with birds, marine mammals and plants. The bird section is by far the largest and most detailed. The main breeding species are given two pages each, with text on the left and a montage of photographic images on the right. The main text covers distribution, identification, voice and behaviour, and there is a small box highlighting the current status on South Georgia, population size and an outline of where on South Georgia that species might most easily be seen. Casual visitors and vagrants generally receive half a page of text and images, these being photographs, all of excellent quality and generally illustrating the key identification features well.

The marine mammals and plants receive a similar treatment, and both sections are excellent. Overall this is a first-rate guide to the region and should rapidly establish itself as essential for wildlife travellers to South Georgia.

Andrew Clarke



Birds of South Asia – the Ripley Guide, second edition

By Pamela C. Rasmussen and John C. Anderton
National Museum of Natural History, Smithsonian Institution, Washington D.C., Michigan State University, Michigan and Lynx Edicions, Barcelona, 2012
Pbk, two volumes; Vol. 1. 379pp, 180 plates, over 1,450 distribution maps; Vol. 2. 684pp, many sonograms, line-drawings, etc.
ISBN 978-84-96553-85-9 Subbuteo code M19177
£55.00 *BB* Bookshop price £49.50

When the first edition of *Birds of South Asia* (*BSA*) appeared in 2005 it received mixed reviews (see *Brit. Birds* 98: 609–610), particularly as it was entering a market already served by two established guides, and competition to displace them was fierce. To compete, it would need to offer accessibility, clarity and accuracy, combined with value for money. In the intervening period, the first edition has increased in popularity, largely displacing *A Field Guide to the Birds of the Indian Subcontinent* (Kazmierczak & van Perlo 2000) and rivalling *Birds of the Indian Subcontinent* (*BIS*) by Grimmett, Inskipp & Inskipp (1998, 2011) as the leading guide for visitors to the Indian subcontinent.

What was particularly remarkable about the first edition was the approach adopted towards taxonomy. Although it followed the familiar Peters sequence, the authors made the decision to dispense with conventional taxonomy, and instead to split or lump those species which they considered merited this treatment. The intervening years have seen many of these decisions supported in peer-reviewed publications, and *BSA* taxonomy has been widely adopted. In fact, the Grimmett, Inskipp & Inskipp 2011 *Field Guide to Birds of the Indian Subcontinent* has largely adopted these same taxonomic changes and sequence (although English names still differ). Clearly *BSA* has been a leader in popularising changes to, and rejuvenating Asian bird taxonomy.

What does the second edition of *BSA* have to offer? It remains the most authoritative, comprehensive and detailed guide to the birds of the Indian subcontinent. It retains the positive attributes of the first edition, and the authors appear to have taken on board many of the comments and criticisms made in the earlier reviews, making numerous minor improvements to this edition. Being paperback, it weighs 2.1 kg, rather less than the whopping 2.5 kg of the first edition.

Volume 1, the field guide (0.8 kg), is the more likely of the two volumes to be used in the field. Here the obvious change is the addition of descriptive vocalisations within the accompanying texts, bringing it into line with its competitors. The maps are generally clear and largely unchanged but still a bit on the small side. Previous errors and omissions have been corrected; for example, the breeding range of Large-billed Reed Warbler *Acrocephalus orinus* is mapped for Afghanistan. Plate numbering and sequence remains as the first edition, and the original images are virtually unchanged. There have, however, been changes to plate layout and content to accommodate additional species, including the three newly discovered species: Great Nicobar Crake *Rallina* sp, Serendib Scops Owl *Otus thilohoffmanni* and Bugun Liocichla *Liocichla bugunorum*. This would have been a wonderful opportunity to correct some of the anomalies from the first edition, an example being the head and upper-body images of juvenile Little *Porzana parva* and Baillon's Crakes *P. pusilla*, which omit the crucial features for separating these species. Having said this, I have not come across any serious inaccuracies and the various artistic styles mesh quite well. Corrections to a number of shortcomings in the descriptive text from the first edition have been addressed.

Volume 2, entitled Attributes and Status, takes the form of a handbook, providing detailed information on identification, variation, status and distribution, voice and habits for each species. The changes to this edition are subtle, difficult to locate, and mostly relate to taxonomic revisions (see below) which have increased the number of species. It is therefore particularly useful that the authors have detailed the taxonomic changes in two appendices. The most radical involve 82 species-level taxonomic changes, which are

described in Appendix 11. These include six new species to the region, six considered Hypothetical in the first edition that are now confirmed, five species added to the Hypothetical list, further splits within the region increase the number of species by 17, a further 42 splits have been adopted between regional and extralimital taxa although these do not impact on the number of regional species, five taxa treated as full species in the first edition are lumped here and are thus removed from the species total, and one species is considered extinct within the region (Siberian Crane *Grus leucogeranus*) but still included here. Appendix 12 describes no fewer than 252 changes to the English and/or scientific names in the second edition. Thankfully the first edition names are given along with the new, making cross-referencing straightforward. Major checklists including Clements and IOC have yet to move on many of these changes so it remains uncertain whether these will be widely adopted. From a Western Palearctic perspective, BOU has already adopted most of the changes affecting passerines, but there are still 30+ changes, mostly to non-passerines, where BOU and *BSA* are at odds with the scientific names used here. Numerous other changes mostly affect generic revisions to Oriental species, and relatively few English names have been changed, with most being new names created due to splits.

As a two-volume handbook, the quantity of information contained here is staggering and it outperforms *BIS* in the level of detail presented, making it the most comprehensive guide available to the entire subcontinent. The two-volume format enables users to take one into the field, and study the detailed text in the other at a more leisurely pace. However, *BIS* cannot be ignored as it remains an authoritative text to the birds of the region, and the regional offshoot guides are particularly portable and useful in the field. As no one guide can cover everything, my recommendation would be to take *BSA* as the primary reference and supported by either *BIS* or the relevant regional guide from the *BIS* series (which are much lighter), thus giving the widest coverage of identification text, images and maps.

Peter Kennerley

An extended version of this review can be found on the *BB* website, at www.britishbirds.co.uk/category/book-reviews

News and comment

Compiled by Adrian Pitches

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

More on lead-shot poisoning

Concerns that lead poisoning from gunshot can affect both animal and human health have widened, following WWT-led research that suggests a third of waterbirds sampled suffer from lead poisoning through ingesting lead shot and that the law set up to protect them isn't working (see *Brit. Birds* 105: 691–692).

The RSPCA, RSPB and Humane Society International/UK have joined with WWT to reiterate that viable alternatives to lead shot are widely available and that these should be used to combat widespread suffering of wildlife and health concerns. The organisations have added their voices following the WWT report and Food Standards Agency (FSA) advice, which has raised concerns around humans regularly eating lead-shot game.

The organisations are calling on the Government to request that the Lead Ammunition Group (LAG), which was established to advise the Government on the key risks to wildlife from lead ammunition, reports by March 2013 so that its findings can inform the Law Commission's review of wildlife legislation.

WWT Chief Executive Martin Spray said: 'Lead is already banned from petrol, pencils and paint. Shooters in some other countries have already adapted to using non-toxic alternatives to lead for their shot. The evidence of the damage caused by lead-shot poisoning has built to a point where it cannot be ignored. New research... shows one in ten waterbirds sampled died from lead-shot poisoning, and a government agency has advised that eating lead-shot game on a frequent basis can expose people to potentially harmful levels of lead.'

RSPB Director of Conservation, Martin Harper, said: 'This new evidence reinforces just how widespread and harmful the effects of lead are. With a recent government-funded study showing low compliance with existing regulations in England on lead-shot use, it's not surprising unacceptable numbers of wildfowl are still dying avoidable deaths from lead poisoning. We also know the problem extends away from our wetlands. Several other bird species ingest lead shot in the same way as waterfowl, and birds of prey can suffer lead poisoning from accidentally ingesting shot in their prey. These are real issues which must be addressed as quickly as possible.'

There is an online petition where you can show support for stopping the use of lead shot at: http://you.38degrees.org.uk/petitions/stop-lead-poisoning-our-birds

Former police officer sentenced for stealing birds' eggs

A former Suffolk police officer, Michael Upson, has pleaded guilty to the possession of 650 wild bird eggs collected while he was still in the Suffolk Constabulary. This follows a successful investigation by the Norfolk and Suffolk Constabularies and the RSPB.

On 21st June 2012, a search by the police and the RSPB at Upson's home revealed 650 eggs of wild birds, including those of protected species such as Marsh Harrier *Circus aeruginosus* and Woodlark *Lullula arborea*. Detailed notebooks found at the house documented the police officer's egg-collecting trips with associates around the UK, including visits to steal eggs of Golden Eagles *Aquila chrysaetos* in the Outer Hebrides; Cetti's Warblers *Cettia cetti* in south Devon; Red-billed Choughs *Pyrrhocorax pyrrhocorax* in north Wales; and Hawfinches *Coccothraustes coccothraustes* in the New Forest. These notebooks also document him taking Kittiwake *Rissa tridactyla* eggs from Lowestoft Pier, while on duty as an acting sergeant on three different police night shifts. Upson claimed to have stopped egg-collecting many years ago, but the evidence found indicates that he was active between at least 1991 and 2001.

Upson received a 14-week sentence, suspended for 12 months. He must also pay £120 in legal costs and complete 150 hours of unpaid work in the community.

Mark Thomas, the RSPB investigations officer leading the case, said: 'That a police officer should knowingly break the law in pursuit of this obsession is shocking, and we welcome his conviction. Evidence from the diaries indicates that Upson stole over 900 wild bird eggs in an eight-year period. Not all of these eggs were recovered.'

The egg collection was found in the loft in an old suitcase along with hundreds of egg data cards, which he had faked to suggest the collection was old. However, the notebooks found in a plastic container hidden in the water tank in the loft gave all the accurate details of when the eggs were taken, in full written accounts.

BirdLife stalwart honoured

Richard Porter – stalwart of BirdLife, *BB* and many other causes – is to be made a Member of Honour of BirdLife International at the World Congress next June, in Ottawa.

Dr Marco Lambertini, Chief Executive of BirdLife, said: 'This award is in grateful recognition of your solid support to BirdLife in so many ways, including your long-suffering service to our Middle East region, which would not be in the incredible position it is today without your leadership in those vital early days and your wonderful support ever since. We also very much appreciate all of your valuable contributions to BirdLife in so many other ways! With this award we would like to formally recognise the role you play as a member of the wider "BirdLife Family".'

Everyone at *BB* knows the energy and passion that RFP brings to bear on causes he believes in so we were delighted with this news.

World listing

Following our piece on Tom Gullick breaking the 9,000-species barrier (*Brit. Birds* 105: 634), fellow world lister Jon Hornbuckle wrote to N&c. Jon points out that, as far as he is aware, the only websites where such lists are regularly updated are www.bubo.org and www.surfbirds.com

'The latter states that Tom has 9,047 and I have 8,923 [at the time of writing] but there is no comment on what taxonomic (authority) is used or whether "heard only" birds are included. My figure does not include heard only... The Bubo list is more rigorous as it does state the authority and whether heard only are included, e.g. my last World Lists (needing update now) were 8,855 for Clements and 9,060 for IOC authorities.'

Clearly, both Tom and Jon have seen a lot of birds on their travels, and (to continue the Olympic analogy from the earlier piece) it looks as though they both deserve a medal!

Recent reports

Compiled by Barry Nightingale and Harry Hussey

This summary of unchecked reports covers early October 2012 to early November 2012.

Headlines A Pale-legged or Sakhalin Leaf Warbler at Portland was the top story during this period. These species are so similar that it has not been possible to assign it to species, despite good photographs. Almost as rare was a South Polar Skua reported from Mizen Head. Other top-drawer east or southeastern rarities included Chestnut-eared Bunting, Siberian Rubythroat and Eyebrowed Thrush on Shetland or Fair Isle; an adult male Isabelline Shrike of the race *isabellinus* and a Siberian Stonechat of the race *stejnegeri* (both at Portland, both of which may go down as the first confirmed records of that particular race for Britain), White's Thrushes in Cornwall and the Outer Hebrides, a Spanish Sparrow on the Isle of Wight, another mainland Pallas's Grasshopper Warbler and an Eastern Olivaceous Warbler in Fife. Nearctic arrivals included Pied-billed Grebe and Cedar Waxwing in Co. Mayo, Solitary Sandpiper on Scilly, two or three Blackpoll Warblers, Bobolink in Shetland and two new Buff-bellied Pipits, while what was presumably the same Belted Kingfisher as that found earlier in October was rediscovered in Co. Galway. The supporting cast of more expected October rarities included exceptional numbers of some species (notably Olive-backed Pipits and Little Buntings) and a great variety of others.

Ross's Goose *Anser rossii* Waxham, 5th–6th November and Horsey (both Norfolk), 7th November. Cackling Goose *Branta hutchinsii* Lissadell (Co. Sligo), 16th October, then three, 19th–27th October; Whitrigg (Cumbria), 25th–26th October, same Loaningfoot (Dumfries & Galloway), 29th October; Islay (Argyll), five on 23rd October, then up to four subsequently. Red-breasted Goose *Branta ruficollis* South Swale (Kent), 14th–23rd October, then Sturt, 24th, and Farlington Marsh (both Hampshire), 25th October to 8th November; Islay, 21st October to 5th November. American Wigeon *Anas americana* Long-stayer, Tacumshin (Co. Wexford), to 5th November; Anglers CP/Wintersett Resr (Yorkshire), 8th October to 8th November; Kirk Loch or Castle Loch (both Dumfries & Galloway), 13th October to 2nd November; South Uist (Outer Hebrides), 24th–28th October; Loch of Strathbeg (North-east Scotland), 31st October to 5th November; St John's Loch (Highland), 3rd November. Black Duck *Anas rubripes* Achill Island (Co. Mayo), 12th–20th October. Blue-winged Teal *Anas discors* Rahasane (Co. Galway), 14th October, with another on 30th October. Ferruginous Duck *Aythya nyroca* Chew Valley Lake (Avon), 18th October. Lesser Scaup *Aythya affinis* Chew Valley Lake, long-stayer to 12th October, two during 15th–25th, one to 9th November, with one of these visiting both Cosmeston Lake and Cardiff

Kit Day

424. Juvenile Solitary Sandpiper *Tringa solitaria*, Bryher, Scilly, October 2012.

Bay (East Glamorgan); Rostellan (Co. Cork), 27th October to 4th November; Lough Gash (Co. Clare), 4th–11th November; Lough Gill (Co. Kerry), 9th–11th November; Lough Owel (Co. Westmeath), 10th November. King Eider *Somateria spectabilis* Burghead (Moray & Nairn), long-stayer intermittently to 5th November. Surf Scoter *Melanitta perspicillata* Peak counts at Llandulas (Denbighshire) of four on 3rd–5th November; Lower Largo (Fife), 13th and 20th October to 1st November; Ballyvaughan (Co. Clare), 16th October; Quanterness/Inganess Bay (Orkney), 17th–19th October; Embo (Highland), 27th–29th October; Saunton Down (Devon), 28th–30th October; Carnlough (Co. Antrim), 1st–7th November; Schull (Co. Cork), 10th November. Hooded Merganser *Lophodytes cucullatus* Pagham Harbour (Sussex), 6th–9th November.

White-billed Diver *Gavia adamsii* Flamborough Head (Yorkshire), 25th October; Whitburn (Co. Durham), 27th October.

Night Heron *Nycticorax nycticorax* Strumpshaw Fen (Norfolk), 1st November. Cattle Egret *Bubulcus ibis* Catcott Lows (Somerset), long-stayer to 11th October; Seaton/Axmouth Estuary, 27th October and Colyford (all Devon), 28th–30th October and 4th–7th November; Strabane (Co. Tyrone), 2nd–11th November. Purple Heron *Ardea purpurea* Radipole Lake (Dorset), long-stayer to 5th November; Morden Bog (Dorset), 8th October; College Resr (Cornwall), 17th–22nd October. Glossy Ibis *Plegadis falcinellus* New arrivals comprised up to four at various localities in Cornwall, 8th–23rd October; eight at Maidstone (Kent), 15th October; and singles at Rainham Marshes (Greater London), 14th–15th October; Dartford (Kent), 14th October; Aveton Gifford (Devon), 19th October; Keyhaven (Hampshire), 24th October; Hengistbury Head (Dorset), 25th October; Ouse Fen (Cambridgeshire), 25th October; and Ham Wall (Somerset), 29th October to 7th November.

Pied-billed Grebe *Podilymbus podiceps* Lough Baun (Co. Mayo), 29th October to 4th November.

Black Kite *Milvus migrans* Mizen Head (Co. Cork), 26th October; Slapton Sands (Devon), 31st October. White-tailed Eagle *Haliaeetus albicilla* Morpeth (Northumberland), 21st October. 'Northern Harrier' *Circus cyaneus hudsonius* Long-stayer, Tacumshin, to 20th October. Red-footed Falcon *Falco vespertinus* St Lawrence (Isle of Wight), 24th–25th October.

Black-winged Stilt *Himantopus himantopus* Newport/Gilberdyke (Yorkshire), 13th October; Saltfleetby (Lincolnshire), 13th October. American Golden Plover *Pluvialis dominica* Long-stayers in Argyll, Co. Clare, Co. Cork, Dumfries & Galloway, Orkney, Outer Hebrides and Shetland, and new arrivals in Cambridgeshire, Co. Clare, Co. Cork, Cornwall (one or two), Cumbria (two), Co. Derry (three), Co. Donegal, Co. Kerry, Co. Kildare, Norfolk, Oxfordshire, Scilly (two) and Co. Wexford (up to five). White-rumped Sandpiper *Calidris fuscicollis* Quilty (Co. Clare), to 10th October; Ballinrannig (Co. Kerry), 9th October; Tacumshin 13th–14th October and 26th October, increasing to four on 29th, then one on 2nd November and two on 3rd; Lough Beg (Co. Derry), 15th October; Cley/Salthouse (Norfolk), 17th–19th and 25th–29th October, two 30th October to 1st November, one remaining to 3rd November; Harris (Outer Hebrides), 18th October; Brora (Highland), 28th–31st October;

Will Soar

425. Juvenile male Belted Kingfisher *Megaceryle alcyon*, Lough Fee, Co. Galway, October 2012.

Rahasane, 4th November; Baltimore (Co. Cork), 11th November. Baird's Sandpiper *Calidris bairdii* Long-stayer at Rosscarbery (Co. Cork), to 15th October. Buff-breasted Sandpiper *Tryngites subruficollis* Long-stayer at Bridges of Ross (Co. Clare) to 13th October; Goswick (Northumberland), 8th October; Annagh Head (Co. Mayo), 12th October; Aberlady Bay (Lothian), 13th October. Long-billed Dowitcher *Limnodromus scolopaceus* Long-stayers at Slimbridge (Gloucestershire), to 8th November, North Uist (Outer Hebrides), to 8th October (with this or a new bird on 23rd–26th October), and Alkborough Flats (Lincolnshire), to 7th November. New arrivals at Rosscarbery, 9th October; Burton Mere (Cheshire & Wirral), 13th–19th October; Llanelli (Carmarthenshire), 28th–29th October; and Beadnell (Northumberland), 4th–8th November. Spotted Sandpiper *Actitis macularius* Moyasta (Co. Clare), two, 13th–17th October, one to 3rd November; Ballysadare (Co. Sligo), 13th October; Killarney (Co. Kerry), 23rd–25th October. Solitary Sandpiper *Tringa solitaria* Bryher, 12th–14th October, same St Mary's (both Scilly), 15th–17th October. Lesser Yellowlegs *Tringa flavipes* Long-stayer, North Bull (Co. Dublin), to 23rd October; King's Sedgemoor/North Moor (Somerset), 10th–12th October; Ballinskelligs (Co. Kerry), 13th–27th October; North Hayling (Hampshire), 14th October; Aldcliffe Marshes (Lancashire & N Merseyside), 21st October to 7th November; Ernesettle Creek (Devon), 21st October to 6th November; Alkborough Flats, 28th October to 3rd November.

Gary Thoburn

426. Adult male Isabelline Shrike *Lanius isabellinus*, Portland Bill, Dorset, October 2012.

South Polar Skua *Stercorarius maccormicki* Mizen Head, 12th October. Little Gull *Hydrocoloeus minutus* Spurn (Yorkshire), 6,500 on 8th October. Bonaparte's Gull *Chroicocephalus philadelphia* Dawlish Warren (Devon), 21st October to 9th November; Sunderland (Co. Durham), 27th October; Boddington Resr (Northamptonshire), 1st–4th November. Forster's Tern *Sterna forsteri* Long-stayer at Soldier's Point (Co. Louth) to 13th October; Galway Bay (Co. Galway), 29th October to 4th November.

Belted Kingfisher *Megaceryle alcyon* Clifden (Co. Galway), 31st October. European Bee-eater *Merops apiaster* Swanage, 28th–29th October, same Durlston Head (both Dorset), 30th October; Seaburn (Co. Durham), 31st October and 3rd–8th November.

Pete Saunders

427. Pale-legged *Phylloscopus tenellipes* or Sakhalin Leaf Warbler *P. borealoides*, Portland, Dorset, October 2012.

John Carter

428. Eastern Olivaceous Warbler *Iduna pallida*, Kilminning, Fife, October 2012.

Isabelline Shrike *Lanius isabellinus* Portland Bill (Dorset), 23rd–27th October. Woodchat Shrike *Lanius senator* Inishmore (Co. Galway), 10th–20th October. Penduline Tit *Remiz pendulinus* Dungeness, 15th and 28th October, and 5th November, Oare Marshes, 30th–31st October, and Grove Ferry (all Kent), 6th November, increasing to four on 9th; Tresco (Scilly), 22nd–27th October. Short-toed Lark *Calandrella brachydactyla* St Mary's, 15th–16th October; Spurn, 27th October. Red-rumped Swallow *Cecropis daurica* Falmouth (Cornwall), 8th October; Titchwell (Norfolk), 15th October; Cley, 17th October; Nisthouse (Orkney), 22nd October; Blackness (Fife), 3rd November; West Shore Wood (Lothian), 4th November.

David Tipling

429. Red-flanked Bluetail *Tarsiger cyanurus*, Stiffkey, Norfolk, October 2012.

Greenish Warbler *Phylloscopus trochiloides* Old Head of Kinsale (Co. Cork), 12th October; Three Castles Head (Co. Cork), 17th October. Arctic Warbler *Phylloscopus borealis* Ronas Voe (Shetland), 21st October; Brancaster Staithe (Norfolk), 24th–25th October; Lerwick (Shetland), 6th–9th November. Pale-legged *Phylloscopus tenellipes* or Sakhalin Leaf Warbler *P. borealoides* Portland, 22nd October. Hume's Warbler *Phylloscopus humei* Cambois (Northumberland), 11th–12th October; Unst (Shetland), 16th–17th and 24th October; Fair Isle, 17th–18th October;

Beachy Head (Sussex), 30th October to 4th November; Ventnor (Isle of Wight), 1st November; and a much-debated bird on St Mary's, Scilly, on 15th–18th October. Radde's Warbler *Phylloscopus schwarzi* Spurn, 11th October; Bardsey (Caernarfonshire), 14th October; Lunan Bay (Angus & Dundee), 18th–21st October; Kilminning (Fife), 18th–21st October; St Agnes, 22nd–23rd October and Gugh (both Scilly), 22nd October; Farne Islands, 22nd–25th October; Bryher, 24th October; Hollesley Marshes (Suffolk), 30th October. Dusky Warbler *Phylloscopus fuscatus* Whalsay (Shetland), 12th October; Inishmore, 19th–23rd October; Sandwick (Shetland), 19th October; Sumburgh (Shetland), 20th October; Reculver (Kent), 22nd October; Hartlepool Headland (Cleveland), 22nd October; Whitburn, 23rd–28th October; St Mary's Island (Northumberland), 23rd October; Flamborough Head, 25th October; Holkham (Norfolk), 25th October; Holy Island (Northumberland), 25th–26th October; Burniston (Yorkshire), 25th October; Lynford (Norfolk), 29th October. Subalpine Warbler *Sylvia cantillans* Portland, 14th and 20th–26th October. Pallas's Grasshopper Warbler *Locustella certhiola* Marsden Quarry (Co. Durham), 12th October. Lanceolated Warbler *Locustella lanceolata* Fair Isle, long-stayer to 22nd October; Burniston, 12th October; North Ronaldsay (Orkney), 17th October. Eastern Olivaceous Warbler *Iduna pallida* Kilminning, 14th October to 8th November. Booted Warbler *Iduna caligata* St Agnes, 20th October. Paddyfield Warbler *Acrocephalus agricola* Church Cove (Cornwall), 8th–13th October. Blyth's Reed Warbler *Acrocephalus dumetorum* Tory Island (Co. Donegal), 8th October; North Ronaldsay, 9th October; Fair Isle, 11th October; Dale of Walls (Shetland), 12th October; St Mary's Island, 13th October; Radipole, 13th October; Helvick Head (Co. Waterford), 15th–16th October; Inverness (Highland), 20th October; St Mary's, 30th October to 2nd November.

Cedar Waxwing *Bombycilla cedrorum* Tarmon/Belmullet (Co. Mayo), 10th November. Rose-coloured Starling *Pastor roseus* Long-stayer on St Mary's to 14th October; others at Holme (Norfolk), 13th October; St Agnes, 21st–24th October; Haverfordwest (Pembrokeshire), 20th–21st October; Cape Cornwall, 22nd October and Walmsley Sanctuary (both Cornwall), 30th October; Knockadoon Head (Co. Cork), 28th October.

Grey-cheeked Thrush *Catharus minimus* St Agnes, long-stayer to 8th October. White's Thrush *Zoothera dauma* Cot Valley (Cornwall), 8th October; Barra (Outer Hebrides), 13th October. Eyebrowed Thrush *Turdus obscurus* Foula (Shetland), 13th October. Siberian Rubythroat *Calliope calliope* Fair Isle 23rd October to 3rd November. Red-flanked Bluetail *Tarsiger cyanurus* Blyth (Northumberland), 22nd October; Stiffkey (Norfolk), 22nd–24th October. Siberian Stonechat *Saxicola maurus* Long-stayer at Hoswick (Shetland), to 8th October; others at Birling Gap (Sussex), 20th–23rd October; Portland, 25th–26th October; Bolt Head (Devon), 27th–30th October; Wellington GP (Herefordshire), 27th and 30th October; Unst, 29th October; Southend (Essex), 30th October. Pied Wheatear *Oenanthe pleschanka* Holy Island, 14th October; Quendale (Shetland), 23rd October; Virkie (Shetland), 24th October. Desert Wheatear *Oenanthe deserti* Worthing (Sussex), 25th–26th October; West Lulworth (Dorset), 27th October; Abberton Resr (Essex), 28th October to 5th November.

George Petrie

430. Chestnut-eared Bunting *Emberiza fucata*, Virkie, Shetland, October 2012.

Spanish Sparrow *Passer hispaniolensis* Newchurch (Isle of Wight), 4th–6th November.

Citrine Wagtail *Motacilla citreola* Bardsey, 9th–12th October. Tawny Pipit *Anthus campestris* Easington (Yorkshire), 13th–17th October; Great Orme (Caernarfonshire), 3rd November. Olive-backed Pipit *Anthus hodgsoni* A record influx, with up to 47 arriving during 9th–28th October: 18 on 12th–16th October, another eight during 18th–19th and a further 13 on 21st–25th October. No fewer than 23 were on Shetland or Fair Isle but others reached Yorkshire (up to five), Cornwall (four), Orkney (three), Northumberland (three), Norfolk and Scilly (two each), and single records from Essex, Co. Galway, Kent, Outer Hebrides and Suffolk. Pechora Pipit *Anthus gustavi* Portland, 26th October. Red-throated Pipit *Anthus cervinus* Orcombe Point (Devon), 9th October; Leasowe (Cheshire & Wirral), 10th October; Sennen (Cornwall), 12th October; Cape Clear (Co. Cork), 14th October; Porthgwarra (Cornwall), 14th October; St Agnes, 14th and 25th–28th October; Ballycotton (Co. Cork), 21st October; St Mary's, 21st October and 1st November; Penlee (Cornwall), 25th October; Tacumshin, 2nd November; Slimbridge, 6th November. Buff-bellied Pipit *Anthus rubescens* Long-stayers remained on St Mary's to 11th October and Ballinrannig/Smerwick (Co. Kerry), to 13th October; Bryher, 9th and 19th–27th October; Foula, 28th October.

Arctic Redpoll *Carduelis hornemanni* In Shetland, a small influx of the nominate race with a long-stayer on Unst to 13th October, another from 30th October to 3rd November, then up to six from 4th November. Elsewhere in Shetland, singles on Foula on 16th October, Whalsay 18th–20th October, Maywick 27th October, and two at Isbister on 4th November. Singles were on Fair Isle on 18th and 25th October, and 2nd November. Elsewhere Lewis (Outer Hebrides), one on 14th, two on 16th, one to 20th October, two on 29th October; North Ronaldsay, one on 17th–18th October with two 19th–22nd; Holkham, 26th–27th October.

Rustic Bunting *Emberiza rustica* Marsden Quarry, 23rd–24th October. Chestnut-eared Bunting *Emberiza fucata* Virkie, 23rd–25th October. Little Bunting *Emberiza pusilla* A total of at least 24 arrived between 12th October and 7th November, with seven during 12th–14th October and another 13 between 22nd and 30th October. There were at least seven on Shetland/Fair Isle and five on Scilly, plus two in Co. Durham and singles in Caernarfonshire, Cleveland, Devon, Gloucestershire, Herefordshire, Norfolk, Northumberland, Orkney, Outer Hebrides and Yorkshire.

Bobolink *Dolichonyx oryzivorus* Brake (Shetland), 28th October. Blackpoll Warbler *Setophaga striata* Bryher, 11th–18th October, St Mary's, 28th–29th October; Tarmon/Belmullet, 9th November.

Richard Stonier

431. Blackpoll Warbler *Setophaga striata*, Bryher, Scilly, October 2012.

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