SANDGROUSE

Volume 29 (2) *2007*

ORNITHOLOGICAL SOCIETY OF THE MIDDLE EAST,
CAUCASUS AND CENTRAL ASIA

OSME

ORNITHOLOGICAL SOCIETY OF THE MIDDLE EAST, CAUCASUS AND CENTRAL ASIA

OSME

OSME was founded in 1978 as the successor to the Ornithological Society of Turkey. Its primary aims are:

- To collect, collate, and publish data on all aspects of the birds of the Middle East, the Caucasus and Central Asia.
- To promote an interest in ornithology and bird conservation throughout the Middle East, the Caucasus and Central Asia.
- To develop productive working relationships with other governmental and non-governmental organisations with an interest in conservation and/or natural history in the region.

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Write to the Membership Secretary at the address below for a membership form detailing methods of payment and also rates for Family, Supporting and Life membership. For any other information on the Society, write to the Secretary at the same address.

Publications

OSME publishes a scientific journal, *Sandgrouse*, containing papers, news and features on all aspects of Middle Eastern ornithology. Published twice yearly, it is issued free to members. Further copies are available for sale from OSME.

Meetings

An Annual General Meeting is held in London at which guest speakers provide new perspectives on ornithology in the region. There are also occasional special meetings, some taking place outside the UK.

Projects

OSME organises field expeditions to collect data on birds in little-known parts of the region and in areas where OSME can assist by teaming up with local groups.

The Conservation & Research Committee grants funds to valuable field projects and desk studies which further knowledge and conservation of birds in the region. Grants have been awarded to over 65 projects since the Conservation & Research Fund was set up in 1982.

MEBirdNet Email Discussion Group

This is an e-mail mailing list (moderated by OSME) that discusses birds and birdwatching in the Middle East, Caucasus and Central Asia. Subjects include research, conservation, bird news, recent records, identification, requests for information and exchange of information. To join the mailing list, send an empty e-mail to: MEBirdNet-subscribe@yahoogroups.com.

ISSN 0260-4736 Registered charity no 282938

c/o THE LODGE, SANDY, BEDFORDSHIRE SG19 2DL, UK
OSME Web site - http://www.osme.org

SANDGROUSE
Volume 29 (2)

Cover Photograph:
White-throated Robin, *Irania gutturalis*, April 2006, Syria
© Aurélien Audevarde.

EDITORIAL

Perhaps the most revolutionary advance in ornithology, and one that will have a direct influence on birding, may come from the results described in a recent paper published in *Molecular Ecology Notes*. An advance copy was published on the Web: **Kerr, KCR, MY Stoeckle, CJ Dove, LA Weigt, CM Francis and PDN Hebert. 2007.** Comprehensive DNA barcode coverage of North American birds. *Mol. Ecol. Notes*. (OnlineEarlyArticles) 17 Jan 07. doi: 10.1111/j.1471-8286.2006.01670.

In brief, self-consistent results were obtained for 643 bird species, with the cautionary note that testing the approach on other 'well-characterised assemblages' was essential to prove the validity worldwide of this method of computer-assessed DNA results from blood or feather samples. The paper holds out the tantalising prospect of PDA-type readers that could confirm a species' identity from its 'bar-code' version of its DNA. Not only might birders be interested in the use of this technique (the ethics of its usage will need to be evaluated pretty quickly), but conservation authorities and wildlife regulatory bodies might just get a useful addition to their armoury. Think of how trafficking in the world's fauna could be better controlled if the identity of species in consignments could be confirmed in seconds, without the need for expertise at every location.

Mike Blair

OSME News

NEW VICE-PRESIDENTS

OSME is delighted to welcome two new Vice Presidents who will serve a term of ten years. These are Dan Alon from the Israel Ornithological Centre, and Dr Akram Eissa Darwish, who is Chairman of Syrian Society for the Conservation of Wildlife. Having served a term of ten years already we thank our outgoing Vice Presidents for their support and advice. They are Dr Omar Al-Saghier, President of the Yemen Ornithological Society, and Dr Yossi Leshem, Director of the International Centre for the study of Bird Migration, based in Israel.

OSME COUNCIL

OSME welcomes four new Council Members who have been elected for a five-year term. These are Richard Bonser, Ian Harrison, Guy Kirwan and Geoff Welch. Steve Rooke, who was elected in 2006, has been forced to stand down due to pressure of work. Lastly, Council has decided that although he was due to stand down by rotation this year, Keith Betton should remain as Chairman for an extra year, retiring now in 2008. A full list of Council Members is shown on the inside title page.

OSME SUMMER MEETING

About 45 Members and guests attended OSME's Summer Meeting in London on 7 July. A wide range of talks covered many aspects of bird conservation and research in the Middle East and Central Asia. Richard Porter outlined recent conservation work in Syria, Iraq and Yemen. He was particularly concerned about the development of a new and unnecessary road around the coast of Socotra. Geoff Welch revealed the latest Important Bird Area work in Kazakhstan, Uzbekistan and Turkmenistan, with 95 sites identified already and a further 100 expected by 2008. Remco Hofland explained how he led a team to look for Sociable Lapwings in Syria and found a minimum of 1500 in a relatively small area, while over 700 were also found by a team nearby in Turkey. Mick Green gave the results of census work after several visits to Barr al Hikman in Oman. This underlined its

huge importance for migrating waders and other waterfowl. Staying in Oman, Ian Harrison reflected on changes he had seen over the last twenty years. In particular he felt that many birding sites around Muscat had now been damaged by urban and industrial development, and while tourism was good in many ways, he was concerned about the new proposals to build more hotels along the coast. Guy Kirwan talked about the work he had done during the writing of the forthcoming book on Turkey's avifauna. Richard Prior gave a summary of what it was like working and birding in Lebanon over the last two years, and finally Richard Bonser outlined the highlights of several recent visits to Egypt's Red Sea coast. A poster presentation on Chaffinch biometrics was made by Uktu Perktaş, who was visiting from Turkey.

MORE OSME FUNDS TO HELP PROJECTS IN THE REGION

OSME has used money from its Conservation and Research Fund to assist two more projects in the region. £500 was awarded towards the cost of undertaking additional ringing projects in Bahrain. £375 was used to supply binoculars for the five locally-employed staff who act as wardens at the breeding site of the Northern Bald Ibises in Syria. See **Plate 1** below. Also, at our suggestion, the African Bird Club generously funded fieldwork in Ethiopia to understand exactly where the birds spent the winter. We welcome applications for project funding from anyone looking to carry out valuable research within the region.

OSME NEEDS HELP WITH ITS WEBSITE

Our website contains much useful information, with trip reports, recent sightings and copies of important papers. However we want to grow it with additional information – such as checklists, photographs and information on sites. Once it has been updated, key areas of the site will be translated into several languages. If you have web experience and are willing to join our "virtual web team" who will update certain sections from where they are based then please do get in touch with Keith Betton (chairman@osme.org)

OSME JOURNALS NEED HOMES IN THE REGION

We are looking to provide ornithologists and libraries in the OSME region with sets of back issues of *Sandgrouse*. Anyone travelling to the region who is willing to take a set (they weigh 6kg, but we can negotiate!) please get in touch with Effie Warr (membership@osme.org).

Plate 1. Syrian Guard with donated binoculars. © *Jeremy Lindsell RSPB*

RAY DANIEL

OSME was saddened to learn of the death of Ray Daniel earlier this year. Ray served as our Librarian from 1998 to 2004. In that role he helped many members by lending them documents or searching out obscure references, and he ensured that we had a very wide range of material stored.

OSME CONSERVATION AND RESEARCH FUND

The Society has awarded grants to a number of projects in the region over recent months. The grants come from the Conservation and Research Fund, which is used to support a wide range of conservation, survey and educational projects.

Recent awards include:

- £1000 towards the cost of mounting an expedition to establish the numbers of wintering Sociable Lapwings in Syria.
- £300 to cover the travel costs of an amphibian expert to speak at the annual spring White Stork Festival at Lake Uluabat in NW Turkey.
- £520 towards the cost of research into Lesser Spotted Eagle ecology in the Caucasus.
- £2000 towards the production of a new Arabic Birds of Syrian field guide (of which £1500 was donated by Swedish tour operator Avifauna).
- £400 to extend work currently undertaken by the Bahrain Ringing Project.
- £360 to provide binoculars and telescopes for rangers protecting the Northern Bald Ibis colony in Syria.

We welcome applications for project funding from anyone looking to carry out valuable research within the region.

ERRATA IN ISSUE 28 (2): The short note 'The first Wattled Starling *Creatophora cinerea* in Kuwait – an escape' was illustrated by a picture of Red-billed Starling *Sturnus sericeus*. The author, Khaled al-Ghanem, had no access to any reference material picturing Red-billed Starling, and had in the circumstances assumed that the illustration in Porter *et al* (1996) of Wattled Starling resembled the bird seen. Wattled Starling of course has occurred in southern Arabia as far as Oman. It was unfortunate that the illustration arrived as 28 (2) was being typeset, and the editor forwarded it immediately without passing it to the identification consultants. Reference to Feare & Craig 1998 subsequently clearly emphasised the error, but revealed a mystery, because the illustrations of Wattled Starling in Porter *et al* (1996) (p201) do not resemble in any way those in Feare & Craig (1998) (pp79 & 83). The short note is withdrawn. The editor apologises to all, but in particular to the author. *Mike Blair*

ERRATA IN ISSUE 29 (1): There were a number of errors in the Late News Photospot 'Sociable Lapwing *Vanellus gregaria* in Syria'. On p89, **Plate 2** was actually of a White-tailed Lapwing *V. leucurus*. I had assembled a number of pictures from David Hoekstra's list, but had not taken the time to replace serial numbers with bird names, and so selected the wrong number. **Plate 4** on p96 is actually of a flock of Ruddy Shelduck *Tadorna ferruginea*. My apologies go to David Hoekstra for these errors with the pictures. Furthermore, a typo was missed on the proofs; at the end of line 3 of the first paragraph, it should have read 'Syria' and not 'Turkey', since of course Turkey had been mentioned earlier in the line. Apologies therefore are due to Remco Hofland and to all members of the team that went to Syria. As a matter of courtesy, the text of this Late News item should have mentioned the main supporter of that expedition, Van Tienhoven. That omission was not intentional, and I emphasise here that the Van Tienhoven support for the Syrian and other expeditions is most admirable, greatly appreciated. Finally, the total of about 2000 Sociable Lapwings in Syria mentioned in the Photospot concerned a count made shortly after the expedition had left Syria, and should be regarded as unverified at present. The highest verified Syrian counts give a total of 1579 birds in four different locations. *Mike Blair*

NEWS & INFORMATION

compiled by Dawn Balmer & Keith Betton

The aim of this section is to inform readers about events in the OSME region. It relies on members and others supplying relevant news and information. If you have anything concerning birds, conservation or development in the OSME area please send it to News and Information, OSME, c/o The Lodge, Sandy, Bedfordshire SG19 2DL, UK, or send it to the appropriate e-mail address shown inside the front cover.

This section is not intended as a definitive report or write-up of the projects concerned. Many of the projects are sponsored; such support is appreciated but is not generally given acknowledgement here.

ARABIA

Phoenix No 23, the latest newsletter of the Atlas of the Breeding Birds of Arabia Project was published in January. Contents include the first breeding in Arabia of the Spotted Crake *Porzana porzana*, discovery of a breeding colony of Cattle Egret *Bubulcus ibis* in UAE and the birds of the Wadi Khabb Shamsi/Wadi Bei - Oman/UAE, Mussandam. For further details contact Mike Jennings at Warners Farm House, Warners Drove, Somersham, Cambridgeshire, PE28 3WD, UK. Or email ArabianBirds@dsl.pipex.com

CYPRUS

Bird photographs wanted

The Birdlife Cyprus website is seeking photographs of birds taken in Cyprus (old and new), in particular photos of rarities or semi-rarities (see http://www.birdlife-cyprus.org/specieslist.htm) are wanted. Please send photographs to the webmaster Chris Lamsdell (email: lamsdell@tiscali.co.uk)

ISRAEL

IRDC Bulletin 6:01

The Israeli Rarities and Distribution Committee (IRDC) have published their latest bulletin on rarities in Israel. It can be viewed at: http://www.israbirding.com/irdc/bulletins/bulletin_6/index.shtml. The updated species list of Israel can be found at: http://www.israbirding.com/irdc/bulletins/irdc_list/

White Stork Webcam

A webcam has been fixed to a White Stork nest at Kibbutz Tirat Zvi, Beit She'an Valley, about 30 KM south of Lake Galilee. This is the first nest in the Beit She'an Valley. The webcam can be viewed at www.birds.org.il. Four years ago a female White Stork was found with a broken wing and rescued by staff at the small Rehabilitation centre in the Kibbutz. A male landed nearby and tried to attract the female but failed. The people from the Kibbutz erected a pole with a tractor wheel on top. This year the male successfully attracted a mate during spring migration and they are nesting successfully.

A New Israeli Bird Forum - Israbirding.com

A new forum for birding in Israel has been launched to promote the exchange of information on birds and birding in Israel, and its immediate surroundings, at http://www.israbirding.com/israelbirdsforum/forum.php. Please follow the link to join this forum. Contributed by: Ido Tsurim, Avner Cohen and Tomer Landsberger)

JORDAN

Birdwatching returns to the Azraq wetland reserve

Jordan's commitment to sustainable tourism continues to receive strong support from the Royal Society for the Conservation of Nature (RSCN), the independent voluntary organization devoted to the conservation of Jordan's natural resources. Thanks to the valiant efforts of the RSCN and their push to restore and improve the once-endangered Azraq Wetland Reserve, a unique wetland oasis in the heart of the semi-arid desert, birders and conservationists alike can once again

experience large numbers of a wide variety of birds, some stopping for a short rest along the migration routes and others wintering or breeding within the protected areas. Azraq once attracted up to half a million migrants at any one time, before water extraction began in the 1980s, but by 1993 so much water had been extracted that no surface water remained and the reserve's ecological value was virtually destroyed. In 1994, the combined efforts of the RSCN and international support initiated a rescue effort, resulting in a significant portion of the wetland being restored. Many species have returned to Azraq oasis, which now has boardwalks and bird hides. At Azraq, regular species are Sinai Rosefinch *Carpodacus synoicus* (Jordan's national bird), Temminck's Lark *Eremophila bilopha*, Desert Lark *Ammonanes deserti*, Greater Hoopoe-Lark *Alaemon alaudipes*, Desert Wheatear *Oenanthe deserti* and Trumpeter Finch *Bucanetes githagineus*, winter visitors including Common Crane *Grus grus* and Eastern Imperial Eagle *Aquila heliaca*. For those wanting to spend more than a day at Azraq, the RSCN has recently opened a new 16 room eco-lodge. For further information about Jordan, contact the Jordan Tourism Board at www.visitjordan.com and to find out more about the RSCN, visit www.rscn.org.jo.

KUWAIT

Birding Kuwait

The latest news from Kuwait can be found on Birding Kuwait, a blog/website run by Mike Pope. The website address is: http://www.hawar-islands.com/blog/14_stub.php.

KAZAKHSTAN

Kazakhstan signs up to protect important wetlands

The first Ramsar site to be declared in Kazakhstan will be the 'Tengiz-Korgalzhyn Lake System'. The site comprises the complete lake system, the lake shore areas as well as a buffer zone. Altogether the area totals some 353,000 hectares. An associated nature museum and visitors' centre will encourage the use of the site for science-based tourism and research. The news has been welcomed by the Association for the Conservation of Biodiversity in Kazakhstan (ACBK) who have been working towards Kazakhstan's succession to the Convention. "Korgalzhyn and Tengiz Lakes are particularly important areas for migratory birds" said Valery Khrokov, President of ACBK. "Accession to the Ramsar Convention will help us ensure that our efforts to conserve them fit into a global strategy for conserving wetland birds". Birdlife International and the United Nations Development Programme have assisted with this work. Details are under the heading 'Government Expands Protection of Steppes' on the website:http://www.rferl.org/featuresarticle/2007/04/1F7E0162-F52A-43D5-8951-E65F03E3E75A.html

New website

Kazakhstan Bird Conservation Union has its own web-site, in Russian and English. It can be viewed at: http://www.kbcu.net/index.htm (Contributed by Jevgeni Shergalin)

REVIEWS & Recent Literature

The Birds of Kazakhstan by Arend Wassink and Gerald Oreel. Privately Published. Contact http://www.birdsofkazakstan.com. Price 55€. ISBN 978-90-811462-1-0

I am lucky enough to have been to Kazakhstan three times over the last 20 years, the first time back in 1987. And how it has changed in that period, for instance the administrative capital has had a different name on each of my visits. Our bird knowledge has changed too. On my first visit in 1987, Yellow-eyed Stock Dove was never mentioned and in 1992 I can remember a wild goose chase of dozens of miles to a Moslem cemetery site where the species had been seen 20 years before! Needless to say we didn't find the bird. In 2005 I knew exactly where to find the species. Kazakhstan is an enormous country, the 9th largest in the world, occupying land the size of the whole of Western Europe, and so a book on its birds in the English language is long overdue.

This book is a comprehensive summary of all the current knowledge, but as the authors indicate 'there remain enormous gaps in our knowledge of the birds of Kazakhstan' – consequently they request any corrections and additions. They record a bird list of 498 as of April 2007 – bird trips visiting this spring season perhaps will have pushed the list to over 500. And will breeding Slender-billed Curlew have been rediscovered?

The book is an all-Dutch affair, but in excellent English – graphics, layout, photo editing, publishing and printing are all the work of familiar names. The authors, Gerald Oreel and Arend Wassink, should be particularly well known to anyone familiar with the high quality *Dutch Birding* magazine. There is an introductory section detailing the landscapes and habitats, complete with a stunning collection of photographs showing the various deserts, wetlands, mountains, forests and steppe. This is followed by a short piece on climate and the inevitable environmental threats; and conservation.

Each species, including sub-species, is covered by a short paragraph detailing status, habitat, distribution (including a breeding distribution map), and migration. A simple bar diagram shows the species presence over the year. Not all species are illustrated by photographs but all the key birds are covered – those 'birders' birds' which make Kazakhstan such a special place. Eversmann's Redstart, White-tailed Rubythroat and White-browed Tit-Warbler are my personal favourites. It's a shame that the White-winged Lark photo is only of a recently fledged juvenile. Photo reproduction is to a very high standard thanks to Rene Pop's well known expert skills in pre-print preparation. In addition, there are several delightful watercolour illustrations by Martin Eccles. The Red-fronted Serin is particularly attractive.

Three appendices cover species omitted from the Kazakhstan list (for various reasons), Red List species of which there are 34 and plant species and genera mentioned in the text. Finally, a nice little touch is a bookmark so you can tag that favourite photograph or species account. The book is beautifully produced and should be on the shelf of anyone with an interest in the birds of this exciting region of the world.

Tim Loseby

The Emirates – a Natural History Edited by Peter Hellyer and Simon Aspinall. Published by Trident Press (www.tridentpress.com). Hardback. 428 pages. ISBN 1-905486-02-2. £60.00

This is a truly impressive book. Weighing in at almost 3kg, it has been created using the knowledge of 34 expert authors backed up by the work of many excellent photog-

raphers. Specialist chapters cover all aspects of the natural history of the United Arab Emirates – mammals, birds, reptiles, amphibians, fish, insects and plants, with additional authoritative chapters on the region's geology and conservation.

The section on birds covers 22 pages, which is perhaps smaller than one might have expected, given that the book's editors are birders. Starting with a look at the ornithological year, this chapter segments each of the main habitats and discusses the typical species that may be encountered. Tables are included to display data on the main intertidal species.

There are already many sources on bird information for the UAE, so for me the real value of this book is revealed once you read the chapters on those faunal groups for which there is little published information. To have drawn together all of these experts to create this book is a real triumph, and it would be great to see similar such works to cover the wildlife and natural history of other areas within the region.

Keith Betton

Books, journals, papers and short notes traditionally have formed the basis of the 'tools' used in the work variously called ornithology, birding or birdwatching. It's about time we paid more attention to the electronic additions. I am expending the definition of 'literature' in this section to encompass such matter - ***Editor***

The Coming Revolution: WorldBirds

David Murdoch *damurdoch@hotmail.com*

Many years ago, when I started birdwatching, I was given a notebook. My fearsome great-aunt told me in no uncertain terms that my notebook was more important than my prized pair of binoculars, and she was right. Seventeen notebooks later, they are some of my most valued possessions. But, though the memories are treasured, 95% of my records lie unused. I have travelled for thirty years accumulating records which then gather dust. At last, the situation is about to change: the revolution is coming, WorldBirds is about to hit the scene. WorldBirds is a global 'family' of internet-based data collection systems, being created to get all that unused but priceless information into a form accessible to all. It is being set up by Birdlife International, the partnership of the world's bird conservation societies, comprising over 150 member organisations. The national partner has 'ownership' of the records data from that country but OSME (and the other Regional Bird Clubs) can play a pivotal role as the 'experts' at the regional level, particularly for countries with few national birders or without a national BirdLife partner. OSME can mobilise resources (local experts and enthusiasts) and promote the programme via *Sandgrouse* and the OSME website.

The potential benefits are immense and wide-ranging, as these few examples show: WorldBirds imparts data ownership to national organisations and will contribute to their development; the data collected include site co-ordinates, enabling the data to be used to develop national atlases, whether of breeding and wintering species; WorldBirds encourages birders to submit comprehensive day lists – the provisional indications are that their analysis show that day lists can align with national trends and thus potentially can be the basis of reliable Abundance Indicators; standardised data submission makes data processing by national (and local) recorders much simpler, allowing them to tackle in-depth data analysis; WorldBirds emphatically is not just for birders visiting foreign countries, because a major focus of the project is to encourage amateur birders in countries that have few professional ornithologists, and, of course, birds are not the only wildlife in the world – the WorldBirds IT set-up potentially can be used for any wildlife group – bats, beetles, butterflies or nudibranchs (that is, sea slugs).

How do birders participate? In this brief account, I cannot do justice to the complexity of the system; a demonstration site at www.birdlife/info/demo/kenya.php gives a feel, but access to a live site such as Kenya's (www.worldbirds.org/Kenya) really shows its potential. Contributors need to log in with their own password. The Kenya site hosts checklists (national and personal), maps and 'top 50s' (species, locations, birders etc.). Locations are linked to Important Bird Area

(IBA) factsheets. I looked at the information available for Sharpe's Longclaw *Macronyx sharpei*, a Kenyan endemic and Red Data Book species, and found not only the list of recent records but a sophisticated distribution map and links to the RDB species factsheet. WorldBirds will therefore be immensely useful also for visitors planning trips as a free data source – to which I hope they will later contribute. To input data, certain 'key fields' are needed, most of which are obvious – species, counts, date, time spent birding. Latitude and longitude are vital – or at least a local proxy such as the UK National Grid. Additional information enhances outputs: *eg* a full checklist of species seen and numbers of observers are particularly useful. These basic fields allow some good baseline scientific criteria to be compiled, such as effort information, but with more data, WorldBirds can employ increasingly sophisticated analysis. When the data are submitted, they are available to all – with reservations.

There are potential drawbacks and problems with any powerful system of information. It is obvious that hunters or egg-collectors might abuse that information; but this can easily be avoided, as those submitting data can suppress records of 'sensitive' species, data that can still be accessed by national administrators. The system needs administrators and records need to be checked, requiring a sophisticated validation system – but much of it can be automated and it will assist OSME to improve assessment of records. Many birders, of course, do not have Net access, but although this is fast changing, it remains a significant problem in developing countries. The present system has problems accepting data gathered while the observer is travelling – for instance, records of seabirds during a sea crossing – a serious challenge that needs to be addressed. In particular, the WorldBirds programme demands high standards of data collection, which may be uncomfortable for those on a relaxed birding holiday. It specifically questions whether site lists are comprehensive ('Did you see a Crested Lark that day at that site?') and requires site co-ordinates – data that most birders would not normally collect, though they are now readily available with GPS systems and Google Earth, and will only be a problem for 'new' sites. I believe that the high standards of data collection required by WorldBirds are quite justified; serious birders should look on their records as scientific data and should apply rigorous standards to their collection, standards applied equally to visiting and national birders.

OSME Council is strongly committed to the introduction of WorldBirds and is keen to assist BirdLife and national partners. Several of the necessary building blocks are already in place for the region. The development of the OSME Regional List (ORL) will greatly simplify its introduction, and although there will be a degree of incompatibility between the two sets of taxonomic approaches and English names, BirdLife is reviewing this aspect continuously, and so the differences will not be insurmountable. OSME has supported the publication in Arabic of the regional field guide 'Birds of the Middle East', which uses a generally agreed Arabic nomenclature. We will be publicising WorldBirds and encouraging resident and visiting birders to submit data into the programme. Specifically, we have placed on the OSME website (www.osme.org) provisional drafts of standardised Bird Report Forms and Rarities Report Forms for the OSME Region, compatible with WorldBirds, that we hope visitors will use – and report back on! These are at present only in English but will be available in other languages.

We must emphasise that WorldBirds is still very much in the developmental stage; we want to be proactive so that we can assist in its development and harness its benefits as soon as possible for the conservation of wildlife in the OSME region. It is unrealistic to expect that most birders will input those data sitting in dusty notebooks, but the objective is that they will submit data from future trips, particularly as they can use WorldBirds to plan them. We are keen that OSME members – you - are involved; we hope that you will try WorldBirds out, pick out the flaws, give us feedback and thus contribute to its development - and the ultimate goal, better wildlife conservation in the Region.

Around the Region

compiled by
Dawn Balmer and Keith Betton

Records in *Around the Region* are published for interest only; their inclusion does not imply acceptance by the records committee of the relevant country. All reports relate to 2007 unless otherwise stated.

Reports and photographs for *Sandgrouse* 30 (1) should be sent by 15 December to: Around the Region, OSME, c/o The Lodge, Sandy, Bedfordshire SG19 2DL, U.K.; or atr@osme.org

Dawn Balmer, 7 Fisher Way, Thetford, Norfolk, IP24 2LD, U.K.
Keith Betton, 8 Dukes Close, Folly Hill, Farnham, Surrey, GU9 0DR, U.K.

Bee-eaters *Merops apiaster* *by D. Powell*

ARMENIA

On 17 May ten **Red-necked Phalaropes** *Phalaropus fulicaria* were recorded at Armash fish ponds.

BAHRAIN

The first breeding record of **Little Tern** *Sternula albifrons* (adult with a chick) was recorded at Buhair Valley on 24 Apr. Numerous small terns thought to be **Little** and not **Saunders's Tern** *S. saundersi* are regularly seen in spring sitting on nests on the small islands and mud banks at the Race Course lake but access problems have resulted in these never having been properly documented. Saunders's Tern does breed here but prefers more coastal sites. A **Spanish Sparrow** *Passer hispaniolensis* was observed and photographed on 9 March 2007 at the old Rock Quarry behind Riffa Air base - (Diplomatic Wadi). This is the 3rd record for Bahrain, the previous being one in November 2006 at the Riffa Golf Course (just a few km from this site).

CYPRUS

Up to four **Red-breasted Mergansers** *Mergus serrator* were off Potamos Liopetri until 19 Jan. An immature **Northern Gannet** *Morus bassanus* was seen off Cape Kiti on 17 Mar; the first since April 2004, and one was reported off Paphos Headland on 30 Mar. On 25 Apr a **Merlin** *Falco columbarius* was at Larnaca Salt Lake. An adult **Saker Falcon** *F. cherrug* was seen hunting the plain north of main road at Sinirustu on 28 Dec 2006 and a **Short-toed Snake Eagle** *Circaetus gallicus* was at Dhekeleia on 3rd Mar. The first **Bateleur** *Terathopius ecaudatus* for Cyprus, a first-year was found at Cape Greco on 21 Apr and was later seen at Cape Andreas on 29 Apr. An **Eurasian Oystercatcher** *Haematopus ostralegus* at Mandria on 11 Mar was only the 10th since 1996. Two **White-tailed Lapwing** *Vanellus leucurus* were recorded during the spring; one at Cape Drepano on 22 Apr (first since 2001) and one at Phasouri reedbeds on 11 May. A **Great Snipe** *Gallinago media* was at Akhna Dam 19-20 Apr and a record 160 **Red-necked Phalarope** *Phalaropus lobatus* were on Akriotiri salt Lake on 6 Apr. An adult **Audouin's Gull** *Larus audouinii* was near Golden Beach Karpaz on 28 Dec 2006 and another adult was at Essentepe on 30 Dec 2006. A first-winter **Black-legged Kittiwake** *Rissa tridactyla* winter flew east of Kayalar on 27 Dec 2006. An adult **Whiskered Tern** *Chlidonias hybrida* at Akhna Dam until11 Jan was a rare winter visitor. The first **Dunn's Lark** *Eremalauda dunni* for Cyprus was on Ayia Napa beach 9-12 Apr (and also first record for Europe). At least 25+ **Woodlark** *Lullula arborea* found wintering in the coastal strip in North Cyprus and thought to be under-recorded. An **Olive-tree Warbler** *Hippolais olivetorum* was at Paphos Lighthouse 26-27 Apr and a **Mountain Chiffchaff** *Phylloscopus sindianus* trapped and ringed at Ayios Minas on 16 Apr will be the first record if accepted. A **Radde's Warbler** *P. schwarzi* reported at Paphos SF on 26 Apr will also be the first record if accepted. A **Semi-collared Flycatcher** *Ficedula*

semitorquata was reported at South Nicosia on 20 Apr. A flock of 12 **Rock Sparrows** *Petronia petronia* reported in the Avagas Gorge on 3 Jan will be 2nd for Cyprus if accepted and one was at Cape Drepano on 2 Apr. The first record of **Blyth's Pipit** *Anthus godlewski* for Cyprus was at Mandria on 4-7 Apr feeding in the company of four **Tawny Pipits** *A. campestris*. The first **Pied Wagtail** *Motacilla alba yarellii* for Cyprus was at Zakaki Marsh on 13 Mar. At least 15 **Meadow Pipit** *Anthus pratensis* were counted at Korucam on 27 Dec 2007, a species that likely is under-recorded. The sixth **Red-fronted Serin** *Serinus pusillus* was at Ayios Neophytos, Paphos on 5 Mar and a **Common Rosefinch** *Carpodacus erythrinus* was at Polis reedbed on 22 Apr (7th record).

EGYPT

Two **Ruddy Shelduck** *Tadorna ferruginea* were at 10th Ramadan on 4 Jan. On 31 Jan two **Lappet-faced Vultures** *Aegypius trachielotos* were seen 56km north of Shalatein and three were at Shelatin/Halaeb on 6 Apr. Around 5000 **Levant Sparrowhawk** *Accipiter brevipes* were seen on 16 Apr above the rubbish tip in Hurghada heading north; there were two flocks, one of 3000 and another of 2000 in 30 minutes. On 16 Dec 2006 a **Greater Spotted Eagle** *Aquila clanga* was seen at Abassa and a pair of **Bonelli's Eagle** *A. fasciatus* were at Sharm el Sheikh, South Sinai on 18-19 May (a rare resident).A **Broad-billed Sandpiper** *Limicola falcinellus* was at Manzala on 21 Dec 2006, around 12 **Red-necked Phalaropes** *Phalaropus lobatus* were at Mut, Dakhla Oasis on 5 Mar, and a **Black-winged Pratincole** *Glareola nordmanni* was at Hurghada on 29 Mar. Two **Pomarine Skua** *Stercorarius pomarinus* were seen at Port Said on 21 Dec 2006. Around 6-8 **African Collared Dove** *Streptopelia roseogrisea* were seen at Marsa Alam, Red Sea, on 5 Apr and two were 18km south of Taba, Sinai on 29-30 Apr. Two male and one female **Namaqua Dove** *Oena capensis* were around the sewage work in Hurghada from 25 Mar. A **Pharaoh Eagle Owl** *Bubo ascalaphus* was at Sakara on 3 Jan and another was at Wadi Digla, Cairo on 5 Mar. A pair and three chicks (2 of them were ringed) were in the Hurghada area on 7 Apr. Four **Long-eared Owl** *Asio otus* were at Sakara on 3 Jan and a **Short-eared Owl** *Asio flammeus* was at El Gouna golf course on 20 Mar and 7 Apr. An **Egyptian Nightjar** *Caprimulgus aegypticus* was seen in Hurghada late Mar. Two **Pied Kingfisher** *Ceryle rudis* were at Wadi Lahmy coast, south Red Sea on 6 Apr; the most southerly record in the Red Sea. Two pairs of **House Crow** *Corvus splendens* were at Taba on 30 Apr were a recent expansion of range. On 6 Apr two **Fan-tailed Raven** *C. rhipidurus* were West of Halaib, south Easter Desert on 6 Apr and three **Isabelline Shrike** *Lanius isabellinus* were at the same site. On 13 Dec 2006 three **Asian Desert Warblers** *Sylvia nana* and a **Ménétries Warbler** *Sylvia mystacea* were at Wadi Hagul. A male **Red-tailed Wheatear** *Oenanthe xanthoprymna* was at Taba (Holiday Taba Resort, 30km S of Taba Heights) from 29 Dec 2006 to at least 5 Jan. A **Finsch's Wheatear** *Oenanthe finschii* was at 10th Ramadan on 4 Jan and a **Red-breasted Flycatcher** *Ficedula parva* was 18km south of Taba, Sinai on 1 May.

IRAN

Two days in Kavir National Park, 120km SE Tehran between 27-28 Apr produced 48 species including **See-see Partridge** *Ammoperdix griseogularis*, **Common Quail** *Coturnix coturni*, **Lesser Kestrel** *Falco naumanni*, **Pin-tailed Sandgrouse** *Pterocles alchata*, **Bay-backed Shrike** *Lanius vittatus*, **Bar-tailed desert Lark** *Ammomanes cincture* and **Desert Lark** *Ammomanes deserti*. At least two **Black-winged Kites** *Elanus caeruleus* were seen in Hormozgan province near Minab in Jan and at least 10 were seen in Feb between Jiroft and Kahnudj in South Iran. In 2004 and 2005 this species was seen (1 in 2004, 2 in 2005) near Karun fish ponds, Shushtar, Khuzestan province.

ISRAEL

The first **Bean Goose** *Anser fabalis* for Israel, a juvenile, was at Eilat during 14-24 Mar and also visited Aqaba sewage ponds (Jordan). On 16 Jan an adult male **Red-breasted Merganser** *Mergus serator* was at Sea of Galilee (Lake Kinneret) and two were at Eilat north beach on 24 Feb. On 29 Mar two **Crested Honey Buzzard** *Pernis ptilorhyncus* were amongst 8000 honey buzzards *Pernis* sp that passed over Ketura Junction and a male passed over the following day. A very early bird was over Eilat on 31 Mar and over 10 were seen migrating over the Eilat Mts and southern Arava during early May. A male in the Golan Heights on 12 June was a late record. A **Long-legged Buzzard** *Buteo rufinus* (*cirtensis* type) was found dead at Eilat on 7 Jun. On 5 Apr a **Demoiselle Crane** *Anthropoides virgo* flew over Eilat and a late **Red Knot** *Calidris canutus* was at Eilat Km20 saltpans on 6 Jun. A record 40 **White-cheeked Tern** *Sterna repressa* were off Eilat's north beach on 19 May. An adult **Saunders's Tern** *Sternula saundersi*, the fourth record if accepted, was at Eilat's north beach on 24 Mar, 17 May and 29 May. **Namaqua Dove** *Oena capensis* were found breeding in northern Israel close to the Sea of Galilee (Lake Kinneret) for the first time this year; up to three pairs being present. Four **Yellow-billed Chough** *Pyrrhocorax graculus* at Mt. Hermon on 25 May are the first records since 2001. There was a good number of **Thick-billed Lark** *Ramphocoris clotbey* records this spring, with two at Hameishar, S Negev on 21 Mar, one at KM 76, S Arava on 23 Mar, 11 at KM 76, C Arava on 30 Mar. Records of three at Sde Boker, C Negev on 11 Jun and seven at Ramon Crater, C Negev on 21-22 Jun involve probable families, indicating that breeding took place this year in the Negev highlands, following an exceptionally wet spring. **Dunn's Larks** *Eremalauda dunni* were recorded at KM 76, on 24 Mar, another there on 30 Mar and one near

Tse'elim, NW Negev on 18 Jun. Following last year's discovery of a possible breeding population of **Basra Reed Warbler** *Acrocephalus griseldis* in the Hula valley (p210 this issue), four adults were trapped at the same site as last year. Two were caught on 8 May and two on 21 May; three of which were returning birds ringed in summer 2006. A **Blyth's Reed Warbler** *Acrocephalus dumetorum* trapped and ringed at Yotvata on 25 Mar will be the 6th record for Israel if accepted and a **Booted Warbler** *Iduna caligata* seen at Yotvata on the 9 Apr will be the 8th record if accepted. A **Black Scrub Robin** *Cercotrichas podobe* was trapped and ringed at IBRCE, Eilat on 20 May and a very late male **Red-breasted Flycatcher** *Ficedula parva* was ringed at the Jerusalem Bird Observatory on 21 Jun.

JORDAN

The first **Bean Goose** *Anser fabalis* for Jordan, a juvenile, was seen at Aqaba sewage ponds between 14-24 Mar (see also Israel). On 7 Apr, a flock of 49 **Black Storks** *Ciconia nigra* was seen in Wadi Araba; a exceptional number. A first-summer **Striated Heron** *Butorides striata* was at Azraq on 16 Apr where it is a rare spring visitor. A **Crested Honey Buzzard** *Pernis ptilorhyncus*, a first-summer female, was at Aqaba sewage works on 17 Apr. On 5 Apr a **White-tailed Lapwing** *Vanellus leucurus* was at Aqaba Sewage Works (a rare migrant) and an adult **Little Gull** *Larus minutus* was there on the same day (very rare migrant). Up to 8 **Egyptian Nightjars** *Caprimulgus aegyptius* were at Azraq on 11 Apr, which suggests this species is possibly commoner in the desert than records show. A **Common Grasshopper Warbler** *Locustella naevia*, a vagrant in Jordan, was seen at Azraq on 31 Mar. An **Upcher's Warbler** *Hippolais languida* was at Aqaba on 4-5 Apr and a late **Finsch's Wheatear** *Oenanthe finschii* was at Azraq on 31 Mar. A colony of **Dead Sea Sparrows** *Passer moabiticus* was at Suwayma in the spring and two **Pale Rockfinch** *Carpospiza brachydactyla* were at Dana on 8 Apr; there have been few recent reports of this species.

KAZAKHSTAN

A first-year **Pallas's Fish Eagle** *Haliaeetus leucoryphus* was at Sorbulak Lake, Province of Almaty on 21 May; there have been 11 records in the period 1885-2005. An adult **White-tailed Eagle** *H. albicilla* was also present.

KUWAIT

A flock of 17 **Sacred Ibis** *Threskiornis aethiopicus* past Doha mid-Mar comprised the 2nd record for Kuwait. Two juvenile **Little Bittern** *Ixobrychus minutus* were present at Jahra East on 31 May suggesting local breeding. Ten **Western Reef Egrets** *Egretta gularis* were at Al-Abraq Al-Khabari on 25 Mar, which is the most inland record for Kuwait. A maximum count of eight **Socotra Cormorant** *Leucocarbo nigrogularis* on a sandbar off Zour Port occurred on several dates between 22 Mar and 18 Apr. On 16 Feb a **Merlin** *Falco columbarius* was at Sulabiya Pivot fields and a pair of **Peregrine Falcon** *F. peregrinus* seen around the tall buildings in Kuwait City centre may have bred. The **Black-winged Kite** *Elanus caeruleus* at Jahra Farms on 1 Jan was the 6th record. An **Egyptian Vulture** *Neophron percnopterus* was seen on 24 Feb near Al-Abraq Al-Khabari flying slowly north and an **Eurasian Griffon Vulture** *Gyps fulvus* was at Kabd on 13 Apr. There were several records of **Shikra** *Accipiter badius* with single wintering birds at Jahra Farms, Abdalli Farms, Jahra Pool and Sabrya Farm in Jan and Feb. On 21 Apr a **Bonelli's Eagle** *Aquila fasciatus* was at Sulaibiya Pivot Fields. **Purple Swamphen** *Porphyrio porphyrio* was resident at South Doha with six birds calling from late Feb; breeding was confirmed when a juvenile was seen in late Jun. The highest winter count of **Crab-plover** *Dromas ardeola* was 300+ in Salaibikhat Bay. A new daily high count for **Northern Lapwing** *Vanellus vanellus* was set with 120 seen at Sulaibiya Pivot Fields on 15 Jan. The 5th **Spur-winged Lapwing** *V. spinosus* for Kuwait was recorded at Jahra East Outfall on 6 Jun. Several **Red-wattled Lapwing** *V. indicus* were present at Abdally Farms in breeding habitat and three free-flying juvenile **White-tailed Lapwings** *V. leucurus* present at Jahra East outfall on 8 Jun may have been reared in Kuwait. A new highest daily count for **Caspian Plover** *Charadrius asiaticus* was set on 2 March when 35 were in the SAANR but soon afterwards this was replaced by a count of an incredible 168 in the SAANR on 16 March but all had moved on by 20 March. Three **Grey Phalarope** *Phalaropus fulicaria* were present with 67 **Red-necked Phalaropes** *P. lobatus* at Jahra East Outfall on 23 Apr and will be the 2nd Kuwait record if accepted. A count of 92 **Black-winged Pratincoles** *Glareola nordmanni* on 21 Apr in the SAANR was a record. On 15 Jan, 41 **Common Woodpigeon** *Columba palumbis* were seen at Sulaibiya Pivot Fields on 15 Jan, representing a new daily high count. **African Collared Dove** *Streptopelia roseogrisea* were seen at Al Abraq and Tulha in the SAANR on several dates during Mar and Apr. Two **Short-eared Owl** *Asio flammeus* wintered at Kabd and were last seen late Mar. It was a poor year for **Egyptian Nightjar** *Caprimulgus aegyptius*, with just one record of a singing bird in breeding habitat in the SAANR Jahra bay side on 24 Apr. Single wintering **Indian Roller** *Coracias benghalensis* were seen at Jahra Farms, Rawdatain KOC oilfield, Mutla Farm, Fahaheel Park, Maboula and Messila on many dates in Jan and early Feb, possibly comprising two or three wandering individuals of this conspicuous but rare Western Palearctic visitor.

The wintering **Long-tailed Shrike** *Lanius schach* remained at Sulaibikhat Bay nature reserve until 10 Apr to the delight of most visiting Western Palearctic listers. A **Rook** *Corvus frugilegus* present from 4 Jan to 8 Mar was the first record for 43 years. On 6/7 Jan, a dusk and dawn check for **Hypocolius** *Hypocolius ampelinus* in Kuwait City revealed six at

Qadsiya, 19 at Mansouriya and 17 at Green Island. There are probably at least two roost sites: one at Mansouriya and another at Green Island. Several other sites have held this species in the city and it is estimated that at least 50, probably more, are regular from autumn to spring. It was another good year with confirmed breeding for **Greater Hoopoe Lark** *Alaemon alaudipes*, **Bar-tailed Lark** *Ammomanes cinctura*, **Desert Lark** *A. deserti*, **Dunn's Lark** *Eremalauda dunni*, **Black-crowned Sparrow-Lark** *Eremopterix nigriceps* and **Temminck's Lark** *Eremophila bilopha* at SAANR, Salmi/ Wadi Al-Bhatin bern and Kabd during Mar and Apr. Two **Oriental Skylark** *Alauda gulgula* were seen in the SAANR on 28 Jan. Several **Basra Reed Warbler** *Acrocephalus griseldis* were recorded on passage at Tulha and Al Abraq. This species possibly bred at Jahra East Outfall reedbed, for up to four were singing and showing well during Apr and early May. However, visits in late May and early Jun failed to locate any amongst the many other *Acrocephalus* spp present. Single **Sykes's Warblers** *Hippolais rama* were seen at Al Abraq and Tulha during spring passage in Apr, an **Icterine Warbler** *H. icterina* was seen at Tulha on 12 Apr and single **Hume's Whitethroats** *Sylvia althaea* were at Al Abraq and Tulha in the SAANR in Apr. Two half-grown fledglings with two adults of **Common Babblers** were seen on 5 Apr, representing the first confirmed breeding for Kuwait and for the Arabian Peninsula as defined by the Atlas of breeding birds of Arabia (ABBA). Iraq and Kuwait are the only Western Palearctic countries where this species has been seen (see also p218 this issue). On 18 Feb six **Bank Myna** *Acridotheres ginginianus* were at Jahra Farms around one of the wells. It seems likely that they will breed again this year. Up to five free-winged **White-vented Myna** *Ac. grandis* have been seen in Kuwait in 2007. It is possible that they might start breeding. A **Dark-throated Thrush** *Turdus atrogularis* was at Failaka on 26 Jan; the first for several years. On 18 Feb a **Fieldfare** *Turdus iliacus* was near Jahra and is the first record since 1998 whilst on 12 Apr a new daily high count of **White-throated Robin** *Irania gutturalis* was set when 72 were recorded at Kabd. A male and female **Eversmann's Redstart** *Phoenicurus erythronotus* at Sabriya Farm on 22-23 Dec 2006 comprised the 6th Kuwait record – a thorough search of Sabriya Farm on 4 Jan revealed a female still present but no male. On Failaka Island a male was present on 25 Jan. Three **Red-tailed Wheatear** *Oenanthe chrysopygia* wintered in the SAANR and were last seen on 23 Mar and **Finsch's Wheatear** *Oenanthe finschii* wintered at the same site. An astonishing 13,000 **Spanish Sparrows** *Passer hispaniolensis* were found roosting in one reedbed and it estimated that the total wintering population in Kuwait might be around 25,000. There were around 400 pairs in SAANR. Breeding was confirmed for **Pale Rockfinch** *Carpospiza brachydactyla* when a nest with four eggs found on 3 May in the SAANR; the first confirmed breeding since 1998. On 1 Apr three **Streaked Weavers** *Ploceus manyar* (male singing, female carrying food) were seen at Sabah Al-Salem. This species has been recorded singing there on a number of occasions in past years and has possibly bred. However, it is not yet on the full Kuwait list since it has not established itself. The first Kuwait record of **Radde's Accentor** *Prunella ocularis* was at Al-Abraq Al-Khabari on 29 Mar. A **Richard's Pipit** *Anthus richardi* was present at Sulaibikhat Bay from 21-30 Jan. Over 1000 **Red-throated Pipits** *An. cervinus* were at Sulaibiya Pivot Fields on 21 Apr, a new highest daily count for Kuwait. A **Desert Finch** *Rhodospiza obsolete* was drinking at Tulha in the SAANR on 15 May and a **Cinereous Bunting** *Emberiza cineracea*, seen on 9 Mar 2007 at Al-Abraq Al-Khabari was an early migrant.

LEBANON

After failing to appear in 2006, **Black-crowned Night Herons** *Nycticorax nycticorax* returned to breed at Aammiq Marsh in May, also lingering and displaying were over 20 **Little Egrets** *Egretta garzetta*, a species yet to breed in Lebanon. Also at Aammiq, a pair of **Eurasian Teal** *Anas crecca* was still present on the late date of 31 May. **Mallard** *Anas platyrhynchos* bred successfully again, and small numbers of **Ferruginous Duck** *Aythya nyroca* were seen on passage between late January and late March. Unusual summer raptor records included a **Golden Eagle** *Aquila chrysaetos* above Ehden Forest on 3 Jun and a **Peregrine** *Falco peregrinus* at Ras Chekka the following day. Tripoli also hosted two **Arctic Skuas** *Stercorarius parasiticus* on 26 Feb and a **Great Black-headed Gull** *Larus ichthyaetus* on 19 Feb. A **Black Tern** *Chlidonias niger* was a rare visitor to Aammiq on 26 Apr, where **Long-eared Owl** *Asio otus* bred successfully again, after the first proven breeding in Lebanon in 2006. **Pied Kingfisher** *Ceryle rudis* is very uncommon away from the coast towards the southern border, so one at Aammiq was a particularly welcome sight on 22 Feb, constituting only the second site record since 1999. **Little Swift** *Apus affinis* seems to be increasingly rare in Lebanon, so two around Ras Beirut on 14 Mar were noteworthy. IBA survey visits to the remote valleys of the northern Mount Lebanon range produced welcome sightings of the endemic Lebanese race of **White-throated Dipper** *Cinclus cinclus*, one also being seen further south near Qab Elias. Two new sites for **White-throated Robin** *Irania gutturalis* were discovered in North Lebanon in May – the species may prove to be less rare than previously thought, breeding above 1600m on the Mount Lebanon range. An **Olive-tree Warbler** *Hippolais olivetorum* was seen at Lake Qaraoun on 10 May and there was a late record from 11 Dec 2006 of two **Yellow-billed Choughs** *Pyrrhocorax graculus* above Ehden forest.

OMAN

An immature **Great White Pelican** *Pelecanus onocrotalus* was at Al Ansab Lagoons from 22 Mar to 9 Apr (7th record). 440 **Cattle Egrets** *Bubulcus ibis*, the highest number ever recorded in Oman,

were at Jarziz Farm, Salalah on 31 Jan. Three **Indian Cattle Egret** *B. coromandus* (previously regarded as a ssp of *B.ibis*) were at East Khor, Salalah on 29 Mar. A first-winter **Black Stork** *Ciconia nigra* was present in the Khor Taqah/Khor Rouri area from 27 Dec to 21 Jan (5th record). A single **African Spoonbill** *Platalea alba* was at East Khor on 29 Mar – the last record of this species was in 2004. 15 **Northern Shelducks** *Tadorna tadorna* were at Montasar (first record for the central desert) on 25 Dec while the birds that arrived in Quriyat in December gradually dwindled in number as the floodwaters dried up, the 24 on 8 Jan reducing to a single bird by 1 Mar. There have been a few more records than usual of **Common Crane** *Grus grus* this winter with two at East Khor on 3 Jan, three at Al Beed Farms in the central desert from 18–31 Jan and seven at Sahanawt Farm, Salalah on 1 Feb. A juvenile **Crested Honey Buzzard** *Pernis ptilorhyncus* was in Khor Taqah on 28 Dec. There was an adult male **Amur Falcon** *Falco amurensis* at Garzeiz Farm, Salalah on 31 Jan and one on 4 Feb. An adult male and female were at Masirah on 3 Apr. There have been few crake records in the north in recent years so a single **Spotted Crake** *Porzana porzana* from 28 Dec-12 Jan and a female **Little Crake** *P. parva* also on 12 Jan at Quriyat are of note. With the habitat degradation at Sohar Sun Farms, there has been only one record of **Sociable Lapwing** *Vanellus gregarius* there - a single bird from 13-16 Feb which unusually stayed by the slurry pits rather than the remaining grass fields. However, three were at Al Beed Farms from18–23 Jan and eleven at Garzeiz Farm, Salalah on 30 Dec and 4 Feb. A **Baltic (Lesser Black-backed) Gull** *Larus f. fuscus* was at Khor al Baleed, Salalah on 3 Jan and another at Yiti on 12 Jan. A **White-eyed Gull** *L. leucophthalmus* was seen at Taqah on 17 Nov and another at Salalah on 25 Dec (8th and 9th records). An **Egyptian Nightjar** *Caprimulgus aegyptius* was seen at Quriyat on 10 Apr (few recent records). A record of **European Scops Owl** *Otus scops*, also at Quriyat, on 19 Jan was unusually late or unusually early (or possibly wintering?). Fourteen **Alpine Swifts** *Tachymarptis melba* were over Garzeiz Farm on 1 Feb while a single **Little Swift** *Apus affinis* was at Qitbit on 4 Mar. A **Grey-headed Kingfisher** *Halycon leucocephala* at Khor Rouri on 29 Dec was either very late or very early. A **White Wagtail** *Motacilla alba* of the race *persica*, which breeds in North-west Iran, was found at Quriyat on 8 Apr - the first record of this race for Oman. A single **Savi's Warbler** *Locustella luscinioides* was at Qurm Park on 9 Apr. The third record, if accepted, of **Eastern Bonelli's Warbler** *Phylloscopus orientalis* was at Montasar on 24 Dec. Five **Grasshopper Warblers** *Loc. naevia* were seen in three locations in Mussandam on 12-13 Apr. The **Long-tailed Shrike** *Lanius schach* first seen at Quriyat on 14 Dec was seen again on 26 Jan (10th record). There have been an unusual number of records of **Cretzchmar's Bunting** *Emberiza caesia* this spring - one almost adult male at Montasar on 8 Feb, a similarly plumaged bird at Qitbit on 4 Mar and a fully adult male at Shisr on 22 Mar. A single **Red-headed Bunting** *E. bruniceps* was seen at Qitbit on 31 Dec (4th record).

QATAR

A **White-tailed Lapwing** *Vanellus leucurus* was at the Prison Pools near Doha on 26 Dec 2006. A **Sooty Gull** *Larus hemprichii* was on a coastal lagoon at Wakra on 26 Jan. The species is infrequently seen in Qatar despite being regular elsewhere in the Gulf. A **White-crowned Wheatear** *Oenanthe leucopyga* in old farm areas near Mukainais and Trainia Gardens on 16 Feb would appear to be the first record. **Zebra Doves** *Geopelia striata* appear to have become resident around the Sheraton Hotel on Doha Corniche, and six were there on 11 Mar. A **Jack Snipe** *Lymnocryptes minimus* was at the Prison Pools on 20 Mar and three **Purple Swamphens** *Porphyrio porphyrio* were there on 3 Apr and at least ten were seen on 18 May. These pools also held two **Ferruginous Ducks** *Aythya nyroca* on 3 Apr and ten on 18 May, when two **Little Bitterns** *Ixobrychus minutus* were present. Two **Pharaoh Eagle Owls** *Bubo ascalaphus* were present on limestone outcrops to the south of Doha on several dates. Small numbers of **Alexandrine Parakeets** *Psittacula eupatria* are now being seen in Qatar. A **Black Scrub Robin** *Cercotrichas podobe* was at the Sealine Beach Resort, south of Umm Said on 4 May and is the first record.

SYRIA

This winter has seen a series of major discoveries involving Syria. The tiny colony of **Northern Bald Ibis** *Geronticus eremita* discovered in 2002 near Palmyra is the last of the migratory eastern population of this Critically Endangered species. In 2006 two pairs fledged six young – a bumper season. The wintering grounds were unknown until three of the four adults were satellite-tagged in June 2006 and tracked down the Red Sea, where they paused in Yemen before crossing the Red Sea to winter in a remote part of the Ethiopian highlands. The three subadults that joined the colony last summer and the six juveniles from 2006 did not follow them; their wintering grounds are still unknown. Two pairs returned in February 2007, followed by three subadults in April; six young hatched. But the situation is not as good as it appears; one adult has been lost every year since the colony was discovered, so its survival still hangs in the balance. In mid-January 2007, a **Lesser White-fronted Goose** *Anser erythropus* satellite-tagged in northern Russia by the Finno-Russian project was tracked through north-east Syria before moving into Iraq – the first proven Syrian record. A visit by A. Kullberg to the north-east on 9-11 February revealed at least 8 (possibly as many as 40) Lesser Whitefronts at Buhayrat al-Basil (lower Khabur reservoir) with 15 **Smew** *Mergellus albellus* (perhaps the third Syrian record). Other records included 700 **Ruddy Shelduck** *Tadorna ferruginea* at

a sabkha (seasonal salt lake) on the Iraqi border and 10 **Red-wattled Lapwing** *Vanellus indicus*, over 500 **Red-crested Pochard,** *Netta rufina* one **Eurasian Penduline Tit** *Remiz pendulinus* (nominate *pendulinus*) and one **Iraq Babbler** *Turdoides altirostris* at al-Hawl lake, a rarely visited IBA near the Iraqi border. For reasons of security very few ornithologists have visited this interesting area.

These discoveries were capped by a Dutch-Syrian expedition organised by R. Hofland, who found a flock of 35 **Lesser White-fronted Geese** on the southern edge of the great Sabkhat al-Jabbul wetland on 20 February. The expedition's main objective was the Critically Endangered **Sociable Lapwing** *V. gregarius*, and it made ornithological headlines worldwide by counting at least 1397 birds in the Ar Ruweira Rangeland reserve, a steppe area in the north, on 25 February - perhaps 25-50% of the world population at one site. They also found a foreign hunting party there. Rapid action by the Syrian Society for Conservation of Wildlife and BirdLife Middle East ensured that none was shot. Expedition members later recorded 113 Sociable Plover, presumably on migration, along the Deir ez-Zor – Palmyra road on 1 March. Intensive surveys are planned for next winter to look for other sites and to ensure their safety. Other expedition records included 2 **Eurasian Dotterel** *Charadrius morinellus* and 30 **Black-bellied Sandgrouse** *Pterocles orientalis* at this site; a flyover **Twite** *Carduelis flavirostris* (potentially a first for Syria) south of Lake Jabbul on 20 February; over 17,000 **White-fronted Geese** and 2,900 **Ruddy Shelducks** north of Lake Assad and 1800 **Whiskered Terns** *Chidonias hybrida* in the north-east of Lake Assad on 22 February; 2 **Great Spotted Cuckoos** *Clamator glandarius* and an adult **Eastern Imperial Eagle** *Aquila heliaca* over Jebel al-Bilas and 17 **Eurasian Griffon Vultures** *Gyps fulvus* at the Palmyra colony on 3 March; also 4 male **Pine Buntings** *Emberiza leucocephalos* and *c*20 **Yellowhammers** *E. citrinella* at Bloudan on 4 March. Other records included a **Macqueen's Bustard** *Chlamydotis macqueenii* in the desert east of Damascus on 7 April, the first report from Syria from several years. First proven breeding records for Syria were a **Northern Shoveler** *Anas clypeata* nest at Sabkhat al-Jabbul in May, **Common Redstart** *Phoenicurus phoenicurus* and **European Robin** *Erithacus rubecula* from Foroulloq Forest near Kassab on 29 May and **Middle Spotted Woodpecker** *Dendrocopos medius* at Slenfe on 1 June. The Common Redstarts were breeding above a window in the reserve rangers' centre! **Namaqua Doves** *Oena capensis* were seen near Palmyra on several dates in May and June; there have been several previous reports from Syria but none has been fully documented. At least 10 **Trumpeter Finches** *Bucanetes githagineus* were at 2400m above Bloudan on 2 June and a pair of **Ortolan Buntings** *E. hortulana* was in suitable breeding habitat at Haffa west of Slenfe on 1 June.

Thus major populations of three Red Data Book species (two Critically Endangered) have been found in the Syrian steppes in the last 5 years - yet very few birders visit Syria. It is likely that further major ornithological discoveries await the adventurous birder.

TURKEY

When large numbers of **Sociable Lapwings** *Vanellus gregarius* were discovered in Syria close to the Turkish border, a group of Turkish ornithologists set off to see if birds were also present north of the border. At Ceylanpinar, near Urfa they found at least 1,017 on 7 Mar. This area is only about 30km from the Syrian border. We can not be sure how many birds were present across the whole area, but although still threatened, the species' world population is clearly larger than had been estimated. (*Computer problems experienced by Emin Yoğourtcoğlu have delayed many Turkish records – Ed*)

UNITED ARAB EMIRATES

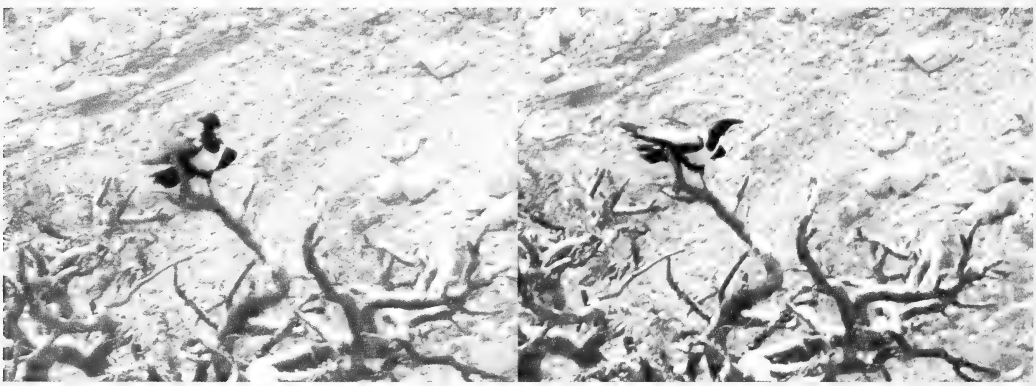
A **Sooty Shearwater** *Puffinus griseus* was off Fujairah on 8 Apr followed by two there on 16 and 27 Apr. There were 13 there on 29 Apr, followed by singles off Ra's Dibba 29 Apr and off Fujairah on 4 May. Two were off Fujairah on 11 May, followed by a single 25 May, when a bird was also off Ra's Dibba. The last bird was off Fujairah on 29 May. The species appears to be regular off the East Coast in Apr and May, and this brings the number of records to 22. Other interesting birds off Fujairah were a **Wilson's Storm Petrel** *Oceanites oceanicus* on 11 May, a **Masked Booby** *Sula dactylatra* on 29 Apr and a **Red-billed Tropicbird** *Phaethon aethereus* on 7 and 11 May. A **Lesser Flamingo** *Phoeniconaias minor* at Al Wathba Lake on 30 Dec 2006 is the 4th record of a wild bird. Up to four **Crested Honey Buzzards** *Pernis ptilorhyncus* were in Abu Dhabi until 13 May. A **Lesser Spotted Eagle** *Aquila pomarina* was over Sharjah University on 22 Apr. A surprising record was that of a male **Sooty Falcon** *Falco concolor* at Jebel Hafeet on 13 Feb. The species normally arrives in May and this is the first winter record for the UAE. A **Merlin** *F. columbarius* of the *pallidus* race was at Ghantoot on 16 Jan. A **Black-winged Pratincole** *Glareola nordmanni* was at Sharjah Tip on 9 Mar. A maximum of seven **Sociable Lapwings** *Vanellus gregarius* were at Dubai Pivot Fields and Lahbab Fields 12 Jan. Up to seven **Great Knot** *Calidris tenuirostris* were at Khor al-Beida from 17 Feb-9 Mar. An adult **Long-toed Stint** *C. subminuta* was near Abu Dhabi Airport on 9 and 19 Apr. A **Mediterranean Gull** *Larus melanocephalus* at Al Warsan Lakes in Dec 2006 was re-found on 15 and 27 Jan and different birds were at Al Wathba Lake from 18 Jan to 20 Feb, and Dubai Creek on 4 Mar. 2007 (5th-7th records). A **Little Gull** *L. minutus* was at Al Wathba Lake on 3 Jan. A **Brown Noddy** *Anous stolidus* off Fujairah on 16 Apr was the only record. Sixteen **Namaqua Doves** *Oena capensis* at Al Ankah fodder

fields on 19 Jan was the highest number ever. There were up to six **Pallid Scops Owls** *Otus brucei* in Mushrif Park. A **Little Swift** *Apus affinis* was over Sharjah Tip on 14 May.

Two **Olive-backed Pipits** *Anthus hodgsoni* were in Safa Park from 23 Jan-9 Mar and up to two **Buff-bellied Pipits** *A. rubescens* were at Dubai Pivot Fields from 1 Jan-21 Mar. Single **Dark-throated Thrushes** *Turdus atrogularis* were in various places between 12 Jan and 23 Feb, and up to two **Redwings** *T. iliacus* were at Mushrif Palace Gardens from 22 Jan-24 Feb (9th record). A **Black Scrub Robin** *Cercotrichas podobe* was in Abu Dhabi on 1 May (4th record). A female **Eurasian Stonechat** *Saxicola torquatus* was in Dubai Pivot Fields until 2 Mar, and a male was at Fujairah National Dairy Farm at Dibba until 9 Feb. Other records were of females at Rul Dhadnah on 2 Jan and Fujairah National Dairy Farm on 23 Feb. These are the 2nd to 5th records. A female **Rufous-tailed Wheatear** *Oenanthe xanthoprymna* at Green Mubazzarah on 31 Dec 2006 will be the 2nd record if accepted. A **Booted Warbler** *Iduna caligata* was at Abu Dhabi on 4 May. A **Green Warbler** *Phylloscopus trochiloides nitidus* was in Abu Dhabi from 28 Apr-3 May and another was at Khor Kalba on 4 May. A **Wood Warbler** *P. sibilatrix* was in full song at Fujairah Dairy Farm from 14-16 Jan, and is first winter record in the UAE. A **Hume's Whitethroat** *Sylvia althaea* was at Ghantoot on 12 Jan. There was a scattering of **Semi-collared Flycatchers** *Ficedula semitorquata* in Abu Dhabi and Dubai from 19 Mar to 7 Apr. An adult male **Brown Shrike** *Lanius cristatus* in Abu Dhabi on 11 May was the 2nd record of the eastern race *lucionensis*. A **Long-tailed Shrike** *La. schach* at Umm al-Nar Golf Course on 13 Mar was the 5th record. **Great Grey Shrikes** *La. excubitor* were at Bateen Airbase Park from 26 Dec 2006 to 2 Jan, and at Abu Dhabi Golf & Equestrian Club from 1 Jan-28 Feb (5th record). A **Brambling** *Fringilla montifringilla* at Jebel Hafeet from 31 Dec 2006-5 Jan was the first since 1996. Two **Cinereous Buntings** *Emberiza cineracea* were at Green Mubazzarah on 1 Apr and three were in Dubai Creekside Park from 4-18 Apr with another in Abu Dhabi on 13 Apr.

YEMEN & SOCOTRA

A **Song Thrush** *Turdus philomelos* was in the garden of the Marib Bilquis Hotel, Marib on 21 Dec 2006. A **Pied Crow** *Corvus albus* (See **Plates 1-2**) was on the Diksam Plateau, Socotra on 14 May. A single was found at the western end of Socotra in 2003. In 2006 one was found on one of the off-lying islands during a seabird survey. This year another was also found on Kal Farun, so there are at least two individuals present.



Plates 1-2. Pied Crow Corvus albus, Diksam Plateau, Socotra, May 2007. *© Charles Hoots*

ACKNOWLEDGEMENTS

The following assisted in the compilation of this review: Mishal Al-Jeriwi, Hani Al Mawash, Khalid Al-Nasrallah, Hussain Al-Qallaf, Abdulrahman Al-Sirhan, Abdulmuhsen Al-Suraye, Simon Aspinall, Alain Baccaert, Andrew Bailey, Christopher Batty, Suzanne Bonmarchand, Richard Bonser, Gary Brown, Jamie Buchan, Steve Cale, Malcolm Calvert, Andrew Clifton, Avner Cohen, Sean Cole, Colin Conroy, Patrik De Harenne, Hugues Dufourny, David Ewbank, Pekka Fagel, Manfred Fleischer, Brian Foster, George Gregory, Øyvind Hagen, Bernard Hanus, Ian Harrison, Steve Higgins, Remco Hofland, Andrew Holden, Charles Hoots, Menno Hornman, Shady Indary, Faisal Jelabi, Nabil Khairallah, Mohammed Khamis, Jan Kiel, Tobi Koppejan, Anssi Kullberg, John Law, Jonathan Meyrav, Istvan "Steve" Moldovan, David Murdoch, Chris Naylor, Jarl Nystrom, Mike Orr, Alexander Parker, Tommy Pederson , Yoav Perlman, Mike Pope, David Porat, Richard Porter, Richard Prior, Sam Radjabi, Ahmed Riad, Ilkka Sahi, Hag Sameach, Gordon Saunders, Horst Schaub, Annie Sévin, Mahmoud Shihab Laurent Spriet, David Stanton, Donald Sykes, Oivind Syvertsen, Robert Thatcher, Mohammad Tohidifar, Karen Wade, Keijos Wahlroos, Ingo Weiss.

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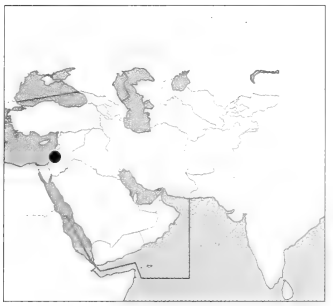
Roosting harriers in the Aammiq wetland, Lebanon



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INTRODUCTION

The Aammiq Wetland (33°44'N, 35°47'E) is the largest remaining freshwater wetland in Lebanon, a remnant of much more extensive marshes and lakes that once existed in the Bekaa Valley. It is an Important Bird Area in the Middle East (Galushin *et al* 1993), is included in the Directory of Wetlands in the Middle East (IUCN 1995), was declared a Ramsar site in 1999 and most recently was designated, with Al Shouf Cedar Reserve, a "Biosphere Reserve" by UNESCO in 2005. It lies on the major flyway for migrant birds in the eastern Mediterranean, and over 250 species of bird have been recorded in the area (A Rocha Lebanon 2006). In recent years, observations confirmed that the marsh was attractive to harriers for roosting, both during the migration seasons and over the winter period. Even the near-threatened Pallid Harrier *Circus macrourus* has been recorded wintering in the marsh (Colin Beale & Chris Naylor pers comm). However, no extended survey has been attempted, and specific roosting sites of harriers in Lebanon are still incompletely known. The Aammiq marsh is no longer burned annually, as used to happen until 2001. Management at the site is designed to, wherever possible, optimise habitats for key species. It is therefore important to establish optimum conditions for roosting harriers with the long-term goal of increasing its usefulness to these species during wintering and migration. To this end, in the autumn of 2004 a survey was started to investigate the numbers, species and habitat preference of roosting harriers in the Aammiq Wetland.

Figure 1. Western Marsh Harrier *Circus aeruginosus* by Cheryl Cousins.

METHODS

Observations were carried out for twelve months from September 2004. Counts were generally taken weekly, but after mid-April, when the numbers dropped drastically, counts were conducted once every two weeks. Age and sex classes of the birds were determined as far as possible using characters described by Forsman (1999). The harriers were counted in late afternoon/evening, 1.5-2 hours before sunset until dark, this period being the best for light over the marsh illuminating harriers. Counts were generally conducted by one observer, from the roof of an old pump house near the

boundary of the wetland. This viewing point gave the maximum coverage of the study area. Only birds that were actually seen landing in the reed beds were counted. The species counted were: Hen Harrier *Circus cyaneus*, Pallid Harrier, Montagu's Harrier *C. pygargus* and Western Marsh Harrier *C. aeruginosus*, but we also totalled 'ring-tailed' harriers as a means of grouping female and immature *C. cyaneus/pygargus/macrourus* where we could not establish species identity. The 'ring-tails' tended to be counted as such when light conditions were poor or the birds were at a great distance.

The roosting sites of the harriers were drawn on a map. At the roosting sites a simple habitat analysis was conducted. Within a roosting area we recorded:

1. The average height of vegetation.
2. The percent cover of vegetation in the following categories: reed, sedge, grass, herb, bare earth, crop and other.
3. The species of plants found.

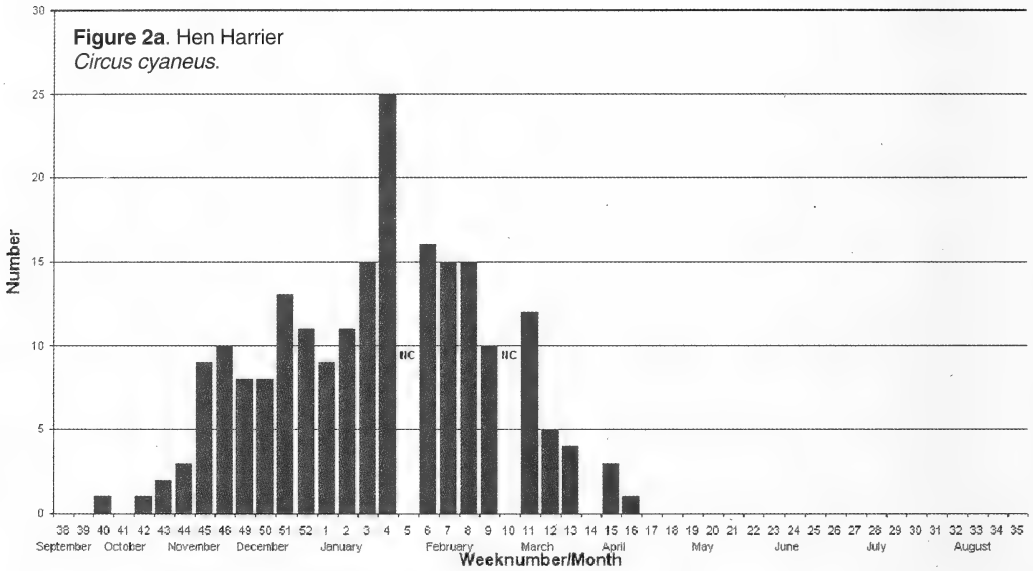


Figure 2a. Hen Harrier *Circus cyaneus*.

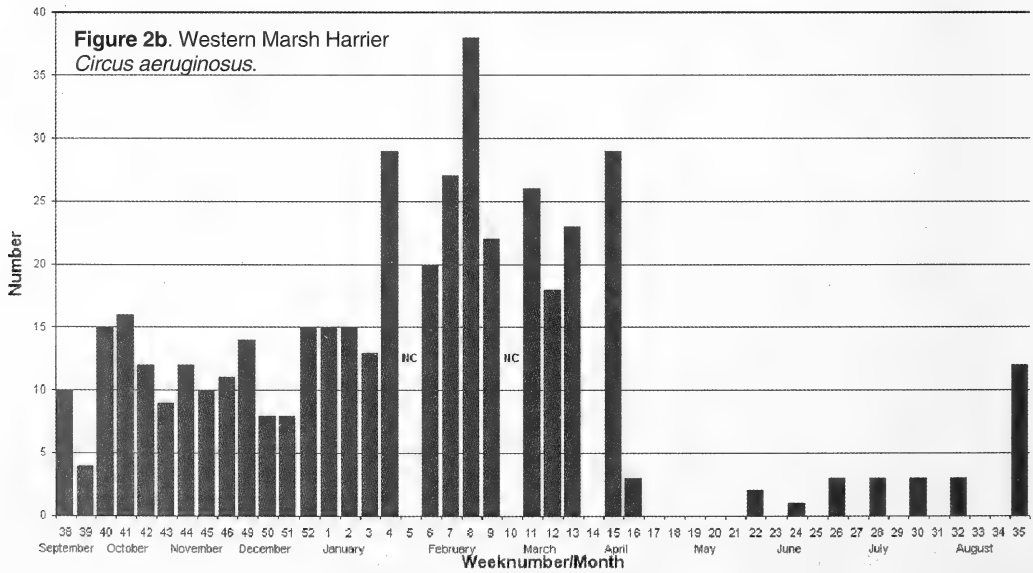
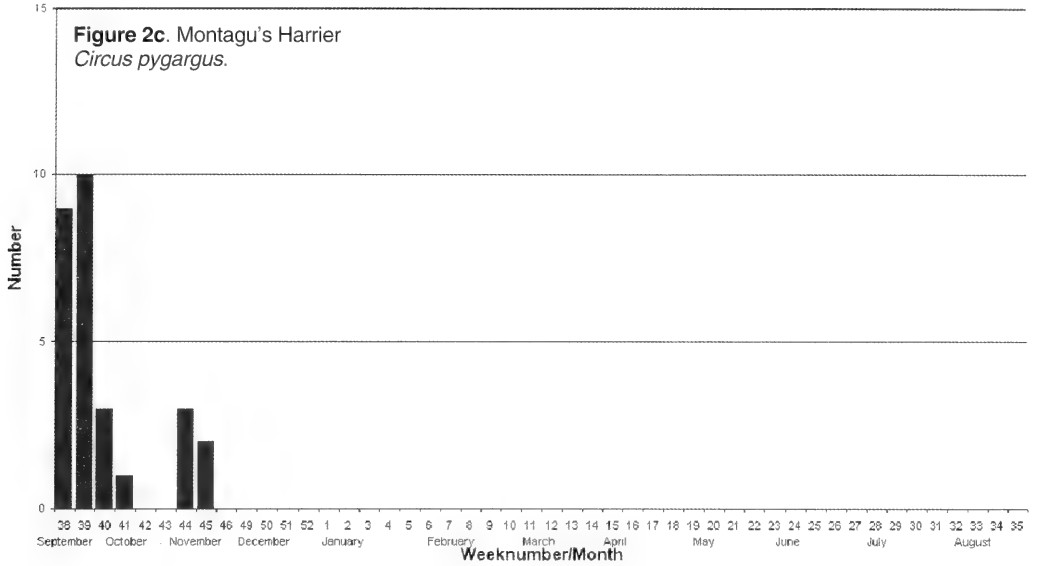
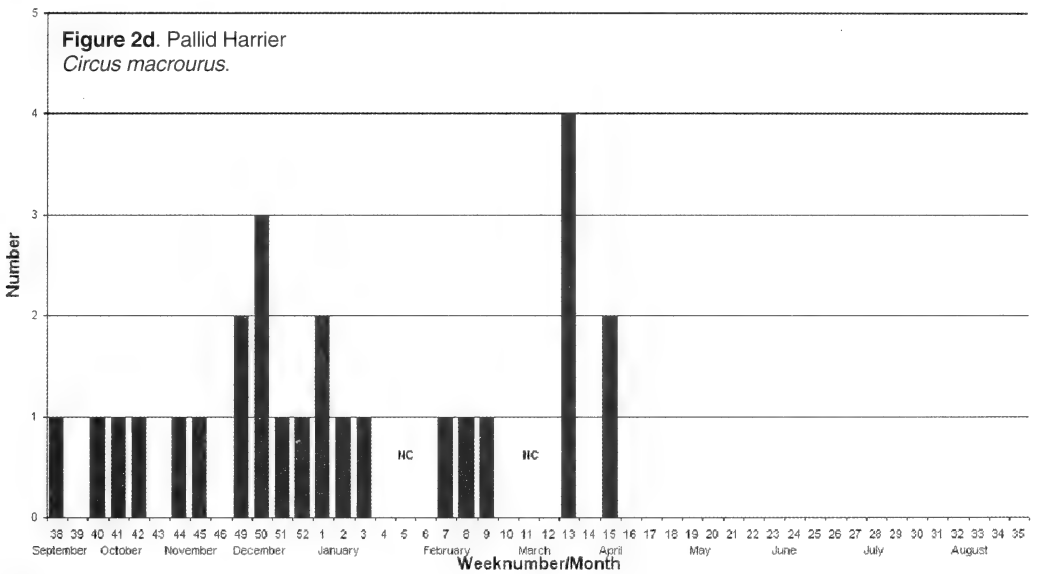


Figure 2b. Western Marsh Harrier *Circus aeruginosus*.





Figures 2a-d. Total number of roosting harriers counted in the Aammiq wetland, Lebanon in the period September 2004-August 2005. NC=Not counted. **Fig 2a.** Hen Harrier *Circus cyaneus*. **Fig2b.** Western Marsh Harrier *Circus aeruginosus*. **Fig 2c**. Montagu's Harrier *Circus pygargus*. **Fig 2d**. Pallid Harrier *Circus macrourus*.

RESULTS AND DISCUSSION

Western Marsh Harrier

The numbers of roosting Western Marsh Harriers varied considerably. The species occurred in greatest numbers in the third week of February, 38 birds being recorded on the 22nd. The numbers encountered dropped abruptly in mid-April. In week 15, 29 harriers were counted and in week 16 only three: a decrease of 90%. Perhaps the most likely explanation for this sudden decrease is that the reed stems had grown very thick by this date, preventing the harriers from finding enough suitable roosting habitat. Those harriers seen flying away from the roosting site after an initial effort to roost

probably found in nearby wheat fields roosting sites that provided sufficient shelter. Another factor is probably that by this time, the majority of Western Marsh Harriers had already migrated further north, which corresponds with the observations in other studies where most had disappeared from their wintering areas by March (Arroyo *et al* 1995, Shirihai 1996). Three birds oversummered in the marsh in 2005, but although initially it seemed as though they might breed, no conclusive proof was obtained. However, breeding in the marsh was proved in 2006.

In mid-April, there was an increase in the percentage of male Western Marsh Harriers. On average, they made up 9.1% of the total (**Table 1**), but in mid-April comprised 38%. Panuccio *et al* (2005) studying wintering Western Marsh Harriers in southern Italy found that males accounted for only 12% of the wintering population. They suggested that males might winter further south in sub-Saharan Africa, possibly because the larger females might be better adapted to colder climates. This argument could account for the low male/female ratio of Western Marsh Harrier wintering at Aammiq and nearby, the area being at a similar latitude to the Sicilian study sites of Panuccio *et al* (2005). We suggest that at least some of the male Western Marsh Harriers seen in mid April were birds that had wintered further south. The April migration peak we recorded corresponds with observations from other studies (Gustin & Pizzari 1998, Arroyo *et al* 1995, Cramp & Simmons 1980).

Table 1. Frequency (%) of sex classes of Marsh Harrier, Hen Harrier and Pallid Harrier during winter 2004-2005 in the Aammiq wetland.

Species	Males (%)	Females (%)	Sample size (N)
Marsh Harrier	9.1	90.9	435
Hen Harrier	6.3	93.7	207
Pallid Harrier	38.5	61.5	26

Hen Harrier

Numbers of this species peaked at the end of January to early February (a maximum of 25 on 27 January). In general, the numbers fluctuated less widely than for the Western Marsh Harrier. Adult males comprised a minority of wintering birds (*c*6%, **Table 1**), which corresponds with the observations in winter in northern valleys of Israel (Shirihai 1996). This species was difficult to count because most individuals arrived just before dark. Unlike the Western Marsh Harrier, the Hen Harrier did not appear to be faithful to just one or two small roosting areas. Most birds spent some time hunting in the marsh before they left for their roosting site. Even when it was almost dark, birds were seen hunting for roosting Barn Swallow *Hirundo rustica* and Common Starling *Sturnus vulgaris*.

Pallid Harrier

This species was seen in low numbers at the Aammiq wetland. At least one bird was present during the whole winter period. In 1999 and 2000, one bird also wintered at Aammiq (Chris Naylor, pers comm). The principal wintering grounds of the Pallid Harrier are found in open country throughout the savanna belt in Africa south of the Sahara, and in the East African steppes. The Pallid Harrier is mainly an autumn and spring migrant through the Middle East, but a small number winter in cultivated areas and semi-desert. The species tends to prefer drier areas in comparison to Western Marsh and Hen Harriers (Shirihai 1996, Galushin *et al* 2003).

Small peaks of migration occur in late November and early December and in late March and early April, circumstances that correspond with the migration periods

recorded in Lebanon by A Rocha Lebanon (2006). Our maximum count was of 4 on 31 March. Unlike the other harrier species, a higher ratio of *pygargus* males (38.5%, **Table 1**) was observed at the roosting site. In Israel the majority (*c*70%) of wintering Pallid Harriers are adult males (Shirihai 1996).

Montagu's Harrier

In autumn, up to 10 Montagu's Harriers, mainly juveniles, were seen feeding in the fields northwest of the marsh. An informal survey of small mammals in this area in autumn 2004 by one of the authors (CC) showed that two rodent species, Levant vole *Microtus socialis* and house mouse *Mus musculus* are abundant here and it is likely that these made up the bulk of the diet of the harriers. After feeding, the harriers would move to their roosting sites. Peak numbers of Montagu's Harrier occur at Aamiq in September, the last birds being noted in early November. Around this time they head for their wintering grounds, the open country of the sub-Saharan savanna belt and the East African steppes (Cramp & Simmons 1980). The total absence of the bird in the spring is notable. It is thought that the species migrates very quickly through the Bekaa Valley in the spring.

Ring-tailed harriers

Small numbers (a maximum count of 6) of unidentified harriers were observed, mainly in the autumn. Ring-tail totals comprised only 1.4% of the total harriers counted.

ROOSTING SITES AND HABITATS

Year-round there were at least two different roosting sites of Western Marsh Harriers, but Montagu's, Pallid and Hen Harriers roosted separately. All harriers roosted in various forms of trampled vegetation, similar to those made by hares *Lepus* sp. Roost sites were 0.5-1m in diameter and were at least 5m apart. Montagu's, Pallid and Hen Harriers tended to roost in the shorter, ungrazed pastures (vegetation up to 1m tall), while Western Marsh Harriers roosted in tall (up to 4m) reedbeds. The roosting site habitat characteristics are given in **Table 2**.

Table 2. Summarised characteristics of the roosting sites of harriers in the Aammiq wetland, 2004-05.

Harrier species	Plant species	Estimated vegetation cover (%)	Average vegetation height (cm)
Montagu's/Pallid	*Carex* sp.	Sedge: 50	60
Hen/Ring-tailed	*Typha* sp.	Reed: 5	
	Festuca arundinacea	Grass: 45	
Western Marsh	*Phragmites australis*	Reed: 100	400

CONCLUSIONS AND RECOMMENDATIONS

The Aammiq wetland is a very important communal roosting site for harriers. Up to 54 individual birds were seen in January and February. This wetland may be the only suitable area in the Bekaa Valley. Birds were often seen coming down from high altitudes from the Anti-Lebanon Mountains, suggesting that they had spent the daylight hours in Syria. It is likely that the wetland acts as roosting site for birds from a huge area. It is significant that the marsh provides roosting habitat for the near-threatened Pallid Harrier, although the numbers are relatively low.

Hunting might have an effect on the overall number of harriers roosting on the Aammiq wetland. On one occasion, we recorded a female Hen Harrier being shot on her way to the roosting site. On other occasions it was seen that harriers dropped down in the reed bed very fast when there was much hunting in the area. Furthermore, it was

obvious that the harriers roosted in the protected part of the marsh where hunting is prohibited. The effect of shooting disturbance on wintering harriers requires further research. However, we suggest that in order to protect the roosting harriers adequately, it is imperative that where the hunting ban applies in the wetland, it is rigorously enforced, especially during January and February, when hunting is severe.

Currently there are plans to cut the reeds rotationally as part of the management of the Aammiq wetland. For roosting Western Marsh Harriers in particular, it is important that in the central part of the marsh enough suitable habitat will be available. When cutting the reeds, an area of tall reed should be left. For the roosting of other harrier species, it is important to maintain rough pastures that are not heavily grazed in the autumn and winter.

When the reed beds are managed, it is important to investigate the impacts of the management regimes on the roosting birds. The harrier survey is now part of the A Rocha Lebanon monitoring program of the Aammiq wetland. Further study should be done in other wetlands in the region, such as those at Aanjar in the Eastern Bekaa, to determine whether or not Aammiq is the only area for roosting harriers in Lebanon.

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Studies of Socotran birds IV. Synonymization of six endemic bird taxa, with comments on the name *Onychognathus blythii creaghi*

GUY M. KIRWAN

Informed taxonomy marks the first step towards effective and meaningful conservation. Knowledge of the avifauna of the island of Socotra has advanced significantly in recent years, with many new data being accrued on the populations and breeding ecology of the endemic birds, and new species for the islands being recorded on a near-regular basis. Unfortunately, our cumulative understanding of taxonomy has remained virtually static since the 1960s. As part of an ongoing re-evaluation of the archipelago's endemic and near-endemic birds, the present paper reviews the validity of the following taxa: *Centropus superciliosus sokotrae, Eremopterix nigriceps forbeswatsoni, Lanius meridionalis uncinatus, Zosterops abyssinicus socotranus and Emberiza tahapisi insularis*, as well as the cases relating to two other taxa originally described from Socotra, *Streptopelia senegalensis sokotrae* and *Onychognathus blythii creaghi*, of which the latter has been generally regarded as a synonym. Rationales for regarding the first six of these names as synonyms of (generally widespread) Afrotropical species are presented, based on an examination of specimens at those institutions holding the only significant collections of Socotran birds. In some cases recommendations for revised treatments of closely related taxa are also suggested here. The case of *O. b. creaghi* is particularly complex and requires the acquisition of more material before the case can be satisfactorily reviewed.

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This is the fourth paper in a series that re-analyses the taxonomy of birds described from the ancient island of Socotra, which lies close to the Horn of Africa but is politically part of Yemen. Previous parts considered subspecific limits in *Caprimulgus nubicus* (Kirwan 2004), species limits in the Golden-winged Grosbeak *Rhynchostruthus socotranus* (Kirwan & Grieve 2007) and validated both taxa of Rufous Sparrow, *Passer* (*motitensis*) *insularis* and *P.* (*m.*) *hemileucus*, known from the archipelago at specific level (Kirwan in press). These notes seek to reawaken interest in taxonomic studies of Socotran birds, which with the sole exception of the endemic *Buteo* (Frost & Siegfried 1970, Clouet *et al* 1994, Martins & Porter 1996, Clouet & Wink 2000, Kruckenhauser *et al* 2004, Jennings 2007), have lain dormant for many years. Specifically, the series sets out to meet the challenge laid by Martins (1996), who stated: 'There is a clear need for a review of the avifauna of Socotra which reflects contemporary systematic thinking.' The present contribution presents rationale for invalidating six avian taxa previously considered endemic to Socotra. Some of these were also considered synonyms by other works, but detailed evidence for such a view had not been published.

Sibley & Monroe (1990) and *The birds of Africa* recognised six taxa as endemic species to Socotra, of which other contemporary commentators, including such influential tomes as Dickinson (2003), have generally acknowledged five (the discrepancy being the status accorded to *Passer insularis*: see Kirwan in press). Ripley & Bond (1966), the most recent commentators to offer an extensive original overview of the taxonomy of the islands' birds, considered a further 11 taxa subspecifically, whilst Martins & Porter (1996) appeared to incline to the view that the *Buteo* is best considered specifically. One of these taxa, *Caprimulgus nubicus jonesi*, was already shown to be a synonym (Kirwan 2004), a view followed by Cleere (submitted), whilst another, *Passer insularis hemileucus*, is meritorious of specific rank (Kirwan in press) and *Rhynchostruthus s. socotranus* is possibly also best considered specifically (Kirwan & Grieve 2007). The present contribution considers the cases of five other taxa treated as endemic

subspecies by Ripley & Bond (1966) and Martins (1996), namely: *Centropus superciliosus sokotrae*, *Eremopterix nigriceps forbeswatsoni*, *Lanius elegans uncinatus*, *Zosterops abyssinicus socotranus*, and *Emberiza tahapisi insularis*, as well as those relating to two other taxa originally described from Socotra: *Streptopelia senegalensis sokotrae* and *Onychognathus blythii creaghi*.

METHODS

Specimens of relevant Socotran taxa held at The Natural History Museum (NHM, Tring) and the National Museum of Natural History (Smithsonian Institution), Washington DC, were studied, along with representative material of other relevant taxa from Arabia and north-east and East Africa. Wherever possible type material was included in my analyses of plumage. The following data were obtained from some specimens: wing-chord (flattened) and tail-length, using a standard metal wing-rule with a perpendicular stop at zero (accurate to 0.5 mm), and culmen-length (to skull) and culmen-depth (at the feathers), using digital callipers (accurate to 0.01 mm). Notes on plumage variation in all relevant forms were taken and compared with previous published findings wherever possible. A broad range of material was photographed, using a Nikon Coolpix 885 digital camera. My findings according to each analysed taxon are presented below in the following format. Firstly, the analyses or conclusions of previous commentators are summarised, then my own findings are presented. Finally, a brief list of relevant specimen material examined during the present study is enumerated, followed by a list of unexamined specimens in the only other institutions with any number of Socotran birds, namely the Museum of Zoology, University of Cambridge (CUMZ), and the National Museums and Galleries on Merseyside, Liverpool (LM). Unless otherwise stated, all of the taxa here were treated as valid by Ripley & Bond (1966), Kirwan *et al* (1996) and Martins (1996). Throughout, I adhere to a concept of subspecies as elucidated by Barrowclough (1982) and Haffer (2003).

***Streptopelia senegalensis sokotrae* C. H. B. Grant, 1914**

Grant's (1914) description refers to the bird as being simply smaller in size and somewhat paler in colour compared to other races. *S. s. sokotrae* was maintained by Sclater (1930), Peters (1937) and White (1965), but by the latter date even its describer evidently no longer believed it to be valid, as *sokotrae* is nowhere mentioned in Mackworth-Praed & Grant (1957), and Ripley & Bond (1966) likewise dismissed *sokotrae* and assigned Socotran birds to nominate *senegalensis*. They were followed by Martins (1996) and Kirwan *et al* (1996), though elsewhere in the same publication, *sokotrae* is apparently admitted (Dymond 1996). Despite Grant's *volte-face*, Goodwin (1970), Urban *et al* (1986), Baptista *et al* (1997), who also considered *sokotrae* to have a pinker head, Gibbs *et al* (2001) and Dickinson (2003) conservatively retained it. Nonetheless, Goodwin (1970) considered that only *cambayensis* might be considered a well-differentiated race.

Compared to material from Arabia and north-east Africa, most of it attributed to nominate *senegalensis*, differences in coloration are imperceptible and I find neither the head consistently pinker nor the overall coloration to be noticeably paler than material from neighbouring populations. There is far too much overlap in the specimens to hand in both Washington and Tring to identify *sokotrae* using these features (see **Plate 1**). Size differences also appear extremely difficult to discern, though Urban *et al* (1986), in particular, pointed to the shorter wing of *sokotrae*, giving the range for both sexes combined as 123–133mm (sample size not stated), vs 128–145mm in the nominate. My analysis of 23 specimens from Socotra gives a wing-length range of 120–137mm (*eg* against 136–146 for ten specimens, both sexes, of the obviously larger *aegyptiaca*, which is also typically brighter and deeper-coloured), 91–111 mm for the tail (vs 104–118 mm for *senegalensis*: Urban *et al* 1986) and 17.44–19.08 (vs 16–21 mm

for *senegalensis*: Urban *et al* 1986), whilst weight data from Forbes-Watson's unpublished report ranged from 70–98g (well within the range of variation from across continental Africa: Urban *et al* 1986). These data do, indeed, suggest that birds on Socotra are marginally smaller than their mainland counterparts, but also indicate that the magnitude of the difference is not highly significant, thereby underlining Grant's decision to subsume *sokotrae* as being correct.

Material examined.—*S. s. sokotrae*: 13 (NMNH), from Socotra, and 10 (NHM), from Socotra (including the holotype). *S. s. senegalensis / S. s. cambayensis*: 50 (NMNH), from eastern Africa south to the Cape and India, and 47 (NHM), from Ethiopia, Oman, Saudi Arabia, Somalia and Yemen. *S. s. aegyptiaca*: 10 (NMNH), from Egypt.

Unexamined material.—*S. s. sokotrae*: 5 (LM), from Socotra.

***Centropus superciliosus sokotrae* C. H. B. Grant, 1915**

The principally Afrotropical White-browed Coucal is distributed throughout much of eastern and southern Africa, further north penetrating south-west Arabia, and including Socotra. Five subspecies are generally admitted, of which two, including *sokotrae*, were described by Claude Grant simultaneously. *C. s. sokotrae* is generally accorded the range Arabia and Socotra, though Grant restricted the range to Socotra, the species being almost unknown in Arabia until a couple of years later (Sclater 1917), but see below for further comments on this issue. Grant (1915) described the adult male of the novelty thus: 'Nape, sides of neck, and entire underparts much paler than in *C. s. superciliosus*; almost lacking the strong buff coloration of the typical form, which thus gives it a very grey appearance.' *C. s. sokotrae* was reaffirmed as valid by Friedmann (1930) and Grant & Mackworth-Praed (1937). Most major works have accepted this form's validity, including Sclater (1930), Mackworth-Praed & Grant (1957) and White (1965), and most recently Irwin (1988), Payne (1997, 2005) and Dickinson (2003). However, Irwin (1988) commented that *socotrae* (*sic*) is not well differentiated from *superciliosus*, but diagnosed it as having the crown and nape paler brown, lighter secondaries, with a greener (less bluish) gloss to the tail and whiter underparts. Payne (1997) also had noted that *sokotrae* is 'not very distinct from [the] nominate', and in Payne (2005) that some individuals are not distinct from Ethiopian specimens of *superciliosus*. Furthermore, he added east Somalia to the known range of *sokotrae*. Indeed geographical variation in *C. s. superciliosus* throughout East Africa is unsurprisingly slight, given its near-continuous distribution, as Louette (1986) remarked on his inability to assign to taxon specimens from north-east Zaïre to either *loandae* or the nominate, and Payne (2005) does not refute this contention.

Amongst the Forbes-Watson series from Socotra, housed at NMNH, and those at NHM, there is evidently quite some variation in the depth of the underparts coloration, with two (NMNH 518000, NHM 1899.8.11.101) being distinctly buff on the nape, neck- and breast-sides and flanks, *contra* Grant (1915), whilst the darkness of the crown and secondaries in the adults is as many *superciliosus* (**Plates 2–3**), to the point of invalidating those parts of Irwin's diagnosis. (The specimens with browner crowns in the photograph are in various stages of immaturity, as noted by Ripley & Bond 1966.) As further evident from **Plate 2**, the intensity of the greenish gloss to the tail is rather variable in Socotran birds, but in any case I am unable to perceive any noticeable difference in tail coloration vis à vis birds from East Africa, at least without the benefit of a colorimeter. I would add that some specimens from as far removed as Sokoke, Kenya, appear to closely approach Socotran examples in those characters that were used to differentiate *sokotrae*. There is much overlap in all these same characters between Socotran and Arabian specimens, though with those with the whitest

underparts are from Socotra and it tends to be the case that young from both these areas have more buff feathering on the underparts than adults.

A further problem presents itself in recognising *sokotrae*, if we delimit its range to include southern Arabia (as most recent commentators have done) and even eastern Somalia (Payne 2005), because the name *superciliosus*, Hemprich & Ehrenberg, 1833 (or perhaps 1829, see information from RJ Dowsett *in litt.* posted at www.zoonomen.net/cit/jours.html#Symb.Phys.Aves), was described from Arabia and Ethiopia. Of the type-series of four specimens, one is definitely labelled as being from Arabia (Dresser & Blanford 1874), though neither Gray (1870) nor Sclater (1891) acknowledged this. This would automatically make *sokotrae* a junior synonym, unless the name is restricted to those on Socotra which, of course, was Claude Grant's original intention and in which he was followed by Sclater (1930), by which time more material from Arabia was available including to British workers. Grant, however, had no experience of Arabian material; most subsequent commentators who possess such familiarity have been content to view Arabian and Socotran material as essentially identical.

Material examined.—*C. s. sokotrae*: 7 (NMNH), from Socotra, and 18 (NHM), from Socotra and Arabia. *C. s. superciliosus*: 10 (NMNH), from Ethiopia and Kenya, and 64 (NHM), from Ethiopia, Kenya, Somalia and Sudan.

Unexamined material.—None.

***Eremopterix nigriceps forbeswatsoni* Ripley & Bond, 1966**

Black-crowned Finch-lark *Eremopterix nigriceps* occurs from north-west India through the southern Middle East and across the Sahel to the Cape Verdes, off western Africa. Four to five races are generally recognised, one of which (nominate *nigriceps*) is generally considered to be restricted to the Cape Verdes, although Hazevoet (1995) regarded variation in *E. nigriceps* as being largely clinal and failed to perceive any diagnostic characters in specimens from the archipelago that might delimit *nigriceps* from the west African race *albifrons*. Such matters are largely beyond our concern here, but it is noteworthy that Hazevoet failed to find rationale for regarding Cape Verdean birds as different from those on the adjacent mainland, given the somewhat partially analagous example that the Cape Verdes present vis à vis Socotra (the two archipelagos are situated at near-parallel latitudes on the opposite sides of the African continent and possess a number of biogeographical similarities). Forbes-Watson (unpubl) noted *E. nigriceps* as being one of the commonest species on the plains of the main island of Socotra, with which analysis Kirwan *et al* (1996) concurred, and further remarked that he found it surprising that no-one had named the Socotran population. This remark prompted Ripley & Bond (1966) to recognise the population subspecifically, in homage to Forbes-Watson. The new form was diagnosed by its similarity to mainland African *melanauchen*, but males having the upperparts more rufous (particularly the inner secondaries and central tail-feathers, and a larger white patch on the forecrown. Compared to *E. n. sincipitalis* of Arabia, *forbeswatsoni* is even less well differentiated, 'being decidedly darker above and having the upperparts more rufous brown, less sandy grey' (Ripley & Bond 1966). *E. n. forbeswatsoni* was not admitted by Ryan (2004), who included Socotran and Arabian birds within *melanauchen*, but was accepted by Dean *et al* (1992) and Dickinson (2003), although the latter also preferred to subsume Arabian birds within *melanauchen*. Dickinson cited Dean *et al* in support of maintaining *forbeswatsoni*, despite that the diagnosis therein is a mere repetition of Ripley & Bond (1966), suggesting no fresh consideration of this taxon's validity.

Table 1. Comparison of the size of the white forehead patch in males of *Eremopterix nigriceps* from Arabia (*sincipitalis*), Socotra (*forbeswatsoni*), Djibouti and Somalia (*melanauchen*). Measurements in mm (using callipers): number of specimens and means in parentheses. Most specimens held in NHM, Tring.

Population	Forehead patch size	Population	Forehead patch size
Arabia	3.93–6.23 (*n*=11, *m*=5.25)	Somalia	2.24–4.81 (*n*=8, *m*=3.80)
Socotra	3.10–6.00 (*n*=22, *m*=4.38)	Djibouti	2.96, 5.37 (*n*=2, *m*=4.16)

It is relevant to state that the comparative material examined by Ripley & Bond (1966) in diagnosing *forbeswatsoni* was very selective (just eight specimens in total from north-east Africa and Arabia). There is considerable variation in the size of the white forehead patch, within both African and Socotran material (see **Table 1** and below). I cannot discern differences in upperparts coloration between *forbeswatsoni* and *melanauchen* from Africa, and compared with the large series in NHM there is plainly no consistent difference in this character compared to Arabian birds (**Plate 4**). One Bahrain male is noticeably paler than any other Arabian example that I have examined in the upperparts and is labelled as being close to *affinis*, but I cannot see the rationale for this statement with the material to hand in Tring. To test the hypothesis that Socotran birds display a larger white forehead patch than neighbouring populations, I measured males from three areas (Socotra, Somalia and Arabia), using callipers, from the base of the bill at the feathers in a straight line to the furthest extent of the white. The results are presented in **Table 1** and reveal the degree of overlap in this character, thereby invalidating this feature. **Plate 5**, however, reveals how, with the limited material at hand to Ripley & Bond (1966) in Washington, the authors of the type description might have reached their conclusions. In contrast, I find no strong evidence on which to base recognition of *forbeswatsoni*, or *sincipitalis*, and one must question whether more than one name is needed for all African and Arabian populations of the species.

Material examined (only males).—E. n. forbeswatsoni: 13 (NMNH), from Socotra (including the holotype), and 9 (NHM), from Socotra. *E. n. melanauchen*: 2 (NMNH), from Djibouti, and 47 (NHM), from Ethiopia, Somalia and Sudan. *E. n. sincipitalis*: 2 (NMNH), from Saudi Arabia, and 41 (NHM), from Bahrain, Saudi Arabia, United Arab Emirates and Yemen.

Unexamined material.—E. n. forbeswatsoni: 2 (LM), from Socotra.

***Lanius meridionalis uncinatus* Sclater & Hartlaub, 1881**

Sclater & Hartlaub (1881), in their diagnosis of the new form, considered this taxon to be closest to *Lanius fallax* (an old name for *L. m. elegans*), but 'remarkable for its much hooked bill'. Thereafter *uncinatus* was maintained by Sclater (1930), Mackworth-Praed & Grant (1960), Rand (1960) and White (1962), usually on the basis of its longer bill and rather less white on the scapulars than geographically proximate races, with the young bird being considered to be whiter below than *aucheri* with a buffish-grey chest and flanks. Following the major upheavals in grey shrike taxonomy of the 1990s, wherein *Lanius excubitor* was considered to comprise two species, *L. excubitor* and *L. meridionalis*, Lefranc (1997) and Harris (2000) effectively added nothing new to the diagnosis and taxonomy of *uncinatus*, being content to maintain the race, whilst Fry & Keith (2000) commented on it as being darker above, with less white on the scapulars, slightly greyer below and having a smaller body but longer bill than *aucheri*. Socotran birds, *uncinatus*, are currently considered to comprise one of the 10–12 forms recognised within the *meridionalis* species-group (Clement 1995, Lefranc 1997, Dickinson 2003). One of the contentious taxa is *jebelmarrae*, from Darfur, Sudan (see Nikolaus 1984, D. L. Pearson *in* Fry & Keith 2000).

L. m. aucheri (of the Middle East south over much of Arabia and on the western side of the Red Sea as far south as northern Ethiopia) is often considered difficult to separate from *L. m. elegans* (which occurs in the Nile Valley and discontinuously west across the Sahara), but this issue is not considered further here. My analysis focused on the relative diagnosability of *uncinatus* vis à vis *buryi* and *aucheri*, as follows. I find no readily appreciable difference in the coloration of the upperparts between *uncinatus* and *aucheri* (**Plate 6**), and in terms of the underparts, the degree of difference is very small, even in the most extreme examples of each, and as a whole are subject to much overlap, thus invalidating their certain use in diagnosis (**Plate 7**). In adults, the amount of white on the scapulars in *aucheri* and *uncinatus* is similar and whilst the former tends to have slightly more the difference is again far from clear-cut. NHM has two young from Socotra, and NMNH another, which show less buffish in the underparts than six *aucheri* of similar age, but the distinction is not very obvious and might depend on the precise age of the birds in question. Comparative bill-lengths for all three forms are presented in **Table 2**, along with tail- and wing-length data for *uncinatus*. Whilst *uncinatus* has a slightly longer culmen, on average, than *aucheri* from Arabia, the difference is rather meagre and seems an insufficient basis alone on which to balance the case for continuing to recognise *uncinatus*.

On the other hand, *L. m. buryi* Lorenz & Hellmayr, 1901, a principally highland form generally restricted to Yemen by most works, is far more easily diagnosable. The underparts are clearly darker grey and more saturated in typical individuals, the upperparts are also obviously darker than *aucheri/uncinatus* and most specimens exhibit scarcely any white in the scapulars, whilst the throat is almost invariably as dark as the rest of the underparts (though it might be added that *aucheri/uncinatus* often show some distinctly grey feathering on the chin and throat). Finally, *buryi* generally appears to be smaller in body size than *aucheri/uncinatus*, albeit with a marginally longer bill on average (**Table 2**). There is a Meinertzhagen specimen in NHM, from Lodar, Yemen, labelled as being an intergrade between *buryi* and *aucheri*, but it might in fact easily be considered a reasonably typical *buryi*. Furthermore, there are two specimens collected by Thesiger in modern-day Ethiopia, NHM 1934.8.9.600 from Danakil, and NHM 1934.8.9.598 from Gobad, both of which are labelled as referring to *buryi* and whose identification appears plausibly correct. In sum, I prefer to subsume *uncinatus* within *aucheri*, but maintain *buryi*. The question of whether some *buryi* move across the Red Sea to winter in the Ethiopian highlands demands further consideration and investigation.

Material examined—L. m. uncinatus: 31 (NMNH), from Socotra, and 15 (NHM), from Socotra (including the holotype). *L. m. buryi*: 35 (NHM), from Yemen (including the holotype of *arabicus*). *L. m. aucheri*: 63 (NHM), from Arabia.

Unexamined material—L. m. uncinatus: 8 (LM), from Socotra, and 2 (CUMZ), from Socotra.

Table 2. Comparison between mensural data for both sexes of *Lanius meridionalis uncinatus* (from Socotra), against bill-length for *L. e. buryi* (Yemen) and *L. e. aucheri* (Arabia). Measurements in mm (using wing-rule and callipers): number of specimens and means in parentheses. Culmen measured to skull, and flattened wing. Specimens held in NHM, Tring, and NMNH, Washington.

Population	Culmen	Tail	Wing-length
Socotra	19.06–23.62	92–107	94–103
	(*n*=31, *m*=20.96)	(*n*=25, *m*=101)	(*n*=31, *m*=99)
Arabia	19.03–21.84	–	–
	(*n*=18, *m*=20.10)	–	–
Yemen	18.94–24.15	–	–
	(*n*=16, *m*=22.05)	–	–

***Zosterops abyssinicus socotranus* Neumann, 1908**

None of the early commentators reported any discriminatory features between the Socotran population and those in mainland Africa, thus it was left to Neumann (1908) to diagnose *socotranus* by its having a whiter underside and, more particularly, an almost blackish bill and dark feet. Subsequently, Mackworth-Praed & Grant (1960) stated simply that it was rather brighter on the upperparts and less olivaceous green, whilst White (1963) mooted that *socotranus* is yellower above than the nominate, with a black bill and no yellow forehead patch. Most recently, Fry (2000) added that the Socotran race is similar to the nominate, but with a blackish bill, greyer irides, brighter yellow throat, darker grey sides and underparts, and further mentioned that *abyssinicus* has the bill horn brown above and pinkish brown below, with the legs brown or flesh-coloured. *Z. a. socotranus* has enjoyed widespread acceptance (Sclater 1930, Mackworth-Praed & Grant 1960, Archer & Godman 1961, Moreau 1967, Fry 2000, Dickinson 2003), and Moreau (1967) noted that its range should be extended to encompass northern coastal Somalia which has been followed by subsequent authors (*eg* Ash & Miskell 1998).

White-breasted (Abyssinian) White-eye *Zosterops abyssinicus* can easily be considered to comprise two groups, one white- or pale-bellied and the other yellow-bellied. The former aggregation comprises the following forms: *Z. a. abyssinicus* (north-east Sudan, Eritrea and north and central Ethiopia), *Z. a. omoensis* (Ethiopia, in Lake Tana to the Omo Valley), *Z. a. arabs* (Arabia) and *Z. a. socotranus* (Socotra and northern Somalia), whilst the yellow-bellied races are two: *Z. a. flavilateralis* (much of Kenya to northern Tanzania) and *Z. a. jubaensis* (southern Ethiopia and southern Somalia to northern Kenya). In all forms within the former grouping, there is quite some intra-taxon variation, and in Sudan and Eritrean specimens in NHM it is difficult to observe much difference between *omoensis* and nominate *abyssinicus*. The forehead patch mentioned by White (1963) as a discriminator between *socotranus* and *abyssinicus* is inadmissible, as Socotran birds have yellow lores extending to above the bill in some specimens (see also Plate 32 in Porter & Martins 1996a), and this feature is shown by a greater proportion of *omoensis* and *abyssinicus*, though a few do not or only barely exhibit it. On average, I find no difference in upper/underparts colorations between *socotranus* and *abyssinicus*, except in the marginally whiter belly of the former, but between *socotranus* and *arabs* one might notice a difference between the, on average, slightly yellower upperparts and crown of the former (versus greyer green in *arabs*), and slightly brighter yellow throat of *socotranus*, whilst the rest of the underparts tend to be more buffish grey in *arabs*. Concerning bare-parts coloration, which in any case seems a rather weak basis for recognising a passerine, Forbes-Watson's labels reveal that of those he collected in 1964, the predominant bill colour varied from black (n=2), through blackish or blackish grey (n=22), dusky (n=1) to dark horn, blue horn or blue-grey (n=8), but even in those cases where the mandibles were largely black to blackish grey, the cutting edges (horn to pinkish) and base (bluish) were usually paler. Feet varied from blue-grey (the commonest description) to blackish, usually with much paler soles (pale yellowish or creamy).

Plates 8–9 illustrate variation in underparts and upperparts colorations within the white-bellied group of taxa. In sum, *socotranus* seems at best only very doubtfully recognisable, whilst *Z. a. arabs* Lorenz & Hellmayr (1901), is rather better defined, at least in underparts coloration, but differences overall are still rather weakly expressed and subject to quite some variation and overlap, leading me to suggest that both might comfortably be included within *abyssinicus*. I would concur with previous authors who have assigned Somali birds to *socotranus*, though Archer & Godman (1961) did not, if subspecific limits as currently defined continue to be accepted. In general, it seems best to restrict the name *omoensis* to the environs of the Omo Valley, as birds from even

relatively close neighbouring regions are almost or virtually impossible to separate from *abyssinicus* or *socotranus*, whilst those collected in the Omo Valley, in NHM, are easily distinguishable, particularly using upperparts coloration (see **Plate 8**).

Material examined—Z. a. socotranus: 33 (NMNH), from Socotra, and 32 (NHM), from Socotra and Somalia. *Z. a. abyssinicus*: 5 (NMNH), from Ethiopia, and 29 (NHM), from Eritrea, Ethiopia and Sudan. *Z. a. omoensis*: 26 (NMNH), from Ethiopia, and 9 (NHM), from Ethiopia. *Z. a. arabs*: 26 (NHM), from Oman, Saudi Arabia and Yemen.

Unexamined material—Z. a. socotranus: 6 (LM), from Socotra, and 4 (CUMZ), from Socotra.

***Onychognathus blythii creaghi* (Ogilvie-Grant & Forbes, 1903)**

Two species of *Onychognathus* are present in the Socotran archipelago, Somali Starling *O. blythii*, which is the commoner, and Socotra Starling *O. frater*, which is also widespread but probably somewhat less numerous. The former species also occurs in Eritrea, northern Ethiopia and northern Somalia. For recent field studies of these starlings see Porter & Martins (1996b) and, more especially, Gedeon & Neumann (2004). Ogilvie-Grant & Forbes (1903) encountered a few small flocks of *O. blythii* (identified by the females having a grey head) on Abd Al-Kuri, in rugged hills bordering the coast, but were only able to secure a single male (NHM 1899.8.11.143), which served to describe *creaghi*, by it having the crown, throat and rest of the underparts oil green, like *O. frater*, rather than purplish blue as in *O. blythii*. The name *creaghi* was already considered a synonym of *blythii* by Sclater (1930) and omitted from Mackworth-Praed & Grant (1960) and White (1962), presumably because these authors followed Sclater, but it was resurrected by Amadon (1962). Despite its inclusion in the influential Peters Check-list, *creaghi* has subsequently fallen into disuse and it was neither mentioned, much less admitted, by Ripley & Bond (1966), Porter & Martins (1996), Feare & Craig (1998), Fry & Keith (2000) and Dickinson (2003). Gedeon & Neumann (2004) were alone in recent times in drawing attention to the name, but painted an incomplete and incorrect view of its history, even erroneously crediting its authorship solely to Forbes. Although they consider that Alec Forbes-Watson regarded *creaghi* as a synonym in his unpublished report, this is not the case as a careful reading of the manuscript demonstrates. In fact, Forbes-Watson makes no comment on the validity of *creaghi*; he merely found *O. blythii* rare on Abd Al-Kuri and was apparently unable to collect it.

The characters applied to delimit *creaghi* are as stated; the holotype does indeed exhibit an oily green sheen to the dark plumage and is thereby differentiated from males taken on the main island of Socotra, as well as in Eritrea and Somalia, also held in Tring. Furthermore, as noted by Ogilvie-Grant & Forbes (1903), in this aspect of the bird's plumage it approaches *O. frater*. In the absence of additional specimens and

Table 3. Comparison between mensural data for males of *Onychognathus blythii* from Abd Al-Kuri (*creaghi*), Socotra (*blythii*), Eritrea and Somalia (*blythii*), and *O. frater* (Socotra). Measurements in mm (using wing-rule and callipers): number of specimens and means in parentheses. Culmen measured to feathers, bill-depth at feathers, and flattened wing. All specimens held in NHM, Tring.

Population	Culmen	Bill-depth	Wing-length
Abd Al-Kuri	24.95	9.74	176 (*n*=1)
Socotra	23.89–26.25	9.57–10.48	163–173
	(*n*=5, *m*=24.85)	(*n*=3, *m*=10.15)	(*n*=5, *m*=168)
Eritrea & Somalia	23.65–29.61	–	160–179
	(*n*=8, *m*=25.91)	–	(*n*=8, *m*=169.5)
Socotra (*O. frater*)	25.06–28.45	9.6–11.44	150–163
	(*n*=5, *m*=26.45)	(*n*=5, *m*=10.56)	(*n*=5, *m*=156)

field observations, it is impossible to comment further on the validity of *creaghi*, but mensural data appear to further support its inclusion within the *blythii* species (**Table 3**). Although the purported differences from *blythii* are not great, even plumage differences between *O. frater* and *O. blythii* are not so marked (Porter & Martins 1996, Feare & Craig 1998). Thus, for now, I prefer to await additional evidence before invalidating or upholding *creaghi*.

Material examined (all NHM)—*O. b. creaghi*: 1 (the holotype), from Abd Al-Kuri. *O. b. blythii*: 23, from Eritrea, Socotra and Somalia. *O. frater*: 5 from Socotra.

Unexamined material—*O. b. blythii*: 9 (LM), from Socotra, and 2 (CUMZ), from Socotra. *O frater*: 7 (LM), from Socotra), and 2 (CUMZ), from Socotra.

***Emberiza tahapisi insularis* (Ogilvie-Grant & Forbes, 1899)**
Taxon endemic to Socotra; the following related forms and their broad ranges are relevant in the comparisons that follow: *arabica* (southern Arabia), *septemstriata* (eastern Sudan, northern Ethiopia and Eritrea) and *tahapisi* (much of the rest of north-east Africa and south to eastern South Africa). *E. t. insularis* is described as differing from *E. t. tahapisi* by 'having the inner margin of the secondaries devoid of rufous, and the general colour of the chest and rest of the under parts pale brick colour, instead of dull rufous chestnut' (Ogilvie-Grant & Forbes 1899). The taxon had been collected earlier, by Balfour, but ascribed by Sclater & Hartlaub (1881) to *E. (t.) septemstriata*, whilst Sharpe (1888) had boldly lumped it in with *tahapisi*. However, subsequent authorities readily accepted Ogilvie-Grant and Forbes' description, and it was maintained by Sclater (1930), Mackworth-Praed & Grant (1960), White (1963) and Paynter & Storer (1970), amongst others. Finally, Dickinson (2003) not only accepted *insularis*, but also *nivenorum*, of north-west Namibia, a taxon widely ignored by most non-South African authorities.

Byers *et al* (1995) stated 'Very like *E. t. tahapisi* but crown-stripes blacker and dark bib more restricted. Inner webs of flight-feathers devoid of rufous. First-winter birds, particularly females, may be very pale on the underparts.' It should be remarked at this point that Ogilvie-Grant & Forbes (1899) only mentioned the secondaries as lacking rufous, because, for instance, there is a young male collected by them (1899.8.11.67) that does have rufous margins to the rectrices and primaries. Most adults collected by them are rather worn in these areas and therefore difficult to evaluate in this feature. Fry (2004) added that the underwing-coverts are whiter. Following examination of a great many *tahapisi*, I disagree that the crown-stripes might be considered blacker, especially against specimens from Kenya and Ethiopia (in which character *septemstriata* is very similar), whilst variation in preparation technique can easily affect the size and shape of the black bib, but in adults I find no suggestion of a definitive difference in this feature between *tahapisi* and *insularis*, merely minor degrees of individual variation. On the other hand, the bib of *septemstriata* might on average be slightly larger, at least in those specimens in Tring, but this is not a clear-cut difference because a great many specimens show no such quantifiable difference. The lack of rufous on some of the flight-feathers only serves to differentiate *insularis* from *septemstriata*, not from *tahapisi*. In this feature, there are a great many *tahapisi* which show equally little warm coloration on the remiges as *insularis* surely does, e.g. NHM 1949.30.192 (from Sudan), 1912.10.15.1766 (Ethiopia) and 1946.5.8.33 (Nyasaland). Even some *septemstriata* do not clearly exhibit much rufous on the flight-feathers, e.g. 1898.7.27.236 (Somalia). Young of both sexes of *insularis* are indeed very pale below, but this equally applies to same-age specimens

from across the range of *tahapisi*, whilst young *septemstriata* can also share this character, though perhaps incline to be slightly darker. *E. t. arabica*, of the south Arabian Peninsula, is even more weakly differentiated, described by Byers *et al* (1995) as differing from *tahapisi* only in having the underparts slightly paler, but I am unable to ascertain any clear differences between the two in this or any other character in the extensive material to hand in NHM (**Plates 10–11**).

The range of intra-taxon variation and relative weakness of any these feature to discriminate between taxa argues against the recognition of any name other than *tahapisi* for eastern and southern populations of Cinnamon-breasted (or African Rock) Bunting. As noted by Fry (2004), it seems that the ranges of *E. t. septemstriata* and West African *E. t. goslingi* meet around the Sudan/Uganda border. If true, this would strongly support species status for *goslingi* (the only taxon that is obviously different from nominate *tahapisi* within the entire complex). Elsewhere from the range of *septemstriata*, however, Byers *et al* (1995) found evidence to suggest that it represented a hybrid swarm between *goslingi* and *tahapisi*.

Material examined—E. t. tahapisi: 80 (NMNH), from South Africa, Mozambique, Angola, Kenya and Ethiopia, and 50 (NHM), from Ethiopia, Kenya, Malawi, Sudan and Uganda (specimens from further south were not evaluated). *E. t. septemstriata*: 16 (NMNH), from Ethiopia, and 24 (NHM), from Eritrea, Ethiopia and Somalia. *E. t. insularis*: 29 (NMNH) and 15 (NHM), from Socotra. *E. t. arabica*: 47 (NHM), from Oman, Saudi Arabia and Yemen.

Unexamined material—E. t. insularis: 4 (LM), from Socotra, and 2 (CUMZ, both syntypes), from Socotra.

CLOSING REMARKS

This study reconfirms the importance of the Forbes-Watson collection from the Socotran archipelago and the unpublished expedition report (see Kirwan 1997), not only for taxonomic studies of the islands' birds but also many aspects of their natural history. The 523 specimens that originally constituted the collection are a remarkable testament to Forbes-Watson and his two Kenyan taxidermists, and continue to represent the best (and most beautifully prepared) series of birds from Socotra; the relative lack of previous attention that has been paid to this resource borders on the extraordinary.

ACKNOWLEDGEMENTS

I am grateful to staff members at the Natural History Museum, Tring (Robert Prŷs-Jones, Katrina Cook, Alison Harding and Mark Adams) and National Museum of Natural History, Washington DC (James P Dean, Carla J Dove, Christina A Gebhard and Brian K Schmitt), for their assistance at these institutions. Clemency Fisher and Tony Parker provided some reference material and a list of relevant specimens held in the National Museums & Galleries on Merseyside, Liverpool. Michael Jennings' persistence was essential in tracking down the unpublished expedition report of Alec Forbes-Watson. I thank Edward Dickinson and Alan Peterson for discussing some nomenclatural and other issues, and for suggesting additional lines of enquiry in endeavouring to resolve the same. In a similar vein, I am grateful to Effie Warr for checking some literature on my behalf. My field work in Socotra was undertaken within the framework of the 1993 Ornithological Society of the Middle East (OSME) South Yemen expedition. OSME also provided financial support that permitted my museum studies in North America, which were further abetted by a scholarship grant from the Field Museum of Natural History, Chicago. John & Effie Warr provided me with much-welcome hospitality during my many visits to NHM.

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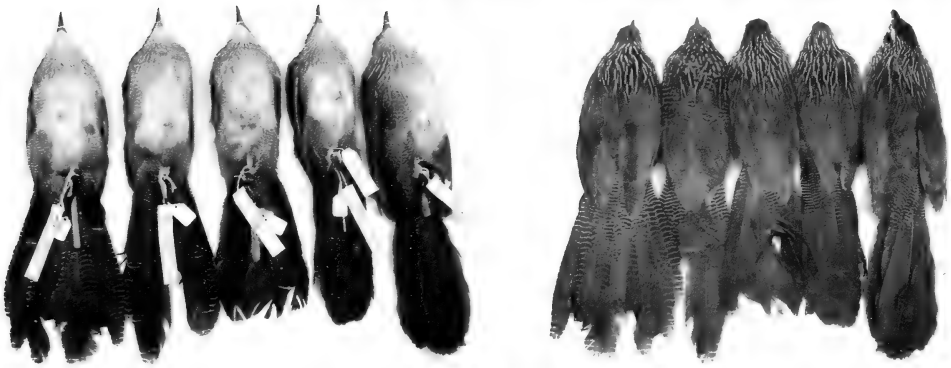
Plate 1. Ventral view of specimens of *Streptopelia senegalensis sokotrae*, taken by A. D. Forbes-Watson in 1964, showing the range of variation in coloration; particularly note the notably pale and dark individuals at the extreme right (*Guy M. Kirwan / National Museum of Natural History, Washington*)



Plates 2–3. Ventral and dorsal views of specimens of *Centropus superciliosus sokotrae*, taken by A. D. Forbes-Watson in 1964, showing the range of variation in coloration (*Guy M. Kirwan / National Museum of Natural History, Washington*)

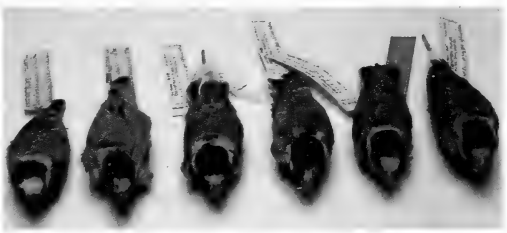
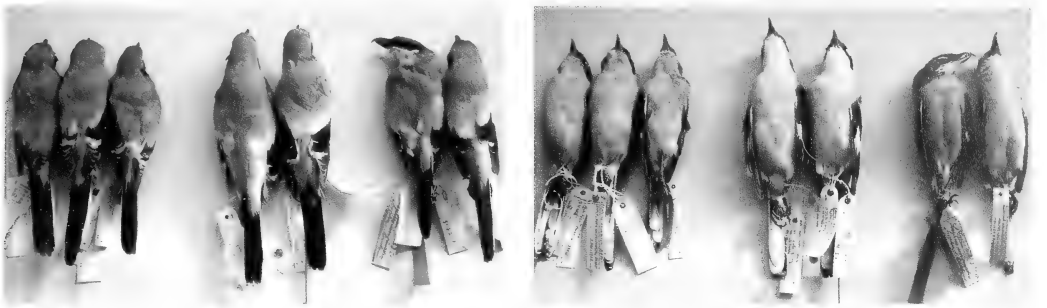
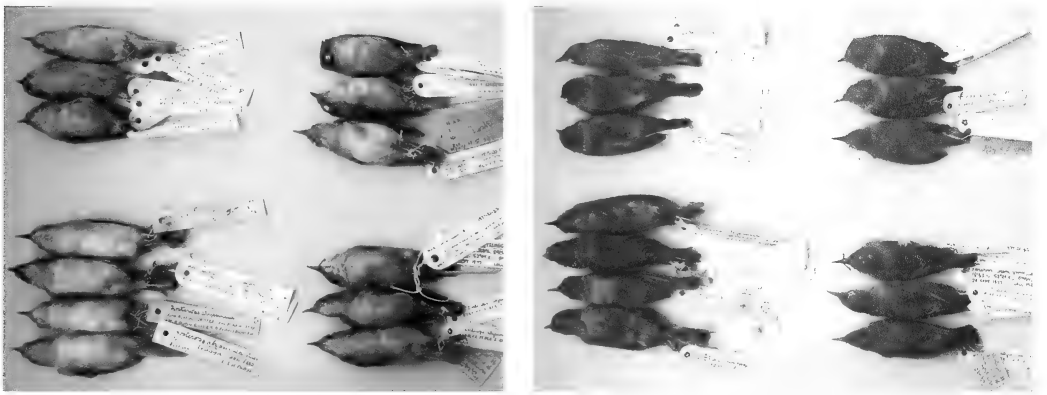


Plate 4 (left). Dorsal view of specimens of *Eremopterix nigriceps*: top left-hand four birds race *melanauchen* from Sudan, top right-hand three race *sincipitalis* from Arabia (the bird on the extreme right from Bahrain), bottom left-hand four race *forbeswatsoni* from Socotra and Abd Al-Kuri, and the bottom right-hand three race *melanauchen* from Somalia (*Guy M. Kirwan, © The Natural History Museum, Tring*)

Plate 5 (above). Dorsal view of male specimens of *Eremopterix nigriceps*, from left to right: two from Dhahran, Saudi Arabia (*sincipitalis*), and four (including the holotype) from Socotra (*forbeswatsoni*) (*Guy M. Kirwan / National Museum of Natural History, Washington*)



Plates 6–7. Dorsal and ventral views of specimens of *Lanius meridionalis* from Arabia and Socotra, from left to right: three specimens from Yemen (*buryi*), two from Saudi Arabia and Oman (*aucheri*) and two, including the holotype, from Socotra (*uncinatus*); note that the specimens of *aucheri* represent the pale extreme in range of variation in underparts coloration in the race (*Guy M. Kirwan, © The Natural History Museum, Tring*)



Plates 8–9. Ventral and dorsal views of white-bellied specimens of *Zosterops abyssinicus* from Arabia and Africa: bottom left-hand four race *socotranus* from Socotra (including a paratype) and Somalia, top left-hand three race *abyssinicus* from Ethiopia, bottom right-hand three race *arabs* from Oman and Yemen, and top right-hand three race *omoensis* from the Omo Valley, Ethiopia. Note the generally close appearance in both upper- and underparts colorations of *socotranus*, which inclines to show fewest warm elements in the underparts, *arabs* (which shows most) and *abyssinicus* (most specimens of which closely approach *socotranus*), whereas *omoensis* from the type-locality region are clearly greener-yellow above with contrastingly darker wings (much less contrast in other populations) and, on average, whiter below than any of the other three races with the largest and brightest yellow throat-patch (*Guy M. Kirwan, © The Natural History Museum, Tring*)

Plates 10–11. Ventral and dorsal views of specimens of *Emberiza tahapisi* from Africa and Arabia: top left-hand three race *insularis* from Socotra, bottom left-hand three race *tahapisi* from Ethiopia and Malawi, and right-hand three race *septemstriata* from Eritrea and Somalia. (*Guy M. Kirwan, © The Natural History Museum, Tring*)

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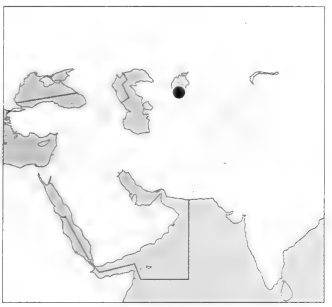
The ornithological regime in the Sudochie wetland, Uzbekistan

ELENA KREUZBERG-MUKHINA AND YEVGENIYA LANOVENKO



Historically, the southern coast of the Aral Sea and the marshy delta of the Amu Darya represented an environment where waterbird aggregations were unique by their diversity and sheer numbers. These circumstances promoted extremely favourable conditions for breeding birds and for transient migrants. Data on the birds of the Aral Sea basin have been collected by many researchers since the late 19th century. The area lies on major migratory flyways and was ideal as a rest and refuelling stop. Since the 1970s, the relentless reduction of the surface area of the Aral Sea accompanied by many lakes drying out has significantly damaged the avifauna of this region. Nevertheless, the region's remaining lakes have not all dried out, even during a recent severe drought, and continue, as at the Sudochie wetland, to play a vital role for migrant and breeding species of waterbirds and for the bird community generally.

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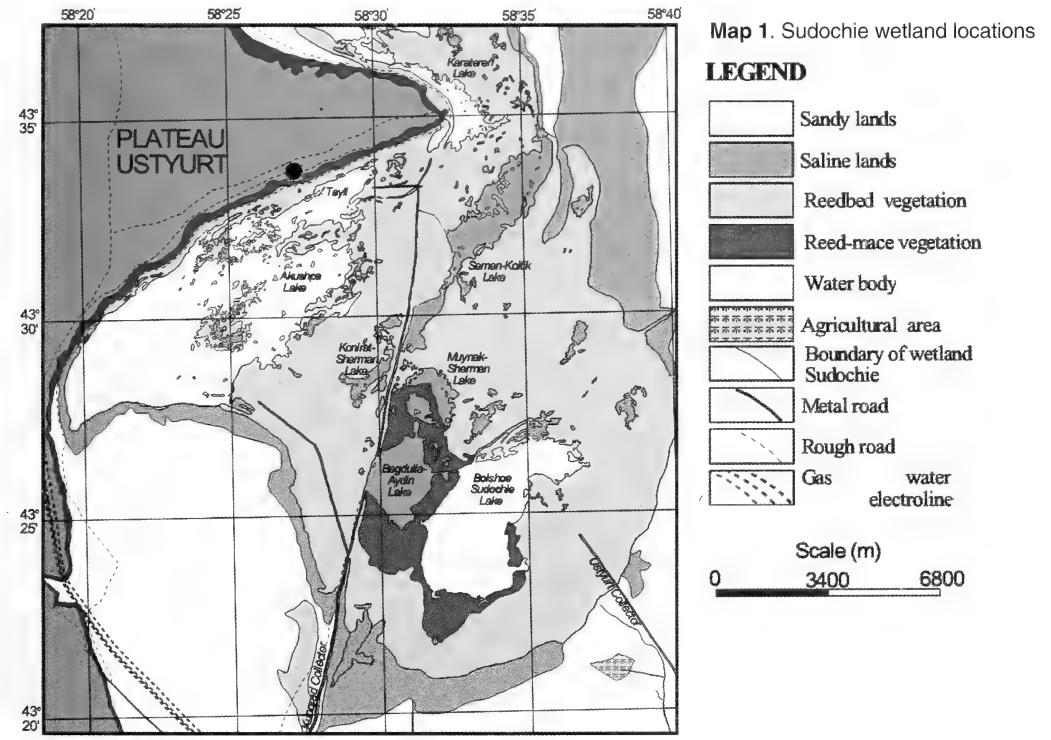
INTRODUCTION

In terms of the biological diversity of water-marsh ecosystems, the wetland system of the southern Aral Sea region once was the most important system of its kind in Central Asia and beyond – indeed it remains globally important as a conservation area. It lies on long-established migration flyways of birds from Western Siberia to wintering grounds that lie from the Caspian southwards as far as southern Africa. As the Aral Sea diminished from the 1970s onward, the importance of the lakes immediately to the south, including the Sudochie wetland, increased in inverse proportion (**Map 1**). Throughout this process, many changes occurred, including the



Map 1. Sudochie wetland locations

territorial distribution of birds – nesting waterbirds initially began to aggregate on the lakes of the Amu Darya delta before increasing aridity reduced the lakes' capacity. Additionally, the flyway routes changed.

Our data from the first year of monitoring the Sudochie wetland showed that the composition and numbers of its avifauna were close to the optimum for this ecosystem, but within the next two years there was a gradual decrease in the numbers of species and the total number of birds on the Sudochie wetland lakes. Nevertheless, despite the general deterioration of ecological conditions in the southern Aral Sea region, the bird species community in the Sudochie wetland showed a great variety of species and significant seasonal variety, the latter being driven by the number of migratory streams of varying intensity during all seasons. Species numbers peak during the seasonal migrations, but to a greater extent in spring than in autumn. It is encouraging to note that a high potential of self-restoration still exists in the Sudochie wetland system, as we found during our final researches in autumn of 2002 after engineering work to control water levels had been implemented.

METHODOLOGY

Monitoring timing and location

Our work on the ornithological regime in Sudochie wetland was carried out from autumn 1999 until autumn 2002. Covering spring, summer and autumn, 10 separate expeditions went to the monitoring areas to collect ornithological and general faunal data, to determine the distribution and number of bird species. The spring monitoring took place in April 2000, 2001 and 2002, summer monitoring in July 2000, 2001 and

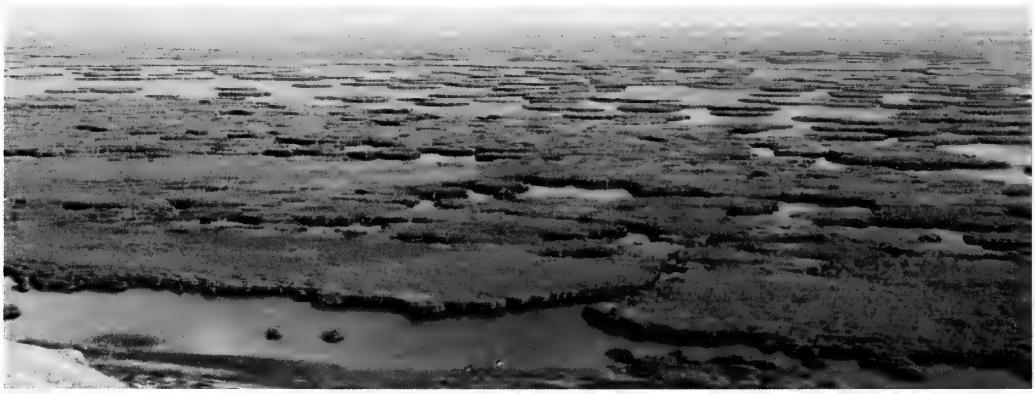


Plate 1. Akushpa Lake. *© Elena Kreuzberg-Mukhina*

Plate 2. Akushpa Lake Shore. *© Elena Kreuzberg-Mukhina*

2002 and autumn monitoring in October 1999, 2000, 2001 and 2002,. The basic monitoring areas were the six key waterbodies of the Sudochie wetland and the adjoining territory, namely Lakes Akushpa (including Taily), Karateren, Begdulla-Aidyn and Bolshoe Sudochie and the Ustyurt and Kungrad collectors.

Species-group indicators

To monitor ecological changes, and hence changes to the ornithological regime, representative indicator species must be selected. Originally, we had selected those bird species predominant from previous seasonal studies and whose dynamics had been detailed in previous annual and interim reports. However, our selections were rendered less effective than expected because of the variable duration of their presence, due to the persistence of the drought and other parameters. We therefore changed our indicator selection criteria to allow us to use species groups chosen from the hydrophilous[1] species. This decision permitted us to reflect very precisely the condition of the basic components of the Sudochie wetland and further allowed us to track changes in these components.

AVIFAUNAL STRUCTURE AND DISTRIBUTION IN THE SOUTHERN ARAL SEA REGION

Previous assessment of the avifaunal structure and distribution

From earlier estimates, the southern Aral Sea region holds 118 hydrophilous bird species of 8 orders and 13 families. On the lakes of the lower reaches of the Darya, 59 species breed – Podicipidiformes (5), Pelicaniformes (4), Ciconiiformes (10), Anseriformes (15), Falconiformes (3), Gruiformes (4) and Charadriiformes (18) (Atadjanov *et al* 1999). Many researchers, mostly scientist-naturalists, in the late 19th and early 20th centuries studied the Aral Sea region's avifauna, the most relevant work being that of MN Bogdanov, AN Zarudny, GS Karelin, NA Severtsov, LA Molchanov and VV Bianki (see Sultanov & Persianova 1982). Subsequently (1950s-1990s), several Russian and local ornithologists worked in the southern Aral Sea region, for example, R Abdreimov, K Kenzhegulov, AM Mambetzhumaev and A Ametov. By the 1970s R Reimov had identified the necessity for controlling hunting to ensure that populations of commercially important birds and mammals of the tugai (gallery forest) and islands of the Amu Darya could be sustained (Sultanov & Persianova 1982). As a result, research was carried out in the 1980s to determine the status of migratory and wintering bird species that were hunted commercially; the main results appeared in *The Cadastral Reference Book of Commercially-hunted Animals of Uzbekistan* (1992). From 1986 to 1988, aerial counts of waterbirds (mostly Anseriformes and Coot *Fulica atra*) were carried out in the Amu Darya delta lakes. The results of the 1987 and 1988 autumn counts of the waterbirds on Sudochie Lake are given in **Table 1**, which well demonstrates the significant year-to-year fluctuations of waterbird numbers typical of many Uzbekistan waterbodies. Waterbird migration in this vast region can vary spatially, both between years and within years, either regionally or locally. Yet, some dominant species at Sudochie Lake have remained stable in numbers in this time, for example Red-Crested Pochard *Netta rufina*, Mallard *Anas platyrhynchos*, Coot and Greylag Goose *Anser anser*. During autumn aerial counts significant assemblages swans, mostly Mute Swan *Cygnus cygnus*, have also been registered; in a single day in 1987, Shernazarov &nd Nazarov (1990) counted 2987 swans – the next year there were at least 1000 (Shernazarov & Nazarov 2000). These observers also recorded in late autumn time rare species such as White-tailed Eagle *Haliaeetus albicilla* (on all large waterbodies) and Pallas's Fish Eagle *H. leucoryphus* (on the delta's periphery). Up to 10 of each of these species was recorded daily at that time.

1 The term 'hydrophilous species' covers species associated with water. This paper also uses 'waterbird community' as a loosely equivalent term.

Table 1. Numbers of waterfowl on Sudochie Lake in autumn 1987 and 1988 (from aerial counts)

Species ▼ Years ►	**1987**	**1988**
Greylag Goose *Anser anser*	6210	3180
Mute Swan *Cygnus olor*	2987	1000
Gadwall *Anas strepera*	1000	2601
Mallard *Anas platyrhynchos*	29165	16518
Common Teal *Anas crecca*	2717	1950
Red-crested Pochard *Netta rufina*	39300	7378
Common Pochard *Aythya ferina*	200	1000
Ferruginous Duck *Aythya nyroca*	10	-
Grebe spp	-	54
Eurasian Coot *Fulica atra*	26300	5036
Total:	**107889**	**38717**

The present avifaunal structure and distribution

We found that the structure of dominant species of waterbirds on the Sudochie wetland has remained unchanged, although numbers have of course fluctuated significantly over seasons and years. Once proper ecological monitoring of the Sudochie wetland began, it was possible for the very first time to research the Aral Sea region in a way that enabled us not only to make realistic scientific estimates of the biomass of this vast ecosystem, but also to forecast how its variety of closely interconnected components, including avifauna, would function spatially and temporally. Unfortunately, our work from 2000 to 2002 coincided with a two-year period of extremely low precipitation and water inflow in the region, circumstances causing considerable degradation of lake size and partial loss of biodiversity. Our ornithological monitoring in many respects has therefore reflected those depressive processes.

The avifaunal community in the Sudochie wetland

Our first year of monitoring showed that conditions for the wetland's avifauna were close to the ecosystem optimum, but the next two years indicated a gradual decrease in species numbers and their populations on the lakes (**Fig 1, Table 2**). Our findings on species composition and the distribution of birds over the Sudochie wetland are given in **Table 2**. We recorded in total during our work on of the Sudochie wetland lakes 230 bird species (of 17 orders), 101 being from the waterbird community. The maximum number of species observed on any day was 164 (April 2000) and the minimum 79 (**Fig 1, Table 2**).

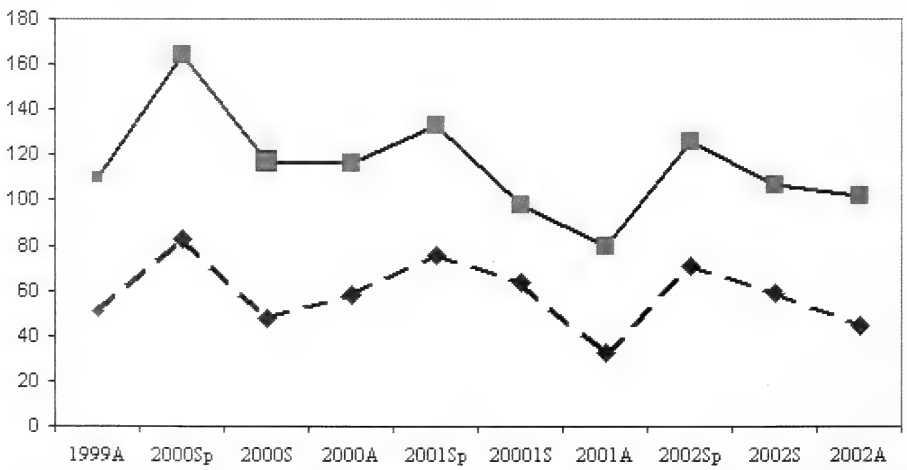


Fig 1. Seasonal avifaunal fluctuations during the monitoring period. Top curve = Total number of bird species recorded. Bottom curve = Hydrophilous species recorded. **Suffix Key**; Sp=Spring, S=Summer, A=Autumn

We have established for the first time seasonal dynamics for the bird species structure in the Aral Sea region. The April 2000 peak (**Fig 1**) declined to133 in 2001 and 126 in 2002 (**Table 2**), but in all cases the spring totals were higher than those for the respective summer and autumn. The composition of the bird community in summer varied little in the three years of monitoring, although being at its greatest in 2000. The most significant changes in the bird community structure occurred during autumn, for in 2001, the total number of species on the Sudochie wetland waterbodies had reduced to 79 from the norm of 110-116 species recorded in 1999-2000, because by autumn 2001 the ecosystems had become degraded through drought, an event that mainly affected the waterbird community whose total species dropped from 56-58 to 28. However, by autumn 2003, the water supply had improved to fill most of the lakes again, allowing an increase in bird species diversity to 103, of which 45 were waterbirds. Despite the overall ecological conditions of the southern Aral Sea region having deteriorated markedly, the bird community of the Sudochie wetland has remained characteristically highly variable, both seasonally and by species number. The seasonal variation is driven by the presence of several migration flyways that persist at varying intensities throughout the year. The peak number of species occurs during the return (spring) migration, a lesser peak occurring in autumn (**Fig 1**).

Table 2. Changes in the number of bird species in Sudochie wetland over years and seasons

Years and Seasons ▶	**1999**		**2000**			**2001**			**2002**	
Orders ▼	**A**	**Sp**	**Su**	**A**	**Sp**	**Su**	**A**	**Sp**	**Su**	**A**
Anseriformes	*18*	*17*	*14*	*17*	*16*	*12*	*12*	*19*	*7*	*17*
Grebes	*4*	*3*	*3*	*5*	*4*	*2*	*3*	*2*	*2*	*2*
Greater Flamingo	-	-	-	-	*1*	*1*	-	*1*	-	-
Ciconiiformes	*7*	*10*	*9*	*5*	*6*	*6*	*2*	*7*	*6*	*5*
Pelicaniformes	*3*	*4*	*4*	*4*	*4*	*4*	*2*	*4*	*4*	*4*
Falconiformes	14	17	9	11	11	5	12	14	7	11
Gruiformes	*4*	*4*	*3*	*3*	*3*	*2*	*1*	*3*	*2*	*2*
Galliformes	1	1	1	2	1	1	1	1	1	1
Charadriiformes	*22*	*40*	*34*	*22*	*38*	*34*	*8*	*36*	*38*	*16*
Columbiformes	2	6	3	3	3	2	4	3	2	5
Cuculiformes	-	-	1	-	1	1	-	-	1	1
Strigiformes	2	2	2	3	1	1	1	1	2	1
Caprimulgiformes	-	2	2	-	1	1	-	-	2	-
Apodiformes	-	1	1	-	1	1	-	1	1	-
Coraciiformes	-	4	5	2	3	2	-	2	4	2
Piciformes	-	-	-	-	-	-	-	1	-	2
Passeriformes	33	53	26	39	39	22	33	35	33	34
Total hydrophilous species:	***58***	***78***	***67***	***56***	***72***	***61***	***28***	***71***	***59***	***45***
Total species:	**110**	**164**	**117**	**116**	**133**	**97**	**79**	**130**	**112**	**103**

Key: A = Autumn, Sp = Spring, Su = Summer. Hydrophilus species subtotals in *italics*.

The taxonomic richness of the bird community in the Sudochie wetland (230 of the 270 species recorded in Karakalpakstan – the territory immediately enclosing the Sudochie to the south) is determined, first of all, by natural ecological factors. The natural and artificially-created system of waterbodies occupies a vast area characterized by the variety of habitats ideally suited for resident, wintering and migratory birds. The diversity of the southern Aral Sea region is increased also by it being adjacent to remote and dry plains, a nearby slice of the Ustyurt Plateau adding a desert component to the typical water-marsh ecosystems. Furthermore, the Sudochie wetland's remoteness from settlements coupled with the low economic usefulness of the basic waterbodies helps maintain favourable conditions for all bird species, not just waterbirds.

Distribution of avifauna on the Sudochie wetland waterbodies

Our research confirmed that the bird community was distributed heterogeneously at all our monitoring sites throughout the Sudochie wetland, which comprises four lakes and two collector-lakes. At the start of the optimum period for the Sudochie wetland ecosystem, monitoring revealed that species composition was the most highly diverse on Akushpa Lake, when some 180 species were recorded. Karateren Lake at this time held 111 species, Begdulla-Aidyn Lake 66, Bolshoe Sudochie Lake 51, Kungrad collector 150 and Ustyurt collector 88.

The 2000-2001 drought and the concomitant degradation of water-dependent ecosystems affected the conditions for the bird species community at all waterbodies, but the changes recorded at individual monitoring points differed temporally as the waterbodies dried out rapidly, but at different rates, which meant that the productivity of each waterbody declined on an individual timescale. Overall, during the vegetation-growing period in 2000, the drought caused the destruction of the productive shallows of small waterbodies and shoreline lagoons on large waterbodies, radically changing

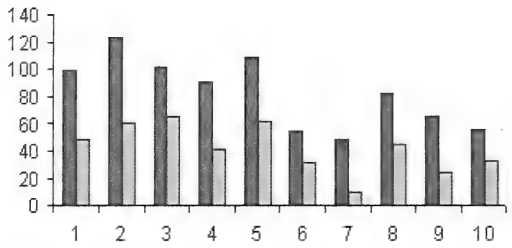


Fig 2a. Akushpa Lake

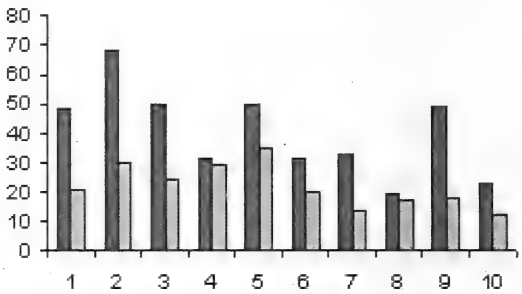


Fig 2b. Karateren Lake

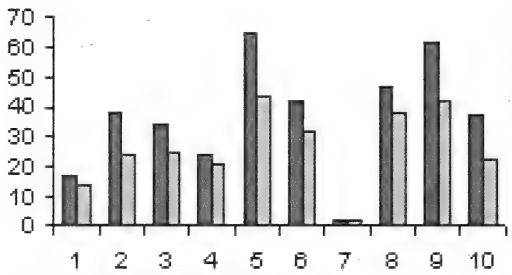


Fig 2c. Begdulla-Aidyn Lake

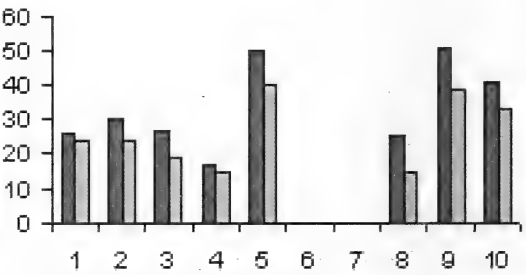


Fig 2d. Bolshoe Sudochie Lake

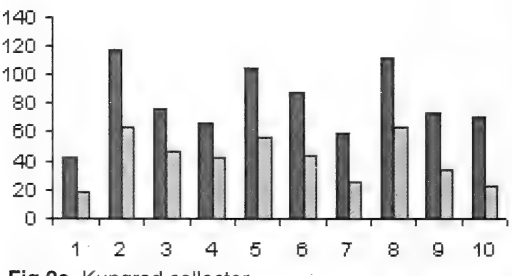


Fig 2e. Kungrad collector

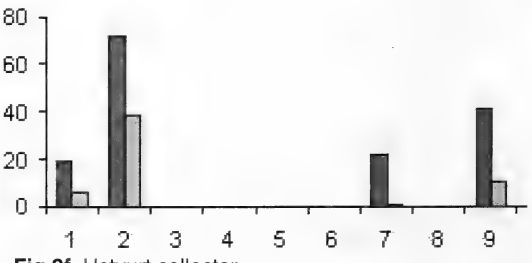


Fig 2f. Ustyurt collector.

Fig 2. Avifaunal dynamics on the main Sudochie wetland waterbodies during the monitoring period. Note that the figures 1-10 represent consecutive monitoring seasons in 1999-2002. For each season, the first column = Total number of species recorded per waterbody and the second column = Total hydrophilous species recorded per waterbody

bird habitat conditions and thus affecting the distribution and number of many species, but the species composition of the bird community itself did not undergo significant changes. The waterbodies declined most rapidly during the 2001 vegetation-growing period, causing significant changes to the ecological conditions. The waterbird community was badly affected, especially in the structure and number of nesting species. Concomitantly, the Sudochie wetland lakes attracted assemblies of many fish-eating and coastal-water birds to feed on the stranded or isolated shoals of fish along the drying shores and amongst the newly-exposed shallows.

The greatest changes in the bird community's structure and distribution took place on the large shallow lakes of Akushpa and Bolshoe Sudochie, where the extent of drying out, the reduction in water surface area and the remnant shallows were at their greatest – vegetation also died back, drastically changing the habitat structure and thus the bird species that could be supported (**Figs 2a & d**). Breeding species on these lakes were superseded by transient and stopover migrants. Nevertheless, the Akushpa and Bolshoe Sudochie lakes retained sufficient waterborne and submergent vegetation and other food supplies to continue their vital role of supporting waterbird and other water-associated fauna (**Figs 3a-j**). Two other lakes – Karateren and Begdulla-Aidyn – suffered from the drought to a greater degree, losing almost all their waterbirds and water-

Fig 3a. 1999, Autumn

Fig 3b. 2000, Spring.

Fig 3c. 2000, Summer

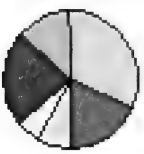


Fig 3d. 2000, Autumn.

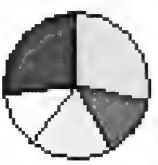


Fig 3e. 2001, Spring.

Fig 3f. 2001, Summer.

Fig 3g. 2001, Autumn.

Fig 3h. 2002, Spring.

Fig 3i. 2002, Summer.

Fig 3j. 2002, Autumn.

Fig 3. Bird species composition ratio on the main Sudochie wetland waterbodies, by season during the monitoring period. **Colour Key** (clockwise from top of Pie-chart): Blue-Grey = Akushpa Lake, Mauve = Karateren Lake, Cream = Begdulla-Aidyn Lake, Light Green = Bolshoe Sudochie Lake, Purple = Kungrad Collector and Pink = Ustyurt Collector. **NB** not all Pie-charts have all six colours.

associated fauna (**Figs 2b & c**). Indeed, Karateren completely dried up and did not undergo much restoration once the remedial water control work became operational. Begdulla-Aidyn has become an overgrown bog following the drought-induced irreversible successional processes. The bird community structure at the other two monitored waterbodies, the Ustyurt and Kungrad collectors, were affected to different degrees. Over the entire monitoring period, the Kungrad collector was used as the principal means of water distribution for the entire Sudochie wetland system, thus enabling much of the area to retain a wide diversity of birds (**Figs 2e & f**). The Ustyurt collector was not utilised to the same extent and in the end dried out completely, thus causing major losses of waterbird species and numbers.

The partial restoration of the avifauna of the Sudochie wetland began in autumn 2002 after hydraulic engineering facilities to control water level and distribution were commissioned (Last column in **Figs 6, 7 & 8a**). Unfortunately, monitoring opportunities were fewer at this time, occurring only during the waterbodies' initial restoration stage. Nevertheless, by this stage it was clear that restoration of water ecosystems and their components was also occurring in heterogeneous and gradual fashion, as had the degradation.

Thus, the bird community composition and distribution have undergone significant changes during our ecological monitoring period, developments that generally have reflected the drought-induced processes of degradation of water ecosystems throughout the Aral region. Each waterbody of the Sudochie wetland has an individual capability and importance for the preservation of avifauna (**Figs 2a-f**). As the water regime became stabilised, we confirmed at Lake Akushpa that its varied bird species composition, the most-broadly-based of the region, had essentially

Table 3 - Threatened bird species of the Sudochie wetland – number dynamics 1999-2002

Years and Seasons ▶	**1999**		**2000**		**2001**			**2002**		
Species ▼	**A**	**Sp**	**S**	**A**	**Sp**	**S**	**A**	**Sp**	**S**	**A**
Mute Swan *Cygnus olor*	434	151	403	17	391	9	2	434	15	462(46j)
Ferruginous Duck *Aythya nyroca*	122	19	23	9	6	1	11	39	-	204
White-headed Duck *Oxyura leucocephala*	3031	1166	2835	1370	2837	1149	9	60	-	1156
Greater Flamingo *Phoenicopterus roseus*	-	-	-	-	13	12	-	27	-	-
Glossy Ibis *Plegadis falcinellus*	-	917	54	-	389	6	-	201	-	-
Eurasian Spoonbill *Platalea leucorodia*	-	1	7	14	9	6	-	5	1	-
Little Egret *Egretta garzetta*	-	42	156	64	70	565	-	1	-	4
Great White Pelican *Pelecanus onocrotalus*	5	33	2	270	6526	93	-	3191	4	362
Dalmatian Pelican *Pelecanus crispus*	-	134	54	20	193	32	-	434	40	192
Pygmy Cormorant *Phalacrocorax pygmeus*	2043	270	1718	274	1025	333	-	2727	4	677
Lesser Kestrel *Falco naumanni*	2	10	2	2	3	2	-	-	3	-
Saker Falcon *Falco cherrug*	6	5	2	3	3	2	1	2	1	1
Osprey *Pandion haliaetus*	-	1	-	-	2	-	1	9	-	-
White-tailed Eagle *Haliaeetus albicilla*	1	3	3	5	2+2pul	1	3	2	2	2 (1j)
Pallid Harrier *Circus macrourus*	3	-	-	-	-	-	-	-	-	6m
Greater Spotted Eagle *Aquila clanga*	-	-	-	3	-	-	-	-	-	2
Steppe Eagle *Aquila nipalensis*	1	-	-	1	2	-	1	1	-	-
Eastern Imperial Eagle *Aquila heliaca*	1	1	2	-	-	-	-	-	-	-
Golden Eagle *Aquila chrysaetos*	-	1	3	-	-	-	1	1	3 (1j)	1
Macqueen's Bustard *Chlamydotis macqueenii*	-	-	-	-	-	-	-	1	-	2
Slender-billed Curlew *Numenius tenuirostris*	-	-	-	-	2	-	-	-	-	-
Asian Dowitcher *Limnodromus semipalmatus*	-	25	33	2	-	-	-	10	-	-
Black-winged Pratincole *Glareola nordmanni*	-	4	25	-	-	5	-	3	27	-
Great Black-headed Gull *Larus ichthyaetus*	-	4	-	31	1	21	-	22	4	3
Total threatened species per season	**12**	**21**	**17**	**16**	**18**	**16**	**8**	**19**	**11**	**14**

remained unchanged throughout the monitoring period, which reflects, as expected, the steady character of a robust ecosystem – that robustness was not known for certain beforehand, and so we had considerable anxiety for the future until the restoration process allayed it. Because Lake Bolshoe-Sudochie, the second largest lake, hosts large assemblages of waterbirds, it is of enormous importance in preserving the traditional migratory routes. Lakes Karateren and Begdulla-Aidyn suffered irreversible successional changes in the drought, thus losing their importance for the preservation of the waterbird community, and providing reduced support of biodiversity in the Sudochie wetland ecosystems in general.

It is too early to state the extent of rehabilitation of these aquatic ecosystems, since it will depend on whether the hydraulic control facilities can provide a dynamically stable water supply and how effective they are in even filling the Sudochie wetland.

THE IMPORTANCE OF THE SUDOCHIE WETLAND TO RARE BIRDS

During our ecological monitoring of the Sudochie wetland waterbodies, 24 threatened species of birds were registered, 13 of which appear in the 2000 International Red List (Anon 2001) and 18 in the 2003 Red Book of Uzbekistan (Anon 2004).

However, the number of rare and vulnerable species changed seasonally during the monitoring period, being at its highest in spring 2000 (21 species), spring 2001 (18 species) and spring 2002 (19 species) (**Fig 4**). Of this species group, 9 are migrants and 15 breed in the Southern Aral Sea region – remarkably 14 of the 15 were confirmed as nesting in the Sudochie wetland during the monitoring period. It should be noted that 6 of these 24 species (Great White and Dalmatian Pelicans (*Pelecanus onocrotalus* and *P. crispus*), Pygmy Cormorant *Phalacrocorax pygmeus*, Glossy Ibis *Plegadis falcinellus*, Mute Swan and White-headed Duck *Oxyura leucocephala*) are also amongst the typical background species that characterized the change process in the Sudochie wetland ecosystems (**Fig 5**). The dynamics of some rare and vulnerable species are given in **Table 3**.

Great White and Dalmatian Pelicans have long been nesting on the Sudochie wetland waterbodies (Lukashevich & Ametov 1990), the former being more numerous but the latter are more site-faithful and stable in numbers. As the waterbodies shrank, the

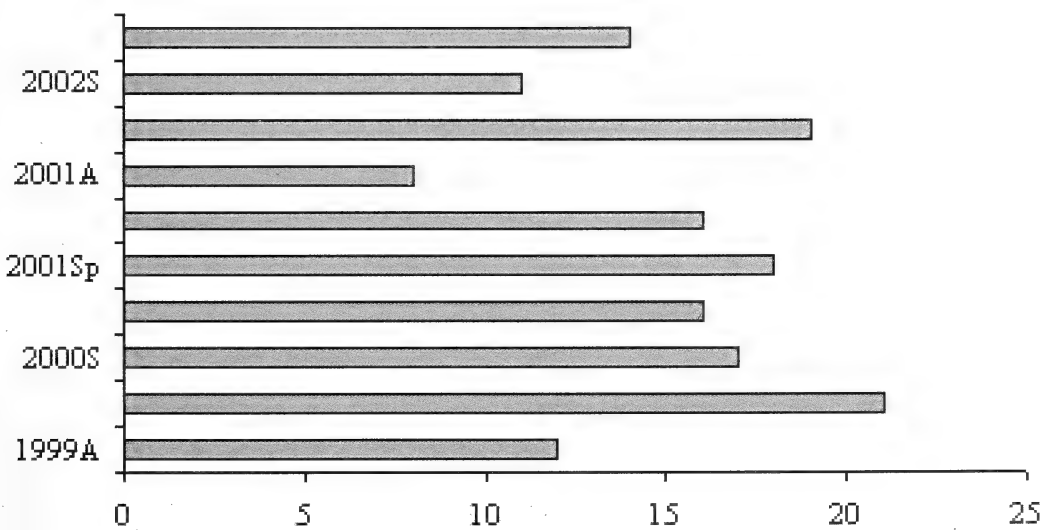


Fig 4. Numbers of rare and vulnerable species in the Sudochie wetland, by season during the monitoring period.

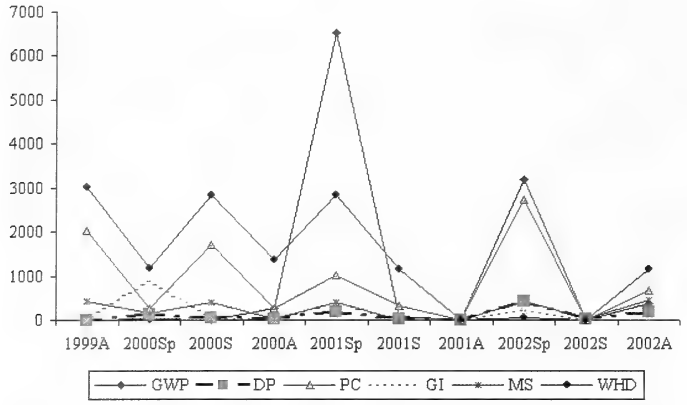


Fig 5. Population totals of threatened species in the Sudochie wetland, by season during the monitoring period. **Key**: GWP=Great White Pelican, DP=Dalmatian Pelican, PC=Pygmy Cormorant, GI=Glossy Ibis, MS=Mute Swan and WHD=White-headed Duck.

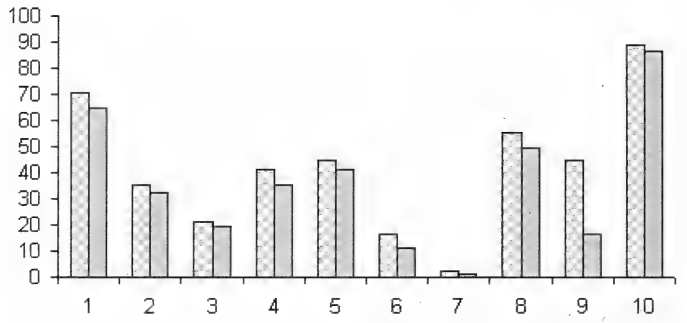


Fig 6. Total numbers of birds in the Sudochie wetland, by season during the monitoring period. The figures 1-10 represent consecutive monitoring seasons in 1999-2002. For each season, the hatched column=Total number of species recorded and the plain column=Total hydrophilous species recorded.

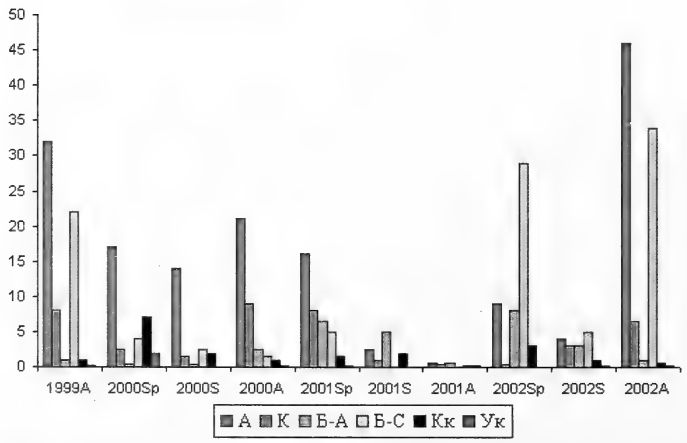


Fig 7. Dynamics of bird numbers (thousands) on the Sudochie wetland waterbodies, by season during the monitoring period. Key А = Akushpa Lake, К (K) = Karateren Lake, Б-А (B-A) = Begdulla-Aidyn Lake, Б-С (B-S) = Bolshoe-Sudochie Lake, Кк (Kc) = Kungrad collector and Ук (Uc) = Ustyurt collector.

Great White Pelican gorged on the easily accessible fish, but after this resource had been exhausted, pelican numbers reduced then stabilised at a low level, mostly nesting Dalmatian Pelicans.

Pygmy Cormorant in the past had formed huge colonies on Sudochie Lake (Lukashevich 1990), but during the monitoring period, it was present in only insignificant, but stable, numbers (**Fig 5**). Although this species undoubtedly breeds in the Sudochie wetlands as judged from the large assemblages, including young birds that we saw, we failed to find their nesting grounds during the monitoring period.

Little Egret *Egretta garzetta* and Eurasian Spoonbill *Platalea leucorodia* were observed only as singletons – in spring and summer 2000 they occurred on the margins of Great Egret *Ardea alba* colonies, suggestive of possible nesting. Glossy Ibis colonies have occurred on Sudochie Lake (Lukashevich 1990), but during our monitoring we saw it mainly during spring migration and also in small numbers in summer (**Table 2**).

From when the drought started, Greater Flamingo *Phoenicopterus roseus* was noted in spring 2001 and

2002 and in summer 2001. It is possible that only immature birds were present, but nesting attempts may have been made, because in spring 2002 we found hummocks strongly resembling old flamingo nests at the Bolshoe Sudochie Lake.

Mute Swan has long nested at Sudochie Lake (Lukashevich 1990). Indeed, one of the lakes of the present Sudochie wetland, Akushpa, translates as 'swan lake', which would have pleased Pyotr Ilyich Tchaikovskiy. The Sudochie wetland is of vital importance for restoring the population of this bird in Uzbekistan. We regularly encountered this species during the monitoring period. The Sudochie wetlands hold migrant and moult assemblages, as well as breeders, whose number during dynamically stable water regimes ranges from 60 to 100 breeding pairs.

Ferruginous Duck *Aythya nyroca* has been a common nesting species on Aral Sea region waterbodies in the past (Kashkarov 1987), but now although it remains widespread, being recorded on Sudochie wetland waterbodies in almost every season during the monitoring period, it is present only in insignificant numbers. Exceptionally, the outward migrations in

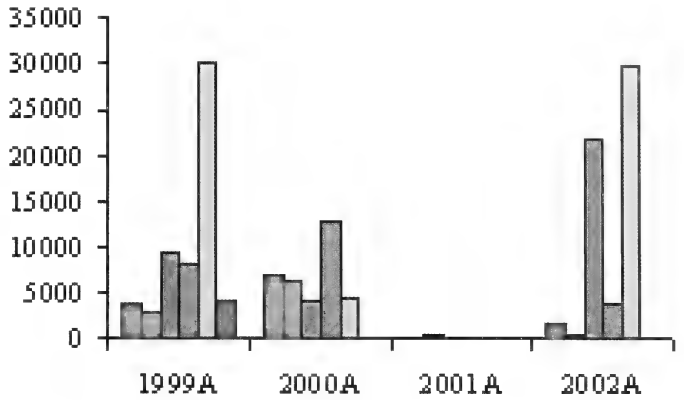


Fig 8a. Autumn. **Colour Key**: Dark Blue = large fish-eating birds, Mauve = small fish-eating birds, Light Brown = swans, geese and dabbling ducks, Dark Green = diving ducks, Pale Blue = Coot and Red = waders.

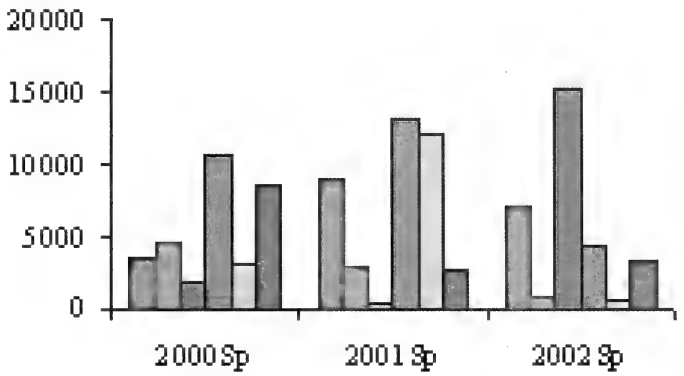


Fig 8b. Spring. **Colour Key**: Dark Blue = large fish-eating birds, Mauve = small fish-eating birds, Light Brown = swans, geese and dabbling ducks, Dark Green = diving ducks, Pale Blue = Coot and Red = waders.

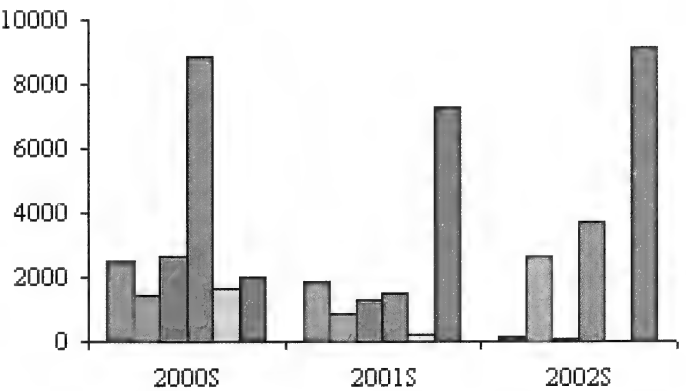


Fig 8c. Summer. **Colour Key**: Dark Blue = large fish-eating birds, Mauve = small fish-eating birds, Light Brown = swans, geese and dabbling ducks, Dark Green = diving ducks, Pale Blue = Coot and Red = waders.

Fig 8. Dynamics of indicator species groups in the Sudochie wetland in autumn and spring during the monitoring period and in summer during the breeding period.

autumn 1999 and 2002 produced relatively high totals of 122 and 204 individuals respectively.

It was of particular importance to that we found White-headed Duck, on the 2004 Global IUCN Red List as 'Endangered' (EN), on the Sudochie wetland lakes – we recorded it not only in significant migratory assemblages, but also as breeding, the first such record for Uzbekistan (**Table 3**). This confirmation is of crucial importance, not only scientifically, but also to the conservation status of the Sudochie wetland in regional and national terms. Previously, its status had been as a rare and insufficiently-studied species, a migrant and probable breeder (Kashkarov 1987). Another remarkable finding was confirmation of breeding of White-tailed Eagle in Uzbekistan, the pair being observed on the Sudochie wetland waterbodies throughout the monitoring period.

Perhaps the most important observation was of two Slender-billed Curlew *Numenius tenuirostris* in flight reported during the spring 2000 migration. This species is categorised internationally as 'Critically Endangered' (CR). If its migration through the Sudochie wetland proves to be a regular event, then undoubtedly the importance preserving the Sudochie wetland's unique and vulnerable biodiversity will increase even further.

Our records of Asian Dowitcher *Limnodromus semipalmatus* and Black-winged Pratincole *Glareola nordmanni* on the Sudochie wetland waterbodies during spring migration and also in summer are of interest. Further ornithological research is essential to establish the status of these and of many other species we recorded here during monitoring.

Despite the changes to the structure of avian complexes consequent to the drought, it is not only possible but also straightforward to recommend the Sudochie wetland as an IBA in Central Asia. From the BirdLife International definition of terms applicable to an IBA (Heath & Evans 2000), Sudochie meets the criteria A1, A3 and A4i as a territory having international importance, because of the presence of such threatened species as Pygmy Cormorant (Near-threatened, NT), Dalmatian Pelican (Vulnerable, VU), Ferruginous Duck (NT), White-headed Duck (EN), and White-tailed Eagle (NT) and Slender-billed Curlew (CR). At Sudochie, several other species, such as Red-crested Pochard, Northern Shoveler *Anas clypeata*, Northern Pintail *A. acuta*, Glossy Ibis (to name but a few) occur in numbers that exceed 1% of the aggregate number of populations that rest here during migration or that breed here (criterion Ä4i). The Sudochie wetland therefore is of crucial importance to the preservation both of globally threatened bird species and those included in the Uzbekistan National Red Book. Consequently it is a matter of urgency that diverse areas across the Sudochie wetland be identified for declaration as Important Bird Areas (IBA) and reserves. From our survey work, we suggest that Akushpa Lake best deserves such a status, because it possesses good protective conditions both for the breeding waterbird community and associated bird species and for the general survival of migrant and wintering species.

ASSESSMENT OF THE ORNITHOLOGICAL REGIME

Analysis of the dynamics of bird numbers in the Sudochie wetland

The most precise assessments of the ornithological complex in Sudochie wetland would be the quantitative characteristics reflected in the dynamics of species diversity and species numbers. Up to now, available data on the numbers of hydrophilous bird

species the southern Aral Sea region waterbodies have been patchy and incomplete. They had been amassed mainly on colonial species and those hunted commercially (Lukashevich & Ametov 1990, Lukashevich 1990) augmented by aerial surveys (Atadjanov *et al* 2001).

As a consequence of our monitoring work in the Sudochie wetland – specifically counts of hydrophilous species – for the first time data on the dynamics of the numbers of these species have been obtained from the large waterbodies of the Aral Sea region as affected by seasonal conditions (**Figs 5-8**). Other species were also counted during this work, but not by methods which allowed neither subsequent calculation of their breeding density nor estimation of the total populations over the whole monitored area. Therefore, the aggregate numbers of all bird species were not calculated to any degree of significance; the totals only for the waterbird community are reasonably accurate (**Fig 5**). The data in **Fig 8a** and **Table 4** show that numbers reach the highest threshold sizes during autumn, when migrant aggregates have accumulated on the Sudochie wetland waterbodies. However, the drought reduced these numbers sharply, reaching a minimum in autumn of 2001 (**Fig 7**). At this time, most of the waterbodies had dried up, leaving no stopover places for migrants. Yet in 2002 after the waterbodies had filled again with fresh water, algal development proceeded rapidly and bird numbers once again increased to exceed the low levels of the previous dry seasons.

Restoration of the hydrological regime therefore provided consequent rapid restoration of the basic elements of ecosystems and increased their efficiency. The pivotal role was played by large lakes – Akushpa and Bolshoe Sudochie – on which gathered not only birds from the main migratory streams but also nesting species (**Fig 7**). Another two lakes – Karateren and Begdulla-Aidyn – had collected significant assemblages of hydrophilous bird species of birds as the Sudochie wetland degraded, because they had retained a good range of food resources, but subsequent vegetation successions have diminished the quantity and quality of these resources somewhat. In the last year of monitoring, both these lakes held only migrant assemblages. The Kungrad and Ustyurt

Table 4. Dynamics of the occurrence and numbers of indicator species on the Sudochie wetland waterbodies, 1999-2002.

Indicators ▶	Large fish-eaters		Small fish-eaters		Swans, geese, dab		Diving ducks		Rails (Coot)		Waders	
Seasons ▼	**N**	**Q**	**N**	**Q**	**N**	**Q**	**N**	**Q**	**N**	**Q**	**N**	**Q**
1999, Autumn	9	3947	12	2917	12	9318	8	8131	4	30295	14	4266
2000, Spring	14	3468	13	4607	10	1744	7	10551	3	3062	29	8608
2000, Summer	13	2502	11	1417	8	2667	6	8871	3	1677	26	2026
2000, Autumn	9	6989	13	6281	10	4290	7	12845	3	4376	16	105
2001, Spring	10	8988	10	2768	2	319	4	13164	3	12148		2557
2001, Summer	10	1882	8	885	2	1263	4	1468	2	189		7281
2001, Autumn	3	87	6	572	6	98	6	63	1	8	6	43
2002, Spring	11	7033	9	709	11	15327	8	4267	2	590	29	3328
2002, Summer	10	166	11	2639	5	97	2	3704	2	4	30	9165
2002, Autumn	9	1796	9	528	11	21899	6	4001	1	29879	10	116

Key: **N** = number of indicator species recorded during each season of monitoring, **Q** = total numbers of birds in the indicator species group & **dab** = dabbling ducks

collectors play a significant role in the preservation of bird diversity, but bird numbers are not high. On the Kungrad collector, assemblages were noted only where it linked with Lakes Begdulla-Aidyn and Akushpa. On the Ustyurt collector the number of hydrophilous species was minimal during all monitoring seasons.

Monitoring – Species-group indicators of the ornithological regime in the Sudochie wetland

The species groups selected as indicators included 1st- and 2nd-order consumers. The groups were:

- Large fish-eating birds, represented by pelicans, cormorants, herons and egrets
- Small fish-eating birds comprising grebes, gulls and terns
- Waterfowl feeding mainly on plankton and algae (dabbling ducks, geese and swans)
- Waterfowl feeding on benthos (diving ducks)
- Coot and other Rallidae
- Shoreline hydrophilous bird species (shorebirds).

Changes in the structure and number of species-group indicators reflected well the basic processes of changes in the structure of Sudochie wetland and its productivity. Analysis of the state of species-group indicators showed that these groups react adequately to the processes occurring in ecosystem structures. The degradation processes in the Sudochie wetland water ecosystems initially was accompanied by an increase in the number of large and small fish-eating birds, attracted by the ease of catching fish in the developing shallows (**Table 4**). Drainage channels interconnecting the shoreline ecosystems attracted into the open many water-marsh bird species in appreciable aggregations on open marshy shores during spring and summer. As waterbodies became shallower, Anseriform composition changed, the number of diving ducks decreasing almost by half and dabbling ducks increasing. The dynamics of Coot numbers reflected the waterbodies' degradation sequence, several tens of thousands reducing to zero. Once the new water level control system came on line, allowing the waterbodies to be filled anew with fresh water in summer and autumn of 2002, the original structure of the water ecosystems changed. The rapid restoration of the vegetation community and of plankton has resulted in a change in the composition of the monitored groups of birds that feed on them. Diving duck numbers have decreased, while phytophagous species (swans, dabbling ducks and Coot) have sharply increased, in places exceeding 1999 levels (**Table 4**).

Migratory and breeding birds in the Sudochie wetland

The highest species diversity (in spring, **Figs 2a-f**) and numbers (autumn, **Figs 6 & 7**) of hydrophilous species are typical of the Sudochie wetland during the seasonal migrations. During optimum conditions, the Sudochie wetland ecosystems can provide a stopover and food sufficient for 70-100 000 hydrophilous birds in autumn and for 30-50 000 during spring (**Fig 7**). The drought–induced aquatic ecosystem degradation, decreasing productivity, led to fewer migrant species encountered and a sharp decrease in total numbers using the Sudochie wetland, especially during summer and autumn. The desiccation of large water bodies in the Aral Sea region apparently led to a realignment of migration routes, because by autumn 2001 in the Sudochie wetland there were no observations of migrant assemblages or of flocks flying through. Nevertheless, the Sudochie wetland ecosystems show a high capacity of restoration. The 2002 autumn restoration, despite achieving only partial restoration of productivity, allowed the Sudochie wetland to attract more waterbird community migrants (86 500) than had been recorded in the first year of monitoring (64 500), when conditions were near-optimum.

However, the ecosystems' degradation/restoration cycle brought about a change in the ratio of the basic indicators of the ornithological regime (**Figs 8a-c**). Seasonal snowmelt filling the Sudochie wetland waterbodies attracts significant numbers of migrants in spring, irrespective of the condition of the waterbodies. During the drought, the numbers of large fish-eaters, dabbling ducks and Coots collecting plankton and weed in shallow areas increased, as did numbers of migrant diving ducks, albeit more briefly. Diving ducks are more sensitive to longer-term changes in ecosystems' components, because their basic food dependency is on benthic animals, which are slow to be restored. The Sudochie wetland is particularly important for Coot migration, numbers during the optimum periods exceeding 30 000.

In 2000, the diving ducks forming the basis of the local breeding populations were dominant; a few dabbling ducks, swans, Greylag Goose and Coot also bred. For the most part, the large or small fish-eaters were well-represented by the local colonial breeding species (pelicans, cormorants, herons, and gulls). Waders occurred mainly on shallow pools and floodwater connected to the main waterbodies by channels. In summer of 2001 and 2002, as the drought progressed, the composition and ratio of the indicator groups changed. The dominant group became the shoreline species, over-summering and early migrant waders, whose large assemblages gathered on shrinking waterbodies of the Sudochie wetland. However, in 2002, after a good supply of water in spring, these waterbodies produced favourable conditions for pochards and some gulls to settle, once again demonstrating the resilience of the basic components of the Sudochie wetland's aquatic ecosystems, once the hydrological regime approached optimum.

In 2000, there were many breeding hydrophilous species in the Sudochie wetland, 41 of the 67 species recorded having bred. As well as the effects of the drought on the ecosystems, reed-burning in 2001 helped reduce this proportion to 25 of 61 recorded and in 2002 17 from 59. Some species were confirmed as having bred only by the presence of juveniles in autumn.

The numbers of nesting species is rather an approximation, because the thorough survey of nesting grounds in 2000 covered cormorant, pelican, heron, and gull colonies and included swan nests, and duck and Coot nestlings. However, in 2001 and 2002 the drought reduced access by water, reed growth often could not be circumvented and the remaining water formed internal bays and lagoons inaccessibly deep into the wetlands, reducing our capacity to carry out comprehensive counts and to search out breeding grounds (**Fig 9**). However, by indirect parameters it was possible to conclude that the number of nesting species had sharply decreased in the first year of the drought, while in the second year, the numbers of birds nesting was down by over 90%.

In optimum years, the 100bp of Mute Swan are joined by several hundred bp of herons, several hundred pelicans and up to several thousand cormorants (Lukashevich 1990, own data) settled on the Sudochie wetland waterbodies, which are particularly importance for breeding waterfowl, such as Mallard, Northern Shoveler, Red-crested and Common Pochards, Ferruginous duck, White-headed Duck and Coot. The total number of nesting ducks and Coot can reach several thousand individuals – their reproductive potential suggests a potential gain of over 10 000 birds per season. The remote bays of the Sudochie wetland also host significant assemblages of non-nesting moulting swans and ducks.

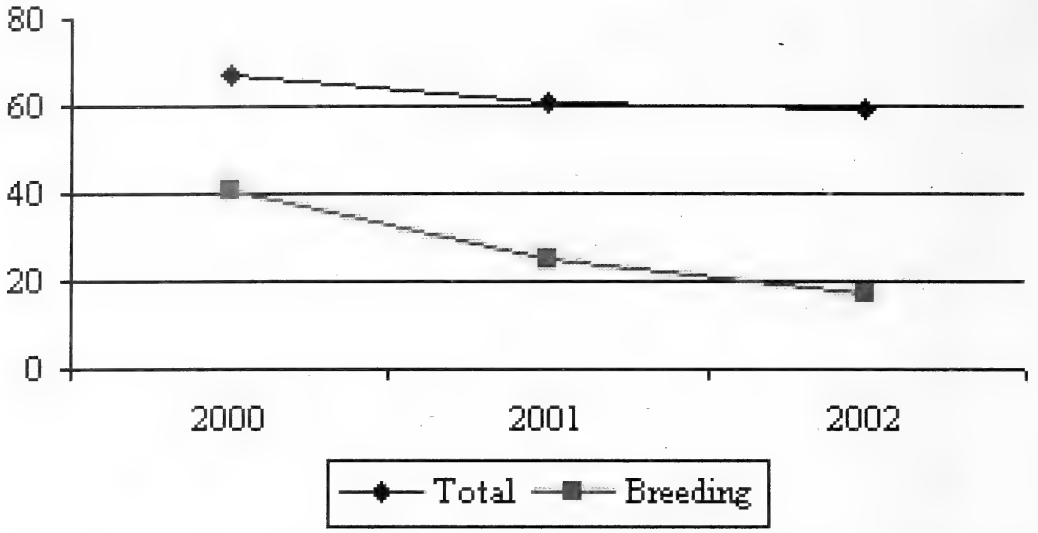


Fig 9. Ratio of the total number of hydrophilous species to the total number of nesting hydrophilous species in the Sudochie wetland in 2000-2002.

Stabilisation of the hydrological regime of the Sudochie wetland waterbodies provides the necessary resources not only to support migrant assemblages of hydrophilous bird species, but also to maintain local nesting populations of waterfowl and colonial nesting species of the waterbird community. However, to obtain a comprehensive specification of the nesting requirements of the regular breeding species, it is essential to continue to monitor the Sudochie wetland to confirm the dynamic stability brought to the ecosystems by the full implementation of the water level control infrastructure.

CONCLUSIONS

We are encouraged to have discovered in our final research work in autumn 2002 a high potential for self-restoration in the Sudochie wetland system, results engendered by some improvements in controlling water levels after recent engineering facilities had become operational. Our prognosis for the area is therefore more optimistic than we had originally thought possible, but it is critically dependent on the proper management of water-level control in future.

The prognosis for the ornithological regime

The prognosis for a stable future for the ornithological regime in terms of species diversity and in particular for the continued existence of the waterbird community year-round in the Sudochie wetland depends utterly on the success of the water level control works in restoring speedily the hydrological regime of the waterbodies. The waterbodies are mineralised to different extents, thus creating diverse sets of conditions that provide for a wide species diversity of for the plant and animal communities of fresh and brackish water. Such circumstances determine how ornithological complexes form, and so the dynamics of hydrophilous avian complexes (the waterbird community) are inextricably interconnected to the succession processes in the aquatic ecosystems. Shallows form rapidly in restoration of water levels, yet these are exploited immediately by many insects to create an excellent forage reserve for the numerous small predators above them in the food chain that feed on benthic prey, in particular for waders, some *Acrocephalus* warblers and wagtails. Subsequently, submergent vegetation regenerates quite quickly, including brackish water weeds, which in turn favour the

generation of plankton and macrophytes, the food for the depleted stocks of fish. As fish numbers increase, the species composition of their prey increases; as waterbody productivity improves, phytophagic consumption (by swans and dabbling ducks) and fish consumption (by grebes, gulls and terns) increases. Subsequent successional development will enable the restoration to the maximum of shoreline and emergent vegetation to form bulrush, or common cattail *Typha latifolia* clumps.

Predictions

At present, the majority of the reed biotopes have been destroyed through frequent fires and in particular by deliberate firing of the dried-out shoreline vegetation. It will therefore take a few years to restore the protective swathes of Sudochie wetland vegetation and to re-establish the quality and quantity of fodder growth that existed here until 1999. The drought considerably transformed all the waterbodies of the Amu Darya delta, but long before the waterbodies of the Sudochie wetland are fully restored, they will serve as nesting biotopes for large phytophages (Mute Swan and Greylag Goose) and large fish-eating bird species (Ciconiiformes and Pelicaniformes). We surmise that Akushpa Lake, after desalinization and fish restocking, will play an important role in the return of colonial-nesting bird species. Its physical layout and location endow it with the protective potential to promote the restoration of many breeding species, such as Mute Swan, Coot and diving and river ducks.

The shallower Bolshoe Sudochie Lake will still be important for the stopover of significant assemblages of migrant waterfowl species and for summer resident waterfowl species and colonial-nesting species.

The ornithological regime of Karateren Lake will develop dependent on how quickly its restoration proceeds; the initial occupation by first-order elements of the food chain forms the critical path. We would estimate that once a stable hydrological regime has been established, it will take up to two years to achieve a partial restoration of lake resources.

It seems that Begdulla-Aidyn Lake will continue changing, because the drought-induced successional developments have turned it, irreversibly, into a bog-dominated waterbody. Therefore it will attract more shoreline birds – waders and gulls prefer boggy sites.

Long-term prognosis

Our ecological monitoring began with the onset of a severe drought in the southern Aral Sea region and so our results reflect to a great extent the processes of ecosystem degradation, but not the restoration. Although the water level control facilities came on line in summer 2002, we cannot yet estimate their precise effect on the maintenance of, or changes to, the Sudochie wetland ecosystems. Continued monitoring, certainly over the next two years, is essential. It will be crucial to identify the ecosystem changes brought about by the new water control regime of the chain of waterbodies comprising Lakes Taily and Akushpa.

ACKNOWLEDGEMENT

The editor much appreciates the speedy assistance of Mike Wilson with Cyrillic translations and transliterations.

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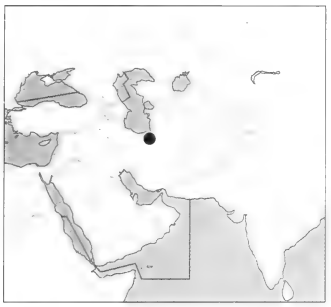
A six-month survey of waterbirds in the Alagol and Kiashahr wetlands, Northern Iran, in the 2002-2003 winter

OLYAGHOLI KHALILIPOUR, BEHROUZ BEHROUZI-RAD AND ABOLGHASEM KHALEGHIZADEH



During the period October 2002 to March 2003, waterbird observations were carried out approximately monthly in the Alagol wetland (Lake Alagol) and the Kiashahr Lagoon, northern Iran. We recorded 43 waterbird species overall; 34 at Alagol and 22 in Kiashahr Lagoon, only 13 being common to both. DOE Mid-winter Censuses in the same areas since 1968 (with a gap from 1979-1989) added another 33 species. The largest waterbird assemblages were of 3654 in Alagol and 852 in Kiashahr Lagoon. In Alagol, Mallard *Anas platyrhynchos* was the most abundant species, and in Kiashahr Lagoon Little Egret *Egretta garzetta*. The waterbird density (measured per 10ha) in Kiashahr Lagoon was higher than in Alagol in every month except for February.

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INTRODUCTION

Although mid-winter waterbird censuses have been conducted in Iran on an annual basis since 1967 (Evans 1994), there have also been a few monthly survey of waterbirds, namely by Scott (1972, 1973) in 1971 and 1972, then by DOE Iran in the 1990s and by Khaleghizadeh (2000). Lake Alagol, at 37°10′-30′N, 54°15′-40′E and 2461ha in area, lies only 20m asl, was at its highest water level in 1991 (**Fig 1**). It is a lacustrine wetland located in the Turkmen Sahra region of Iran and the intervening grassy steppe, on the Turkoman Steppes near the Turkmenistan border, *c*60km north-northeast of Gorgan Gonbad-e-Kavous, in northern Golestan province. Lake Alagol lies *c*6km southwest of Lakes Ulmagol and Ajigol. Kiashahr Lagoon (37° 29′ N, 49° 29′ E, 550ha) is located on the Caspian Sea coast, east of Sefid Rud (river), in Gilan province (**Fig 2**). Bandar Kiashahr Lagoon lies immediately east of the mouth of the Sefid Rud, *c*40 km east of Bandar Anzali, in the south-west Caspian region (Evans 1994, Golestan DOE Office pers comm & Scott 1995). The aim of the study carried out in the two Ramsar Sites (Alagol wetland and Kiashahr Lagoon) was to monitor waterbirds in a six-month period spanning the winter of 2002/2003, as a comparative analysis of waterbird species and numbers utilising a coastal lagoon and a steppe lake.

METHODS

Our waterbird observations at Lake Alagol and Kiashahr Lagoon were carried out approximately once every month from October 2002 to March 2003 inclusive (**Fig 1**). Lake Alagol is oligotrophic, supporting little aquatic vegetation except for some tamarisk *Tamarix*, rush *Juncus* and sedge *Carex* spp and grasses, and a few small patches of *Phragmites australis* reeds (**Plate 1**). Kiashahr lagoon (**Fig 2**) is located between a jetty to the west and a small wood of alder trees to the east.

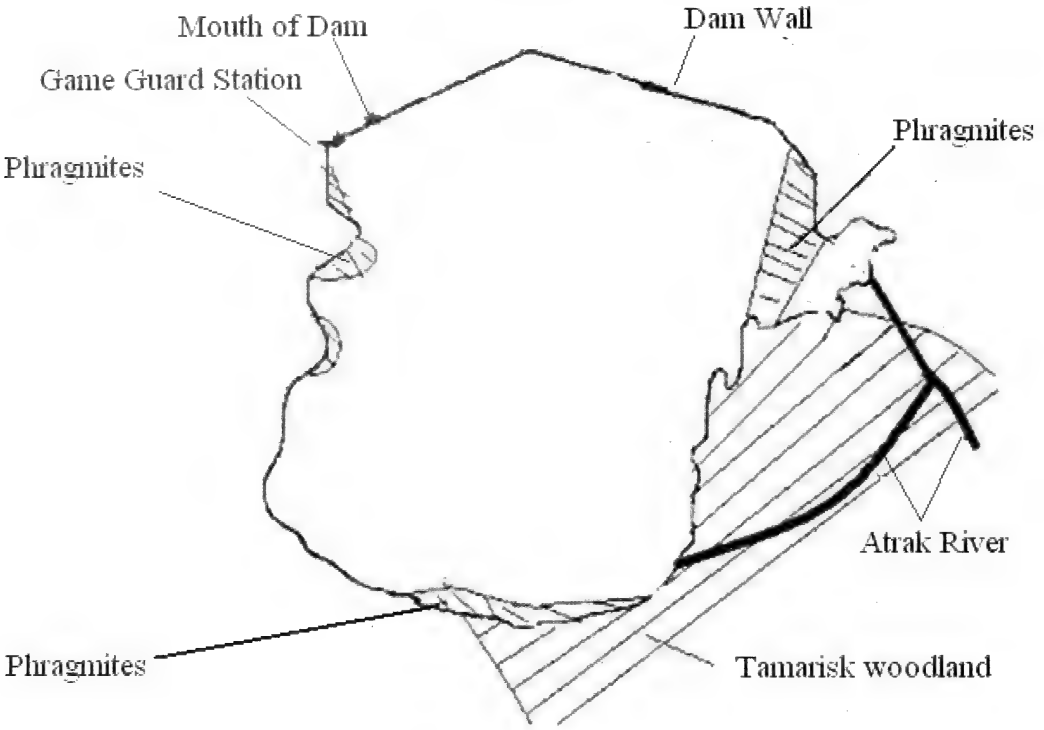

Fig 1. Sketch-map of Lake Alagol wetland. *© Olyagholi Khalilipour*

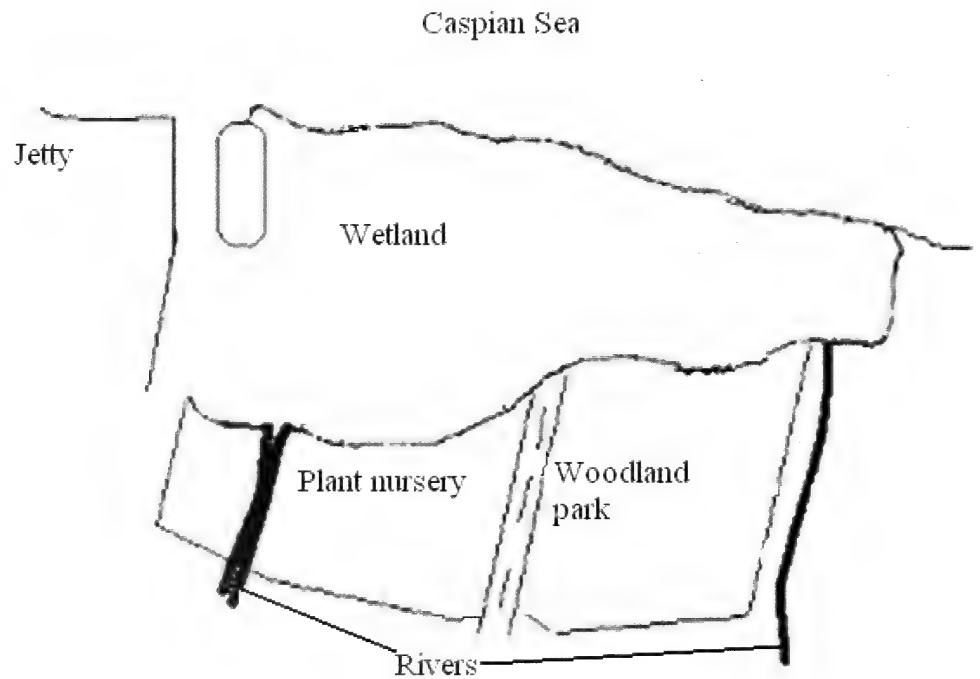

Fig 2. Sketch-map of Kiashahr Lagoon. *© Olyagholi Khalilipour*

Plate 1. Lake Alagol wetland from the north. *© Abolghasem Khaleghizadeh*

Waterbird hunting is permitted in the two areas on Wednesdays to Fridays (Laws and Parliamentary Affairs Office, DOE 1997). Consequently, we made our counts on non-hunting days (Saturdays to Tuesdays), picking days with good weather. Our total counts of waterbirds, species and bird numbers and the waterbird density in Alagol and Kiashahr are given in **Tables 1&2**. We added columns to Tables **1&2** to include selected waterbird totals from the results of the DOE Mid-winter Waterbird Censuses (MWC). **Table 3** presents DOE MWC data where available for approximately the same areas of coverage at Alagol and Kiashahr to give a degree of comparison between the earlier censuses (1968-1977, summarised as '1970s') and the more recent (1990-2005, summarised as '1990s'). The information from Evans (1994) and Scott (1995) is not directly comparable with the results presented here; Evans (1994) and Scott (1995) not only covered a smaller area, but also derived their conclusions from a mixture of multiple survey sites.

RESULTS

In total, we recorded 43 species of waterbirds during this survey. Of these, 34 species were recorded in Alagol, and 22 in Kiashahr, although only 13 species of waterbirds were recorded at the two sites. The counts of each species are given in **Tables 1&2**. February provided the highest monthly species at Alagol and March at Kiashahr (19). Anatidae was the dominant family at Alagol, with fifteen species and Laridae was the dominant family at Kiashahr with five species. The total numbers of birds reached their highest levels in Alagol in February (3654) and in Kiashahr in March (852 individuals). Bird density (individuals/10ha) in Kiashahr Lagoon was higher than at Alagol in all months, except for February, but the reason for this exception is not known.

Table 1. Waterbirds of 34 species Recorded at Lake Alagol during October 2002 to March 2003, and maximum counts of these species (taken from the DOE Mid-winter Waterbirds Censuses 1968-1978 (1970s) and 1990-2005 (1990s)). **Key**: W=wintering, P=passage, V=vagrant.

		Oct	Nov	Dec	Jan	Feb	Mar		Max	Max
Species ▼ Water depth (m) ►	**Status**	**2.5**	**2.52**	**2.52**	**2.54**	**2.59**	**2.62**	**%**	**1970s**	**1990s**
Mute Swan *Cygnus olor*	W	0	0	34	24	38	53	1.03	19(73)	450(96)
Common Shelduck *Tadorna tadorna*	V	0	7	0	2	1	2	0.08	503(74)	271(00)
Gadwall *Anas strepera*	W	16	93	211	76	164	57	4.25	1200(75)	3430(05)
Eurasian Wigeon *Anas penelope*	W	0	17	61	18	59	65	1.51	300(75)	1500(95)
Mallard *Anas platyrhynchos*	W	0	218	856	724	1014	913	25.65	356(76)	7288(91)
Northern Shoveler *Anas clypeata*	W	0	18	8	5	58	61	1.03	30000(69)	3300(96)
Northern Pintail *Anas acuta*	W	8	57	51	0	112	0	1.57	85(76)	2700(93)
Garganey *Anas querquedula*	P	84	156	0	0	0	0	1.65	-	1500(93)
Eurasian Teal *Anas crecca*	W	0	219	281	40	196	116	5.87	20000(69)	2200(96)
Red-crested Pochard *Netta rufina*	W	0	95	37	0	12	18	1.12	1500(75)	550(98)
Common Pochard *Aythya ferina*	W	1	131	79	11	417	193	5.73	1000(75)	4752(01)
Ferruginous Duck *Aythya nyroca*	W	0	0	18	2	13	0	0.23	-	75(01)
Greater Scaup *Aythya marila*	V	0	0	3	0	7	0	0.07	-	220(93)
Smew *Mergellus albellus*	V	0	0	0	17	6	11	0.23	8(74,76)	17(03)
White-headed Duck *Oxyura leucocephala*	V	0	7	3	0	0	0	0.07	1(74)	534(02)
Anatid sp	W	12	54	18	37	112	26	1.78	-	-
Little Grebe *Tachybaptus ruficollis*	W	14	138	117	113	219	157	5.22	-	250(96)
Great Crested Grebe *Podiceps cristatus*	W	45	13	7	2	6	14	0.6	-	282(99)
Greater Flamingo *Phoenicopterus roseus*	P	225	117	0	0	36	0	2.6	157(76)	8000(95)
Dalmatian Pelican *Pelecanus crispus*	V	0	0	0	4	4	7	0.1	-	2(01)
Great Cormorant *Phalacrocorax carbo*	W	81	21	105	45	18	53	2.22	-	362(91)
Water Rail *Rallus aquaticus*	V	0	0	1	0	0	0	0.01	-	1(05)
Eurasian Coot *Fulica atra*	W	38	435	215	110	246	591	11.26	50000(75)	5120(05)
Black-winged Stilt *Himantopus himantopus*	V	3	0	0	1	0	0	0.03	-	139(91)
Pied Avocet *Recurvirostra avosetta*	V	1	3	7	0	4	4	0.13	-	150(93)
Northern Lapwing *Vanellus vanellus*	W	10	113	87	4	130	49	2.71	-	250(96)

Little Ringed Plover *Charadrius dubius*	W	26	14	43	17	62	13	1.2	-	84(00)
Kentish Plover *Charadrius alexandrinus*	W	34	7	0	12	52	110	1.48	-	550(01)
Green Sandpiper *Tringa ochropus*	V	0	0	0	1	0	0	0.01	-	12(98)
Little Stint *Calidris minuta*	V	7	3	0	0	2	0	0.08	-	44(01)
Scolopacid sp	V	4	0	0	0	0	6	0.07	-	-
Great Black-headed Gull *Larus ichthyaetus*	W	0	37	0	158	74	73	2.35	-	411(01)
Common Black-headed Gull *Larus ridibundus*	W	34	100	72	102	74	108	3.37	-	5551(01)
Slender-billed Gull *Larus genei*	W	73	12	32	40	21	58	1.62	-	420(95)
Little Gull *Larus minutus*	W	28	119	46	50	34	127	2.78	-	720(95)
Larid sp	V	12	15	0	0	0	22	0.34	-	-
Common Tern *Sterna hirundo*	W	254	119	12	100	130	114	5.02	-	-
Monthly waterbird species totals		**19**	**26**	**24**	**25**	**29**	**24**	**100**		
Monthly waterbird total numbers		**1070**	**2382**	**2503**	**1774**	**3654**	**3140**			
Waterbird population density/10ha		**4.35**	**9.68**	**10.17**	**7.21**	**14.85**	**12.76**			

From **Tables 1&2**, the most abundant species at Alagol changed in the first three months: Common Tern *Sterna hirundo* was the most abundant in October (before most wintering species have arrived), Greater Flamingo *Phoenicopterus roseus* and Eurasian Coot *Fulica atra* in November and Mallard *Anas platyrhynchos* thereafter. In Kiashahr, Garganey *Anas querquedula* was the most abundant in October, but Little Egret *Egretta garzetta* took over that position for the next five months.

A number of species were treated as vagrants, including Greater Scaup *Aythya marila*, Water Rail *Rallus aquaticus* and Black-winged Stilt *Himantopus himantopus* at Alagol (**Table 1**), Green Sandpiper *Tringa ochropus* at Alagol and Kiashahr (**Tables 1&2**), and Black-crowned Night Heron *Nycticorax nycticorax* and Purple Swamphen *Porphyrio porphyrio* at Kiashahr (**Table 2**). Common wintering waterbirds at Alagol were Gadwall *Anas strepera*, Little Grebe *Tachybaptus ruficollis*, Great Crested Grebe *Podiceps cristatus*, Great Cormorant *Phalacrocorax carbo*, Eurasian Coot, Northern Lapwing *Vanellus vanellus*, Common Black-headed Gull *L. ridibundus*, Slender-billed Gull *Larus genei*, Little Gull *L. minutus*, Common Tern and Whiskered Tern *Chlidonias hybrida*, whereas at Kiashahr the common wintering species were: Great Egret *Egretta alba*, Little Egret, Little Grebe, Great Cormorant, Common Moorhen *Gallinula chloropus*, Eurasian Coot, Little Gull, and Common Tern.

At Alagol, early winterers included Common Shelduck *Tadorna tadorna*, Northern Shoveler *Anas clypeata*, Eurasian Wigeon *A. penelope*, Mallard, Red-crested Pochard *Netta rufina* and Great Black-headed Gull *Larus ichthyaetus*. At Kiashahr, early arrivals included Great Crested Grebe, Common Pochard *Aythya ferina* and Slender-billed Gull. Late winterers at Alagol included Dalmatian Pelican *Pelecanus crispus*, Mute Swan *Cygnus olor*, Smew *Mergellus albellus* and Ferruginous Duck *Aythya nyroca*. Species

such as Garganey, Greater Flamingo and Little Stint *Calidris minuta* (the last in very small numbers) were recorded passing through mainly in October and November at Alagol, whereas White-headed Duck *Oxyura leucocephala*, appeared only in November and December and in very small numbers; the numbers of Common Black-headed Gull, Little Gull and Common Tern remained reasonably consistent throughout (**Table 1**). At Kiashahr, species such Eurasian Teal *Anas crecca*, Caspian Gull *Larus cachinnans* and Common Black-headed Gull were absent in December and January but present in the other months (**Table 2**).

DISCUSSION

Importance of the sites for birds

According to our results and those of Scott (1995) and the DOE MWC (**Table 3**), Lake Alagol is utilised by a wide variety of waterfowl during the migration seasons and in winter, and is especially important for Greater Flamingo, dabbling ducks, Red-crested Pochard and Eurasian Coot. Lake Alagol has been reported as hosting 23 resident waterbird species, 58 wintering species and 17 breeding species (Ghasemi 1997). At Alagol, except for October, Eurasian Coot numbers were relatively steady throughout the period, with a slight dip in January, a pattern similar to that found in the Anzali Wetland (Khaleghizadeh & Behrouzi-Rad 2004). Apart from a few in December, Garganey occurred only in October, a different pattern from that in the Anzali wetland, which experienced two peaks, one in late summer and the other in early spring.

The Kiashahr area is an important staging and wintering area for a wide variety of migratory waterfowl, notably gulls. A small patch of woodland to the south of the lagoon supports a large colony of Great Cormorant, Black-crowned Night Heron and other herons and egrets (Scott 1995). The number of wintering waterfowl has decreased considerably since the 1970s because of increased disturbance from fishing activities (Evans 1994). During this study, a woodland patch was supporting Great and Little Egrets, Pygmy Cormorant *P. pygmeus* and Great Cormorant, but Black-crowned Night Heron had drastically decreased.

Changes in waterbirds population

That Mallard at Alagol and Little Egret at Kiashahr lagoon were the most abundant species, in each case representing 25% of the total number of waterbirds present, reflects the relative mean water depth of the two wetlands – at Alagol being 250cm and at Kiashahr 93cm (Khalilipour 2003). The area of Alagol has been increased from 1540ha to 2461ha following the construction of a dam on the Atrak river to the northeast. Similarly the area of Kiashahr has increased from 500 to 550ha after the construction of a canal beside the jetty to the west (**Fig 2**). Did these changes affect the waterbird populations adversely or to their benefit? The data are insufficient to confirm causative factors, but wintering populations of some species, for example Common Shelduck, Northern Shoveler, Eurasian Teal, Red-crested Pochard and Eurasian Coot have decreased on Lake Alagol, whereas winter population increases have occurred for other species, such as Greater Flamingo, Mute Swan, Northern Pintail, Eurasian Wigeon, Mallard, Gadwall and Common Pochard (**Table 1**). Similarly the four waterbird species for which there are DOE MWC data at Kiashahr, Mute Swan, Eurasian Teal, Common Pochard and Eurasian Coot have all declined markedly (**Table 2**). It is likely that high levels of hunting pressure at Kiashahr and Alagol and the intense jetty-building activity near the study area contributed to the decrease in species diversity (**Table 3**) that we found. Quite a few species not recorded in the 1970s were present in the 1990s, particularly at Kiashahr (**Tables 1 & 2**). We note that the Mid-Winter Counts (MWC) were expanded to cover more waterbird

Table 2. Waterbirds of 22 species recorded at Kiashahr Lagoon during October 2002 to March 2003, and maximum counts of these species (taken from the DOE Mid-winter Waterbirds Censuses 1968-78 (1970s) and 1990-2005 (1990s)). **Key**: W=wintering, P=passage, V=vagrant.

Species ▼ Water depth (m) ►	Status	Oct 0.93	Nov 0.78	Dec 0.90	Jan 0.71	Feb 0.83	Mar 0.88	%	Max 1970s	Max 1990s
Mute Swan *Cygnus olor*	V	0	0	0	8	3	12	0.57	30(73)	8(98)
Garganey *Anas querquedula*	P	157	0	13	0	0	0	4.18	-	-
Eurasian Teal *Anas crecca*	P	14	26	0	0	53	97	4.67	13223(71)	5000(00)
Common Pochard *Aythya ferina*	V	0	4	1	0	15	24	1.08	169(73)	15(03)
Little Grebe *Tachybaptus ruficollis*	W	10	24	37	48	65	56	5.9	-	165(03)
Great Crested Grebe *Podiceps cristatus*	V	0	9	4	2	14	11	0.98	-	4(99)
Black-crowned Night Heron *Nycticorax nycticorax*	V	0	0	0	1	0	0	0.02	-	-
Grey Heron *Ardea cinerea*	V	7	16	4	7	0	9	1.06	-	10(97)
Great Egret *Ardea [Egretta] alba*	W	27	69	34	54	53	81	7.82	-	117(03)
Little Egret *Egretta garzetta*	W	123	143	183	180	234	153	24.99	-	234(03)
Pygmy Cormorant *Phalacrocorax pygmeus*	V	12	0	7	15	0	13	1.16	-	8(97)
Great Cormorant *Phalacrocorax carbo*	W	51	15	21	14	25	36	3.99	-	125(03)
Purple Swamphen *Porphyrio porphyrio*	V	0	1	0	0	0	0	0.02	-	155(99)
Common Moorhen *Gallinula chloropus*	W	7	5	18	9	12	19	1.72	-	12(03)
Eurasian Coot *Fulica atra*	W	55	13	59	19	30	43	5.39	5800(73)	130(03)
Green Sandpiper *Tringa ochropus*	V	0	1	0	7	14	3	0.62	-	-
Scolopacid sp	V	0	0	0	0	13	0	0.32	-	-
Caspian Gull *Larus cachinnans*	P	27	12	0	0	17	53	2.68	-	-
Great Black-headed Gull *Larus ichthyaetus*	V	3	0	5	7	14	7	0.89	-	51(99)
Common Black-headed Gull *Larus ridibundus*	P	6	24	0	0	0	17	1.16	-	16(00)
Slender-billed Gull *Larus genei*	W	0	71	0	56	16	58	4.94	-	48(99)
Little Gull *Larus minutus*	W	135	119	100	153	175	123	19.8	-	1750(03)
Common Tern *Sterna hirundo*	W	9	11	42	50	34	39	4.55	-	45(97)
Larid sp	W	0	6	32	2	20	0	1.48	-	-
Monthly waterbird species totals		**15**	**17**	**14**	**16**	**16**	**19**			
Monthly waterbird total numbers		**643**	**569**	**560**	**635**	**807**	**852**			
Waterbird population density/10ha		**11.69**	**10.35**	**10.18**	**11.55**	**14.67**	**15.49**			

Table 3. Peak counts of waterbirds of 47 species from midwinter censuses by the DOE. Some 33 species (•) were recorded by others. **NB**: '1970s' covers 1968-1978 and '1990s' covers 1990-2005 in this table. The numbers in brackets are the years of the counts.

Species at Alagol & Kiashahr	**1970s**	**1990s**	**1970s**	**1990s**
Greylag Goose *Anser anser* •		310 (96)		135 (90)
Greater White-fronted Goose *Anser albifrons* •	65 (69)	12 (95)		
Bewick's Swan *Cygnus columbianus* •	4 (76)			
Whooper Swan *Cygnus cygnus* •	3 (74)	850 (96)	36 (73)	
Common Shelduck *Tadorna tadorna*			3 (73)	
Ruddy Shelduck *Tadorna ferruginea* •		368 (94)		
Gadwall *Anas strepera*			426 (71)	
Eurasian Wigeon *Anas penelope*			839 (74)	
Mallard *Anas platyrhynchos*			12370 (71)	96 (98)
Northern Shoveler *Anas clypeata*			102 (68)	
Northern Pintail *Anas acuta* •			140 (73)	7 (98)
Red-crested Pochard *Netta rufina*			49 (71)	
Ferruginous Duck *Aythya nyroca*		75		
Tufted Duck *Aythya fuligula* •	6 (74),4000 (88)	2000 (92)	316 (68)	2 (90)
Long-tailed Duck *Clangula hyemalis* •		13 (00)		
Common Goldeneye *Bucephala clangula* •		25 (04)	112 (71)	
Smew *Mergellus albellus*			38 (78)	
Red-breasted Merganser *Mergus serrator* •			2 (70)	
Horned Grebe *Podiceps auritus* •				14 (03)
Black-necked Grebe *Podiceps nigricollis* •		36 (05)		
Eurasian Spoonbill *Platalea leucorodia* •		20 (98)		
Little Bittern *Ixobrychus minutus* •				2 (93)
Cattle Egret *Bubulcus ibis* •				7 (93)
Grey Heron *Ardea cinerea*		120 (94)		
Purple Heron *Ardea purpurea* •				2 (97)
Great Egret *Ardea [Egretta] alba*		330 (94)		
Little Egret *Egretta garzetta*		94 (93)		
Western Reef Heron *Egretta gularis* •				2 (97)
Great White Pelican *Pelecanus onocrotalus* •		8 (02)		
Water Rail *Rallus aquaticus*				24 (00)
Spotted Crake *Porzana porzana* •				16 (99)
Northern Lapwing *Vanellus vanellus*				100 (95)
Common Ringed Plover *Charadrius hiaticula* •		32 (95)		
Jack Snipe *Lymnocryptes minutus* •				1200 (03)
Great Snipe *Gallinago media* •		2 (01)		
Black-tailed Godwit *Limosa limosa* •		250 (96)		
Common Redshank *Tringa totanus* •		380 (97)		
Marsh Sandpiper *Tringa stagnatilis* •		210 (93)		
Common Greenshank *Tringa nebularia* •		55 (96, 99)		
Sanderling *Calidris alba* •		574 (01)		
Dunlin *Calidris alpina* •		22 (99)		
Common Gull *Larus canus* •		145 (04)		
Yellow-legged Gull *Larus michahellis* **Note 1**. •		28 (05)		
Caspian Gull *Larus cachinnans* **Note 2**		1000 (91)		
Lesser Black-backed Gull *Larus fuscus* **Note 3** •		260 (04)		75 (00)
Caspian Tern *Hydroprogne caspia* •				12 (97)
Whiskered Tern *Chlidonias hybrida* •				2 (98)

Notes

1 This entry of 28 birds was recorded at the time (2005) as *Larus cachinnans*. Due largely to the disruption caused by the defensive conflict with Iraq, recording of large gulls in Iran since the 1970s remained with traditional taxonomy for some time after Herring Gull *Larus argentatus* was split into first Yellow-legged Gull *L. cachinnans* (relevant ssp *cachinnans* & *michahellis*) and then into Caspian Gull *L. cachinnans* and Yellow-legged Gull *L. michahellis*.

2 This entry of 1000 birds was recorded at the time (1991) as *Larus argentatus (cachinnans)*. Note that the presence in Iran of any *L. argentatus* ssp as their distribution is now understood is very unlikely.

3 This entry provides some difficulty. Records of *L. fuscus* prior to this time (2000) relate to individuals or very small numbers (Derek Scott pers comm to the editor), but further enquiries in Iran support the identification (Abolghasem Khaleghizadeh, per comm).

species with time, which explains some of the lack of data in the **Tables**. Furthermore, our study took place in a winter that was colder than most of the others, although we are unsure how much winter temperatures might have affected year-on-year count totals. 33 species observed during the DOE MWC were not recorded in our study – see **Table 3** – but we point out that the DOE MWCs cover much greater areas than does our study. Furthermore, at Alagol, in the mid-1990s a dam and settlement were built, as was a DOE Game Guard Station, which factors created conditions more amenable to some species, whose numbers increased, eg Eurasian Wigeon, Mallard, Northern Pintail, Common Pochard (**Table 1**), Mute Swan and Greylag Goose (**Table 3**).

Conservation

In respect of globally threatened species, these four waterbird species, recorded during the present survey, were assigned by IUCN (Anon 2001) to the category **Lower Risk/Near Threatened**, but are categorised rather differently by BirdLife International (2006), thus: Dalmatian Pelican, **Vulnerable**; Pygmy Cormorant, **Least Concern**; Ferruginous Duck **Near Threatened**; White-headed Duck, **Endangered**. The DOE MWC had but a single record of large numbers of White-headed Duck (534) in Alagol in January 2002 winter (**Table 1**).

Alagol and Kiashahr comprise publicly-owned land (Evans 1994) and both wetlands have been identified as Important Bird Areas by Birdlife International. The Ramsar Site incorporating Alagol also includes the plant-covered Lakes Ajigol and Ulmagol as a single complex and that covering Kiashahr Lagoon extends to take in the mouth of the Sefid Rud – they were established on 23 June 1975 (Scott 1995). Despite this status, they have no formal legal protection and no conservation measures are known to have been proposed (Evans 1994). Waterbird populations in the Alagol wetland are subject to very high levels of disturbance from fishermen and hunting (Evans 1994), but the Department of Environment (DOE) has recently established a Game Guard station there. In Kiashahr Lagoon, increased tourism causes disturbance additional to that of the hunters and fishermen, but there is also constant boat movement through the middle of the wetland.

Further systematic investigations are required to assess the ecological trends and changes which have occurred at the two wetlands, to establish a practical monitoring programme to detect the onset of subsequent changes and to identify ways of reducmng the disturbance to waterfowl from fishing activities.

ACKNOWLEDGEMENTS

We are very grateful to the DOE Staff in Gilan and Golestan provinces for their advice and in particular to the personnel of the Alagol DOE's Game Guard Station for their active assistance. In particular, we are indebted to Mr Mohammad E Sehhatisabet for his support.

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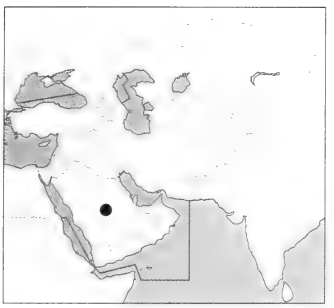
Wintering of Greater Spotted Eagle *Aquila clanga* and Eastern Imperial Eagle *A. heliaca* in the Arabian Peninsula

WRITTEN AND PHOTOGRAPHED BY DR GR LOBLEY



Some recent eagle sightings of Greater Spotted Eagle *Aquila clanga* and Eastern Imperial Eagle *A. heliaca* are presented from Saudi Arabia and Oman. Although these species are considered globally vulnerable, they are still regular winter visitors across the peninsula, albeit in relatively small numbers.

INTRODUCTION

Suggested wintering ranges of these Greater Spotted and Eastern Imperial Eagles in Arabia are presented in Ferguson-Lees & Christie 2001. However, these species now regularly winter further inland near Riyadh (Evans 1994) and further south in Oman (Eriksen, 1996, 2001). These eagles are present in Saudi Arabia from early October until late April, though some major northward movements of adult Eastern Imperial Eagles may already be under way by late February, based on some recent eagle records in northeast Saudi Arabia, close to the Kuwait border. Various recent wintering eagle sightings are presented in **Figures 1&2** along with the general broad wintering range within the peninsula. This article introduces these magnificent birds and documents some of my most exciting eagle encounters in Saudi Arabia and Oman.

Greater Spotted Eagle *A. clanga*

This medium-sized eagle is a regular winter visitor to the littoral of eastern Saudi Arabia. In the past, the species probably frequented the formerly extensive mangroves and *Phragmites* sp reed beds lining many large coastal bays. With ongoing land claim

Figure 1. Wintering range of Greater Spotted Eagle *Aquila clanga* in Arabia

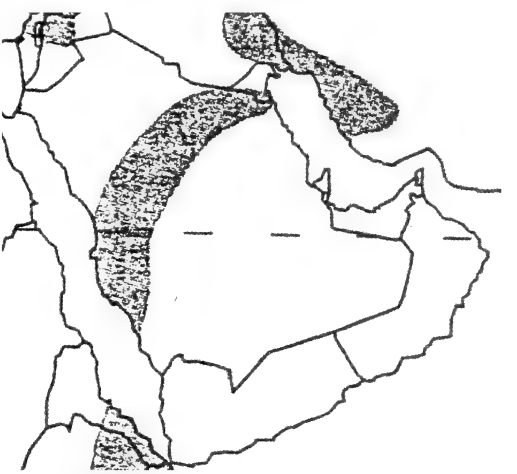


Figure 2. Wintering range of Eastern Imperial Eagle *Aquila heliaca* in Arabia

Plate 1. Juvenile Greater Spotted Eagle *Aquila clanga*, Dhahran, Saudi Arabia, *October 2005*

Plate 2. Juvenile Greater Spotted Eagle *Aquila clanga*, Sabkhat al-Fasl, Saudi Arabia, *October 2006*

Plate 3. Juvenile Greater Spotted Eagle *Aquila clanga,* Dhahran, Saudi Arabia, *October 2003*

Plate 4. Juvenile Greater Spotted Eagle *Aquila clanga*, Dhahran, Saudi Arabia, *October 2005*

Plate 5. Juvenile Eastern Imperial Eagle *Aquila heliaca,* Haden, western Saudi Arabia, *October 1993*

leading to removal of many unprotected coastal mangroves, birds are now increasingly encountered around lowland man-made lakes and sewage farms as well as at central pivot irrigated areas of cultivation, as exemplified by Dhahran waste water lake, Dammam Industrial City sewage farm, Sabkhat al-Fasl and Haradh dairy farm, respectively. This eagle is also regular in Oman at sewage farms such as Al Ansab, near Muscat, where my first pale phase *fulvescens* juvenile was also seen on March 30, 2006. In Dhofar, Oman, the species is also reported at Salalah farms (Eriksen & Sargeant 2001), as well as at pristine and beautiful natural wetland habitats such as Khor Rawri, where three birds were seen on March 31, 2006.

This compact species has a relatively short tail, so that at rest, the primaries practically extend to the tip of the tail (**Plates 1&2**). Juvenile birds are more common in Arabia and are quite distinctive when seen well. At rest, typical darker juveniles (**Plates 1&2**) are uniformly black-brown, with whitish drop-shaped spots on the upperwing coverts, often forming rows (Ferguson-Lees 2001). Another useful field character is the proportionately large, shaggy-naped head (**Plate 2**). Rarer individuals with chocolate-brown body have also been described (Forsmann 1999), but not illustrated: **Plate 3** shows an individual showing browner plumage. Juveniles show an obvious pale buffy vent and undertail coverts (**Plates 1&3**), a feature also clearly visible in flight (Plate 4). Typical juveniles are streaked buffy on the belly, which merges to a darker breast (**Plate 1**). Many of my own observations of this species are from Dhahran. Although I have not observed any prey species actually being taken, I have seen a juvenile eagle eating a freshly-dead Little Egret *Egretta garzetta*, which I assumed it killed, though the species does reportedly take carrion. Food up to the size of medium-sized waterfowl (Forsmann 1999) such as coots and ducks (Ferguson-Lees & Christie 2001) have been noted, but prey has also included a young Grey Heron *Ardea cinerea* (Snow & Perrins, 1998). Recognisable individual birds sometimes remain in Dhahran for up to two weeks in autumn, before moving on, presumably further south or inland.

In flight, the relatively short tail and head and broad wings form a distinctive silhouette. Identifying features pictured in the underside view also include white carpal crescent marks and whitish tips of the secondaries (**Plate 4**).

Status Remarks

In Saudi Arabia, the eagle sightings and date ranges for 2002 – spring 2006 are summarized as follows: autumn records total 15, date range October 1 – December 11; spring records total 6, dates February 24 – April 20. These 21 records are mainly from Dhahran, with the rarer spring records augmented by Haradh (Nadec dairy farm) and Sabkhat al-Fasl (Jubail). The spread of records may suggest that a few birds might overwinter in the Gulf littoral, though there are no records between mid December and late February. This data indicates that the eagle is regular but rare. In an earlier three-year study of the Jubail Marine Wildlife Sanctuary (May 1992 to May 1995), the species was also classified as rare (Symens & Alsuhaibany 1996). Around 20 birds wintered at Al-Ha'ir, Riyadh during the early 1990s (Evans 1994). The species is fairly common from autumn to spring near Muscat, Oman (Eriksen 1999), where 10 – 15 eagles have been reported regularly at roost near Al Ansab. In the UAE, it is also reported in small numbers from late October to April (Richardson 1990), wintering at favoured coastal locations including mangroves, marshes, lagoons and mudflats.

Although there were no sightings in Dhahran in Autumn 2006 (until November 30), regular records at Sabkhat al-Fasl during October and November included up to 8 birds (2 juveniles and 6 immatures) on 10 November.

Most information on breeding and wintering ranges and migration patterns are based on direct field observations of eagle sightings. Useful as these sight records are, they present only a partial view of reality. However, a recent satellite tracking study of migration and wintering of *A. clanga* in Arabia provided fascinating insights into wintering movements (Meyburg *et al* 1995). An eagle was captured near Makkah, Western Saudi Arabia on 24 October. It moved 850 km south into Yemen where it spent the winter months (November to early February). It then returned to its Siberian breeding area, near Omsk, via Iraq, Iran and to the east of the Aral Sea, covering about 4500 km of the return journey in under a month.

An estimated world population of fewer than 10 000 mature birds in 2000 was considered to be on the high side (Ferguson-Lees 2001). These authors also noted that this species has now disappeared as a breeding bird in many parts of Eastern Europe and its breeding range across Asia is quite fragmented.

Eastern Imperial Eagle *A. heliaca*

This is a larger and more impressive bird - the adult has a distinctive golden yellow crown and nape, recalling Golden Eagle, hence its specific name *heliaca* derived from the Greek *heliakos* meaning "of the sun" (Clark 1999). In Saudi Arabia, adults and subadults occur along with younger birds, but youngsters predominate further south in Oman (Eriksen 2005), suggesting that the adults tend to overwinter closer to their breeding ranges in Eurasia (Eriksen 1996). Adult plumage is reportedly acquired in about 6 – 7 years (Forsmann 1999).

Within Saudi Arabia, I have seen the species at Haden in the west in the autumn (**Plate 5**), on a transect between Nai'ryah and Sadawi in the northeast (*c*180km), close to Kuwait and at the Qatif refuse dump. On 10 February, 2006, six birds were seen on the northeast transect, four of which were adults; whereas on 23 February 2006, only two birds were seen: one adult and a juvenile. If typical, these limited records could support the idea that initial northerly movement may be already underway by mid February in some years. On the early morning of 20 February 2004, a juvenile was resting on a hilltop close to Jabal an Nai'riyah. It was concentrating its attention on something initially just out of view for us, beneath the hill. Then, a Rüppell's sand fox *Vulpes ruepelli* came into clear view, but kept a respectful distance from the eagle. As the sun rose further, the eagle then flew around the hill, providing wonderful clear flight views. Experiences like this considerably enhance the already excellent raptor viewing potential in this area in early spring.

More recently in Autumn 2006, single juveniles were recorded during every visit to Sabkhat al-Fasl, *ie* on 29 September, 6 and 13 October, 10 (**Plate 6**) and 16 November. Sabkhat al-Fasl is the only place in Saudi Arabia where I have recorded both eagle species at the same location in single visits. Both eagles have also been reported regularly at several locations in Oman, including Al Ansab and Khor Rawri (Eriksen & Sargeant, 2001). The upperside flight view (**Plate 6**) shows prominent white-tipped wing coverts, creating wing bars (Harris *et al* 1996). The pale inner three primaries create a characteristic pale wedge, clearly visible in both upper and underside flight views (**Plates 5-7**).

In Dhofar, Oman, on 2 April, 2006 two eagles were seen: an adult at Khor Rawri and a juvenile at Tawi Atayr. The juvenile at Tawi Atayr provided another memorable encounter, as the bird slowly circled round gaining height, passing right overhead of us at the sink hole location. As the bird came slowly closer and within photographic

Plate 6. Juvenile Eastern Imperial Eagle *Aquila heliaca*, Sabkhat al-Fasl, Saudi Arabia, *November 2006*

Plate 7. Juvenile Eastern Imperial Eagle *Aquila heliaca* being intercepted by Fan-tailed Raven *Corvus rhipidurus*, Tawi Atayr, Oman *April 2006*

Plate 8. Subadult (top left) and juvenile Eastern Imperial Eagle *Aquila heliaca*, near Sadawi, northeast Saudi Arabia, *January 26, 2007*.

Plate 9. Habitat of Greater Spotted Eagle *Aquila clanga*, Khor Rawri, Dhofar, Oman, *April 2006*

Plate 10. Wetland habitat of Greater Spotted Eagle *Aquila clanga* and Eastern Imperial Eagle *A. heliaca*: Sabkhat al-Fasl, Jubail, Saudi Arabia, *February 2006*

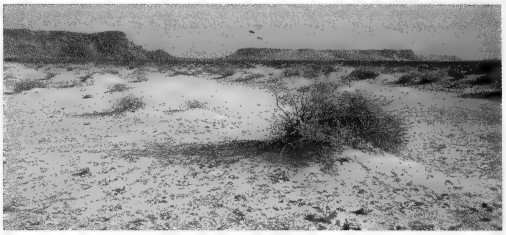


Plate 11. Habitat of Imperial Eagle *Aquila heliaca*: Jabal an Nai'riyah, northeast Saudi Arabia, *February 2006*

range, a Fan-tailed Raven *Corvus rhipidurus* intercepted and persistently tried to drive it away (**Plate 7**). Although we did not get any clear views of Yemen Linnet *Carduelis yemensis* at the sink hole, I really enjoyed seeing and photographing the breeding birds on the adjacent rough land: including singing male Cinnamon-breasted Bunting (African Rock Bunting) *Emberiza tahapsi*, (South) Arabian Wheatear *Oenanthe lugentoides* carrying food and the entertaining displays of male Rüppell's Weaver *Ploceus galbula* at a large breeding colony in an acacia tree.

I was particularly pleased with the raptors in Oman, as initially I thought we might be too late for the eagles: our long weekend visit was 30 March to 2 April 2006. Fortunately, some eagles can still be found in Oman until at least mid April (Eriksen 2005).

As a fortuitous finale to this report, in late January 2007 in northeast Saudi Arabia, a chance encounter with both subadult and juvenile eagles afforded the unusual opportunity to photograph both birds in flight together (**Plate 8**). The older bird showed clear subadult features, such as pale golden nape-shawl and dark body (Mullarney *et al* 1999). The subadult eagle appeared consistent with the final plumage stage before adulthood, i.e. the sixth plumage-type or 7th calendar year spring, as presented in Forsmann 1999. *(All **Figures** and **Plates** © GR Lobley)*

SUMMARY

While Oman, especially Dhofar, rightly figures highly on international birders' potential itineraries, the fortunate few who have the opportunity will also be extremely delighted with the quality raptor watching potential of Saudi Arabia. It is real privilege to see these wonderful eagles and be able to visit some of the wild areas they inhabit over the winter months.

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Skua (*Catharacta, Stercorarius*) occurrence in the OSME Region

VLADIMIR ARKHIPOV AND MICHAEL BLAIR

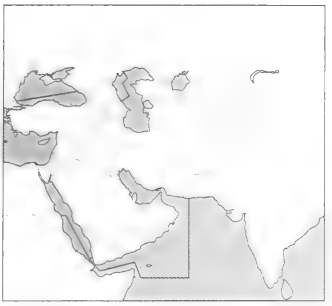

Figure 1. Map of the OSME Region (as of 2007).

Records of skua (*Catharacta, Stercorarius*) occurrence in the OSME Region come from a wide variety of sources. Those we found in the English language are diverse, but those in the languages of the Region have been difficult, if not impossible, to consult until recent years. The geographic definition of the OSME Region now includes the Caucasus and Central Asian Republics, the majority of whose sources and of those in neighbouring Russia and Ukraine have been published only in Cyrillic languages. Offshore observations have been of particular value in suggesting passage trends. Overland passage from skua breeding grounds seems well established, probably as minor migration routes, representing a strategy that would balance better migration conditions against probably uncertain food supplies en route, whereas migrants travelling solely over the sea face poorer migration conditions but may have a guaranteed food supply. Observation of overland migration is rendered more difficult by the underlying trend of fluctuating skua numbers being in delayed lockstep with lemming population cycles. Overland migration between the breeding grounds and the open waters of such as the Aegean, Black and Caspian Seas and of the Gulf through to the Indian Ocean is substantiated by records. Other overland movements, such as across Turkey or eastern Saudi Arabia probably occur, but remain largely undocumented because of low observer density. Furthermore, skuas that do migrate overland probably perform loop migration in at least the southern part of their journey. The recent warming trend of the Holarctic taiga and tundra zones is likely to alter the composition and proportions of their biological communities in an unpredictable and complex way, and probably non-linearly.

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INTRODUCTION

The OSME Region has been interpreted as follows for these skua records (**Fig 1**). It includes a significant proportion of the eastern Mediterranean and includes Cyprus. The western boundary then follows the territorial line between Greece and Turkey right through to the Sea of Marmora, but includes European Turkey. The southern Black Sea is included, the boundary following the northern borders of the Caucasus states (Georgia, Armenia and Azerbaijan) and the Central Asian states in the Region clockwise to Afghanistan, exiting into the Indian Ocean at the easternmost coast of Iran. For this paper we include for simplicity the whole of the Caspian rather than following the OSME Region boundary through it from northernmost Azerbaijan to the Kazakhstan border where it adjoins Astrakhan. From the Iranian border a line due south on 64°20'E crosses a line that stretches eastward from the Somalia-Kenya border at 10°N. For this paper, records that occurred anywhere along the African coast from that point northwards, or in any part of the Red Sea are included. Beyond this area, any extralimital records that indicate a migratory movement of skuas to or from the OSME Region have been included, such as records of collected birds and observations in southern European Russia. The pattern of overland skua migration occurs both east and west of the OSME Region – examples are cited.

Meininger & Sørensen (1986), prompted largely by the skua data for Egypt being obtained for *The Birds of Egypt* (Goodman & Meininger 1989), examined skua occurrence in the Middle East, but were hampered by the paucity of data available, except for those from Eilat, and so had to concentrate on the area centred on Sinai.

Now that more data are generally accessible, particularly from Cyrillic–language papers, and that many more birdwatchers now record bird species across the OSME Region, it seems opportune to revisit the subject of skua occurrence. Skua taxonomy has developed from Furness (1987) through Malling Olsen and Larsson (1997), but we consider that the approach of (Cohen *et al* 1997) on skua phylogeny, which revised the relationships of all skua taxa further, a process refined by Andersson (1999), offers the best comprehensive assessment, although we are aware that there are other arguments, *eg* Braun & Brumfield (1998). We follow Sangster *et al* (2004) and Dudley *et al* (2006) in our treatment of all skuas within a single genus *Stercorarius*. Furness (1997) and Furness & Mineyev (1997) succinctly summarised knowledge of skua breeding dynamics in Europe. Snow & Perrins (1998) produced a comprehensive account of what was known about skuas in the Western Palearctic, largely in line with the worldwide coverage in del Hoyo *et al* (1996).

Although to some extent we aim to update Meininger & Sørensen (1986), we also examine briefly the effect of food availability on skua breeding success and numbers on migration, the possible origins of long-distance overland migration, and the putative impact of a warming global climate on tundra-breeding species. Like Meininger & Sørensen (1986), we deal primarily with two species, Pomarine Skua *Stercorarius pomarinus* and Arctic Skua *S. parasiticus*. We use the catch-all term 'skua' in this paper for reasons of simplicity, where others quite reasonably have opted for 'jaeger' elsewhere. Similarly, we retain the older British-English names.

SKUA RECORDS – SOME LIMITATIONS

From the standard literature, it is not a straightforward task to determine the status of skuas away from the breeding grounds or the most-watched migration routes. The new boundaries of the OSME Region compounded our difficulty. The Birds of the Middle East field guide (Porter *et al* 1996) aligns largely with the earlier extent of the OSME Region (omitting the Caucasus and Central Asian republics) and does not map any skua species' occurrence. Although Snow & Perrins (1998) cover Turkey and the accounts by Furness (1997, 2002a, 2002b) and Furness and Mineyev (1997) do refer to overland movement from the tundra breeding areas, there is little detail in these sources and for most of the present OSME Region, information was lacking. Accordingly, we have depended heavily upon the relatively few detailed papers dealing with skua records (*eg* Meininger & Sørensen 1986 for Sinai and Abuladze 1998 for the Black Sea coast of the Caucasus), upon extracts from or translations of reports or papers (*eg* Mohammad Sehatti-Sabet *in litt*, Iran midwinter waterbird counts), birdwatching records (*eg* Richardson 1987-2002, UAE; Hellyer *in litt*, Oman) and upon Internet information.

Many reports and other accounts and descriptions of seabird sightings lack rigour, notable exceptions being Bourne (1991) and Bourne & Casement (1996). Because many sources provide but brief summaries without the full descriptions of the birds or of the weather at the time, and because Internet information is essentially ephemeral and often presented without objective review, we have interpreted material with a considerable degree of caution. Nevertheless, some conclusions can be attempted from its analysis. Identification of skuas in flight is far from straightforward, but some individuals amongst southern hemisphere skuas (Cohen *et al* 1997) come from hybrid populations. Ageing and indeed separating the immatures of some species remains fraught with difficulty in all but the best light and at relatively close range. We had to keep these aspects in mind when reviewing records and reports. Another problem, beyond the scope of this paper, may lie in the accuracy of museum labelling of some skua specimens (WRP Bourne pers comm).

INFORMATION SOURCES

The Royal Navy Birdwatching Society (RNBWS) database is a large source of (mostly) seabird records, covering some 60 years of sightings from naval and merchant ships on the world's oceans and seas, mostly but not exclusively from their membership; we have examined and extracted skua records for the OSME Region as defined above. Traditional literature sources consulted certainly provided essential background information, but often contained discouraging terms such as 'little studied'. Fortunately, birdwatching societies, groups and individuals have supplied much valuable information. Unpublished information from notes of varying antiquity have informed our investigation, as has Internet information, but often the best help and insight have come from the generous amount of time given by so many people to debate and discuss skua behaviour and the factors affecting it. We have obtained additional data from sources in Turkey, Bulgaria, Russia, Cyprus, Georgia, Azerbaijan, Astrakhan, Kazakhstan, Iran, the United Arab Emirates (UAE) and Oman. However, much of the ground we cover here was originally covered by Meininger & Sørensen (1986).

SKUA MIGRATION PATTERNS

Whatever skua migration routes and patterns exist, as known from observation or surmised from records, they must be set in the twin contexts of how they arose and how persistent they are. The current migration system in Europe, which emerged from the last ice age (15 000BP) is still developing, to quote Berthold (2000). Where skua breeding grounds were at that time is open to conjecture, as is where skua breeding grounds will be if climatic warming continues.

Following Berthold (2000), we avoid where possible the terms 'autumn migration', 'spring migration' and 'winter quarters' because they cannot easily be applied to migratory southern-hemisphere species, which feature in a minor way in this paper. We use 'outward' and 'return' migration and 'goal area'. The data we have obtained shed only a little light on whether some or all skua species have goal areas in warmer oceans that the majority of outward migrants reach and remain within, or whether a broad dispersal occurs at some time near the end of the outward migration. It is also not clear whether some or all skua species have 'retarded-return' or 'graded-return' migration strategies by immatures. The former is the continued presence of non-breeding immatures in a goal area or within a relatively narrow latitudinal band and the latter is the appearance of immatures regularly along part of the return migration route. However, the main thrust of Berthold (2000) is that migration is under endogenous impulse and control (which would tend to diminish our hypothesis below that lemming availability has an effect on the proportion of Pomarine Skuas migrating by sea-routes). The tendency for overland routes may have originated from ancestral skua spp that had no sea-route to use until the end of the last ice age, when the innate adaptive skua behaviour in seeking breeding areas close to the best available food supplies developed in the post-breeding period into utilising food sources near open water. As birds hunted gradually further, they could change their outward migration through experience (adaptive navigation, Berthold 2000)

For tundra-breeding birds the term site fidelity cannot apply in the same way as for temperate species, but Pomarine Skua is probably site-faithful incidentally, when lemmings are present in sufficient numbers. Arctic Skua, having more catholic tastes than Pomarine, and the much more omnivorous Long-tailed Skua *S. longicaudus* probably express greater site fidelity. It is possible that the paucity of overland records of Long-tailed Skua is linked to site fidelity because the benefits of migrating largely over sea routes are greater for site-faithful tundra breeders, but if this be the case, it is

not a straightforward relationship, because Arctic Skuas are more commonly recorded as overland migrants than Pomarine.

Tundra-breeding skua species occupy breeding areas where environmental conditions are particularly erratic, a condition common to many species that display nomadism (Berthold 2000), but being highly migratory with later maturation and being long-lived, the skua species' low annual reproductive potential might make them prone to nomadism only from their goal areas. Certainly this is one possible explanation why so many offshore oceanic records are not only widely distributed but are of very small numbers, but the lack of differentiation in the records between adults and immatures obscures the picture. The mechanism for such nomadism probably cannot be defined as true 'pursuing movements' to follow food supplies, but searching for food is almost certainly a factor.

Theoretically, escape movements (*eg* being driven off the breeding grounds by early onset of winter) might cause more individuals to migrate by alternative routes, but precisely which years had this effect is not known, making correlation with the sparse data on skua overland movements impossible. Yet another area of data shortage is the extent to which the timing, duration and distance of outward migration differ between juvenile and adult skuas. From the number of midwinter records, it is also possible that partial migration, where a proportion of the population do not continue to the 'goal areas', is a common phenomenon amongst northern skuas, especially if at higher latitudes winters are not severe, but distinguishing between partial migrants, retarded-return immatures or nomadic individuals is not possible from the mass of records.

The data are insufficient to confirm suspicions that loop migration might explain some of the disparities in some locations between the total number of skuas observed on outward and return overland migration. On the other hand, loop migration may occur only at certain locations where geography tends to funnel birds on to a different course (*eg* on return migration, north up the Gulf of Aqaba, and further east, north over Iran near Bandar-e Abbas, Hormozgan Province, where the Strait of Hormuz turns west-southwest), or it may be opportunistic, when conditions are suitable.

OVERLAND AND RELATED MOVEMENTS

We make the assumption that most if not all skuas recorded in the Red Sea and the Gulf belong to a migratory population that when mature enough to breed, travels and from to the Arctic breeding grounds overland. This assumption is based on the timings and directions of movement of the peak numbers of sightings, which align better with overland post-breeding (outward) and pre-breeding (return) migrations than with birds that return to the Arctic via oceanic routes, either south past India and the Malaysian peninsula and then through the Bering Strait, or via the Cape of Good Hope and north through the Atlantic past Cape Fear of northern Norway. Of course, non-breeders will wander, some certainly oversummering in seas of the OSME Region.

RUSSIA AND THE NORTHERN AND CENTRAL CASPIAN-BLACK SEA REGION

In the OSME Region, the skua species mostly involved in overland migration are Pomarine and Arctic. Long-tailed Skua is recorded as an overland migrant much less often, but it is more pelagic than its congeners (Furness 1996). Aspinall (2005) cited two recent (2002 and 2004) observations as being accepted as the first and second records for the Azerbaijan checklist. However, we have found overland and Caspian records going back to 1888 from Russian sources (see below). Moreover, WRP Bourne (pers comm) and Frank Ward (RNBWS pers comm) drew MB's attention to published (but perhaps not

well-circulated beyond seabird specialists) observations from 1997-8 from the oilfields in the central Caspian Sea that suggest a significant return migration (April & May) in one year (much reduced the next), but almost negligible outward migration in both years, the location being almost exactly half way between the Azerbaijan coast (the Aspheron peninsula) in the west and the Turkmenistan coast in the east (Bourne 1999, 2000).

More or less at the same time, we obtained supporting Oct 2004 and May 2005 Kalmykian data (Sergej Bukreev pers comm via Gadzhibek Dzhamirzoev) from slightly further north in the centre of the Caspian Sea. There were no outward migration records of any *Stercorarius* sp in October 2004, but in May 2005 Arctic Skua predominated, Long-tailed Skua occurred a few times and Pomarine only once. All observations were further than 25km from the shore. Arctic Skua was also the most numerous seabird in the central Caspian (Sergej Bukreev pers comm), sufficiently so for the movement to be classed as a 'well-expressed spring flyway'. Evidence of significant outward migration through the Caspian came from independent observations of Arctic Skua movements occurring in August 2005 (via Sergej Bukreev pers comm).

Relevant published Pomarine Skua records – Zarudny (1888, 1916), Khlebnikov (1928), Spangenberg & Feygin (1936), Smogorzhevsy (1959), Airumyan *et al* (1966), Scherbina (1977), Savitskiy & Poslavskiy (1977), Kostin (1983), Khokhlov (1990), Abuladze (1998), Savitskiy & Lebedeva (2003), Archives of the Bird Conservation Union (BCU) of Georgia (2003) and Arkhipov & Zhuravlev (in press) – are at **Table 1a**, and those for Arctic Skua – Zarudny (1888), Dementyev *et al* (1951), Zalataev 1953, Dolgushin (1962), Lugovoy (1963), Strokov (1974), Gubin & Levin (1980), Kalabin (1984), Krivitsky *et al* (1985), Shevchenko *et al* (1993), Abuladze (1998), Eskelin & Tolvanen (2000), the Archives of the BCU of Georgia and of the Zoological Museum of the Moscow State University – are at **Table 1b**. Sotnikov (2002) summarised Arctic Skua records 1990-7 (**Table 2**) in the Kirov Region (Middle Volga to Vyatka in central Russia) at about 56°N, half-way between the breeding areas at 66°N and the latitude (46°N) of the northern Black and Caspian Seas. Records from Kostin (1983), Abuladze (1998) and Moseykin *et al* (2003) for Long-tailed Skua are summarised at **Table 3** and include an autumn vagrant (Sep 2002) in the landlocked Stavropol' Territory between the northern Caspian and the NE Black Sea. Khoklov (2000) recorded two Pomarine Skuas in the same Territory.

Excluding anomalous or insufficiently precise dates, **Tables 1-3** have a predominantly outward migration (post-breeding) bias. Conversely, the RNBWS database records (**Table 4**) for large numbers in the centre of the Caspian Sea suggest evidence of a sizable overland return migration to the breeding grounds. Turkmenistan records seem exclusively to be from the Caspian coast (Dement'ev 1952, Scherbina 1977). Validated Armenian records are scarce, the only skua observed in recent times being a juvenile Pomarine at southeast Lake Sevan basin on 7 Sep 2002 (Vasil Ananian, Pascal Wink & Roy Beddard pers obs). One Arctic skua was collected at Armash on 7 Apr 1989 (Vasil Ananian *in litt*). The first acceptable Armenian Pomarine Skua records (1966) are cited by Ayrumian *et al* 1968 (Vasil Ananian *in litt*).

Year-on-year variation in numbers may relate to tundra cycles (*qv*) of food availability the previous year in the breeding grounds. There are insufficient data to relate the numbers of skuas observed in our Region to tundra cycles, but of course in years where few birds have been observed in the Caspian in autumn, a low point in the tundra cycle might be the proximate cause. In the general area of the Caspian, we surmise that on migration most birds keep to the middle of the Sea, out of sight of shore-based observers (Scherbina 1977, RNBWS records, Sergej Bukreev pers comm),

Table 1a. Pomarine Skua *Stercorarius pomarinus* records from the Black Sea, the Caspian-Aral region and related regions (VA). **Key**: M = Migration season, O = Outward migration, R = Return migration, W = Wintering (probably)

Date	M	Place	Number	Reference, Source
Summer 1881	R?[1]	Lake Sulukol, Uralsk Region, Kazakhstan[2]	1 observed	Zarudny 1888
27 Apr 1907	R	Aralsk, Aral Sea, Kazakhstan	1 collected	Zarudny 1916
Sep 1915	O	Astrakhan Region, Russia	1 probable	Khlebnikov 1928
7-8 Jun 1928	R?	Aralsk, Aral Sea, Kazakhstan	1 observed	Spangenberg & Feygin 1936
Jun 1957	R?	Ukraine, Black Sea coast, Crimea	1 collected (8 June); some observed	Smogorzhevsky 1959
Aug 1958	O?	Ukraine, Black Sea coast, Crimea	Several observed	Smogorzhevsky 1959
25 Oct 1961	O	Ukraine, Black Sea coast, Crimea	1 observed	Kostin 1983
12 Aug 1965	O?	Ukraine, Black Sea coast, Crimea	1 observed	Kostin 1983
18&24 Aug 1975	O?	Ukraine, Black Sea coast, Crimea	1 observed each date	Kostin 1983
5 Sep 1976	O	Ukraine, Azov Sea, Sivash gulf	1 imm. collected	Kostin 1983
17 Aug 1966	O?	Armenia, Lake Sevan	1 observed	Airumyan *et al* 1968
Oct 1966	O	Armenia, Lake Sevan	1 subad collected	Airumyan *et al* 1968
6 Oct 1973	O	Chikishlyar, Caspian Sea, Turkmenistan	1 collected	Shcherbina 1977
27 Jun 1974	R?[3]	Chogray reservoir, Kalmykia, Russia	1 F ad collected, +3 observed	Savitskiy & Poslavskiy 1977
10 Apr 1977	R	Russia, North Caucasus, Stavropol region	1 observed	Khokhlov 1990
Nov 1983	O	Russia, North Caucasus, Stavropol region	1 observed	Khokhlov 1990
17 Jan 1992	W	Black Sea, Krasnodar Region, Russia	1 observed	Abuladze 1998
30 Apr 2002	R	Georgia, Black Sea coast (Batumi beach)	Solitary bird recorded	Archives BCU Georgia 2003
24 Nov 2002	W	Black Sea, Krasnodar Region, Russia	1 observed	Savitskiy & Lebedeva 2003
16 Oct 2006	O	Kazakhstan, Lake Shalkar-Karashan Aktubinsk region	1 subad observed	Arkhipov & Zhuravlev in press

Notes: [1] Late northbound return migrant, early (breeding failure?) outward migrant or non-breeder. [2] North of Caspian Sea. [3] As for **Note 1**.

Table 1b. Arctic Skua *Stercorarius parasiticus* records from the Black Sea, the Caspian-Aral region and related regions (VA). **Key**: M = Migration season, O = Outward migration, R = Return migration, W = Wintering (probably), ZM MSU = Zoological Museum of Moscow State University.

Date	M	Place	Number	Reference, Source
13 Oct 1885	O	Russia, Orenburg	1 observed	Zarudny1888
15 Aug 1890	O?	Russia, Astrakhan region	1 collected	Lugovoy 1963
23 Aug 1905	O?	Russia, Astrakhan region	1 collected	Lugovoy 1963
1 Sep 1921	O	Russia, Krasnodar region, Black Sea coast, Novorosiysk	1 collected	ZM MSU
4 Sep 1921	O	Russia, Krasnodar region, Black Sea coast, Novorosiysk	1 collected	ZM MSU
Aug-Sep 1936	O	Kazakhstan, Lake Chelkar	1 collected	Dolgushin 1962
28 May 1936	R	Kazakhstan, Lake Tengiz	1 observed	Krivitskiy *et al* 1985
Sep-Jan 1946-8	O/W	Russia, Krasnodar region, Black Sea coast	Single birds observed	Strokov 1974
23 Mar 1949	R	Turkmenistan, Caspian sea, Chikishlyar	1 collected	Dementyev *et al* 1951; ZM MSU
16 Jul 1951	O?	Kazakhstan, Caspian sea, Mangishlak	1 F collected	ZM MSU; Zaletaev 1953
3 Aug 1951	O?	Kazakhstan, Caspian sea, Mangishlak	1 juv collected	ZM MSU; Zaletaev 1953
3 Aug 1951	O?	Kazakhstan, Caspian sea, Mangishlak	1 F collected	ZM MSU; Zaletaev 1953
28 Oct 1955	O	Russia, Astrakhan region, Volga Delta	1 juv M collected	Lugovoy 1963
17 Jun 1959	R?	Kazakhstan, Lake Teniz	1 M collected	Dolgushin 1962
24 Aug 1976	O?	Kazakhstan, Ural river area	1 observed	Gubin & Levin 1980
9-11 Jun 1981	R?	Uzbekistan, lake Aydarakul	1 observed	Kalabin 1984
24 Jun 1982	R?	Kazakhstan, Ural river area	1 observed	Shevchenko *et al* 1993
15 Oct 1985	O	Kazakhstan, Ural river area	2 observed	Shevchenko *et al* 1993
11 Oct 1994	O	Georgia, Makhindzhauri, Ajaria	1 seen with Long-tailed Skua *S. longicaudus*	Abuladze 1998
2 Oct 1999	O	Kazakhstan, Lake Tengiz	1 juv observed	Eskelin & Tolvanen 2000
9 Oct 1999	O	Kazakhstan, Lake Tengiz	1 juv observed	Eskelin & Tolvanen 2000
9 Dec 1999	O	Western Georgia, Rioni River bank near Vani.	Found dead	Archives BCU Georgia 2001

Table 2. Arctic Skua *Stercorarius parasiticus* records, Kirov Region, Russia 1990-1997 (after Sotnikov 2002, via VA). **Key**: M = Migration season, O = Outward migration, R = Return migration.

Date	M	Event
18 May1990	R	Adult observed
01 Oct 1990	O	Adult observed
28 Aug 1993	O	Juvenile collected
23 Sep 1993	O	3 adults observed, 2 being collected
24 Sep 1993	O	2 adults observed
29 Sep 1994	O	Adult male collected
17 Oct 1994	O	1 observed
12 Sep 1995	O	4 (3 ad, 1 juv) observed
30 Sep 1995	O	5 (3 ad, 2 juv) observed
04 May1996	R	1 observed
16 Sep 1996	O	30 observed, mostly adults
01 Sep 1997	O	1 observed

Table 3. Long-tailed Skua *Stercorarius longicaudus* records in the Black Sea-Caspian Sea region, 1963-2002 (VA). **Key**: M = Migration season, O = Outward migration, R = Return migration

Date	M	Place	Number	Reference, Source
12 Oct 1963	O	Portovoe, Black Sea, Crimea, Ukraine	1 probable	Kostin 1983
8 May 1987	R	Near Rioni River mouth, Georgia	1 observed	Abuladze 1998
11Oct 1994	O	Makhindzhauri, Ajaria, Georgia	1 observed	Abuladze 1998
6 Sep 2002	O	Stavropol Region, Russia	1 M observed	Moseykin *et al* 2003

but only regular observations could establish the patterns. If during the return migration much of the movement is nocturnal, then the data at **Tables 1-3** do not necessarily conflict with those in **Table 4**. Some evidence discussed below may support this hypothesis. We surmise also that skua passage through the Gulf between the Straits of Hormuz and the river mouths at its head and through the Gulf of Oman (see below) may also occur mostly out of sight of shore-based observers. Recently, more pelagic trips are being undertaken into the Gulf of Oman, admittedly to search for petrels, but it would not be entirely unexpected if skua sightings rose sharply.

Eastern Central Asia and extralimitally towards Baikal and Korea and India

According to Gavrilov & Gavrilov (2005), Pomarine Skua has been recorded once at Lake Zaysan in easternmost Kazakhstan. Although this is accepted by Wassink & Oreel (2007), they include three other records (two collected in 1907 and one in 1928 from the Aral area and one from 1973 from north-central Kazakhstan. Arctic Skua appears to be a rare but regular passage migrant, more often seen in autumn (Gavrilov & Gavrilov 2005), including at the Chokpak Pass. Wassink & Oreel (2007) support that status, noting its occurrence from the east to the west of Kazakhstan. Rogacheva (1992) mentions Pomarine and Arctic Skua in the Yenesey mid-taiga (**Table 5**). Pomarine Skua is a very rare vagrant in Uzbekistan – Arctic (first recorded by Zarudny in 1916) is rare, but almost regular (Kashkarov & Ostapenko 1990). In the Baikal Region, observations and examination of old records revealed a consistent story: Gagina (1962), Izmailov (1967), Tolchin *et al* (1974), Melnikov (1998), Pizhyanov *et al* (1998) and Fefelov *et al* (2001) have recorded both species in small numbers, the outward migrants slightly in excess of the return migrants, but what is more interesting is that almost as many sightings are of birds in summer, probably non-breeders. There is one midwinter record (**Table 6**). It would seem that Baikal has adequate food supplies for skuas for much of the year.

Table 4. RNBWS records of larger numbers of skuas on passage in the Caspian Sea, 1997-98. **Key**: M= Migration season, R = Return migration.

Skua species	Coordinates	Location	Observer	Date	M	Total	Remarks
Skua sp	40:0:0.0N, 51:4:0.0E	Off Aspheron Peninsula	SJ Hingston	Apr 1997	R	117	117 in 18 days (*c*6-7/d)
Skua sp	40:0:0.0N, 51:4:0.0E	Off Aspheron Peninsula	SJ Hingston	May 1997	R	30	2/day for 15 days
Pomarine Skua	40:5:47.0N, 50:15:15.0E	Off Aspheron Peninsula	SJ Hingston	Mar 1998	R	13	
Stercorarius	40:5:47.0N, 50:15:15.0E	Off Aspheron Peninsula	SJ Hingston	Apr 1998	R	15	
pomarinus	40:0:0.0N, 51:4:0.0E	Off Aspheron Peninsula	SJ Hingston	Apr 1997	R	71	71 in 18 days
	40:0:0.0N, 51:4:0.0E	Off Aspheron Peninsula	SJ Hingston	May 1997	R	320	*c*21/day for 15 days
Arctic Skua	40:5:47.0N, 50:15:15.0E	Off Aspheron Peninsula	SJ Hingston	Apr 1998	R	11	
Stercorarius	40:0:0.0N, 51:4:0.0E	Off Aspheron Peninsula	SJ Hingston	Apr 1997	R	200	11/day for 18 days
parasiticus	40:0:0.0N, 51:4:0.0E	Off Aspheron Peninsula	SJ Hingston	May 1997	R	375	26/day for 15 days

Table 5. Records of Arctic Skua *Stercorarius parasiticus* and Pomarine Skua *S. pomarinus* in Yenesey mid-taiga 1974-1982 (Rogacheva 1992). **Key**: M = Migration season, O = Outward migration, R = Return migration.

Skua species	Date	M	Location	Number
Pomarine Skua	06 Jun 1980	R?	Sarchika River mouth, near Bakhta	1 observed
Pomarine Skua	05 June1981	R?	Yenisey, near Mirnoya	1 observed
Arctic Skua	14 Apr 1982	R	'mid-taiga'	1 observed
Arctic Skua	28 May 1974	R	On log floating in Yenesey	3 observed (1 collected)
Arctic Skua	29 Jun	?	'mid-taiga'	1 observed
Arctic Skua	After 29 Jun	?	'mid-taiga'	1 observed
Arctic Skua	After 29 Jun	?	'mid-taiga'	1 observed
Arctic Skua	25 Jul	?	'mid-taiga'	1 observed

Until recently it was not known for certain if skuas made overland passage in the easternmost Palearctic, because skuas were largely absent from Korean bird species lists (Moores 2004, Moores pers comm to MB). Tomek (1999) lists none for North Korea and Lee *et al* (2000) mentions only Arctic Skua as a vagrant for South Korea. However, Moores, while engaged in other ornithological research in Korea, had to undertake many ferry journeys and made many observations of skuas out to sea. He summarises his and others' observations (Moores 2004), and draws the conclusion that the pattern of observations suggests skuas (and other seabird species *eg* Black-legged Kittiwake *Rissa tridactyla* – Moores pers comm) are crossing the Korean peninsula to and from the Yellow Sea (175km). Moores also has recorded southern-hemisphere large skuas in Korean waters, noting South Polar Skua *S. maccormicki* but not Brown Skua *S. antarctica*, circumstances similar to those in the Arabian Sea (*qv*). In the Oriental Region as defined by the OBC in Inskipp *et al* (1996), the other skua spp expected are Pomarine, Arctic and Long-tailed. Further Pomarine and Arctic Skua records (2003–5) in Korean waters will appear in Moores (in press).

An account of an exhausted Arctic Skua on the beach near Chennai (Madras) on India's east coast (Aldridge 1997) reasonably surmises that the bird might have arrived overland from the breeding grounds, but did not discuss whether overland passage from India's west coast might have occurred. Perhaps the more likely explanation was that the bird was exhausted because of infection, and had simply come ashore. However, the RNBWS database has 16 Pomarine, a dozen Arctic Skua and some 20 skua sp records from the western coast of the Indian subcontinent (including one inland record approximately in northern Gujerat), but none at all from the eastern coast.

The Gulf – Iran

Individuals recorded in Iran in midwinter (**Table 7**) suggest that this behaviour is regular for small numbers, harsh winters permitting. The Iran Checklist (Scott & Adhami 2006) considers Pomarine and Arctic Skua as passage migrants and Long-tailed Skua as a vagrant. This Checklist includes Great Skua *S. skua* (the applicable records being from the earlier treatment of all large skuas as 'Great'), the authors surmising that the form occurring is likely Brown Skua *S. lonnbergi*, now treated as *S. antarctica*).

The Gulf – UAE and Qatar

The UAE has a long history of birdwatching, but more important, record-keeping has been extensive. The first Emirates Bird Report dates from 1987, and the Editor at the time of the 2002 issue, Colin Richardson, has provided (*in litt*) an extract of skua occurrences for that period. From September to January, sightings are fairly numerous and reasonably consistent, but, February is relatively quiet, and then from March to May there is a peak, activity decreasing sharply from June to August, July being the quietest month of all. **Fig 2** shows the general pattern of (mostly shore-based) recorded sightings per month. These data support overland passage north of Kuwait, but there is one short note that suggests overland passage across the Empty Quarter, *Rub al Khali*, may well occur. On four evenings in April 1993, a total of 75 Pomarine and Arctic Skuas was seen emerging from deep inland, crossing the shore at Dubai and heading northeast towards the Straits of Hormuz (Bannon 1993). From the subsequent direction of travel of these birds, Bannon (1993) suggests that they were heading from the northernmost reaches of the Straits of Hormuz, at which point the shorter route north would be over Iran, rather than turning southwestwards again to re-enter the Gulf towards the Shatt-al-Arab at its head. The implications are examined in the Discussion section below.

The Gulf – Oman and the Gulf of Oman

The Oman Bird Records Committee (OBRC) made available their database on skua sightings (Peter Hellyer pers comm). **Figs 3 & 4** give the pattern of Oman Pomarine Skua sightings (mostly shore-based) per month and the total numbers of birds per month, and **Figs 5 & 6** provide the same information for Arctic Skua. However, with only 5 OBRC records of Long-tailed Skua, that species remains a scarce vagrant to shore-based observers. The database also contains records of large skuas, namely Great Skua *S. skua*, South Polar Skua *S. antarcticus* and Antarctic Skua *S. maccormicki* (as *Catharacta* species). Views on skua taxonomy and English names have changed, particularly since 1987, which bedevils interpretation of older records. The corollary is that Great Skua *S. skua* is assumed to occur in the OSME Region only in the eastern

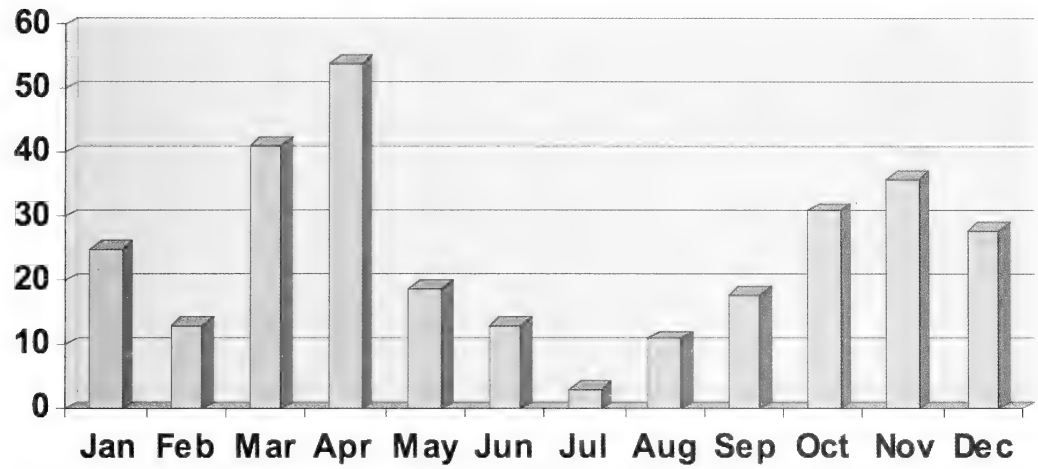

Figure 2. Yearly pattern of UAE recorded skua sightings (from data provided by Colin Richardson) 1987-2002. This chart does not take into account numbers of birds in any sighting, nor does it imply daily coverage year-round.

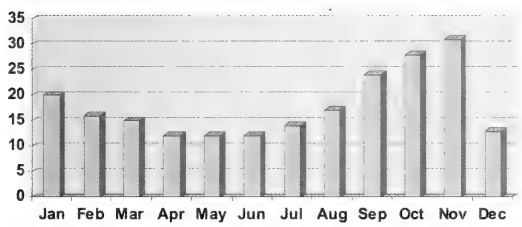

Figure 3. Yearly pattern of Oman Pomarine Skua *Stercorarius pomarinus* records (234) 1964-2005, covering 750 birds (from OBRC database).

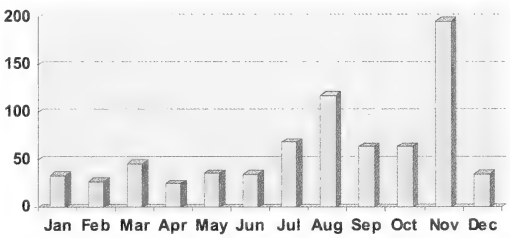

Figure 4. Month-by-month totals of Oman Pomarine Skuas *Stercorarius pomarinus* recorded 1964-2005 (from OBRC database).

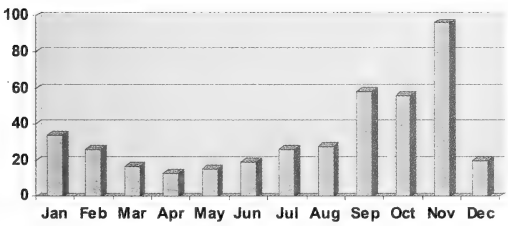

Figure 5. Yearly pattern of Oman Arctic Skua *Stercorarius parasiticus* records (408) 1962-2005, covering 1189 birds (from OBRC database).

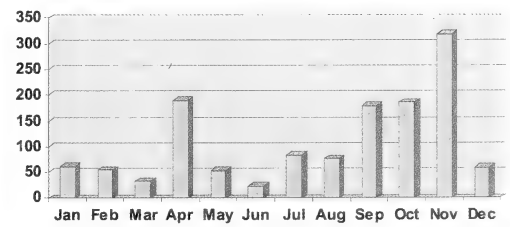

Figure 6. Month-by-month totals of Oman Arctic Skuas *Stercorarius parasiticus* recorded 1962-2005 (from OBRC database).

Table 6. Records of Arctic Skua *Stercorarius parasiticus* and Pomarine Skua *S. pomarinus* in the Baikal region, 1908-1992. (VA) **Key**: M = Migration season, O = Outward migration, R = Return migration, W = Winter.

Species	Date	M	Place	Number	Reference, Source
Arctic Skua.	Apr 1909	R	Transbaikalia, Bura river	1 collected	Gagina 1962
Arctic Skua	Jun N/K	R?	Transbaikalia, Muya river	1 observed	Izmailov 1967
Pomarine Skua	7 Oct 1908	O	Transbaikalia, Kitoi river	1 collected	Gagina 1962
Pomarine Skua	Summer 1952	R?	Baikal area, Irkutsk	1 collected	Gagina 1962
Pomarine Skua	23 Oct 1969	O	Bratsky Reservoir, Irkutsk Region	1 observed	Tolchin *et al* 1974
Pomarine Skua	13 Oct 1970	O	Angara river	1 observed	Tolchin *et al* 1974
Pomarine Skua	16-17 Jun 1972	R?	North Baikal	1 ad observed	Tolchin *et al* 1974
Pomarine Skua	1 Jun 1984	R?	Baikal, Olkhonskie vorota	1 observed	Pizhyanov *et al* 1998
Pomarine Skua	12 Sep 1987	O	Baikal, Selenge Delta	1 juv observed	Fefelov *et al* 2001
Pomarine Skua	28 May 1987	R	Northern Baikal	1 observed	Pizhyanov *et al* 1998
Pomarine Skua	25 Jan–mid Feb 1988	W	Baikal	1 ad observed	Melnikov 1998
Pomarine Skua	17 Jul 1989	R?	Baikal, Selenge Delta	1 ad observed	Fefelov *et al* 2001
Pomarine Skua	8 Jun 1992	R?	Northern Baikal	2 observed	Pizhyanov *et al* 1998

Mediterranean and the Black Sea as a vagrant. The easternmost recovery of a British-ringed Great Skua, an immature, comes from near Volgograd, between but north of the Caspian Sea and the Sea of Azov (Furness 2002b). All sightings and records of large skuas elsewhere in the Region are regarded here as pertaining to southern hemisphere skuas, either as true vagrants or as juveniles and immatures on dispersal. Consequently, the strongest evidence to refute this assumption would be if Great Skua mtDNA is eventually obtained from analyses of 'large skua' feather or blood samples obtained in this part of the Region. The OBRC may decide to re-examine their records on their database of large skuas as to assigned identity (22 records within the 1962-2005 period).

Arabian Sea – Gulf Offshore Records

The vast majority of records of skuas at sea and on migration in the OSME Region relate to individual birds or small flocks, which generally is the norm (Cramp & Simmons 1986). The very recent trend of pelagic trips, mostly off Oman, may inform skua movements in future, but for this paper, offshore skua records (1951-2003) come mostly from the RNBWS database, which is subject to a constant validation process to dispense with records deemed inadequate. Because the RNBWS records are largely dependent on competent observers happening to be on a ship passing through the OSME Region, the database is of random rather than systematic observations. Nevertheless, there are some 38 records of northern hemisphere skuas in the Arabian Sea from the Gulf of Aden through the Gulf of Oman to Kuwait, 10 being in return migration months, 7 in outward migration months, 12 in winter months and the remainder being 'loafers' in summer – presumably non-breeders, immatures or juveniles. At least 150 birds are positively recorded, and a few other entries cite such as 'many', 'occasional sightings' or '3 out of 12 positively identified'. 23 records were of Pomarine

Table 7. Iranian records of Arctic Skua *Stercorarius parasiticus* and Pomarine Skua *S. pomarinus* between 1971 and 2004. **Key**: M = Migration season, O = Outward migration, R = Return migration, W = Winter.

Species	Date	M	Location	No	Remarks
Skua sp	01 Dec 1972	W	Gorgan Bay, Miankaleh Peninsula, Mazandaran	3	DA Scott *in litt.* Very bad weather
Skua sp	13 Sep 1975	O	E end of Miankaleh Peninsula, Mazandaran	1	DA Scott *in litt.*
Skua sp	15 Sep 1975	O	Offshore Miankaleh Peninsula, Mazandaran	2	DA Scott *in litt.*
Skua sp	Feb 2004	W	Qeshm island, off Qeshm town	1	DA Scott *in litt.*
Arctic Skua	10 Jan 1971	W	On shore W of Bandar Anzal, Gilan,Caspian	1ad	DA Scott *in litt.*
Arctic Skua	15 Sep 1971	O	W end Anzali Mordab, Gilan, Caspian	1ad	DA Scott *in litt.*
Arctic Skua	01 Dec 1972	W	Flying S into Gorgan Bay, Miankaleh Peninsula	15	DA Scott *in litt.* Very bad weather
Arctic Skua**	16 Jan 1974	W	Caspian Sea, off Now Farahabad, Mazandaran	3	GA Atkinson-Willes via DA Scott *in litt.*
Arctic Skua	13 Sep 1975	O	E end of Miankaleh Peninsula, Mazandaran	4	DA Scott *in litt.*
Arctic Skua	15 Sep 1975	O	On shore Miankaleh Peninsula, Mazandaran	1imm	DA Scott *in litt.*
Arctic Skua	26 Apr 1998	R	Straits of Hormuz, Bandar Abbas	3	Pale-phase. BirdQuest tour, DA Scott (leader) *in litt.*
Arctic Skua	28 Apr 1998	R	Miankaleh Peninsula	2	BirdQuest tour, via B Yelland, DA Scott (leader) *in litt.*
Arctic Skua*	15 Jan 2001	W	Khor-e-Tiab, Hormozgan Province	1	Midwinter counts, M Sehatti-Sabet *in litt.*
Arctic Skua	13 Apr 2001	R	Beach-front, Bandar Abbas	2	BirdQuest tour, DA Scott (leader) *in litt.*
Arctic Skua	13 Apr 2001	R	Hara Protected Area, Hormozgan	2	BirdQuest tour, DA Scott (leader) *in litt.*
Arctic Skua*	22 Jan 2002	W	Helle Protected Region	1	Midwinter counts, M Sehatti-Sabet *in litt.*
Arctic Skua*	12 Jan 2004	W	Caspian Coast, Hashtpar-Anzali	1	Midwinter counts, M Sehatti-Sabet *in litt.*
Pomarine Skua	02 Mar 1973	R	E end Miankaleh Peninsula, Mazandaran	1imm	DA Scott *in litt.*
Pomarine Skua	15 Sep 1973	O	Caspian Sea off Miankaleh Peninsula	1imm	DA Scott *in litt.*
Pomarine Skua	28 Sep 1973	O	E end Miankaleh Peninsula, Mazandaran	1imm	DA Scott *in litt.*
Pomarine Skua	27 Nov 1975	W	Flying S Ashuradeh, Miankaleh Peninsula	1	DA Scott *in litt.*
Pomarine Skua	26 Feb 1976	W	Between Bandar Abbas & Qeshm island	1	Ben King via DA Scott *in litt.*
Pomarine Skua*	17 Jan 2000	W	Gulf Coast, Bandar-e-lengeh-Gavbandy	1	Midwinter counts, M Sehatti-Sabet *in litt.*
Pomarine Skua*	12 Jan 2004	W	Caspian Coast, Hashtpar-Anzali	1	Midwinter counts, M Sehatti-Sabet *in litt.*
Pomarine Skua*	21 Jan 2004	W	Caspian Coast, Chalus-Babolsar	1	Midwinter counts, M Sehatti-Sabet *in litt.*

Skua, but only 8 were of Arctic, and 2 of Long-tailed, the remainder not being identified as to species. The RNBWS database' Pomarine and Arctic Skua records from the western coast of the Indian subcontinent or offshore spread of dates that do not rule out an offshore wintering area. Interestingly, there were also 10 records of 'large' skuas, whose species attribution we will leave undefined within the area of interest, and 7 others to the south and east, the dates slightly favouring immatures and non-breeders during the southern breeding season.

Red Sea, Egypt, Israel and adjacent eastern Mediterranean

In addition to those records in Meininger & Sørensen (1986), we obtained a few older records of skua sightings in the Red Sea, mostly shore-based (Effie Warr pers comm), but here we also include some offshore records from the Gulf of Aden up through the Red Sea from the RNBWS database (two large skuas, one Pomarine and two Arctic). For the Port Said-Gulf of Suez area, the RNBWS database has 6 records in return migration months, three in outward migration months and 5 in winter, involving 26 birds: - two singleton Great Skua records at Port Said (1960 & 1964), 4 Pomarine Skua records – three singletons at Port Said (1964 & 2001) and the fourth record of three birds transiting the Suez Canal at Little Bitter Lake (1988) – and 8 Arctic Skua records, two in the Bay of Suez (7 birds, 1963), the others (11 birds, 1963, 1965, 1967, 1988, 2001) in or near Port Said. Some of these records are the same as those cited in Meininger & Sørensen (1986), but all appear to be of the same order. These numbers by themselves support the idea of an opportunist rather than established migration route through Egypt along the Suez Canal, but since the 1980s the growth of birdwatching at the northern end of the Gulf of Aqaba through Israel has helped confirm that the established return migration route in this area has a longer overland component than the Suez option – this had been suggested by Meininger & Sørensen (1986).

Yoav Perlman: "Overland skua migration over Israel seems to be regular, and in relatively large numbers. All records I remember are in spring, when flocks are seen to migrate north from the Gulf of Aqaba almost daily - all three *Stercorarius* species. I remember seeing flocks of tens of Arctics a few times myself, and I can recall a record by Tomer Landsberger of 29 Long-tails migrating north over Eilat in spring 2005. After leaving Eilat, the skuas gain great altitude, and are rarely seen over the Arava valley, although I recall a record by Daniel Gelbart of about 120 skuas (*qv*) over the southern Arava. Records from the north of Israel are very few and in tiny numbers".

The Gelbart skua sighting occurred at 05:50 on 24 May 2001 at North Beach. 'A group of about 60 skuas at a high altitude came in from the sea and continued northwards overland. Towards the north, there was another group of about 50 skuas that had already passed. Although both groups were provisionally assessed as Arctic rather than Pomarine, at the same time another group of skuas, 24 Arctic, 8 Pomarine and two Long-tailed Skuas remained close to shore but did not continue north and so it is quite possible that the first two groups at high altitude were similarly constituted' (Daniel Gelbart pers comm citing own notes).

Another possibly relevant skua sighting, made during a European Honey Buzzard *Pernis apivorus* survey at 700m asl, was of three pale-phase adult Arctic Skuas migrating north over the Eilat mountains, at Mount Yoash, 8km inland from the Red Sea, on 21 May 2002. The skuas passed 300m above the survey point, but below the stream of Honey Buzzards (Daniel Gelbart pers comm). These recent records confirm the suppositions by Meininger & Sørensen (1986) that skuas on return migration soar to altitude at the Eilat coast and migrate onwards out of sight, and that this is a

significant, if minor, overland migration route in spring. Meininger & Sørensen (1986) and Shirihai (1996) both suggest that loop migration may occur, outward migration taking the Mediterranean coastal route at least as far as the Suez Canal and the Nile, the return concentrating through Eilat. However, that assumes that the same populations are involved, which is not yet proven, although dark-morph Arctic Skuas have been quite commonly recorded. Dark-morph Arctic Skuas mostly come from populations south of the tundra – in this case from locations from NW Russia westwards and southwards. (Although Pomarine Skua has a dark morph, it comprises 5-20% of all breeding populations) (Furness 1996). Furthermore, there are few data concerning overland outward migration across Sinai or along the north-south watercourses. Diurnal soaring birds may have escaped notice along Egypt's Mediterranean coast, but if the movement overland were nocturnal, detection would be near-impossible. In Greek waters, Arctic Skua is a widespread but scarce passage migrant (Akriotis & Handrinos 1997), which aligns with its status from the Bosphorus to the Dardanelles (Kirwan *et al* in press). One old ringing recovery in Greece (1941) was of a bird ringed near Murmansk, which again suggests overland passage from the breeding grounds into the Black Sea. It is likely that skua movements on the Black Sea west coast are part of the same passage (Dimitrov *et al* 2005). In Greek and Bulgarian waters, the scarcity of Pomarine Skua may be because many have been overlooked (Akriotis & Handrinos 1997, Dimitrov *et al* 2005). The routes by which Great Skua reached Greek waters (5 records, Akriotis & Handrinos 1997) and Bulgarian waters (the only records deemed valid are: 1-4 birds summer and autumn 1986 off Bourgas, 3 birds at Lake Atanasovo in summer 1988, Dimitrov *et al* 2005, Tanyo Michev pers comm). Terns now also are scarce in the eastern Mediterranean, one reason advanced being that since the Aswan Dam reduced the flow of nutrient and replacement material to the Nile Delta, fish stocks have declined, as has the fishing industry, the resultant scarcity of fish driving away terns, and perhaps skuas intending to winter there (Colin Richardson pers comm). Both Pomarine and Arctic Skuas off Lebanon were considered vagrant or extremely rare passage migrants (Ramadan-Jaradi & Ramadan-Jaradi 1999).

Cyprus, Turkey and adjacent seas

The older records reflect a more fragmented (but still well-recorded) approach than of recent decades, but it is likely that Arctic Skua was more frequent in Cyprus waters than the records show, as a scarce but regular passage migrant in spring and autumn. Off the central north coast, 17 (+ three skua sp) were recorded flying west in autumn 1999; 13 were pale-phase. A further bird was recorded in Nov 2003 (Peter Flint pers comm). MB recorded from the Ákamas Peninsula 5 skua sp flying west across Chrysocchou Bay in Oct 1997 and two skua sp flying east off the sea to cross the Zakaki sandspit and Akrotiri Salt Lake in Mar 2002. Pomarine Skua is classed by BirdLife Cyprus as an accidental vagrant in Cyprus waters. It is likely that increased and coordinated seawatching in Cyprus will obtain more sightings of both species.

The most authoritative collation of reliable Turkish records can be found in *The Birds of Turkey* (Kirwan *et al* in press), in which the 26 Pomarine Skua records since 1880 are mainly from the Bosphorus, Aegean and Mediterranean coasts. The 112 Arctic Skua records include several inland at Burdur Gölü, Inner Anatolia (thrice at Kulu Gölü and once at Ereğli marshes) and East Anatolia (Bendimahi, Van Gölü and near Van town) (Guy Kirwan *in litt*). The current status of skuas in Turkey is: Pomarine Skua, rare passage migrant (Kirwan *et al* in press), although there are several recent records of flocks (Guy Kirwan pers comm); Arctic Skua, passage migrant and winter visitor; Long-tailed Skua, perhaps only a vagrant (8 records, Kirwan *et al* in press), and Great Skua, vagrant (6 records, 4 of which lack or are supported by little documentary

evidence; 4 of the 6 records are winter records) (Kirwan *et al* in press, Kirwan *et al* 1999[1]). The *Birds of Turkey* cites the original references contained in former compilations of Turkish bird species, *eg* Kasparek (1986, 1992) and the Turkey Bird Reports (Kirwan & Martins 1994, 2000, Kirwan *et al* 2003).

Off the Turkish Black Sea coast, scattered winter sightings of Arctic Skua (*eg* 7 in 6 days – Jan 1997 – at 6 locations, 5 dark-phase, two pale-phase: Geoff Welch pers comm) suggest that it winters regularly in the Black Sea in small numbers, certainly in years without prolonged harsh weather. The Kuşbank (2007) database contains only two other winter records, an April record, and also an inland record at Kulu Gölü for 30 Jan 2004. Correlation of Kuşbank data with information published elsewhere in English would be a worthwhile aim.

We conclude that Arctic, and quite possibly Pomarine Skuas, make regular use of a route involving the Bosphorus (not necessarily always crossing the sea) and the Sea of Marmara, thence probably along the Aegean coast, but, given the propensity of Arctic Skua for overland movement, the possibility of most birds flying more or less due south in autumn from the Black Sea cannot be discounted. For example, a most likely route would be for birds to follow the Sakarya River from the coast (about midway between Istanbul and Zonguldak), south and east to the vicinity of Polatlý, near the edge of the Central Plateau, where they could head southwest towards Antalya, taking them over Eğirdir, Beyşehir and Burdur lakes, although this is not exactly a direct route. Alternatively, from the plateau, they could head southeast towards Adana, taking them over Kulu and Tuz. Another route would be south and west from the Kızılırmak River delta to Ankara, thence over Kulu (which lake has several records during passage periods, including one of Long-tailed Skua, in 1991) and Lake Tuz towards Adana (routes suggested by Geoff Welch).

Cramp & Simmons (1986) observed that inland skua records reported to them comprised mostly single birds, sometimes two and rarely more. This accords with Turkish records (Guy Kirwan pers comm). The broad scatter of records suggests one or a combination of the following options: low-intensity of passage corridors, broad-front passage, or that migratory corridors are considerable in number (Guy Kirwan *in litt*).

A more easterly route crosses many high mountain chains, and it may be that it is regularly used by several other species. The Turkey Bird Reports mention records at Van Lake of Black-throated Diver *Gavia arctica* and Long-tailed Duck *Clangula hyemalis* as well as Pomarine, Arctic and Great Skuas during passage periods.

Given the enthusiasm and growing expertise of the increasing number of Turkish birdwatchers who submit their records to the Turkey Bird Report and electronically to Kuşbank, it is likely that our knowledge of skua occurrence and migration patterns in and near Turkey will soon increase.

SKUAS AND TUNDRA CYCLES

It would be an obvious suggestion that skua numbers observed on migration are affected by breeding success, which for some species depends on tundra-based biological cycles. Low concentrations of prey in any year in the breeding grounds certainly correlate with reduced *Stercorarius* skua fledging rate. However, Arctic Skua is not lemming-dependent and may nest in more widespread fashion, hunting other bird species when lemmings are scarce (Ims & Fuglei 2005). Furthermore, Long-tailed Skua is able to adapt to some extent to other prey and food sources such as large

insects (Ims & Fuglei 2005), but it is more site-faithful than Pomarine Skua. The latter can form large flocks in the Arctic in search of lemming-rich areas, which in the main are inland. All mammal and avian predator numbers follow the lemming cycle to a greater or lesser extent, but adult Pomarine skuas of course can move elsewhere inland, sometimes for long distances (Korpimäki *et al* 2004). In lemming-poor years, skuas may move to the coast, where prey species variation and mammal predators are more consistent in number (Ims & Fuglei 2005). However, a poor breeding season will not greatly affect adult *Stercorarius* skua numbers, skuas being long-lived seabirds – in those years, skua chick survival is also affected by increased mammal predation (mostly by Arctic fox *Alopex lagopus*) and by high mortality from sibling aggression. We suggest the hypothesis that when lemmings are scarce, the tendency for Pomarine Skuas to form large flocks increases the chance that a higher proportion of birds will migrate by sea routes, because the 'peer pressure' of flocking lasts longer.

However, a factor that may have stabilised the lemming cycle in its present form is the presence in sufficient years of snow depths that permit the lemmings in winter or late spring to initiate population build-up when concealed (Ims & Fuglei 2005), thus minimising predator-control mechanisms (Korpimäki *et al* 2004). If annual snow depths diminish or disappear with time in line with the general warming of the tundra that has been recorded since the 1990s, then the lemming cycle could flatten out to low levels, thus reducing prey biomass available to skuas. Quite how other prey species within the overall tundra ecosystem will be affected by the warming process is uncertain, but if most diminish, so will skua numbers overall, although doubtless we would see some adaptation by Long-tailed and Arctic skuas. The trends at the western tundra limits are discouraging – Snowy Owl *Bubo scandiaca* (BirdLife International 2005) and Arctic Fox are declining rapidly in Fennoscandia (Ims & Fuglei 2005). The breeding population of Snow Goose *Chen caerulescens* on Wrangel Island formerly achieved breeding success only once in every four years, when the snowpack melted sufficiently early. They have bred successfully every year since 2002, the wintering population in Washington State USA doubling to 83 000 birds since 1997 (McKenna 2007). The average increase in temperature in March, April and May on Wrangel since 1977 is 2°C, consistent with changes in the Arctic as a whole, as measured by the International Arctic Research Center in Fairbanks Alaska (McKenna 2007). Should this trend continue, it bodes ill for skuas and all Arctic fauna and flora.

DISCUSSION

The difficulties of studying overland skua movements are immense. Not only are the areas vast, but average observer density is exceptionally low year-round. Although the extent of loop migration probably is much greater than hinted at where totals recorded favour spring or autumn counts, the effect may well be masked by the impact of poor breeding seasons. Food shortages at or bad weather on the breeding grounds may well allow earlier departures by failed breeders, and adverse weather during the early stages of return migration may favour the build-up of concentrations of migrant skuas before major overland route sectors. Food shortages on the breeding grounds are usually linked to tundra cycles (*qv*), mostly concerning lemming numbers, on the breeding grounds. Furthermore, the extent of wandering in the world's oceans by individual birds, particularly before they are old enough to breed, is extraordinarily difficult to quantify. There is no reliable method of distinguishing in goal areas migrant birds from wanderers at sea from about October to February. However, there are tantalising glimpses of what might represent the true extent of wandering. For example, of Arctic Skuas ringed on their Scottish breeding grounds there have been four recoveries of unexpected wanderers – two from the eastern

Mediterranean and remarkably one each from central Sudan and the Congo Basin (Wernham *et al* 2003), quite a recovery rate for 'off the beaten track' individuals. The species winters along the shores of the southern continents in the main, and so the surmise that birds encountered in the Indian Ocean had wandered round southern Africa seemed reasonable, as mentioned by Meininger & Sørensen (1986), but ringing recoveries of Scottish birds from the eastern Mediterranean raise the possibility that the overland route to the Indian Ocean was a plausible alternative (Furness 2002a).

To guarantee a food supply en route, skuas on overland passage could track migratory shorebirds, much as wolves track caribou in the Nearctic. Shorebird flyway populations, especially at choke points or at major resting sites, seem an ideal source of prey, but observations of such as Ruff *Philomachus pugnax* migrating westward along the northern tundra so far have not suggested anything other than opportunistic predation, which may be more common behaviour along established skua migration routes than previously believed (Kolbjørn Schjølberg pers comm). The lack of records of groups travelling overland supports the idea of opportunistic feeding en route. The numbers recorded in the central Caspian could be explained by low-intensity passage resulting in accumulating totals, but it seems that low-intensity passage is maintained, because these observations characteristically emphasise movement of small groups over a period of several days. Undoubtedly, individual birds will remain in the southern Caspian area, if conditions remain sufficiently clement. We could not find any data on whether overland migration occurs in a number of preferred corridors or on a broad front. Skuas have also been observed attacking landbirds over the sea off Oman (Schjølberg 2006).

Skuas on migration over sea feed more on fish than at other times (Cramp & Simmons 1983), but have regularly been recorded killing small mammals and other bird species, including gulls, for food (Cramp & Simmons 1983). The extent of en-route predation of other migrant species simply is not known, nor is the route consistency of skuas on overland passage. Nevertheless, skuas making long overland journeys must do so in an energy-efficient way if they are to survive. Returning to Bannon's (1993) observations of skuas that appeared to have crossed the Empty Quarter, there are two aspects of this journey, assuming it to be regular behaviour, that merit some attention. Firstly, a 900km direct journey from near Salalah on Oman's south coast due north to Dubai must be as energy-efficient as, or better than, an oversea route of 1700km. Hypothetically, the energy demands of a short route are always less than a long route, but the flight techniques on these two routes must differ. Thermals over the sea are scarce and usually only over shallow seas and so seabirds make use of two low-altitude phenomena to assist them. One is 'ground-effect' where just above the surface the compression of air reduces the lift required (best demonstrated by pelicans), and the other is 'wind-induced vorticity', where many vortices form downwind of a wave, allowing birds to make use of the upward-rotating component (best demonstrated by shearwaters and gannets). Skua-sized seabirds can apply both techniques over the sea. Over land, soaring flight in thermals provides the most efficient flight technique that skuas could use, as reported by Meininger & Sørensen (1986), Bannon (1993) and Daniel Gelbart (pers comm). Skuas commonly use flapping flight for extended periods, and so a lengthy overland journey such as that proposed by Bannon (1993) would require both flapping and soaring flight. His observations all occurred in the last hour before dusk, implying that the birds had flown in daylight across the northern part of the Empty Quarter, where the very warm air at low and medium altitudes can be severely turbulent (MB can confirm this from painful personal experience in small aircraft). Assuming a minimum migration groundspeed of 50km/h on the overland 900km, we

are left with a minimum overland flight time of 18 hours. At this time of year, daylight in eastern Saudi Arabia lasts about 12 hours, the onset of darkness being around 1900 local time, which would require the overland flight to begin at around 0100. If landfall on the Arabian Sea coast near Salalah occurs at this time, it suggests that a clear sky with enough moonlight is essential for the birds to avoid the mountains that lie variously on the coast, or where there is a coastal plain, inland. Of course, the use of overnight ground roosts en route cannot be ruled out, but a single continuous journey may be the more regular option, given the lack of diurnal invertebrate prey en route. Radio-tracking is the only answer to this puzzle, but catching a skua that is going to travel overland is problematical.

THE FUTURE

Given that conservation organisations within the OSME Region and elsewhere often give priority to identifying flyways overland, it seems to us that much valuable data could be obtained on skua and other seabird movements through enclosed and relatively narrow seas – *eg* the Caspian and Black Seas, the Gulf of Oman – fairly simply and cheaply. We encourage BirdLife International to develop with its partner organisations methods of obtaining regular and systematic observations in such areas. In the Caspian and wherever there are oil and gas platforms, the industries concerned might consider that supporting such a cause by allowing a programme of regular observations to be mounted would bring plaudits, rather than the usual criticism, of high environmental risks being taken. A programme of regular pelagic trips undoubtedly would be a source of invaluable data. Once the degree of regularity of the migration patterns can be established, it is likely that firmer conclusions could be reached on several aspects: the effects of the tundra cycle on yearly skua numbers on migration, the stability of overland passage, location and number of overland routes and whether overland migrants come largely from certain sub-populations.

ACKNOWLEDGEMENTS

To John Aldridge, Vasil Ananian, Simon Aspinall, Dawn Balmer, John Bannon, Viktor Belik, Keith Betton, WRP Bourne, József Büki, Sergej Bukreev, Gadzhibek Dzhamirzoev, Peter Flint, Professor Bob Furness, Daniel Gelbart, Ramaz Gokhelashvili, Peter Hellyer, Stan Howe, Süreyya Isfendiyaroglu, Ian Harrison, Mike Jennings, Abolghasem Khaleghizadeh, Howard King, Guy Kirwan, Tanyo Michev, Boyan Milchev, Nial Moores, Dimitar Nankinov, Yoav Perlman, Richard Porter, Colin Richardson, Mohammad Ebrahim Sehheti-Sabet, Kolbjørn Schjolberg, Derek Scott, Frank Ward, Effie Warr, Geoff Welch and Mike Wilson, many thanks indeed.

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The first breeding record of Thick-billed Lark *Ramphocoris clotbey* in Kuwait and concomitant behavioural observations

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The Thick-billed Lark *Ramphocoris clotbey* is a resident breeder in Morocco and the Western Sahara (Thévenot *et al* 2003, breeding season Feb–Jun), in Mauritania (Borrow & Demey 2004, Snow & Perrins 1998), Algeria and Tunisia (Isenmann & Moali 2000, Isenmann *et al* 2005, laying period Mar–Jun) and Libya (Snow & Perrins 1998). This desert species is apparently only a rare visitor to Egypt (a breeding record for 1995), Israel (bred 1999) and Syria (Goodman & Meininger 1989, Granit 1999, Serra *et al* 2005, Shirihai 1996, Snow & Perrins 1998). A clutch of Thick-billed Lark eggs was discovered in the Syrian desert, though whether in present-day Syria is not certain (Baumgart 2003, Kirwan 2004). It is a scarce resident in Jordan (Andrews 1995). Thick-billed Lark breeds sparingly in the northern half of Saudi Arabia though records are of probable, not confirmed, breeding; nest building has been noted there March and June (Jennings 1995 *in litt*).

In Kuwait, Thick-billed Lark was noted previously as a winter and spring visitor to the west in small numbers, which might have bred (Haynes 1979, Bundy & Warr 1980). Since 1985, however, until 2002, there were no Kuwait records (Cowan & Pilcher 2003). In 2002 Thick-billed Lark was recorded in western Kuwait by CWTP and STS near Salmi, in square MB35 of Jennings' (1995) Atlas of the Breeding Birds of Arabia (ABBA) project. On 8 March a single

Plate 1. Thick-billed Lark *Ramphocoris clotbey* nest, Kuwait 2002. *CWT Pilcher, © L Pilcher*

Plate 2. Male Thick-billed Lark *Ramphocoris clotbey* on nest, Kuwait 2002. *CWT Pilcher, © L Pilcher*

Thick-billed Lark, another single and then two individuals were seen, in a few kilometres. On 22 March two Thick-billed Larks were seen closer to Salmi: one of them collected plant material including soft heads of grasses; they then flew together over a berm (an earthen wall). One returned and collected more plant material. A nest of this species was found on 29 March when a sitting bird was flushed at close range, in the vicinity of the 22 March birds. Two adults were present, one of which then sat on the nest despite the observers being only about 20 feet away.

Plate 3. Female Thick-billed Lark *Ramphocoris clotbey* on nest, Kuwait 2002. *CWT Pilcher, © L Pilcher*

The nest (**Plate 1**) was beside a low green plant (*Fagonia* sp, GM Brown *in litt*) on the shoulder of a west-facing shallow gully. It was on a stony surface and deep-cupped, the rim level with the ground surface. It was lined with long grasses and there were also some short feathers in the cup walls. At the bottom of the nest were some seed heads. The nest held four large reddish-marked eggs. A terrace of flat stones adjoined one section of the nest rim. This species' nest is described in Cramp (1988) as being a *shallow* depression [italics are ours] lined with vegetation, whilst Harrison & Castell (2002) described the cup of plant material of the nest as being *supported* on one side by a stone or plant tuft and *built up* on the other with a collection of small pebbles or earth fragments. A Thick-billed Lark nest found in March 1988 in northern Saudi Arabia (Jennings 1988) was more similar to the Kuwait one: on a gravel surface, by a small plant, deeply-cupped into the ground with a pebble glacis surrounding it, nest cup of grass and twiglets and lined with some downy plant heads.

The two adults were similar in plumage, although inspection of STS's video sequences of the birds and CWTP's photos showed the black facial coloration of one bird was less extensive, and its breast and belly less densely marked and therefore was presumably the female. It had appeared that one of the birds was on the nest from about 10.30 to at least 13.30 hours local time, when STS and CWTP left the area. It was noticed, though, that this sitting bird must have turned at some point to face the opposite direction. In fact, the birds changed over at least once. The video footage and photos showed male and female each sat on the nest, facing different directions (**Plates 2 & 3**). In Cramp (1988) it is stated that it was not known whether male Thick-billed Larks participate in incubation. Harrison & Castell (2002) stated that incubation is by female Thick-billed Lark only.

One of the birds, in display-flight around the nest (therefore presumably the male), would rise quite high then circle the site, including gliding for long periods assisted by apparently heading into the wind. In the first stage of his descent, the wings were held very bowed; in the second stage a falcon-like stoop was performed, at speed, to very close to the surface of the ground, before landing. Song was not heard, perhaps due to the wind. According to Cramp (1988) the male song-flight [*ie* display-flight] of Thick-billed Lark apparently involves slow descent but has seldom been witnessed. This descent has been described as gliding, apparently the bird throwing itself right and left in zigzag fashion, but also as descending 'parachute' fashion (Cramp 1988). A fast stoop was not mentioned but Cramp (1988) did note an observation of a Thick-billed Lark that "flew low over ground towards nest in 'lame flight' and, when *c*2m from nest, rose straight up in the air and dived down to sit quietly by nest...".

On the ground both birds gave somewhat plaintive 'swee' calls. The male at times bowed, lowering his breast and head close to the ground. A pair of Temminck's Horned Larks *Eremophila bilopha* had a nest with eggs about 30m from the Thick-billed Larks' nest. On leaving the nesting area, a Thick-billed Lark was found *c*1km away.

On 4 April, STS visited the Thick-billed Lark nest and found it empty though in very good condition, with no sign of any eggshell in it or nearby. A Thick-billed Lark was seen. The Temminck's Horned Lark nest was also missing its eggs, and eggshell, and was partially filled in with stones. Presumably the nests had been predated. The observations of 29 March constitute the first confirmed breeding record of Thick-billed Lark for the ABBA area (Jennings *in litt*).

More general observations from these March and April records of Thick-billed Lark in Kuwait follow. The birds were relatively large, dwarfing Temminck's Horned Larks when beside them. An adjacent Crested Lark *Galerida cristata* was noticeably smaller. Their posture was often upright, with bill, silvery grey or very pale blue in colour with a darker tip, held up at an angle. Their 'crest' was raised at times. In flight, the upperwing showed a strong contrast between the broad pure-white trailing edge and the black middle area and brown fore-edge. The white trailing edge also contrasted with the otherwise blackish coloration of the underwing. The wings appeared to be very narrow at long distances, the white trailing edge seeming to disappear. The edge only reappeared at this range when the birds were outlined against rising ground or berm. In Cramp (1988), the effect of this plumage pattern in flight was noted as increasing the long and pointed appearance of the wings of Thick-billed Lark. The rump was white, which agrees with the illustration in Mullarney *et al* (1999) but contrasts with that in Snow & Perrins (1998), which depicts a sandy-brown rump concolorous with back and uppertail-coverts.

A soft 'chip' or 'pip' call was heard, which had a bell-like quality according to STS. These calls were given singly or repeated two or three times, when birds flew close past the observers. There were some other quiet single notes too, but they were difficult to discern. The birds' method of descent from altitude was remarkable: they appeared to drop like a stone with the wings held out stiffly and very sharply decurved, this and the wing pattern suggesting Redshank *Tringa totanus*. Though not apparent when observed, it is possible that these descents were part of display. STS and CWTP were rather surprised by how far the very first bird flew (half a kilometre) after it flushed and it and the others seen on 8 and 22 March all seemed rather shy. According to Cramp (1988), the escape-flight of Thick-billed Lark is short and low, ending in an abrupt stop, though one bird was described in Cramp (1988) as flying away "very fast, swerving and twisting in jerky flight, giving 'co-ep' call...". In Algeria, a male called continuously and strutted nervously about before finally flying off, with a female, *c*300m or more (Cramp 1988).

Subsequently, a pair of Thick-billed Larks was observed on 8 March 2005 (Gregory 2005 *in litt*) and on 19 February 2006 (GM Brown *in litt*), in this same area of Kuwait near Salmi. In 2002, five Thick-billed Larks were seen at Ratqa, northern Kuwait, on 4 March (Gregory 2005).

ACKNOWLEDGEMENTS

STS and PJC thank Dr Gary Brown (KISR, Kuwait), George Gregory and Mike Jennings for their replies to queries. Kuwait ornithology is indebted to Professor Chris Ford (Kuwait University), Dr Jim Bishop (KISR) and Mrs Lea Pilcher for ensuring the safe-keeping of ornithological materials of the late Charles Pilcher, Professor of Pharmacology at Kuwait University, and ornithological guru in Kuwait 1979–2004.

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Ringing four breeding waterbird species at Lake Tashk, Iran – supplemental data

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This short note supplements the data in Sehhatisabet *et al* (2006), which concerned four breeding waterbird species at Lake Tashk in the Bakhtegan Protected Region, Iran – Great White Pelican *Pelecanus onocrotalus*, Little Egret *Egretta garzetta*, Eurasian Spoonbill *Platalea leucorodia* and Slender-billed Gull *Larus genei*. DOE ornithologists ringed 859 pulli in 2004-5. Most of the 2006 data (from 12-14 June), omitted from Sehhatisabet *et al* (2006) due to pressure of time, are presented here.

Table 1. Numbers of adults, immatures and of flightless pulli counted on Jasirah Bozorg and Jazirah Kouchak, Lake Tashk in 2006.

Species	Ad+Imm	Flightless pulli	Totals
Pelecanus onocrotalus	1	0	1
Egretta garzetta	800	200	1000
Platalea leucorodia	1350	150	1500
Larus genei	1500	2000	3500

Table 2. Pulli of three species ringed on Jazirah Bozorg and Jazirah Kouchak islands in Lake Tashk in 2006, with ring details.

Species	2006	Ring series and serial numbers	2004-5 totals
Egretta garzetta	68	GG 1501-1506, 1508- 1555, 1557-1570	168
Platalea leucorodia	114	LL 29002-29050, 29061-29075, 29101-29150	316
Larus genei	250	J 4751-5000	258
Subtotals	**432**		**742**

NB Including *Pelecanus onocrotalus*, the grand total of all four species ringed in 2004-2006 was 1291 birds.

Table 3. Waterbird species observed around Lake Tashk and western Lake Bakhtegan during June 2004-2006.

Lake ▶	Bakhtegan, west			Tashk		
Species ▼ Years ▶	**2004**	**2005**	**2006**	**2004**	**2005**	**2006**
Northern Shelduck *Tadorna tadorna*	0	0	72	36	120	48
Ruddy Shelduck *Tadorna ferruginea*	0	0	5	0	0	0
Black-necked Grebe *Podiceps nigricollis*	6	500	250	120	10	15
Eurasian Spoonbill *Platalea leucorodia*	1	19	85	1210	550	1500
Grey Heron *Ardea cinerea*	0	38	0	0	0	0
Purple Heron *Ardea purpurea*	0	30	0	0	0	0
Great Egret *Ardea alba*	0	103	0	0	0	0
Little Egret *Egretta garzetta*	20	4	12	938	700	1000
Greater Flamingo *Phoenicopterus roseus*	13935	1	10000	4784	75	4000
Great White Pelican *Pelecanus onocrotalus*	0	0	0	22	22	1
Black-winged Stilt *Himantopus himantopus*	0	1	0	5	0	0
Pied Avocet *Recurvirostra avosetta*	10	0	0	0	0	0
Common Ringed Plover *Charadrius dubius*	5	25	0	4	8	0
Red-necked Phalarope *Phalaropus lobatus*	0	0	3000	0	0	0
Common Redshank *Tringa totanus*	3	0	0	0	0	0
Green Sandpiper *Tringa ochropus*	0	1	0	0	0	0
Slender-billed Gull *Larus genei*	10	55	0	3180	4500	3500

Table 4. Some waterbird species ringed at Gumboon on 16-20 December 1967.

Species	Nos ringed	Species	Nos ringed
Common Teal *Anas crecca*	13	Common Snipe *Gallinago gallinago*	3
Water Rail *Rallus aquaticus*	2	Redshank *Tringa totanus*	3
Jack Snipe *Lymnocryptes minimus*	3		

Table 1 shows the 2006 counts made on Jazirah Bozorg (Great Island) and Jazirah Kouchak (Small Island). Unfortunately, only one Great White Pelican was found, which suggests that the species may be on the brink of abandoning Lake Tashk as a breeding site, although a flock of 17 had been seen at Jazirah Bozorg in May. We did find three nests with a total of 6 unhatched eggs on Jazirah Bozorg, and we can but hope that Great White Pelican returns in 2007. Little Egret numbers appear relatively stable over the three breeding years, but although the total of Eurasian Spoonbill adult and immature birds was by far the highest recorded, productivity, in the form of flightless pulli, was disproportionately low. **Table 2** details the 2006 ringing effort with 432 pulli ringed. We were unable to carry out a comprehensive count of nests and eggs in 2006. **Table 3** lists a range of waterbird species from the general area between 2004-2006. **Table 4**, ringing details from 1967 of a few waterbird species at nearby Gumboon, is included for

historical interest. In 2006, one Slender-billed Gull (serial EE 4606), three Eurasian Spoonbills (serials LL 53191, 39411, 39404) and one Little Egret (serials GG 4721) were found dead on Jazireh Bozorg, after the end of the breeding season.

PRIMARY REFERENCE

Sehhatisabet, ME, M Balouch, A Bahman-Pour and A Khaleghizadeh. 2006. Ringing four breeding waterbird species at Lake Tashk. *Sandgrouse* **28 (2)**: 106-113.

Basra Reed Warbler *Acrocephalus griseldis* in the Hula Valley, Israel, in 2006

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In early July 2006, we trapped and ringed four Basra Reed Warblers *Acrocephalus griseldis* at the Hula Valley (33°05'N, 35°35'E) as part of monitoring activities carried out by the Hula Valley Birdwatching Center (Israeli Ornithological Center, Society for the Protection of Nature in Israel). The birds were caught in one of our less-frequented ringing sites in the eastern part of the valley that was last visited in February 2006. The habitat consists of fishponds surrounded by a thick cover of mixed *Phragmites* sp (reeds) and *Rubus prucerus* (blackberry) bushes. After catching the first three birds on 4 July, we retrapped all three birds on 6 July and caught a fourth bird the next day. The birds included three adults (probably two males and one female, as adjudged from the larger size of males and the presence of a brood patch on the female), and a very fresh juvenile. The juvenile was at a very late stage of feather growth, where the feather shafts have not yet 'closed' (blood feathers).

In this short note we discuss the possibility of Basra Reed Warblers breeding in Israel, describe the poorly known juvenile plumage, and highlight the separation of Basra Reed Warbler from Great Reed Warbler *A. arundinaceus* and Clamorous Reed Warbler *A. stentoreus*, common species that were trapped together with the Basra Reed Warblers allowing close comparison in the hand.

Distribution

The Basra Reed Warbler is known to breed very locally in the marshes of southern Iraq, and probably also in southern Iran and Kuwait. It is classified by the IUCN as endangered, with an estimated 70-80% decline in population size during the last few decades, mostly due to drainage and destruction of marshes (BirdLife International 2007). The whole population apparently migrates to Africa for the winter. There are scattered records in Sudan and Saudi Arabia of individuals on migration, and relatively large numbers are caught annually at Ngulia, SE Kenya, as they stopover in late autumn/early winter, though according to the Ngulia ringing totals, a 20-30% decadal decline was noted in recent decades (Pearson & Backhurst 1988, Walter *et al* 2004, Birdlife International, 2007). However, their wintering areas are not known, although some birds have been recorded in Malawi, Mozambique and South Africa (Walter *et al* 2004).

In Israel, the Basra Reed Warbler is regarded as vagrant. It was first recorded in 1984, and up to 2002 it has been recorded 11 times more. Most birds were ringed at Eilat or at the Bet She'an Valley, both in the Great Rift Valley, between late April and late June (Shirihai 1996, 1999; K Meyrom pers comm). No sign of breeding has ever been noted in Israel before, but the repeated occurrence of birds in early summer, when they should already be back at their breeding sites, might have indicated that these birds bred in the general geographic area nearby.

Plate 1. Adult Basra Reed Warbler *Acrocephalus griseldis* (left) and adult Great Reed Warbler *A. arundinaceus* (right). © *Rami Mizrahi.*

Plate 2. Adult Basra Reed Warbler *Acrocephalus griseldis* (left) and adult Clamorous Reed Warbler *A. stentoreus* (right). © *Amit Geffen.*

Plate 3. Adult Basra Reed Warbler *Acrocephalus griseldis* showing some head moult. © *Rami Mizrahi.*

Plate 4. Basra Reed Warbler *Acrocephalus griseldis* 2nd primary notch. © *Yoav Perlman.*

Plate 5. Adult (left) and juvenile (right) Basra Reed Warblers *Acrocephalus griseldis.* © *Yoav Perlman.*

Plate 6. Juvenile Basra Reed Warbler *Acrocephalus griseldis.* © *Yoav Perlman.*

Possible breeding in Israel and Conservation

This documented occurrence in northern Israel indicates for the first time that Basra Reed Warblers breed away from their known breeding range of southern Iraq. All four birds were trapped in the late breeding season, and they were all trapped at the same site, within a radius of 20m. The juvenile was trapped and then retrapped twice more, together with the same adult, probably a male, exactly in the same spot. The presumed female had a prominent brood patch, which indicates that this bird finished breeding not long before. Furthermore, the fact that the juvenile was in the last stages of its wing and tail feather growth, indicates that it hatched nearby.

All of this evidence indicates that the Basra Reed Warbler bred in summer 2006 in or relatively close to the Hula Valley. In early July post-breeding dispersal has already begun. However, based on our ringing data of other *Acrocephalus* spp from northern Israel, this dispersal has never occurred over distances greater than a few dozen kilometres. The site where we trapped these birds is similar to many other sites in which we have worked very intensively during the breeding season, and yet we have never caught Basra Reed Warbler, suggesting that if it breeds in the Hula Valley, its distribution is at most very local, and it is present in very small numbers.

Shirihai (1999) suggested that after the severe reduction in the area of the southern Iraqi marshes, the Basra Reed Warbler might expand its breeding range to other zones. This hypothesis is supported by the very consistent former vagrancy pattern in Israel, occurring mainly during the breeding season in the Bet She'an Valley during the 1990s. There has been no other proof or indication of breeding away from the south Iraq marshes and the Hula Valley, but see Yésou *et al* (2007), this issue. Recent ornithological efforts surveying the marshes along the Euphrates in Syria, and ringing activities in Lebanon might provide some new information about new breeding grounds of this endangered species. Currently the Israeli Ornithological Center is initiating a conservation project on the Basra Reed Warbler. During the 2007 breeding season, we will conduct intensive surveys to locate more individuals that may be breeding at nearby sites, and assess the species' population size in Israel. Locating the birds in the field is difficult, as with all *Acrocephalus* species, so field efforts will include mist-netting and using playback calls.

Identification

The Basra Reed Warbler is a medium-sized *Acrocephalus*, intermediate in size between Eurasian Reed Warbler *A. scirpaceus* and the larger species, Great and Clamorous Reed Warblers. Basra Reed Warbler is a relatively easy *Acrocephalus* to identify, even in the field, due to the unique size and proportions, combined with typical upperpart coloration. In the hand, the combination of measurements and wing formula make identification straightforward. The identification features of the Basra Reed Warbler were noted by several authors before (*eg* Pearson & Backhurst 1988, Shirihai 1995 Baker 1997, Tenuovo 2006). It is distinctly larger than Eurasian Reed Warbler, and the coloration of the upperparts is a much colder olive-grey. The body and wing proportions are rather similar to Great Reed Warbler, including a long primary projection and shortish tail, but it is much smaller, the bill proportionately much longer and more slender, the supercilium is whitish and more prominent above the eye, and the upperparts are much colder-toned, olive-grey (**Plate 1**). Clamorous Reed Warbler has very similar bill proportions and bare-parts colour (greyish legs, horn-pink base to lower the mandible), but it has a much shorter primary projection than Basra Reed Warbler (Clamorous Reed Warblers in Israel are resident and short-distance migrants), the tail is much longer, upperpart coloration is much warmer and head markings are weaker than Basra Reed Warbler (**Plate 2**).

In the hand, the combination of wing and tail measurements and weight makes straightforward separation of Basra Reed Warbler from all other *Acrocephalus* species treated here (**Table 1**). Its wing length is intermediate between Great Reed and Eurasian Reed, with no overlap. The wing length is similar to Clamorous Reed Warbler, but the wing proportions are totally different, and they differ greatly in tail length. The tail length of Basra Reed Warblers

Table 1: Biometrics of four reed warbler species. The *Acrocephalus griseldis* measurements are of four birds trapped in the Hula Valley, July 2006 and of six birds trapped at the Bet She'an Valley, 1992-2004 (K Meyrom pers comm). The biometrics of the other three species are of birds trapped in 2005 in the Hula Valley.

Species? Measurements?	Wing (mm)			Tail (mm)			Weight (g)		
	Range	Average	SD	Range	Average	SD	Range	Average	SD
Basra Reed Warbler *Acrocephalus griseldis* (n=10)	80-86.5	83	1.99	61-63	61.875	0.63	16.5-23.8	19.04	2.06
Great Reed Warbler *A. arundinaceus* (n=364)	91-105	96.69	3.23	69-87	73.97	4.02	24.4-40.2	29.52	4.22
Clamorous Reed Warbler *A. stentoreus* (n=109)	78-95	84.32	3.11	72-91	77.80	5.71	19.4-30.6	24.08	2.18
Eurasian Reed Warbler *A. scirpaceus* (n=3207)	52-72	65.68	2.42	46-57	52.05	2.70	8-17.2	10.98	1.40

seems to be unique, apparently with no overlap with the Middle Eastern populations of the other three species. The weight range is very typical of Basra Reed Warbler too; only extremely thin Clamorous Reed Warblers and extremely fat Eurasian Reed Warblers reach the extremes of the Basra Reed Warbler weight range, but can be easily ruled out by their wing and tail measurements. All adult birds caught in July 2006 had very worn feathers. Two adult birds had some head moult (**Plate 3**), but wing and tail moult should not occur before reaching their East African stopover sites. Another important identification feature that is not mentioned in the literature is the unique notch on the 2nd primary. It is as long as in Eurasian Reed and Great Reed Warblers, but it is very deep, creating a distinct 'step' (**Plate 4**); whereas in other *Acrocephalus* species the notch is always gradual.

The juvenile Basra Reed Warbler we trapped had similar body proportions to adults, though its bill was distinctly shorter than adults (**Plates 5 & 6**). The upperparts coloration was similar to that of adults, even in fresh plumage, distinctly olive-grey, mostly cold toned with some warmer tones to the fringes of greater coverts, secondaries and uppertail coverts. Juveniles of Great, Clamorous and Eurasian Reed Warblers all show very warm brown of buff tones in fresh plumage.

ACKNOWLEDGEMENTS

The authors wish to thank Itay Shani for his help with the fieldwork, the Israeli Ornithological Center for funding the research work carried out in the Hula Valley and Zev Labinger his useful comments on earlier versions of this article.

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First record of Basra Reed Warbler *Acrocephalus griseldis* for Syria

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Basra Reed Warbler *Acrocephalus griseldis* has traditionally been believed to have a very restricted breeding range in the extensive reedbeds of south-east Iraq; it winters in eastern Africa from Sudan to Mozambique (BirdLife International 2000). The shallow wetlands in which it breeds were extensively damaged during the Iran-Iraq War of the 1980s, though they have partially recovered in recent years. At Ngulia, Kenya, a classic site for the species, the average annual ringing total has been declining continuously over the last three decades relative to the average annual total for all Palaearctic passerine migrants. It is currently listed as Endangered by BirdLife International (2007). An individual seen and photographed by PY and GF at Halabbiyah on the Syrian Euphrates on 24 April 2006 appears to represent the first record for Syria.

PY found an unusual warbler in reeds along the Euphrates, close to the Byzantine castle at Halabbiyah (35°41.286'N, 39°49.462'E). The reeds formed a discontinuous belt no more than 2m wide fringing the river. He initially thought that it was a Great Reed Warbler *A. arundinaceus.*

Plate 1. Basra Reed Warbler *Acrocephalus griseldis*, back view, at Halabbiyah, Syria, 24 April 2006. © *Guy Flohart.*

Plate 2. Basra Reed Warbler *Acrocephalus griseldis*, side view, at Halabbiyah, Syria, 24 April 2006. © *Guy Flohart.*

Both PY and GF noted its large size in direct comparison with a Common Nightingale *Luscinia megarhynchos*, but its structure recalled a small *Acrocephalus* warbler. Telescope views revealed a clearly slimmer silhouette, supporting this assessment. It was watched for one minute and digiscoped; it could not subsequently be relocated.

The apparent contradiction between size and shape was its first striking feature. The shape was quite slim, or at least elongated. The impression of slimness arose less from the body, which was proportionately more full-bodied than in the smaller Acrocephalus warblers, than from the head shape and from wing / tail length. The head was slim, visibly different from that of Great Reed Warbler and more like a small *Acrocephalus*, but the primary projection recalled Great Reed Warbler, with at least 8 primaries visible. There was marked contrast between the 'washed brown' upperparts and light underparts. The upperparts were cold brown with a greyish cast, very different from Great Reed Warbler; the head looked grey under some light conditions. The underparts were off-white with a faint brown tinge on the flanks, noticeably lighter than on Great Reed Warbler. The supercilium was striking: off-white or pale cream, very long (as long as in Paddyfield Warbler *A. agricola*) and thin, quite different from that of Great Reed Warbler. The bill looked proportionately longer and much thinner than in Great Reed Warbler. The legs were greyish. The photographs confirm the greyish cast to the plumage, the primary projection, the supercilium and the head shape; unfortunately the bill is out of sight.

This is a significant observation as there are extensive reedbeds along the Syrian Euphrates; few are accessible and very few have ever been visited by ornithologists (Rand 1994). Another Mesopotamian basin endemic, Iraq Babbler *Turdoides altirostris*, is a conspicuous and easily identified species, yet it has only recently been found to occur throughout the Syrian Euphrates (Murdoch *et al* 2004). This individual does not appear to be in a typical habitat – perhaps it was a migrant – but there are extensive reedbeds nearby. Other records from 2006 indicate that Basra Reed Warbler may be more widespread than previously suspected: four birds were caught in the Hula valley, Israel, in July 2006; one, a recently fledged juvenile, was probably locally bred (Western Palearctic News 2006, Perlman 2007, Perlman & Geffen 2007, this issue). The known breeding range of Basra Reed Warbler is limited and its conservation status is precarious, justifying active searches in the breeding season outside the known range; as identification is not straightforward, mist-netting for confirmation would be valuable. Ornithologists visiting the Syrian Euphrates are urged to look for this elusive species and to take comprehensive notes, supported if possible by photographs.

ACKNOWLEDGEMENTS

We are very grateful to David Pearson and Richard Porter for their expert comments.

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Recent decisions by the Oman Bird Records Committee – an update on first records for the Sultanate of Oman

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This short paper aims to put on the official record recent decisions taken by the Oman Bird Records Committee (OBRC), the body responsible for examining claims of sightings of birds previously unrecorded or considered rare in Oman – mainly species that have been recorded on fewer than ten occasions. Only records of first occurrences in Oman that have been accepted by OBRC since the publication of Oman Bird List, Edition 6 (2003) have been included here.

A single Dalmatian Pelican *Pelecanus crispus* was seen and photographed by Paul Jourdain on 10 January 2005 at Shinas (near the UAE border) and by Hanne and Jens Eriksen the following day. What was assumed to be a second bird was seen at Quriyat 80 km south-east of Muscat by Jeremy Moore (11 February 2005) and Ian Harrison and David Sargeant (15 February). This species breeds in Iran (now rare resident, Scott & Adhami 2006) as well as south Pakistan and northwest India. It is known to be a partial migrant from the breeding areas in these countries as well as from Turkey. The provenance of these birds is uncertain but most probably will be from the Iran populations.

An old record of a Great Frigatebird *Fregata minor* seen off Fahal Island by Michael Gallagher and Roger Woodiwiss from 11-18 June 1982 was recently reviewed and accepted by the committee as the first record for Oman. The coasts of Arabia are outside the normal more southerly Indo-Pacific range of this species and this record is thus unusual – the fact that it stayed in the area for some time is also interesting.

Cape Gannet *Morus capensis* breeds on offshore islands off Namibia and Cape Province and disperses north to Mozambique and Tanzania. The record of a bird seen by Hanne Eriksen on 12 March 2004 off the Halaaniyaat Islands (southern Oman) is therefore probably an example of a bird overshooting its normal range during post-breeding dispersal. This particular bird was almost overlooked and noticed only during scrutiny of photographs; one wonders, therefore, how many other individuals visit the Arabian coast without being noticed among the large numbers of Masked Booby *Sula dactylatra*.

A single first year White-eyed Buzzard *Butastur teesa* was found by Ian Harrison on 22 March 2004 At Ayn Najr, a small spring with brackish pools and small stands of date palms and *ghaf* trees *Prosopis cineraria* near the central Oman coast about 18km west of Ras Bintawt. The bird was seen in typical gliding flight, on the ground and soaring above the low hills. This species is a breeding resident from Pakistan and India through to Iran – indeed it breeds just across the Straits of Hormuz from the Omani enclave of Mussandam (rare, Scott & Adhami 2006). It is therefore not so surprising that some post-breeding dispersal of young birds should occur southwards although the bird is considered a fairly sedentary species. Perhaps what is a little surprising is that this bird was so far south.

An American Golden Plover *Pluvialis dominica* at Sur Sewage Farm, seen first by Andrew Lassey amongst others on 23 & 24 November 2003 and later by more observers, stayed until 23 December 2003. It is a remarkable record, even given this species' long distance oceanic migration. While it has been recorded in Australia and West Africa, this particular individual was a long way from normal migration routes – even as a vagrant.

A Buff-breasted Sandpiper *Tryngites subruficollis* was photographed at Sahanawt Farm, Salalah by François Moraze on 26 October 2005. The normal migration route of this species is across central North America to southern South America but has been recorded as a vagrant to East Africa and Sri Lanka (to name but two of the many countries it has been recorded in) and it is therefore not so surprising that an individual turned up in Arabia.

Two adult Malachite Kingfishers *Alcedo cristata* were discovered at Khor Kharfut in Dhofar close to the Yemen border on 16 September 2000 by Stephen Carr. The birds were watched for 30 minutes down to about 7 metres as they dived into the water from overhanging reeds. Both birds were observed together many times on the same reed as if they were a breeding pair – rather than territorial rivals. The species is widely distributed across sub-Saharan Africa where it is sedentary. Its range extends to eastern Somalia, which is some 600km in a straight line across the Indian Ocean from the area where these birds were seen. To have reached southwest Oman, these birds either crossed the Indian Ocean, or passed through Yemen. There were two further records in November 2004 at Khor Taqah and Khor Mughsayl, about 100km further to the east. An unanswered question is whether or not this species, like some other Africo-tropical species, visits the Dhofar region during the southwest monsoon on an occasional or regular basis in order to breed. Jennings (2005) cites local people in Eastern Yemen as saying that this species visits that area during the summer.

A Eurasian Magpie *Pica pica* found at Qurm Park on 15 October 2004 by Dave Sargeant, and then by other observers until 30 January 2005, was considered to have been ship-assisted. The only previous record of this species (from May 1986 to January 1987 in Ruwi) is thought to have been an escape.)

A Sardinian Warbler *Sylvia melanocephala* was found and videoed by Steve Tibbett at Thumrait on 29 September 2004. This mainly resident species – at best only a partial migrant – is rare even in western Arabia, and so to find one in south-eastern Arabia is highly unusual, especially given the long distance this bird had to travel over inhospitable terrain.

Cyprus Wheatear *Oenanthe cypriaca*, an endemic summer visitor to Cyprus, normally migrates much further to the west than the central desert of Oman. The sighting of a bird from 8-9 March 2004 by Rupert Hafner at Qitbit Motel is therefore unusual, and is presumably of a bird that had become disoriented on its way north from its wintering grounds.

A single first year Eurasian Pied Flycatcher *Ficedula hypoleuca* was found by John Atkins, Ian Harrison and David Sargeant at Qitbit Motel on 21 October 2004. It had been recorded as a vagrant in the UAE, but not in Oman, the nearest passage of eastern birds being through Turkey, Syria, Jordan and Israel.

Radde's Accentor *Prunella ocularis* breeds at higher elevations in Turkey and Iran, including the mountains due north of the enclave of Mussandam, and descends to lower levels in winter. This species has therefore been anticipated as a potential winter visit to Oman, and so the first record, a bird found by Ian Harrison on the Saye Plateau in Mussandam on 17 November 2004, was not entirely unexpected.

The sub-species *leucopsis* of White Wagtail *Motacilla alba* (White-faced White Wagtail) is very much an eastern taxon, breeding in China. It is therefore very unusual for one to be so far west. The bird photographed by Roger Barnes at Al Ansab Sewage Lagoons on 15 March 2005 is thus an interesting record. What is equally interesting is that there was a record of this species in northeastern England at about the same time.

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Iris Colour in Common Babbler *Turdoides caudatus*

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Cramp & Perrins (1993) in *The Birds of the Western Palearctic* describe iris colour in Common Babbler *Turdoides caudatus* thus: In 'Field Characters', "Eye usually warm brown." In 'Bare parts', "ADULT. In India, iris always warm dark brown, sometimes with narrow white marginal rim; light brown, brown and red-brown recorded Iraq and Iran, once also hazel; paler colours, yellow and orange-yellow mentioned in Ali and Ripley (1971) and Whistler (1941) need verification. ... NESTLING. Iris dark grey. ... JUVENILE. Iris dark grey with olive tinge." In Kuwait, Common Babbler is a vagrant, with five records. The subspecies involved is *T. c. salvadorii*, which occurs in south-western Iran and Iraq. The nearest other subspecies, *T. c. huttoni*, is found in southern Afghanistan, while two other subspecies occur in the Indian subcontinent.

Up to four Common Babblers were present at Zour Port, Kuwait from 14 August 1998 to 7 December 2001. The single bird which remained during the latter part of this time sang and was observed to carry twigs as nesting material, and so presumably was an old male. In his description, mainly of this single bird, Mark Chichester wrote: 'Eye – golden-yellow with a black pupil.' On 3 August 2006 Khalid Al-Nasrallah photographed a group of three Common Babblers in the Sabah Al-Ahmad Natural Reserve, Kuwait (**Plates 1&2**). Two of these birds (as in **Plate 1**) had dark brown irises, but **Plate 2** shows a bird with a pale yellow iris. The ages and sexes of these individuals are unknown. It is clear that Common Babbler may have 'paler colour' irises, at least in the westernmost subspecies, *T. c. salvadorii*. The frequency with which this characteristic appears is uncertain and we do not know if iris colour varies with age or sex.

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Plate 1. Common Babbler *Turdoides caudatus* with all-dark irises, Sabah Al-Ahmed Natural Reserve, Kuwait. © *Khalid Al-Nasrallah.*

Plate 2. Common Babbler *Turdoides caudatus* with pale irises, Sabah Al-Ahmed Natural Reserve, Kuwait. © *Khalid Al-Nasrallah.*

Lesser Kestrel *Falco naumanni* in habitat around Mar Saba Monastery, Jerusalem wilderness, Palestine

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Palestine is part of the Great Rift Valley, and lies in the southwestern section of the junction of three continents, Europe, Asia and Africa, on the eastern shore of the Mediterranean. The Rift Valley, stretching from around 20°S in Mozambique to around 34°N in Syria, has created geological conditions in Palestine's location together that have produced diverse topographical features that have different micro-climates, allowing the country to host one of the richest bird species communities in the Middle East. Several areas are especially important as stopover sites for migrants and others lie beneath major flyways for migratory and passage species. Furthermore, many sites meet the criteria established by Birdlife International and IUCN for Important Bird Areas. Some 13 sites in the West Bank and in the Gaza Strip have so far been nationally recognized as IBAs in Palestine.

One IBA that supports globally threatened species in Palestine, meeting BirdLife IBA criteria A1 (species of global conservation concern), A3 (biome-restricted species) and A4 (congregations of certain proportion or number), is the Mar Saba Monastery area. Mar Saba, a Byzantine monastery (**Plate 1**), lies within the boundaries of the Jerusalem Wilderness Area (also called the Judean

Plate 1. Mar Saba Monastery © *Agriculture Ministry.*

Plate 2. Lesser Kestrel *Falco naumanni* on the Mar Saba cliffs, 10 May 05. © *Imad Atrash.*

Plate 3. Locust sp commonly encountered in the Jerusalem Wilderness Area. © *Imad Atrash.*

Plate 4. Eroded limestone plateau of the Jerusalem Wilderness Area. © *Agriculture Ministry.*

Plate 5. Lesser Kestrel *Falco naumanni* on Mar Saba wall, 10 May 05. © *Imad Atrash.*

Desert), which mostly is classified as being in an Irano-Turanian climatic zone, the dominant habitats being montane. This essentially treeless, arid and thin-soiled limestone plateau displays dramatic erosion (**Plate 4**), and is bisected by wadis draining towards the Dead Sea. Being in the rain-shadow of the central highlands, the region is designated as a hot area that receives very low annual rainfall, the mean varying from 400mm in the west to 150mm in the east.

The unique geological formation of the Mar Saba area, its bio-geographic location and its relative abundance of water produced by flash floods and permanent springs all help to create a natural diversity of desert habitats, which is why the Mar Saba area regarded as one of the special IBAs of Palestine, because it hosts the globally threatened Lesser Kestrel *Falco naumanni* in numbers that meet the above IBA criteria. The Lesser Kestrel has a reliable source of food (**Plate 3**) in this diverse area. Furthermore, this site has experienced a considerable increase in bird numbers not only during the breeding season, but also on passage and in winter, confirming the importance of the part the Jerusalem Wilderness in relation to the migration flyway.

The Research and Wildlife Survey Department of the Palestine Wildlife Society implements and initiates bird species and wildlife surveys in a continuous programme throughout the year in the Jerusalem Wilderness, but at certain times, especially spring, activity concentrates on the group of Lesser Kestrels that nest in the holes and caves of the high cliffs that surrounding Mar Saba Monastery. On 2004, from late April to mid-May, the team paid five visits to the monastery and the surrounding area (24 & 26 April, 5, 8 and 15 May) to count and monitor nesting sites and to estimate the probable number of breeding pairs within the 5km^2 where the species was usually encountered. We found 2 nests inside the monastery itself and at least another 9 nests were recorded immediately outside it.

The monitoring and general observation programme took place from mid-February – the first recorded arrival was on 14 Feb) – to mid-June. These research activities were interspersed with education-awareness campaigns for different sectors of the Palestinian community, to raise their perception of the need to protect the Lesser Kestrel and its habitat throughout that area. This approach ties in the eco-tourism value of the area with conservation support at the same time.

The research team involved in 2004 were: Imad Atrash (PWLS), Sami Backleh (PWLS), Anton Khalilieh (PWLS), Johan Vanatgarden (Dutch volunteer during April).

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A small colony of Purple Heron *Ardea purpurea* on Bahrif Island, Nile valley, Aswan - a new breeding species for Egypt?

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On 10 May 2007 during bird counts on the west bank of the Nile north of Aswan, my attention was attracted by the typical bubbling colony-sound of Little Egrets *Egretta garzetta*, coming from Bahrif, a small island (**Fig 1**) in the middle of the Nile, clearly the species was nesting. I also observed at least 6 Black-crowned Night Herons *Nycticorax nycticorax* on the island. On 16 and 24 May 2007 we had closer looks by boat. I was accompanied by Haitham Ibrahim, Unit of Environmental Studies & Development South Valley University, Aswan and Chaled Abu Bakr on the first visit and by Samar Hassan and Dr Hoda Yacouli of the Egyptian Environmental Affairs Agency EEAA, Aswan on the second visit I took pictures on both visits.

Observations on Bahrif Island

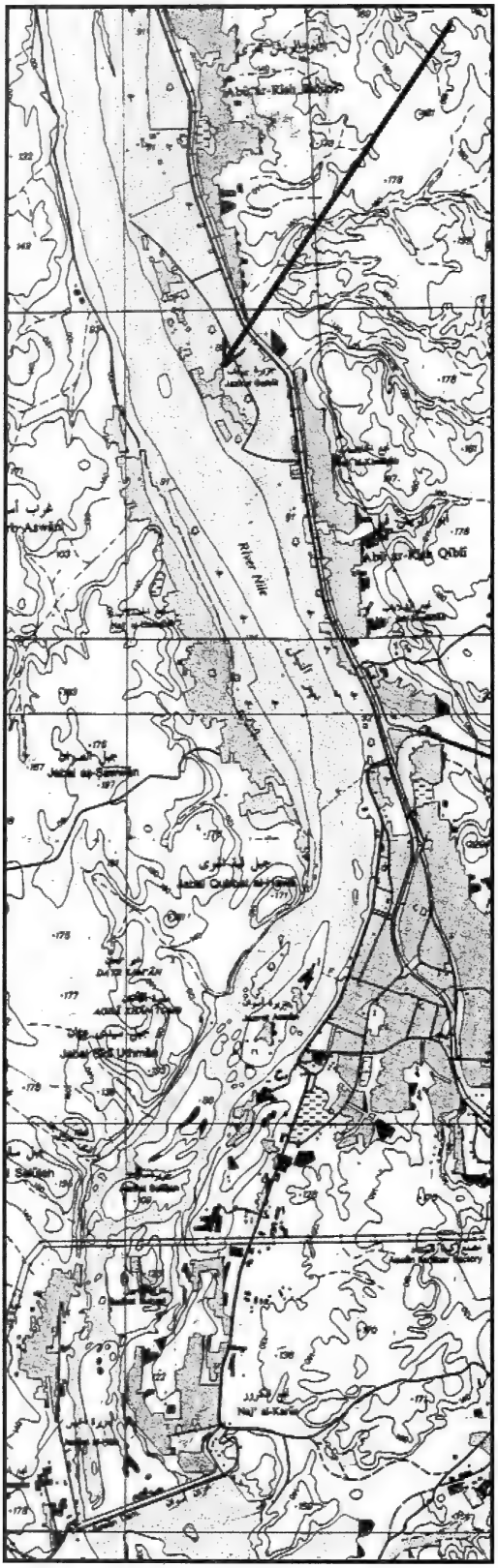
This small permanent island, (*c*2,5 acres at 24°09'34"N, 32°52'31"E) locally is known as Bahrif or Gharb Aswan island, the vegetation being mainly reed *Phragmites australis*, some small Mimosa *Mimosa pigra* shrubs and fields of knotgrass *Polygonum senegalensis* (**Plate 1**). At the time of the observations the island was nearly inaccessible because the Nile was running high and the reedbeds, partly in shallow water, were so dense. From the upper deck of the boat we could observe the interior of the island, but we did not attempt to land in order to limit disturbance. Over a 40-minute period, we sailed round the island several times to help estimate the numbers of breeding pairs and nests. There were:

- Black-crowned Night Heron: 25-50
- Squacco Heron *Ardeola ralloides*: 30-40
- Cattle Egret *Bubulcus ibis*: >100
- Little Egret: >100
- Purple Heron *Ardea purpurea*: 5-10.

Many nests of Squacco Heron, Cattle Egret and Little Egret with adults or chicks were visible. We did not observe any Night Heron nests, but some birds were carrying sticks or flying round the island with sticks, many others perching in the reedbeds. The Purple Herons were concentrated in the centre of the island, and although we failed to find any nests (probably because of the dense reeds), we observed 8 juveniles, some with downy crown feathers (**Plate 2**), which I photographed. Probably unable to fly, they clambered towards areas of denser reed. Some 10 birds, probably mostly adults, flew away or hid in the reeds. Our second visit (**Plates 3 & 4**) revealed at least one juvenile and 4 adults flying from the island and two adults and two juveniles hiding in the reeds. We also noted two Little Bittern *Ixobrychus minutus* and two Grey Herons *Ardea cinerea* (sex and age unknown) on the island.

Table 1: Additional observations of Purple Herons near Bahrif Island, 29 Apri-28 May 2007

Counts & cumulative observation period	To the N	To the S	Near observer
1. 125 point counts, 10.4 hours	7	11	6
2. one point count, 10 hours	47	13	0
3. observation by boat, 1 hour	1	2	8



Additional observations of Purple Heron near Bahrif Island

From 29 April to 28 May 2007, three separate surveys were carried out in the surroundings of Bahrif Island:

1. From 1-15 May a point count survey in the Nile Valley between the Old Dam in the south and the bridge in the north over 18km at 125 points (many unsuitable heron habitats). Counts were carried out for 5 minutes each.

2. Migration and feeding movements of herons were observed from the east bank of Elephantine Island, (8km south of Bahrif Island) for a total of 10 hours (h) over 6 days: 29 April (1h), 18 May, (2h) 19 May (2h), 20 May (1h), 26 May (2h) and 28 May (2h). Except for 20 May (sunset), all counts were in the morning.

3. Additional observations were made along the west bank between Aswan city and Bahrif Island (6.5km) by boat on 16 May between 08:00 and 09:00 hours.

The results of the additional observations are at **Table 1**. Most, if not all, birds seen were adults.

Discussion

In Goodman & Meininger (1989) Purple Heron is mentioned only as 'a fairly common passage visitor' occurring 'from late February to mid-May (early June)' and is 'a rare summer visitor to the Nile Valley'. Until now there seems to have been no proof of breeding in Egypt (Sherif Baha el Din pers comm). However, Meinertzhagen (1930) had written, 'there is no reason why they should not do so'. The totals comprising **Table 1** suggest the presence of resident birds in the surroundings of Bahrif Island. Incubation and fledging periods are 25-30 and 45-50 days respectively (Cramp & Simmons 1977), and so the presence on 24 May of at least 1 juvenile able to fly means that its incubation time must have begun in early March. The nearest known Purple Heron colonies are more than 900km to the north, in Jordan and Israel, where the breeding season is lasts from mid-March to the end of July (Shirihai 1996, Cramp & Simmons 1977).

Figure 1. Map showing Bahrif Island (arrowed). *© Dick Hoek*

Plate 1. Northeastern end of Bahrif Island 16 May 2007. *© Dick Hoek*

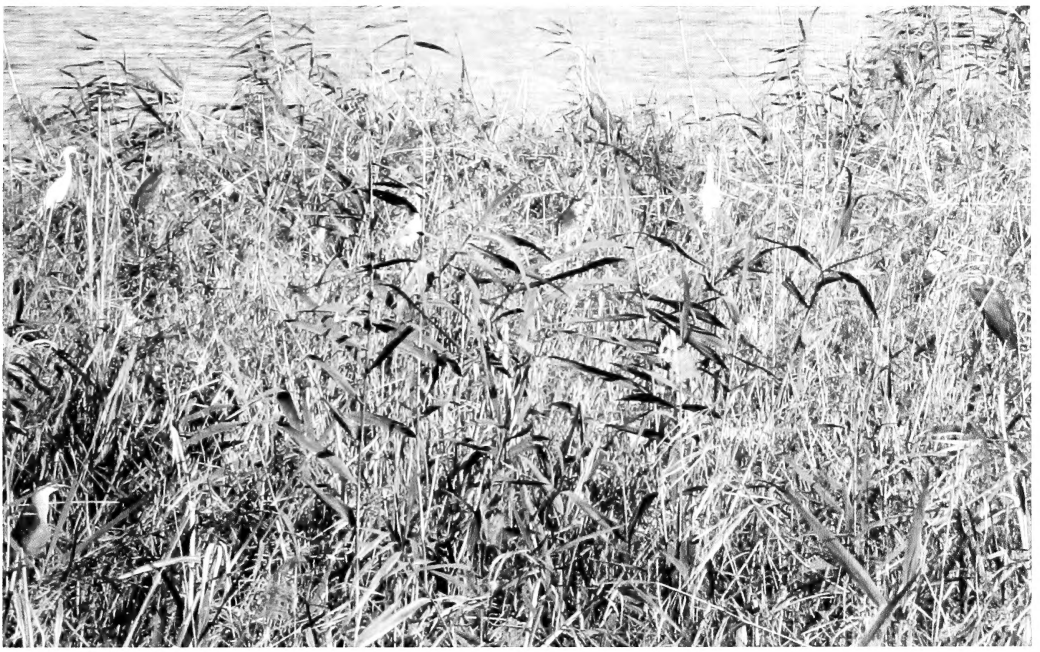


Plate 3. 2 Purple Heron *Ardea purpurea*, 2 adults and a juvenile Little Egret *Egretta garzetta* and 3 Black-crowned Night Heron *Nycticorax nycticorax*, Bharif Island 24 May 2007. *© Dick Hoek*

Plate 2. Juvenile Purple Heron *Ardea purpurea* - downy feathers on crown, Bharif Island 16 May 2007. *© Dick Hoek*

Plate 4. Purple Heron *Ardea purpurea*, adult and juvenile, Bahrif Island 24 May 2007. *© Dick Hoek*

In addition, during bird counts on northern Lake Nasser from 21 to 26 May, we counted 41 Purple Herons (an underestimate). We discovered three heron colonies of Little Egret, Cattle Egret and Squacco Heron in tamarisk *Tamarix nilotica* shrubs. In one mixed colony in the Khor Essunta area, *c*50km south of Bahrif Island, *c*10 adult Purple Herons were present, some standing on the top of the tamarisk while others flew around (pers obs). Unfortunately we had no time to look more closely, but we cannot exclude the possibility that Purple Heron also bred at this colony.

ACKNOWLEDGEMENT

I wish to thank Mr. Mahmoud Hasseb of the EEAA Aswan, for making a suitable boat available to visit Bahrif Island and for providing a permit to accompany the EEAA rangers on Lake Nasser.

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GUIDELINES FOR AUTHORS (2007)

The Editor will consider for publication in *Sandgrouse* or in *Webgrouse* (on the OSME Website) original papers that contribute to the body of information about birds of the Middle East and related zoogeographical regions; subject categories include, but are not limited to, species distribution, breeding biology, behaviour, identification, taxonomy, phylogeny and conservation. The Middle East for this purpose (the OSME region) includes Turkey, Cyprus and Egypt in the west, the Caucasus republics and Kazakhstan in the north, Kyrgyzstan, Tadjikistan, Turkmenistan and Afghanistan in the east, Oman and Yemen (including the Socotra archipelago) in the south, and all states within the above boundaries. The region follows a line that follows the approximate centreline of the Red Sea to include all islands belonging to Yemen and Saudi Arabia to the latitude of the Egypt-Sudan border on the western coast; north of this latitude, the Red Sea falls entirely in the OSME region. The Arabian Sea eastern limit is 61°24āE and the southern limit is 10°N.The Editor may recommend that authors of papers concerning birds on or near the western and eastern limits of the OSME region should submit them to the African and Oriental Bird Clubs respectively. Papers dealing with countries outside the OSME Region will normally be declined unless their emphasis is on species of direct interest to OSME, or concern the migration of species through the Region. It is the Editor's decision to accept or decline a submission for *Sandgrouse* or to suggest it for *Webgrouse*, but discussion is welcomed on these aspects.

Submissions should not have been published elsewhere substantially in the same form, nor should they be offered concurrently for publication elsewhere. Papers should be in English, but the Editor will endeavour to assist authors who are unable to obtain English translations of their work. The general principle is that submissions sent to the Editor should be in English in electronic format (English (UK) and Microsoft Word, not Mac)'. Submissions on other formats will be assessed individually. Submissions in hard copy should be double-spaced and on only one side of A4 paper sheets so that they can be scanned.

- In e-mail submission, **please do not embed diagrams, pictures and other graphics** (such as line-drawing maps and Excel tables) **in a Word document** – send them as separate files in popular formats (*eg* .jpeg or TIFF files) in separate messages to: ed@osme.org. **Please avoid transmitting images larger than 1.3MB if at all possible, otherwise mail them on CD**.
- On CDs, **please do not embed diagrams, pictures and other graphics** (such as line-drawing maps and Excel tables) **in a Word document**, but include them as separate items in the CD in the formats given above.
- Hard-copy figures should be drawn, without lettering, preferably in black ink on good-quality paper on white or translucent paper. Any legend of captions and figure lettering should be given in full at the end of the text of the paper submitted. Transparencies, negatives or good-quality prints are most acceptable – all can be scanned. Authors should state whether hard copy material is to be returned to them.

OSME has reviewed bird species, current nomenclature and taxonomy in the OSME Region List (ORL), which is based on Dickinson (2003) and generally follows the IOC English names (Gill & Wright 2006). The ORL is on the OSME website or is available on request from ed@osme.org. Authors are asked to use the ORL for order and sequence of bird species and for scientific and English names. Where possible, authors should consult a post-2005 issue of *Sandgrouse* and follow the layout conventions therein, summarised below:

Layout: Place author addresses (including current e-mail) after the paper's summary, if there is one, or after author names.

Headings: Use side headings (in **bold** full capitals), but without underlining. Centre headings, in smaller **bold** font than the side headings, are retained for '**ACKNOWLEDGEMENTS**' and '**REFERENCES**' at the end of papers.

Tables and Figures - uses of bold type: Where a Table or a Figure is identified by a title, the words 'Table' and 'Figure' should be in **bold**, thus: **Table** and **Figure**. Similarly, when referring to a Table number or a Figure number in the text, these should appear in **bold** thus: **Table 1. Figure 1.** This enables a reader to find references to Tables and Figures very quickly in the text. However, see '**Abbreviations**' below for the use of '**Fig**'. Note that column headings in a **Table** should be in **bold**.

Abbreviations and the form they take: The general principle of modern abbreviations is that they do not have full stops (periods) following them, the argument being that abbreviations are now recognised as such, and by definition a shortening of a word to form an abbreviation should not be accompanied by adding a full stop to lengthen it! Hence we have 'in prep', not 'in prep.' for 'in preparation'. Examples are; asl (not a.s.l.) = above sea level, (pers obs) = personal observation(s), not (pers. obs.) or (*pers obs*) or (*pers. obs.*) and *eg* (not e.g. nor eg) = *exempli gratia*, for example. **General rules: Firstly,** words and abbreviations from Latin and occasionally other languages are in ***italic***. Examples are; *et al* (not et al. or et al) = and others, *ie* (not i.e. or ie) = that is, *c* is the preferred abbreviation for 'circa' = approximately (not c. or *c.*), and it should be used without a space between it and the quantity, thus: '*c*10 nests', *cf* and not 'cf.' or '*cf.*' for 'compare', unpub and not unpubl (Preferably, 'unpub' should be followed by 'data', 'ms', 'notes' or similar) and 1km (not 1 km or 1 Km or 1 km.) = one kilometre. Lastly, **Fig** (not Fig. or **Fig.**) = Figure; the use of this abbreviation is preferred in articles, but if 'Figure' is used, please be consistent. **Secondly,** the number of the **Figure** is also in **Bold**, thus: **Fig 1** or **Fig 6**. **Thirdly**, for abbreviations of quantity, the abbreviation remains singular even when the quantities are plural, *eg* **1km, 2km or 500km.**

References and Citations In the reference list, the first author's surname is followed by the relevant initials. Subsequent authors should have their initials placed before the surname. **The general rule is** that we treat authors of papers first as human beings, and so apart from the lead or sole author whose surname must appear first to keep reference lists searchable in alphabetic order, we place the initials first. Note that:

All references cited in the text must appear in the Reference List. All references appearing in the Reference List must be cited in the text. Published and generally available references should be classed as **Primary References,** whereas internal reports and Web references should be called **Secondary References**. The general form of listing references should follow the example below of the two references cited in these Guidelines.

A citation in the text with 3 or more authors should cite only the first author, thus '(Smith *et al* 2000), omitting periods (full stops) and without a separating comma (see also *et al* in '**Abbreviations**' above. Multiple citations in the text within a single set of brackets normally should be separated by a comma (,), thus: (Jones & Smith 1999, Heath *et al* 2000, Ramadan-Jaradi 2004). However, multiple citations of a single author or the same team of authors may require separation by a semi-colon, thus: (Brown 1998, 1999, 2001; Jones & Smith 1999, Ramadan-Jaradi 2004). Citing an author by name within the text is unchanged, thus: 'as recorded by Jones (1997)'. Do not use full stops (periods) to separate an author's initials in the Reference List, hence 'JFP SMITH' and not 'J.F.P. SMITH' (Note the use of 'SMALL CAPITALS'). A citation with two authors should follow '(Smith & Jones 2000)' in the text, using the ampersand (&), but should be written as 'SMITH, JFP AND AB JONES. 2000.' in the Reference List.

General The first mention of a species in any paper must include the species name, thus: 'House Sparrow *Passer domesticus*', without brackets. However, English is such a flexible language that sometimes context may still require the use of brackets. Please do not repeat the scientific name in the text unless comparisons between one or more species are being drawn. Summaries of full-length papers should be less than 300 words, should not cite references and should cover only the subjects contained in the main text. We adopt the convention that authors will receive one or more edited electronic versions of their original texts to check for typographical errors and to confirm that the changes have not altered the meaning of the content before the journal is sent for typesetting. No changes of substance can be made to typeset proofs. In research journals, the convention remains of using the third person and the passive voice, purportedly to allow a neutral presentation. *Sandgrouse* encourages use of the first person and active voice, while noting that the more technical papers may benefit from the former, non-partisan style. Short Notes do not require summaries.

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