

SANDGROUSE

VOLUME 42(1) 2020



ORNITHOLOGICAL SOCIETY OF THE MIDDLE EAST
THE CAUCASUS AND CENTRAL ASIA



ORNITHOLOGICAL SOCIETY OF THE MIDDLE EAST THE CAUCASUS AND CENTRAL ASIA

For details of OSME's aims, membership, meetings, conservation and research funding, OSMEBirdNet, OSME recommended bird taxonomy, Sandgrouse instructions for authors and news and tweets see www.osme.org.

VICE PRESIDENTS (AS AT FEBRUARY 2020): Dr Sergey Sklyarenko (Kazakhstan), Dr Ali Adhami Mirhosseyni (Iran), Dr Azzam Alwash (Iraq), Melis Charalambides (Cyprus), Dr Nabegh Ghazal Asswad (Syria).

COUNCIL (AS AT FEBRUARY 2020):

Michael Blair (orl@osme.org, *ORL Listmaster*)
Paul Donald (sandgrouse@osme.org,
Sandgrouse editor)
Tomas Haraldsson (youthdevelopment@osme.org, *Youth Development Officer*)
Ian Harrison
Chris Hughes (treasurer@osme.org,
ads@osme.org, *Joint Treasurer & Advertising*)
Georgia Locock
Nick Moran
Sajidah Ahmad (secretary@osme.org,
Secretary)

Dr Robert Sheldon (chairman@osme.org,
Chairman)
AbdulRahman Al-Sirhan
(webmaster@osme.org,
Website management-co-opted)
Paul Stancliffe
Effie Warr (sales@osme.org, membership@osme.org, *Sales & Membership-co-opted*)
John Warr (treasurer@osme.org,
Joint Treasurer-co-opted).

CONSERVATION FUND COMMITTEE (AS AT FEBRUARY 2020): Dr Maxim Koshkin (Convener), Dr Nabegh Ghazal Asswad, Mick Green, Sharif Jbour, Richard Porter.

OSME CORPORATE MEMBERS: Avifauna Nature Tours, Birdfinders, Birdtour Asia, Greentours, NHBS, Oriole Birding, Rockjumper Birding Tours, Sunbird.

Sandgrouse: OSME's peer-reviewed scientific journal publishes papers and notes on the ornithology primarily of the OSME region. If in doubt email the *editor* (Dr Paul Donald, sandgrouse@osme.org, BirdLife International and University of Cambridge, UK).

Editorial Board: AbdulRahman Al-Sirhan (Kuwait), Vasil Ananian (Armenia), Dr Raffael Ayé (Switzerland), Jem Babbington (Saudi Arabia, *photo consultant*) Arnoud van den Berg (Netherlands), Michael Blair (UK), Chris Bradshaw (UK), Dr Gary Brown (Germany), Oscar Campbell (UAE), Peter Castell (UK), Peter Flint (UK), Dr Robert Flood (UK), Paul Goriup (UK), Jens Hering (Germany), Mike Jennings (UK), Dr Abolghasem Khaleghizadeh (Iran), Dr Fares Khoury (Jordan), Dr Alan Knox (UK), Andrew Lasey (UK), Dr Mike McGrady (Austria), Dr Stephen Newton (Ireland), Yoav Perlman (Israel), Aasheesh Pittie (India), Richard Porter (UK), Colin Richardson (Cyprus), Dr Manuel Schweizer (Switzerland), Dr Derek Scott (UK), Dr Robert Sheldon (UK), Arend Wassink (Netherlands), Geoff Welch (France).

OSME and BirdLife International work together to conserve birds

Registered charity no 282938

OSME, c/o The Lodge, Sandy, Beds SG19 2DL, UK

©2020 Ornithological Society of the Middle East, the Caucasus and Central Asia





SANDGROUSE

VOLUME 42 (1) 2020

- 2 The distribution and numbers of Dalmatian Pelican *Pelecanus crispus* on the Central Asian flyway between 1990 and 2015. AIKATERINI CHRISTOPOULOU, ARIS MANOLOPOULOS & GIORGOS CATSADORAKIS
- 29 The development of the Besh Barmag Bird Migration Count in Azerbaijan and its importance for the monitoring of Eurasian migrant birds. MICHAEL HEISS, KAI GAUGER, CHRISTOPH HIMMEL, PIA FETTING, TOMAS AXÉN HARALDSSON, GABRIEL CAUCAL, ZÜLFÜ FÖRÖÇLİ & ELCHIN SULTANOV
- 46 A corridor of soaring bird migration in Lebanon on the Eastern Mediterranean flyway. BERND-ULRICH MEYBURG, IVAYLO ANGELOV & SAMER AZAR
- 59 The world's largest gathering of Steppe Eagles *Aquila nipalensis* discovered in central Saudi Arabia. MISCHA KEIJMEL, JEM BABBINGTON, PHIL ROBERTS, MIKE MCCGRADY & BERND-ULRICH MEYBURG
- 69 Assessing long-term changes in the raptor fauna of the Fertile Crescent by reference to the nineteenth century works of Canon HB Tristram. REENA SAEED & MAZIN B. QUMSIYEH
- 78 Status of breeding seabirds on the Mediterranean coast of Egypt from 2012 to 2018. MOHAMED IBRAHIM HABIB
- 84 An unprecedented influx of Black-throated Thrushes *Turdus atrogularis* to the United Arab Emirates in winter 2016/17. OSCAR CAMPBELL & MARK SMILES
- 92 Additional data on African Pipit *Anthus cinnamomeus eximius* in Saudi Arabia. JEM BABBINGTON & PHIL ROBERTS
- 100 The first records of Paddyfield Pipit *Anthus rufulus* for the United Arab Emirates and the Arabian peninsula with notes on their identification. OSCAR CAMPBELL, MARK SMILES & SIMON LLOYD
- 111 First successful breeding of Greater Flamingo *Phoenicopterus roseus* and first attempted breeding of Lesser Flamingo *Phoeniconaias minor* in Saudi Arabia. PHILIP ROBERTS & JEM BABBINGTON
- 115 Observations of White-faced Whistling Duck *Dendrocygna viduata* in Iraq. MUDHAFAR A SALIM, WAMEEDH S YASSIR, SALWAN ALI ABED, RICHARD PORTER, MOHAMMED T JABBAR, LAITH ALI AL-OBEIDI, HAIDAR A HADI & ZAMAN S HARBI
- 118 Breeding of Saker Falcon *Falco cherrug* in Armenia. MIKHAIL KOREPOV & KAREN AGHABABAYN
- 122 New nest sites of Black Stork *Ciconia nigra* in Khuzestan Province, Iran. MOSTAFA YUSEFI, SEIFOLAH HASHEMI, KERAMAT HAFEZI & ALI T QASHQAEI
- 125 Kleptoparasitism by Egyptian Vultures *Neophron percnopterus* of an unusual prey item of Sooty Falcons *Falco concolor*. MEIDAD GOREN & SHLOMI SEGALL
- 128 ESSAY: Historical bird identification – reflections from a Cyprus perspective. PETER FLINT
- 139 Obituary: Peter Cowan (1947-2019). ROB SHELDON
- 140 Obituary: Chris Naylor (1961-2019) and Susanna Naylor (1965-2019). BARBARA MEARNES
- 143 From the Rarities Committees. IAN HARRISON (COMPILER)
- 155 Letter from the Chairman. ROB SHELDON
- 159 Book review: *Birds of Cyprus*. MIKE BLAIR
- 162 Around the Region. IAN HARRISON (COMPILER)

Photo above: Lesser Flamingos *Phoeniconaias minor*, March 2019, South of Jizan, Jizan Province, Saudi Arabia. The first attempted breeding of this species in Saudi Arabia is discussed in an article in this issue of *Sandgrouse*. © Phil Roberts

Cover photo: Steppe Eagles *Aquila nipalensis*, Ushaiqer dump site, Ushaiqer, Riyadh Province, Saudi Arabia, November 2019. These birds were part of the largest ever recorded aggregation of this globally threatened species, the discovery of which is described in this issue of *Sandgrouse*. © Jem Babbington

The distribution and numbers of Dalmatian Pelican *Pelecanus crispus* on the Central Asian flyway between 1990 and 2015

AIKATERINI CHRISTOPOULOU, ARIS MANOLOPOULOS &
GIORGOS CATSADORAKIS

Summary: The countries of Central Asia hold 50-80% of the global population of the Dalmatian Pelican *Pelecanus crispus* but the breeding distribution and population size are only poorly known. We thus made a systematic effort to collect, compile and map all the breeding information available from a variety of publications and databases for the period 1990-2015. We located 260 different sites with counts of Dalmatian Pelicans. The species breeds regularly or occasionally at 54 sites, 41 of which are situated in the countries of the former USSR. A rough approximation of the overall breeding population in this part of the world for the period 2000-2010 lies between 3000 and 4366 pairs, with a possible increase of the order of 46%-120% since the 1980s. The present un-weighted geographical centre of the breeding distribution in the countries of the former USSR has shown a north-eastwards shift of c767 km compared to that of the 1970-1980s. Colonies in the southern and more arid parts of Central Asia (Kazakhstan, Iran, Uzbekistan, Turkmenistan) have been abandoned and new sites colonised further north, probably due to milder winter and spring temperatures.

INTRODUCTION

Dalmatian Pelican *Pelecanus crispus* is a species of global conservation concern, recently downlisted from Vulnerable (VU) to Near Threatened (NT) in the IUCN Red List of Threatened Species (BirdLife International 2018). Its geographical distribution is limited to the Palearctic biogeographic region, from Montenegro to China (Catsadorakis *et al* 2015). In 2018 the world population of the Dalmatian Pelican was estimated to be between 22 000 and 27 000 individuals and 7350-9000 breeding pairs (Catsadorakis & Portolou 2018). During the last 30 years the species has been recorded as a breeding species more or less regularly in Montenegro, Albania, Greece, Bulgaria, Turkey, Romania, the Russian



Plate 1. Dalmatian Pelicans *Pelecanus crispus*, Lake Kerkini, Greece. © Giorgos Catsadorakis

Federation (hereafter Russia), Kazakhstan and Mongolia, and irregularly in Ukraine, Uzbekistan, Turkmenistan, Georgia, Azerbaijan and Iran (Catsadorakis & Portolou 2016). Recently it has also bred in Kuwait (OSME 2019), and it also occurs as a non-breeding summer visitor, winter visitor and passage migrant in North Macedonia, Iraq, India, Afghanistan, Pakistan and China.

The world population of the Dalmatian Pelican is divided into three more or less distinct population groups belonging to three different flyways, each with different features. The Black Sea/Mediterranean flyway group consists of c16-18 well-known breeding concentrations (colonies and groups of interconnected colonies) and the birds are short-distance migrants overwintering within a radius of less than 1000 km from their nesting colonies (Crivelli *et al* 2000, Catsadorakis *et al* 2015). The overall size of the Black Sea/Mediterranean flyway population is estimated at about 2800-3000 pairs (Catsadorakis & Portolou 2018). The East Asian flyway population breeds in Mongolia and winters in China. Its size is not accurately known but it is less than 100, and the nesting colonies in Mongolia are only partly identified, as are the wintering sites in China. This is clearly a long-distance migratory population that is threatened with extinction (Mundkur *et al* 2017). The bulk of the global population of this species lies on the Central Asian flyway in the countries of Western and Central Asia, especially in Russia and Kazakhstan. These two large countries hold 50-80% of the global population of the species (Catsadorakis & Portolou 2018). These populations consist entirely of long-distance migrants, which overwinter mainly in Iran, Pakistan and India (Crivelli *et al* 2000).

Despite its importance, very little is published in the English literature about the distribution of the species on the Central Asian flyway. There are a few dozens of references on the species scattered in a variety of publications, such as ornithology journals (*eg* Ali *et al* 2011), conservation and birdwatching reports (*eg* Wassink 2011) and local, regional and national action plans (*eg* Dzhamirzoev & Bukreev 2008) but, to our knowledge, there has been no systematic effort so far to compile all these scattered data to develop an integrated assessment of this flyway population. Furthermore, there are few researchers or other ornithologists working systematically on pelican ecology and conservation, especially in this part of the world. The areas are very large, over 3 million km², the distances are huge, there are frequently access limitations (Zhatkhanbayev 1994) and there is no regular monitoring scheme in place. Organising and carrying out research and monitoring programmes in these areas, especially in the most remote and inaccessible wetland sites where pelicans breed, is extremely difficult and expensive, and very difficult to maintain in the long term (Krivenko *et al* 1994, Zhatkanbaev 1994, Schielzeth *et al* 2008). The number of competent researchers and ornithologists is also insufficient to cover the area adequately. The result of all these limitations is that we know neither all the breeding sites nor their population sizes, and the exact distribution of the species in this area remains only partially known. Thus the available estimates of the West and Central Asian flyway come from a compilation of scattered information and expert assessments. The last effort to compile all the available information about the populations of this area was made in the early 1990s (Crivelli *et al* 1994) mainly using data from the 1970s and 1980s. Only rough estimates can be made of the size of the global Dalmatian Pelican population, the area of distribution is huge, densities are low and coverage is incomplete (Gilissen *et al* 2002, Catsadorakis *et al* 2015).

Although there appears to be quite a large number of publications in Russian and other languages, these remain almost entirely inaccessible to scientists elsewhere due to the language barrier. In this paper we have made a systematic effort to collect and compile all the data scattered in a variety of publications and databases in English, aiming at producing the best possible distribution maps of the Dalmatian Pelican for each country



Plate 2. Dalmatian Pelicans *Pelecanus crispus*, Great White Pelicans *Pelacanus onocrotalus* and Great Cormorants *Phalacrocorax carbo*, Lake Kerkini, Greece. © Giorgos Catsadorakis

in this flyway, mainly targeting the breeding distribution but also compiling data on the staging and wintering ranges and comparing this to what was known from the last century.

METHODS

Data mining and compilation

We searched for every possible source in English, or containing summaries or abstracts in English, for data on the distribution of breeding, wintering and migrating populations of Dalmatian Pelican in wetlands of the countries of West and Central Asia. We collected data from peer-reviewed, published or unpublished literature and other reports. We were particularly interested in data and information referring to the period 1990-2015. We used a bibliography which we have been compiling for many years and also back-sourced references from published papers. We searched in ornithological journals for the region, such as *Sandgrouse*, *Podoces*, *Zoology in the Middle East*, *Zoological Survey of Pakistan* and others. We also searched in the Data Zone of Birdlife International (Birdlife International 2019) and the databases of Wetlands International for the International Waterbird Census (IWC) for the countries of West and Central Asia, as well as International Sheets on Ramsar Wetlands, Action Plans for the Conservation of Threatened Birds, ornithological reports and publications for the Important Bird Areas of Kazakhstan, Uzbekistan and Turkmenistan. Overall we used information from over 100 different literature sources and internet sites.

As well as published sources, we also wrote to ten researchers we knew were carrying out work on Dalmatian Pelican or had published work on them and asked them to share their published and unpublished data. We were particularly interested to gain access to recent census data from Kazakhstan and the Russian Federation. The letters

contained a table with all the data that had been gathered at that time from literature for Kazakhstan and the Russian Federation, as well as a map with all the sites in each table. The researchers were asked to check the provided information and to make changes or add new data according to their research and field work. We excluded Afghanistan from our search because the published information about its avifauna is extremely poor and the existing information refers to papers much older than our period of interest (Praveen 2018) and because the sole recent information for the Dalmatian Pelican we could find was a phrase in Rasmussen & Anderton (2005) stating that the species “probably breeds W Afghanistan” (OSME 2019). We also excluded Armenia, as references to Dalmatian Pelican in the available literature were very few and it was clear from all of them that the species was considered to be a vagrant to the country (Ananian *et al* 2007).

Our definition of a “site” or “nesting site” in this article requires explanation. Given the frequently huge size of wetlands and waterbodies in this part of the world, locations of pelican colonies situated at the same lake might be as much as 70 km apart. However, because they belong to the same lake they are referred to as all belonging to one “nesting site”. Regardless of the wetland’s size, if two colonies were situated more than 100 km from each other they were considered to be two different colonies. In the case of two discrete water bodies that each hosted a colony of Dalmatian Pelicans, these were considered to be two different colonies even though they might be less than 20 km apart. However, for reasons of clarity and legibility of the maps, in certain cases sites situated less than 20 km from each other were merged behind the same symbol. We tried also to address and standardize nomenclature issues. The same wetlands or locations might be spelled differently in different countries or languages. An example is Lake Sarygamysh at the borders of Turkmenistan and Uzbekistan, which is variously rendered as Sarakamysh, Sarygamysh, Sarykamysh, Sary-Kamysh, Sarygamyş Sariqamish and Sarykamis.

Comparison of past and current geographical distributions

An assessment of a shift in the species’ breeding distribution range in Russia and Kazakhstan was based on a comparison between the recent breeding site distribution and the distribution of breeding sites during the period 1980-1990, when all sites were located in the former USSR. The former distribution was obtained by locating on the map the sites listed in the article of Krivenko *et al* (1994), which showed the nesting sites in the region during the second half of the 1980s. The map was geo-referenced and was used as an aid for accurately locating the historical nesting sites in this region. The former nesting site distribution was then compared to the recent distribution after calculating the geographic median center for both former and current nesting site distributions. The geographic median center of a distribution is calculated from the median value of the latitude and longitude co-ordinates in the set of the distribution points.

RESULTS

In total, we identified 260 different sites where Dalmatian Pelicans were recorded and where their numbers were estimated in some way (Table 1). The full list of sites is given in Appendix 1. Note that in the maps and in Appendix 1 sites very close to each other have sometimes been amalgamated, so the total number of sites given in the text and in Table 1 sometimes exceeds the number listed in the Appendix and shown in the maps. Counts were assigned to one or more of the following categories according to the characterisation provided in the publication or the relevant evidence: (1) breeding, (2) wintering, (3) passage or migration/staging, (4) present but unclear status. There were sites where both breeding and wintering, or breeding and staging, or any combination of two or more phenological

Table 1. Total numbers of identified sites per country. Numbers in parentheses denote occasional breeding and are not included in the total sum of located sites.

Country	Number of identified sites	Number of breeding sites	Number of wintering sites	Number of breeding and wintering sites
Azerbaijan	11	(1)	10	1
Georgia	6	(1)	6	-
India	38	0	38	-
Iran	27	(3)	24	3
Iraq	6	0	6	-
Kazakhstan	55	26	25	4
Pakistan	31	0	31	-
Russian Federation	58	20	29	9
Turkmenistan	11	1	10	-
Uzbekistan	16	1	15	-
TOTAL	260	54	194	16

statuses was recorded, and this is illustrated in the compiled maps with different symbols. The results for each of the target countries and regions are presented in Table 1.

Azerbaijan

In Azerbaijan Dalmatian Pelicans were recorded in winter or during spring and autumn migration at 11 sites (Fig. 1), with Gizilagach State Reserve (A8) having the highest numbers of wintering birds in the country. Gizilagach State Reserve is also the only site in Azerbaijan where breeding was recorded (3-4 pairs) (AzerRoadServices Joint Stock Company 2012). The highest wintering numbers were counted during the IWC of 2003, when 2602 individuals were recorded (Solokha 2006).

Georgia

In Georgia there are six wintering or passage sites. Kartsakhi Lake (G2) is the only breeding site in the country, where 5-10 breeding pairs of Dalmatian Pelicans were counted in 2005 (Birdlife International 2019). This lake is called Aktas Lake in Turkey and is a regular breeding site for the Dalmatian Pelican in the Turkish section of the lake, though the colony is small (Onmus *et al* 2011).

Iran

Dalmatian Pelican is mainly a winter visitor to Iran with 27 wintering/passage sites recorded, at three of which breeding was also recorded (Fig. 2). According to Behrouzi-Rad (2013a), six breeding pairs of Dalmatian Pelican were counted on Tiff Island (IR2), which was the first record of the species breeding in the islands of the Persian Gulf. In Bakhtegan Lake (IR13), three breeding pairs were recorded in 2005 (Behrouzi-Rad 2013a). Parishan Lake (IR1) was also recorded as a breeding site for Dalmatian Pelican from 1995, when 5-10 breeding pairs were recorded, until 2005 when the number of breeding pairs was six (Behrouzi-Rad 2013a). Counts from 2006 to 2009 showed that there were no breeding pairs at the lake (Behrouzi-Rad 2013a). The highest number of wintering/passing Dalmatian Pelicans was counted in 2007 in Khore Chahbahar and Konarak (IR63), when 753 individuals were counted (Behrouzi-Rad 2013c). In the same year, 738 Dalmatian Pelicans were also counted on the southern coasts of the Caspian Sea (IR14 and IR31) (Behrouzi-Rad 2013c). A detailed analysis of the wintering numbers of Dalmatian Pelican in Iran for

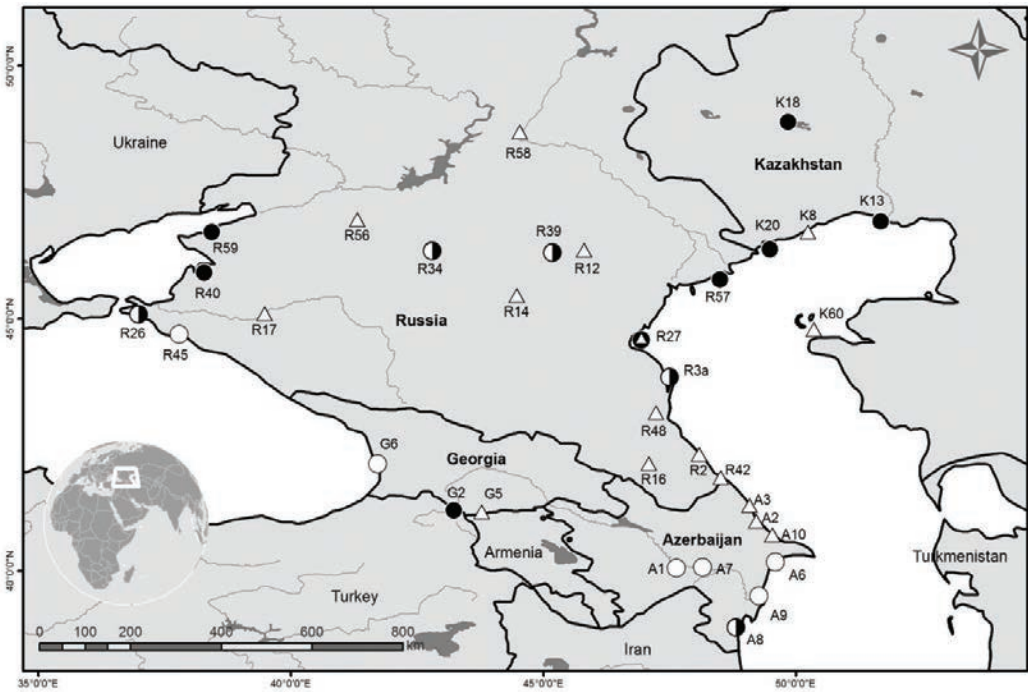


Figure 1. Sites with recorded occurrence of Dalmatian Pelicans between 1990 and 2015 in a region comprising Georgia, Azerbaijan, the SW part of Russia and the westernmost part of Kazakhstan. Filled circles = breeding; open circles = wintering; open triangles = others (staging – migration – unknown status); filled circles with triangle = breeding and others; half-filled circle = breeding and wintering. Alphanumeric codes refer to the full list of sites given in Appendix 1.

the period 1987-2017 is being prepared (Ashoori *et al* in prep), in which it is mentioned that very high numbers were recorded in some wetlands in 2016 and 2017.

Iraq

The Dalmatian Pelican in this country is considered an “Uncommon and possibly irregular winter visitor to the southern marshes” (Salim *et al* 2012). Iraq has six Dalmatian Pelican wintering sites, concentrated in the south east of the country (Fig. 2). The highest count of wintering Dalmatian Pelicans comes from Haur Al Hammar (IQ2) and refers to the years 1973-1979, when 81-243 individuals were counted (Birdlife International 2019).

Kazakhstan

Kazakhstan hosts the highest number of Dalmatian Pelican breeding sites listed in this study. Of a total of 55 sites where Dalmatian Pelicans were recorded in the country, 30 are breeding sites and 25 are used for wintering or passage (Figs. 1, 3). The Ili River Delta (K14) is one of the most important Dalmatian Pelican breeding sites in the world with 850-1000 breeding pairs during 1980-1990 and up to 500 breeding pairs in 2005-2006 (Ramsar Sites Information Service 2011). Another important breeding site is the wetland complex of Tengiz-Korghaldzyn (K52), where 650 breeding pairs were counted in 2003 (Ilyashenko 2010). Sites where numbers of breeding pairs range from 200-300 are: Lake Chardara (K9) in 2002 (Natuhara 2002), Cherniy Irtysch Delta (K10) in 2006 (Birdlife International 2019), Lower Irgiz and Turgay river basins (K37) in 2006 (Wassink & Oreel 2008), Sarykopa Lake System (K41) in 2003-2004 (Birdlife International 2019), Lake Sorbulak (K47) in 2002 (Morimoto *et al* 2005), Ural River Delta and Nearest Caspian Sea Coastal Zone (K13) in

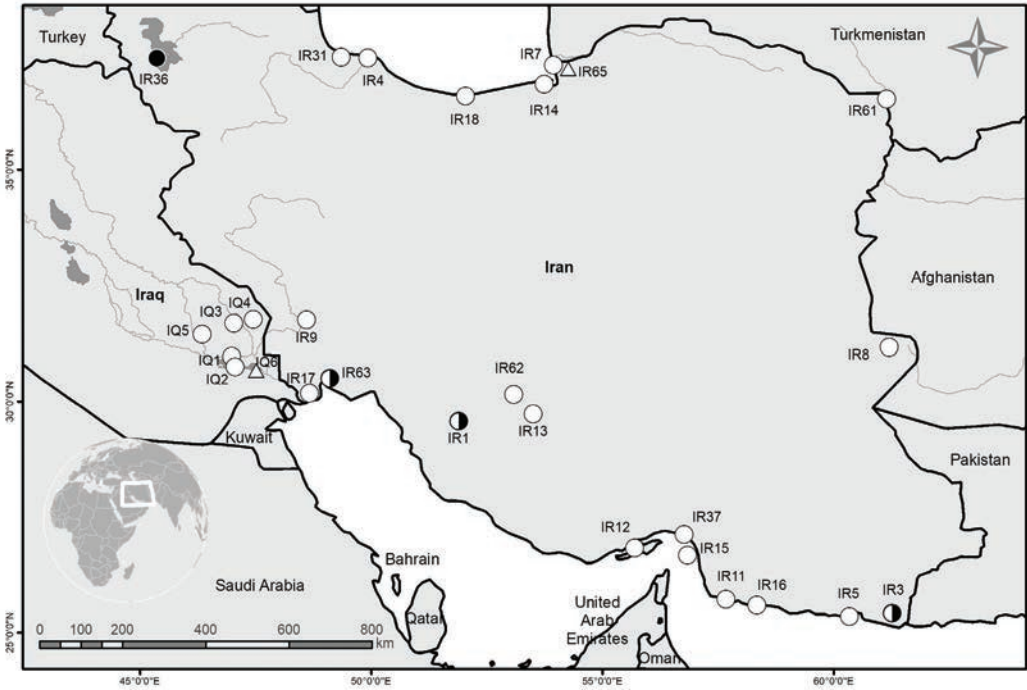


Figure 2. Sites with recorded occurrence of Dalmatian Pelicans between 1990 and 2015 in a region comprising Iran and south-eastern Iraq. Symbols and numbering as in Figure 1.



Plate 3. Dalmatian Pelican *Pelecanus crispus* nests, Lake Prespa, Greece. © Giorgos Catsadorakis

2006-2007 (Ilyashenko 2010, Ramsar Sites Information Service 2009b), and Lake Zharkol (K67) in 2004.

Russia

In Russia the Dalmatian Pelican breeds at 29 sites and winters at 38 (Figs. 1, 3). The Volga Delta (R57) has the highest numbers of breeding birds in the country, reaching up to 240

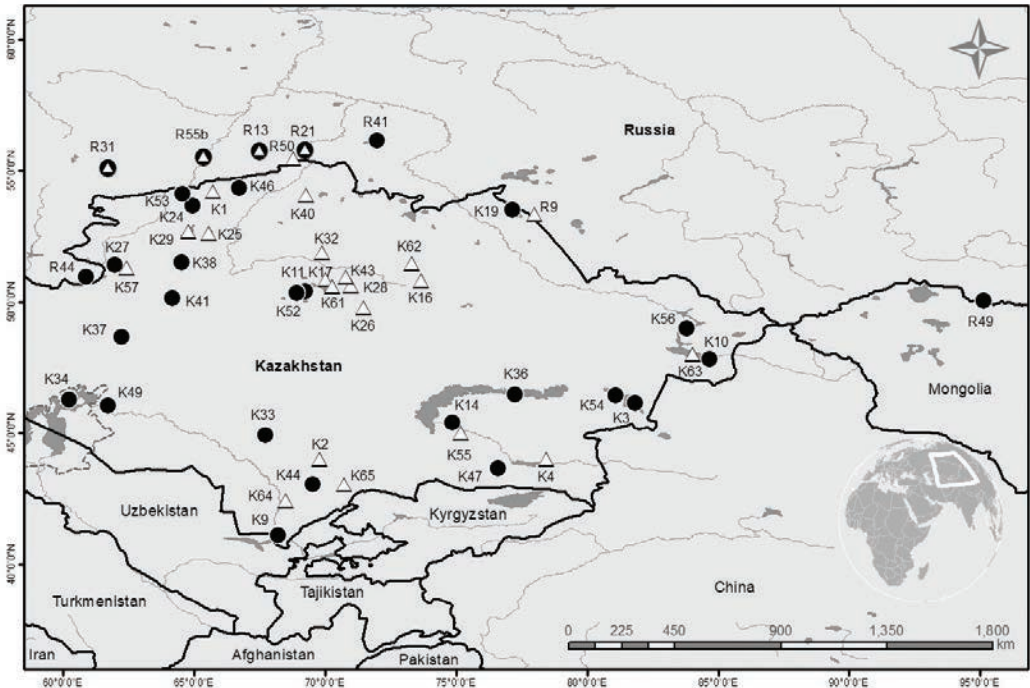


Figure 3. Sites with recorded occurrence of Dalmatian Pelicans between 1990 and 2015 in a region comprising the major part of Kazakhstan and central Russia. Symbols and numbering as in Figure 1.

breeding pairs (Arkhipov 2006, Birdlife International 2019, Ilyashenko 2010, Ramsar Sites Information Service 1997h). According to Birdlife International (2019), there were 175 breeding pairs on Tyuleni Island (R27) in 2008, 40-220 breeding pairs at Lake Tundrovo (R21) in the years 1986-2001, 160-180 breeding pairs at Lake Chernoye (R13) during 2003-2005 and 60-100 breeding pairs at the Achikol'skiye Lakes (R3a) in 2007. According to Kazakov *et al* (1997) there were 100 breeding pairs at Lake Manych-Gudilo (R34) in the years 1969-1991 (Ramsar Sites Information Service 1997c) (Fig. 1).

Uzbekistan and Turkmenistan

Information from these two countries is limited. There were 11 sites identified in Turkmenistan and 16 sites in Uzbekistan (Fig. 4), at all of which Dalmatian Pelicans were observed either in winter/staging or during migration. The species nested at Lake Sarygamysh (U5, T6) until the 1990s at least, but after that it seems that very few pairs may have nested in some years. It is not known if there is breeding at any other sites.

Pakistan

Dalmatian Pelican winters at 31 sites in Pakistan, mainly scattered at several sites across the Indus River Delta and the coastline west of it up to the border with Iran (Fig. 5). Some sites have high numbers of birds. According to Chaudhry *et al* (2012), 10 112 Dalmatian Pelicans were counted at Sakar Tali near Nagar Parkar (P28) in January 2011. Another important site is Lake Jabho or Jubbho Lagoon, where 2600 individuals were counted in 1988 (Mundkur *et al* 2009), declining to 909 individuals in 2011 (Chaudhry *et al* 2012). Counts made during 2011 and 2012 gave 1523 birds at Narrari Lagoon (P23), 1266 birds at Sankar near Nagar Parkar (P28) and 1244 birds in Taunsa Barrage Wildlife Sanctuary (P30).

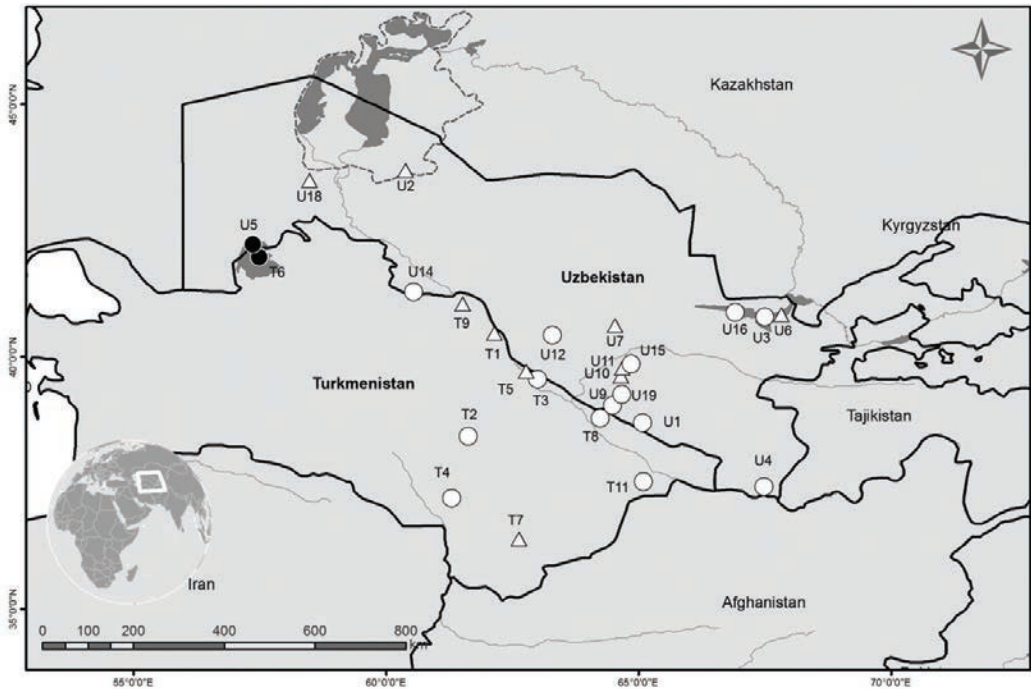


Figure 4. Sites with recorded occurrence of Dalmatian Pelicans between 1990 and 2015 in Uzbekistan and Turkmenistan. Symbols and numbering as in Figure 1.

The Aakra River Estuary (P4) is also important as in 2002, 850 individuals were counted there (Mundkur *et al* 2009).

India

All the 38 wintering sites of the Dalmatian Pelican in India are situated in the northwestern part of the country (Fig. 5). Amipur Tank (IN1), located in the north-western coast of India held 500 individuals during the winter of 2004. The most recent counts in India come from Blackbuck National Park (IN6) and Ishwaria Lake, where only two and four Dalmatian pelicans were counted respectively in 2007 (Mundkur *et al* 2009).

Breeding population size

The quantitative information we were able to compile on the breeding population size of each colony or group of colonies is sporadic and refers to different years, and thus it cannot be used in any reliable manner to estimate the overall breeding population size in the target area for any given time period. There are only a very few short series of reliable census results, most referring only to one year, or rarely to 3-5 years, and any attempt to estimate overall numbers from such data is problematic, due to the well-documented inter-annual variations of the breeding numbers. Despite these caveats, we thought it worthwhile to produce the best available approximation of the order of magnitude of the overall breeding population size for the first decade of the current century by adding up the available information for each colony in each country. The majority of regularly used breeding areas are concentrated in Russia and Kazakhstan, while in all the other countries together the maximum breeding numbers never exceeded 40 pairs. In Kazakhstan the best approximation we have is 2262-2984 pairs and for Russia 700-1345 pairs. All in all, according to the data we were able to gather, the breeding numbers in this part of the

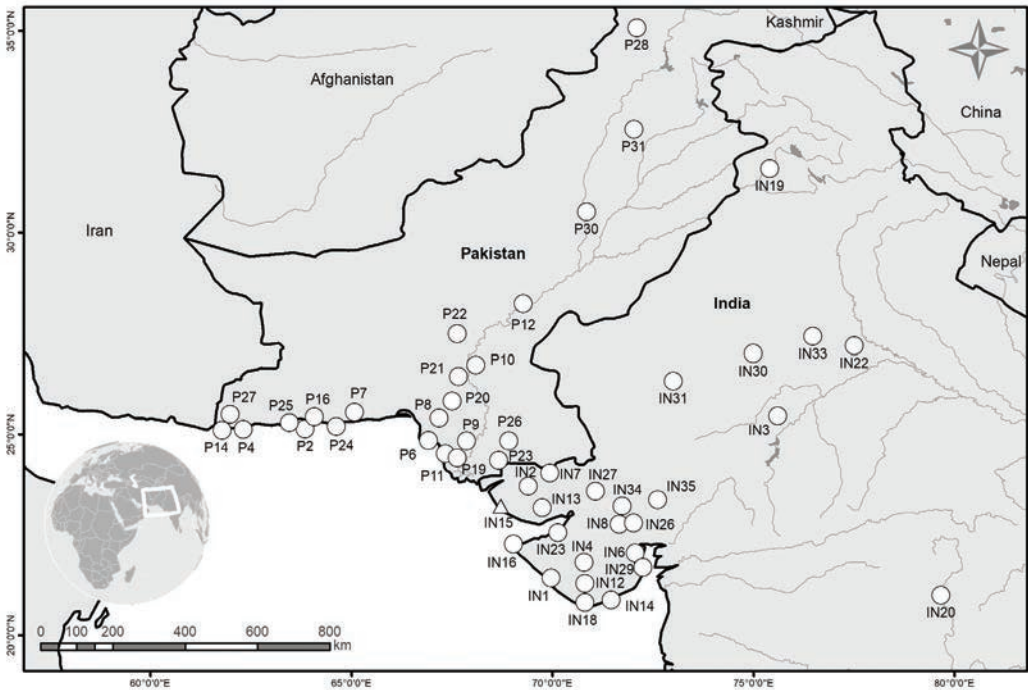


Figure 5. Sites with recorded occurrence of Dalmatian Pelicans between 1990 and 2015 in a region comprising Pakistan and northwestern India. Symbols and numbering as in Figure 1.

world for the period 2000-2010 may vary between 2966 and 4366 pairs, a range giving just an idea of the order of magnitude only.

Comparison of past and present breeding range in Russia and Kazakhstan

In 1994, Krivenko *et al* (1994) published a map showing the geographical distribution of Dalmatian Pelican breeding sites in the countries of the former Soviet Union during the 1970s and the 1980s. By overlaying the recent (2000-2015) breeding distribution on the distribution map of Krivenko *et al* (1994), we tried to assess whether there was any significant range shift within this period. The geographic median centre of the 1990s-2010s breeding distribution was estimated to be 560 km (or 2° 20') east and 523 km (or 5°) north of the geographic median centre of the breeding distribution in the period of the 1970s-1990s, thus showing a north-eastern shift of almost 767 km (Fig. 6). Unfortunately, we do not have accurate quantitative data in consistent series to be able to give the proper weighting into the estimation of the geographic median centre according to the size of each colony, so our estimation is based on the simple geographical distribution of the breeding sites.

DISCUSSION

Geographical distribution of the Dalmatian Pelican in the Central Asian flyway

We located 41 breeding sites in the former USSR countries, compared to the 33 counted in the 1980s and 1990s (Krivenko *et al* 1994), although both data sets on which we based this comparison are insufficiently detailed to merit high accuracy. To our knowledge this is the first time that the breeding range and the breeding wetlands/areas of the Dalmatian Pelican have been documented in such detail since the assessment of Krivenko *et al* (1994). Those authors claimed that for such regions land-based monitoring produces unreliable results, because of the vast size of the areas and the great mobility of non-breeding

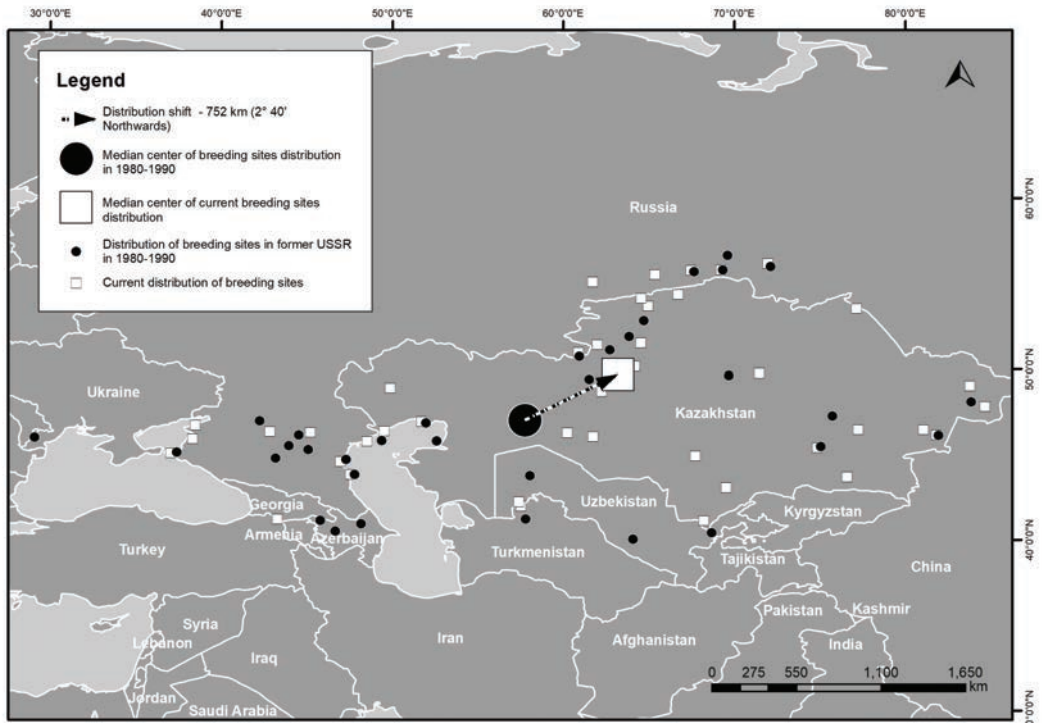


Figure 6. Distribution of the Dalmatian Pelican breeding sites in the late 1980s (filled circles) and in the period 2000-2010 (open squares). Also shown are the relative positions of the unweighted geographic median centre of the breeding colonies in the past in relation to the present, demonstrating the north-eastern shift of *c*770 km.

pelicans (Krivenko *et al* 1994). There is no doubt that an aerial survey by low-flying aircraft is the best way of carrying out a census, both for searching for new colonies and for estimating the numbers of nests (Zhatkanbaev 1994). We hope, however, that the data compilation and maps produced by this study will form a starting base that will be gradually completed by the contributions of researchers from these countries. As much information published in languages other than English has remained out of the scope of this work, it is certain that a similar review is needed to compile all the work published in Russian and other languages, which would complement our work so that we would be able to prepare more detailed maps of Dalmatian Pelican distribution, which is the first step towards establishing adequate monitoring schemes.

Breeding population size

In the second half of the 1980s the total breeding population in the former USSR countries was estimated by Vinogradov & Auevov (1994) to be 2600-3100 pairs, divided into: 74 pairs in the Black Sea/Sea of Azov region, 400-440 in the Caspian – Fore-Caucasus, and the remainder in the areas east of the Caspian Sea. The estimated breeding population obtained through the current study, although with many limitations, is *c*3000-4400 pairs, which indicates a possible increase of 0-70% compared to the numbers of the late 1980s, which were subject to very similar limitations. However, in 2015 it was possible to gather the most up-to-date available knowledge about the breeding numbers of the target area, both from expert knowledge and compilation of published information, in the context of preparing the global action plan for the species (Catsadorakis & Portolou 2018). The corresponding estimations were: 1500-2667 pairs for Russia, 3000-3200 pairs for Kazakhstan and fewer than 50 pairs in all other former USSR countries, totalling 4550-5717 pairs, *ie* an increase

colonies in the north east (north-central Kazakhstan, Turgay and Siberia) which lie over 1700 km away.

In the 1980s-1990s the former USSR countries harboured more than 80% of the global breeding population of the species (Crivelli *et al* 2000), with Kazakhstan alone holding over 50% of it. The most recent estimates (Catsadorakis & Portolou 2018) show that the same countries now hold 50-80%. This is mainly due to the fact that the Black Sea/Mediterranean flyway populations, especially in Greece, have been increasing even more than those of the former Soviet Union countries (Catsadorakis & Portolou 2016).

Northward expansion of the breeding range

The invaluable effort of Crivelli *et al* (1994) presents the opportunity to compare the breeding range of the species in the study area between the late 1980s and the present, a period of around 30 years. The recorded north-eastward shift of the breeding range has been observed in many other species of birds and there is much evidence that many species' ranges throughout the world are shifting towards the poles and/or towards higher altitudes, a common response to climate change (Hickling *et al* 2006, Maclean *et al* 2007, Chen *et al* 2011, Välimäki *et al* 2016). Range expansion is one of the most commonly used environmental indicators of climate change (Møller 2015).

It appears that colonies in and around the large wetlands or wetland systems lying in the southern and more arid parts of Western Asian countries (Kazakhstan, Iran, Uzbekistan, Turkmenistan), and which were formerly used by Dalmatian Pelicans for nesting, have been or are being abandoned, and that new sites are being colonised further north as milder winters prolong the duration of the ice-free period. In the 1980s-1990s there were 12 nesting sites north of 47° N while in the 2010s this had increased to 20 (Fig. 7). It is possible that both ongoing climate change, in the form of higher average air temperatures especially in spring (Hu *et al* 2011) and the impact of human interventions such as unsustainable use of water resources (Glantz & Zohn 2005, Morimoto *et al* 2005), have had an important effect on this shift, both through the milder winters and springs that have allowed the colonisation of northern sites and through large-scale works with negative effects on the hydrological regimes of southern wetlands. The large nesting colonies situated in Uzbekistan and Turkmenistan, the two southernmost countries of the former USSR, harboured 240-500 breeding pairs in the 1980s (Crivelli *et al* 2000), whereas in the last 10 years very few colonies are left around Lake Aral, Lake Sarykamish and the upper Amu Darya, with fewer than 20 pairs in total. These changes are in line with what Krivenko *et al* (1994) predicted for this part of the world: "decreasing rainfall will lead to an increasing role of human impacts to the same direction with natural trends. Wetlands will be deprived of their water resources both from the natural trends and from more intensive and frequently short-sighted human uses. Increased demand for water to meet economic needs will reduce an already low water level and this will mean, accelerated eutrophication, increased conservation of pollutants and in many cases high salinization and lower fish populations. All these would not allow pelican breeding".

In the Central Asian populations conditions are not so clear. Limiting factors for populations are either not known at all or insufficiently known. It is not clear whether all the colonies in Russia and Kazakhstan have been identified, and their trends and reactions to pressures are unknown. In comparison to their status described in the 1970s, 1980s and early 1990s (Crivelli 1994), there appears to be a substantial increase in breeding numbers. However, the exact spatial changes in the geographical range of these colonies are poorly known and the degree and frequency of human disturbance cannot be assessed in an objective way. There is information that some colonies are entirely free of disturbance and others suffer heavily from it, either regularly or occasionally. It is interesting that, in 1994,

Krivenko *et al* (1994) had already foreseen the coming changes that our review appears to confirm. They had seen the increasing trend since the 1990s and predicted that: “the growth in numbers will occur in all main sites. In the Turgay and possibly in the Siberian sites pelicans will expand their range northwards occupying the well conserved water bodies”.

ACKNOWLEDGEMENTS

Prof. Sergej A. Soloviev, Alexei Ebel and Yury Lokhman substantially contributed to our search by answering our inquiries. Thanos Maravelias helped with the collection and compilation of data. Olga Alexandrou made useful comments to a previous draft. Julia Henderson improved the English of the article. Abbas Ashoori made useful suggestions that improved the paper. This research was carried out as a part of the Society for the Protection of Prespa’s Pelican Project, which is funded by the MAVA Foundation through the PONT Trust Fund.

LITERATURE CITED

(Note: This list contains both the references cited in the main text and those used to compile the contents of Appendix 1, which may not be cited in the text)

- Abed, JM. 2008. Restoration rate of waterfowl population in the restored marshes, southern Iraq. *Marsh Bulletin* 3: 67–80.
- Ali, Z, F Bibi, SY Shelly, A Qazi & AM Khan. 2011. Comparative avian faunal diversity of Jiwani coastal wetlands and Taunsa Barrage wildlife sanctuary, Pakistan. *Journal of Animal and Plant Sciences* 21: 381–387.
- Ananian, VYu, MG Ghasabyan, KE Aghababyan, MG Maregasparyan & VSh Hakobyan. 2007. Midwinter waterbird counts in Armenia. Results for 2003–2007. *Ecologia Berkut* 16: 195–204.
- Arkipov, VY. 2006. Status and distribution of selected bird species on the Russia-Kazakhstan border northwest of the Caspian Sea. *Sandgrouse* 28: 156–160.
- Ashoori, A, H Amini, A Khaleghizadeh, A Manolopoulos, G Catsadorakis. 2019. What caused the impressive increase of Dalmatian Pelicans *Pelecanus crispus* wintering in Iran in the period 1998–2017? *Zoology in the Middle East*. doi:10.1080/09397140.2019.1663866.
- AzerRoadServices Joint Stock Company. 2012. *Second Road Network Development Investment Program: Masalli (Sarcuwar) Interchange to Shorsulu (Bilasuar) Interchange*. <https://www.adb.org/projects/documents/second-road-network-development-investment-program-masalli-to-shorsulu-interchange-eia>. [Accessed 28 August 2016]
- Barua, M & P Sharma. 1999. Birds of Kaziranga National Park, India. *Forktail* 15: 47–60.
- Begum, A, MZ Khan, SA Ghalib, R Kanwal, A Zehra, G Yasmeen, S Siddiqui, B Hussain, IS Khan, A Safi, MUA Hashmi, T Lateef, MA Iqbal & U Manzoor. 2016. Distribution, status and current trends in the population of coastal birds of Balochistan. *Canadian Journal of Pure & Applied Sciences* 10: 3853–3864.
- Behrouzi-Rad, B. 2007. Identification of fish-eating birds. *International Journal of Environmental Research* 1: 88–95.
- Behrouzi-Rad, B. 2009. Waterbird populations during dry and wet years in the Hamoun Wetlands Complex, Iran/Afghanistan Border. *Podoces* 4: 88–99.
- Behrouzi-Rad, B. 2013a. Breeding species of waterbirds on 10 islands of Persian Gulf in 2009. *Octa Journal of Environmental Research* 1: 52–64.
- Behrouzi-Rad, B. 2013b. Waterbirds population, species diversity and similarity fluctuation in relation to water pollution in Zangi and Ahmadi Coastal Wetlands in Khore Mosa, Iran. *International Journal of Marine Science* 3: 311–318.
- Behrouzi-Rad, B. 2013c. Wintering position and first record of breeding of Dalmatian Pelican *Pelecanus crispus* on Tiff Island in Khore Mosa in Persian Gulf in 2010. *Octa Journal of Environmental Research* 1: 77–88.
- Behrouzi-Rad, B. 2014. Population dynamic and species diversity of wintering waterbirds in mangroves wetland (Persian Gulf) in 1983 and 2013. *International Journal of Marine Science* 4: 1–7.
- Bibi, F & Z Ali. 2013. Measurement of diversity indices of avian communities at Taunsa Barrage Wildlife Sanctuary, Pakistan. *Journal of Animal and Plant Sciences* 23: 469–474.
- BirdLife International. 2018. *Pelecanus crispus* (amended version of 2017 assessment). The IUCN Red List of Threatened Species 2018: <http://dx.doi.org/10.2305/IUCN.UK.2017-3.RLTS.T22697599A122838534.en>. [Downloaded 10 May 2019]
- BirdLife International. 2019. Species factsheet: *Pelecanus crispus*. <http://datazone.birdlife.org/species/factsheet/dalmatian-pelican-pelecanus-crispus/details>. [Accessed 26 April 2019]
- Bot, S. 2008. *Kazakhstan – May 11 – July 11 2008*. http://www.surfbirds.com/trip_report.php?id=1445. [Downloaded 21 January 2014]

- Catsadorakis, G, O Onmuş, S Bugariu, O Gül, D Hatzilacou, O Hatzofe, M Malakou, T Michev, T Naziridis, H Nikolaou, A Rudenko, D Saveljic, S Shumka, M Siki & AJ Crivelli. 2015. Current status of the Dalmatian pelican and the great white pelican populations of the Black Sea/Mediterranean flyway. *Endangered Species Research* 27: 119–130.
- Catsadorakis, G & D Portolou. 2016. *1st Draft Status Report for the Dalmatian Pelican (Pelecanus crispus). Report of Action A6 under the framework of Project LIFE EuroSAP (LIFE14 PRE/UK/002)*. Hellenic Ornithological Society and Society for the Protection of Prespa (unpublished report).
- Catsadorakis, G & D Portolou (compilers). 2018. *International Single Species Action Plan the Conservation of the Dalmatian Pelican (Pelecanus crispus)*. CMS Technical Series No. 39, AEW Technical Series No. 69, EAAFP Technical Report No. 1. Bonn, Germany and Incheon, South Korea.
- Chaudhry, MJI, M Arshad & G Akbar. 2012. Some observations on threatened and near threatened avifauna of Pakistan. *Records: Zoological Survey of Pakistan* 21: 65–72.
- Chen, I-C, JK Hill, R Ohlemüller, DB Roy & CD Thomas. 2011. Rapid range shifts of species associated with high levels of climate warming. *Science* 333: 1024–1026.
- Cresswell, W, S Yerokhov, N Berezovikov, R Mellanby, S Bright, P Catry, J Chaves, J Freile, A Gretton, A Zykina, R McGregor & D McLaughlin. 1999. Important wetlands in northern and eastern Kazakhstan. *Wildfowl* 50: 181–194.
- Crivelli, AJ. 1994. The importance of the former USSR for the conservation of pelican populations nesting in the Palearctic. In: Crivelli, AJ, VG Krivenko & VG Vinogradov (eds). *Pelicans in the former USSR*. IWRB Publication 27, Slimbridge, UK, pp1–4.
- Crivelli, AJ, G Catsadorakis, D Hatzilacou, D Hulea, M Malakou, M Marinov, T Michev, T Nazirides, N Peja, G Sarigul & M Siki. 2000. *Status and population development of Great white and Dalmatian pelicans, Pelecanus onocrotalus and P. crispus breeding in the Palearctic*. Medmaravis 5th Pan-Mediterranean Seabird Symposium, Malta, pp38–45.
- Crivelli, AJ, VG Krivenko & VG Vinogradov (eds). 1994. *Pelicans in the former USSR*. IWRB Publication 27. Slimbridge, UK.
- Dinkevich, MA, PA Tilba, RA Mnatsekanov, YuV Lokhman & TV Korotkiy. 2003. The new data on wintering of Dalmatian Pelican in Krasnodar region. *Berkut* 12: 1–2.
- Dinkevich, MA. 2008. Action Plan for conservation of Dalmatian Pelican (*Pelecanus crispus*) in Caucasus eco-region. In: Dzhmirzoev GS & SA Bukreev (eds). *Action Plans for conservation of globally threatened bird species in Caucasus eco-region*. Russian Bird Conservation Union, Institute of Biogeography and Landscape Ecology at Daghestan State Pedagogical University, pp 109–116. [in Russian and English]
- Dzhmirzoev, GS. 2013. *Problems and outlook of bird conservation in Russia*. Proceedings of the All-Russian Conference, dedicated to the 20th anniversary of the Russian Bird Conservation Union. RBCU, Moscow.
- Dzhmirzoev, GS & SA Bukreev. 2008. *Action plans for conservation of globally threatened bird species in Caucasus eco-region*. Russian Bird Conservation Union, Institute of Biogeography and Landscape Ecology at Daghestan State Pedagogical University. RBCU, Moscow–Makhachkala.
- Ejtehadi, H, T Amini & H Zare. 2005. Importance of vegetation studies in conservation of wildlife: a case study in Miankaleh wildlife refuge, Mazandaran Province, Iran. *Environmental Sciences* 9: 53–58.
- Garstecki, T & Z Amr. 2011. *Biodiversity and Ecosystem Management in the Iraqi Marshlands. Screening Study on Potential World Heritage Nomination*. IUCN, Amman, Jordan.
- Ghasemi, S, M Zakaria, H Abdul-Hamid, E Yusof, A Danehkar & MN Rajpar. 2010. A review of mangrove value and conservation strategy by local communities in Hormozgan province, Iran. *The Journal of American Science* 6: 329–338.
- Ghasemi, S, N Mola-Hoveizeh, M Zakaria, A Ismail & FH Tayefeh. 2012. Relative abundance and diversity of waterbirds in a Persian Gulf mangrove forest, Iran. *Tropical Zoology* 25: 39–53.
- Gilissen, N, L Haanstra, S Delany, G Boere & W Hagemeyer. 2002. *Numbers and distribution of wintering waterbirds in the Western Palearctic and Southwest Asia in 1997, 1998 and 1999. Results from the International Waterbird Census*. Wetlands International Global Series 11, Wageningen, The Netherlands.
- Glantz MH & IS Zonn. 2005. *The Aral Sea: Water, climate, and environmental change in Central Asia*. World Meteorological Organization No. 982. ISBN 92-63-10982-6.
- Haider, MJ & A Rauf. 2011. An updated checklist of avifauna of coastal wetland complex, Karachi, Pakistan. *Berkut* 20: 17–21.
- Heiss, M & K Gauger. 2011. Coastal bird migration at the Caspian shore of the Azerbaijan Republic in October 2007. *Podoces* 6: 59–71.
- Heiss, M. 2012. The importance of Besh Barmag bottleneck (Azerbaijan) for Eurasian migrant birds. *Acta Ornithologica* 48: 151–164.
- Hickling R, DB Roy, JK Hill, R Fox & CD Thomas. 2006. The distributions of a wide range of taxonomic groups are expanding polewards. *Global Change Biology* 12: 450–455.

- Hu Z, C Zhang & Q Hu. 2011. Temperature changes in Central Asia from 1979 to 2011 based on multiple datasets. *Journal of Climate* 27: 1143-1167.
- Ilyashenko, EI. 2010. *Atlas of Key Sites for the Siberian Crane and Other Waterbirds in Western/Central Asia*. International Crane Foundation, Baraboo, Wisconsin, USA.
- International Crane Foundation. 2009. Safe Flyways for the Siberian Crane. https://www.cms.int/siberian-crane/sites/default/files/uploads/SiberianCrane/SCWP_final_low_spreads-reduced.pdf. [Downloaded 28 January 2017]
- Joolae, L, B Behrouzi-Rad, HR Esmaeili & O Tabiee. 2011. Sivand Dam as an alternative wetland for wintering waterbirds in Fars Province, southern Iran. *Podoces* 6: 130-134.
- Kashkarov, R, GR Welch & M Brombacher. 2008. *Important Bird Areas in Uzbekistan-priority sites for conservation*. Uzbekistan Society for the Protection of Birds, Tashkent, Uzbekistan.
- Keijl, GO, TM Van der Have, J Mansoori & VV Morozov. 2000. Some interesting bird observations from the coast of Iran, January-February 2000. *Sandgrouse* 23: 44-48.
- Khaleghizadeh, A & B Behrouzi-Rad. 2004. On waterbirds in the Anzali Wetlands, Iran, in 1999/2000. *Zoology in the Middle East* 31: 13-22.
- Khaleghizadeh, A. 2007. Waterbirds in microhabitats of Selke and Espand, in the Anzali Wetlands, Iran. *Sandgrouse* 29: 17-34.
- Khalilipour, O, B Behrouzi-Rad & A Khaleghizadeh. 2007. A six-month survey of waterbirds in the Alagol and Kiashahr wetlands, Northern Iran, in the 2002-2003 winter. *Sandgrouse* 29: 167-176.
- Khan, MZ, T Jabeen, SA Ghalib, S Siddiqui, MS Alvi, IS Khan, G Yasmeen, A Zehra, F Tabbassum, B Hussain & R Sharmeen. 2014. Effect of right bank outfall drain (RBOD) on biodiversity of the wetlands of Haleji wetland complex, Sindh. *Canadian Journal of Pure & Applied Sciences* 8: 2871-2900.
- Khani, A, E Nouran, A Kafash, SS Ilanloo, J Alipour & M Yousefi. 2015. Artificial waterbodies in Sarakhs county: important stopover sites for migratory waterbirds in northeastern Iran. *Sandgrouse* 37: 71-78.
- Kostiushyn, V, Yu Andryuschenko, I Goradze, A Abuladze, J Mamuchadze & K Erciyas. 2011. *Wintering Waterbird Census in the Azov-Black Sea Coastal Wetlands of Ukraine, Georgia and Turkey*. Wetlands International Black Sea Programme, Kiev.
- Krivenko, VG, AJ Crivelli & VG Vinogradov. 1994. Historical changes and present status of pelicans in the former USSR: a synthesis with recommendations for their conservation. In: Crivelli, AJ, VG Krivenko & VG Vinogradov (eds). *Pelicans in the former USSR*. IWRB Publication 27, Slimbridge, UK, pp132-151.
- LUKOIL Uzbekistan Operating Company LLC. 2012. Khauzak-Shady Biodiversity Action Plan. https://www.miga.org/sites/default/files/archive/Documents/Khauzak_Biodiversity_Action_Plan.pdf. [Downloaded 22 August 2016]
- Macleán, MD, MM Rehfish, S Delany & RA Robinson. 2007. *The Effects of Climate Change on Migratory Waterbirds within the African-Eurasian Flyway*. Doc TC8.24, 8th Meeting of the Technical Committee. British Trust for Ornithology, Thetford, UK & AEWASecretariat, Bonn, Germany.
- Mansoori, J. 2009. The avian community of five Iranian wetlands, Miankaleh, Fereidoonkenar, Bujagh, Anzali and Lavandevil, in the South Caspian Lowlands. *Podoces* 4: 44-59.
- Martin, TE, V Nivet-Mazerolles, C Landsmann, M Guilleman, J Dubos, F Valejo & V Dombrovski. 2014. Bird records from south-central Uzbekistan, 2010-2013. *Sandgrouse* 36: 34-49.
- Møller, AP. 2015. Environmental Indicators of Climate Change: Phenological Aspects. In: Armon RH & O Hänninen (eds). *Environmental Indicators*. Springer, Dordrecht, Germany, pp39-49.
- Morimoto, Y, Y Natuhara, A Morimura & M Horikawa. 2005. The pelican scenario for nature restoration of Aral Sea wetland ecosystems. *Landscape and Ecological Engineering* 1: 85-92.
- Mundkur, T, D Bakewell & G Chong. 2009. *Status of waterbirds in Asia: results of the Asian waterbird census, 1987-2007*. Wetlands International, Wageningen, The Netherlands.
- Mundkur, T, D Watkins, N Batbayar, C Lei, V Fu, Y-Y Tung, S Chan & L Yong. 2017. *Conservation Planning for the Critically Endangered East Asian population of the Dalmatian Pelican Pelecanus crispus. Contribution to an International Single Species Action Plan*. Unpublished report to AEWASecretariat.
- Natuhara, Y. 2002. *Tracking pelicans in Kazakhstan*. https://www.microwavetelemetry.com/uploads/NewsletterPDFs/MTINewsletter_2003_Winter.pdf. [Downloaded 29 October 2016]
- Onmuş, O, M Siki, G Sarıgül & AJ Crivelli. 2011. Status and development of the population of the globally threatened Dalmatian Pelican *Pelecanus crispus* in Turkey. *Zoology in The Middle East* 54: 3-17.
- OSME. 2019. The OSME Region List of Bird Taxa, Part A: Non-passerines. Version 4.4: February 2019. http://osme.org/sites/default/files/pdf/A_ORL-V4.4-Final-Non-Passerines.pdf. [Downloaded 26 April 2019]
- Praveen, J. 2018. Birds of Afghanistan: Species not recorded in the 'Indian Subcontinent checklist'. *Indian birds* 14: 141-144.
- Ramsar Sites Information Service. 1997a. *Information Sheet on Ramsar Wetlands: Kuban Delta: Akhtaro-Grievenskaya group of limans*. <https://rsis.ramsar.org/rsis/675>. [Accessed 28 August 2016]

- Ramsar Sites Information Service. 1997b. *Information Sheet on Ramsar Wetlands: Lake Alagol, Lake Ulmagol and Lake Ajigol*. <https://rsis.ramsar.org/ris/49>. [Accessed 26 April 2019]
- Ramsar Sites Information Service. 1997c. *Information Sheet on Ramsar Wetlands: Lake Manych-Gudilo*. <https://rsis.ramsar.org/ris/673>. [Accessed 28 August 2016]
- Ramsar Sites Information Service. 1997d. *Information Sheet on Ramsar Wetlands: Lake Urmia [or Orumiyeh]*. <https://rsis.ramsar.org/ris/38>. [Accessed 26 April 2019]
- Ramsar Sites Information Service. 1997e. *Information Sheet on Ramsar Wetlands: Lakes of the lower Turgay and Irgiz*. <https://rsis.ramsar.org/ris/108>. [Accessed 26 April 2019]
- Ramsar Sites Information Service. 1997f. *Information Sheet on Ramsar Wetlands: Tobol-Ishim Forest-steppe*. <https://rsis.ramsar.org/ris/679>. [Accessed 15 December 2016]
- Ramsar Sites Information Service. 1997g. *Information Sheet on Ramsar Wetlands: Veselovskoye Reservoir*. <https://rsis.ramsar.org/ris/672>. [Accessed 28 August 2016]
- Ramsar Sites Information Service. 1997h. *Information Sheet on Ramsar Wetlands: Volga Delta*. <https://rsis.ramsar.org/ris/111>. [Accessed 28 August 2016]
- Ramsar Sites Information Service. 1999. *Information Sheet on Ramsar Wetlands: Deltas of Rud-e-Shur, Rud-e-Shirin and Rud-e-Minab*. <https://rsis.ramsar.org/ris/51>. [Accessed 26 April 2019]
- Ramsar Sites Information Service. 2006. *Information Sheet on Ramsar Wetlands: Naurzum Lake System*. <https://rsis.ramsar.org/ris/1872>. [Accessed 25 August 2016]
- Ramsar Sites Information Service. 2007a. *Information Sheet on Ramsar Wetlands: Alakol-Sasykkol Lakes System*. <https://rsis.ramsar.org/ris/1892>. [Accessed 26 April 2019]
- Ramsar Sites Information Service. 2007b. *Information Sheet on Ramsar Wetlands: Koibagar -Tyuntyugur Lake System*. <https://rsis.ramsar.org/RSIapp/files/RSIrep/KZ1862RIS.pdf>. [Downloaded 26 August 2016]
- Ramsar Sites Information Service. 2009a. *Information Sheet on Ramsar Wetlands: Kulykol-Taldykol Lake System*. <https://rsis.ramsar.org/ris/1863>. [Accessed 5 September 2016]
- Ramsar Sites Information Service. 2009b. *Information Sheet on Ramsar Wetlands: Ural River Delta and adjacent Caspian Sea coast*. <https://rsis.ramsar.org/ris/1856>. [Accessed 26 August 2016]
- Ramsar Sites Information Service. 2010. *Information Sheet on Ramsar Wetlands: Lesser Aral Sea and Delta of the Syrdarya River*. <https://rsis.ramsar.org/ris/2083>. [Accessed 5 September 2016]
- Ramsar Sites Information Service. 2011. *Information Sheet on Ramsar Wetlands: Ili River Delta and South Lake Balkhash*. <https://rsis.ramsar.org/ris/2020>. [Accessed 26 April 2019]
- Rasmussen, P & JC Anderton. 2005. *Birds of South Asia: The Ripley Guide*. 2 vols. Lynx Editions, Barcelona and Smithsonian Institution, USA.
- Rohit, P & D Nishith. 2014. Assessment of bird and macrofauna diversity in mangrove ecosystem of Jakhau Creek, Gulf of Kachchh, India. *International Journal of Plant, Animal and Environmental Sciences* 4: 447–453.
- Rustamov, EA. 1994. The wintering waterfowl of Turkmenistan. *Wildfowl* 45: 242–247.
- Rustamov, EA, GR Welch & M Brombacher. 2009. *Important Bird Areas in Turkmenistan - priority sites for conservation*. Ministry of Nature Protection, Ashgabat, Turkmenistan.
- Rustamov, EA & AV Belousova. 2013. Wetland Birds of the Hydrographic Network of Altyn Asyr. In: Zonn, IS & AG Kostianov (eds.) *The Turkmen Lake Altyn Asyr and Water Resources in Turkmenistan*. Springer, Berlin, Heidelberg, pp261–290.
- Salim, MA, OF Al-Sheikhly, KA Majeed & RF Porter. 2012. An annotated checklist of the birds of Iraq. *Sandgrouse* 34: 4–43.
- Savitskiy, RM & NV Lebedeva. 2011. *The nesting of Anseriformes in suboptimal conditions – waterfowl of northern Eurasia: geography, dynamics and population management*. International Conference on the Waterfowl of Northern Eurasia.
- Schieltzeth, H, G Eichhorn, T Heinicke, J Kamp, MA Koshkin, AV Koshkin & L Lachmann. 2008. Waterbird population estimates for a key staging site in Kazakhstan: a contribution to wetland conservation on the Central Asian flyway. *Bird Conservation International* 18: 71–86.
- Sea Alarm Foundation. 2009. *Country Wildlife Response Profiles: Russian Federation*. <https://www.sea-alarm.org/wp-content/uploads/2010/07/russia-black-sea.pdf>. [Downloaded 1 October 2016]
- Sharma, BK, S Kulshreshtha & AR Rahmani. 2013. *Faunal Heritage of Rajasthan, India*. Springer International Publishing, Switzerland.
- Sklyarenko, SL, GR Welch & M Brombacher. 2008. *Important Bird Areas in Kazakhstan: priority sites for conservation*. Association for the Conservation of Biodiversity of Kazakhstan (ACBK), Almaty.
- Solokha, A. 2006. *Results from the international waterbird census in Central Asia and the Caucasus 2003–2005*. Wetlands International Russia, Moscow.
- Soloviev, SA. 2006. Waterbird surveys in the Tobolo-Irtyskaja forest-steppe and steppe of Western Siberia. In: Boere, GC, CA Galbraith & DA Stroud (eds). *Waterbirds around the world*. The Stationery Office, Edinburgh, UK, p 266.

- Soloviev, SA, OA Odinev, ED Ratnichenko & VE Mezer. 2006. Dalmatian Pelican population inhabiting the lake system Saltaim-Tenis and adjoining lakes (north of the forest-steppe zone of Omsk Region). *Strept* 2: 85–90. [In Russian]
- Soloviev, SA & FS Soloviev. 2011. *The world most northern colony of Dalmatian pelican (Pelecanus crispus) and Cormorant (Phalacrocorax carbo) in the lake system Saltaim-Tenis (northern forest-steppe of Omsk region, Western Siberia)*. 8th Conference of the European Ornithologists' Union. p360. http://eounion.wpengine.com/wp-content/uploads/2015/07/EOU_Riga_Abstracts.pdf. [Downloaded 28 January 2017]
- Soloviev, SA, OS Soloviev & SS Soloviev. 2015. *Current condition of the most northern populations Dalmatian Pelican and Cormorant in Siberia*. 10th Conference of the European Ornithologists' Union. Book of Abstracts, pp 468.
- Soloviev, SA & OS Soloviev. 2017. The current status of the world's northernmost colony of Dalmatian Pelican *Pelecanus crispus* in Omsk Oblast. *Ornithologischer Anzeiger* 56: 29–33.
- Sultanov, E. 2008. Recent waterbird counts in Gyzylygach, the Azerbaijan Republic's most important Ramsar site, with comments on conservation. *Podoces* 3: 31–38.
- Tablot G. 2012. *Kazakhstan*. <http://www.surfbirds.com/mb/trips/kazakhstan-talbot-0512.pdf>. [Downloaded 17 June 2016]
- Turaev, M. 2012. Akpetky lakes, Sarykamysh lake, Ayakaghytma lake, and their desert surrounds: three new Important Bird Areas in Uzbekistan. *Sandgrouse* 34: 137–147.
- UNESCO. 2008. *Saryarka – Steppe and Lakes of Northern Kazakhstan*. <https://whc.unesco.org/en/list/1102/documents/>. [Accessed 19 October 2016]
- Välimäki, K, A Lindén & A Lehtikoinen. 2016. Velocity of density shifts in Finnish landbird species depends on their migration ecology and body mass. *Oecologia* 181: 313–321.
- Van der Have, TM, GO Keijl, J Mansoori & VV Morozov. 2001. *Searching for Slender-billed Curlews in Iran, January-February 2000*. WIWO, Zeist.
- Van der Have, TM, GO Keijl, J Mansoori & VV Morozov. 2002. Waterbirds in coastal wetlands along the Persian Gulf coast of Iran, January-February 2000. *Zoology in the Middle East* 26: 71–88.
- Van Diek, H, R Felix, M Hornman, P Meininger, F Willems & M Zekhuis. 2004. Bird counting in Iran in January 2004. *Dutch Birding* 26: 287–296.
- Vijayan, L & VS Vijayan. 2013. Conservation and Management of Wetland Birds in Rajasthan: Perspectives and Challenges. In: Sharma, BK, S Kulshreshtha & AR Rahmani (eds). *Faunal Heritage of Rajasthan, India*. Springer International Publishing, Switzerland, pp231–244.
- Vilkov, EV. 2006. Evolution of freshwater lagoons in Daghestan and their importance for waterbirds on the west Caspian coast. In: Boere, GC, CA Galbraith & Stroud DA (eds). *Waterbirds around the world*. The Stationery Office, Edinburgh, UK, p372.
- Vinogradov, VG & EM Auezov. 1994. Past and present distribution of pelicans in Kazakhstan. In: Crivelli, AJ, VG Krivenko & VG Vinogradov (eds). *Pelicans in the former USSR*. IWRB Publication 27, Slimbridge, UK, pp32–44.
- Wassink, A. 2008. *Ornithological trip report Kazakhstan September – October 2008*. https://www.researchgate.net/publication/228769316_ORNITHOLOGICAL_TRIP_REPORT_KAZAKHSTAN_SEPTEMBER-OCTOBER_2008. [Downloaded 2 October 2016]
- Wassink A. 2009. *Ornithological Trip Report Kazakhstan May 2009*. <http://www.surfbirds.com/mb/Features/wassink/kazakhstan-aw-2009-spr.pdf>. [Downloaded 2 October 2016]
- Wassink, A. 2011. *Ornithological trip report Kazakhstan March-April 2011*. <http://www.surfbirds.com/mb/Features/wassink/kazakhstan-aw-2011.pdf>. [Downloaded 17 June 2016]
- Wassink, A & GJ Oreel. 2008. Birds of Kazakhstan: new and interesting data. *Dutch Birding* 30: 93–100.
- Wetlands International. 2003. *Directory of Azov-Black Sea Coastal Wetlands*. <https://www.wetlands.org/publications/directory-of-azov-black-sea-coastal-wetlands/>. [Downloaded 26 October 2016]
- Zhatkanbaev, AZh. 1994. Methods for carrying out counts of *Pelecanus crispus* and *P. onocrotalus*. In: Crivelli, AJ, VG Krivenko & VG Vinogradov (eds) *Pelicans in the former USSR*. IWRB Publication 27, Slimbridge, UK, pp 115–118.

Aikaterini Christopoulou, Department of Ecology and Systematics, Faculty of Biology, National and Kapodistrian University of Athens, GR 15784 Zografos, Greece. aikatchr@gmail.com

Aris Manolopoulos & Giorgos Catsadorakis Society for the Protection of Prespa, Prespa, GR 53077 Aghios Germanos, Greece.

Appendix 1. Summary and source data of sites with recorded Dalmatian Pelican occurrence between 1990 and 2015 on the Central Asian flyway.

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
A1	Fig. 1	Agyol National Park	47° 38' 0.000" E	40° 4' 1.163" N	AZ030	Birdlife International 2019
A10	Fig. 1	Yashma island	49° 32' 34.864" E	40° 43' 31.897" N	AZ033	Birdlife International 2019
A2	Fig. 1	Besh Barmag	49° 13' 18.347" E	40° 59' 54.900" N		Heiss & Gauger 2011
A3	Fig. 1	Divichi liman (or Lake Akzibir)	49° 5' 8.229" E	41° 18' 13.779" N	AZ024	Birdlife International 2019
A6	Fig. 1	Sahil settlement-"Shelf factory"	49° 36' 0.000" E	40° 11' 0.000" N	AZ053	Birdlife International 2019
A7	Fig. 1	Sarysu Lake	48° 9' 31.473" E	40° 4' 57.541" N	AZ032	Birdlife International 2019
A8	Fig. 1	Gizilagach State Reserve	48° 49' 4.466" E	38° 53' 38.055" N	AZ048	AzerRoadServices Joint Stock Company 2012, Birdlife International 2019, Ilyashenko 2010, Sultanov 2008
A9	Fig. 1	Kura Delta, Shorgel lakes/Shirvan reserve	49° 16' 17.281" E	39° 30' 44.544" N	AZ046, AZ043	Birdlife International 2019
G2	Fig. 1	Kantsakhi Lake	43° 13' 56.589" E	41° 13' 0.769" N	GE017	Birdlife International 2019
G5	Fig. 1	Bogdasheni Lake, Khanchali Lake, Madatapha Lake	43° 47' 2.508" E	41° 10' 54.372" N	GE030, GE009, GE031	Birdlife International 2019
G6	Fig. 1	Kolkheti National Park, Paliastomi Lake, Rioni River Delta	41° 43' 14.795" E	42° 7' 40.982" N		Kostiushyn et al 2011
IN1	Fig. 5	Amipur Tank	69° 58' 26.298" E	21° 25' 20.021" N		Mundkur et al 2009
IN12	Fig. 5	Gir National Park and Wildlife Sanctuary	70° 48' 23.505" E	21° 17' 13.843" N	IN086	Birdlife International 2019
IN13	Fig. 5	Hamirsar Tank	69° 45' 14.320" E	23° 10' 17.787" N		Mundkur et al 2009
IN14	Fig. 5	Jafarabad Coast (Salt Works)	71° 27' 44.073" E	20° 52' 19.322" N		Mundkur et al 2009
IN15	Fig. 5	Jakhau Mangrove sites	68° 43' 0.816" E	23° 12' 37.271" N		Rohit & Nishith 2014
IN16	Fig. 5	Jamagar District: Dwaraka Taluka (6 Inland & 5 Coast)	69° 2' 14.427" E	22° 15' 41.200" N		Mundkur et al 2009
IN18	Fig. 5	Kaj Lake (Pipalava Bandharo)	70° 48' 33.205" E	20° 48' 36.464" N	IN087	Birdlife International 2019
IN19	Fig. 5	Kanjli Lake	75° 24' 18.036" E	31° 34' 40.970" N	IN050	Birdlife International 2019
IN2	Fig. 5	Banni Grassland and Chhari Dland	69° 24' 22.953" E	23° 42' 27.525" N	IN082	Birdlife International 2019
IN20	Fig. 5	Kathvadar Lake & Salt Pans	79° 40' 0.994" E	20° 59' 48.692" N		Mundkur et al 2009

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
IN22	Fig. 5	Rajasthan (Sambhar Lake, Keoladeo National Park, Bharatpur)	77° 30' 49.421" E	27° 11' 12.566" N	IN064	Sharma et al 2013, Vijayan & Vijayan 2013, Mundkur et al 2009, Birdlife International 2019
IN23	Fig. 5	Marine National Park and Wildlife Sanctuary, Khijadiya Lake and Bird Sanctuary, Jamnagar District: Jamnagar Taluka (8 Inland & 6 Coast)	70° 8' 35.433" E	22° 32' 42.613" N	IN089, IN088	Birdlife International 2019, Mundkur et al 2009
IN26	Fig. 5	Nabarovar Wildlife Sanctuary, Bhaskarpara	72° 1' 17.089" E	22° 47' 31.732" N	IN090	Birdlife International 2019, Mundkur et al 2009
IN27	Fig. 5	Wild Ass Wildlife Sanctuary, Nanda Bet Ner Village, Adesar	71° 4' 45.526" E	23° 34' 34.344" N	IN097	Birdlife International 2019, Mundkur et al 2009
IN29	Fig. 5	Gaurishanker Lake (Bortalao), New Port Saltpans, Bhavnagar	72° 14' 50.946" E	21° 40' 55.232" N	IN093	Mundkur et al 2009, Birdlife International 2019
IN3	Fig. 5	Bardha Dam, Sareri Bandh	75° 36' 6.554" E	25° 26' 52.145" N	IN059, IN074	Birdlife International 2019, Mundkur et al 2009
IN30	Fig. 5	Sambhar Lake	75° 0' 4.881" E	26° 59' 32.023" N	IN073	Birdlife International 2019
IN31	Fig. 5	Sardarsamand	73° 0' 42.439" E	26° 18' 49.554" N		Mundkur et al 2009
IN33	Fig. 5	Sariska Tiger Reserve	76° 28' 48.967" E	27° 25' 4.653" N	IN075	Birdlife International 2019
IN34	Fig. 5	Savada Village Pond (Nava Talao)	71° 44' 20.834" E	23° 12' 30.871" N		Mundkur et al 2009
IN35	Fig. 5	Thol Lake Wildlife Sanctuary	72° 36' 59.960" E	23° 22' 0.588" N	IN094	Birdlife International 2019
IN4	Fig. 5	Bhadar Dam, Fuljar Reservoir, Veri Dam (Talab)	70° 47' 13.492" E	21° 48' 59.105" N		Mundkur et al 2009
IN6	Fig. 5	Blackbuck National Park	72° 3' 36.937" E	22° 2' 38.206" N		Mundkur et al 2009
IN7	Fig. 5	Flamingo city, Devisar Tank	69° 56' 4.537" E	24° 1' 41.526" N	IN085	Birdlife International 2019, Mundkur et al 2009
IN8	Fig. 5	Dholi Dhaja Dam, Khirjog, Tundi Wetland	71° 40' 4.735" E	22° 45' 44.931" N		Mundkur et al 2009
IQ1	Fig. 2	Central Marshes	46° 59' 21.558" E	30° 57' 26.474" N	IQ075	Birdlife International 2019
IQ2	Fig. 2	Haur Al Hammar	47° 3' 26.485" E	30° 44' 10.495" N	IQ039	Birdlife International 2019
IQ3	Fig. 2	Haur Al Rayan and Umm Osbah	47° 1' 50.901" E	31° 40' 31.482" N	IQ033	Birdlife International 2019
IQ4	Fig. 2	Haur Om am Nyaj	47° 27' 10.738" E	31° 45' 13.344" N	IQ032	Birdlife International 2019
IQ5	Fig. 2	Haur Uwainah	46° 20' 51.152" E	31° 25' 53.118" N	IQ035	Birdlife International 2019
IQ6	Fig. 2	East Hammar	47° 30' 47.080" E	30° 40' 4.321" N	IQ039	Abed 2008
IR1	Fig. 2	Arjan Protected Area	51° 53' 40.671" E	29° 34' 19.691" N	IR074	Birdlife International 2019
IR11	Fig. 2	Khor Jask	57° 40' 32.950" E	25° 42' 52.537" N	IR101	Behrouzi-Rad 2013c, Birdlife International 2019

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
IR12	Fig. 2	Khouran Straits, Hara Protected Area	55° 42' 13.061" E	26° 49' 31.183" N	IR096	Behrouzi-Rad 2013c, Behrouzi-Rad 2014, Birdlife International 2019, Van der Have <i>et al</i> 2001, Van der Have <i>et al</i> 2002
IR13	Fig. 2	Bakhtegan Lake, Tashk Lake and Kamjan marshes	53° 30' 22.008" E	29° 43' 40.911" N	IR077	Behrouzi-Rad 2013a, Birdlife International 2019
IR14	Fig. 2	Miankaleh Peninsula and Gorgan Bay	53° 44' 42.126" E	36° 50' 11.919" N	IR023	Behrouzi-Rad 2007, Behrouzi-Rad 2013c, Birdlife International 2019, Ejtehadi <i>et al</i> 2005, Mansoori 2009, Van Diek <i>et al</i> 2004
IR15	Fig. 2	Rud-i-Gaz and Rud-i-Hara deltas	56° 50' 44.965" E	26° 40' 23.883" N	IR100	Birdlife International 2019
IR16	Fig. 2	Rud-i-Jagin and Rud-i-Gahik deltas	58° 20' 19.940" E	25° 35' 33.976" N	IR102	Birdlife International 2019
IR17	Fig. 2	Shadegan marshes and tidal mudflats of Khor -al Amaya and Khor Musa	48° 40' 21.621" E	30° 10' 16.170" N	IR064	Birdlife International 2019
IR18	Fig. 2	South Caspian shore, from Astara to Gomishan	52° 2' 46.392" E	36° 34' 53.670" N	IR012	Birdlife International 2019
IR3	Fig. 2	Bahu Kalat (Gandu) Protected Area	61° 15' 54.835" E	25° 25' 6.135" N	IR105	Birdlife International 2019
IR31	Fig. 2	Anzali - Southwest Caspian lowlands, Gilan province, Bujagh National Park (Sefid Rud)	49° 21' 2.024" E	37° 25' 34.436" N		Behrouzi-Rad 2007, Behrouzi-Rad 2013c, Ilyashenko 2010, Mansoori 2009, Khaleghizadeh <i>et al</i> 2004, Khaleghizadeh 2007
IR36	Fig. 2	Oroomiyeh Lake	45° 22' 14.207" E	37° 24' 13.020" N		Ramsar Sites Information Service 1997d
IR37	Fig. 2	Deltas of Rud-e-Shur, Rud-e-Shirin and Rud-e-Minab	56° 46' 4.156" E	27° 6' 48.824" N		Ramsar Sites Information Service 1999
IR4	Fig. 2	Bandar Kiashar lagoon and mouth of Sefid Rud	49° 55' 43.296" E	37° 23' 58.920" N	IR017	Birdlife International 2019
IR5	Fig. 2	Chahbahar Bay and Khor Konarak	60° 20' 52.040" E	25° 20' 24.972" N	IR104	Birdlife International 2019
IR61	Fig. 2	Sarakhs county	61° 9' 0.211" E	36° 30' 57.977" N		Khani <i>et al</i> 2015
IR62	Fig. 2	Sivand Dam	53° 5' 12.684" E	30° 8' 36.113" N		Joolae <i>et al</i> 2011
IR63	Fig. 2	Khore Ahmadi	49° 6' 17.000" E	30° 29' 41.000" N		Behrouzi-Rad 2009
IR65	Fig. 2	Alagol Lake, Ulmagol Lake, Ajigol Lake	54° 15' 55.289" E	37° 10' 31.397" N		Khalilipour <i>et al</i> 2007, Ramsar Sites Information Service 1997b
IR7	Fig. 2	Gomishan marshes and Turkoman steppes	53° 56' 28.422" E	37° 14' 55.481" N	IR024	Behrouzi-Rad 2007, Birdlife International 2019
IR8	Fig. 2	South end of the Hamoun-i Puzak, Hamoun-I Sabari, Hamoun-I Hirmand	61° 12' 1.359" E	31° 9' 21.425" N	IR088, IR087	Behrouzi-Rad 2009, Birdlife International 2019

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
IR9	Fig. 2	Dez river marshes and plains, Horeh Bamdej	48° 36' 6.193" E	31° 44' 25.130" N	IR059, IR061	Birdlife International 2019
K1	Fig. 3	Alkzhan Lakes	65° 41' 37.869" E	54° 10' 51.625" N	KZ024	Sklyarenko et al 2008
K10	Fig. 3	Cherniy (Black) Irysh Delta	84° 38' 50.123" E	47° 49' 7.726" N	KZ120	Birdlife International 2019, Sklyarenko et al 2008
K11	Fig. 3	Delta Kulanoptes Northeast	69° 14' 19.441" E	50° 25' 8.941" N	KZ051	Schielzeth et al 2008
K13	Fig. 1	Ural River Delta and Nearest Caspian Sea Coastal Zone	51° 41' 10.230" E	46° 55' 44.568" N	KZ009	Birdlife International 2019, Ilyashenko 2010, Ramsar Sites Information Service 2009b, Sklyarenko et al 2008
K14	Fig. 3	Ili River Delta and South Lake Balkhash	74° 50' 7.176" E	45° 23' 53.581" N	KZ092	Birdlife International 2019, Ramsar Sites Information Service 2011, Sklyarenko et al 2008
K16	Fig. 3	Irysh-Karaganda Waterworks 10	73° 39' 46.197" E	50° 47' 2.320" N	KZ085	Sklyarenko et al 2008
K17	Fig. 3	Isei Lake, Taban Lake	70° 0' 49.016" E	50° 49' 30.356" N		Schielzeth et al 2008
K18	Fig. 1	Kamysh-Samarskie Lakes	49° 51' 10.465" E	48° 53' 41.480" N	KZ006	Birdlife International 2019, Sklyarenko et al 2008
K19	Fig. 3	Karasuk	77° 8' 36.299" E	53° 30' 16.299" N	KZ082	Sklyarenko et al 2008
K2	Fig. 3	Alkzhar Lake, Kyzylkol Lake	69° 45' 24.531" E	43° 58' 31.623" N	KZ071, KZ072	Birdlife International 2019, Sklyarenko et al 2008, Wassink 2008, Wassink 2009
K20	Fig. 1	Kazakhstan portion of the river Volga's Delta-Zhambay	49° 29' 26.526" E	46° 22' 41.379" N	KZ008	Birdlife International 2019, Sklyarenko et al 2008
K24	Fig. 3	Shoshkaly Lake System, Kustani Region	64° 55' 59.000" E	53° 40' 0.000" N	KZ027	Birdlife International 2019, Cresswell et al 2009, Sklyarenko et al 2008
K25	Fig. 3	Koybagar-Tyuntuygur Lake System	65° 33' 28.486" E	52° 37' 1.998" N	KZ033	Birdlife International 2019, Ramsar Sites Information Service 2007b, Sklyarenko et al 2008
K26	Fig. 3	Kultansor and Tatyssor Lakes, Tassuat Lake	71° 27' 36.154" E	49° 45' 2.093" N	KZ060, KZ059	Birdlife International 2019, Sklyarenko et al 2008
K27	Fig. 3	Kulykol-Taldykol Lake System	61° 57' 49.662" E	51° 24' 33.272" N	KZ036	Birdlife International 2019, Ilyashenko 2010, Sklyarenko et al 2008
K28	Fig. 3	Kumdykol-Zharlykol Lake System	70° 58' 7.305" E	50° 36' 8.735" N	KZ056	Birdlife International 2019, Sklyarenko et al 2008
K29	Fig. 3	Kushmurum Lake	64° 45' 10.892" E	52° 39' 47.259" N	KZ032	Birdlife International 2019, Sklyarenko et al 2008
K3	Fig. 3	Alakol-Sasykkol Lakes System	81° 49' 11.704" E	46° 9' 28.625" N	KZ115	Birdlife International 2019, Ramsar Sites Information Service 2007a, Sklyarenko et al 2008
K32	Fig. 3	Sholak lake near Korgalzhyn	69° 51' 57.057" E	51° 52' 26.225" N		Bot 2008, Schielzeth et al 2008
K33	Fig. 3	Chu river (Lakes in the Lower reaches of the)	67° 42' 49.837" E	44° 54' 52.964" N	KZ069	Birdlife International 2019, Sklyarenko et al 2008

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
K34	Fig. 3	Lesser Aral Sea and Delta of the Syrdarya River	60° 13' 0.116" E	46° 16' 56.725" N	KZ043	Birdlife International 2019, Ramsar Sites Information Service 2010, Sklyarenko <i>et al</i> 2008
K36	Fig. 3	Karatal River (Lower reaches of the)	77° 14' 27.056" E	46° 27' 43.101" N	KZ090	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K37	Fig. 3	Turgai-Irgiz Lake System	62° 12' 54.319" E	48° 40' 39.788" N	KZ042	Birdlife International 2019, Goose & Duck 2008, Ramsar Sites Information Service 1997e, Sklyarenko <i>et al</i> 2008
K38	Fig. 3	Naurzum State Nature Reserve	64° 30' 43.422" E	51° 30' 45.115" N	KZ040	Birdlife International 2019, Ilyashenko 2010, Ramsar Sites Information Service 2006, Sklyarenko <i>et al</i> 2008
K4	Fig. 3	Altyn-Emel National Park	78° 25' 6.902" E	43° 59' 35.957" N	KZ101	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K40	Fig. 3	Petropavlosk	69° 14' 32.150" E	54° 2' 42.305" N		Cresswell <i>et al</i> 2009
K41	Fig. 3	Sarykopa Lake System, Zharkol lake	64° 10' 2.195" E	50° 8' 43.279" N	KZ041	Birdlife International 2019, Ilyashenko 2010, Sklyarenko <i>et al</i> 2008
K43	Fig. 3	Shiyshalkar Lake	70° 46' 25.264" E	50° 56' 0.163" N		Schielzeth <i>et al</i> 2008
K44	Fig. 3	Shoshkakol Lakes	69° 30' 51.949" E	43° 3' 53.428" N	KZ074	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K46	Fig. 3	Sorbalyk-Maibalyk Lakes Group	66° 41' 32.538" E	54° 20' 42.286" N	KZ025	Sklyarenko <i>et al</i> 2008
K47	Fig. 3	Sorbulak Lake System	76° 35' 10.407" E	43° 40' 21.233" N	KZ097	Birdlife International 2019, Bot 2008, Morimoto <i>et al</i> 2005, Wassink 2009
K49	Fig. 3	Syrdarya Delta Lakes	61° 42' 33.634" E	46° 2' 53.960" N	KZ044	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K52	Fig. 3	Korgalzhyn State Nature Reserve, Tengiz-Kurgajino Lake System, Delta Kulanotpes Northeast	68° 54' 55.271" E	50° 20' 23.011" N	KZ051	Birdlife International 2019, Bot 2008, Cresswell <i>et al</i> 2009, Schielzeth <i>et al</i> 2008, Tablot 2012, UNESCO 2008
K53	Fig. 3	Teniz-Karakamys Lakes	64° 31' 59.000" E	54° 7' 0.000" N	KZ023	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K54	Fig. 3	Tentek River Delta, Sasykkol	81° 4' 2.837" E	46° 27' 1.885" N	KZ114	Birdlife International 2019, Cresswell <i>et al</i> 2009, Sklyarenko <i>et al</i> 2008
K55	Fig. 3	Topar Lake	75° 9' 32.210" E	44° 58' 29.042" N		Wassink 2009
K56	Fig. 3	Tortoise Islands	83° 47' 2.089" E	49° 0' 21.700" N	KZ117	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K57	Fig. 3	Tounsor Hollow Lakes	62° 24' 6.767" E	51° 16' 25.740" N	KZ037	Birdlife International 2019, Sklyarenko <i>et al</i> 2008
K60	Fig. 1	Tyulen (Seal) Islands Archipelago	50° 21' 52.563" E	44° 47' 25.581" N	KZ011	Sklyarenko <i>et al</i> 2008
K61	Fig. 3	Amangeldy, Uyalshalkar Lake System	70° 15' 59.582" E	50° 35' 20.758" N	KZ052, KZ055	Birdlife International 2019, Schielzeth <i>et al</i> 2008, Sklyarenko <i>et al</i> 2008

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
K62	Fig. 3	Yereimtausk y Zakasnik	73° 16' 40.898" E	51° 26' 17.879" N		UNESCO 2008
K63	Fig. 3	Zayshan Lake	84° 1' 28.394" E	47° 59' 28.582" N		Cresswell et al 2009
K64	Fig. 3	Zhabagly-Arys-Chardara	68° 28' 25.038" E	42° 24' 10.643" N		Wassink 2011
K65	Fig. 3	Zhabagly/Ters Asthibulak lake-Second Tuzkol lake-Bililkol lake-Akkol lake	70° 41' 46.355" E	43° 1' 14.300" N		Wassink 2011
K8	Fig. 1	Caspian Sea shore between Volga and Ural River Deltas	50° 14' 47.461" E	46° 42' 57.236" N		Birdlife International 2019
K9	Fig. 3	Chardara Reservoirs	68° 12' 1.055" E	41° 6' 46.308" N	KZ076	Birdlife International 2019, Natuhara 2002, Sklyarenko et al 2008, Wassink 2008
P10	Fig. 5	Indus basin (lower)	68° 5' 48.987" E	26° 42' 57.399" N		Khan et al 2014
P11	Fig. 5	Indus Delta (Outer)	67° 20' 18.132" E	24° 30' 40.881" N	PK047	Birdlife International 2019
P12	Fig. 5	Indus Dolphin Reserve and Kandhkot wetlands	69° 16' 29.887" E	28° 13' 41.984" N	PK037	Birdlife International 2019
P14	Fig. 5	Jinani Beaches and Dasht Kaur	61° 47' 41.617" E	25° 5' 51.390" N	PK035	Ali et al 2011, Birdlife International 2019, Chaudhry et al 2012, Mundkur et al 2009
P16	Fig. 5	Kaimat Hor	64° 4' 39.504" E	25° 25' 44.123" N		Chaudhry et al 2012
P19	Fig. 5	Keeti Bundar North Wildlife Sanctuary	67° 38' 13.327" E	24° 24' 53.815" N	PK049	Birdlife International 2019
P2	Fig. 5	Astola Island	63° 50' 45.137" E	25° 7' 25.361" N		Chaudhry et al 2012
P20	Fig. 5	Kirthar National Park (incl. Hub Dam)	67° 30' 38.721" E	25° 49' 13.733" N	PK046	Birdlife International 2019
P21	Fig. 5	Manchar Lake	67° 40' 2.341" E	26° 25' 57.382" N	PK045	Birdlife International 2019, Mundkur et al 2009
P22	Fig. 5	Miani Hor	67° 38' 16.032" E	27° 28' 39.479" N		Chaudhry et al 2012
P23	Fig. 5	Jabho (= Jhubo=Jubho) Lake, Shaikh Kerio Peer, Narrari Lagoon	68° 40' 8.337" E	24° 20' 38.826" N		Chaudhry et al 2012, Mundkur et al 2009
P24	Fig. 5	Ormara	64° 37' 49.519" E	25° 11' 12.788" N		Chaudhry et al 2012
P25	Fig. 5	Pasni	63° 27' 38.689" E	25° 16' 52.859" N		Chaudhry et al 2012
P26	Fig. 5	Phoosna Wetland Complex	68° 55' 13.900" E	24° 49' 56.975" N	PK054	Birdlife International 2019, Chaudhry et al 2012, Mundkur et al 2009
P27	Fig. 5	Saji Dam	61° 59' 11.930" E	25° 29' 38.350" N		Chaudhry et al 2012, Mundkur et al 2009
P28	Fig. 5	Sakar Tali near Nagar Parkar	72° 6' 32.378" E	35° 4' 54.599" N		Chaudhry et al 2012

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
P30	Fig. 5	Taunsa Barrage Wildlife Sanctuary	70° 50' 55.735" E	30° 30' 31.560" N		Bibi & Ali 2013
P31	Fig. 5	Uchali Wetland Complex	72° 1' 36.461" E	32° 33' 27.311" N	PK024	Birdlife International 2019
P4	Fig. 5	Aakra River Estuary, Gawadar	62° 19' 11.774" E	25° 7' 7.374" N		Chaudhry et al 2012, Mundkur et al 2009
P6	Fig. 5	Hawkes Bay/Sandspit, Coastal wetland complex of Karachi	66° 55' 32.776" E	24° 50' 16.450" N		Chaudhry et al 2012, Haider & Rauf 2011, Mundkur et al 2009
P7	Fig. 5	Hingol National Park	65° 5' 2.466" E	25° 33' 1.268" N	PK036	Begum et al 2016, Birdlife International 2019, Chaudhry et al 2012
P8	Fig. 5	Hub Dam	67° 10' 52.043" E	25° 23' 58.379" N		Begum et al 2016, Mundkur et al 2009
P9	Fig. 5	Kinjhar (Kairi) Wildlife Sanctuary, Haleji Wildlife Sanctuary, Hudero (Hadero) Lake	67° 52' 21.142" E	24° 49' 51.308" N	PK048, PK051	Birdlife International 2019, Mundkur et al 2009
R12	Fig. 1	Chernie Zemli Zapovednik	45° 48' 37.713" E	46° 21' 27.742" N		UNESCO 2008
R13	Fig. 3	Bol'shoye Belaye lake, Chernoye Lake, Kurtan Lake, Schuch'ye Lake, Stekleney Lake	67° 27' 50.769" E	55° 45' 12.374" N	RU2068, RU2043, RU2056, RU2064, RU2055	Birdlife International 2019
R14	Fig. 1	Chograiskiy reservoir (Southern part of), Dadynskiye lakes, Lysyi Liman lake and valley of Vostochniy Manych river, Manychstroil area	44° 28' 50.405" E	45° 27' 39.005" N	RUI288, RUI164, RUI272, RUI377	Birdlife International 2019
R16	Fig. 1	Daghestan (Republic of)	47° 5' 25.646" E	42° 8' 12.717" N		Vilkov 2006
R17	Fig. 1	Dinskoy Bay	39° 28' 42.851" E	45° 5' 53.895" N		Wetlands International 2003
R2	Fig. 1	Adzhi Lake	48° 5' 10.760" E	42° 18' 57.131" N	RUI174	Birdlife International 2019
R21	Fig. 3	Kaban'e-Lake (Altai Krai), Tundrovo lake	69° 12' 32.837" E	55° 46' 50.329" N	RU2066, RU2069	Alexei Ebel pers comm, Birdlife International 2019
R26	Fig. 1	Kizitashsky Liman Complex	36° 58' 59.943" E	45° 4' 55.208" N	RUI152	Birdlife International 2019, Wetlands International 2003
R27	Fig. 1	Karakol'skiye Lakes, Kizlyar Bay, Nizhnekumskiyee floods, Tyuleni island	46° 56' 18.410" E	44° 34' 55.785" N	RUI176, RUI172, RUI419, RUI434, RUI435	Birdlife International 2019
R31	Fig. 3	Donguzly Lake (Chelyabinsk), Kurlady Lake	61° 42' 6.832" E	55° 4' 47.753" N	RU2030	Alexei Ebel per. comm, Birdlife International 2019
R39	Fig. 1	Oling area	45° 10' 39.766" E	46° 18' 29.426" N	RUI256	Birdlife International 2019
R3a	Fig. 1	Achikol'skiye lakes, Agrakhan Bay & Terek Delta, Southern Agrakhan Lake, Chechen' Island and east side of Agrakhan peninsula	47° 30' 8.999" E	43° 50' 38.290" N	RUI177, RUI422, RUI171, RUI435	Birdlife International 2019, Ilyashenko 2010, Soloviev 2006

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
R40	Fig. 1	Akhtarski and Sladki Liman Temporary Reserve (southeast Azov Sea coast), Beisugsky Liman and Lake Khanskoye, Kuban Delta, Salt lakes in the Primorsko-Akhtarsk area	38° 16' 54.068" E	45° 54' 52.668" N	RUI156, RUI150	Birdlife International 2019, Ramsar Sites Information Service 1997a, Sea Alarm Foundation 2009, Wetlands International 2003
R41	Fig. 3	Saltaim-Tenis Lake system, Omsk oblast	71° 57' 18.603" E	56° 9' 34.833" N	RU2072	Birdlife International 2019, Soloviev 2006, Soloviev et al 2006, Soloviev & Soloviev 2011, Soloviev et al 2015, Soloviev & Soloviev 2017
R42	Fig. 1	Mouth of Samur river	48° 31' 4.753" E	41° 51' 31.042" N	RUI173	Birdlife International 2019
R44	Fig. 3	Ayke Lake, Shalkaro-Zhetykol'ski lake system	60° 51' 41.295" E	50° 57' 3.214" N	RUI269, RUI217	Birdlife International 2019
R45	Fig. 1	Sochi and Psou rivers, Novorossiysk city (Sudzhuk lagoon), Kizitash salt lakes (Anapa district)	37° 47' 26.660" E	44° 41' 24.995" N		Dinkevich et al 2003
R48	Fig. 1	Mekhteb reservoir, Sulak skaya bay, Temirgoiskiye lake, Turali lakes, Turalinskaya lagoon	47° 13' 53.579" E	43° 8' 13.898" N	RUI263, RUI423, RUI262, RUI259, RUI261	Birdlife International 2019
R49	Fig. 3	Tere-Khol' Lake	95° 6' 57.915" E	50° 4' 9.149" N	RU3040	Birdlife International 2019
R50	Fig. 3	Tobol-Ishim Ramsar Site	68° 45' 29.193" E	55° 27' 25.698" N		UNESCO 2008
R55b	Fig. 3	Belozersky and Okunevsky Nature Reserves, Krutali Lake, Tyumen and Kurgan Regions	65° 20' 5.993" E	55° 30' 14.029" N	RU2053	Birdlife International 2019, International Crane Foundation 2009, Ramsar Sites Information Service 1997f
R56	Fig. 1	Veselovskoye Reservoir	41° 19' 14.622" E	46° 57' 46.307" N		Ramsar Sites Information Service 1997g
R57	Fig. 1	Astrakhan State Nature Biosphere Reserve (Volga Delta)	48° 29' 56.860" E	45° 46' 56.504" N	RUI179	Arkhipov 2006, Birdlife International 2019, Ilyashenko 2010, Solokha 2006
R58	Fig. 1	Volgograd Region	44° 32' 0.637" E	48° 41' 57.012" N		Dzhamirzoev 2013
R59	Fig. 1	Yeiski salt-lakes	38° 26' 5.315" E	46° 43' 20.018" N	RUI157	Birdlife International 2019, Wetlands International 2003
R9	Fig. 3	Bol'shoye Topol'noye lake, Holes of the Karasuk river downstream	77° 58' 2.559" E	53° 19' 55.173" N	RU2109, RU2090	Birdlife International 2019
T1	Fig. 4	Gorelde	62° 9' 10.029" E	40° 28' 7.788" N	TM039	Birdlife International 2019, Rustamov et al 2009
T11	Fig. 4	Zeyit-Kelif	65° 6' 12.600" E	37° 31' 31.200" N	TM048	Birdlife International 2019, Rustamov et al 2009
T2	Fig. 4	Jarsay-Khangui	61° 37' 40.424" E	38° 25' 11.990" N	TM035	Birdlife International 2019, Rustamov et al 2009

Map Code	Map	Site/IBA name	Longitude	Latitude	IBA code	Reference
T3	Fig. 4	Ketleshor-Ramankol	63° 0' 16.302" E	39° 33' 25.850" N	TM044	Birdlife International 2019, Rustamov <i>et al</i> 2009
T4	Fig. 4	Khankhovuz	61° 18' 10.839" E	37° 12' 6.565" N	TM036	Birdlife International 2019, Rustamov <i>et al</i> 2009
T5	Fig. 4	Nargyz	62° 46' 37.187" E	39° 42' 43.335" N	TM043	Birdlife International 2019, Rustamov <i>et al</i> 2009
T6	Fig. 4	Sarygamysh	57° 29' 11.259" E	41° 58' 49.070" N	TM022	Birdlife International 2019, Rustamov <i>et al</i> 2009, Rustamov & Belousova 2013
T7	Fig. 4	Saryyazy	62° 38' 12.228" E	36° 23' 29.009" N	TM042	Birdlife International 2019, Rustamov <i>et al</i> 2009
T8	Fig. 4	Soltandag-GyzyIburum	64° 14' 25.118" E	38° 46' 50.516" N	TM047	Birdlife International 2019, Rustamov <i>et al</i> 2009
T9	Fig. 4	Soltansanjan-Duyeyoyum	61° 31' 21.960" E	41° 2' 48.730" N	TM037	Birdlife International 2019, Rustamov <i>et al</i> 2009
U1	Fig. 4	Achinskoe Lake	65° 4' 58.915" E	38° 41' 21.320" N	UZ022	Kashkarov <i>et al</i> 2008
U10	Fig. 4	Dzheiran Ecocentre	64° 39' 21.700" E	39° 37' 23.178" N	UZ017	Birdlife International 2019
U11	Fig. 4	Kagan Fish Farm	64° 40' 39.210" E	39° 46' 16.231" N	UZ016	Birdlife International 2019
U12	Fig. 4	Karakyr Lakes	63° 17' 47.261" E	40° 25' 35.556" N	UZ012	Birdlife International 2019
U14	Fig. 4	Khorezm Fish Farm and adjacent lakes	60° 33' 2.079" E	41° 16' 37.538" N	UZ011	Kashkarov <i>et al</i> 2008
U15	Fig. 4	Tudakul and Kuymazar Reservoirs	64° 51' 28.265" E	39° 51' 18.176" N	UZ015	Birdlife International 2019, Martin <i>et al</i> 2014
U16	Fig. 4	Northern shore of Aydarkul Lake	66° 54' 52.860" E	40° 52' 55.008" N	UZ029	Birdlife International 2019
U18	Fig. 4	Sudochoye Lake	58° 29' 6.722" E	43° 29' 30.663" N	UZ002	Birdlife International 2019
U19	Fig. 4	Zekry Lake	64° 40' 15.113" E	39° 15' 2.075" N	UZ020	Birdlife International 2019
U2	Fig. 4	Alpetky lakes & Surrounding Araklum Desert	60° 23' 20.956" E	43° 41' 53.120" N	UZ049	Birdlife International 2019, Turaev 2012
U3	Fig. 4	Tuzkan Lake	67° 30' 21.506" E	40° 47' 3.295" N	UZ035	Birdlife International 2019
U4	Fig. 4	Aktepe Reservoir and Three Lakes	67° 29' 24.243" E	37° 25' 17.355" N	UZ048	Kashkarov <i>et al</i> 2008
U5	Fig. 4	Sarykamysh lake and surrounding Ustyurt plateau	57° 21' 59.294" E	42° 13' 44.328" N	UZ050	Turaev 2012
U6	Fig. 4	Arnasay Lake System	67° 49' 58.227" E	40° 49' 56.873" N	UZ030	Kashkarov <i>et al</i> 2008
U7	Fig. 4	Ayakaghytma lake & surrounding desert	64° 32' 17.110" E	40° 37' 15.890" N	UZ051	Birdlife International 2019, Turaev 2012
U9	Fig. 4	Dengizkul Lake	64° 29' 8.653" E	39° 2' 1.681" N	UZ021	Birdlife International 2019, LUKOIL Uzbekistan Operating Company LLC 2012

The development of the Besh Barmag Bird Migration Count in Azerbaijan and its importance for the monitoring of Eurasian migrant birds

MICHAEL HEISS, KAI GAUGER, CHRISTOPH HIMMEL, PIA FETTING, TOMAS AXÉN HARALDSSON, GABRIEL CAUCAL, ZÜLFÜ FƏRƏCLI & ELCHIN SULTANOV

Summary: The Caspian region is a hub for migrating birds. On the western shore in Azerbaijan a place was discovered in autumn 2007 where a very high concentration of migrating birds are observed. Here, at the Besh Barmag bottleneck, all migrating birds that avoid crossing the Greater Caucasus and the Caspian sea are concentrated into a narrow coastal plain. Since its discovery the site has been regularly visited by scientists and birdwatchers, who have conducted bird migration counts and produced a valuable set of data. The most comprehensive count, with some minor limitations, was undertaken from 1 September to 7 December 2018, when over 2.3 million individuals of 273 species were estimated to move south through the site. Considering the whole available data set for the site, a total of 316 species has been recorded. More than 1% of the flyway population of 45 species pass through the site, and for 22 species more than 1% of their world population has been counted passing in one or more seasons. This underlines the importance of this place for migratory birds and the potential for a future bird observatory.

INTRODUCTION

For centuries, bird migration has been a well-known phenomenon along the Caspian sea coast. Early naturalists like Gustav Radde witnessed migrating waterfowl and their hunting in southern Azerbaijan (Radde 1886). On the western Caspian coast migrating birds have mainly been studied along the Caspian shoreline of Dagestan (Russia), north of Azerbaijan, with a focus on water-dependent species or raptors (eg Mikheev *et al* 1975, Butiev *et al* 1983, Mikheev 1985, Mikheev 1991, 1992, Lebedeva & Butiev 1998, Kostin & Butiev 2000, Vilkov 2006) and in southern Azerbaijan (eg Shubin 1998, Sultanov 2006, Sultanov 2008). These studies focused mainly on resting or wintering birds and knowledge about actively migrating birds, their actual numbers and migration routes remained sparse.

The Besh Barmag migration bottleneck in Azerbaijan was discovered in autumn 2007 (Heiss & Gauger 2011). Here, about 80 km north of the capital Baku, the foothills of the Greater Caucasus almost reach the shoreline of the Caspian sea at the c500m high Mount Besh Barmag (Beşbarmaq dağı in Azerbaijani), forming a narrow coastal plain. Migrating birds that avoid crossing the two topographic obstacles of the mountains and the sea are funnelled through this 2.5 km wide plain (Plates 1 & 2). Furthermore, the direction of the shoreline coincides closely with the general north-south orientation of the migration route, and may act as 'guiding lines' used by migrating birds (Geyr von Schweppenburg 1963, Berthold 2000). Despite the shortness of the first observation period in autumn 2007, with just 3.5 weeks of fieldwork, the unanticipated passage of over 300 000 migrating birds gave the first indication of a potential major bird migration bottleneck in Azerbaijan (Heiss & Gauger 2011). In 2008, a first attempt was made to gather data over a complete autumn season with an international team of bird counters and bird ringers, but due to problems with local authorities the project had to be cancelled after just two weeks.

The first comprehensive bird migration study was conducted a few years later in autumn 2011 and spring 2012, when both migration periods were fully covered by almost daily counts (Heiss 2013a). Across both periods, a total of 278 bird species were recorded. Due to the study design an estimated total of 1.2–1.5 million diurnally migrating



Plate 1. Location of Besh Barmag bottleneck within the Transcaucasian region. Migrating birds (red area and arrow) coming from the north concentrate between the two migration barriers of the Greater Caucasus and Caspian sea that form the Besh Barmag bottleneck in north-eastern Azerbaijan (white border). Not shown are movements through the Greater Caucasus and across the Caspian sea or along its coast (after Heiss & Gauger 2011).



Plate 2. View from the top of easternmost foothill of the Greater Caucasus at an altitude of about 450 m asl. Mount Besh Barmag is the rocky outcrop on the right side. The counting station is down in the coastal plain near the Caspian Sea, Azerbaijan, 25 May 2012. © Michael Heiss

individuals in autumn 2011 and 0.6–0.8 million in spring 2012 could be estimated, supporting the assumption of a major bird migration bottleneck at Besh Barmag (Heiss 2013a). Comparisons with world and flyway population estimates suggest that 15 bird species exceeded 1% of their world populations in at least one of the two seasons and a total of 34 species exceed 1% of their flyway populations, which underlines the importance of this place for migratory birds (Heiss 2013a, 2016a). The main limitation of this study was, however, that the data were gathered by a single counter, very likely to miss a large proportion of migrating birds on busy days. Additionally, there were occasional gaps of unwatched observation hours and observation days due to the study design, which also



Plate 3. Group picture of the first 'Bird Camp Besh Barmag' in autumn 2016 consisting of members from Nature Friends Azerbaijan, students and young people from Sweden, Germany and Azerbaijan. Besh Barmag, Azerbaijan, 17 September 2016. © Harald Ris

inferred observations from three different positions in the bottleneck area. Thus, the true number of migrating birds passing through Besh Barmag remained unclear.

Since then the site has become of interest for international birdwatching tourism, starting in autumn 2014 with a group of Dutch birdwatchers. In just four weeks the small group counted 1.3 million migrating birds (H., S. & F. Olk pers comm), suggesting that the previous number of 1.2 – 1.5 million migrating individuals estimated for a much longer period of 3.5 months in autumn 2011 by Heiss (2013a) had been too low. Two years later, in autumn 2016, the first 'Bird Camp Besh Barmag' was organised with the aid of Təbiət Dostları (Nature Friends Azerbaijan)



Plate 4. During the 'Bird Camp Besh Barmag' methods such as mist-netting of birds were demonstrated; this is not only an effective scientific tool that provides valuable data, but also an excellent way to bring birds, literally speaking, closer to the people. Only if they are aware of these small creatures and understand their value, vulnerability and their problems in a more and more humanly influenced world, will people experience concern about them and lend their support to bird conservation. Besh Barmag, Azerbaijan, 17 September 2016. © Sabina Bunyatova

as the main local partner and many others that supported the project (Plate 3). This field camp took place directly in the bottleneck area and consisted of young participants mainly from Azerbaijan, Sweden and Germany, with the aim to inform them about bird migration and the importance of the site. Scientific methods, such as bird migration counts and bird ringing were demonstrated and training given in bird identification skills (Plates 4 & 5). Another crucial part of this camp was to connect with local people to assess the potential of the site for a bird observatory and eco-tourism. After this successful event another 'Bird Camp Besh Barmag' was held in spring 2017 (Plate 6). In the same year the entire autumn season was covered by a bird ringing study in coastal shrubs at the bottleneck site to find out the potential of bird ringing, which could be affiliated to a possible bird observatory (Plate 7). Paralleling the ringing study, the first bird migration count was conducted from 4 to 20 November 2017 under the name 'Besh Barmag Bird Migration Count'. The main



Plate 5. Training in bird identification and conducting scientific bird migration counts was another aim of the 'Besh Barmag Bird Migration Count'. Besh Barmag, Azerbaijan, 17 September 2016. © Michael Heiss



Plate 6. Another 'Bird Camp Besh Barmag' was held in April 2017 with more students from Baku enjoying a presentation of the importance of the bottleneck site. Besh Barmag, Azerbaijan, 22 April 2017. © Rustam Maharramov

aim was to count migrating birds daily from dawn to dusk with a team of international birdwatchers. Furthermore, organisational issues, such as logistics, accommodation and count coordination were tested and capacity building strengthened with local partners. After this successful 'pilot study' in autumn 2017, it became clear that with the circumstances at that time it would be possible to run such a count with



Plate 7. The first comprehensive bird ringing was done in autumn 2017 to test the potential of the bottleneck area for this method. Besh Barmag, Azerbaijan, 4 November 2017. © Michael Heiss



Plate 8. Counters at the counting station in the coastal plain in November 2018. Occasionally, more than 30 counters and birdwatching tourists were around at the same time keeping an eye on migrating birds in every direction. Besh Barmag, Azerbaijan, 8 November 2018. © Michael Heiss

international bird counters for an entire autumn season of several months. This was then organised for autumn 2018, the first of its kind for the site (Plate 8). The main aim of that comprehensive count was to estimate the actual number of diurnally migrating birds passing through Besh Barmag bottleneck during a complete autumn season, with daily counts from sunrise to sunset. A history of the ornithological exploration of this site from its discovery to the end of 2018 is given in Table 1. This paper gives an overview of the autumn 2018 count in relation to the entire data set of previous years that is currently available for the site and thus revises and updates the importance of Besh Barmag bottleneck for migrating birds (*cf* Heiss 2013a). The future development of this site and recent problems are subsequently discussed.

METHODS

The counting site (40°59'N, 49°13'E) is located near the city of Siyezen in a 2.5-km wide coastal plain between the easternmost foothills of the Greater Caucasus and the shoreline of the Caspian Sea (Plates 1 & 2). In the following analysis, especially for the revision of the importance of this site, all available data obtained between 2007 and 2018 from the counting spot were used (Table 1). All data are available online via the Trektellen website

Table 1 Overview of the available data from the Besh Barmag bottleneck between 2007 and 2018. Further details can be found online on the Trektellen website (<https://trektellen.nl/count/view/1533/>).

Observation period	Description
28 Sep – 24 Oct 2007	First short-term study (Heiss & Gauger 2011)
2 Aug – 17 Nov 2011	First comprehensive autumn count (Heiss 2013a)
1 Mar – 29 May 2012	First comprehensive spring count (Heiss 2013a)
10 Oct – 7 Nov 2014	Count by Fred Olk, Hans Olk and Simon Olk
25 Oct – 28 Oct 2015	Count by BirdLife Sweden Youth Committee (results not on Trektellen)
8 Sep – 25 Sep 2016	First 'Bird Camp Besh Barmag' (mainly from 16 – 19 September)
21 Apr – 23 Apr 2017	Second 'Bird Camp Besh Barmag'
20 Aug – 20 Nov 2017	First comprehensive bird ringing by Pia Fetting near the counting site with occasional bird migration counts conducted by volunteers. More regular counts started on 18 October 2017.
4 Nov – 20 Nov 2017	Short-term 'Besh Barmag Bird Migration Count'
1 Sep – 7 Dec 2018	Long-term 'Besh Barmag Bird Migration Count'

(<https://trektellen.nl/count/view/1533/>). For each count date the observation time, weather conditions and the number of counters is given. For all migrating birds the flight direction was noticed, *ie* whether they were flying north or south.

For data analysis the seasonal totals for each bird species per observation season were summed. To avoid double counting and consequently an overestimation of the seasonal total numbers, the figures for ‘counter-migrants’ (*ie* north-flying birds in autumn and south-flying birds in spring) were deducted from those of the same species moving in the ‘right’ migratory direction. Then, the obtained seasonal totals were compared with the world and flyway population sizes of each species. If the comparison revealed that a species reached 1% of its world or flyway population, Besh Barmag bottleneck was considered as being internationally important for that species. This 1% criterion is adapted from *eg* BirdLife International (2001). Areas where this threshold is regularly reached need special protection (Yosef *et al* 2000, BirdLife International 2001).

World and flyway population sizes for the comparison with migration data were mainly taken from data compiled by BirdLife International (2018), except for those of water-dependent birds, which were obtained from Wetlands International (2018). When the population estimate was given in breeding pairs, one pair was treated as three individuals, to take account of non-breeding individuals. When the population estimate was given as ‘mature individuals’ one-third of this number was added for the same reason. No explicit flyway population estimates exist for Azerbaijan. For waterbirds it is possible to derive these from Wetlands International (2018). A few waterbird species might migrate with two or more flyway populations through Azerbaijan; in such cases the population subtotals were added together. For other species, population estimates for European Russia (BirdLife International 2004) and southern Russia (Belik 2005) were aggregated with data from Kazakhstan, as these two countries cover the main breeding range of migrant birds likely to pass through Azerbaijan, accounting for their treatment as a flyway population. Unfortunately, breeding population estimates for Kazakhstan exist only for species of international conservation concern, such as Black-winged Pratincole *Glareola nordmanni* (Kamp *et al* 2009). The population figures for the remainder of species were derived from BirdLife International’s data of world population sizes and their world breeding distribution map (BirdLife International & NatureServe 2012, BirdLife International 2018). For the purposes of these estimates the world population of a species was taken to be spread evenly over its world breeding range; thus a species whose breeding range in Kazakhstan represents 20% of its total world breeding range would be assumed to have 20% of its world population in Kazakhstan.

RESULTS

The count in autumn 2018 consisted of 1070 observation hours. A total of 273 species was observed, bringing the overall total for the site from 2007 to 2018 to 316 species.

The bird migration count in autumn 2018 was the most productive season to date, with the highest number of migrating birds ever recorded for this site. A total of 2 590 640 south-flying and 269 631 north-flying birds revealed the estimated passage of 2 321 009 migrating individuals (if north-flying birds are subtracted from south-flying ones to avoid possible double counts).

The most common species was Common Starling *Sturnus vulgaris* with 957 561 individuals in autumn 2018. The equivalent count in autumn 2014 was 908 746 individuals suggesting the regular occurrence of very high numbers of this species. In total, eight species have counts of more than 100 000 individuals in at least one of the counting seasons since the site’s discovery (2007–2018), which are 105 895–123 491 Little Bustards *Tetrax tetrax* in autumn 2011 (Plate 9), 125 714 Continental Great Cormorants *Phalacrocorax*



Plate 9. Snowfall in steppes north of the Greater Caucasus forced thousands of birds to migrate further south on 7 November 2011. This extraordinary day, with its impressive 82 048 migrating Little Bustards (shown here), 157 240 Eurasian Skylarks and thousands of other birds (<https://trektellen.nl/count/view/1533/20111107>) has not yet been repeated in subsequent years, but remains one of the main motivations for a visit by birdwatching tourists to experience such an event. Besh Barmag, Azerbaijan, 7 November 2016. © Michael Heiss

sinensis in autumn 2018, 118 686 Common Black-headed Gulls *Chroicocephalus ridibundus* in autumn 2018, 130 918 Rooks *Corvus frugilegus* in autumn 2018, 213 881 Calandra Larks *Melanocorypha calandra* in autumn 2017, an estimated 213 225–240 957 Eurasian Skylarks *Alauda arvensis* in autumn 2011 and an estimated 211 296–285 870 Rose-coloured Starlings *Pastor roseus* in spring 2012. Twenty-three species have been counted in numbers between 10 000 and 100 000 migrating individuals in at least one field season (Common Pochard *Aythya ferina*, Northern Shoveler *Spatula clypeata*, Garganey *Spatula querquedula*, Eurasian Wigeon *Mareca penelope*, Mallard *Anas platyrhynchos*, Northern Pintail *Anas acuta*, Eurasian Teal *Anas crecca*, Pygmy Cormorant *Microcarbo pygmeus*, Grey Heron *Ardea cinerea*, Western Great Egret *Ardea alba*, Caspian Gull *Larus cachinnans*, White-winged Tern *Chlidonias leucopterus*, Common Tern *Sterna hirundo*, Sandwich Tern *Thalasseus sandwicensis*, Western Stock Dove *Columba oenas*, Blue-cheeked Bee-eater *Merops persicus*, Western Jackdaw *Corvus monedula*, Eurasian Barn Swallow *Hirundo rustica*, Sand Martin *Riparia riparia*, Western Yellow Wagtail *Motacilla flava*, White Wagtail *Motacilla alba*, Common Chaffinch *Fringilla coelebs*, European Greenfinch *Chloris chloris*) and 38 species in numbers between 1000 and 10 000 individuals.

With respect to the 1% criterion (Yosef *et al* 2000, BirdLife International 2001) as a measure to evaluate the international importance of this bottleneck, the number of species passing through the area in numbers representing more than 1% of their flyway population in at least one of the observation season is 45, of which 22 species also exceeded 1% of their world population. Eight of these 22 species might prove to be below this 1% threshold as the percentage of the world population arrived at varied according to whether the calculation was based on published world and flyway population estimates or on the

standard deviation of calculated estimates from autumn 2011 and spring 2012. For the same reason five species of those expected to reach the 1% of their flyway population estimate might be below this threshold as well (Table 2).

DISCUSSION

With a seasonal total of 2.3 million migrating birds counted in autumn 2018 it is clear that the previous numbers from autumn 2011, with 1.2–1.5 million birds passing through Besh Barmag bottleneck (Heiss 2013a), were under-estimated. However even the count of 2.3 million birds can still be regarded as incomplete, as a lack of available counters for August was the main reason for the rather late start of the count on 1 September 2018. In the first half of September only a few counters were available, resulting in incomplete day counts and an underestimate of birds during the counts was very likely. A similar situation occurred at the end of the season; many counters already left but on the last day of the count (7 December), bird migration was still continuing. With more counters available and the inclusion of the whole of August and December we consider that the number of birds that can be visually counted during diurnal migration passing through Besh Barmag bottleneck in an entire autumn season is more likely to reach around three million. If nocturnal or very high diurnal migration were included, the true number of migrants must be even higher.

For the organisation of future counts, a high number of counters will be needed to undertake the full set of migration activities at Besh Barmag is the most critical parameter; the more counters are available, the higher the proportion of passing birds will be detected and counted. In the most busy migration period from mid-October to the end of November at least eight to ten counters are needed to survey the entire migration. For example at the end of October passerine migration is heavy and often lasts at least until the early afternoon and often for the whole day. Larks, corvids and Common Starlings are among the most common species or species groups flying through the coastal plain. Each counter can cover one of these three groups on either side of the counting station, so six counters are kept busy by just these species. Additional counters are needed to cover overhead (often very high) migrating birds. At the same time, waterbird migration above the Caspian Sea can be very intense, requiring one or two more counters to focus on seawatching only. Even in the less intense earlier periods in August and September, many counters are needed to allow shift-based working, when daily counts can last up to 14 hours, too long for concentrated fieldwork by individual counters especially under the hot weather conditions at that time of the season. This high demand for counters, who are needed to cover a long migration period, preferably from 1 August to mid-December (or even earlier, although the magnitude of migration in July is still unknown), is truly challenging with respect to organisational and financial issues. A reduction in human resources to two or three counters might be a good solution to reduce these issues and will also standardise the count, as consistently fewer birds will be detected, making the count data more comparable between years in terms of long-term monitoring, but the sheer number of birds that is likely to be missed is a strong argument towards seeking many counters to be involved per season. Another approach to be able to count with fewer persons is to focus on certain species of conservation interest, such as the species listed in Table 2 or species that are globally red-listed by the IUCN. The discrepancy between the overall seasonal totals between autumn 2011 (1.2–1.5 million birds), when a single observer obtained the data, and autumn 2018 (2.3 million birds), when a large group counted, is expected to be caused largely by different manpower rather than influences of different weather conditions or the estimation methods used for the autumn 2011 count. Even the approximately 40 counters who were involved throughout autumn 2018,

Table 2. Bird species for which the observed or estimated number of migrating individuals exceeds the 1% criterion of the world population or flyway population in at least one of the observation seasons between 2007 and 2018. The observed number of migrating birds includes individuals outside the defined observation hours. IUCN status: LC — Least Concern, NT — Near Threatened, VU — Vulnerable, EN — Endangered. Data source for population estimates: 1 — Wetlands International (2018), 2 — BirdLife International (2018), 3 — Galushin *et al.* (2003), 4 — Gauger (2007), 5 — Kamp *et al.* (2009), 6 — Southern Russia (Belik 2005), 7 — Karyakin (2012), 8 — European Russia (BirdLife International 2004), 9 — No estimates available and therefore own estimates used (see Methods). Notes: a — No world population estimate available, but the European population of 10 500–31 100 individuals covers <5% of the global range IUCN (2018), b — Flyway population of subspecies *P. l. major*, c — wintering at a waste dump in the bottleneck area, d — highest day count.

Species	Highest seasonal count	Counting season	World population	Percentage of world population	Flyway population	Percentage of flyway population	IUCN status
Eastern Greylag Goose <i>Anser anser</i>	4075	Autumn 2018	1 059 000–1 109 000 ¹	<1	250 000 ¹	1.63	LC
Greater White-fronted Goose <i>Anser albifrons</i>	1221	Autumn 2018	3 130 000–3 202 100 ¹	<1	25 000 ¹	4.88	LC
Red-breasted Merganser <i>Mergus serrator</i>	353	Autumn 2018	495 000–605 000 ¹	<1	10 000 ¹	3.53	LC
Common Shelduck <i>Tadorna tadorna</i>	4597	Autumn 2018	625 000–750 000 ²	<1	30 000–50 000 ¹	9.19–15.32	LC
Ruddy Shelduck <i>Tadorna ferruginea</i>	2246	Autumn 2018	173 030–223 080 ¹	1.01–1.30	50 000–70 000 ¹	3.21–4.49	LC
Common Pochard <i>Aythya ferina</i>	17 960	Autumn 2018	1 950 000–2 250 000 ¹	<1	460 000–500 000 ¹	3.59–3.90	VU
Northern Shoveler <i>Spatula clypeata</i>	13 503	Autumn 2018	6 530 000–7 040 000 ¹	<1	650 000–1 000 000 ¹	1.35–2.08	LC
Garganey <i>Spatula querquedula</i>	62 037	Autumn 2018	2 550 000–2 750 000 ¹	2.26–2.43	1 100 000–2 000 000 ¹	3.10–5.64	LC
Gadwall <i>Mareca strepera</i>	5646	Autumn 2018	4 315 000–5 200 000 ¹	<1	90 000–130 000 ¹	4.34–6.27	LC
Northern Pintail <i>Anas acuta</i>	28 494	Autumn 2018	7 130 000–7 240 000 ¹	<1	650 000–1 150 000 ¹	2.48–4.38	LC
Eurasian Teal <i>Anas crecca</i>	29 929	Autumn 2018	6 660 000–7 690 000 ¹	<1	500 000–1 000 000 ¹	2.99–5.99	LC
Great Crested Grebe <i>Podiceps cristatus</i>	1216 ^d	Autumn 2018	1 050 341–1 621 850 ¹	<1	30 000–35 000 ¹	3.47–4.05	LC
Western Stock Dove <i>Columba oenas</i>	11 696	Autumn 2018	2 100 000–3 900 000 ²	<1	273 000–510 000 ^{8,9}	2.29–4.28	LC
Common Crane <i>Grus grus</i>	1151	Autumn 2011	650 100–727 130 ²	<1	80 000–127 000 ²	0.91–1.44	LC
Little Bustard <i>Tetrax tetrax</i>	105 895–123 491	Autumn 2011	333 000–859 999 ²	12.31–37.08	150 000–499 999 ^{2,4}	21.18–82.33	NT
Eurasian Spoonbill <i>Platalea leucorodia</i>	4466	Autumn 2018	63 400–65 250 ¹	6.84–7.04	23 000 ^{1,b}	19.42	LC
Glossy Ibis <i>Plegadis falcinellus</i>	2923–4443	Autumn 2011	227 500–2 218 500 ¹	0.13–1.95	25 000–100 000 ¹	2.92–17.77	LC
Grey Heron <i>Ardea cinerea</i>	8016–10 770	Autumn 2011	790 500–3 661 500 ¹	0.22–1.36	25 000–1 000 000 ¹	0.80–43.08	LC
Purple Heron <i>Ardea purpurea</i>	2523	Autumn 2018	272 500–573 100 ¹	<1	10 000–25 000 ¹	10.09–25.23	LC

Species	Highest seasonal count	Counting season	World population	Percentage of world population	Flyway population	Percentage of flyway population	IUCN status
Western Great Egret <i>Ardea alba</i>	11 911	Autumn 2018	1 557 200–2 434 900 ¹	<1	25 000–100 000 ¹	11.91–47.64	LC
Little Egret <i>Egretta garzetta</i>	2829–4827	Autumn 2011	644 030–3 115 480 ¹	<1	25 000–100 000 ¹	2.83–19.31	LC
Dalmatian Pelican <i>Pelecanus crispus</i>	4576–5734	Spring 2012	11 400–13 400 ¹	34.15–50.30	6 000–9 000 ¹	50.84–95.57	NT
Pygmy Cormorant <i>Microcarbo pygmaeus</i>	33 458	Autumn 2018	153 000–221 000 ¹	15.14–21.87	70 000–115 000 ¹	29.09–47.80	LC
Continental Great Cormorant <i>Phalacrocorax sinensis</i>	125 714	Autumn 2018	1 441 900–2 062 500 ¹	6.10–8.72	100 000–200 000 ¹	62.86–125.71	LC
Pied Avocet <i>Recurvirostra avosetta</i>	3083	Autumn 2018	280 000–470 000 ¹	0.66–1.10	12 000–25 000 ¹	12.33–25.69	LC
Black-winged Pratincole <i>Glareola nordmanni</i>	5846	Autumn 2018	228 000–285 000 ⁵	2.05–2.56	228 000–285 000 ⁵	2.05–2.56	NT
Slender-billed Gull <i>Chroicocephalus genei</i>	1629	Autumn 2018	312 500–377 500 ¹	<1	150 000 ¹	1.09	LC
Common Black-headed Gull <i>Chroicocephalus ridibundus</i>	118 686	Autumn 2018	4 845 440–8 850 440 ¹	1.34–2.45	250 000 ¹	47.47	LC
Great Black-headed Gull <i>Ichthyophaga ichthyophaga</i>	1391–1875	Spring 2012	125 000–1 100 000 ¹	0.13–1.50	100 000–1 000 000 ¹	0.14–1.88	LC
Caspian Gull <i>Larus cachinnans</i>	60 000 ^c	Winter 2015	200 000–500 000 ¹	12.00–30.00	200 000–500 000 ¹	12.00–30.00	LC
Gull-billed Tern <i>Gelochelidon nilotica</i>	863–1523	Autumn 2011	157 700–419 200 ¹	<1	10 000–25 000 ¹	3.45–15.23	LC
Caspian Tern <i>Hydroprogne caspia</i>	932	Autumn 2018	247 220–466 920 ¹	<1	10 000–25 000 ¹	3.73–9.32	LC
Whiskered Tern <i>Chlidonias hybrida</i>	6235–7849	Autumn 2011	304 300–1 477 800 ¹	0.42–2.58	25 000–100 000 ¹	6.24–31.40	LC
White-winged Tern <i>Chlidonias leucopterus</i>	50 800–70 290	Autumn 2011	3 100 000–4 000 000 ¹	1.27–2.27	2 500 000–3 000 000 ¹	1.69–2.81	LC
Common Tern <i>Sterna hirundo</i>	23 305–29 493	Autumn 2011	1 614 200–3 627 300 ¹	0.64–1.83	25 000–1 000 000 ¹	2.33–117.97	LC
Sandwich Tern <i>Thalasseus sandvicensis</i>	8389–10 367	Autumn 2011	490 400–636 400 ¹	1.32–2.11	110 000 ¹	7.63–9.42	LC
Steppe Eagle <i>Aquila nipalensis</i>	798	Spring 2012	78 042–110 193 ²	0.72–1.02	25 074–36 720 ^{6,7}	2.17–3.18	EN
Western Marsh Harrier <i>Circus aeruginosus</i>	7178	Autumn 2018	622 500–1 147 500 ²	0.63–1.15	110 000–425 000 ^{6,9}	1.69–6.53	LC
Pallid Harrier <i>Circus macrourus</i>	212–240	Autumn 2011	27 000–45 000 ²	<1	15 930–25 800 ^{3,6}	0.82–1.51	NT
Blue-cheeked Bee-eater <i>Merops persicus</i>	8880–10 704	Autumn 2011	210 000–622 000 ^{2,a}	1.43–5.10	11 580–33 000 ⁹	26.91–92.44	LC
Calandra Lark <i>Melanocorypha calandra</i>	213 881	Autumn 2017	68 250 000–145 950 000 ²	<1	15 000 000–30 000 000 ⁹	0.71–1.43	LC
Common Starling <i>Sturnus vulgaris</i>	957 561	Autumn 2018	157 500 000–286 500 000 ²	<1	23 000 000–45 500 000 ^{6,9}	2.10–4.16	LC
Rose-coloured Starling <i>Pastor roseus</i>	211 296–285 870	Spring 2012	675 000–2 775 000 ²	7.61–42.35	675 000–2 775 000 ²	7.61–42.35	LC
Western Yellow Wagtail <i>Motacilla flava</i>	50 921–59 401	Spring 2012	96 000 000–160 500 000 ²	<1	2 879 000–9 480 000 ^{6,9}	0.54–2.06	LC

each of whom stayed between two weeks and 2.5 months, were not enough to cover the entire autumn season. An increased number of observers does not only produce a higher seasonal overall total, it also allows confirmation of the occurrence of species exceeding the 1% criterion (Yosef *et al* 2000, BirdLife International 2001; Table 2). With the additional human resources in autumn 2018, the number increased from 34 species exceeding the 1% of their world or flyway population (Heiss 2013a) to 45 species. Of these, 25 species had their highest seasonal total in autumn 2018 and 12 species were not previously known to meet this threshold (Eastern Greylag Goose, Greater White-fronted Goose, Red-breasted Merganser, Common Pochard, Gadwall, Northern Pintail, Eurasian Teal, Great Crested Grebe, Calandra Lark, Slender-billed Gull, Caspian Gull [wintering in 2015] and Western Yellow Wagtail [common migrant in spring 2012 and included due to data revision]). The calculated estimates of 14 species from autumn 2011 and spring 2012 have not been exceeded by counts in subsequent years and need to be confirmed by future counts. However, the higher calculated estimates for these species from 2011 are likely caused by the incompleteness or the lack of reliable count data in the early migration period (August/September) of subsequent years, when species such as Blue-cheeked Bee-eater, Common Tern, Glossy Ibis, Gull-billed Tern, Little Egret, Whiskered Tern and White-winged Tern, peak in their migration. Other species like Dalmatian Pelican, Great Black-headed Gull, Rose-coloured Starling, Steppe Eagle and Western Yellow Wagtail are more numerous in spring than in autumn and thus their 2012 counts can only be confirmed by a repeat spring migration count.

Another interesting outcome of this work has been that with the increasing numbers of ornithologists visiting Azerbaijan in general, and Besh Barmag in particular, several species (or subspecies) have been found that were new for the country, such as Taiga Flycatcher *Ficedula albicilla*, mist-netted on 10 October 2007 (Heiss & Gauger 2011), a Eurasian Nutcracker *Nucifraga caryocatactes* on 5 September 2011 (Heiss 2013b), a male White-headed Wagtail *Motacilla (flava) leucocephala* on 12 April 2012 (Heiss & Eidam 2015), a Glaucous Gull *Larus hyperboreus* on 25 April 2012 (Heiss 2014), a European Herring Gull *Larus argentatus* on 24 January 2015 (S Klasan, C Schlawe, B Stahnke pers comm), a Yellow-browed Warbler *Phylloscopus inornatus* on 28 October 2015 (Sjögren 2015), a mist-netted Little Bunting *Emberiza pusilla* on 13 October 2017 (Fetting & Buddemeier in prep), a Lapland Longspur *Calcarius lapponicus* on 16 October 2017 (A Sandberg pers comm), an Olive-backed Pipit *Anthus hodgsoni* on 5 October 2017 (Buddemeier in prep), a Pallas's Leaf Warbler *Phylloscopus proregulus* on 19 and 22 October 2018 (Rivière & Chaillou in prep) and a juvenile Long-tailed Rosefinch *Carpodacus sibiricus* between 22 and 24 November 2018 (Gauger in prep). Although these species are not of conservation concern they are very appealing rarities that might attract more ornithologist and birdwatching tourists to visit the counting station and add to the spectacle of bird migration and the regular species.

Threats and conservation

With such a high concentration of birds, any hazards encountered during their passage through the bottleneck can be threatening at a population scale, especially for those 45 species exceeding the 1% criterion of world or flyway populations or that are globally red-listed (Heiss 2016b). An analysis of the migration height shows that 84% of the individuals in autumn 2011 and 95% in spring 2012 passed through the coastal plain below 50 m above ground level (Heiss 2016a). This height must be regarded as critical owing to the potential of collision with anthropogenic obstacles such power lines, buildings and traffic and the exposure to hunting (Heiss 2016a, Plates 10 & 11). At the bottleneck site, migration over the Caspian Sea, predominantly by waterbirds, is currently regarded as safe as it is free of

any anthropogenic constructions. Here, too, migrating birds used the lower altitudes for their passage.

In the bottleneck area itself probably the greatest threat is a dense network of overhead power lines supplying electricity to several villages and an oil production area (Heiss 2016a). In general, power lines are known to entail collision hazards (Bevanger 1994, Loss *et al* 2014). In Azerbaijan as a whole several species have been reported as victims of collisions with power lines (Sultanov 1991, Sultanov *et al* 1991, Patrikeev 2004, Gauger



Plate 10. A high concentration of birds attracts not only ornithologists; hunting in the bottleneck area can also be observed on some days. This presumably shot Pied Avocet might have been injured at another place along the Caspian flyway. Besh Barmag, Azerbaijan, 21 September 2016. © Michael Heiss



Plate 11. A view through the Besh Barmag bottleneck showing parts of an oil production plant crossed by several power lines. Collisions with these may pose a threat to migrating birds, but as yet no detailed investigations have been conducted. Furthermore, this picture shows the extent of infrastructural development in the bottleneck area and since the construction of the near highway along the coast, which crosses the counting station, it becomes clear that space for conducting bird migration counts is getting more and more reduced. Besh Barmag, Azerbaijan, 21 March 2012. © Michael Heiss



Plate 12. One of the newly discovered threats for migrating birds are small ponds of oil in an oil production area within the bottleneck, which are full of oiled and dead birds. Many species have been found including raptors, waders, gulls, tern, ducks, rails, passerines and even a Demoiselle Crane *Anthropoides virgo*. Besh Barmag, Azerbaijan, 17 November 2017. © Michael Heiss

2007). The impact of power lines in the bottleneck area has not yet been studied and might be an interesting subject for further investigation (Plate 11). With ongoing infrastructural development, the construction of wind farms could create future collision hazards for migrating birds at Besh Barmag bottleneck. The narrowness of the coastal plain here together with the barrier effect of wind farms (Drewitt & Langston 2006) will set severe limits to any horizontal evasive movements. The oil production area itself was identified as threat in autumn 2017, when hundreds of dead birds were found in several artificial oil ponds (Plates 12 & 13).

The most recent threat is the construction of the 'Baku-Guba-Russia state border highway' that connects Iran and Russia and stretches directly along the Caspian Sea coast in the area of the bottleneck. The road works started during 2018 and reached the bottleneck area during the counts in autumn 2018. The construction works are said to be finished in 2020 in the bottleneck area. This highway is unfortunately constructed directly through the counting station, where we experienced a high concentration of passerines. It is expected that the new highway could be a potential hazard for low flying birds especially in spring, when most northward flying birds avoid the prevalent northern headwinds by a reduction of their flight altitude (Heiss 2016a). Future counts will investigate this problem and if necessary measures will be worked out to prevent collisions between birds and cars.

Detailed environmental impact studies on migrating birds (diurnal and nocturnal) are recommended before decisions are made as to the sites of future developments or in general along the Azerbaijani coast that is used as flyway for birds. A general prohibition of wind farms in the bottleneck area should be considered.



Plate 13. A Jack Snipe *Lymnocyptes minimus* falls victim to the oil pollution in the bottleneck area. Besh Barmag, Azerbaijan, 17 November 2017. © Michael Heiss

Future perspectives

In autumn 2018, Besh Barmag was again shown to be a bird migration bottleneck of global importance. In the wake of these findings, the implementation of standardised annual bird migration counts is recommended to monitor the population dynamics of a broad range of bird species breeding for the most part in the vast landmass of central Eurasia, an area that is remote and little known. A monitoring programme of this kind is a very useful tool for bird conservation, able to detect population declines at an early stage and consequently guide further bird conservation considerations (Dunn & Hussell 1995, Yosef & Fornasari 2004, Dunn 2005). Unlike breeding bird surveys, which can be expensive (since to cover large and remote breeding areas by many ornithologists requires a huge amount of logistics), bird migration counts at bottlenecks are more cost-effective thanks mainly to easier logistics (Fuller & Mosher 1981), the research being concentrated in a single place, and to the ease of organising scientific help from counters and volunteers. Such counters can be either experts experienced enough to conduct the counts more or less autonomously with regards to methods and bird identification, or amateurs needing guidance by coordinators or scientific staff. Even completely inexperienced novices can be of great help if their motivation to participate is high. This also offers an additional chance for capacity building especially in-country, as local birdwatching beginners can join the counting team.

If financial support, whether from the government, institutes, third parties or sponsors, or the volunteer help can be secured for only one counting season each year, the monitoring programme should focus on the autumn, as most species occurred here in higher numbers than in spring and a detailed analysis of several other aspects can be included in the study, such as breeding success as measured by the ratio of juveniles and adults, which would give deeper insights into population dynamics. This is crucial to identify population changes at an early stage, as the number of individuals per species

alone does not allow assessment of the survivability of populations (Vansteelant *et al* in press). If budget and capacity permits, an additional annual spring count might be a next step, as some species were more common in this season (Heiss 2013a).

As the highway along the coast at Besh Barmag bottleneck will be constructed through the former counting station, future development of a bird observatory should be in consultation with local authorities to avoid possible future infrastructural developments with a negative influence on the activities of the bird observatory. The new observatory should include long-term monitoring of diurnal migration, a ringing station in coastal shrubland, acoustic monitoring for nocturnal migrants, an information and visitor centre and proper accommodation for scientific staff. Depending on the noise level of the new highway, which certainly limits the development of a bird observatory, financial shortages and the shortage of people to run such an observatory, the continuation of visual bird migration counts seems to be the only possibility at the moment. The standardisation of these counts, which are crucial for the detection of population changes in long-term monitoring programmes (regarded as the main aim of such work), as done in other bottleneck sites, might be less realistic at the moment as further infrastructural development may once again lead to a relocation of the counting station, making previous year-to-year data again incomparable. For that reason we propose a more flexible approach with varying numbers of counters and a flexible time span for counts. The main aim should then be to count the maximum number of birds passing through, bearing in mind that year-to-year totals might vary due to varying sample efforts. This imperfect monitoring approach might be the only realistic solution as long as the precarious situation of a new counting station or the establishment of a permanent bird observatory is not fully solved with governmental or any other support.

Apart from the scientific output, the site is of great value for national and international eco- and birdwatching tourism, which can form the economic backbone of a future 'Besh Barmag Bird Migration Count'. Maybe for exactly that economic reason we have lately received much state support from the Azerbaijan tourism board and with this teamwork the situation is developing faster towards a bird observatory than expected.

No matter what the future will bring, the recent important progress at Besh Barmag could not have been made possible without the help and support of our local partners, such as Nature Friends Azerbaijan and the Azerbaijan Ornithological Society. For any future activities this partnership needs to be strengthened and further developed, with a long-term aim to passing this project completely into Azerbaijani hands. The 'Besh Barmag Bird Migration Count' then has the potential to become an internationally recognised nature conservation project.

ACKNOWLEDGEMENTS

Our special thanks go to OSME, Michael Succow Foundation, NABU Germany, German Academic Exchange Service (DAAD) and several donating birdwatching tourists for their financial support. Nature Friends Azerbaijan helped with the local organisation of the bird camps and recent bird migration counts. Angela Schmitz-Ornés and Martin Haase (Greifswald University, Germany) supported us scientifically in various ways. Gerard Troost's Trektellen-app made data collection in the field very easy and efficient. He was a constant help during the counts and also provided much help when our entire database went online. Without the many counters the data would not have been as good and complete as they are. Each of the counters over the last years deserves special thanks. We also thank the staff of the Azerbaijan Ornithological Society (AOS) for many years of organisational, documental and professional support for this project. We are also grateful to Harald Ris, Sabina Bunyatova and Rustam Maharramov for providing their pictures. For the very recent support and the implementation of the Besh Barmag Bird Migration Count into a national tourism development strategy, we thank the Azerbaijan Tourism Board.

LITERATURE CITED

Belik, VP. 2005. [Populations of the nesting avifauna of Southern Russia]. *Strepet* 3: 5–37. [In Russian]

- Berthold, P. 2000. [*Bird migration – A general survey*]. Wissenschaftliche Buchgesellschaft, Darmstadt. [In German]
- Bevanger, K. 1994. Bird interactions with utility structures: collision and electrocution, causes and mitigating measures. *Ibis* 136: 412–425.
- BirdLife International. 2001. *Important Bird Areas and potential Ramsar sites in Europe*. BirdLife International, Wageningen, The Netherlands.
- BirdLife International. 2004. *Birds in the European Union: a status assessment*. BirdLife International, Wageningen, The Netherlands.
- BirdLife International & NatureServe. 2012. *Bird species distribution maps of the world*. BirdLife International, Cambridge, UK and NatureServe, Arlington, USA.
- BirdLife International. 2018. The IUCN Red List of Threatened Species 2018. www.iucn.org. [Accessed 15 December 2018]
- Butiev, VT, AV Mikheev & AO Shubin. 1983. [Seasonal raptor migration along the western shore of the Caspian Sea]. In: Galushin, VM (ed). *Ecology of Raptors: Proc. 1st Conf. on Ecology and Conservation of Raptors, Moscow, 16–18 February 1983*. Nauka, Moscow, pp11–13. [In Russian]
- Drewitt, AL & RHW Langston. 2006. Assessing the impacts of wind farms on birds. *Ibis* 148: 29–42.
- Dunn, EH & DJT Hunsell. 1995. Using migration counts to monitor landbird populations: Review and evaluation of current status. In: Power, DM (ed). *Current Ornithology, Vol. 12*. New York, NY: Plenum Press; pp43–88.
- Dunn, EH. 2005. Counting migrants to monitor bird populations: State of the art. In: Ralph, CJ & TD Rich (eds). *Bird conservation implementation and integration in the Americas: Proceedings of the third international Partners in Flight conference 2002*. USDA Forest Service Gen. Tech. Rep. PSW-191. USDA Forest Service Pacific Southwest Research Station, Albany, CA.
- Fuller, MR & JA Mosher. 1981. Methods of detecting and counting raptors: a review. In: Ralph, CJ & JM Scott (eds). *Estimating numbers of terrestrial birds*. Stud. Avian Biology 6, pp235–246.
- Galushin, V, R Clarke & A Davygora. 2003. *International action plan for the Pallid Harrier (Circus macrourus)*. Report TPVS/Inf (2003) 18, Strasbourg, France.
- Gauger, K. 2007. Occurrence, ecology and conservation of wintering Little Bustards *Tetrax tetrax* in Azerbaijan. *Archiv für Naturschutz und Landschaftsforschung* 46: 5–27.
- Geyr von Schweppenburg, HF. 1963. [Terminology and theory of the guiding line]. *J. Orn.* 104: 191– 204. [In German]
- Heiss, M & K Gauger. 2011. Coastal bird migration at the Caspian shore of the Azerbaijan Republic in October 2007. *Podoces* 6: 59–71.
- Heiss, M. 2013a. The importance of Besh Barmag bottleneck (Azerbaijan) for Eurasian migrant birds. *Acta Ornithologica* 48: 151–164.
- Heiss, M. 2013b. Spotted Nutcracker *Nucifraga caryocatactes*: a new species for Azerbaijan. *Sandgrouse* 35: 39–42.
- Heiss, M. 2014. A sighting of Glaucous Gull (*Larus hyperboreus*) in Azerbaijan. *Berkut* 23: 24–25.
- Heiss, M & F Eidam. 2015. First record of White-headed Yellow Wagtail *Motacilla flava leucocephala* for Azerbaijan. *Sandgrouse* 37: 199–202.
- Heiss, M. 2016a. Migratory behaviour of bird species occurring in critical numbers at Besh Barmag bottleneck in Azerbaijan. *Bird Conservation International* 26: 243–255.
- Heiss, M. 2016b. Records of Globally Red-listed Bird species migrating through the Besh Barmag bottleneck, Azerbaijan Republic. *Podoces* 11: 43–52.
- Loss, RS, T Will & PP Marra. 2014. Refining estimates of bird collision and electrocution mortality at power lines in the United States. *PLoS ONE* 9: e101565.
- Kamp, J, MA Koshkin & RD Sheldon. 2009. Population size, breeding performance and habitat use of the Black-winged Pratincole *Glareola nordmanni*. *Bird Conservation International* 19: 149–163.
- Karyakin, IV. 2012. [Technical report on the results and work of the project 'Development and testing of the monitoring program of the Steppe Eagle population in the border area of Russia and Kazakhstan (Orenburg region in Russian, Aktobe and West-Kazakhstan oblasts in Kazakhstan)]. Contract No. UNDP/2001–199–03. Novgorod, Russia. [In Russian]
- Kostin, AB & VT Butiev. 2000. [Late spring migration of raptors at the western coast of the Caspian Sea]. *Russian Ornithological Journal, Express Edition* 89: 3–10. [In Russian]
- Lebedeva, EA & VT Butiev. 1998. Summer movements of waders in the Samur river delta: preliminary data and review of the problem for the Caspian Sea region. *International Wader Studies* 10: 395–402.
- Mikheev, AV, VI Orlov & AG Rezanov. 1975. [Migration of Ciconiiformes at the western Coast of the Caspian Sea]. *Proceedings of the All-Union conference on migration of birds, part 1*. Moscow State Univ., Moscow, pp133–136. [In Russian]
- Mikheev, AV. 1985. [Diurnal bird migration along the western Coast of the Caspian Sea]. In: Amirkhanov, AM (ed). *Birds of the North-western Caucasus*. Moscow, pp5–19. [In Russian]

- Mikheev, AV. 1991. [Diurnal migration of geese and swans at the western coast of the Caspian Sea]. *Caucasian Ornithological Journal* 1: 73–89. [In Russian]
- Mikheev, AV. 1992. [Visible diurnal migration of gulls at the western coast of the Caspian Sea]. *Caucasian Ornithological Journal* 4: 128–153. [In Russian]
- Patrikeev, MP. 2004. *The Birds of Azerbaijan*. Pensoft, Sofia/Moscow.
- Radde, G. 1886. [*Travels along the Persian-Russian border – Talysh and their people*]. FA Brockhaus, Leipzig, Germany. [In German]
- Shubin, AO. 1998. The importance of the western Caspian coast for migrating and wintering waders. *International Wader Studies* 10: 403–412.
- Sjögren, I. 2016. First record of Yellow-browed Warbler *Phylloscopus inornatus* for Azerbaijan. *Sandgrouse* 38: 199–200.
- Sultanov, E. 1991. [Assessment of bird collision on power lines in the southeastern part of Azerbaijan.] [*Current questions of ecology and nature conservation in the Stavropol region and adjacent territories. Materials of the scientific-practical conference 8–10 October 1991*]: pp162–163, Stavropol, Russia. [In Russian]
- Sultanov, E, NI Karabanova, RA Huseinov, RA Kamarli & S Magerramov. 1991. [Bird victims at power lines on spring migration in southeastern Azerbaijan SSR.] [*Fauna, population and ecology of birds of the North Caucasus. Materials of the scientific-practical conference 23–27 April 1991*]: pp66–67. Stavropol, Russia. [In Russian]
- Sultanov, E. 2006. Results of eight years of monitoring wintering and nesting waterbirds in Azerbaijan. In: Boere, GC, CA Galbraith, DA Stroud (eds). *Waterbirds around the world*. The Stationery Office, Edinburgh, UK: pp370–371.
- Sultanov, E. 2008. Recent waterbird counts in Gyzylagach, the Azerbaijan Republic's most important Ramsar Site, with comments on conservation. *Podoces* 3: 31–38.
- Yosef, R, L Fornasari & A Giordano. 2000. Soaring migrants and the 1% principle. *Ring* 22: 79–84.
- Yosef, R & L Fornasari. 2004. Simultaneous decline in Steppe Eagle (*Aquila nipalensis*) populations and Levant Sparrowhawk (*Accipiter brevipes*) reproductive success: coincidence or a Chernobyl legacy? *Ostrich* 75: 20–24.
- Vansteelant, WM, J Wehrmann, D Engelen, J Jansen, B Verhelst, R Benjumea, S Cavaillès, T Kaasiku, B Hoekstra & F de Boer. (in press). Accounting for differential migration strategies between age groups to monitor raptor population dynamics in the eastern Black Sea flyway. *Ibis*, <https://doi.org/10.1111/ibi.12773>.
- Vilkov, EV. 2006. [Ecology of Anseriformes on lagoons of the western coast of Middle Caspian Sea.] *Berkut* 15: 99–119. [In Russian]
- Wetlands International. 2018. *Waterbird Population Estimates*. wpe.wetlands.org. [Accessed 15 December 2018]
- Michael Heiss, Vogelwarte Hiddensee, Zoological Institute and Museum, Ernst Moritz Arndt University of Greifswald, Soldmannstraße 23, 17489 Greifswald, Germany. michaheiss@aol.com (corresponding author)
- Kai Gauger, Wendorf 7, 18519 Sundhagen, Gemany. kai_gauger@yahoo.de
- Christoph Himmel, Dürrbeinstaffel 3, 70599 Stuttgart, Germany, christoph.himmel@gmx.de
- Pia Fetting, Vogelwarte Hiddensee, Zoological Institute and Museum, University of Greifswald, Soldmannstraße 23, 17489 Greifswald, Germany. pia.fetting@posteo.de
- Tomas Axén Haraldsson, OSME Youth Development Officer and founder of the Bird Camp concept, Pastor Ödmanns väg 81, 13460 Ingarö, Sweden. Tomasharaldsson@hotmail.com
- Gabriel Cauca, 9 Boulevard de Russie, 03200 Vichy, France.
- Zülfü Ferecli, Azerbaijan Ornithological Society, M. Mushfig Street 4B, Ap. 60, AZ1021 Baku, Azerbaijan. fzulfu@gmail.com
- Elchin Sultanov, Azerbaijan Ornithological Society, Baku Engineering University, Institute of Zoology of national Academy of Sciences of Azerbaijan, M. Mushfig Street, 4B, Baku, Azerbaijan Republic, AZ1004, elchin59@gmail.com, elchin_sultanov@aos.az

A corridor of soaring bird migration in Lebanon on the Eastern Mediterranean flyway

BERND-ULRICH MEYBURG, IVAYLO ANGELOV & SAMER AZAR

Summary: We document the existence of a narrow autumn migration corridor for soaring birds in Lebanon, qualifying as a “bottleneck site”, situated within the greater Eastern Mediterranean flyway. Over 11 days in September–October 2019, we counted 8751 raptors of 23 species, during observations lasting on average 3.5 hours per day. The raptors use the strong thermal and orographic updrafts that form above the mountain from early morning, and then migrate south along the mountain ridge for at least 35 km. During early morning hours the birds usually flew at altitudes below 300 m. This provided good identification opportunities, especially for species that are often hard to be reliably identified at raptor migration sites. We document the highest counts thus far recorded in Lebanon of Greater Spotted Eagle *Clanga clanga* (80 individuals), Short-toed Snake Eagle *Circaetus gallicus* (718), Black Kite *Milvus migrans* (2769) and Northern Steppe Buzzard *Buteo buteo vulpinus* (1290). Observations of Black-winged Kite *Elanus caeruleus*, Barbary Falcon *Falco peregrinus peregrinoides* (two individuals) and Oriental Honey Buzzard *Pernis ptilorhynchus* are among the first ten records in Lebanon for those species.

INTRODUCTION

Lebanon lies along the Eastern Mediterranean flyway of soaring birds (Zalles & Bildstein 2000), where hundreds of thousands of migrating raptors, storks and pelicans pass each autumn and spring. Until now migration in the country has been studied from single observation points, mostly along the western slopes of Mount Lebanon (Cameroon *et al* 1967, Nielsen & Christensen 1970, Macfarlane 1978, Khairallah 1991). However, the main migration corridors through Lebanon are still not precisely identified (Beale & Ramadan-Jaradi 2001), and because there have been no synchronous migration studies across the whole width of the flyway, the total number of soaring birds that fly through Lebanon is still to be determined. Relative to other Mediterranean countries, the rate of bird poaching is extremely high in Lebanon (Leshem 1985, Brochet *et al* 2016). Stricter law enforcement, together with larger-scale education and awareness activities, is needed for Lebanon.

STUDY AREA AND METHODS

Mount Lebanon (central Lebanon) and the Anti-Lebanon mountains (eastern Lebanon) are the main mountain ranges in Lebanon, stretching for about 170 km parallel to the Mediterranean coast. The Beqaa valley is a flat fertile river valley, about 120 km long and 16 km wide on average, located between these mountains. The Beqaa valley is the northernmost extension of the Great Rift Valley, and is the most important farming region in Lebanon.

We conducted fieldwork to gather information on the migration of Lesser *Clanga pomarina* and Greater *Clanga clanga* Spotted Eagles through Lebanon to complement long-term satellite telemetry data from those species. Our main goal was to collect information on altitudes at which eagles flew during the day, roost sites, daily rhythm and illegal hunting pressure regarding these and other species. We gathered this information to enhance our evaluation of satellite telemetry data from over 50 migrating adult Lesser and Greater Spotted Eagles that have been tracked through Lebanon since 1994 (Meyburg *et al* in prep.). We explored the area around the southern end of the Beqaa valley, north of lake Qaraoun, the adjoining slopes of Mount Lebanon to the west and Anti-Lebanon to the east (Fig. 1). We also made exploratory trips mostly as far as 40 km to the north (the area of Anjar) (33° 43' 56.10" N, 35° 56' 0.94" E), but also in the area of Baalbek (65 km NE) (34° 0'



Figure 1. Map of Lebanon, showing the study area at Shouf (red dot) and the migration corridor described (black line) and other sites mentioned in the text, where raptor migration has been observed during the study or at former surveys (white circle).



Plate 1. Mount Barouk and Beqaa valley, as seen from Anti-Lebanon Mountains near Lala. © Ivaylo Angelov

23.79" N, 36° 12' 14.95" E). Because political unrest limited our ability to travel freely to all areas, we used the available time to also study the migration of other large soaring birds.

We conducted observations from a viewpoint (33° 39' 50.85" N, 35° 42' 19.12" E) within the core of Shouf Cedar nature reserve on the eastern slope of Mount Barouk (southern extension of Mount Lebanon) at 1710 m asl. The site is 1.9 km from the mountain pass overlooking the Beqaa valley, along the asphalt road connecting Kafraiya and the entrance of Shouf Cedar nature reserve (Fig. 1, Plate 1).

Counts were conducted on 11 days (27 September – 13 October 2019), for a total of 39 h 40 min. The mean daily observation time was 3 h 36 min (range: 45 min – 5 h 50 min). Morning counts (8:40–12:00 hrs) represented 74% of the time spent observing. At least two observers were present during observations. Binoculars (10x50) were used for identification. By driving to the north and south along in the foot of the mountain and

stopping at different locations, we tried to trace the migration path of the birds for longer distances, and map the trajectory of the flights through the corridor.

We used digital cameras to help address identification and ageing challenges of Greater Spotted and Steppe Eagles *Aquila nipalensis*. We aimed to determine the age structure of both species (Svensson *et al* 2009, Lontkowski & Maciorowski 2010, Forsman *et al* 2016, Gejl 2018). Special efforts were devoted to screening each *Clanga* eagle, especially when they were in larger groups, in order to minimize the risk of overlooking Greater Spotted and Steppe Eagles amongst them. We estimate that more than 90% of the Lesser Spotted Eagles were properly identified individually.

RESULTS

Table 1 summarizes our results. We counted 8751 raptors belonging to 23 species, plus 250 Great White Pelicans *Pelecanus onocrotalus*, 135 Black Storks *Ciconia nigra* and 22 Common Cranes *Grus grus*. The most common species were Black Kite *Milvus migrans*, Lesser Spotted Eagle and Northern Steppe Buzzard *Buteo buteo vulpinus*, accounting for 77% of all raptors. Levant Sparrowhawk *Accipiter brevipes*, Short-toed Snake Eagle *Circaetus gallicus* and Eurasian Sparrowhawk *Accipiter nisus*, comprised another 19.3% of all raptors. A notable count of 80 Greater Spotted Eagles was made, with 48 passing during the peak migration day (4 October) together with 1529 Lesser Spotted Eagles.

The soaring birds mostly flew above the highest parts of the eastern slope of Barouk mountain, moving south, following the ridge. We were able to trace the migration bottleneck along 36 km (Fig. 2), and observed that birds most often used the same flight route. In doing so, they largely took advantage of thermal updrafts along the whole eastern slope of the mountain, but also made use of orographic updrafts, especially during days with east winds. However, when strong west winds occurred (*eg* on 29 September), conditions at the viewpoint were much less favorable. In such conditions, soaring bird migration shifted to the east, to the other side of the Beqaa valley at the foot of Anti-Lebanon mountain. There, for 1 h 40 min, we counted more than 1100 raptors, mostly Black

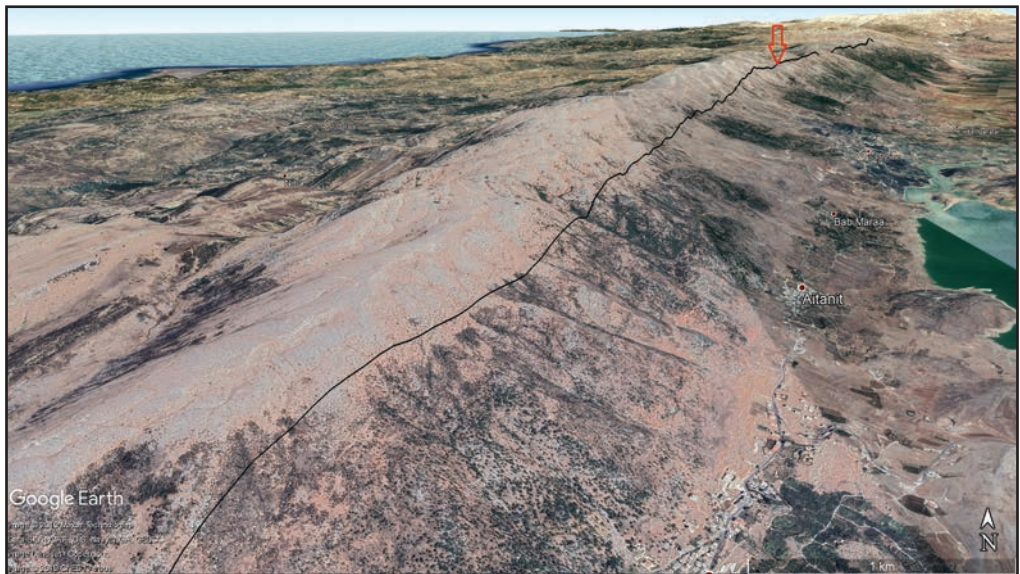


Figure 2. 3D habitat map, showing the migration corridor along the main ridge of Mount Barouk, as described in this study.



Plate 2. Adult male Oriental Honey Buzzard *Pernis ptilorhynchus*. © Samer Azar

Kites (800) and Levant Sparrowhawks (250), but also a juvenile Egyptian Vulture *Neophron percnopterus* and 27 Lesser Spotted Eagles, among others.

Oriental Honey Buzzard *Pernis ptilorhynchus*

One juvenile was observed on 13 October, around 11:50, over the watchpoint around 100 m above us. During 10–30 September 2019, three were observed at Hammana (www.trektellen.nl). There have been recent discussions about the occurrence of hybrids of Oriental and European Honey Buzzard *P. apivorus*, mostly within the Middle East (Babbington & Campbell 2016) and this possibility cannot be excluded (Faveyts *et al* 2011, Forsman 2016). An Oriental Honey Buzzard was observed and photographed on 14 September, 42 km north of our observation point (Plate 2).

Black Kite *Milvus migrans*

Black Kite was the most common raptor species (2769 individuals), 27.6% of which passed on 10 October. Most birds were in small groups (< 10), sometimes in loose drawn-out flocks of 20–30, up to 56. Additionally, an estimated 700 passed on 28 September during a single hour above Hadet, 15 km west of Baalbek, and 800 on 29 September in 1 h 40 min above Lala, 9 km SE of the observation point (Fig. 1). Our observations in the nearby, mostly flat, lowland areas of the Beqaa valley, showed that Black Kites migrated throughout the area in a broad front and in loose flocks, frequently flying at low speeds and very low altitudes (50–100 m above ground), but also up to 300–400 m and more. It is possible that during the study period, many times more kites passed over the Beqaa valley than at Shouf nature reserve.

Given the smaller numbers observed at the Bosphorus and the gulf of Iskenderun in Turkey (Fülop *et al* 2014, Oppel *et al* 2014), we suspect that most of the Black Kites observed by us probably came from the Eastern Black Sea flyway, where almost 160 000 were counted in 2017 at Batumi (Wehrmann *et al* 2019). Moreover a large majority of the kites

Table I: Raptors and other soaring birds seen during migration surveys in Lebanon, 27 September–13 October 2019.

Species	Date and time spent in observation											Total
	27.IX (3:10)	30.IX (2:20)	1.X (2:40)	2.X (3:40)	3.X (4:30)	4.X (5:40)	5.X (3:20)	7.X (0:45)	10.X (4:35)	12.X (3:05)	13.X (5:50)	
Common Crane <i>Grus grus</i>									17		5	22
White Pelican <i>Pelecanus onocrotalus</i>	250											250
Black Stork <i>Ciconia nigra</i>	7	2		3					4		119	135
Osprey <i>Pandion haliaetus</i>									1		1	2
Eastern Imperial Eagle <i>Aquila heliaca</i>											2	2
Steppe Eagle <i>A. nipalensis</i>		1	2	1	1	5	4		2		1	17
Booted Eagle <i>A. pennata</i>	8	5	7	8		6	8		3		2	47
Lesser Spotted Eagle <i>Clanga pomarina</i>	160	98	124	156	127	1529	236	5	70	55	122	2682
Greater Spotted Eagle <i>C. clanga</i>	1			1		48	6		8	6	10	80
<i>C. pomarina/clanga</i>									3	9	30	42
Short-toed Snake Eagle <i>Circaetus gallicus</i>	23	32	264	78	23	135	52	1	46	24	40	718
Black Kite <i>Milvus migrans</i>	262	51	246	184	397	389	232	15	767	1	225	2769
Black-winged Kite <i>Elanus caeruleus</i>								1				1
Western Marsh Harrier <i>Circus aeruginosus</i>		10	7	7	3	4	3		13		3	50
Pallid Harrier <i>C. macrourus</i>	1		1				2					4
Unidentified Montagu's/Pallid Harrier						1					2	3
Long-legged Buzzard <i>Buteo rufinus</i>	1						1					2
Northern Steppe Buzzard <i>B. buteo vulpinus</i>	17	54	92	193	25	40	52		365	59	393	1290
Honey Buzzard <i>Pernis apivorus</i>	12	5	1	6	2	7	3					36
Oriental Honey Buzzard <i>P. ptylorhynchos</i>											1	1
Eurasian Sparrowhawk <i>Accipiter nisus</i>	10	3	13	29	31	11	14		98	8	28	245
Levant Sparrowhawk <i>A. brevipes</i>	535	59	52	12	1	47	12		8			726
Northern Goshawk <i>A. gentilis</i>	1											1

Barbary Falcon <i>Falco peregrinus</i> <i>pelegrinoides</i>										2			2
Common Kestrel <i>F. tinnunculus</i>	1			5		2	3			12		4	27
Lesser Kestrel <i>F. naumanni</i>										1			1
Red-footed Falcon <i>F. vespertinus</i>										1			1
Eurasian Hobby <i>F. subbuteo</i>			1				1						2
Total count	1289	320	810	683	610	2224	629	22	1421	162	988	9158	



Plate 3. Juvenile Black Kite of the subspecies *Milvus migrans lineatus*. © Samer Azar

were not *M. m. migrans*, but *M. m. lineatus*, the eastern subspecies (Plate 3), or intermediates (Scheider *et al* 2004, Karyakin 2017, Andreyenkova *et al* 2019), having a larger wing span, big and very pale to white underwing wrist patches, a pale and often deeply forked tail, six fingers of the primaries and grey legs (Lindholm & Forsten 2011, Forsman 2016). The migration of this form, also called the Black-eared Kite, is poorly understood (Scheider *et al* 2004, Andreyenkova *et al* 2019). It is known to occur and overwinter in neighboring Syria (Baumgart 1991), and is also observed passing near Suez (B-U Meyburg, unpubl data). Large numbers winter in the Middle East (Forsman 2016). Ferguson-Lees & Christie (2001) state that this kite spends the winter mainly in Africa and the Indian subcontinent, but in the *Handbook of the Birds of the World Alive* (Orta *et al* 2016) Africa is not mentioned as a wintering area. Meyburg (unpubl data) observed this kite migrating near Suez, but arriving much later than the nominate *M. m. migrans*. Thousands of Black Kites have been observed wintering in southern Anatolia in recent years, and tens of thousands in Israel (Vansteelant *et al* 2019). *M. m. lineatus* has been more frequently observed in Europe in recent years, including in winter, suggesting the form has spread to the west (Skyrpan *et al* in prep).

Black-shouldered Kite *Elanus caeruleus*

One adult of the subspecies *vociferus* was observed at close range over the watchpoint at 11:47 on 7 October. The bird was flying from north to south, following the most often used migration corridor. In the region, the species breeds in Israel (130–150 breeding pairs) and Iraq, also in southernmost Turkey (Kirwan *et al* 2008, Ararat *et al* 2011, Ramadan-Jaradi &

Serhal 2014, Karakas & Biricik 2017, Lawicki & Perlman 2017). This observation is probably among the first ten records of the species in Lebanon (Ramadan-Jaradi & Serhal 2014).

Short-toed Snake Eagle *Circaetus gallicus*

718 Short-toed Snake Eagles were recorded during the study, which, as far as we can determine, is the highest count for Lebanon. However, much greater numbers are expected to pass through the country because 6257 were counted around the gulf of Iskenderun, Turkey, and up to 1788 have been counted at Batumi, Georgia (Oppel *et al* 2014, Wehrman *et al* 2019), while a mean of 3224 was counted annually during 1990–99 in northern Israel, about 120 km south of the current study (Alon *et al* 2004).

Steppe Eagle *Aquila nipalensis*

A total of 17 birds were observed, 10 juveniles, three juveniles or 2cy, two immatures and two subadults (Plate 4). At other places we observed five additional migrating Steppe Eagles: one juvenile or 2cy bird SW of Danniyeh on 22 September, one juvenile on 25 Sept at Aghbe, two (one juvenile and one juvenile or 2 cy) at Ain Et Tine and one juvenile at Lala on 29 September. The lack of records of adults in autumn is probably explained by their using a different pathway. Visual observations and satellite telemetry have shown that they migrate further east, mainly through Saudi Arabia towards Bab-el-Mandeb at the southernmost tip of the Red Sea (Welch & Welch 1988, Meyburg *et al* 2003, 2012). As a result, they mostly occur only in the very south of Israel during autumn (Alon *et al* 2004), whereas in spring they pass through in much greater numbers, a consequence of a loop migration around the Red Sea (Meyburg *et al* 2003, 2012). The breeding range of Steppe Eagle in Europe has contracted, especially in the west (Karyakin 2018), thus few birds cross the Bosphorus (Fülop *et al* 2014). Steppe Eagles are late autumn migrants, and at Eilat they peak between the third week of October and the first week of November, with the last being seen in the second week of December (Shirihai & Christie 1992).

Greater Spotted Eagle *Clanga clanga*

We recorded a total of 80 individuals, 48 (60%) of which passed on the peak day for migration of Greater and Lesser Spotted Eagles (4 October). The age structure of the Greater Spotted Eagles seen by us is presented in Table 2. Juveniles and birds in second plumage were predominant until the middle of the study period, after which immatures (2nd to



Plate 4. Subadult Steppe Eagle *Aquila nipalensis*. © Samer Azar

4th plumage) and adults (Forsman 2016, Gejl 2018) formed the large majority (Plates 5 and 6). Nearly a third (31%) of the birds were identified as subadults or adults, which is more than the 12% (n = 86) recorded at Suez (Bijlsma 1983). During the last three days of the count (10–13 October), which fell within the broad peak migration period of adult Greater Spotted Eagles through Lebanon as identified by satellite telemetry (Meyburg *et al* in prep), the species represented 9.7% of all *Clanga* eagles. Photographs were taken of 23 of the Greater Spotted Eagles, which aided identification. Additionally, on 12–13 October a total of 12 *Clanga* eagles (three were photographed) were observed in good light conditions and at rather close range, but we were unable to determine whether they were *A. clanga* or *A. pomarina*. This led us to suspect that some may have been hybrids (first, second or later generation) of Greater and Lesser Spotted Eagle (Helbig *et al* 2005, Lontkowski & Maciorowski 2010, Vali *et al* 2010, Forsman 2016, Meyburg *et al* 2016).



Plate 5. Adult Greater Spotted Eagle *Clanga clanga*. © Samer Azar

Table 2: Ages of Greater Spotted Eagles observed in Lebanon during surveys (27 September–13 October) in 2019.

	27.IX	2.X	4.X	5.X	10.X	12.X	13.X	Total
Juvenile		1	32	3				36
Juv/2nd year					1			1
2nd year	1		3	1	1		1	7
Immature			10	1				11
Subadult/adult			3	1	6	6	9	25
Total	1	1	48	6	8	6	10	80

Typically, only a very small number of Greater Spotted Eagles are observed on migration in northern Israel - in autumn about 50 individuals each season (c0.1% of all migrating birds of prey; Leshem & Yov-Tov 1996, Alon *et al* 2004). Similarly low numbers, comprising a similarly small percentage of the total migration, have been reported for southern Israel (Shirihai & Christie 1992). Possible explanations for the low numbers observed in Israel could be that many Greater Spotted Eagles go unrecorded amongst the much greater number of Lesser Spotted Eagles or that observations are perhaps not made during a period that covers the entire time of migration.

During two visits in autumn to northern Israel and near Suez (Egypt), respectively, almost 10% of the two *Clanga* eagle species observed by Meyburg (unpubl data) were *C. clanga*, although these moving, mixed flocks were sometimes very large, making precise counts impossible. Notable numbers of satellite tracked *C. clanga* migrate to Africa along the Mediterranean Sea every year (Meyburg *et al* 1998 and unpubl).

Lesser Spotted Eagle *Clanga pomarina*

2683 Lesser Spotted Eagles were recorded during the 11 days, with 57% of them being counted on 4 October. Observations at Aghbe (34.01° N, 35.71° E), which is 4 km NE of the



Plate 6 (left). Lesser (below) and Greater Spotted Eagle (above). © Ivaylo Angelov

Plate 7 (right). Young adult Lesser Spotted Eagle *Clanga pomarina*. © Samer Azar

raptor migration watchpoint at Harissa (Nielsen & Christensen 1970) and 40 km to the N of this study (Fig. 1), indicate that the main flow of large eagles passes through there. During four hours on 25 September at Aghbe we observed more than 1200 Lesser Spotted Eagles, while during 26 Sept – 4 Oct at least 1000 were observed on at least three separate days (CABS, pers comm). In total, we observed more than 20 birds that seemed to have severe injuries, possibly from gunshots. Five birds were observed to be dangling a leg, while the rest had apparently damaged wings (eg several consecutive flight feathers missing or broken, birds holding their wings abnormally).

The number of Lesser Spotted Eagles passing through Lebanon is probably almost as high as in Israel (around 100,000). According to telemetry results, all adult birds from Europe migrate through this rather narrow country in both spring and autumn (Meyburg *et al* 1995, 1998, 2004, 2017, in prep).

Barbary Falcon *Falco peregrinus pelegrinoides*

Two adults, behaving like typical migrants, were observed on 10 October; observations were separated by only about 10 minutes. The first was seen at a distance of about 300 m. It had a Peregrine-like, but slimmer, body that was creamy-white in coloration without any visible markings, a dark hood and a conspicuous but narrow black moustache. In nearby, more northern countries the species possibly breeds in Turkey and is confirmed as a breeder in Iran and Iraq (Kirwan *et al* 2008, Ararat *et al* 2011, Khaelghizadeh *et al* 2011). It is generally sedentary, but birds from Central Asia might migrate, and 10–20 are recorded annually in Eilat, Israel (Fergusson-Lees & Christie 2001).

DISCUSSION

Lebanon and Israel, which are similar in size, lie along the world's second most important bird migration route, the Eastern Mediterranean Flyway (Zalles & Bildstein 2000). While many migratory bird studies have been carried out in Israel, very few publications are available from Lebanon. This is due, in particular, to the difficult political situation that has prevailed for decades. Even at present, many parts of the country are not easily accessible. Lebanon is unfortunately also one of the most important hotspots of illegal soaring bird shooting. Because this country is probably used by a number of migratory birds of prey and other rare species similar to those that pass through Israel, it is very important to support in every way possible the Lebanese authorities, NGOs and individuals to improve the protection of migratory birds. This task deserves world-wide attention and support.

Nearly 100% of the world population of the Lesser Spotted Eagle migrate twice a year through Lebanon. However, the full migratory routes of the proportion of the population that passes east of the Black Sea are unclear. The aim of our field work was to verify and complement by means of direct observations the results of satellite tracking that has occurred since 1994.

We report on the discovery of a narrow migration route through Lebanon used by soaring birds, which, given the number of individuals counted (over 9000) within a limited observation time (less than 40 hours in 11 days), qualifies as a “bottleneck site” according to regional Important Bird Area criteria for the Middle East (BirdLife International 2019). The same general area was briefly mentioned by Beale & Ramadan-Jaradi (2001), who reported that between 30 September and 1 October 2000 about 10 000 birds, mostly Lesser Spotted Eagles, passed near Aana (c5 km northeast of our observation point).

In terms of numbers of migrating soaring birds observed in Lebanon, our observations were comparable with those of Cameroon *et al* (1967), Nielsen & Christensen (1970) and Khairallah (1991). We document the highest counts in Lebanon of Greater Spotted, Steppe (by including the ones seen at other locations) and Short-toed Snake Eagle (80, 22 and 718 birds respectively), but also Black Kite and Northern Steppe Buzzard (2769 and 1290). However, it seems likely that far less than 10% of the total soaring birds that pass through Lebanon each season (Zalles & Bildstein 2000) have been counted during any of the studies there. Thus, the migration of these birds is still insufficiently known and further studies, especially simultaneous counts at different observation points, are needed.

The strong influence of weather conditions, especially wind speed, on soaring bird migration in the Middle East is well documented (Bijlsma 1983, Alpert *et al* 2000). The bottleneck at our study site is formed as a result of the specific geographic features and typical meteorological conditions that occur in the area. As the Lebanon mountain range and its southern extension, the Barouk mountain, are aligned with the primary axis of migration along the Eastern Mediterranean, soaring birds benefit simultaneously from both strong thermal updrafts above the steep and mostly bare eastern slopes, and orographic lift, especially when predominantly easterly winds blow (Fig. 2). It is quite possible that the geography of the area determines the emergence of a very dense or continuous line of thermals, so called “thermal streets”, that can benefit migratory raptors by facilitating prolonged linear/straight line soaring that may go uninterrupted without losing height for tens of kilometers (Pennycuick 1972, 1998, Katzner *et al* 2015). Although linear soaring while gliding has been recorded in large migrating eagles such as Lesser Spotted and Steppe Eagles, which used it 7% and 11% of the time, respectively (Spaar & Bruderer 1996, Spaar 1997), our approach did not allow us to measure how many of the eagles were flying in such a manner or for how long. The use of orographic lift by raptors was clearly observed in the morning (8:30–9:30), when large eagles, kites and buzzards were flying very low above the windward side of the ridgeline, as has been observed for migrating Golden Eagles *Aquila chrysaetos* in North America (Bohrer *et al* 2017). Raptors are also able to change direction away from the principal axis of migration in order to gain lift from updrafts along mountain ridges (Mandel *et al* 2011), but at our study location the ridge was parallel to the migration direction. It has been shown that in order to optimize travel speed, raptors are able to alternate between circular and linear soaring in relation to local topography, and that linear soaring may be supported also by thermal uplift along thermal streets (Santos *et al* 2017). During midday and early afternoon we observed the so called “noonday lull”, when visual raptor migration strongly declined, and at times almost disappeared, due to birds flying very high and being very hard to observe (Bildstein 2006).

Due to the massive migration of some species from eastern regions, Lebanon offers very good opportunities for the identification and photography of taxa such as Black-eared Kite *M. m. linneatus* and hybrids of the subspecies *M. m. migrans* and *M. m. linneatus*. The breeding area of Black-eared Kite seems to be spreading strongly to the west recently. Very little is known about its wintering areas, especially in Africa. Further efforts at direct observation, photography and satellite tracking of Black Kites and *Clanga* eagles may illuminate the status of hybridization and provide more information on their wintering areas.

Raptor migration through the area benefits from the relative safety from illegal shooting afforded by the presence and activity of the guards at the entrance of the nearby Al Shouf Cedar nature reserve. The easily accessible bottleneck we describe offers good opportunities for environmental education and excellent conditions for the future establishment of a permanent raptor migration visitors' center. More than 30 years ago, Bijlsma (1987) identified education and law enforcement as the most urgent measures to be undertaken in Lebanon, for improvement of the status of migratory birds. This is still the case given the continuing and widespread shooting of migratory raptors. Creation of a permanent soaring bird migration station, together with an exhibition hall and a visitors' center can facilitate the environmental education of future generations in Lebanon.

ACKNOWLEDGEMENTS

We express our sincere thanks to the Society for the Protection of Nature in Lebanon (SPNL) and the Committee Against Bird Slaughter (CABS), especially Adonis Khatib, Assad Serhal (SPNL) and Axel Hirschfeld (CABS). We also thank the administration and guards of Al Shouf Cedar nature reserve. Mike McGrady made important improvements to the manuscript and corrected the English.

LITERATURE CITED

- Alpert, P, DS Tannhauser, Y Leshem, A Kravitz & A Rabinovitch-Hadar. 2000. Migrating soaring birds align along sea-breeze fronts: first evidence from Israel. *Bulletin of the American Meteorological Society* 81: 1599-1601.
- Alon, D, B Granit, J Shamoun-Baranes, Y Leshem, G Kirwan & H Shirihai. 2004. Soaring-bird migration over northern Israel in autumn. *British Birds* 97: 160-182.
- Ararat, K, O Fadhil, RF Porter & M Salim. 2011. Breeding birds in Iraq: important new discoveries. *Sandgrouse* 33: 12-33.
- Andreyenkova, N, I Starikov, M Wink, I Karyakin, I Zhimulev & O Andreenkov. 2019. The problems of genetic support of dividing the black kite (*Milvus migrans*) into subspecies. *Vavilovskii Zhurnal Genetiki i Selektzii [Vavilov Journal of Genetics and Breeding]* 23: 226-231. DOI 10.18699/VJ19.486
- Babbington, J & O Campbell. 2016. Recent status and occurrence of Crested Honey Buzzards *Pernis ptilorhynchus* in the Arabian peninsula, with emphasis on Saudi Arabia and the United Arab Emirates. *Sandgrouse* 38: 12-22.
- Baumgart, W, M Kasperek & B Stephan. 1995. *The Birds of Syria: an Overview*. Max Kasperek Verlag, Heidelberg. 124 pp. [in German]
- Beale, CM & G Ramadan-Jaradi. 2001. Autumn routes of migrating raptors and other soaring birds in Lebanon. *Sandgrouse* 23: 124-129.
- Benson, SV. 1970. *Birds of Lebanon and the Jordan Area*. The International Council for Bird Preservation, London & New York.
- Bijlsma, R. 1983. The migration of raptors near Suez, Egypt, autumn 1981. *Sandgrouse* 5: 19-44.
- Bijlsma, R. 1987. *Bottleneck areas for migratory birds in the Mediterranean region*. ICBP Study Report, Cambridge. 18 pp.
- Bildstein, K. 2006. *Migrating raptors of the world: their ecology and conservation*. Cornell University Press, Ithaca, New York.
- BirdLife International 2019. Middle East IBA categories and criteria. <http://datazone.birdlife.org/site/ibacritme>
- Bohrer, G, D Brandes, J Mandel, K Bildstein, T Miller, M Lanzone, T Katzner, C Maisonneuve & J Tremblay. 2011. Estimating updraft velocity components over large spatial scales: contrasting migration strategies of Golden Eagles and Turkey Vultures. *Ecology Letters* 15: 96-103.
- Brochet, A-L, W Van Den Bossche, S Jbour P Ndang'ang'a, VR Jones, W Abdou, A Razzaq Al- Hmoud, N Ghazal Asswad, JC Atienza, I Atrash, N Barbara, K Bensusan, T Bino, C Celada, SI Cherkaoui, J Costa,

- B Deceuninck, K Etayeb, C Feltrup-Azafzaf & SHM Butchart. 2016. Preliminary assessment of the scope and scale of illegal killing and taking of birds in the Mediterranean. *Bird Conservation International* 26: 1-28.
- Cameron, R, L Cornwallis, M Percival & A Sinclair. 2008. The migration of raptors and storks through the Near East in autumn. *Ibis* 109: 489 - 501.
- Faveyts, W, M Valkenburg & B Granit. 2011. Crested Honey Buzzard: identification, western occurrence and hybridisation with European Honey Buzzard. *Dutch Birding* 33: 149-162.
- Ferguson-Lees, J & DA Christie. 2001. *Raptors of the world: A field guide*. Christopher Helm, London.
- Forsman, D. 2003. Identification of Black-eared Kite. *Birding World* 16: 56–60.
- Forsman, D. 2016. *Flight identification of raptors of Europe, North Africa and the Middle East*. Helm Identification Guides, London.
- Fülöp, A, I Kovács, E Baltag, SJ Daróczy, AS Dehelean, LA Dehelean, RB Kis, IS Komáromi, H Latková & T Miholcsa. 2014. Autumn migration of soaring birds at Bosporus: validating a new survey station design. *Bird Study* 61: 264-269.
- Gejl, L. 2018. *Europas Greifvögel*. Das Bildhandbuch zu allen Arten. Haupt, Bern.
- Helbig, A, I Seibold, A Kocum, D Liebers, J Irwin, U Bergmanis, B-U Meyburg, W Scheller, M Stubbe & S Bensch. 2005. Genetic differentiation and hybridization between Greater and Lesser Spotted Eagles (*Accipitriformes: Aquila clanga*, *A. pomarina*). *Journal of Ornithology* 146: 226-234.
- Karakas, R & M Biricik. 2017. New breeding sites of the Black-winged Kite (*Elanus caeruleus*) in Turkey (Aves: Falconiformes). *Zoology in the Middle East* 63: 1-3.
- Karyakin, I. 2017. Problem of identification of Eurasian subspecies of the Black Kite and records of the Pariah Kite in Southern Siberia, Russia. *Raptors Conservation* 34: 34-67.
- Karyakin, I. 2018. Status of the Steppe Eagle in the world: “white spots” in distribution, population numbers, ecology and threats. *Raptors Conservation* 2018, Suppl. 1: 81-84.
- Katzner, T, P Turk, A Duerr, T Miller, M Lanzone, J Cooper, D Brandes, J Tremblay & J Lemaître. 2015. Use of multiple modes of flight subsidy by a soaring terrestrial bird, the Golden eagle *Aquila chrysaetos*, when on migration. *Journal of The Royal Society Interface* 12: 20150530.
- Khairallah, NH. 1991. Notes on the autumn raptor migration over the Lebanon in 1981. *Sandgrouse* 13: 34-41.
- Khaelghizadeh, A, A Zarei & M Tohidifar. 2011. Past and present status of the Barbary Falcon *Falco pelegrinoides* in Iran. *Falco* 38: 16-19.
- Kirwan, GM, KA Boyla, P Castell, B Demirci, M Özen, H Welch & T Marlow. 2008. *The Birds of Turkey*. Christopher Helm, London.
- Lawicki, L & Y Perlman. 2017. Black-winged Kite in the WP: increase in breeding population, vagrancy and range. *Dutch Birding* 39: 1-12.
- Leshem, Y. 1985. Report of the “massacre of the innocent” in Lebanon. *Bull. WWG Birds of Prey* 3: 149-152.
- Leshem, Y & Y Yom-Tov. 1996. The magnitude and timing of migration by soaring raptors, pelicans and storks over Israel. *Ibis* 138: 188–203.
- Leshem, Y & Y Yom-Tov. 1998. Routes of migrating soaring birds. *Ibis* 140: 41-52.
- Lindholm, A & A Forsten. 2011. Black Kites *Milvus migrans* in Russian Altai. *Calula* 2: 1–6.
- Lontkowski, J & G Maciorowski. 2010. Identification of juvenile Greater Spotted Eagle, Lesser Spotted Eagle and hybrids. *Dutch Birding* 32: 384-397.
- Macfarlane, AM. 1978. Field notes on the birds of Lebanon and Syria 1974-77. *Army Birdwatching Soc. Per. Publ.* 3: 36-41.
- Maciorowski G, P Mirski & Ü Väli. 2015. Hybridisation dynamics between the Greater Spotted Eagles *Aquila clanga* and Lesser Spotted Eagles *Aquila pomarina* in the Biebrza River Valley (NE Poland). *Acta Ornithol.* 50: 33–41.
- Mandel, J, G Bohrer, D Winkler, D Barber, C Houston & K Bildstein. 2011. Migration path annotation: Cross-continental study of migration-flight response to environmental conditions. *Ecological Applications* 21: 2258-2268.
- Meyburg, B-U. 2005. [Migration and persecution of raptors in southern Turkey]. *Orn. Mitt.* 57: 12-16. [in German]
- Meyburg, B-U, I Angelov & C Meyburg. (in prep). Migration and persecution of Spotted Eagles (*Clanga pomarina*, *C. clanga*) in Lebanon as revealed by satellite and GSM tracking.
- Meyburg, B-U, U Bergmanis, T Langgemach, K Graszynski, A Hinz, I Börner, C Meyburg & WMG Vansteelant. 2017. Orientation of native versus translocated juvenile Lesser Spotted Eagles (*Clanga pomarina*) on the first autumn migration. *Journal of Experimental Biology* 220: 2765-2776.
- Meyburg, B-U, P Boesman, JS Marks & GM Kirwan. 2016. Lesser Spotted Eagle (*Clanga pomarina*). In: del Hoyo, J, A Elliott, J Sargatal, DA Christie, & E de Juana. (eds.). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona.

- Meyburg, B-U & C Meyburg. 2009. Annual cycle, timing and speed of migration of a pair of Lesser Spotted Eagles (*Aquila pomarina*) – a study by means of satellite telemetry. *Population Ecology of Raptors and Owls* 6: 63-85.
- Meyburg, B-U, C Meyburg, T Belka, O Sreibr & J Vrana. 2004. Migration, wintering and breeding of a Lesser Spotted Eagle (*Aquila pomarina*) from Slovakia tracked by satellite. *Journal of Ornithology* 145: 1-7.
- Meyburg, B-U, C Meyburg, T Mizera, G Maciorowski & J Kowalski. 1998. Greater Spotted Eagle wintering in Zambia. *Africa - Birds & Birding* 3: 62-68.
- Meyburg, B-U, C Meyburg & P Paillat. 2012. Steppe Eagle migration strategies - Revealed by satellite telemetry. *British Birds* 105: 506-519.
- Meyburg, B-U, P Paillat, & C Meyburg. 2003. Migration routes of Steppe Eagles between Asia and Africa: A study by means of satellite telemetry. *The Condor* 105: 219-227.
- Meyburg, B-U, W Scheller & C Meyburg. 1995. Migration and wintering of the Lesser Spotted Eagle (*Aquila pomarina*): a study by means of satellite telemetry. *Journal of Ornithology* 136: 401-422.
- Nielsen, BP & S Christensen. 1970. Observations on the Autumn Migration of Raptors in the Lebanon. *Ornis Scand* 1: 65-73.
- Oppel, S, P Iankov, S Mumun, G Gerdzhikov, M Iliev, S Isfendiyaroglu, C Yeniuyurt & E Tabur. 2014. Identification of the best sites around the gulf of Iskenderun, Turkey, for monitoring the autumn migration of Egyptian Vultures and other diurnal raptors. *Sandgrouse* 36: 240-249.
- Orta, J, JS Marks, EFJ Garcia & GM Kirwan 2016. Black Kite (*Milvus migrans*). In: del Hoyo, J, A Elliott, J Sargatal, DA Christie & E de Juana. (eds.). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona, www.hbw.com/node/54015. [retrieved 5 December 2019].
- Pennycuik, CJ. 1972. Soaring behaviour and performance of some East African birds, observed from a motor-glider. *Ibis* 114: 178 - 218.
- Pennycuik, CJ. 1998. Field observations of thermals and thermal streets, and the theory of cross-country soaring flight. *Journal of Avian Biology* 29: 33-43.
- Ramadan-Jaradi, G & M Ramadan-Jaradi. 2015. Spring flyways of migrating soaring birds in Akkar/Northern Lebanon. *Lebanese Science Journal* 16: 15-21.
- Ramadan-Jaradi, G & A Serhal. 2014. First confirmed breeding record of Northern Raven *Corvus corax* in Lebanon for over four decades and recent records in Lebanon of Black-winged Kite *Elanus caeruleus*, Pin-tailed Sandgrouse *Pterocles alchata* and Black-bellied Sandgrouse *P. orientalis*. *Sandgrouse* 36: 191-194.
- Santos, C, F Hanssen, A-R Muñoz, A Onrubia, M Wikelski, R May & J Silva. 2017. Match between soaring modes of black kites and the fine-scale distribution of updrafts. *Scientific Reports* 7. 10.1038/s41598-017-05319-8.
- Scheider J, M Wink, M Stubbe, S Hille & W Wiltschko. 2004. Phylogeographic relationships of the Black Kite *Milvus migrans*. In: Chancellor, RD & B-U Meyburg (eds) *Raptors Worldwide*. WWGBP/MME: pp467–472.
- Shirihai, H & DA Christie. 1992. Raptor migration at Eilat. *British Birds* 85: 141-186.
- Skyrpan, M, Škrábal & I Literák. in prep. *Milvus migrans lineatus* is spreading west.
- Spaar, R. 1996. Flight strategies of migrating raptors; a comparative study of interspecific variation in flight characteristics. *Ibis* 139: 523-535.
- Spaar, R & B Bruderer. 1996. Soaring migration of Steppe Eagles *Aquila nipalensis* in Southern Israel: Flight behaviour under various wind and thermal conditions. *Journal of Avian Biology* 27: 289-301.
- Svensson, L, K Mullarney, D Zetterström & PJ Grant. 2009. *Collins Bird Guide*. Second edition. Collins, London.
- Vansteelant, WMG, J Wehrmann, D Engelen, J Jansen, B Verhelst, R Benjumea, S Cavaillès, T Kaasiku, B Hoekstra & F de Boer. 2019. Accounting for differential migration strategies between age groups to monitor raptor population dynamics in the eastern Black Sea flyway. *Ibis* (online early). DOI: 10.1111/ibi.12773.
- Wehrmann, J, F de Boer, R Benjumea, S Cavaillès, D Engelen, J Jansen, B Verhelst & W Vansteelant. 2019. Batumi Raptor Count: autumn raptor migration count data from the Batumi bottleneck, Republic of Georgia. *ZooKeys* 836: 135-157.
- Welch, G & H Welch. 1988. The autumn migration of raptors and other soaring birds across the Bab el Mandeb Straits. *Sandgrouse* 10: 26–50.
- Zalles, JI & KL Bildstein. 2000. *Raptor Watch. A global directory of raptor migration sites*. Birdlife Conservation Series No. 9. Birdlife International, Hawk Mountain.

B-U Meyburg, BirdLife Germany (NABU), PO Box 33 04 51, 14199 Berlin, Germany, bumeyburg@aol.com

I Angelov, Gorno pole 6486, Madzharovo, Haskovo, Bulgaria, ivaylo.d.angelov@gmail.com

S Azar, Lebanon Birdwatching Tours: Lebanon, Byblos, Halat, Rue Al Noukour, Building 17, 1st floor. Lebanonbirdwatchingtours@gmail.com

The world's largest gathering of Steppe Eagles *Aquila nipalensis* discovered in central Saudi Arabia

MISCHA KEIJMEL, JEM BABBINGTON, PHIL ROBERTS, MIKE MCGRADY & BERND-ULRICH MEYBURG

Summary: From November 2019 to January 2020, a gathering of up to 6000 Steppe Eagles (60-70% adults/sub-adults and 30-40% immatures/juveniles) was present at a dump site 6.5 km southwest of Ushaiqer (25.30° N, 45.12° E), 180 km north-west of Riyadh in Saudi Arabia. In addition, c1200 Steppe Eagles were located at a landfill near Shaqra (25.16° N, 45.19° E), 19 km south of Ushaiqer. This is the largest gathering of this globally threatened species ever recorded anywhere in the world, and accounts for approximately 4.5 – 9.0% of the estimated global population. Our results identify the importance of these sites and suggest that local poisoning events, electrocution risk and other threats could negatively affect the population. However, opportunities for conservation and tourism also exist, and should be pursued. The findings highlight the utility of satellite tracking in discovering sites important to birds, and digital tools like the OSMEBirdnet, which enable cooperation amongst disparate interested parties.

INTRODUCTION

Steppe Eagle *Aquila nipalensis* is a medium to large raptor that occurs in open habitats such as steppe, semi-desert shrublands and grasslands, and breeds mostly in lowlands and low hills. Until a few decades ago, this species was considered the world's most common eagle of its size (Brown & Amadon 1968). It is now listed on the IUCN Red List as globally Endangered (IUCN 2019) and is listed in Appendix 1 of the Raptors MOU of the Convention for Migratory Species. It has undergone extremely rapid population declines across much of its range. The breeding area in the west has shrunk considerably, and the western border of the range has shifted 1000 km to the east (Meyburg *et al* 2005, Karyakin *et al* 2018). The population in Europe has declined by more than 80% in the past 50 years and it has disappeared from Romania, Moldova and Ukraine. The estimated current global population is 80 000 – 160 000 individuals (Karyakin *et al* 2018, I Karyakin pers comm). At Eilat in Israel, a 40% decline in observations of the species has occurred during the course of the 30 years in which censuses have been made. During this period, the ratio of juveniles to adults fell from 30% to less than 1.4% in 2000 (Yosef & Fornasari 2004). Observers in Saudi Arabia noted a very sharp decline in the number of wintering and migrating eagles in the last three decades of the last century. However, this cannot be quantified exactly, since there are no bottleneck concentrations of migratory eagles in Saudi Arabia as there are at Eilat (Meyburg *et al* 2005).

Worldwide declines have been due to habitat alteration and loss, with conversion of steppes to fields, persecution (Kharchenko & Minoransky 1967, Karyakin *et al* 2016, Goroshko 2018, Meyburg *et al* 2019) and fires on the breeding grounds being some of the reasons (Karyakin *et al* 2016). It is also adversely affected by electrocution and collisions with power lines and poisoning (Shobrak 2012, Karyakin *et al* 2016) and threatened by potential wind energy developments (Hilgerloh *et al* 2011, Khoury 2017). Furthermore, it has the same susceptibility to inadvertent poisoning by certain non-steroidal anti-inflammatory drugs (NSAIDs) as do Old World vultures (Sharma *et al* 2014).

There are two subspecies that differ slightly in plumage and size, *A. n. orientalis* and *A. n. nipalensis* (Cramp & Simmons 1980, Welch & Welch 1991, del Hoyo *et al* 1994). The race wintering in Arabia is *A. n. orientalis*, which has a breeding distribution that stretches from south-eastern European Russia and Inner Anatolia, Turkey, east to Lake Balkhash and perhaps to the Tien Shan and Altai mountains, Kazakhstan (del Hoyo *et al* 1994, Shirihai *et*

al 2000). This race is completely migratory, leaving the breeding areas in late August and September. They avoid crossing large stretches of open water, so large concentrations are observed in bottleneck areas such as Eilat in Israel, Suez in Egypt and the Bab al Mandeb strait at the south-eastern end of the Red Sea (Shirihai *et al* 2000, Zalles & Bildstein 2000, Bildstein 2006). They winter in the Middle East, the Arabian peninsula, and eastern and southern Africa. Congregations of 2000-3000 Steppe Eagles were observed in recent years wintering at the Raysut dumpsite in Salalah, Oman. The population in the wider area is thought to be much larger, but data based on coordinated multiple location counts are not available (B-U Meyburg & M McGrady unpubl data). Saudi Arabia has been known as a wintering area for Steppe Eagles and other scavenging birds for some time (Welch & Welch 1991, Shirihai *et al* 2000, Zalles & Bildstein 2000, McGrady 2018). Near Taif in the west of Saudi Arabia, migratory birds of prey have been counted systematically since the 1990s (B-U Meyburg unpubl data), and well over 100 migrating raptors of several species have been caught and ringed and some fitted with satellite transmitters. Seven of 14 Steppe Eagles trapped during autumn migration in Saudi Arabia at a site approximately 50 km northeast of Taif, (21.62°N, 40.72°E) spent the following winter in the Arabian Peninsula as revealed by satellite telemetry. The other seven birds crossed the Bab-el-Mandeb strait to winter in Africa (Meyburg *et al* 2003, 2012). Spring migrants pass over Eilat from late January to early May, with peak passage from late February to mid-April (Meyburg *et al* 2019).

METHODS AND RESULTS

Data from Steppe Eagles trapped in Oman and tracked via satellite by B-U Meyburg and M McGrady (<http://steppeeaglesoman.blogspot.com>) suggested that an area in Saudi Arabia near Shaqra, 160 km northwest of Riyadh, could hold good numbers of Steppe Eagles (Fig. 1). In particular, two sites, located 6.5 km southwest of Ushaiqer and 9 km southwest of Shaqra (Fig. 2), were seen to be used by the tracked eagles. This area was also the winter home range of a Steppe Eagle tracked with a transmitter for more than 100 days from early November 1996 to late February 1997 (Meyburg *et al* 2012). However, we were not aware of any published or unpublished information indicating this to be an important transit site for eagles. Nevertheless, we considered it to be a potentially good location, as it is along a relatively direct route from the breeding grounds, past the head of the Arabian Gulf towards the Bab el Mandeb strait, and onwards to Africa.

MM sought observers who might visit the area to see whether it was indeed used by many eagles by posting information on OSMEBirdnet. Although there are few birdwatchers in Saudi Arabia, MK from Riyadh saw the request and first visited the area on 8 and 9 November 2019.

The Ushaiqer dump site (25.30°N, 45.12°E) is at the end of a 5-km graded track that splits off from the road between the towns of Ushaiqer and Shaqra (25.326°N, 45.173°E) and heads west (Fig. 2). Along the first 3.5 km of track the surroundings are slightly undulating, barren plains strewn with rocks, devoid of vegetation and therefore suitable for observations of large birds at distances of several kilometres. Further along the track, small hills, ridges and small, dry wadis dominate the surroundings, and birds can be hidden from view and difficult to count. The site at Ushaiqer receives large amounts of chicken offal, which attracts the large numbers of eagles. This is similar to the large congregations of Steppe Eagles at the Raysut dumpsite in Salalah, Oman which were also drawn to waste from chicken farms, but decreased in numbers in the winter of 2019, probably due to reduced disposal of waste from nearby chicken farms (B-U Meyburg & M McGrady unpubl data).

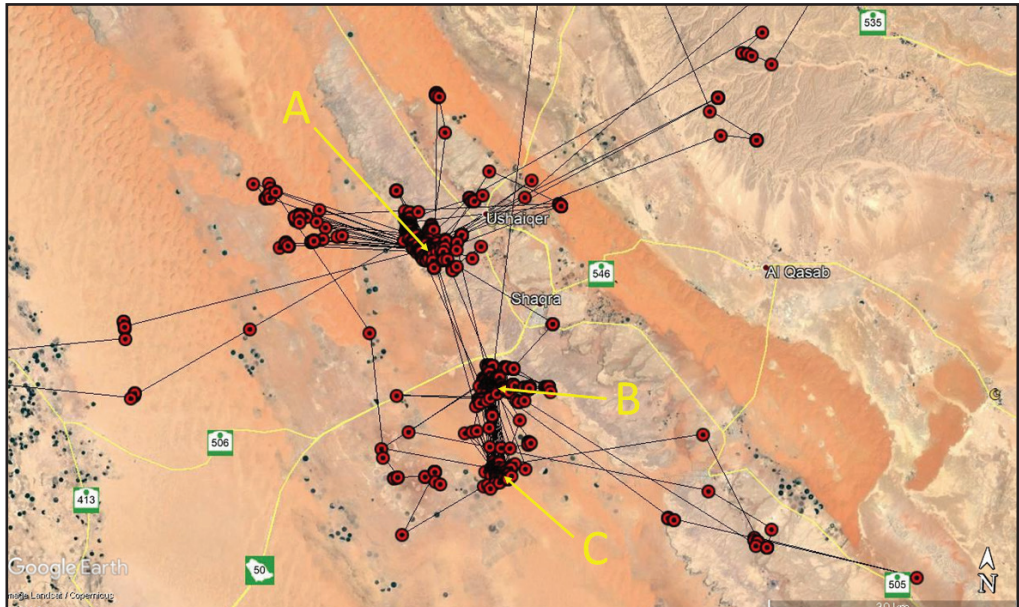


Figure 1. Movements of a satellite-tagged subadult Steppe Eagle *Aquila nipalensis* that wintered in the Shaqra-Ushaiqer area, Saudi Arabia from 3 November 2017 to 27 March 2018. A = Ushaiqer dump site, B = Shaqra landfill site, C = Line of high voltage power transmission lines where the eagle perched.



Figure 2. Geographical map of the study area in the vicinity of Ushaiqer and Shaqra, Riyadh Province, Saudi Arabia.

MK visited the Ushaiqer site during mid-morning of 8 November. The plains were mostly empty along the first 1.5 km of the track, but further along approximately 100 Steppe Eagles were found scattered across the plains and on the embankment along the track. The actual waste site is inside a depression and is only visible after one travels more than 4 km down the track. However, from 3 km onwards, congregations of many hundreds of Steppe Eagles were observed on the many ridges east of the waste site. Most of the eagles are not visible until the dump site is reached and the surrounding ridges and sandy desert behind are in view. At the dump site MK scanned the area with a telescope, took photographs and made a rough estimate of the total number of Steppe Eagle (c2000); also present were two Eastern Imperial Eagles *Aquila heliaca*. Once back in Riyadh, MK informed MM and JB of his sightings, who commented on the importance of such a large gathering. The largest gatherings of which we were then aware were those of up to 3000 individuals at Salalah, Oman (B-U Meyburg & M McGrady unpubl data).

On 9 November, MK returned at dawn and conducted a full count of the birds present. This time the count was done systematically telescope-field by telescope-field from the start of the track to the waste dump, and to the horizon beyond. Because of the early hour, disturbance was minimal and fewer than 100 birds were airborne. This resulted in a tally of 4420 eagles. An estimated 500 additional Steppe Eagles were found at the back of two ridges that were accessible by car; thus, the total number encountered was approximately 4920. About 65% of the eagles were adults (Plate 1) or sub-adults (Plate 2); the others were juveniles (first winter) or immatures (second to fourth winter) (Plates 3). MK also recorded two Eastern Imperial Eagles and one juvenile Greater Spotted Eagle *Clanga clanga*. Three later counts by MK in November and December resulted in an average of 5053 +/- 130 Steppe Eagles and up to 10 Eastern Imperial Eagles, seven Greater Spotted Eagles and one Cinereous Vulture *Aegypius monachus* on a single occasion.

JB and PR visited the Ushaiqer location at first light on 15 November 2019. They failed to locate the main track to the site so drove over the rough, boulder-strewn plain to the dump site. Like MK they saw little for the first 3 km, but then started seeing tens of Steppe Eagles. Once near to the dry wadis they located a single juvenile Eurasian Griffon Vulture *Gyps fulvus* (Plate 4), and as they approached the

main dump they saw thousands of Steppe Eagles. They counted birds through a telescope and binoculars and derived a rough estimate of 6000 birds. Most birds either congregated on small hills or wadi cliff-sides or on more open areas of the plain (Plate 5). Counts of birds from photographs were compared to estimates for the hills confirming the estimates in the field were reasonably accurate. After several hours, birds started to fly and counting became difficult. JB and PR spent many hours driving around the site, during which they



Plate 1. Adult Steppe Eagle *Aquila nipalensis*, Ushaiqer dump site, Ushaiqer, Riyadh Province, Saudi Arabia, 15 November 2019. © Phil Roberts



Plate 2. Sub-adult Steppe Eagle *Aquila nipalensis*, Shaqra landfill site, Shaqra, Riyadh Province, Saudi Arabia, 15 November 2019. This is an older sub-adult, perhaps in its fifth winter. © Jem Babbington.



Plate 3. Juvenile Steppe Eagle *Aquila nipalensis*, Ushaiqer dump site, Ushaiqer, Riyadh Province, Saudi Arabia, 15 November 2019. © Jem Babbington.

also recorded 15 Eastern Imperial Eagles, four Greater Spotted Eagles and two Eurasian Black Kites *Milvus migrans*. The Steppe Eagles comprised about 70% adults/sub-adults and 30% immatures/juveniles, a similar proportion to that estimated by MK a week earlier. Departing the site on 4 January 2020, they recorded 44 Steppe Eagles sitting on a single GSM mast along the main track, highlighting just how numerous the birds were here.



Plate 4. Juvenile Eurasian Griffon Vulture *Gyps fulvus*, Ushaiqer dump site, Ushaiqer, Riyadh Province, Saudi Arabia, 15 November 2019. © Jem Babbington.



Plate 5. Large gathering of Steppe Eagle *Aquila nipalensis*, Ushaiqer dump site, Ushaiqer, Riyadh Province, Saudi Arabia, 15 November 2019. © Phil Roberts

Further counts were conducted on three days in early January 2020 using a telescope along the track to Ushaiqer dump, from the top of the escarpment overlooking the dump and two adjacent valleys that were not visible from original count sites. These counts resulted in an average of 5802 +/- 145 Steppe Eagles as well as three Eastern Imperial Eagles, three Greater Spotted Eagles and three Eurasian Black Kites. It became obvious during day-long visits that more and more birds moved to the dump during the morning and at midday the numbers appeared to be at their highest.

The Shaqra site (25.16°N, 45.19°E; Fig. 2) is 19 km south of Ushaiqer and is accessed through a controlled gate. It is a large fenced-off area of approximately 2 km x 1 km and receives more general waste, with no obvious dumping of large quantities of offal; the site is a landfill and waste is regularly covered with soil. There are many areas where Steppe Eagles sit, including a large hillside along one edge and the one main dumping area where waste is currently being disposed. There is a sandy track running around the fenced-off area, but many areas where birds sit are obscured from this track, meaning that access to the fenced off area is required for accurate counting.

MK visited the Shaqra landfill in early morning of 8 November and counted 70 Steppe Eagles on the pylons of the overhead power transmission lines near the site. His visit was cut short because access to the fenced-off disposal site was denied. JB and PR visited the site at lunchtime on 15 November, and they were able to enter the landfill through the open gate and drove around the entire fenced-off location. Accurate counting was difficult because birds were often moving from one location to another within the fenced-off area (Plate 2), and others were flying in groups high above the site. Most birds were seen on the ground, with over 50 on the main dumping area and the rest on the ridge or sandy areas around the site. The total count for the location was 700 Steppe Eagles, four Eastern Imperial Eagles, a single Greater Spotted Eagle and two Eurasian Black Kites. A further early morning visit made by JB and PR on 4 January 2020 counted c1200 Steppe Eagles, one Eastern Imperial Eagle and one Greater Spotted Eagle. Presumably, the lack of offal at this site means it is much less favoured than the Ushaiqer site, though it still attracted very large number of eagles.

Satellite data suggested that pylons near the Shaqra landfill site (Fig. 1) hold roosting birds. Counts showed lower early morning numbers than late afternoon numbers. Maximum counts of Steppe Eagles on the pylons resulted in a total of 150 individuals in the morning and 946 in the evening, with the highest number of birds counted on a single pylon being 69.

DISCUSSION

At Shaqra-Ushaiqer we identified the largest aggregation of Steppe Eagles (c7200) ever recorded. This area was not previously known to be important to birds of prey. The only other record of large numbers of raptors in this area was of over 50 Steppe Eagles in an agricultural area west of Shaqra, in the winter of 2014 (M Al Fahad pers comm). The area was not listed as an Important Bird Area (IBA, Evans 1994), nor was it listed as an important area for migrating raptors (Shirihai *et al* 2000, Zalles & Bildstein 2000). We estimate that our counts were accurate to within about 10%. Accepting the current total population of all ages prior to migration of 80 000 to 160 000 birds (Karyakin *et al* 2018, I Karyakin pers comm), this single area therefore accounts for between 4.5 and 9.0% of the global population.

Large congregations of 2000 to 3000 Steppe Eagles have been recorded in recent years in Salalah, Oman, at the Raysut dumpsite (B-U Meyburg & M McGrady unpubl data, D Forsman pers comm). Satellite tracking data at both Raysut and Shaqra-Ushaiqer suggest that birds do not visit the sites every day and total numbers in the larger areas are therefore thought to be much higher. This is further supported by the relatively stable number of Steppe Eagles at the Ushaiqer site during the observation period, which suggests a much larger population is present in the wider area. Coordinated observations at multiple locations are problematic because of the low number of observers available and actual population numbers may easily have been underestimated. This is as much a problem in the wider Ushaiqer area as it is in the wider Raysut area.

The findings underline the importance of landfills and dump sites to passage and wintering Steppe Eagles. In recent decades both the human population and associated waste production (Ouda *et al* 2017, McGrady *et al* 2019a) and the numbers of hoofed livestock and especially poultry have increased dramatically in Arabian countries (FAO 2017). Landfills and dump sites, particularly if offal and carcasses are disposed at them, are important to a wide variety of scavenging bird species in Arabia. In the 1990s it was not unusual to see 50–100 scavenging birds at such sites in western Saudi Arabia (B-U Meyburg pers obs) and current literature shows many of those birds are of conservation concern (Al Fazari & McGrady 2016, Al Farsi *et al* 2019, McGrady *et al* 2019b). The low numbers of other raptors of high conservation priority during the time of our observations suggest in the cases of Eurasian Griffon Vulture (Symes *et al* 2015) and Cinereous Vulture that they are rare in the area or scarce in the cases of Eastern Imperial Eagle and Greater Spotted Eagle.

The availability of waste in Arabia is changing as waste management efforts change, causing eagles to move locally and regionally. Tracked eagles returning to Salalah to find a historically used dumpsite closed dispersed to new areas, some of which were dump sites (M McGrady & B-U Meyburg unpubl data). Cause of the lower number of eagles at Shaqra landfill site may be the regular covering of the waste, whereas Ushaiqer is a dumpsite, where waste remains largely uncovered.

Because of the sheer numbers of eagles at the Shaqra-Ushaiqer sites, conservation activities are important and need to be initiated. Regular monitoring of the site is required to better understand the ebb and flow of passage migrants and eagles that overwinter there and to understand risks that may spur any necessary remedial work. Regular observations at and around the Ushaiqer and Shaqra dump sites as well as along the power lines adjacent to the Shaqra site, where up to 946 birds have been counted roosting, have produced little or no evidence of large scale electrocutions, collisions or poisoning. Other conservation initiatives include the possibility of providing safe-guaranteed food (Anderson & Anthony 2005, McGrady *et al* 2019a). This lessens the possibility of accidental poisoning through livestock medication and can attract birdwatching tourists and generate local income and job opportunities, an opportunity made even more feasible now Saudi Arabia has opened up for tourism and grants tourist visa to citizen of eligible countries. The public should be made aware that scavenging birds also offer immediate human health benefits through the consumption of waste that might otherwise promote the spread of disease (Markandya *et al* 2008, McGrady *et al* 2019a). This illustrates that conservation and human health goals can be compatible, and highlights the desirability of planning waste management to promote scavenging bird conservation.

The findings at the Shaqra and Ushaiqer sites further demonstrate the usefulness of satellite tracking as a conservation tool for providing new information on bird migration, changes in routes and the location of areas important to them. These sites are positioned on the migration route between the Caspian sea to the head of the Arabian Gulf and the Bab el Mandeb strait, and tracking data suggests that this area may have been important to eagles for at least 20 years. A satellite tracked Steppe Eagle (PTT 27995) was in the Shaqra area from 8 November 1996 to 27 February 1997 having arrived there from a location 50 km northeast of Taif, where it had been trapped in early November. The home range of that bird during its time at Shaqrah was 621 km², very small in comparison to most of the other eagles during that study, suggesting that it primarily used the dump sites in this area (Meyburg *et al* 2003, 2012). Seven of 11 Steppe Eagles tracked from Oman have visited this area (M McGrady and B-U Meyburg unpubl data; Fig. 1) and other on-going research shows that some Steppe Eagles fitted with transmitters in central Kazakhstan use this area as well (R Efrat, I Karyakin pers comms). The above data suggest that a substantial

proportion of the Steppe Eagle population may now overwinter in the Arabian peninsula, a possibility pointed out by Meyburg *et al* (2003, 2012) and one that is hardly mentioned in the literature prior to 2000. Obviously, such a change in the location of wintering grounds may account to some extent for the decline in numbers seen at spring migration bottlenecks, like at Eilat, Israel (Shiriahi *et al* 2000, Meyburg *et al* 2003, 2012, Weiss 2018), at the wintering areas in Africa or at the dump sites in Salalah, Oman. More detailed age-specific counts at the Ushaiqr dump site on five separate dates showed that juveniles and immatures make up 30%-40% of the total population. This is considerably higher than observed at Eilat in 2000 (Yosef and Fornasari, 2004) but our dataset is limited, and more observations are required.

Finally, these results also highlight the utility of listserves, such as OSMEBirdnet in enabling communications between a remote researcher and locally-situated field observers, who were able to confirm the importance of this area to eagles.

ACKNOWLEDGEMENTS

The trapping and fitting of eagles with transmitters was done under permission from the Ministry of Environment and Climate Affairs (Oman). The tracking effort was made possible by in-kind and financial support from the Anglo-Omani Society (UK), International Avian Research (Austria), Bernd Meyburg Raptor Research and Conservation Fund (Germany), Arid Lands (Oman), Office for Conservation and Environment, Diwan of Royal Court (Oman), Geotrak (USA), Environment Society of Oman, Hawk Mountain Sanctuary (USA), Greater Los Angeles Zoo Association (USA). The authors would like to thank I. Harrison for enabling this find by managing OSMEBirdnet, and R Sheldon who runs the OSME blog.

LITERATURE CITED

- Al Farsi, G, J Al Araimi, J Al Humaidi, A Al Bulushi, M Sarrouf Willson, M McGrady & MK Oli. 2019. Use of the municipal dump site on Masirah Island, Oman by Egyptian Vultures *Neophron percnopterus*, 2013–2018. *Sandgrouse* 41: 7–14.
- Al Fazari, WA & MJ McGrady. 2016. Counts of Egyptian Vultures *Neophron percnopterus* and other avian scavengers at Muscat's municipal landfill, Oman, November 2013–March 2015. *Sandgrouse* 38: 99–105.
- Anderson, MD & A Anthony. 2005. The advantages and disadvantages of vulture restaurants versus simply leaving livestock (and game) carcasses in the veldt. *Vulture News* 53: 42–45.
- Bildstein, KL. 2006. *Migrating Raptors of the World*. Cornell University Press, Ithaca, New York.
- Brown, LH & D Amadon. 1968. *Eagles, hawks and falcons of the world*. Hamlyn Publishing Group, New York.
- Cramp, S & KEL Simmons (eds). 1980. *Handbook of Birds of Europe the Middle East and Europe – Birds of the Western Palearctic*. Oxford University Press, Oxford, UK.
- del Hoyo, J, A Elliot & J Sargatal (eds). 1994. *Handbook of Birds of the World. Volume 2. New World Vultures to Guinea-fowl*. Lynx Edicions, Barcelona.
- Evans, MI. 1994. *Important Bird Areas in the Middle East*. Conservation Series 2. BirdLife International, Cambridge, UK.
- FAO. 2017. Food and Agriculture Organization of the United Nations - Statistical data up to 2017. <http://www.fao.org/faostat/en/#data/QA/visualize>. [Accessed 28 December 2019]
- Goroshko, OA. 2018. Population status and conservation issues of Steppe Eagle in the Daurian steppe, Russia. *Raptors Conservation Suppl 1*: 89 – 92.
- Hilgerloh, G, A Michalik & B Raddatz. 2011. Autumn migration of soaring birds through the Gebel El Zeit Important Bird Area (IBA), Egypt, threatened by wind farm projects. *Bird Conservation International* 21: 365–375.
- IUCN 2019. The IUCN Red List of Threatened Species. Version 2019-2. <https://www.iucnredlist.org>. [Accessed 05 November 2019]
- Kharchenko, VI & VA Minoransky. 1967. [On contemporary distribution of the Steppe Eagle (*Aquila rapax* Temm.) in the European part of the USSR.] *Zoologicheskii Zhurnal* 46: 958–960. [In Russian]
- Karyakin, IV, AV Kovalenko, AN Barashkova, IE Smelansky & EG Nikolenko. 2016. [Strategy of the Steppe Eagle conservation in the Russian Federation.] Ministry of Natural Resources and Ecology of the Russian Federation, Russian Raptor Research and Conservation Network, Sibecocenter, UNDP, Moscow. 43 pp. [in Russian]
- Karyakin, IV, EG Nikolenko & EP Shnayder. 2018. [Status of the Steppe Eagle in the world: “white spots” in distribution, population numbers, ecology and threats.] Reports presented on II International Scientific and Practical Conference “Eagles of Palearctic: Study and Conservation”. *Suppl 1*: 81 – 84. [in Russian]

- Khoury, F. 2017. Spring migration of soaring birds over the highlands of southwest Jordan: flight patterns and possible implications for wind farm developments. *Sandgrouse* 39: 61 – 67.
- Markandya, A, T Taylor, A Longo, MN Murty, S Murty & K Dhavala. 2008. Counting the cost of vulture decline – an appraisal of the human health and other benefits of vultures in India. *Ecol. Econ.* 67: 194–204.
- McGrady, MJ. 2018. Diurnal raptor migration, including wintering, on the Arabian peninsula, an overview. *Sandgrouse* Suppl 4: 85–104.
- McGrady, MJ, T Al Amri & A Spalton. 2019a. Protecting nature's waste managers. <https://www.natureasia.com/en/nmiddleeast/article/10.1038/nmiddleeast.2019.80>. Published 29 May 2019. [Retrieved 17 November 2019]
- McGrady MJ, DL Karelus, HA Rayaleh, M Sarrouf Willson, BU Meyburg, MK Oli & K Bildstein. 2019b. Home range and movement of Egyptian Vultures in relation to rubbish dumps in Oman and the Horn of Africa. *Bird Study* 65: 544–556.
- Meyburg, B-U, P Paillat & C Meyburg. 2003. Migration routes of Steppe Eagles between Asia and Africa: a study by means of satellite telemetry. *Condor* 105: 219–227.
- Meyburg, B-U, P Paillat, C Meyburg & K Graszynski. 2005. [The migration of the Steppe Eagle.] *Der Falke* 52: 12-17. [In German]
- Meyburg, B-U, C Meyburg & P Paillat. 2012. Steppe Eagle migration strategies - revealed by satellite telemetry. *British Birds* 105: 506-519.
- Meyburg, B-U, P Boesman, JS Marks & CJ Sharpe. (2019). Steppe Eagle (*Aquila nipalensis*). In: del Hoyo, J, A Elliott, J Sargatal, DA Christie & E de Juana (eds.). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona. <https://www.hbw.com/node/53157>. [Retrieved 18 November 2019]
- Ouda, OKM, HP Peterson, M Rehan, Y Sadef, JM Alghazo & AS Nizumi. 2017. A case study of sustainable construction waste management in Saudi Arabia. *Waste and Biomass Valorization*, DOI.org/10.1007/s12649-017-0174-9.
- Sharma, AK, M Saini, SD Singh, V Prakash, A Das, RB Dasan, S Pandey, D Bohara, TH Galligan, RE Green & D Knopp. 2014. Diclofenac is toxic to the Steppe Eagle *Aquila nipalensis*: widening the diversity of raptors threatened by NSAID misuse in South Asia. *Bird Conservation International* 24: 282-286.
- Shirihai, H, R Yosef, D Alon, GM Kirwan & R Spaar. 2000. *Raptor migration in Israel and the Middle East*. Technical Publication. International Birding & Research Center, Eilat, Israel.
- Shobrak, M. 2012. Electrocutation and collision of birds with power lines in Saudi Arabia. *Zoology in the Middle East* 57: 45–52.
- Symes, A, J Taylor, D Mallon, R Porter, C Simms & K Budd. 2015. *The conservation status and distribution of the breeding birds of the Arabian Peninsula*. Cambridge, UK and Gland, Switzerland: IUCN, and Sharjah, UAE: Environment and Protection Areas Authority.
- Weiss, N, E Haviv, D Alon, Y Perlman & J Schackermann. 2018. How fast does the Steppe Eagle population decline?: survey results from Eilat, Israel. *Raptors Conservation* 38: 92–93.
- Welch, G & H Welch. 1991. The autumn migration of the Steppe Eagle *Aquila nipalensis*. *Sandgrouse* 13: 24–33.
- Yosef, R & L Fornasari. 2004. Simultaneous decline in Steppe Eagle (*Aquila nipalensis*) populations and Levant Sparrowhawk (*Accipiter brevipes*) reproductive success: Coincidence or a Chernobyl legacy? *Ostrich* 75: 20-24.
- Zalles, JI & KL Bildstein. 2000. *Raptor watch: a global directory of raptor migration sites*. BirdLife International, Cambridge, UK and Hawk Mountain Sanctuary, Kempton, USA.
- M Keijmel, PO Box 1174, Riyadh 11431, Saudi Arabia. mischakeijmel@gmail.com
 J Babbington, c/o Saudi Aramco, PO Box 13007, Dhahran 31311, Saudi Arabia.
 P Roberts, PO Box 11089, Dhahran 31311, Saudi Arabia.
 MJ McGrady, International Avian Research, Am Rosenhügel, 59, A-3500 Krems, Austria.
 B-U Meyburg, BirdLife Germany (NABU), POBox 33 04 51, D-14199 Berlin, Germany.

Assessing long-term changes in the raptor fauna of the Fertile Crescent by reference to the nineteenth century works of Canon HB Tristram

REENA SAEED & MAZIN B. QUMSIYEH

Summary: The Reverend Canon HB Tristram was the first serious observer of birds in Palestine, then part of the Ottoman Empire, which he visited six times between 1858 and 1897. We focus on two of his works, published in 1865, 1867 and 1884, which provide summaries of his other works. We compared his observations with more recent ones on the raptor fauna in Palestine in its pre-1948 borders and were struck by the diversity and richness of the raptor fauna he observed. Some species have become regionally extinct in the intervening period (eg Brown Fish Owl *Ketupa zeylonensis*) and others show differences from Tristram's era (eg breeding of the Black Kite *Milvus migrans*). We suggest that further studies of old literature might generate useful indicators of human induced habitat changes and other environmental impacts, including climate change.

INTRODUCTION

The Fertile Crescent is where humans first developed agriculture, domesticating plants and animals some 12 000 years ago. This region was, and still is, rich in floral and faunal diversity because of its geography and geology. Geological changes, especially the collision of the Arabian and the African continental plates, resulted in diverse elevations from the lowest point on Earth to the heights of Mount Hermon (Jabal Alshaikh). The region's geographic location ensures the inclusion of African, Asian and Mediterranean elements in its flora and fauna (Bryce & Birkett-Rees 2016). For the avifauna of the region this also means high diversity, and hundreds of millions of birds migrate through what is essentially a bottleneck between Africa and Eurasia (Shirihai 1996, Shirihai *et al* 2000, Alon *et al* 2004). However, the rich biodiversity that allowed human civilization to flourish also meant that human population impact grew significantly both in the transition to agriculture and in the transition to the industrial age (eg Qumsiyeh *et al* 2014, Sánchez-Marco *et al* 2016).

Raptors are particularly sensitive to habitat destruction because of their position as top predators in an ecosystem (Şekerciöglü 2006, McClure *et al* 2018). However, little information on trends in raptor populations is available in this most ancient area while much more has been done in other countries (Nathan *et al* 1996). Understanding such changes is important in guiding environmental conservation efforts. Due to a long history of religious and cultural development in the Fertile Crescent, many pilgrims came here and together with scientists were able to describe many of the species. While some of their descriptions were "orientalist" in nature (Qumsiyeh & Saeed 2018), many observations made especially by 19th century travellers are directly relevant to understanding the temporal changes in fauna and flora over the past two hundred years (Goupil & Qumsiyeh 2018).

Here, we examine the work of Canon HB Tristram focusing on his seminal works on birds (Tristram 1865, 1867, 1884). We chose to focus on raptors because of their sensitivity to changes in habitats and the fact that many of these species are now on the IUCN red list of endangered or threatened species.

An introduction to HB Tristram

Henry Baker Tristram (Plate 1) was a British biblical scholar, theologian and ornithologist. Tristram was born on 11 May 1822 near Alnwick in Northumberland, England, the eldest son of the Reverend Henry Baker Tristram, vicar of Eglington. He studied in Durham

School for two years and in 1844, at Lincoln College, Oxford, graduated with a BA second class in Classics, adding an MA two years later. Tristram was ordained deacon in 1845. He was a founder member of the British Ornithologists' Union (BOU) and published a valuable series of papers on the ornithology of North Africa and Palestine in its journal *The Ibis* (eg Tristram 1859). He also published papers on other branches of natural history, such as conchology.

Tristram suffered from respiratory illness and was advised to spend time in warmer climates (Baker 1996), perhaps explaining why he traveled where he did. He studied the fauna of territories such as Bermuda (1846-49), Palestine (1858-1897), Tunisia and Algeria (1859-1861).

His name is commemorated in ornithology in the common names of Tristram's Warbler *Sylvia deserticola* (Tristram) and Tristram's Serin *Serinus syriacus* (Bonaparte) and the common and scientific names of Tristram's Grackle *Onychognathus tristrami* (Sclater) and Tristram's Storm-Petrel *Oceanodroma tristrami* (Salvin). Other taxa were also named after him such as Tristram's

Jird *Meriones tristrami* (Thomas) and Tristram's Lizard *Acanthodactylus tristrami* (Günther).

He first arrived in Palestine in the spring of 1858 and, as a clergyman, was keen to explore it from a scriptural point of view. His daughter wrote "My father set his foot for the first time on the land which he has made his own in the course of six visits of investigation [and] saw, that as far as an exploration and investigation for biblical illustration went, the land had only been scratched" (Baker 1996, p 329). He studied the fauna from 1858 onward but also helped survey the flora with his colleague, Benjamin Thompson Lowne (funded by the Royal Society). He published a number of papers culminating in some books such as *The Land of Israel: A Journal of Travels in Palestine* (1865), *The Natural History of the Bible* (1867), *The Topography of the Holy Land* (1871), and *The Survey of Western Palestine: The Fauna and Flora of Palestine* (1884). Tristram's collections of shells, plants, fish, birds and geological specimens located in London became objects of inquiry that supplemented his work.

Tristram's collection of terrestrial molluscs gathered from 1858-1897 was given to the Backhouse collection at Sunderland Museum and his collection of shells was donated to the Montrose Museum in Scotland (Baker 1996). His collections were sold to many places. Part of his collection of plants is at the herbarium at Cambridge and some of his collection of birds, which contained 265 specimens, was housed in the Natural History Museum in 1864 where one year later part of his collection of mammals was added. Many researchers working with groups like Palestine Exploration Fund (founded 1865; <https://www.pef.org.uk/>) utilized his work, although PEF later changed its focus to archaeology.

Tristram continued to travel to Palestine in 1880/81 and again in 1894 and his last visit was in 1897 at the age of 75. Over this period, his time was divided between exploring locations mentioned in the Bible and studying and collecting specimens of fauna, flora, geology and archaeology. But he was always fascinated mostly by birds (Baker 1996). He received many honours and honorary degrees: Legum Doctor (LLD) from Edinburgh (1868), Doctor of Divinity (DD) from Durham (1882) and St Andrews (1896), and fellowship of the Royal Society and President of the Tyneside Naturalists' Field Club in 1859-60 and in 1896-1897. He died in 1906.



Plate I. Photograph of HB Tristram, taken in Durham, in travelling outfit worn in Palestine c1850s (from Baker 1996). Anon

Recent status of raptors compared with Tristram's time

We compared raptor records reported by Tristram in the 19th century with the known status of birds from more recent studies (Table 1). For selected species we expand the discussion because of the importance of the species or its regional extinction since the time of Tristram.

Table 1. Raptor Fauna in Historic Palestine in the 19th century from Tristram and current status after Nathan *et al* (1996) and Shirihai (1996): AV- accidental visitor, EX - extinct, PM - passage migrant; RB - resident breeder; SB - spring breeder; SV - summer visitor; WV - winter visitor. In italics is the regional Red List status from Dolev & Perevolotsky (2004): RE - Regional Extinct, VU - Vulnerable, LC - Least Concern, EN - Endangered, NT - Near Threatened, DD - Data Deficient. Tristram's notes are given after the table for selected taxa. Not all species occurring in the region are listed.

Species	Status	Tristram's notes
ACCIPITRIDAE		
Eurasian Sparrowhawk <i>Accipiter nisus</i>	RB, LC	Very common (1867)
Cinereous Vulture <i>Aegypius monachus</i>	PM, WV, SB, RE (as breeder)	See species accounts below
Golden Eagle <i>Aquila chrysaetos</i>	RB, EN	See species accounts below
Greater Spotted Eagle <i>Aquila clanga</i>	EX, PM, WV, SV, RE (as breeder)	See species accounts below
Eastern Imperial Eagle <i>Aquila heliaca</i>	PM, WV, VU	Throughout the country, common "as common as the Golden Eagle" (1865) "especially Dead Sea and Araba Valley areas" (1867). More numerous than Golden Eagle, throughout country, not in summer (1884).
Tawny Eagle <i>Aquila rapax</i>	RB, VU	Found breeding in Mt Carmel (1865). "young nestling was brought to me in April at Jericho, and another at Jerusalem" (1867, p 252).
Long-legged Buzzard <i>Buteo rufinus</i>	RB, PM, WV, NT	Extremely numerous and in all parts of the country and at all seasons of the year (1884).
Short-toed Snake Eagle <i>Circus gallicus</i>	PM, WV, SV, LC	See species accounts below
Western Marsh Harrier <i>Circus aeruginosus</i>	PM, WV, SB, RE (as breeder)	See species accounts below
Hen Harrier <i>Circus cyaneus</i>	PM, WV, VU	Common permanent resident of the plains (1867, p 260).
Lammergeier <i>Gypaetus barbatus</i>	AV, RE	See species accounts below
Eurasian Griffon Vulture <i>Gyps fulvus</i>	RB, PM, WV, VU	See species accounts below
Bonelli's Eagle <i>Aquila fasciatus</i>	RB, PM, WV, EN	"rather common in every part of the country" (1865, p 252, 1867, & 1884 as <i>Aquila bonelli</i>). (Now extremely rare)
Booted Eagle <i>Aquila pennata</i>	PM, WV, LC	Not common, mostly north (1867)
White-tailed Eagle <i>Haliaeetus albicilla</i>	EX, RE (reintroduced)	See species accounts below
Eurasian Black Kite <i>Milvus migrans</i>	PM, RE (as Breeder)	See species accounts below
Red Kite <i>Milvus milvus</i>	AV, NT	Common (1865, 1884)
Egyptian Vulture <i>Neophron percnopterus</i>	PM, WV, SB, VU	See species accounts below
European Honey Buzzard <i>Pernis apivorus</i>	PM, SB, SV, VU	"observed it in November and December near the coast.. a specimen near Nazareth in April" (1867, P 255).

Species	Status	Tristram's notes
PANDIONIDAE		
Western Osprey <i>Pandion haliaetus</i>	PM, WV, SV, VU	"We never paid a visit, either in winter or spring, the neighbourhood of Carmel and the Kishon without seeing the Osprey" (1865, p253).
FALCONIDAE		
Lanner Falcon <i>Falco biarmicus</i>	RB, PM, WV, VU	"Most common of the large falcons in Palestine" (1884, p99)
Eleonora's Falcon <i>Falco eleonora</i>	PM, SB, SV, LC	Observed several times in spring (1867).
Lesser Kestrel <i>Falco naumanni</i>	PM, WV, SB, NT	Returns in March. Seen everywhere (1858, 1865 1867, 1884 as <i>Tinnunculus cenchrus</i>)
Peregrine Falcon <i>Falco peregrinus</i>	PM, WV, SV, RE (as breeder)	See species accounts below
Eurasian Hobby <i>Falco subbuteo</i>	PM, SB	Summer visitor returning rather late in spring (1884)
Common Kestrel <i>Falco tinnunculus</i>	RB, PM, WV, LC	Common in every part of the country, east and west, to the confines of the southern desert, throughout the year (1867, 1884).
TYTONIDAE		
Western Barn Owl <i>Tyto alba</i>	RB, RD, NT	Met with especially around ruins (as <i>Strix flammea</i> , 1884)
Strigidae		
Long-eared Owl <i>Asio otus</i>	RB, PM, WV, LC	Plentiful in many forest areas including district of Safed. Prefers old ruins and olive groves (1867, 1884 as <i>Scops zorca</i>).
Short-eared Owl <i>Asio flammeus</i>	PM, WV, SB, DD	"Winter visitant...in the hill country of the south and sometimes in the north" (1884).
Little Owl <i>Athene noctua</i>	RB, NT	The most common owl and in every part of the Holy Land (1867, 1884 as <i>persica</i>)
Eurasian Eagle Owl <i>Bubo bubo</i>	RB, RD, NT	Very Common (1867, 1884, also as <i>ascalaphus</i>)
Brown Fish Owl <i>Bubo zeylonensis</i>	RE	See species accounts below
Eurasian Scops Owl <i>Otus scops</i>	PM, WV, SB, LC	Common (1884)
Tawny Owl <i>Strix aluco</i>	RB, NT	Not uncommon in the forest districts of Gilead and Bashan (1884).

Accounts of selected species

Cinereous Vulture *Aegypius monachus*

Tristram noted that "It occurs sparingly throughout the country, being chiefly seen in the wild uplands of the South and on the plains of Moab; seldom more than two together" (1884 p 95). A breeding pair was observed on the Arbel Cliffs near Tiberias by Tristram (1867). Shirihai (1996) records observations from Jerusalem, Jericho and mount Tavor and noted that after the 1980s small flocks of a few vultures were noted in the Golan Heights and Galilee (Shirihai 1996). One of these vultures apparently succumbed to thallium used as a rodenticide in Wadi Araba (Mendelssohn 1972). It is now listed as regionally extinct as a breeder (Dolev & Perevolotsky 2004).

Golden Eagle *Aquila chrysaetos*

This species was noted as "very common all the winter in the maritime plains and about Mount Camel, as well as in the south of Judaea" (Tristram 1865 p 251) and his later works found it throughout the country but mostly in the northern mountains (Tristram 1867, 1884). It is now mostly observed in the Golan Heights, the occupied West Bank and the

Negev region (Porter & Beaman 1985) and is listed as regionally Endangered (Dolev & Perevolotsky 2004).

Greater Spotted Eagle *Aquila clanga*

Tristram reports this eagle as “tolerably common but nowhere in great numbers together” (1867, p185) and later as “uncommon” (Tristram 1884). It was observed until the 1960s near the Hula plains and in the Carmel and Galilee hillsides and rarely thereafter (Paz 1986, Shirihai 1996). It is now regionally extinct as a breeding raptor (Porter & Beaman 1985, Dolev & Perevolotsky 2004).

Short-toed Snake Eagle *Circaetus gallicus*

“Most abundant of the eagle tribe, from early spring to the commencement of the winter” (Tristram 1884). Tristram noticed it on the hills near Bethlehem and also several individuals in the neighborhood (1867). Shirihai (1996) estimated 300-400 pairs in the desert zone in the 1980s but its current status needs more work.

Western Marsh Harrier *Circus aeruginosus*

This species was described as very common over marshes and in all the plains throughout the year (Tristram 1867, 1884). The 1950s era destroyed populations through the project that drained the Hula Wetlands (Shirihai 1996) and the use of insecticides in the 1950s and 1960s (Mendelssohn & Paz 1977). It is now listed as regionally extinct as a breeder (Dolev & Perevolotsky 2004).

Lammergeier *Gypaetus barbatus*

Tristram recorded the Lammergeier as being not common (1867), adding in 1884 that it is found by “the Dead Sea and the Jordan Valley, especially the ravines of the Arnon and the Callirhoe” (p 94). The last three breeding pairs in the country were recorded in the early 1980s and in an effort to save the species birds were brought to a zoo in Tel Aviv but were not successful breeders (Leshem 1984) and so the species is now considered regionally extinct (Dolev & Perevolotsky 2004).

Eurasian Griffon Vulture *Gyps fulvus*

Tristram remarked that “the numbers of the Griffon-Vultures in every part of Palestine are amazing; and they are found at all seasons of the year. I do not think that I ever surveyed a landscape without its being enlivened by the circling of a party of Griffons” (Tristram 1865, p246). In the same paper he mentioned that in one locality (Ginneseret) he counted over 500 birds. He mentioned particularly the abundance of this raptor in Wadi Qelt, near Jericho (Tristram 1865, 1867). Nowadays, the species is recorded as a rare resident, found only in small breeding colonies in the Golan Height, Galilee, the Negev and along the Jordan Valley (Shirihai 1996, Slotta-Bachmayr *et al* 2004). It is listed as regionally Vulnerable by Dolev & Perevolotsky (2004).

White-tailed Eagle *Haliaeetus albicilla*

This species was first described from Egypt and was breeding there until the 1800s (Maurer *et al* 2010). It was mentioned by Tristram (1887, 1884) as occurring mostly in the north of the country. Rare remaining pairs were reported breeding in the Hula Valley and Mount Gilboa until the 1950s but disappearing thereafter (Paz 1986, Shirihai 1996). It is listed as regionally Endangered (Dolev & Perevolotsky 2004).

Eurasian Black Kite *Milvus migrans*

In 1865, Tristram noted that: “No sooner has the Red Kite begun to retire northwards than the Black Kite, never once seen in winter, returns in immense numbers from the south and, about the beginning of March, scatters itself over the whole country, preferring especially the neighborhood of villages, where it is a welcome and unmolested guest” (p 256; also see 1884 p181). This is now a winter visitor and passage migrant especially observed along the Jordan valley and Wadi Araba, but breeding ceased in the region in the past 50 years (Porter & Beaman 1985, Shirihai *et al* 2000).

Egyptian Vulture *Neophron percnopterus*

According to Tristram this is “the most universally diffused of all the Raptors of Palestine during summer, it being impossible in any part of the country to travel a mile or two without putting up a pair” (Tristram 1865, p. 249) and especially noted it in spring (Tristram 1867, 1884). This is now an endangered species locally but supplemental feeding for it seems to make a difference (Meretsky & Mannan 1999). It is listed as regionally Vulnerable (Dolev & Perevolotsky 2004).

Peregrine Falcon *Falco peregrinus*

Tristram described Peregrine Falcons as being present throughout the year especially near the coast and watershed in the central part of the region and recorded it as a breeding species (1884). It was observed in large numbers in northern and southern mountains until the mid-1950s and was later found in the 1970s and 1980s in pairs or as single adults but not nesting and was believed decimated by the use of pesticides (Shirihai 1996). It is listed as regionally extinct as a breeder (Dolev & Perevolotsky 2004).

Brown Fish Owl *Ketupa zeylonensis*

This owl is found even in ancient remains (Gilbert 2002). Tristram (1865) collected a specimen on 8 December 1863 in Wady el Kurn near Acre close to the great ruin of Kulat-el-Kurn and observed three more in the vicinity. Another individual was collected in Wadi Hammam near Lake Tiberias in 1879 and the excitement of this caused the collection of four more specimens by Fathers Tepper and Schmitz (Shirihai 1996). According to Shirihai (1996), the last specimen was killed in 1950 and the last observation was in 1974-75. A specimen collected in Palestine (probably Galilee)



Plate 2. Specimen of Brown Fish Owl *Ketupa zeylonensis* at Talitha Kumi Lutheran school collected 1919, locality in Palestine unknown but possibly Galilee.

in 1919 is now housed at a school in Bethlehem (Plate 2). It is listed as regionally extinct (Dolev & Perevolotsky 2004).

DISCUSSION

Tristram was a meticulous researcher but rather influenced by trying to find connections of current fauna and humans to biblical issues. As a clergyman, it is apparent that he tried to link his observations to the Bible and such things sometimes verge on orientalist depictions (Goupil & Qumsiyeh 2018, Qumsiyeh & Saeed 2018). However when he spoke strictly of the native population's connection to nature he gave us some very valuable insights into issues of ethnozoology. For example he states that the "the native vocabulary for the Accipitres is much richer than for any other class. The Arabs distinguish all the Vultures except the rare *Vultur monachus*, which they confound with the Griffon. They have five names for the Falcons, three for the Eagles, and two for the Kites. They recognize both the Kestrels, the Sparrow-Hawks, and have a distinct appellation for the Harriers: while they distinguish the *Bubo asculaphus*, the White, Little, and Scops Owls" (Tristram 1865, p 242). Tristram's observations were limited by the dates he was here and the locations he visited and were sometimes uneven (eg his 1865 paper was far more rigorous than his 1859 one). However, Tristram's observations have provided the first modern scientific inventory of fauna and flora in the nineteenth century. Thus they provide a basis from which to understand the changes over the past 150-170 years in fauna including raptor populations as noted above and in Table 1. Raptors serve as indicators of environmental health and overall biodiversity (Duke 2008, Donázar *et al* 2016). Declines in raptors abundance can lead to loss of the ecological system and cascade effects on its components through altering the numbers and behaviors of their prey (Şekercioğlu 2006, Gaston *et al* 2018).

In Palestine, human pressure such as urbanization, overpopulation, and political instability have caused significant negative effects on biodiversity (Qumsiyeh *et al* 2014, 2017). For example, raptor declines have been attributed to the use in Israel of pesticides and insecticides (Mendelssohn & Paz 1977, Yom-Tov & Mendelssohn 1988). Our study of the diet of Eurasian Eagle Owl *Bubo bubo* in Wadi Al Makhrou, Bethlehem noted that old pellets had higher diversity (arthropods, reptiles, birds and mammals) than newer pellets, which were dominated by *Rattus* (household rat) indicating a declining ecosystem (Amr *et al* 2016). The data shown above for changes since Tristram's time can enrich such studies by adding a longer-term dimension.

Top predators are excellent indicators of changes and can also themselves be an important tool in conservation efforts (Sergio *et al* 2008, Bennett & Owens 1997, Owens & Bennett 2000). The situation of raptors in Palestine needs to be studied in much more detail especially in light of the accelerating climate change impacts (Sternberg *et al* 2015). We suggest that earlier notes from past centuries should not be ignored, no matter how sparse they may be, because they shed light on changes. While museum specimens give some data, abundance data can only be gleaned from notes like those provided in Tristram's publications. Further studies should also look at DNA of specimens collected by Tristram and compare to moderns samples to understand population genetic changes (eg Nachman 2013, Hofman *et al* 2015)

ACKNOWLEDGMENTS

We are grateful to Richard Mearns, Elias Handal, Mahd Khair and an anonymous reviewer for reviewing/editing. Partial support for our work was received from the Darwin Initiative, the National Geographic Society and the Royal Society.

LITERATURE CITED

- Alon, D, G Barak, J Shamoun-Baranes, Y Leshem, GM Kirwan & H Shirihai. 2004. Soaring-bird migration over northern Israel. *British Birds* 97: 160-182.
- Amr, ZS, EN Handal, F Bibi, MH Najajreh & MB Qumsiyeh. 2016. Change of diet of the Eurasian Eagle Owl, *Bubo bubo*, suggest decline in biodiversity in Wadi Al Makhrou, Bethlehem Governorate, Palestinian Territories. *Slovak Raptor Journal* 10: 75-79.
- Baker, RA. 1996. 'The Great Gun of Durham' - Canon Henry Baker Tristram, FRS (1822–1906). An outline of his life, collections and contribution to natural history. *Archives of Natural History* 23: 327-341.
- Bennett, PM & IP Owens. 1997. Variation in extinction risk among birds: chance or evolutionary predisposition? *Proc Roy Soc Series B: Biological Sciences* 264: 401-408.
- Bryce, T & J Birkett-Rees. 2016. *Atlas of the Ancient Near East: from Prehistoric Times to the Roman Imperial Period*. Routledge, London.
- Dolev, A & A Perevolotsky. 2004. *The Red Book: Vertebrates in Israel*. Israel Nature and Parks Authority, Israel.
- Donázar, JA, A Cortés-Avizanda, JA Fargallo, A Margalida, M Moleón, Z Morales-Reyes, R Moreno-Opo, JM Pérez-García, JA Sánchez-Zapata, I Zuberogoitia & D Serrano. 2016. Roles of raptors in a changing world: from flagships to providers of key ecosystem services. *Ardeola* 63: 181-235.
- Duke, G. 2008. The EU environmental policy context for monitoring for and with raptors in Europe. *AMBIO: A Journal of the Human Environment* 37: 397-401.
- Gaston, KJ, DT Cox, SB Canavelli, D García, B Hughes, B Maas, D Martínez, D Ogada & R Inger. 2018. Population abundance and ecosystem service provision: the case of birds. *BioScience* 68: 264-272.
- Goupil, T & MB Qumsiyeh. 2018. Felix-Marie Abel and his vision of nature in Palestine: Géographie de la Palestine revisited. *Arab World Geographer* 21: 128-140.
- Hofman, CA, TC Ric, RC Fleischer & JE Maldonado. 2015. Conservation archaeogenomics: ancient DNA and biodiversity in the Anthropocene. *Trends in Ecology & Evolution* 30: 540-549.
- Leshem, Y. 1984. The rapid population decline of Israel's Lappet-faced vulture *Torgos tracheliotus negevensis*. *International Zoo Yearbook* 23: 41-46.
- Maurer, G, DG Russell, F Woog & P Cassey. 2010. The eggs of the extinct Egyptian population of White-tailed Eagle *Haliaeetus albicilla*. *Bull. BOC* 130: 208-214.
- McClure, CJ, JR Westrip, JA Johnson, SE Schulwitz, MZ Virani, R Davies, A Symes, H Wheatley, R Thorstrom, A Amar & R Buij. 2018. State of the world's raptors: Distributions, threats, and conservation recommendations. *Biological Conservation* 227: 390-402.
- Mendelsohn, H. 1972. Ecological effects of chemical control of rodents and jackals in Israel. In: T Farvar & JP Milton (eds) *The Careless Technology*. Natural History Press, New York: pp527-544.
- Mendelsohn, H & U Paz. 1977. Mass mortality of birds of prey caused by Azodrin, an organophosphorus insecticide. *Biological Conservation* 11: 163-170
- Meretsky, VJ & RW Mannan. 1999. Supplemental feeding regimes for Egyptian vultures in the Negev Desert, Israel. *Journal of Wildlife Management* 63: 107-115.
- Nachman, MW. 2013. Genomics and museum specimens. *Molecular Ecology* 22: 5966-5968.
- Nathan, R, UN Safrie & H Shirihai. 1996. Extinction and vulnerability to extinction at distribution peripheries: an analysis of the Israeli breeding avifauna. *Israel Journal of Zoology* 42: 361-383.
- Owens, IP & PM Bennett. 2000. Ecological basis of extinction risk in birds: habitat loss versus human persecution and introduced predators. *Proceedings of the National Academy of Sciences* 97: 12144-12148.
- Paz, U. 1986. Birds. In: *The Encyclopedia of Animal Life in Israel*, vol 6. Society for the Protection of Nature, Tel Aviv. [in Hebrew]
- Porter, RF & MAS Beaman. 1985. A resume of raptor migration in Europe and the Middle East. Conservation Studies on Raptors. *ICBP Technical Publication* 5: 237-242.
- Qumsiyeh, MB & R Saeed. 2018. Orientalist depictions of Jerusalem and Palestine versus anthropological and biological diversity. *Ya Quds Academic Cultural Newsletter* 4: 12-16.
- Qumsiyeh, MB, SS Zavala & ZS Amr. 2014. Decline in vertebrate biodiversity in Bethlehem, Palestine. *Jordan Journal of Biological Sciences* 7: 101-107.
- Qumsiyeh, MB, E Handal, J Chang, K Abualia, M Najajreh & M Abusarhan. 2017. Role of museums and botanical gardens in ecosystem services in developing countries: case study and outlook. *International Journal of Environmental Studies* 74: 340-350.
- Sánchez-Marco, A, R Blasco, J Rosell, A Gopher & R Barkai. 2016. Birds as indicators of high biodiversity zones around the Middle Pleistocene Qesem Cave, Israel. *Quaternary International* 421: 23-31.
- Şekercioğlu, CH. 2006. Increasing awareness of avian ecological function. *Trends in Ecology & Evolution* 21: 464-471.
- Sergio, F, T Caro, D Brown, B Clucas, J Hunter, J Ketchum, K McHugh & F Hiraldo. 2008. Top predators as conservation tools: ecological rationale, assumptions, and efficacy. *Annual Review of Ecology, Evolution, and Systematics* 39: 1-19.

- Shirihai, H. 1996. *The Birds of Israel*. Academic Press, London.
- Shirihai, H, R Yosef, D Alon & G Kirwan. 2000. *Raptor migration in Israel and the Middle East. A summary of 30 years of field research*. International Birdwatching Centre Eilat, Eilat.
- Slotta-Bachmayr, L, R Bögel & A Camiña. 2004. The Eurasian Griffon Vulture (*Gyps fulvus*) in Europe and the Mediterranean. Status report and action plan. EGVWG, Salzburg, Austria.
- Sternberg M, O Gabay, D Angel, O Barneah, S Gafny, A Gasith, JM Grünzweig, Y Hershkovitz, A Israel, D Milstein & G Rilov. 2015. Impacts of climate change on biodiversity in Israel: an expert assessment approach. *Regional Environmental Change* 15, 895-906.
- Tristram, HB. 1859. Notes on Birds observed in in Southern Palestine, in the month of March and April 1858. *Ibis* 1: 22-41.
- Tristram HB. 1865. On the Ornithology of Palestine (part 2). *Ibis* 3: 241-263.
- Tristram, HB. 1867. *The natural history of the Bible*. Society for Promoting Christian Knowledge, London.
- Tristram, HB. 1884. *The Survey of Western Palestine: The Fauna And Flora Of Palestine*. The Palestine Exploration Fund, London.
- Yom-Tov, Y & H Mendelssohn. 1988. Changes in the distribution and abundance of vertebrates in Israel during the 20th century. *Monographiae Biologicae* 62: 515-547.
- Reena Saeed & Mazin B. Qumsiyeh, Palestine Museum of Natural History and Palestine Institute for Biodiversity and Sustainability, Bethlehem University, Bethlehem, Palestine. info@palestinenature.org

Status of breeding seabirds on the Mediterranean coast of Egypt from 2012 to 2018

MOHAMED IBRAHIM HABIB

Summary: I undertook surveys on the Mediterranean coast of Egypt between 2012 and 2018 to assess the status of breeding seabirds. Two breeding populations of Slender-billed Gull *Chroicocephalus genei* contained 45 375 individuals, representing 32% of the estimated regional breeding population. Conversely, only 15 empty nests were found at Egypt's only known breeding colony of Yellow-legged Gull *Larus michahellis*. I counted 92 occupied nests of Gull-billed Tern *Gelochelidon nilotica*, over 950 nests of Sandwich Tern *Thalasseus sandvicensis* and 670 breeding pairs of Common Tern *Sterna hirundo*. Port Said is an important nesting area for Little Terns *Sterna albifrons* in the Middle East with over 3955 breeding pairs, representing more than 6% of the current Black Sea and Mediterranean breeding population. The main threats affecting breeding seabirds on the Mediterranean coast of Egypt are disturbance from landfill and modification of the sea shore by the gas industry, tourism resorts and the building of new ports together with the collecting of eggs and chicks.

INTRODUCTION

Seabirds are among the most threatened bird groups and face a wide variety of threats both on land and at sea. On land these include high pressure from coastal developments, affecting the availability and quality of breeding and wintering habitats, and predation at colonies from native and invasive species. At sea the main threats include interaction with fisheries (bycatch), the lack of prey caused by depletion of fish stocks and from acute and chronic pollution (oil spills, chemical discharges *etc*), marine litter and disturbance from maritime traffic (Croxall *et al* 2012). Several gull populations have increased significantly in Europe, North America and Australia, probably as a result of an increase in food availability derived from human activities (Blokpoel & Spaans 1991); in the Mediterranean basin, Yellow-legged Gull *Larus michahellis* has undergone a widespread increase (Thibault *et al* 1996). Slender-billed Gull *Chroicocephalus genei* breeds widely at isolated scattered localities from Senegal and Mauritania through the Iberian Peninsula to the Mediterranean and Black Sea, east to Asia Minor, the Middle East, Kazakhstan, Afghanistan, Pakistan and northwestern India. They winter around the Mediterranean, Black and Caspian Seas, on the coast of the Arabian Peninsula and south to the Horn of Africa. The number breeding around the Black Sea and Mediterranean was estimated at 140 000–205 000 in 1999–2000 (Wetlands International 2014). Populations of these two gull species in Egypt are poorly known, so I generated updated information on their populations and those of several other species by undertaking surveys on the Mediterranean coast of Egypt between 2012 and 2018 to assess the status of breeding seabirds along the Mediterranean coast. The Mediterranean is the home of several hundred bird species, some of which occur exclusively in this climatic zone. In 1995, the Contracting Parties of the Barcelona Convention adopted a new protocol concerning the Specially Protected Areas and biological diversity in the Mediterranean (SPA/BD Protocol). Annex II of this protocol lists the endangered or threatened species found in the Mediterranean, including 15 bird species.

METHODS

I undertook surveys on the Mediterranean coast of Egypt from 2012 to 2018 during the breeding season from April to the end of August each year and visited El Arish, Port Said, Damietta, Fayum and Alexandria Governates to assess the status of breeding seabirds (Fig. 1). A car was needed to visit the nesting sites, and several visits were made to the



Figure 1. Location of breeding colonies studied (red dots).

Table 1. Summary of the total number of apparently occupied nests found during the survey for each of six species. Species listed as regionally threatened on Annex II of the Regional Activity Centre for Specially Protected Areas (RAC/SPA) are indicated.

Species	Total nests	RAC/SPA
Little Tern <i>Sternula albifrons</i>	3955	Annex II
Common Tern <i>Sterna hirundo</i>	672	
Sandwich Tern <i>Thalasseus sandvicensis</i>	950	Annex II
Gull-billed Tern <i>Gelochelidon nilotica</i>	94	Annex II
Yellow-legged Gull <i>Larus michahellis</i>	16	
Slender-billed Gull <i>Croicocephalus genei</i>	15 125	Annex II

colonies. Visits to the various parts of colony were kept short, usually 5–15 min in duration. Counts were done using the total count method (Bibby *et al* 2007). Nest counts were also made, the counting units being apparently occupied nests (Bibby *et al* 2007). The total number of nests at a given site was the summed numbers of occupied and unoccupied nests that appear to have been used during the breeding season (Bibby *et al* 2007). Most behavioral observations were made using binoculars and a spotting scope from the best vantage points available, as the rather muddy and loose substrate often prevented close access.

RESULTS

I undertook counts at breeding areas located along the Mediterranean coast of Egypt, indicated in Fig. 1. The results are summarised in Table 1, which shows the total number of apparently occupied nests of each species.



Plate 1. Slender-billed Gull *Croicocephalus genei* brooding eggs, El Nasser Salinas, Egypt. © Mohamed Habib

Species accounts

Slender-billed Gull *Croicocephalus genei*

This species is a resident breeder, passage visitor and winter visitor to the Mediterranean coast of Egypt. It has established a breeding colony on small scattered muddy dykes at the El Nasser Salinas of Port Fouad, where 12 250 nests with 5- to 10-day-old chicks protected by adults (small chicks were excluded) were counted on 11 June 2017 (Habib 2018a). Adult breeders foraged at lake Manzala and the Suez Canal to feed their chicks. In 2014, 2875 nests were counted at El Qaren El Zahaby island at lake Qarun, El Fayum (Habib 2016a), so the estimate of the two populations combined is 15 125 pairs (45 375 individuals). As the number of breeding birds around the Black Sea and Mediterranean was estimated at 140 000–205 000 in 1999–2000 (Wetlands International 2014), the Egyptian population represents 7.4–10.8% of the estimated breeding birds for the whole region (Habib 2017).

Yellow-legged Gull *Larus michahellis*

During the present study, the first evidence of breeding of Yellow-legged Gull in Egypt was found at El Malaha, Port Fouad, just east of Port Said, where the species nested on small patches of exposed sand on a long dyke. At least 15 empty nests were found (Habib 2017) and one occupied nest. This is the only known breeding colony of the species in Egypt at present.



Plate 2. First summer Yellow-legged Gull *Larus michahellis*. © Mohamed Habib



Plate 3. Brooding Gull-billed Tern *Gelocheilidon nilotica*.
© Mohamed Habib



Plate 4. Sandwich Tern *Thalasseus sandvicensis* parent feeding a chick. © Mohamed Habib

Gull-billed Tern *Gelocheilidon nilotica*

A record in 2014 of two breeding pairs at El Qaren El Zahaby Island at lake Qarun (Habib 2015) represented the first breeding of Gull-billed Tern in Egypt and only the second breeding record for north-eastern Africa. There is no immediate threat to this colony because it is not permitted for fishermen to visit the islands due to the ban on fishing at Qarun lake during the breeding season. In 2017 at El Nasser Company Salinas, Port Fouad in the north-western corner of the Sinai Peninsula we counted 12 occupied nests and in 2017 (Habib 2018a) we counted 80 occupied nests at Abu Simble.

Sandwich Tern *Sterna sandvicensis*

The first Egyptian breeding record of breeding Sandwich Terns was confirmed at Port Fouad, El Nasser Company Salinas in 2017, when over 950 nests were counted (Habib 2018b). No previous breeding attempts by this species were recorded in the area, although it was regularly surveyed since 2013. Perhaps the present high number is due to amalgamation of all breeding Sandwich Terns at one location after the construction of the new Suez Canal bypass and the eastern Port Said port, or because hunting and the use of guns has been prohibited around the Suez Canal area since the revolution. The Egyptian population represents around 15.8% of the Mediterranean population of about 6000 pairs.

Common Tern *Sterna hirundo*

Two Common Tern colonies were found during the surveys. The first was located in 2013 at 'Drainage Lake': a shallow hypersaline lake with small, scattered sandy islands, with the water coming from two main delta discharge drains crossing Lake Manzala (Habib 2014a). Here, the terns were nesting on small patches of exposed sand. A maximum of 273 Common Terns were counted, with 270 nests estimated at the colony (Habib 2016b). In 2017 at a second colony at Port Fouad, El Nasser Company Salinas we counted about 400 breeding pairs. These colonies are significantly larger than that found at El Malaha in 1990, which had five breeding pairs.

Little Tern *Sternula albifrons*

The area where this species was found breeding is within the Port Said region, along the Mediterranean coast including east of Port Fouad but outside the Ashtum El Gamil protected area. In total I estimated there were 2591 nests at Port Said, 439 nests at El Arish, 900 nests at Port Fouad and 25 nests at Abu Simble, giving a total of 3955 (Habib



Plate 5. Common Tern *Sterna hirundo* feeding chick. © Mohamed Habib

2014b, 2016c). The terns preferred to nest on the mainland rather than on islands. Eason *et al* (2012) found 439 Little Tern nests in the northern Sinai. Port Said is an important nesting area for Little Terns in the Middle East, representing more than 6% of the current Black Sea and Mediterranean breeding population, estimated at 63 500–113 000 birds (Wetlands International 2014).

DISCUSSION

Surveys of the Mediterranean coasts of Egypt between 2012 and 2018 have revealed important populations of a number of species. In particular, Slender-billed Gull, Sandwich Tern and Little Tern breed in regionally important numbers, and the newly established breeding population of Gull-billed Terns appears to be increasing. The large size of the Slender-billed Gull colony at El Nasser Salinas may represent the amalgamation of all breeding Slender-billed Gulls in the area at one location after construction of the new Suez Canal by-pass and Eastern port.

Seabirds in Port Said face disturbance during the breeding season, such as fishermen walking through the area, trucks carrying fish (which were seen to destroy nests) and people collecting one-week old Little Tern chicks which are not yet able to fly. Building the corniche road and new resorts (such as El Manasra–El Deba) will increase tourism and visitor pressure on the beaches. The Little Tern colonies merit protection from further development within the breeding areas and from disturbance. Also, the activities of the gas industry will disturb the breeding habitat. Signs should be posted forbidding any human activities in the breeding areas during mating, nesting and fledging. The colony



Plate 6. Little Tern *Sternula albifrons* brooding chick. © Mohamed Habib

at the El Nasser Salinas merits protection from further development within the breeding area.

LITERATURE CITED

- Bibby, CJ, ND Burgess, DA Hill & SHA Mustoe. 2007. *Bird Census Techniques. Second Edition*. Academic Press, London.
- Blokpoel, H & L Spaans. 1991. Superabundance in Gulls: Causes, Problems and Solutions [Introductory Remarks]. In: BD Bell (ed). *Acta XX Congressus Internationalis Ornithologici*. New Zealand Ornithological Congress Trust Board, Wellington, New Zealand: pp2361-2364.
- Bosch, M, D Oro, FJ Cantos & M Zabala. 2000. Short term effects of culling on the ecology and population dynamics of the yellow-legged gull. *J Appl Ecol* 37: 369-385.
- Croxall, J, SHM Butchart, B Lascelles, A Stattersfield, B Sullivan, A Symes & P Taylor. 2012. Seabird conservation status, threats and priority actions: A global assessment. *Bird Conservation International* 22: 1-34.
- Dies, JI & B Dies. 2005. Kleptoparasitism and host responses in a Sandwich Tern colony of Eastern Spain. *Waterbirds* 28: 167-171.
- Eason, P, B Rabea & O Attum. 2012. Island shape, size, and isolation affect nest-site selection by Little Terns. *Journal of Field Ornithology* 83: 372-380.
- Fishpool, LDC & MI Evans (eds). 2001. *Important Bird Areas in Africa and Associated Islands: Priority Sites for Conservation* (Birdlife Conservation Series No. 11). Birdlife International, Cambridge, UK.
- Habib, MI. 2014a. Common Tern *Sterna hirundo* breeding at Port Said, Mediterranean Coast of Egypt, May 2013. *Dutch Birding* 36: 2526.
- Habib, MI. 2014b. Little Tern *Sterna albifrons* nesting, Port Said. *Egypt Bulletin of the "Mediterranean Water Birds" Network*, No. 2.
- Habib, MI. 2015. Gull-billed Terns breeding at Qarun lake, Egypt, in 2013-14. *Dutch Birding* 37: 178-180.
- Habib, MI. 2016a. The Slender-billed Gull *Larus genei* breeding in Egypt in 2014. In: Yesou, P., J Sultana, J Walmsley & H Azafzaf (eds). *Proceedings of the 2nd Symposium On the Conservation Of Marine And Coastal Birds In the Mediterranean Hammamet, Tunisia*. RAC/SPA and Medmaravis, Tunisia: pp63-66.
- Habib, MI. 2016b. Common Tern (*Sterna Hirundo*) breeding colony discovered at Port Fouad, Port Said, Mediterranean coast Of Egypt, May 2016. [Poster] Bird Numbers 2016, Salle University, Germany.
- Habib, MI. 2016c. A survey of Little Tern *Sternula albifrons* colonies at Port Said, Egypt, in 2015 with notes on behaviour. *Sandgrouse* 38: 118-123.
- Habib, MI. 2017. New breeding colony of Yellow-legged Gull at Port Fouad, Egypt, in May 2016. *Dutch Birding* 39: 86-87.
- Habib, MI. 2018a. Slender-Billed Gulls *Larus genei* breeding at El Nasser Salinas, Northern Egypt, June 2017. *Sandgrouse* 40: 28-35.
- Habib, MI. 2018b. Sandwich Terns breeding at Port Fouad, Egypt, in June 2017. *Dutch Birding* 40: 168-171.
- Meininger, PL & GAM Atta. 1994. *Ornithological Studies In Egyptian Wetlands 1989/90*. Foundation for Ornithological Research in Egypt, Vlissingen, The Netherlands.
- Thibault, JC, R Zotier, L Guyot & V Bretagnolle. 1996. Recent trends in breeding marine birds of the Mediterranean region with special reference to Corsica. *Colonial Waterbirds* 19: 31-40.
- Veen, J. 1977. Functional and causal aspects of nest distribution in colonies of the Sandwich Tern (*Sterna sandvicensis* Lath.). *Behavior* 20: 1-193.
- Wetlands International. 2014. Water Bird Population Estimates. wpe.wetlands.org. [Retrieved 14 March 2014]

Mohamed I Habib, Environment Committee Coordinator, Red Sea Association for Environment and Water Sports, Egypt. mrhydro35@hotmail.com

An unprecedented influx of Black-throated Thrushes *Turdus atrogularis* to the United Arab Emirates in winter 2016/17

OSCAR CAMPBELL & MARK SMILES

Summary: We document an influx of unprecedented extent of Black-throated Thrushes to the United Arab Emirates in the winter of 2016/17, a single winter (November to March) in which 48% of all the records of the species from the UAE from 1990 to 2019 were made. Comparative data from adjacent countries are also presented, compiled mainly from the bi-annual *Around the Region* summaries published in *Sandgrouse*. From this analysis it is clear that the influx of Black-throated Thrushes in the UAE was closely matched in neighbouring countries and, to a lesser extent, much further afield, and may have resulted from lower than average temperatures further north in the usual wintering range.

INTRODUCTION

Black-throated Thrush *Turdus atrogularis* breeds widely across the taiga forests of central Siberia, from the Ural mountains eastwards to north-western Mongolia, and winters across south-central Asia and south-western China (Collar 2019a). Across its wintering range, it becomes increasingly rare southwards; on the Arabian peninsula it is uncommon to rare and highly erratic in occurrence (e.g. Pedersen & Aspinall 2010, Eriksen & Victor 2013).

Status in the UAE

Black-throated Thrush is an uncommon to rare winter visitor (Pedersen *et al* 2019). Its occurrence is erratic and less than annual; the species was not recorded at all in 13 (45%) winters between 1990–2019 (Figs 1 and 2). Timing of occurrence is generally November to mid-March, with most records from mid-November to late January (Fig. 3). It has long been known to occur in highly variable numbers, with two winters (1990/91 and 2010/11) producing significant spikes prior to 2016-17. In addition, marked arrivals were recorded in winters 1982/83 and 1984/85 (Richardson & Chapman 1988, Richardson 1991). In the latter influx, up to nine birds were recorded regularly in the Dubai area between November and early March (C Richardson *in litt*). Almost all records come from anthropogenic habitats, particularly urban parks but also plantations, orchards and agricultural areas.



Plate 1. First-winter male Black-throated Thrush *Turdus atrogularis*, Al Mamzar Park, Dubai, UAE Abu Dhabi, 15 November 2016. © Fouad Itani



Plate 2. Adult male Black-throated Thrush *Turdus atrogularis*, Al Mamzar Park, Dubai, UAE Abu Dhabi, 17 November 2016. © Fouad Itani

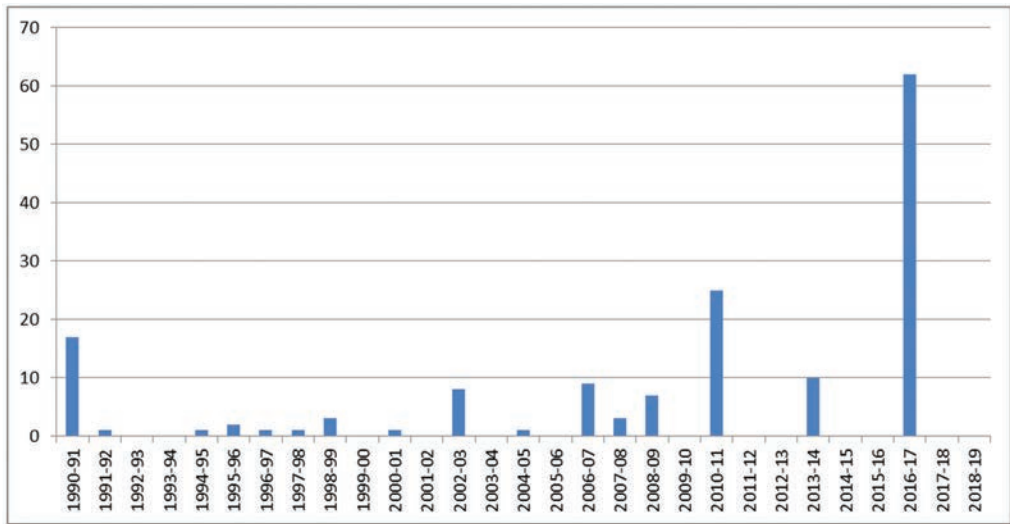


Figure 1. Number of individual Black-throated Thrushes *Turdus atrogularis* recorded annually in UAE, winters 1990/91 to 2018/19. Sources: UAE Bird Database, Richardson (1991-94, 1997, 2003, unpublished). Note that these numbers represent an under-estimate, obtained by summing the maximum count for each site in any one winter.

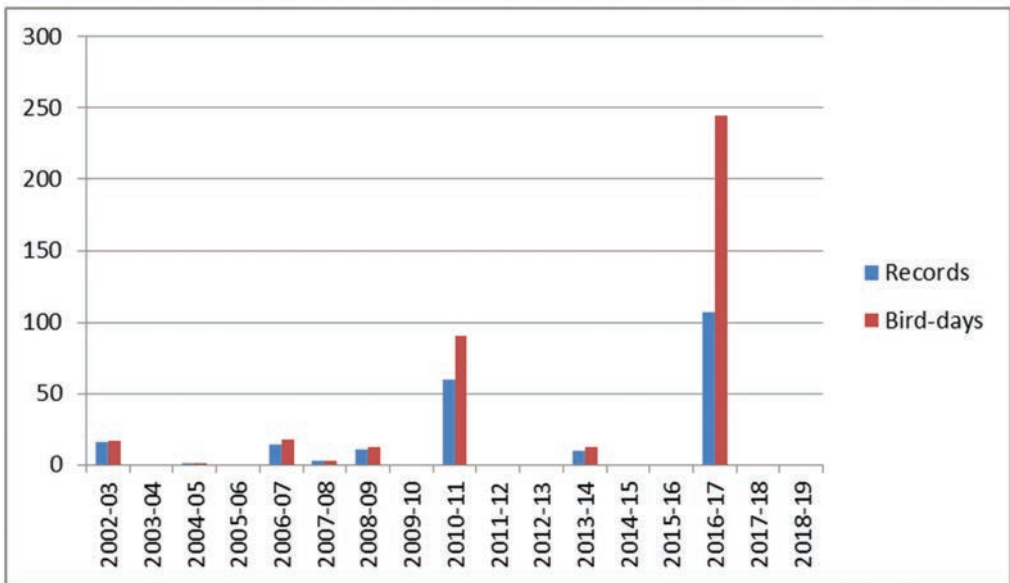


Figure 2. Number of individual records and number of bird-days (latter obtained by summing all counts for the entire winter) of Black-throated Thrushes *Turdus atrogularis* in UAE, winter 2002/03 to 2018/19. Complete data for winters 1990/91 to 2001/02 were not available. Note that both parameters presented here, as for that in Figure 1, are highly dependent on observer density. Additionally, the availability of irrigated parks and other anthropogenic sites (both publically accessible and otherwise) favoured by the species has also increased markedly in recent decades in the UAE. Conversely, more habitat may actually reduce the apparent extent of any influx by making locating birds harder. Sources as Figure 1.

The majority of records involve single birds, rarely small groups of up to four and once, in the influx year 2010/11, a record of seven from a small garden in a montane site in the UAE interior.

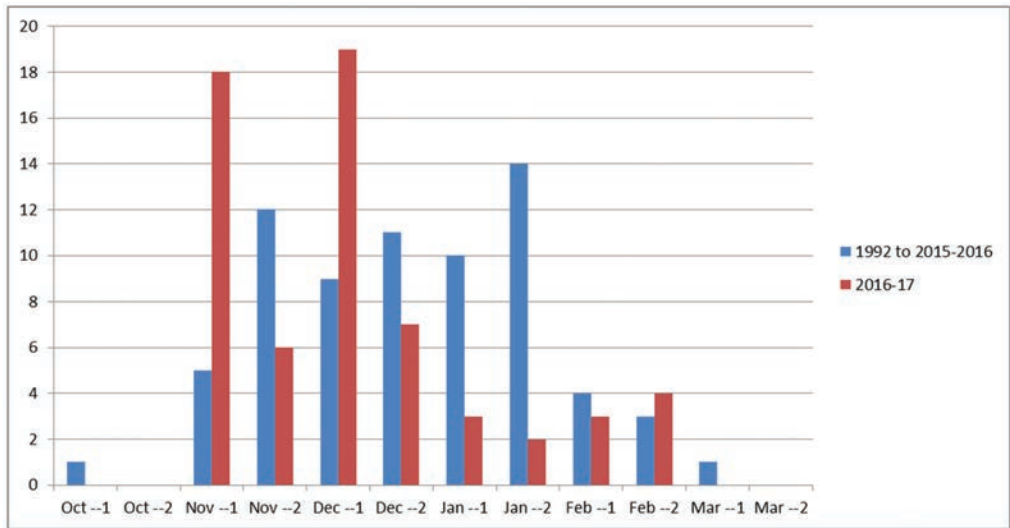


Figure 3. Timing of arrivals of Black-throated Thrushes *Turdus atrogularis* in UAE, comparing winter 2016/17 to all other winters, 1990/91 to 2018/19. Data are presented fortnightly by month, hence Oct – 1 refers to records from 1-15 October, Oct – 2 refers to 16-31 October and so on. Sources as Figure 1.

Influx in winter 2016/17

The influx of 2016/17 was exceptional in terms of numbers and, to a lesser extent, in timing. In all, at least 62 individuals were recorded, accounting for 107 individual records and 245 bird-days. These 62 individuals represent an absolute minimum total (obtained by summing the maximum count for each site at which the species occurred) but nevertheless account for 48% of all records of the species from the UAE from 1990-91 to 2018-19. The timing of the influx averaged a little earlier than other years (Fig. 3) and appeared to come in two waves, in the first half of November and the first half of December. The first record was of a single bird on 6 November, with eight further records by 15 November, totalling 18 birds in all, including a flock of eight. By 11 December, a further 15 were present on Lulu Island, Abu Dhabi (up from five on 1 December), rising to a record UAE count of 18 there on 16 December. Relatively few new individuals were found after late December and spring passage was not detectable (Fig. 3).

The distribution of records in the UAE during the 2016/17 influx is presented in Fig. 4. Predictably, most come from well-watched urban areas along the Arabian Gulf coastline, but there were two east coast records and, by late January, up to four were present in the Al Ain area (although none were recorded from the upper slopes of Jebel Hafeet, a site which had hosted seven birds during the 2010/11 arrival). Records were also surprisingly scarce from the western region; this may reflect very limited observer activity but productive sites such as Delma Island and Sila'a peninsula, which have hosted Black-throated Thrushes in the past, were visited in mid-November and early December yet produced a total of only three individuals.

DISCUSSION

The influx of Black-throated Thrushes to the UAE in winter 2016/17 was matched by comparable influxes into neighbouring countries. Oman, Qatar, Kuwait and the eastern region of Saudi Arabia all witnessed significant arrivals, with that in Oman on a record scale, and arrival dates generally closely correlated with those in the UAE (Table 1). However, the main arrival was clearly concentrated in eastern Arabia along the southern

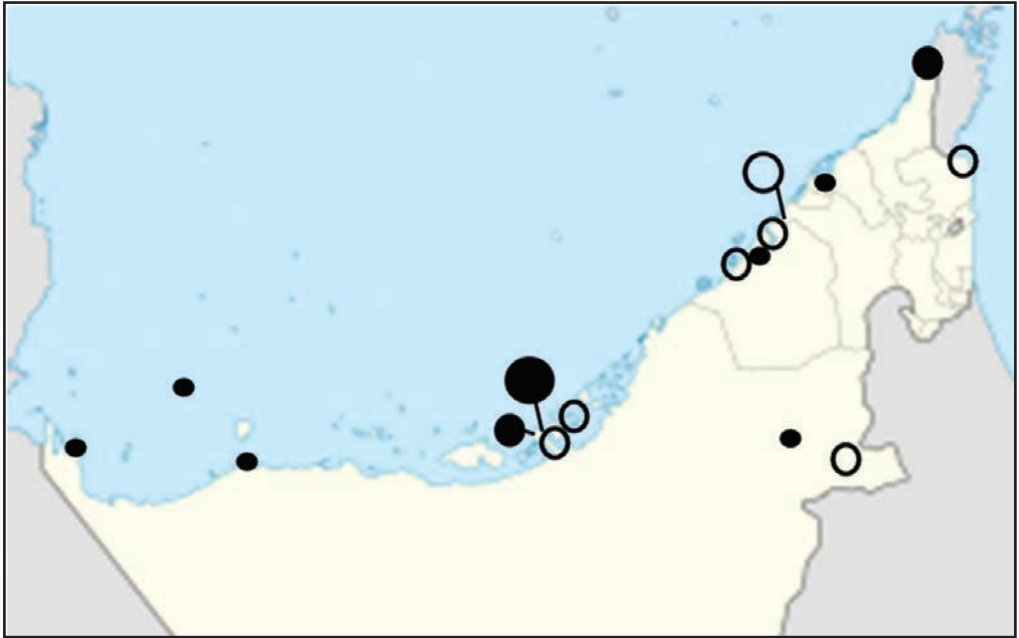


Figure 4. Distribution of records of Black-throated Thrushes *Turdus atrogularis* across the UAE during the influx in winter 2016/17. Small filled circle – 1; medium open circle – 2-3; medium filled circle – 5-8; large open circle – 9; large filled circle – 18.



Figure 5. Records of Black-throated Thrush *Turdus atrogularis* from October to December 2015. Source: www.eBird.org

Arabian Gulf coastline, with very many fewer records further west. The absence of records from well-watched Israel is surprising considering that Turkey received its third ever record on 14 November, very closely timed with the first arrivals in the UAE and Oman. The second record from Turkey comprised 14 birds at one site in March 2011 (Kirwan *et al* 2016), a winter that also saw a significant influx into the UAE. A record from Egypt is not



Figure 6. Records of Black-throated Thrush *Turdus atrogularis* from October to December 2016. Source: www.eBird.org



Figure 7. Records of Black-throated Thrush *Turdus atrogularis* from October to December 2017. Source: www.eBird.org

totally unexpected in the context of this influx but its date (25 April), a full six weeks after the species has generally departed eastern Arabia, is surprising.

The maps presented (Figs 5 to 7) summarise Black-throated Thrush records taken from www.eBird.org (Sullivan *et al* 2009) for the three autumn to early winter (October to December inclusive) periods of 2015/16 to 2017/18 for the Middle East region and southern Asia, east to Myanmar. Whilst they are not standardized for observer effort (note that usage of eBird across this region has generally increased from 2015 to 2017), these maps indicate that the 2016/17 arrival to eastern Arabia was matched by greatly increased numbers in the northern Indian sub-continent and southern Asia during the same period. A number of other species of (presumed) central Asian origin appeared in the UAE during the main arrival of Black-throated Thrushes, the most significant being

Table 1 Records of Black-throated Thrush *Turdus atrogularis* from selected other countries in the Middle East, winters 2014/15 to 2018/19. Sources: Harrison & Lamsdell (2015a,b, 2016); Harrison (2016, 2017a,b, 2018a,b, 2019a, b), www.eBird.org, Markus Craig in litt. Note that records presented below are generated, in most countries, by very small numbers of observers. In addition to the records summarized below, one Black-throated Thrush was very recorded in Egypt on 25 April 2017 (the third national record). No records were sourced from Cyprus or Israel for any year; for records from Turkey and Iran, see Discussion.

	2014/15	2015/16	2016/17	2017/18	2018/19
Kuwait	Two, 11-14 Feb	No records	Recorded 3 Nov to 2 Mar; at least 56 individuals recorded from 10 sites, including 19 Jahra, 18 Dec.	No records	One, 13 Nov
Oman	One, 1 Dec	No records	20 Sayq, 16 Nov, rising to 40 by 12 Dec and 42, 1 Jan remaining to early March. 10 Qatbit 17 Nov and 3 Masirah, 4 Dec. In addition, scattered singles as far south as Salalah (21 Nov).	No records	No records
Qatar	No records	No records ¹	One 18 Nov, increasing to 30 by end of Dec and remaining in dwindling numbers until early Mar	No records	No records ²
Saudi Arabia	No records	No records	None reported in early winter but 4 in Eastern Province, 20 Jan, rising to 12 until 10 Feb.	No records	No records

¹ No data available for second half of 2015

² No data available for the second half of 2019

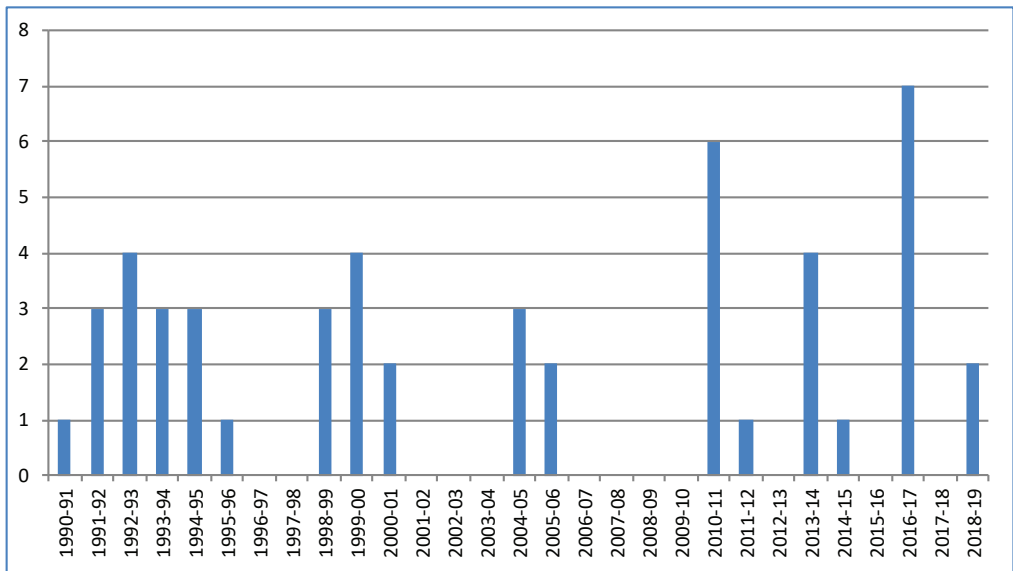


Figure 8. Number of individual Eversmann's Redstarts *Phoenicurus erythronotus* recorded annually in the UAE, winters 1990/91 to 2018/19. Sources as Figure 1.

single records of Little Bunting *Emberiza pusilla* (12–13 November), White-capped Bunting *Emberiza stewarti* (16–22 November), and Little Bustard *Tetrax tetrax* (1–3 December) (Pedersen *et al* 2020). Also notable were small, but marked, arrivals of Yellow-browed Warbler *Phylloscopus inornatus* (three between 4–25 November) and Eversmann's Redstart *Phoenicurus erythronotus* (six between 10 November and 1 January). The latter species occurs almost annually in the UAE in very small numbers (recorded at least once during 59% of winters, 1990/91 to 2018/19) but, as with Black-throated Thrush, is similarly prone to small (albeit much less marked) influxes (Fig. 8). It is interesting that the two most significant influxes of Eversmann's Redstart since 1990/91 coincided with the best recent winters (2016/2017 and 2010/11) for Black-throated Thrushes, with six or seven individuals

recorded November-January during both winters in question. However, this correlation is not apparent in other winters.

The winter distribution and abundance of both Black-throated Thrush and Eversmann's Redstart is variable and unpredictable from year to year and month to month, dependent on climatic conditions (Collar 2019a, b) and berry crop (Cramp 1988). Whilst detailed data on variation in the weather parameters across much of central Asia are not readily available, IRIMO (2019) provides summary data for Iran and, from that source, minimum temperatures for five meteorological stations, taken from September 2015 to June 2017 are summarized by Khaleghizadeh (2019). This clearly indicates noticeably lower temperatures for most months at most weather stations from November 2016 to February 2017, compared to the equivalent month in the preceding or following winters. This unusually cold weather was attributed as a factor in a notable influx of Bohemian Waxwings *Bombycilla garrulus* and Eurasian Bullfinches *Pyrrhula pyrrhula* to Iran from late November–December 2016 onwards (Khaleghizadeh 2019). Compared to other countries considered in this study, Black-throated Thrush is a fairly common and widespread winter visitor in Iran (Khaleghizadeh *et al* 2017) and hence its occurrence was not analysed by Khaleghizadeh (2019). However, anecdotal observations indicate that there were certainly many more than usual in Iran in 2016/17. For example, seven individuals were located in southern Iran (Shiraz city environs and Kerman province) in 23 hours of birdwatching, 10-13 February 2017 (OC pers obs). Furthermore, at Velenjan-Evin, northern Tehran, up to 40 individuals were present in 2016/17, compared to a maximum of five for most winters (A. Khaleghizadeh in litt). It seems conceivable that the same, unusually cold, weather conditions, prevailing in Iran and presumably further afield in Central Asia, were responsible for the record arrival of Black-throated Thrushes to the UAE and adjacent countries in the same winter.

ACKNOWLEDGEMENTS

We are very grateful to all observers who submitted records to the UAE Bird Database and to www.eBird.org that made this analysis possible. In particular, Tommy Pedersen and Colin Richardson have maintained the UAE Bird Database for many years and made the data therein available to all. Markus Craig, Neil Tovey and Mike Pope provided much helpful information regarding records of Black-throated Thrush in Kuwait. Abolghasem Khaleghizadeh responded promptly and helpfully regarding data from Iran. Marshall Iloff kindly gave permission to use data from eBird and Colin Richardson made a number of helpful comments that improved the manuscript.

LITERATURE CITED

- Collar, N. 2019a. Black-throated Thrush (*Turdus atrogularis*). In: J del Hoyo, A Elliott, J Sargatal, DA Christie & E de Juana (eds). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona. <https://www.hbw.com/node/58259> [Retrieved 11 June 2019]
- Collar, N. 2019b. Eversmann's Redstart (*Phoenicurus erythronotus*). In: J del Hoyo, A Elliott, J Sargatal, DA Christie & E de Juana (eds). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona. <https://www.hbw.com/node/58494> [Retrieved 11 June 2019]
- Cramp, S (ed). 1988. *Handbook of the Birds of Europe, the Middle East and North Africa: Volume V: Tyrant Flycatchers to Thrushes*. Oxford University Press, Oxford, UK.
- Eriksen, J & R Victor. 2013. *Oman Bird List. Edition 7. The official list of the birds of the Sultanate of Oman*. Centre for Environmental Studies and Research, Sultan Qaboos University, Muscat.
- Harrison, I & C Lamsdell (compilers). 2015a. Around the Region. *Sandgrouse* 37: 115–126.
- Harrison, I & C Lamsdell (compilers). 2015b. Around the Region. *Sandgrouse* 37: 212–223.
- Harrison, I & C Lamsdell (compilers). 2016. Around the Region. *Sandgrouse* 38: 130–143.
- Harrison, I (compiler). 2016. Around the Region. *Sandgrouse* 38: 224–239.
- Harrison, I (compiler). 2017a. Around the Region. *Sandgrouse* 39: 93–111.
- Harrison, I (compiler). 2017b. Around the Region. *Sandgrouse* 39: 201–215.
- Harrison, I (compiler). 2018a. Around the Region. *Sandgrouse* 40: 113–126.
- Harrison, I (compiler). 2018b. Around the Region. *Sandgrouse* 40: 195–208.
- Harrison, I (compiler). 2019a. Around the Region. *Sandgrouse* 41: 128–151.

- Harrison, I (compiler). 2019b. Around the Region. *Sandgrouse* 41: 244–263.
- IRIMO. 2019. <http://irimo.ir/far/wd/2703>. [Accessed 11 June 2019]
- Khaleghizadeh, A. 2019. Irruption of Bohemian Waxwings *Bombycilla garrulus* and Eurasian Bullfinches *Pyrrhula pyrrhula* in Iran in the winter of 2016/2017. *Sandgrouse* 41: 80–85.
- Khaleghizadeh, A, K Roselaar, DA Scott, M Tohidifar, J Mlíkovský., M Blair & P Kvartalnov. 2017. *Birds of Iran: Annotated Checklist of the Species and Subspecies*. Iranian Research Institute of Plant Protection, Tehran.
- Kirwan, GM, M Özen, M Erturhan & A Atahan. 2014. Turkey Bird Report, 2007–2011. *Sandgrouse* 36: 146–175.
- Pedersen, T & S Aspinall. 2010. Checklist of the birds of the United Arab Emirates. *Sandgrouse* Suppl 3: 1-96.
- Pedersen, T, SJ Aspinall, OJ Campbell & MC Smiles (compilers). 2020. *EBRC Annotated Checklist of the birds of the United Arab Emirates*. <http://www.uaebirding.com/uaechecklist.html>. [Accessed 20 August June 2019]
- Richardson, C. (compiler). 1991. Emirates Bird Report 15. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C. (compiler). 1992. Emirates Bird Report 16. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C. (compiler). 1993. Emirates Bird Report 17. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C. (compiler). 1994. Emirates Bird Report 18. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C. (compiler). 1997. Emirates Bird Report 19. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C. (compiler). 2003. Emirates Bird Report 20. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C. (compiler). Unpublished. Emirates Bird Report 21 – Preliminary draft. Retrieved from <https://www.uaebirding.com/bird-checklists>. [Accessed 11 June 2019]
- Richardson, C & A Chapman. 1988. Migration patterns through Dubai 1984-88. *Sandgrouse* 10: 71–80.
- Sullivan, BL, CL Wood, MJ Iliff, RE Bonney, D Fink & S Kelling. 2009. eBird: a citizen-based bird observation network in the biological sciences. *Biological Conservation* 142: 2282–2292.

Oscar Campbell, c/o British School-Al Khubairat, PO Box 4001, Abu Dhabi, United Arab Emirates. ojcampbell25@yahoo.com
 Mark Smiles, 10A Peel Close, Drayton Bassett, Tamworth, Staffordshire, England. marksmiles63@gmail.com

Additional data on African Pipit *Anthus cinnamomeus eximius* in Saudi Arabia

JEM BABBINGTON & PHIL ROBERTS

Summary: Very little is known about the Arabian subspecies of African Pipit *Anthus cinnamomeus eximius*. This paper updates records from Saudi Arabia, provides additional information on breeding, status and habitat and presents the first biometrics from live birds and a sonogram.

African Pipit *Anthus cinnamomeus* is a large pipit, closely related to Richard's Pipit *A. richardi*, that is found predominantly in southern and eastern Africa. It is also a breeding species of the southwestern region of the Arabian Peninsula, including both western Yemen and south-western Saudi Arabia. This population represents the species' only range outside the African continent and is recognised as an endemic race under the name *A. c. eximius* (Clancey 1986). The birds are resident and inhabit elevated plateau areas with low grass in summer, but appear to move from these areas during winter (authors' pers obs). Information on the species in Saudi Arabia is limited and very few records have been published, as birds in Arabia have been little studied (Shirihai & Svensson 2018). This note documents many additional sightings and extends the known range of the species in Saudi Arabia. It also presents biometric data from live birds and additional information on breeding season, food and calls.

Previous Saudi Arabian records

African Pipit of the subspecies *A. c. eximius* is poorly represented in museum collections, with just three specimens from Saudi Arabia at the Natural History Museum, Tring, UK, collected by Philby in 1936. The Arabian population was previously attributed to *A. c. annae* but was re-examined by Clancey (1986), who described birds of the south-western Arabian highlands as an endemic subspecies *A. c. eximius*. He noted the existence, without comment, of two Arabian specimens of *A. c. annae* from southern Yemen, both of which were collected by Meinertzhagen in 1923 (Meinertzhagen 1924), but there were no records of *annae* from Saudi Arabia and these remain the only two putative records of this subspecies in Arabia. The specimens examined by Clancey in 1986 from Saudi Arabia, which he assigned to a new subspecies *A. c. eximius*, included a male from Mount Soudah (Suda) near Abha at 2819 m on 9 June 1936, where birds have been regarded as being quite common but seen singly (M. Jennings in litt). The second was a female from Mahsan, near Abha at 2438 m on 10 June 1936 and the third was a male that was much darker than the previous records from Najran at 1341 m on 6 July 1936. Since these first birds were collected, sightings in Saudi Arabia have been rare. An individual that was ringed in juniper, acacias and wild olive trees at 19.633 N, 41.917 E some time between 1982 and 1984 was the first recorded since 1936 (Felemban 1986). Interestingly this was the only bird seen or caught during extensive field work between February 1982 and December 1984 for a PhD thesis at ten sites in southwestern Saudi Arabia between 500 and 2900 m and is the most northerly record in the Kingdom. However, the weight of this bird, 28 g, is well above the weights recorded by JB for African Pipit (23.0 – 23.2 g, two birds) and is closer to that of Long-billed Pipits recorded by JB (26.5 – 27.8 g, two birds) so there must be some doubt about its identification. During the study, 955 birds of 75 species were ringed over 139 days. The species was not seen during 113 one-hour field censuses undertaken in the same study area or during other incidental field observations in the area. In September and October 1989 and in March and April 1990, up to three birds consisting of one or

two pairs and described by the finder as being dark, were seen in upland pasture above Abha (ABBA database). Jennings (2010) stated there could be up to 50 pairs in each of the Atlas squares in which it has been recorded (only two in Saudi Arabia), suggesting there would be about 100 pairs in the Kingdom and that it must therefore be regarded as rare in Saudi Arabia.

Additional Saudi Arabian records

Although we live in the Eastern Province of Saudi Arabia, we have regularly visited the south-western highlands of Saudi Arabia from summer 2013 onwards and saw a number of unfamiliar-looking pipits, but due to a lack of a clear understanding of the key identification features, no conclusive identification was initially made. During 2014 and 2015, a number of sightings by the authors at Al Mehfar Park, Tanoumah were discussed with Hadoram Shirihai (HS) and various photographs sent, which HS confirmed as African Pipit. HS kindly also helped clarify key identification points, making further identification much easier.

Key points to the identification of African Pipit (Plates 1 & 2) from Long-billed Pipit (Plate 3) are that African Pipit has (1) more obvious breast streaking on a whiter background, (2) a more obvious malar strip, (3) heavier streaking above, (4) a more obvious orange base to lower mandible, (5) a smaller and shorter bill, (6) smaller body size, (7) more extensive white on the outer tail feathers (Plates 4 & 5), (8) longer legs and (9) proportionately longer hind claws.

After these discussions, HS identified as an African Pipit a bird originally identified as a Long-billed Pipit that was photographed at Azeeza (18.207 N, 42.432 E), between Abha and Mount Soudah at 2450 m on 4 July 2014, the first record since April 1990. The confirmed records from Al Mehfar Park, Tanoumah were of a single bird 10 June 2015 at 18.9651 N, 42.132 E, where a total of three were present over the next few days and two different birds nearby at 18.966 N, 42.134 E on 22 June 2015 (Plate 1).

JB visited the Tanoumah area with Chris Boland and Abdullah Alsuhaybany in May and June 2016 to try to trap and ring the species and caught two African Pipits as well as two Long-billed Pipits at 18.957 N, 42.152 E. The biometrics of these birds are presented in Table 1 and are, as far as we know, the first documented biometrics of live specimens of *A. c. eximius*. The fact that African Pipit and Long-billed Pipit were trapped and ringed in the same small area confirms field observations that the two species use very similar habitat types and are often seen feeding in close proximity in the same fields. During this ringing trip, at least three other African Pipits were seen in the same area on 1-4 June 2016.

A visit in July 2016 aimed primarily at locating the species yielded a minimum of seven birds in the Tanoumah area, including an adult on 6 July 2016 (Plate 2), a juvenile on 7 July



Plate 1. African Pipit *Anthus cinnamomeus eximius*, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 22 June 2015. © Jem Babbington



Plate 2. African Pipit *Anthus cinnamomeus eximius*, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 6 July 2016. © Jem Babbington



Plate 3. Long-billed Pipit *Anthus similis arabicus*, Tamniah, Abha, Asir Province, Saudi Arabia, 30 June 2019. © Jem Babbington



Plate 4. African Pipit *Anthus cinnamomeus eximius* tail pattern, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 31 May 2016. © Chris Boland

2016 (Plate 6) and a family party of two adults feeding a juvenile on 8 July 2016. One of the adults seen feeding the juvenile carried a ring and as good photographs were taken of the bird it could be identified as one of the two birds ringed as adults in May/June 2016 just 100 m away. Virtually every suitable grassy field in Al Mehfar Park held at least one bird, indicating that they are common in this small area at least. On 9 July 2016 in a grassy, open



Plate 5. Long-billed Pipit *Anthus similis arabicus* tail pattern, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 31 May 2016. © Chris Boland



Plate 6 (left). Adult African Pipit *Anthus cinnamomeus eximius* with food, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 8 July 2016. © Jem Babbington



Plate 7 (right). Adult African Pipit *Anthus cinnamomeus eximius* with food, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 26 May 2018. © Jem Babbington

plain near the dam along the Talea Valley (18.353 N, 42.387 E) a bird in song flight was located and photographed. This location is 75 km south of Al Mehfar Park, Tanoumah, and 20 km north of Azeeza in a straight line. PR arranged a visit to Tanoumah in late April 2018 to see if birds were back on their breeding sites, and managed to see four birds at Al Mefah Park, Tanoumah on 28 April. Two birds were still present, this time collecting food, on 26 May 2018 and were seen again on 14 June 2018 (Plate 5), always in the same field (18.966 N, 42.134 E) in which they were first seen in 2015. Two birds were seen in short grassy fields

in a wadi near An Namas on 27 May 2018, with a calling bird at the same site on 15 June 2018 (19.089 N, 42.155 E). A new location was found on 17 May 2019 when five birds were seen in various short grassy fields in a deep wadi at Quaraish, near Tanoumah with two birds still present on 4 August 2019.

Habitat and range

The area where the birds were seen in Al Mehfar was a patchwork of acacia and cultivated terraced fields, some with short grass and bare earth with rocks, with scattered fruit trees and mature Juniper, a habitat also favoured by Long-billed Pipit. Locations elsewhere have all be in wide wadis or valleys with short grass fields surrounded by acacia and Juniper trees. The range of African Pipit in Saudi Arabia comprises a small area of the Asir mountains in southwestern Saudi Arabia, with all records from May to September and all above 2900 m. The most northerly records concerned birds seen in a wide valley with ploughed and grassy fields and large acacia trees near Al Namas (19.094 N, 42.154 E), the most southerly was the bird at Azeeza (18.207 N, 42.432 E), making the range approximately 105 km from north to south, excluding the questionable ringing record of Felemban. The Azeeza site was different to all other locations in being a steep sloping valley, the bird seen on the edge of the slope in a boulder strewn area with long grass tufts but bare ground. Although this site has been visited since, no further records have been noted at Azeeza.

Status

African Pipit remains rare in the Kingdom due to its restricted range, within which it is uncommon from May to September. Its current restricted range could be due to the lack of knowledge of key identification points, as *A. c. eximius* was not illustrated well in guidebooks until Shirihai & Svensson (2018) published high quality photographs. This, combined with the low density of observers present in the Kingdom, all of whom live far from the south-western mountains, could well be skewing our understanding. The whereabouts of birds during the winter would be an interesting topic to study, as they appear to move away from their breeding areas during this period, possibly to lower altitudes. There are no recent confirmed records away from known breeding sites outside the breeding season. JB and PR have visited the area in winter in three different years with a combined total of over 60 hours of field time.

Biometrics

Biometrics of live African Pipits of the race *eximius* have not been recorded previously as far as we are aware. The measurements of live birds recorded by JB (Table 1) fall mainly within the range of those recorded by Shirihai & Svensson (2018) of museum specimens. African Pipit has strikingly white outer tail feathers (Plate 4), whereas Long-billed Pipit has pale brownish outer tail feathers (Plate 5). According to Shirihai & Svensson (2018), the white outer tail of African Pipit is striking on take-off, but we have not found them easy to see in the field, although if looked at closely they can sometimes be seen, more often when landing than taking off.

Food

Nothing has been recorded of food taken in Arabia, but in Africa this species takes a range of insects and other arthropods and their larvae, as well as a few seeds (Jennings 2010). Although it is not possible to know exactly what food is being carried in Plates 6 and 7, it appears to match with that mentioned by Jennings. Birds seen in southwestern Saudi Arabia fed on the ground, mostly in short grassy fields.

Table 1. Biometrics of African Pipit *Anthus cinnamomeus eximius* and Long-billed Pipit *Anthus similis arabicus* from two birds of each species caught 31 May and 1 June 2016, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, compared to biometrics in Shirihai & Svensson (2018) taken from museum specimens. Note: Primary measurements are distance in mm from the longest primary. Primaries are number from the outermost inwards. In both species the outermost primary, P1, is minute.

	<i>A. c. eximius</i>	<i>A. c. eximius</i>	<i>A. c. eximius</i>	<i>A. similis arabicus</i>	<i>A. similis arabicus</i>
Source	JB, field measurement	JB, field measurement	Shirihai & Svensson (2018)	JB, field measurement	Shirihai & Svensson (2018)
Year	May 2016	June 2016	-	May / June 2016	-
Number	1	1	10	2	2
Weight (g)	23.0	23.2	-	26.5 – 27.8	-
Wing (mm)	85	91	82.5 - 89	93 - 97	90 - 98
Tail (mm)	65	67	59 - 66	78 - 80	70 - 82
Tarsus (mm)	25.4	26.1	23.9 – 26.6	22.8 – 25.0	
Bill to skull	18.6	17.5	15.8 – 17.4 (bill to feather)	21.0 - 22.5	18.3 – 22.0 (bill to feather)
Bill depth (mm)	4.1	4.5	4.2 – 4.9	4.6 – 5.0	4.2 – 5.2
Hind claw (mm)	10.0	10.6	10.0 – 11.5	8.1 – 8.6	7.3 – 10.9
P2	1	1	0 - 2	-	= longest, but often 0.5 – 1.5
P3	longest	longest	longest	-	= longest, but often 0.5 – 1.5
P4	longest	longest	longest	-	= longest, but often 0.5 – 1.5
P5	2	2	0.5 - 3	-	= longest, but often 0.5 – 1.5
P6	11	8	8 - 12	-	2.5 - 5
P7	17	14	13 - 17	-	10 - 14
Emarginations	P3-5	P3-5	P3-5(6)	P3-5(6)	P3-5

Breeding

Little information is available on breeding biology in Arabia. Birds have been recorded singing or in pairs from January to September. Nest-building has been reported in April and May, with adults holding territories and showing agitated behaviour from January to as late as July and August. All this suggests a long breeding season, which points to multiple broods. Young juveniles have been seen with adults at the end of May and early June but there are no dates for eggs or young in the nest (Jennings 2010). Our records add significantly to these data, all of which came from records of birds in Yemen. The birds carrying food at Tanoumah on 26 May 2018 (Plate 7) continually flew off in the same direction and returned to feed in the same field, indicating they had young in the nest. Unfortunately, despite extensive searching we could not locate the nest site. The family party with a juvenile at Tanoumah on 7-8 July 2016 (Plates 8-10) extends the breeding season mentioned by Jennings by one month.

Calls

Very little is known about the call of African Pipit of the subspecies *A. c. eximius* and the sonogram (Plate 12), made from a very poor recording, is the only known documented call.



Plate 8. Juvenile African Pipit *Anthus cinnamomeus eximius*, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 7 July 2016. © Jem Babbington



Plate 9. Juvenile African Pipit *Anthus cinnamomeus eximius*, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 8 July 2016. © Jem Babbington



Plate 10. Adult (behind) & Juvenile (back on) African Pipit *Anthus cinnamomeus eximius*, Al Mehfar Park, Tanoumah, Asir Province, Saudi Arabia, 8 July 2016. The adult had just fed the juvenile. © Phil Roberts



Plate 11. African Pipit *Anthus cinnamomeus eximius*, near Al Namas, Asir Province, Saudi Arabia, 15 June 2018. © Jem Babbington

The bird was recorded calling from a tall acacia, where it had flown when accidentally flushed from a grass field (Plate 11). Based on notes from Kenya and Tanzania it is not clear whether a difference exists between those birds and Arabian ones (Shirihai & Svensson 2018).

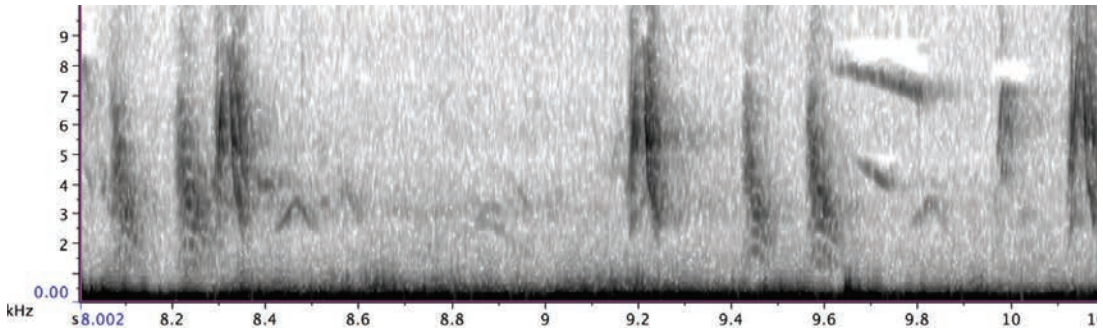


Plate 12. Sonogram of African Pipit *Anthus cinnamomeus eximius*, near Al Namas, Asir Province, Saudi Arabia, 15 June 2018. © Magnus Robb

ACKNOWLEDGEMENTS

JB would like to thank Chris Boland and Abdullah Alsuhaibany for their help while ringing the species, Hadoram Shirihai for sharing his knowledge of the key identification points and Magnus Robb for producing the sonogram of the call.

LITERATURE CITED

- Clancey, P.A. 1986. Subspeciation in the pipit *Anthus cinnamomeus* Rüppell of the Afrotropics. *Le Gerfaut* 76: 187-211.
- Felemban, H.M. 1986. *Studies on the Ornithology of South Western Saudi Arabia*. Unpublished PhD Thesis, University of East Anglia, UK.
- Jennings, M.C. 2010. Atlas of the Breeding Birds of Arabia. *Fauna of Arabia* 25: 1-751.
- Shirihai, H & L Svensson. 2018. *Handbook of Western Palearctic Birds: Passerines Volume 1 – Larks to Phylloscopus Warblers*. Bloomsbury, London.

Jem Babbington, c/o Saudi Aramco, PO Box 13007, Dhahran 31311, Saudi Arabia. jembabbington@btinternet.com

Philip Roberts, c/o Saudi Aramco, PO Box 11507, Dhahran 31311, Saudi Arabia. phil0562000@yahoo.co.uk

The first records of Paddyfield Pipit *Anthus rufulus* for the United Arab Emirates and the Arabian peninsula with notes on their identification

OSCAR CAMPBELL, MARK SMILES & SIMON LLOYD

Summary: Two recent records of Paddyfield Pipit *Anthus rufulus* in the United Arab Emirates, from November 2017 and October 2018, are the first of the species for the UAE and the Arabian peninsula. The field characters that enabled identification of the species in an Arabian context (and subsequent acceptance of both records by the Emirates Bird Records Committee) are outlined in the hope of raising awareness of this species amongst birdwatchers in the region.

INTRODUCTION

We document two records of Paddyfield Pipit *Anthus rufulus* in the UAE. The first bird was discovered on 10 November 2017 at Hamraniyah (25°38'19 N, 55°56'19 E), an area of turf farms and watered fields in Ras al-Khaimah emirate, northern UAE. Apart from small numbers of Tawny Pipit *A. campestris* this site is not frequented by large pipits, so the bird was immediately of interest, in particular on account of its distinctive call. Its appearance did not quite match any of the more likely candidates but, during rather brief views, only low quality sound recordings were obtained. Identification was not confirmed until the bird was relocated at the same spot on 24 November, observed closely and fully documented with sound recordings and photographs (Campbell 2017a,b, Smiles 2017, Lloyd 2019; Plates 1-6). It was last seen on 26 November. The bird was aged as a first



Plate 1. Paddyfield Pipit *Anthus rufulus*, Hamraniyah, UAE, 24 November 2017. This image shows the rather erect stance and short tail. The dark loreal markings are relatively obvious eliminating both Richard's *A. richardi* and Blyth's *A. godlewskii* Pipits. The breast streaking is rather light (but much more extensive than on the majority of Tawny Pipits *A. campestris*). There is an obvious creamy suffusion to supercilium and breast, the latter clearly contrasting with the paler belly. © Oscar Campbell



Plate 2. Paddyfield Pipit *Anthus rufulus*, Hamraniyah, UAE, 24 November 2017. Note the very diffusely streaked mantle and scapulars, with no real hint of any darker tramlines. The cooler, greyish cast evident across much of the mantle and scapulars is typical of Paddyfield Pipit from the north western parts of its range. The median coverts, all adult-type feathers, are obviously narrowly and diffusely dark-centered, quite different from the typical pattern of Blyth's *A. godlewskii* and Tawny *A. campestris* Pipits. The tail is rather short for a large pipit and the bill appears rather blunt to the tip. © Oscar Campbell



Plate 3. (left). Paddyfield Pipit *Anthus rufulus*, Hamranyah, UAE, 24 November 2017. The upperparts look particularly greyish in tone and poorly marked in this image, with much warmer, contrasting fringes to the adult-type coverts and tertials. The bill is rather too strong right to the tip for Blyth's Pipit *A. godlewskii* and the rather tall, leggy stance is not typical of that species. © Oscar Campbell

Plate 4. (right). Paddyfield Pipit *Anthus rufulus*, Hamranyah, UAE, 24 November 2017. The loral line is evident and the hind claw, whilst clearly long and markedly curved, is much too short for Richard's Pipit *A. richardi*. © Oscar Campbell



Plate 5. (left). Paddyfield Pipit *Anthus rufulus*, Hamranyah, UAE, 24 November 2017. In this image, the bird appears rather more hunched and compact, with a particularly poorly marked saddle. However, it is still obviously a large pipit with a fairly strong, blunt bill, although it is much less substantial and deep-based than would be typical of Richard's Pipit *A. richardi*. The dusky loral line shows well here. © Tommy Pedersen

Plate 6. (right). Paddyfield Pipit *Anthus rufulus*, Hamranyah, UAE, 24 November 2017. This image illustrates the contrast between the fresher, recently renewed outer three primaries, which are blacker than the rest of the remiges. The primary coverts are noticeably worn and faded. Note also the extensive white on the fifth tail feather (counting outwards) and the fact that the outermost tail feathers are re-growing. © Oscar Campbell



Plate 7. (left). Paddyfield Pipit *Anthus rufulus*, Wamm Farm, UAE, 12 October 2018. In this image, the bird looks quite greyish tinged on the upperside and combines an upright, rather long-necked posture with a shortish tail and fairly strong bill. The breast is particularly poorly marked compared to Richard's *A. richardi* or Blyth's *A. godlewskii* Pipits although some Tawny Pipits *A. campestris* show breast streaking that is comparable to this. The lores appear very weakly marked in this image, but the dark bar was generally more apparent in the field. © Huw Roberts

Plate 8. (right). Paddyfield Pipit *Anthus rufulus*, Wamm Farm, UAE, 12 October 2018. Here the bill is rather strong looking and blunt to the tip, with a rather curved culmen. This is quite different to the rather narrow, spiky-looking bill of Blyth's Pipit *A. godlewskii*. The breast markings appear rather stronger here than in Plate 6 and are beyond what is typical in most Tawny Pipits *A. campestris* that have completed post-juvenile moult. © Huw Roberts

calendar year on account of a single retained, white-tipped innermost median covert, retained worn juvenile outer primary coverts and retained juvenile inner primaries and secondaries. The outer tail feathers were still re-growing (Plate 6). The remainder of the plumage was very fresh.

The second bird was discovered on 12 October 2018 at Wamm Farms (25°36'05 N, 56°14'35 E), a dairy farm with extensive, watered fodder fields in Fujairah Emirate in the far north-east of the UAE. This site supports many wintering Tawny and Richard's *A. richardi* Pipits, with Long-billed Pipit *A. similis* regular in small numbers and Blyth's Pipit *A. godlewskii* occasional. The first three of these species were all present and observed closely on the same day, and the Paddyfield Pipit was seen alongside Tawny Pipits several times. The Paddyfield Pipit was first located calling in flight and eventually allowed prolonged close views; sound recordings and photographs were obtained (Smiles 2018; Plates 7-9). It looked immediately distinctive in the field and, with the recent experience of the Hamraniyah bird, identification was fairly straightforward and made whilst observing the bird. It was not seen subsequently. The Wamm bird was rather worn compared to the Hamraniyah individual and there were no obvious moult contrasts to indicate a definitive age.

IDENTIFICATION

Whilst being of a relatively distinctive appearance in the field (given thorough experience of congeners), the identification of Paddyfield Pipit in a vagrant context is extremely

complex, due to the very subtle nature of its field characters, many of which overlap to at least some extent with at least one congener. For that reason, identification must be based on thorough assessment of a wide range of characters, no single one of which is conclusive on its own. Furthermore, most modern field guides, including those for the Indian sub-continent where the species occurs alongside the same congeners as in Arabia, give the field separation of large pipits rather superficial treatment. Exceptions are Alström & Mild (2003) and Shirihai & Svensson (2018), both of which give comparative coverage and were invaluable in confirming the identification of the UAE individuals.

The following characters, in combination, allowed the elimination of Richard's, Blyth's, Tawny and Long-billed Pipits. Some of the structural and plumage features discussed below that are evident in Plates 1-9 are discussed further in the plate captions.

Call The rather snappy, clean *chip-chip* call first drew attention to both birds (Figures 1 and 2). These calls were given almost invariably in flight and heard repeatedly, over several hours of observation, from both individuals. They sounded distinctively different to typical calls of Richard's, Tawny and Long-billed Pipits, but closer to some calls of Blyth's Pipit. Separation by ear from the latter proved extremely difficult, and

was perhaps not possible with any degree of confidence, although Robb (2019) has recently shown that separation by sonogram is possible, based on both the structure of the call and the maximum frequency of the fundamental. In Blyth's Pipit, a typical 'chip' call has a fundamental that, when measured at 3 kHz, has a very short time-span and so forms a rather vertical, almost 'tentpole'-like structure below the second harmonic. This is quite different to Paddyfield Pipit, where the span of the fundamental at 3 kHz is three times longer, so the fundamental itself effectively forms a 'tent' with no 'pole'. Furthermore, the maximum frequency of the fundamental averages noticeably greater in Paddyfield Pipit than in Blyth's Pipit, with no overlap (Table 1). Recordings of the Hamraniyah bird were of sufficient quality to allow analysis of both features and both strongly supported the identification as Paddyfield Pipit. Tawny Pipit also has a rather similar sounding 'chip' call (K. Mild in litt; OC, MS, SL pers obs), albeit rarely given by itself, without being part of a rapid burst of similar calls, and sonogram analysis reveals it to be distinctively different in multiple parameters. Both Blyth's and Tawny Pipits commonly use more than one call-type so the lack of different calls other than the consistent *chip* notes over a prolonged period of observation is strongly suggestive of Paddyfield Pipit. Additionally, the Hamraniyah bird, having remained silent whilst foraging at close range for some time,



Plate 9. Paddyfield Pipit *Anthus rufulus*, Wamm Farm, UAE, 12 October 2018. This image depicts a rather warmer toned upperside than the bird at Hamraniyah, but note the diffuse markings and lack of tramlines. The bill appears rather strong throughout its length with a curved culmen (not as straight and spikey as is typical of Blyth's Pipit *A. godlewskii*) but perhaps not as deep-based and heavy as would be expected on African Pipit *A. cinnamomeus* and certainly quite different to the majority of Richard's Pipits *A. richardi*. © Mark Smiles

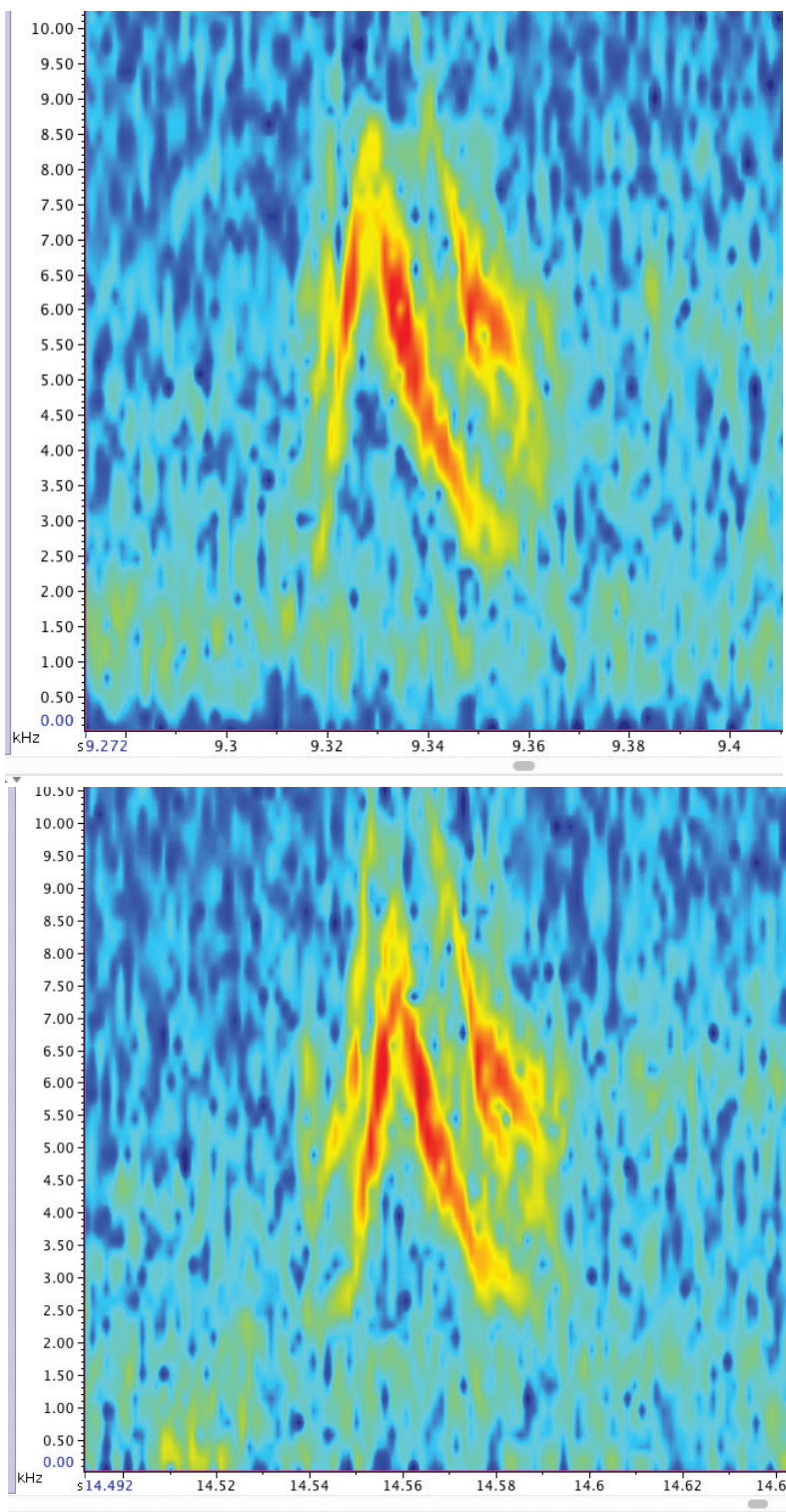


Figure 1. Two calls taken from sonogram of Paddyfield Pipit *Anthus rufulus*, Hamraniyah, United Arab Emirates, 24 November 2017. Sonogram obtained from Lloyd (2019).

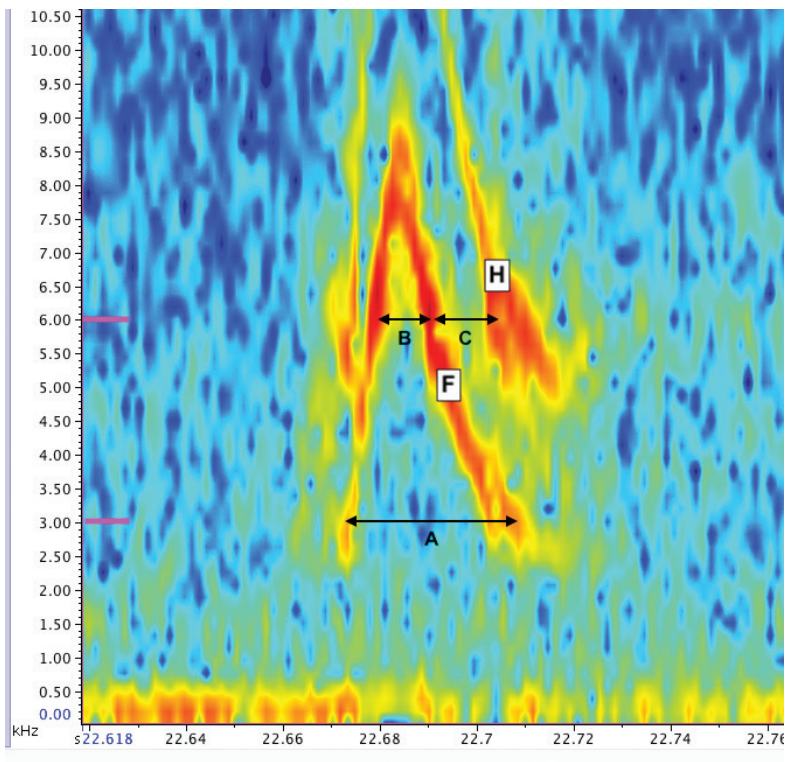


Figure 2. Call of Paddyfield Pipit *Anthus rufulus*, Hamranyiah, United Arab Emirates, 24 November 2017. The call parameters utilized in Table I have been annotated. In addition, the fundamental is labelled F and the first harmonic H. Sonogram obtained from Lloyd (2019).

Table I. Comparison of call parameters of Paddyfield Pipit *Anthus rufulus* recorded at Hamranyiah, UAE, 24 November 2017, with other Paddyfield, African *A. cinnamomeus* and Blyth's Pipit *A. godlewskii* calls. The parameters A, B and C are defined in Fig. 2. The recording of the UAE Paddyfield Pipit analysed here is available online (Lloyd 2019). Other data adapted from Robb (2019) or in, the case of African Pipit, data from parameters measured by Magnus Robb based on the sonogram presented in Babbington & Roberts (2020). ms = milliseconds.

	Individuals and number of calls	Total duration (ms)	Maximum frequency of fundamental (Hz)	A (ms)	B (ms)	C (ms)
Paddyfield Pipit (Hamranyiah bird)	1 (16)	56 (46-70)	8007 (7245-8697)	34 (30-37)	10 (9-12)	15 (12-17)
Paddyfield Pipit	11 (31)	67 (57-86)	7680 (6407-8415)	36 (25-45)	13 (6-18)	18 (12-24)
African Pipit (African subspecies)	11 (31)	80 (57-114)	8699 (6848-10906)	45 (28-58)	23 (15-33)	14 (8-21)
African Pipit (Arabian subspecies <i>eximius</i>)	1 (3)	75 (70-84)	8933 (8817-9011)	46 (45-49)	25 (23-26)	17 (16-18)
Blyth's Pipit	9 (27)	58 (37-77)	4620 (3239-5458)	12 (2-21)	-	-

was induced to respond vigorously to playback of a Paddyfield Pipit recording; the bird called back strongly and made a short flight, before continuing to call after landing again. Playback to the Wamm bird elicited an initial short burst of calls in reply, but then had no

effect. In summary, whilst call is of great importance in the identification of Paddyfield Pipit, and distinctions within sonograms are probably diagnostic, these differences are subtle to the ear and, in the field, call is best used in conjunction with structural and plumage characters.

Structure Although clearly a 'large' pipit, with a rather heavy belly in flight and substantial bill, neither bird remotely gave the powerful structural impression typical of Richard's Pipit or Long-billed Pipit. The tail was decidedly short and the bill, which was of medium length and somewhat deep-based and blunt to the tip, was quite different in proportions to the almost thrush-like bill that is usually highly distinctive in Richard's and Long-billed Pipits. Tawny Pipit and, especially, Blyth's Pipit are structurally closer to Paddyfield Pipit, although the rather short tail and rather long hind claw exhibited by the UAE birds pointed away from the former and the blunt-tipped bill with rather curved (as opposed to straight) culmen is not typical of the latter.

Plumage In combination, plumage features on both birds could safely eliminate all four congeners. With rather saturated, uniformly warm underparts and rather poorly marked upperparts, Long-billed Pipit is quite different from all the others and not considered further here. Richard's and Blyth's Pipits are very similar to each other in many plumage features. Characters (exhibited by both birds) that were incorrect for either Richard's or Blyth's Pipits were the rather poorly and diffusely marked mantle (lacking strong, consistent dark 'tramlines'), the rather lightly and narrowly streaked breast and the clear dark mark on the lores (particularly strong and well-defined on the Hamraniyah bird). The loreal mark was rather weak and poorly defined on the Wamm bird, but still present. In addition, the renewed adult median coverts of both birds, which had rather narrow, triangular dark centres with diffuse edges, eliminate Blyth's Pipit. The Hamraniyah bird (and, to a rather lesser extent, the Wamm individual, perhaps due to the latter's more worn plumage) exhibited a variably obvious, pale, grey-tinged wash to the poorly streaked mantle, scapulars and nape. Such coloration is not typical of Blyth's or Richard's Pipits, nor the nominate *rufulus* subspecies of Paddyfield Pipit. However, it is a characteristic of the subspecies *A. r. waitei*, the form breeding in the north-west Indian sub-continent and a summer migrant to eastern and central Afghanistan (Rasmussen & Anderton 2012, Tyler 2019), although *waitei* is not universally recognized (Alström & Mild 2003). Finally, the tail pattern of the Hamraniyah bird, with rather extensive and obvious white on the fifth tail feather (counting outwards) is quite atypical of Blyth's Pipit. Tawny Pipit can also be eliminated on the basis of plumage features exhibited by both individuals. Of these, the most important are the median coverts, being rather Richard's Pipit-like (as described above) on Paddyfield Pipit whereas on Tawny Pipit this tract is rather more solidly dark with sharper, more contrasting pale fringes, forming a well-defined bar on the folded wing. In addition, the light and sparse but nevertheless obvious breast streaking, the rather buffy-cream wash to the breast and (weakly) on the flanks, contrasting with the white belly, and the relatively strongly marked mantle (especially on the Wamm bird) are all features that would be individually very unusual on Tawny Pipit and, in combination, exceptional.

Behaviour Whilst doubtless of limited use in a vagrant context, behaviour was quite distinctive and is described here as a further potential clue. Both Paddyfield Pipits were very tame and approachable, and both frequented short or very short grass and even bare ground, where they were easy to view. No other congeners observed in the UAE are consistently as approachable (although some individuals of Blyth's Pipit exhibit behaviour that is almost as confiding). Richard's Pipit especially is invariably wary, flying at long range and, where available, utilizing longer swards into which it often disappears. Similar distinctions between Paddyfield and Richard's Pipits are evident in Asia (K. Mild in litt).



Plate 10 (left). African Pipit *Anthus cinnamomeus eximius*, Tanoumah, Asir Province, Saudi Arabia, 9 July 2016. In this image, the bill looks noticeably strong and somewhat similar to Richard's Pipit *A. richardi*. Note also the obvious and very pale supercilium and the rather strong, well-defined dark centres to the median coverts. However, this bird is in rather worn plumage and it is uncertain how it would differ in fresh autumn plumage. The quite strong dark loreal mark aids separation from Richard's Pipit but likely falls within the variation exhibited by Paddyfield Pipit *A. rufulus*. Subspecific assignment is based on location. © Jem Babbington

Plate 11 (right). African Pipit *Anthus cinnamomeus annae*, Lake Ziway, Ethiopia, 30 March 2019. This is a less worn bird than that featured in Plate 10. However, the strong, broad supercilium is equally well marked, as the extensively dark, rather solid centres to the median coverts. The lores are obviously blackish and, interestingly, the bill appears weaker compared to the *eximius* featured in Plate 10. The latter two features are not artefacts of this single image; both are evident in other images of the same individual. Subspecific assignment is based on location. © Oscar Campbell

Despite being rather short, the tail of both individuals was rather habitually dipped and they regularly adopted a rather 'proud', Richard's Pipit-like stance, standing erect and motionless with a somewhat extended neck for long periods. Such a stance is not typical of Blyth's or Tawny Pipits, at least in the UAE.

THE PROBLEM OF AFRICAN PIPIT *ANTHUS CINNAMOMEUS*

This common and widespread African species has an isolated outpost in the mountains of south west Arabia where it is a very local and scarce resident breeder, with 50 pairs estimated for Saudi Arabia and 500 for Yemen (Jennings 2010). It is regarded as generally sedentary, most frequent at 2000-3000 m elevation with a single Yemeni specimen taken at 630 m in March the only evidence of possible altitudinal migration. The Arabian subspecies *A. c. eximius* (Clancey 1986) is particularly poorly studied, although good quality photographs have lately been obtained and two birds have been ringed and measured as part of an on-going study at a recently discovered site at Tanoumah, Saudi Arabia (J. Babbington in litt, Babbington & Roberts 2020; see also Babbington 2016, 2019, Svensson & Shirihai 2018; Plate 10). However, all images so far available were taken in spring and summer and we are uncertain how a freshly moulted *eximius* African Pipit in autumn would appear. Overall, African Pipit is extremely similar to Paddyfield in many respects, both with regard to plumage and calls, and the latter are separable only with an in-depth analysis of sonograms (Robb 2019; see below). Shirihai & Svensson (2018) imply that (usually) a very weak loreal patch, rather strong breast streaking and rather strong supercilium, whiter to the rear, are features of African Pipit. Such features, whilst open to interpretation to some extent, are somewhat at odds with the appearance of either of the Paddyfield Pipits observed in the UAE.

Observations by OC in Ethiopia indicate that the African Pipits resident there (Plate 11) appear very close to Richard's Pipit in structure, being strong billed, long-tailed and easily

dwarfing adjacent Western Yellow Wagtails *Motacilla flava*. This was certainly not the impression given by either individual of Paddyfield Pipit in the UAE. However, Ethiopian birds are of the wide-ranging subspecies *A. c. annae* which average slightly larger on most biometrics than *eximius* (Shirihai & Svensson 2018). Multiple images of African Pipits from Saudi Arabia, made available by Jem Babbington (see references cited above) depict an apparently rather large, strong-billed bird with an obviously long, substantial tail, most closely resembling Richard's Pipit. Many images examined (although not all) illustrate birds with rather extensively and well-contrasted dark centres to the median coverts, although this impression may be due to wear rather than represent a genuine difference between African and Paddyfield Pipits.

We have been unable to source recordings of the call of *eximius*, which appear to be currently unavailable in the public domain. However, when compared to at least some the calls available online of African Pipits *A. c. annae* (subspecific assignment based on location) from Ethiopia (for example, Boesman, 2015), both the Hamraniyah and Wamm birds sound marginally thinner and higher-pitched, with a slightly drier, cheerier call approximating to *chip*, compared to the slightly coarser, lower *chet* of African Pipit. Although it is unlikely that these distinctions would be evident in the field, sonogram analysis does reveal some quantifiable distinctions between Paddyfield and African Pipits. Robb (2019) compared a sample of Paddyfield Pipit calls from 11 individuals to those of African Pipit (11 individuals, although calls of *eximius* were not included) and demonstrated two important distinctions. One measurement involves the time-span of the fundamental at 3 kHz (measurement A; Fig. 2), as discussed when compared against Blyth's Pipit, above. The second involves the time-span of the fundamental at 6 kHz (measurement B) compared to the time-span between the downslope of the fundamental and the downslope of the second harmonic (measurement C). Table 1 illustrates how the Hamraniyah Paddyfield Pipit compared against data presented by Robb (2019). From these data, it can be seen that, whilst there is almost complete overlap in measurement A, the UAE bird much more closely matched the mean value for Paddyfield Pipit than for African Pipit. Furthermore, the analysis at 6 kHz is even more conclusive – in Paddyfield Pipit, measurement C is usually considerably longer than B; the UAE bird also shows this. In African Pipit, measurement B is always longer than C. Subspecies *eximius* of African Pipit was not included in the sample of calls analysed by Robb (2019). However, analysis of the sonogram presented by Babbington & Roberts (2020) confirms that the key parameters of *eximius* are much closer to those of mainland African subspecies than they are to Paddyfield Pipit (M. Robb in litt). These data are presented in Table 1 and strongly support the contention that the Hamraniyah bird was a Paddyfield Pipit and not *eximius*.

DISCUSSION

Both records discussed here have been accepted by the Emirates Bird Records Committee, with Paddyfield Pipit being added to the UAE List in October 2018. A suite of features in combination, as discussed above, served to eliminate all the regularly occurring large pipits in the UAE. With regard to African Pipit, EBRC considered the apparent (albeit minor) distinctions in both plumage and voice discussed in the preceding section, its status and non-migratory nature in Arabia and the fact that other southern Arabian breeding species are exceptional as vagrants to the Arabian Gulf region as sufficient evidence to eliminate that species. In contrast, vagrancy to the UAE of a number of species with breeding ranges that at least partially overlap with Paddyfield Pipit in southern Asia and the north-west Indian subcontinent is long-established (Pedersen *et al* 2020).

Despite being both widespread and abundant across cultivated and open habitats of southern Asia, reaching Timor to the south east, Paddyfield Pipit is apparently very

rare to the west of its known breeding range. The current records constitute the first from the Arabian Peninsula and, as far as we can ascertain, the most south-westerly to date. Vagrancy to the north or east of its known range is apparently unreported (Brazil 2009, Tyler 2019) with no records to date from well-watched Hong Kong (G. Talbot in litt). However, the species is a breeding migrant to the north-western part of its range (Afghanistan; Tyler 2019) and it is conceivable that birds departing from there in autumn on an incorrect bearing could reach eastern Arabia. As noted above, birds from such regions are rather paler and greyer (and correspond to *A. r. waitei*, if this is a valid race) than those from more humid parts of the species range and broadly match the appearance of those recorded in the UAE. Setting aside a very recent report from the UK, of a bird whose provenance is still under discussion, we have been able to source records of vagrant Paddyfield Pipit only from Iran (two records, attributed to *A. r. waitei*; van den Berg & Haas 2014, Tyler 2019), so vagrancy to the south-west of its breeding range is not without precedent. Now that the 'credibility barrier' has been broken and the species is firmly on the radar of local birdwatchers, it remains to be seen if further records will follow. Indeed, Ashy Drongo *Dicrurus leucophaeus*, a species with a not dissimilar global range to Paddyfield Pipit (although much more migratory), and first recorded as vagrant west of its main range as recently as 2006, has now been recorded on over 20 occasions in eastern Arabia (including at least 10 in the UAE), Iran and once as far west as Israel (Khil *et al* 2019).

ACKNOWLEDGEMENTS

We would like to thank David Poulton, Tommy Pedersen, Jacky Judas, Huw Roberts, Abraham Arias and Richard Stansfield who observed either bird in the field with us and provided helpful comments and/or photographs. Magnus Robb kindly provided data from Robb (2019), analysed the *eximius* sonogram and critically reviewed and commented on aspects of this paper. Jem Babbington kindly provided many images of African Pipit taken in Saudi Arabia and made a pre-publication copy of Babbington & Roberts (2020) available. Dave Bakewell, Faansie Peacock and, especially, Krister Mild provided thorough and very detailed comments on the identification of the November 2017 bird which were extremely helpful in the initial analysis. Mike Jennings provided a copy of Clancey (1986) and Graham Talbot promptly answered a query with regard to the status of Paddyfield Pipit in Hong Kong. Yoav Perlman made a number of helpful comments that improved this manuscript and Roy Slaterus provided additional assistance. Sonograms were prepared using Raven Lite from Cornell University.

LITERATURE CITED

- Alström, P & K Mild. 2003. *Pipits & Wagtails of Europe, Asia and North America*. Christopher Helm, London.
- Babbington, J. 2016. Birding the Talea'a valley – Abha. <https://www.birdsofsaudi Arabia.com/2016/08/birding-taleaa-valley-abha.html>. [Accessed 29 May 2019]
- Babbington, J. 2019. African Pipit – Tanoumah. <https://www.birdsofsaudi Arabia.com/2019/04/african-pipit-tanoumah.html>. [Accessed 29 May 2019]
- Babbington, J & P Roberts. 2020. Additional data on African Pipit *Anthus cinnamomeus eximius* in Saudi Arabia. *Sandgrouse* 42: 92-99.
- Boesman, P. 2015. Xeno-canto sound recording XC299957. www.xeno-canto.org/299957. [Accessed 29 May 2019]
- Brazil, M. 2009. *A Field Guide to the Birds of East Asia*. Christopher Helm, London.
- Campbell, O. 2017a. Xeno-canto sound recording XC395095. www.xeno-canto.org/395095. [Accessed 29 May 2019]
- Campbell, O. 2017b. Xeno-canto sound recording XC395097. www.xeno-canto.org/395097. [Accessed 29 May 2019]
- Clancey, PA. 1986. Subspeciation in the pipit *Anthus cinnamomeus* Rüppell of the Afrotropics. *Gerfaut* 76: 187–211.
- Jennings, M. 2010. Atlas of the Breeding Birds of Arabia. *Fauna of Arabia* 25: 680–682.
- Khil, L, M Ullman & Ł Ławick. 2019. Ashy Drongos in Iran in 2014–2018 and status in the WP. *Dutch Birding* 41: 23–28.
- Lloyd, S. 2019. Xeno-canto sound recording XC507869. <https://www.xeno-canto.org/507869>. [Accessed 4 January 2020]

- Pedersen T, SJ Aspinall, OJ Campbell & MC Smiles (compilers). 2020. EBRC Annotated Checklist of the birds of the United Arab Emirates. <http://www.uaebirding.com/uaechecklist.html>. [Accessed 4 January 2020]
- Smiles, M. 2017. Xeno-canto sound recording XC392912. www.xeno-canto.org/392912. [Accessed 29 May 2019]
- Smiles, M. 2018. Xeno-canto sound recording XC439002. www.xeno-canto.org/439002. [Accessed 29 May 2019]
- Rasmussen, P & J Anderton. 2012. *Birds of South Asia. The Ripley Guide. Vols. 1 and 2*. National Museum of Natural History, Smithsonian Institution, Michigan State University and Lynx Edicions, Washington DC, Michigan and Barcelona.
- Robb, M. 2019. Call identification of Europe's first Paddyfield Pipit. <https://soundapproach.co.uk/call-identification-of-europes-first-paddyfield-pipit>. [Accessed 15 December 2019]
- Svensson, L & H Shirihai 2018. *Handbook of Western Palearctic Birds. Volume 1 Passerines: Larks to Warblers*. Bloomsbury, UK.
- Tyler, S. 2019. Paddyfield Pipit (*Anthus rufulus*). In: del Hoyo, J, A Elliott, J Sargatal, DA Christie & E de Juana (eds.). *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona. www.hbw.com/node/57769. [Retrieved 21 May 2019]
- van den Berg, AB & M Haas. 2014. WP reports. *Dutch Birding* 36: 195–208.
- Oscar Campbell & Simon Lloyd, c/o British School Al-Khubairat, PO Box 4001, Abu Dhabi, UAE. ojcampbell25@yahoo.com, simonpeterlloyd@googlemail.com
- Mark Smiles, 10a Peel Close, Drayton Bassett, Tamworth, Staffordshire, England. marksmiles63@gmail.com

First successful breeding of Greater Flamingo *Phoenicopterus roseus* and first attempted breeding of Lesser Flamingo *Phoeniconaias minor* in Saudi Arabia

PHILIP ROBERTS & JEM BABBINGTON

Summary: We describe the first instance of successful breeding by Greater Flamingo in Saudi Arabia, with a single pair producing a chick in August 2016. We also describe the first attempted breeding of Lesser Flamingo in Saudi Arabia, where 10 nests were found in December 2018.

Greater Flamingo is a common passage migrant and winter visitor to all coasts of Saudi Arabia and although early-season breeding behaviour has been recorded near Jeddah and at Sabkhat al Fasl, where birds made up to 60 mud nests between 1991 and 2002 (Jennings 2010), successful breeding has not been recorded prior to that described in this paper. Lesser Flamingo is a vagrant to the Kingdom, and no previous breeding attempts have been recorded. The species is an erratic visitor to Yemen where nest mounds were found near Aden in August 1961, March 1996, October 2008 and spring 2009 (Jennings 2010). The records described in the paper are the first indications of attempted breeding of Lesser Flamingo in Saudi Arabia.

Greater Flamingo *Phoenicopterus roseus*

Greater Flamingo is the world's most widespread flamingo species, occurring across Africa, southern Europe, the Middle East (including Yemen, UAE, Kuwait and Iran) and into southern and southwestern Asia. Northern populations migrate to warmer regions in winter, and the species often disperses widely. It is a common passage migrant and winter visitor to all coasts of the Kingdom of Saudi Arabia but many birds now stay all summer, particularly immature birds. Breeding records have occurred nearby in Kuwait (irregular breeder on Bubiyan), Abu Dhabi and Yemen on the Red Sea coast. Although most Saudi records are from the coast many have occurred inland, particularly immatures in the Riyadh region where they are regarded as uncommon and irregular visitors (Stagg 1994). These inland records are probably birds moving from the Arabian Gulf to the Red Sea or vice versa. The largest counts have occurred at Sabkhat Al Fasl, where up to 10 000 birds have been counted in winter from 2015 onwards. Sabkhas, such as Sabkhat Al Fasl, are normally located near the coast and are highly saline shallow lakes and lagoons.

On 12 August 2016, the authors found a pair of Greater Flamingos with two recently hatched young, too small to fly, on a very large flooded sabkha area at Sabkhat Al Fasl, near Jubail (Plate 1). This constitutes the first evidence of successful breeding of the species



Plate 1. Greater Flamingo *Phoenicopterus roseus* with young chick, Sabkhat Al Fasl, Jubail, Eastern Province, Saudi Arabia, 12 August 2016. © Jem Babbington

in the Kingdom. Prior to this record there had been some early-season breeding behavior noted near Jeddah and at Sabkhat Al Fasl, where birds made up to 60 mud nests between 1991 and 2002 (Jennings 2010).

Lesser Flamingo *Phoeniconaias minor*

Breeding of Lesser Flamingo is very irregular and not attempted every year and is highly dependent on suitable conditions on the mudflats favored for breeding. These are usually far out from shore in large lakes or pans. The species is mainly associated with the rift valley lakes of East Africa where huge congregations occur in places such as Lake Nakuru in Kenya. It is the smallest of the six species of flamingo, with a height of 80-90 cm. It is also the most numerous flamingo, with an estimated global population of approximately three million birds. It is highly dispersive and breeds in a number of locations in East Africa, where around 75% of the global population breeds on Lake Natron in Tanzania, in western and southern Africa and in India and Pakistan. Birds wander widely after breeding, often in an eruptive manner, as can be seen from a record of 9160 together in Aden, Yemen in March 1996. The species is regular in Yemen where nest-building, but not egg-laying, has been observed (Porter & Aspinall 2010). Lesser Flamingo is a vagrant to Saudi Arabia, with the only records as follows:

- One Jizan Harbour, Jizan Province, 24 June 1984.
- A single immature was seen with an immature Greater Flamingo on the Riyadh watercourse, Riyadh Region, 10 June 1988 (Stagg 1994), regarded as an escape by some (Jennings 2010).
- 50 at Jizan Bay, Jizan Province, December 1999 (Kirschel 1999).
- 2 adults Jeddah South Corniche, January 2000
- 10 birds flew south just north of Al Birk, May 2002
- 20 at an inland pool, 1 km north on the Yemen boarder, south of Jizan 6 February 2015
- 108 adults and immatures, on the coast south of Jizan, 6 July 2018
- 420 adults on the coast south of Jizan (same site as above), 14 December 2018



Plate 2. Lesser Flamingo *Phoeniconaias minor*, coast south of Jizan, Jizan Province, Saudi Arabia, 6 July 2018. © Phil Roberts.



Plate 3. Lesser Flamingo *Phoeniconaias minor* nests, coast south of Jizan, Jizan Province, Saudi Arabia, 6 July 2018. © Jem Babbington.



Plate 4. Lesser Flamingos *Phoeniconaias minor*, coast south of Jizan, Jizan Province, Saudi Arabia, 14 December 2018. One bird is sitting on a nest while others are nest-building. © Phil Roberts.

Records have occurred in Yemen to the south of Saudi Arabia, where the species occurs erratically and has built nesting mounds. Nest mounds were found near Aden in August 1961, March 1996, October 2008 and spring 2009 (Jennings 2010). The authors believe that the exceptional numbers seen in Saudi Arabia in July and December 2018 may be birds that were forced north from Yemen into Saudi Arabia by the ongoing conflict in Yemen.

On 6 July 2018, at the location mentioned above, the authors found four nests of a flamingo species located (Plate 3). The 108 Lesser Flamingos present at the time were with at least 500 Greater Flamingos and as the nests of the two species are very similar it was not possible to identify the species that built them. As the only previous breeding record for Saudi Arabia was the Greater Flamingo record mentioned above, it was suspected

this was likely to be the species involved. Certainly, a breeding attempt had taken place irrespective of the species. PR returned to the same site on 14 December 2018 and located 420 Lesser Flamingos including birds sitting on nests and others building nests nearby (Plate 4). In total, ten nests were located during this visit making it clear the original four nests were also those of Lesser Flamingo. Unusually, these nests were close to shore and easily accessible by both people and stray dogs making disturbance highly likely, thereby limiting the possibility of successful breeding. This constitutes the first record of attempted breeding by the species in Saudi Arabia. PR again returned to the same site on 8 and 9 March 2019 and although approximately 200 Lesser Flamingo were still present there was no evidence of successful breeding. In fact, Greater Flamingos were observed adding mud to the existing nests.

LITERATURE CITED

- Jennings, MC. 2010. Atlas of the Breeding Birds of Arabia. *Fauna of Arabia* 25: 1-751.
- Kirschel, A. 1999. *Birdwatching Trip Report South-West Saudi Arabia*. <http://www.birdtours.co.uk/tripreports/saudi-arabia/swsaudi/swsaudi1999.htm>.
- Porter, RF & S Aspinall. 2010. *Birds of the Middle East – Second Edition*. Christopher Helm, London.
- Stagg, A. 1994. *Birds of the Riyadh Region (2nd edition). An Annotated Checklist*. National Commission for Wildlife Conservation & Development (NCWCD), Riyadh.

Philip Roberts, c/o Saudi Aramco, PO Box 11507, Dhahran 31311, Saudi Arabia. phil0562000@yahoo.co.uk

Jem Babbington, c/o Saudi Aramco, PO Box 13007, Dhahran 31311, Saudi Arabia. jembabbington@btinternet.com

Observations of White-faced Whistling Duck *Dendrocygna viduata* in Iraq

MUDHAFAR A SALIM, WAMEEDH S YASSIR, SALWAN ALI ABED, RICHARD PORTER, MOHAMMED T JABBAR, LAITH ALI AL-OBEIDI, HAIDAR A HADI & ZAMAN S HARBI

Summary: We discuss a number of recent records of White-faced Whistling Ducks in Iraq, which have mostly been reported by hunters. The provenance of these birds is unclear; they may relate to escapes from captivity, which may now be breeding in the wild, or to genuine wild birds.

White-faced Whistling Duck *Dendrocygna viduata* has a wide breeding range that extends over sub-Saharan Africa and large areas of South America. It is gregarious and can congregate in thousands in suitable wetlands (Brown *et al* 1982, Young 1996, Johnsgard 2010). It is globally assessed as Least Concern (LC) according to the IUCN Red List (BirdLife International 2016).

In Africa it has regular movements of over 400 km, probably in response to rainfall or drought, and in north-east Africa it has been recorded at Wadi Halfa in Sudan, close to the Egyptian border (Nikolaus 1987). It also reaches the western coast of the Red Sea from northern Eritrea to north-west Somalia (BirdLife International Data Zone). These are the nearest records to the Middle East where, hitherto, it has not been recorded in the wild. The only species of the same genus to have occurred as vagrants have been Lesser Whistling Duck *Dendrocygna javanica* (recorded in Oman, from southern Asia) and Fulvous Whistling Duck *D. bicolor* (recorded in Oman and Yemen, from Africa or southern Asia) (Porter & Aspinall 2010).

Globally, White-faced Whistling Ducks are often kept in captivity (Hillgarth & Kear 1982); however, only a few observations of captive birds have been made in the Middle East. In the United Arab Emirates, captive birds in the Dubai Municipality were released into the wild: five in Saih al Salam - Oasis Lake in September 2015, three individuals in the same wetlands in April 2018, and two individuals in Saih al Salam - Al-Qudra Lake and surroundings in October 2018 (Tommy Pedersen pers comm).

In Iraq from 2013 to 2019 frequent news and photographs of White-faced Whistling Duck were exchanged on social media and among the hunting community and people interested in unusual observations of birds in Iraq. In order to shed more light on the increasing observations of this species, the Iraqi Organization for Conservation of Nature (IOCN) gathered the fragmented information and observations and news and screened out the most reliable and trusted ones in an attempt to document the status of the species in Iraq.

White-faced Whistling Ducks in captivity in Iraq

Until July 2019, only two records of this species in captivity had been discovered. The first was in the Baghdad bird market when an individual was found in a cage in spring 2013, but no information was obtained as to its origin. The second observation was made when IOCN staff found two birds in a cage in the bird market in Basra in spring 2015. The bird-keeper reported that “the birds were netted at a wetland in Missan”; and after further enquiry on the specific site, time and description, it appeared that the birds were collected from a wetland area (between Teeb and Sannaf wetlands) northeast of Amara City. IOCN staff were unable to discover anything of more substance and so this provides the minimum level of knowledge of the location at which the birds were collected in southern



Plate 1. White-faced Whistling Ducks found in different wetlands within central and southern Iraq. These photographs are some of those taken in Iraq and shared by hunters on social media between 2015 and 2017. These have been investigated and authenticated by IOCN. Anon

Iraq. These observations were the first to document the occurrence of White-headed Whistling Duck in Iraq, albeit of birds in captivity, there being none recorded in the wild (Allouse 1953, Allouse 1960, Salim *et al* 2006, Porter & Aspinall 2010, Salim *et al* 2012).

White-faced Whistling Duck in the wild in Iraq

In early February 2015, a photograph of six White-faced Whistling Ducks was exchanged on social media, requesting help to identify this group of ‘strange birds’ (Plate 1). In response to this unexpected observation and request, IOCN started an investigation as to their origin. Because it appeared very unlikely to find this species in Iraq, the investigations were carried out discreetly so as to be sure the birds were really collected in Iraq and to discover the location where they were hunted. A few months later, the IOCN team interviewed the hunter in the Shaikh Saad area after tracing him via the social media where he had posted the photo. He told the team: “I was able to shoot six strange ducks that I’ve never seen before”. He also reported that “there were some other ducks species with these birds”, although he did not provide any information about the accompanying ducks. He said that after he realized that these six individuals were an unusual duck species, he posted their photos on social media seeking help in their identification.

Two years later, in January 2017, another photograph was exchanged on social media by a hunter who, apparently, had netted some waterfowl species, two of which were White-faced Whistling Ducks. The IOCN team followed the same method in tracking down the location and the details of hunting of these birds. After a series of investigations and meetings with locals, it appeared that the netted birds were collected from Teeb wetlands in Missan District, approximately 30 km northeast of Missan District. This wetland seems

to be the same area where the two individuals found in captivity in Basra had been claimed to be collected in spring 2015.

In addition, further information collected from hunters indicated the presence of White-faced Whistling Ducks in other localities in central and southern Iraq, where 10 ducks were reported in the Dalmaj Marsh in winter 2015, and two ducks out of ten were collected in lakes located south of Babil governorate in winter 2016. Also in winter 2017, seven ducks were reported to be seen in a wetland near Al-Aziziyah district, 88 km northwest of Wasit district. IOCN did not investigate these claims that might be uncertain, however they are reported to assist with future investigations.

Despite these frequent observations of White-faced Whistling Duck between 2015 and 2017 in the wetlands of southern Iraq, IOCN cannot be certain of their provenance and it is not clear if they originated from birds held in captivity (in Iraq or elsewhere in the region) or whether they occurred naturally as a result of an eruption of birds from birds from north-east Africa. The species is prone to eruptive movements (Takekawa *et al* 2015, Nikolaus 1987, Brown 1982), but such a journey across the vast deserts of Arabia seems unlikely. The aim of publishing these observations is to encourage further observations, both of birds in the wild and in captivity, of a species that may be set to become naturalised in the Middle East.

ACKNOWLEDGEMENTS

We are very grateful to the Iraqi Organization for Conservation of Nature (IOCN) staff who have sincerely contributed in the investigations, and their names were not mentioned in this paper. Also, thanks to Mr Laith Taban, Omar Ghalib, Muad Mohammed, Mike Blair and Tommy Pedersen for their help with information for this paper, and to Mr Kerem Ali Boyla for his kind clarification regarding Turkey.

LITERATURE CITED

- Allouse, B. 1953. *The Avifauna of Iraq*. Iraq Natural History Museum, Baghdad.
- Allouse, B. 1960. [*Birds of Iraq*] Vol I. Al-Rabita Press, Baghdad. [In Arabic]
- BirdLife International. 2016. *Dendrocygna viduata*. *The IUCN Red List of Threatened Species* 2016: e.T22679763A92829021.
- Brown, LH, EK Urban & K Newman (eds). 1982. *The Birds of Africa*, Volume 1. Academic Press, London.
- Hillgarth, N & J Kear. 1982. Causes of mortality among whistling ducks in captivity. *Wildfowl* 33: 133-139.
- Johnsgard, PA. 2010. *Ducks, Geese and Swans of the World*. University of Nebraska-Lincoln Libraries, Nebraska.
- Nikolaus, G. 1987. Distribution Atlas of Sudan's Birds, with Notes on Habitat and Status. *Bonn. Zool. Mon.* 25: 1-322.
- Porter, R & S Aspinall. (2010). *Birds of the Middle East*. Christopher Helm, London.
- Porter, RF, MA Salim, K Ararat & O Fadhel. 2010. A Provisional Checklist of the Birds of Iraq. *Marsh Bulletin* 5: 56-95.
- Salim, MA, OF Al-Sheikhly, KA Majeed & RF Porter. 2012. An Annotated Checklist of the Birds of Iraq. *Sandgrouse* 34: 4-43.
- Salim, MA, R Porter, P Schiermacker-Hansen, S Christensen & S Al-Jbour. 2006. [*Field Guide to the Birds of Iraq*]. Nature Iraq/BirdLife International. [in Arabic]
- Takekawa, JY, SR Heath, AI Samuel, N Gaidet, J Cappelle, T Dodman, W Hagemeyer, WD Eldridge, SA Petrie, GS Yarris, S Manu, GH Olsen, DJ Prosser, KA Spragens, DC Douglas & SH Newman. 2015. Movement ecology of five Afrotropical waterfowl species from Malawi, Mali and Nigeria. *Ostrich* 86: 155-168.
- Young, HG. (1996). The Distribution and Origins Of Wildfowl (Anatidae) Of Western Indian Ocean Islands. *Biogéographie de Madagascar* 1996: 363-367.

Mudhafar A Salim, PO Box (1895), Iraq. mudhafarsalim@yahoo.com

Breeding of Saker Falcon *Falco cherrug* in Armenia

MIKHAIL KOREPOV & KAREN AGHABABAYN

Summary: We describe the first confirmed breeding on the Saker Falcon in Armenia, following a decade during which observations of the species in the breeding season have increased. The possible origin of the breeding population in Armenia is discussed.

Saker Falcon *Falco cherrug* is a globally threatened species, included in the IUCN Red List (BirdLife International 2017) and in the Armenian Red Book (Aghasian & Kalashyan 2010), listed in both as Endangered. Saker Falcon was considered to be a year-round resident in Armenia (Adamian & Klem 1999) despite the absence of breeding evidence other than several summer records. An alternative theory expressed by Dementiev & Gladkov (1951) was that Saker is replaced in summer in the Caucasus region by Lanner Falcon *Falco biarmicus*. The existing records of Saker from the Caucasus were interpreted by Dementiev & Gladkov as relating to migratory and wintering birds, and the spring and summer records from Armenia, mentioned by Leister & Sosnin (1942), as confusions with Lanner Falcon. Later, in the decade of 2000-2010, the species was observed during migration and winter (Table 1: rows 1-8), but from 2013 the spring and summer observations of the species

Table 1. Observations of Saker Falcon in Armenia during 2000-2019.

Record	Location	Date and time	Details	Observer
1	Haghpat village	28 Nov 2003, 15:20	I flying over	K Aghababyan
2	Armash village	18 Jan 2004, 10:15	I flying over	K Aghababyan
3	Arpi village	18 Jan 2004, 13:40	I flying over	K Aghababyan
4	Goris town	10 Mar 2004, 16:35	I hunting	K Aghababyan
5	Lichk village	17 Sep 2006, 14:15	I flying over	K Aghababyan
6	Ranchpar village	1 Dec 2007, 13:50	I flying over	K Aghababyan
7	Surenavan village	10 Nov 2007, 10:50	I flying over	K Aghababyan
8	Surenavan village	12 Dec 2008, 14:05	I flying over	K Aghababyan
9	Aragats mount	8 Aug 2017, 11:30	I flying over	W Westdijk
10	Jermuk town	2 Jun 2015, 10:05	I hunting	P Adriaens
11	Byurakan village	30 May 2017, 10:00	I flying over	D Gregorie
12	Byurakan village	13 May 2017, 13:49	I flying over	M Laeremans
13	Sevan town	5 May 2017, 12:16	I flying over	M Laeremans
14	Surenavan village	2 May 2017, 7:46	I flying over	K Boers
15	Surenavan village	1 May 2017, 6:32	I flying over	K Boers
16	Avshar village	1 May 2017, 7:01	I flying over	K Boers
17	Khosrov Reserve	30 May 2015, 14:26	I flying over	A Sarkisyan
18	Jermuk town	17 Apr 2013, 11:26	I hunting	P Adriaens
19	Arevabuyr village	21 Jul 2019, 5:59	I hunting	J van Oostveen
20	Aragats mount	13 Jun 2019, 10:48	I flying over	K Aghababyan
21	Jermuk town	24 May 2019, 07:48	I hunting	S de Winter, H Valkema



Figure 1. Saker Falcon distribution in Armenia in 2000-2019. The nest described in this article was within the red ellipse. Grey filled circles represent areas where Sakers have been recorded in the breeding season, black circles represent areas where they have been recorded out of the breeding season. Precise locations are deliberately not given due to the species' sensitivity to disturbance.



Plate 1. Saker Falcon nest with nestling visible, Gegharkunik province, Armenia, May 2018. © M. Korepov.



Plate 2. Adult Saker Falcon on the breeding territory, Gegharkunik province, Armenia, May 2018. © M. Korepov

started increasing, and in the period 2013-2017, ten observations were made between early-April and early August (Table 1: rows 9-18). The summer observations were concentrated around the three provinces of Aragatsotn, Ararat, and Vayots Dzor provinces (Fig. 1). This increase in summer sightings in 2013-2018 suggested that Sakers breed in Armenia, although still there was no direct evidence of breeding.

Searching for the possible breeding pairs of the species, MK found an occupied nest on 12 May 2018 on the shore of Lake Sevan, Gegharkunik province (Fig. 1). The nest was placed on the upper half of the cliff in a rounded recess (Plate 1). The height of the nest from the base of the cliff was about 10 m. Given the location of the observers below the nest, we were able to see only one nestling in natal down. The adult bird was sitting nearby (Plate 2). There was much excrement on the walls under the nest and under the adult birds' resting places – a common feature at the nests of all large falcons. Nearby, on the same cliff, there was a nest of Common Kestrels *Falco tinnunculus*, the parents of which acted aggressively towards the Sakers. Due to the sensitivity of the species the precise location of the nest is not provided in the current article.

Later, three other observations of Sakers were made in the breeding season of 2019, again in Aragatsotn, Ararat and Vayots Dzor provinces (Table 1: rows 19-21; Fig. 1).

Leister & Sosnin (1942) and Adamian & Klem (1999) suggested that Saker Falcon may have been a breeding bird in Armenia since at least 1930s, whereas Dementiev & Gladkov (1951) suggested that it was only a passage and winter visitor. The recently proved breeding of the species could have resulted from a natural expansion of the species' range, which although seems unlikely given the strong pressure on the species by illegal trapping for falconry is at least in line with trends in neighboring Georgia (Kovács *et al* 2014) and Turkey (Dixon 2007). Alternatively, as suggested by I. Karyakin in the discussions of the

Armenian Birdwatching Association's Facebook group November 2019, recent breeding in Armenia may result from the establishment of a new breeding population by escaped falconry birds from Arabia. Both scenarios seem possible, with a small natural population being bolstered in recent years by escaped falconry birds.

Whatever the history of colonization of Armenia by Saker Falcon, the breeding of the species in the country is now confirmed. The records made in the period of 2013-2019 suggest that there might be at least two or three more pairs of the species breeding in Armenia. This strongly influences the conservation strategy of the species in Armenia, as with such a low number of breeding pairs the species would have to be designated as Critically Endangered, according to criteria D1: 25 pairs or less (IUCN Standards and Petitions Committee 2019). Subsequently, the following conservation measures for the Saker Falcon are suggested: (1) a review of the conservation status of the species in the upcoming edition of the Red Book of Animals of Armenia; (2) discovery of all the other nests of the Saker Falcon in the country; (3) inclusion of those areas into the existing network of Emerald Sites, protected under Bern Convention; (4) development of a strategy of further uplisting of those areas with the aim of proposing those as Nationally Protected Areas; (5) education of employees of the State Inspectorate for Nature Protection and Mineral Resources about the conservation value of the species in order to strengthen control over possible poaching. Furthermore, it is important to understand the origin of the Armenian population, and for that reason the genetic investigations are needed.

ACKNOWLEDGEMENTS

The records of the species in Armenia in the period of 2013-2019 were collected by members of the Armenian Birdwatching Association and mostly stored at the online platform Observation.org. Expeditionary work that led to the discovery of the Saker nest was supported by Scientific-Research Center "Povolzie" (Ulyanovsk, Russia) and NABU-Armenia (Yerevan, Armenia).

LITERATURE CITED

- Adams, MS & D Klem, Jr. 1999. *Handbook of the Birds of Armenia*. Amer. Univ. of Armenia, Oakland, California.
- Aghasyan, A & M Kalashyan (eds). 2010. *Red Data Book of the Republic of Armenia*. Ministry of Nature Protection, Yerevan.
- BirdLife International. 2017. *Falco cherrug* (amended version of 2016 assessment). The IUCN Red List of Threatened Species 2017: e.T22696495A110525916. <http://dx.doi.org/10.2305/IUCN.UK.2017-1.RLTS.T22696495A110525916.en>. [Assessed 1 December 2019].
- Dementiev, G & N Gladkov. 1951. [*Birds of Soviet Union*]. VIM Soviet Science. 652 pp. [In Russian]
- Dixon, A. 2007. Saker Falcon breeding population estimates. Part 1: Europe. *Falco* 29: 4-12.
- IUCN Standards and Petitions Committee. 2019. *Guidelines for Using the IUCN Red List Categories and Criteria*. Version 14. Prepared by the Standards and Petitions Committee. 113 pp.
- Kovács, A, NP Williams, & KA Galbraith. 2014. *Saker Falcon Falco cherrug Global Action Plan*. CMS Raptors MOU Technical Publication No 2 CMS Technical Series No 31. 206 pp.
- Leister, AF & GV Sosnin. 1942. Materials on ornithofauna of the Armenian SSR. ARMFAN, Yerevan, Armenia.
- Mikhail Korepov, Ilya Ulyanov State Pedagogical University, 2 Tupoleva, apt 64, 432059, Ulyanovsk, Russia.
- Karen Aghababayan, BirdLinks Armenia NGO (former TSE NGO: Armenian Bird Census), 87b Dimitrov, apt 14, 0020 Yerevan, Armenia. karen.ghababayan@gmail.com

New nest sites of Black Stork *Ciconia nigra* in Khuzestan Province, Iran

MOSTAFA YUSEFI, SEIFOLAH HASHEMI, KERAMAT HAFEZI & ALI T QASHQAEI

Black Stork *Ciconia nigra* is a rare breeding and migrant species in Iran and was assessed as an uncommon summer visitor, passage migrant and winter visitor in the country during 1967 to 1978 (Scott 1995, Qashqaei *et al* 2017, DA Scott pers comm). In that period, Black Stork apparently bred in small numbers in remote regions of the Alborz Mountains, the mountains of North Khorasan, the Zagros Mountains and the Kerman highlands, but there were few confirmed breeding records. Also, small number of Black Storks wintered at wetlands such as Gavkhuni and Kabutarkhan and along permanent rivers such as lower Zaindeh Rud in central and southern Iran, from Esfahan southwards (Scott 1995, Qashqaei *et al* 2017, DA Scott pers comm; Table 1). There are few further details on the presence and breeding of Black Stork in Iran, with just four confirmed breeding records during 1970-2016 (Scott 2007, Qashqaei *et al* 2017). This report documents the fifth and sixth confirmed breeding records of the species in Shimbar Protected Area, Khuzestan Province, Iran.

Table 1. Black Stork records in Iran during 1972-1977. All records provided by DA Scott.

Location	Coordinates	Province	No. individuals	Date	Note
Rud-e Shur	35°34'N, 50°50'E	Tehran	1	12 January 1972	
Miankaleh Wildlife Refuge	36°50'N, 53°45'E	Mazandaran	2	2 March 1973	The first spring migrants and earliest record in the country
Miankaleh Wildlife Refuge	36°50'N, 53°45'E	Mazandaran	12	11 July 1972	Non-breeding individuals that remained throughout the summer
Lake Alagol	37°21'N, 54°35'E	Golestan	10	13 July 1972	
Monde River	29° 34'N, 52° 13'E	Fars	9	6 January 1973	West of Shiraz
Dasht-e Arjan	29°37'N, 51°59'E	Fars	12	10 January 1973	
Miankaleh Wildlife Refuge	36°50'N, 53°45'E	Mazandaran	16	16 July 1973	Non-breeding individuals that remained throughout the summer
Dasht-e Moghan	39°35'N, 48°00'E	Ardebil	1	1 January 1974	Unusually far north
Lashgarak	35°49'N, 51°35'E	Tehran	1	5 August 1974	A bird flying over Lashgarak
Hormud Protected Area	27°37'N, 55°48'E	Hormozgan	15	11 January 1975	
Miankaleh Wildlife Refuge	36°50'N, 53°45'E	Mazandaran	18	2 August 1975	Non-breeding individuals that remained throughout the summer
Serif Rud, Terik Dam	36° 59'N, 49°34'E	Gilan	A few birds	28 September 1975	Autumn passage migrants
Ashkerabad Marshes, Ghaleh-Now wetland, or Eshgh-Abad wetland	35°27'N, 51°31'E	Tehran	1	25 March 1977	Tohidifar & Scott (2014)



Plate 1. A pair of Black Storks *Ciconia nigra* in the nest (Andika County, left), in the mouth of a cave on a uniform rocky cliff (right). © M. Yusefi



Plate 2. A nest of Black Stork *Ciconia nigra* (Izeh County, left), and the nest site (right). © S. Hashemi

At one site we recorded a breeding pair of Black Storks on a nest in a rocky cliff (32.1565° N, 49.62241° E, 610 m asl), 11 km Shahid Abasspour Dam, in the vicinity of a dam lake in Shimbar Protected Area, Andika County, Khuzestan Province during spring 2018 and 2019. The nest site was the entrance to a cave on an otherwise uniform rocky cliff, c50 m above the water surface (Plate 1). At a second site, we documented three nests of Black Stork together northeast of Kuh-e Gozir (Gozir Mount, 32.2593° N, 49.7454° E, 558 m asl), Karun River, Izeh County, Khuzestan Province. These nests were active from 2003 to 2019 at least. The nest site is a rocky cliff, c60 meters above the water surface and nests are very large, indicating long use (Plate 2).

Karun River has deep valleys and inaccessible high cliffs that are suitable for nesting by Black Stork. In a previous study, nest sites of Black Stork were on cliffs 20-24 m above the river, and these new sites are higher above the water surface (Qashqaei *et al* 2017). These observations comprise the second and third breeding records of Black Stork for Khuzestan province.

ACKNOWLEDGEMENTS

We thank DA Scott for his helpful comments and for providing his records from the 1970s.

LITERATURE CITED

Qashqaei, AT *et al* 2017. Further breeding records of Black Stork *Ciconia nigra* in Iran. *Sandgrouse* 39: 48-52.
 Scott, DA (ed). 1995. *A Directory of Wetlands in the Middle East*. IUCN, Gland, Switzerland and IWRB, Slimbridge, UK.

Scott, DA. 2007. A Review of the Status of the Breeding Waterbirds in Iran in the 1970s. *Podoces* 2: 1–21.
Tohidifar, M & DA Scott. 2014. Birds of Ghaleh-Now Wetland, Southeastern Tehran: A comparison of avian biodiversity between the 1970s and 2010s. *Podoces* 9: 31–46.

Mostafa Yusefi, Provincial Office of Department of the Environment, Andika, Khuzestan, Iran.

Seifolah Hashemi, Provincial Office of Department of the Environment, Izeh, Khuzestan, Iran.

Keramat Hafezi, Iran Bird Records Committee, Khuzestan & Chahar-Mahal & Bakhtiari, Iran.

Ali T Qashqaei, Sahel square, Parsia complex, 5th Sarv bldg, PO 14938–89881, Tehran, Iran. a.t.qashqaei@gmail.com (corresponding author)

Kleptoparasitism by Egyptian Vultures *Neophron percnopterus* of an unusual prey item of Sooty Falcons *Falco concolor*

MEIDAD GOREN & SHLOMI SEGALL

Summary: We describe a successful attempt at kleptoparasitism by Egyptian Vultures on Sooty Falcons carrying an unusual prey item, a Cream-coloured Courser.

Kleptoparasitism among Egyptian Vultures *Neophron percnopterus* is not unheard of. In Spain, a pair of Egyptian Vultures has been documented raiding a nearby nest of Griffon Vulture *Gyps fulvus* (Camina 2017). It is not, however, a widespread phenomenon, nor has it, to our knowledge, been recorded with respect to raiding prey caught by Sooty Falcons *Falco concolor*. The following details a recent observation that documents just that, though the observation is notable for an additional aspect, namely the nature of the prey involved.

The incident involved a pair of Sooty Falcons, a migratory species that breeds in the desert region of the southern deserts of Israel. The falcons typically arrive at breeding sites in April or May. They are cliff-nesting birds that feed mainly on birds, insects and bats. They lay eggs in July when most of the local raptors have already finished raising chicks.

A total of 51 visits to the site were made by the authors between 2012 and 2019. Each visit lasted between 2-4 hours. The many usual behavioural patterns which were documented included the first observation of a Sooty Falcon swallowing pebbles for digestion (M Goren per obs, Blair 2000) and the first documentation of Sooty Falcons preying on Cream-coloured Courser *Cursorius cursor* (M Goren per obs). The latter is noteworthy as coursers typically weigh more than half of the falcon's weight (130 g on average for coursers, compared to 250 g for a Sooty Falcon). In that respect, the incident described below, which took place on 15 July 2019, was out of the ordinary.

At 07:15 we found the pair sitting on their favourite cornice, grooming themselves and generally resting. They did this for the next 40 minutes, then the male took off and flew to the opposite side of the canyon, to a lower shelf of rock. There we observed him for the next ten minutes picking around the pebbles. After a few minutes he walked behind a rock and took off with what turned out to be a dead Cream-Coloured Courser (Plate 1a). We assume that the prey was hidden there earlier that day or at the earliest the day before. Caching of surplus prey is in fact well documented with Sooty Falcons in Israel (Frumkin 1993). Prey is often stashed away from the nest, perhaps so as not to attract wasps and parasites. In this case, the cache was all the way over the other side of the deep canyon. The falcon flew with this heavy prey across the canyon and brought it to his mate, who proceeded to eat it (Plate 1b). This was followed by loud calls between the pair. For the next 35 minutes the female was watched eating, while the male sat on the other side of the canyon grooming. Then the female gave loud alarm calls, getting her mate's attention. The cause for alarm was soon revealed as a pair of Egyptian Vultures. This pair breeds annually in the same area, nesting not far from the falcons. One of the Egyptian Vultures circled a couple of times and then quickly descended in the direction of the female falcon and emerged with the courser in its bill. Literature and oral communication established that this was the first documented case in Israel of Egyptian Vultures snatching food from other hunters rather than consuming carrion.

This was followed by an aerial chase (Plate 1c), with both falcons and vultures involved. Sooty Falcons in Israel are often recorded chasing away other nesting raptors,



Plate I. Kleptoparasitism by Egyptian Vultures on Sooty Falcons with prey of Cream-coloured Courser. © Shlomi Segall

including Golden Eagle *Aquila chrysaetos*, Eurasian Griffon Vulture *Gyps fulvus*, Egyptian Vulture, and Barbary Falcon *Falco pelegrinoides* (Frumkin 1993). The falcons gave chase, which eventually resulted in the vulture losing its grip on the prey. The prey, by now an unrecognizable mass of feathers and meat, fell from a high altitude to the bottom of the canyon. One of the vultures was first to the scene, this time choosing not to risk losing it and opting to hold on to it with its beak (Plate 1d), freeing his talons for aerial combat with the falcons. The chase re-commenced (Plate 1e) until the vultures make it to their nest, by which time the falcons gave up.

The overwhelming majority of Sooty Falcon prey (small passerines) is likely to be of little interest to vultures, presumably because it would be difficult for the vultures to spot small passerines in the talons of the falcons. A courser is an unusually large prey item for a Sooty Falcon, and so we think that this might account for why this is probably the first ever documentation of this type of kleptoparasitism.

LITERATURE CITED

- Blair, SK. 2000. Caring for Raptors. <http://www.birdcare.asn.au/pdf/raptors.pdf>
- Camina, A. 2017. Cooperative kleptoparasitism in a pair of Egyptian Vulture *Neophron percnopterus* in Northern Spain. *Vulture News* 72.
- Frumkin, R. 1993. Breeding Ecology of the Sooty Falcon (*Falco concolor*) in Israel. In: Nicholls MK & R Clark (eds) *Biology and Conservation of Small Falcons*. Proceedings of the Hawk and Owl Trust Conference, 6–8 September 1991, Canterbury, UK: pp 51–58.

Meidad Goren, *The Society for the Protection of Nature in Israel*.

Shlomi Segall, *The Hebrew University of Jerusalem*. shlomi.segall@mail.huji.ac.il

ESSAY: Historical bird identification – reflections from a Cyprus perspective

PETER FLINT

Summary: This essay examines the history of bird identification on Cyprus and in the wider east Mediterranean region over the last century or so. Examples from Cyprus and the neighbouring Levant illustrate the difficulties encountered by earlier generations of birders when accessible identification literature was unavailable or inadequate. The evolution of regional identification literature and the resulting improvements in identification skills and knowledge, and in the number of species identified, are also discussed.

Early ornithologists on Cyprus were often professional bird collectors (eg Schrader in Müller 1879, Guillemard 1888), members of the European, usually British, aristocracy (eg Lilford 1889, Belcher 1929, von Sack in Stresemann 1953) or “sportsmen” – recreational bird shooters (eg Wilson 1928); the second and third categories often being combined (for a full list see Flint & Stewart 1983, 1992). Although some of these earlier naturalists appear to have been experienced and competent field observers, identification of uncommon or unfamiliar species was invariably via the shotgun with, when necessary, specimens sent for identification to foreign taxonomic experts such as Ernst Hartert at Tring, Richard Bowdler Sharpe at the British Museum of Natural History and MJ Nicoll at Cairo (eg Cyprus Natural History Society 1908-1913, Bucknill 1909-10). However, having the specimen in the hand for close examination did not always result in correct identification (eg Flint & Stewart 1983, p. 59). Reliance on the shotgun later largely ceased (eg Riddell 1927, Ferrier 1936), although Payn (1939) depended on it extensively for his identification of subspecies.

The emergence of what we might now consider typical modern birdwatchers, and the field identification problems encountered by them, are illustrated in the publications of clubs associated with the Middle East Biological Scheme. This scheme had been established in 1945 by the British army’s Middle East headquarters in Palestine for the benefit of their interested personnel serving in that country and elsewhere in the Middle East (Nature 1946).

Of particular interest is the Haifa Naturalists’ Club Bulletin (1945), which contains a list of the English names of 42 species of birds seen during a visit to Cyprus 26 July – 5 August 1945. The observers’ names are not given, but (assuming there was more than one) they were presumably British military personnel on leave from Palestine. Their list contains the last known record from the island of White-throated Dipper *Cinclus cinclus*; presumably of the formerly resident postulated taxon *olympicus*. Of the other species on the list, 37 might be expected to be found on the island at that time of year today, but it also includes two species not on the current Cyprus list (Stylianou 2019a): Sombre Tit *Poecile lugubris* and Alpine Accentor (“probably *Prunella collaris caucasica*”). In the past dusky juveniles of the resident taxon of Great Tit *Parus major aphrodite* have occasionally been reported as Sombre Tits, so that may be one explanation for that record. Alternatively, if the observers’ knowledge of Sombre Tit was limited solely to its name, then the dark endemic Cyprus Coal Tit *Periparus [ater] cypriotes* (Plate 1) is also a possibility. As for the Alpine Accentor, no obvious confusion species are present in summer, but if it did occur on Cyprus it would most likely be in hard winters; the record remains a mystery. The list also includes Arabian Wheatear (the former English name of Finsch’s Wheatear *Oenanthe finschii*, Plate 2 – Dresser 1902, Payn 1939 – rather than as now *O. lugentoides*) but not the abundant and rather similar Cyprus Chat (now Cyprus Wheatear *O. cypriaca*) which was likely to have been the species involved. The list notably does not include two common



Plate 1. Cyprus Coal Tit *Periparus [ater] cypriotes*, Troodos, Cyprus, 8 December 2014. A potential fourth endemic species. © Dave Walker



Plate 2. Finsch's Wheatear *Oenanthe finschii* male, a newly arrived winter visitor, Anarita park, Cyprus, 24 October 2015. © Dave Walker

species: Cyprus Warbler *Sylvia melanothorax* (sometimes formerly considered a subspecies of Sardinian Warbler *S. melanocephala* – eg Vaurie 1959 – which is also not mentioned) and Cretzschmar’s Bunting *Emberiza caesia*.

A second visit by apparently different British military personnel from Palestine was made from 23 June – 5 July 1946 (Hamilton & Parkin 1946). Their account is discursive, less comprehensive and more cautious than the earlier one, eg “several warbler” species and “Lesser Kestrel?” but it does include the “Cyprus Chat” and they also commented that some Crested Larks *Galerida cristata* on the Mesaoria plain were reddish-brown above, something also noted by later observers. However, they found “pipits” and Common Wheatears (now Northern Wheatears *Oenanthe oenanthe*) to be common; improbable in a Cyprus summer.

Despite these apparent errors and omissions these two sets of observers might be considered to have done reasonably well for visitors before the field guide era and when there were no portable books on the identification and distribution of east Mediterranean/Middle-Eastern birds. The only contemporary regional work I’m aware of is *Nicoll’s Birds of Egypt* (Meinertzhagen 1930), with *Die Vögel der Paläarktischen Fauna* (Hartert 1903-1922) including the region as part of the wider Palearctic, but such works were not likely to have been accessible to birdwatchers in the field.

Further examples of the identification problems at that time caused by a lack of high quality and easily accessible literature are contained in the publications of Eric Hardy, who was apparently a prime mover of the Middle East Biological Scheme and a competent and experienced ornithologist (eg Hardy 1946a). As leader of the ornithological section of a Middle East Biological Scheme expedition to Lebanon and Syria in 1945 he and others were unable to identify immature Starling-like birds. He described them in detail but “the birds were new to us and we had no suitable literature for reference”. Only later, after returning to Jerusalem, and gaining access to Hartert (*op cit*) was he able to identify them as immature Rose-coloured Pastors (now Rose-coloured Starlings) *Pastor roseus* (Hardy 1946b). In 1946, a young vulture obtained alive by him in Palestine was eventually suspected to be Northern Lappet-faced *Torgos tracheliotos*, but only when he had it crated up and flown alive to the Zoological Society of London, “where more reference literature was available” was its identity confirmed (Hardy 1947).

Perhaps surprisingly, none of the mainly British pre-field guide era visitors/residents on Cyprus mention the bird identification literature owned or consulted by them, though some likely examples may have been *A History of the Birds of Europe* (Dresser 1871–1896), *A Manual of Palaearctic Birds* (Dresser 1902, 1903), *A Practical Handbook of British Birds* (Witherby 1919-1920), *Birds of the British Isles and their eggs* (Coward 1920-1926) and *The Handbook of British Birds* (Witherby *et al* 1938-1941) none of which except the first two would have included unfamiliar regional species. Of later authors, the Bannermans (1958) mention Hartert (*op cit*), and Stewart & Christensen (1971) mention the Peterson guide, *Birds of the Palearctic Fauna* (Vaurie 1959, 1965) and *Identification for Ringers* (Williamson 1962, 1968). The last was later replaced by the *Identification Guide to European Passerines* (Svensson 1970, 1975, 1984, 1992), permitting more accurate and reliable identification of species and subspecies in the hand and was also used for ageing and sexing in the field. With its academic, detailed text and large scale maps *Songbirds of Turkey: an atlas of biodiversity of Turkish passerine birds* (Roselaar 1995) is of particular value for the taxonomy, distribution, morphology, geographical variation and identification of regional subspecies; although a rather overlooked work I have often found information in it that is not available elsewhere.

The publication of the first edition of *A Field guide to the Birds of Britain and Europe* (Peterson *et al* 1954) followed by *Birds of Cyprus* (Bannerman & Bannerman 1958) meant that soon after the founding of the Cyprus Ornithological Society in 1957, birdwatchers

had for the first time literature covering the identification of all the species on the island's list (Peter Stewart pers comm), albeit often rather briefly and the latter book was not portable.

The problem of the identification of unfamiliar middle-eastern species remained and is illustrated by the history of Kittlitz's Plover *Charadrius pecuarius* and Bimaculated Lark *Melanocorypha bimaculata* on Cyprus. The first record of the former was in 1958, when it was identified as a Lesser Sand Plover *Charadrius mongolus*. Only in 1996, after Kittlitz's Plover had reoccurred on the island and with the benefit of much better identification literature (eg Taylor 1983, 1987) was it realised that the 1958 bird had also been a Kittlitz's (Flint *et al* 1997). The second individual, in 1991, was also initially identified as a Lesser Sand Plover (Flint *et al* 1997), and this was followed by two further records of Kittlitz's Plover, the last in 1995 (Colin Richardson pers comm). This history suggests that the species may have been somewhat overlooked prior to the 1990s, but that the source population in the last two decades may have become less dispersive or has declined.

The 1958 "Lesser Sand Plover" record from Cyprus was later wrongly republished as 1957, and it is noteworthy that this non-existent 1957 record was later cited in support of unproven records of Lesser Sand Plover from Turkey, though in the latter case the actual species was more likely Greater Sand Plover *Charadrius leschenaultii* (Plate 3) of the small-billed subspecies *columbinus* (Flint *et al* 1997).

The first three Bimaculated Larks for Cyprus were collected by the Smithsonian expedition in spring 1968, but at the time identified as Calandra Larks *Melanocorypha calandra*; only later after comparison with museum material at the Smithsonian was their correct identity established (Hubbard 1968, Horner & Hubbard 1982, Flint & Stewart 1992, John Hubbard pers comm). This species probably continued to be overlooked on



Plate 3. Greater Sand Plover *Charadrius leschenaultii columbinus*, a spring passage migrant, Paphos headland, Cyprus, 26 March 2016. © Dave Walker

the island after 1968: I recall in spring 1970, two Cyprus birders at Akrotiri studying an unusual "Calandra" Lark before finally giving up on it. Had Bimaculated been in the field guides at that time then its first field record might have been in 1970, rather than 1982 (Flint & Stewart 1992). It is now known to be a scarce but regular spring passage migrant (eg Stylianou 2019b) and from the above was perhaps also previously so but overlooked.

Conversely, some claimed unusual records in the past were not accepted because visiting observers who were familiar with species common in their home countries did not realise those species were rare or unrecorded in the country they were visiting, and so took no supporting descriptions/photographs. A well-known example from Cyprus is of a Blue Tit *Cyanistes caeruleus* seen well in such circumstances at Bellapais, 17-20 February 1990 (RA Streatfeild in Flint & Stewart 1992); a species not then and not now on the Cyprus list (Jane Stylianou pers comm). The proliferation of avifaunas and checklists for countries in the region (eg Cyprus, Turkey, Syria, Lebanon, Israel, Egypt), on-line resources and especially the quick and easy to check distribution maps in regional field guides should now make such instances less likely, although they still occur (Jane Stylianou pers comm).

The Smithsonian team working in Cyprus in 1967 and 1968 had used the Peterson, Williamson and Meinertzhagen books, plus Moreau (1961) for its Mediterranean region migration overview and timings and routes of individual species (John Hubbard pers comm). I later used that author's unique and valuable *The Palaearctic-African Bird Migration Systems* (1972) for the same purpose. Given the importance of that work it seems odd that, although there have been many scientific papers, no more recent books on that subject have ever been published.

The Smithsonian team had left a copy of the identification appendix from *Birds of Arabia* ('Meinertzhagen's Key') with Peter Stewart. When I arrived in Cyprus in 1969 Peter passed a copy on to me. I was also recommended by Steen Christensen to consider obtaining *Nicoll's Birds of Egypt* (Meinertzhagen 1930) and the Vaurie volumes. The Meinertzhagen works were long out of print and although I traced a copy of the Arabia book (Meinertzhagen 1954), the price (£700 in today's money) was prohibitive. Volume 1 of Vaurie (the important Passeriformes) was also out of print but the publishers had retained one imperfect copy (no dustjacket); it proved to be one of my most consulted books. To get further coverage of potential middle-eastern vagrants I eventually obtained *Birds of North Africa* (Etchécopar & Hüe 1967) and *Les Oiseaux du Proche et du Moyen Orient* (Hüe & Etchécopar 1970), both with excellent plates by Paul Barruel. These books and the Vaurie, while not portable, proved invaluable, eg in enabling the identification of the first White-crowned Black Wheatear (now White-crowned Wheatear) *Oenanthe leucopyga* for the island and of various subspecies, including eastern Stonechats, then *Saxicola torquata maura*, and Collared Flycatcher *Ficedula albicollis semitorquata* (now Semi-collared Flycatcher *F. semitorquata*, Plate 4).

Despite this high-powered literature, the first White-tailed Lapwing *Vanellus leucurus* for Cyprus, in 1970, was identified by the finders from *Birds of the World* magazine (Gooders 1969-70). While in Cyprus I had also obtained *Birds of Lebanon and the Jordan area* (Benson 1970), not a typical field guide but useful before a visit to Lebanon in letting me know which species I might expect to see there and in identifying Graceful Prinia *Prinia gracilis*, not then in the European field guides.

By 1970 I had realised the need for a more practical bird identification book on the island's birds than the mainly large, expensive and difficult to obtain books I was then using, so I optimistically started work on a Cyprus field guide in the style of the Peterson. By the time I had reached the herons the enormity of the task sank home and I realised that my priorities lay with studying the island's birds, rather than in helping others to identify them.



Plate 4. Semi-collared Flycatcher *Ficedula semitorquata* male, a spring passage migrant, Cyprus, 31 March 2017. © Dave Walker

The presence of Steen Christensen on Cyprus 1968-71 with his raptor in-flight identification skill and knowledge resulted in a greatly improved understanding of the species' composition of the large autumn raptor passage through the island, especially regarding buzzards and eagles. He also made a big effort to pass his knowledge on to other birders resident on the island at that time and later co-authored *Flight Identification of European Raptors* (Porter *et al* 1974, 1976, 1981) which was widely used on the island.

In 1970 *The Hamlyn Guide to Birds of Britain and Europe* (Bruun & Singer 1970) became available; its user-friendly layout, with the text, maps and plates on facing pages, has since been widely copied. Although the distribution maps include Cyprus, Turkey, Syria and the Levant the book covers only European species, thus many east Mediterranean and Middle-Eastern species are omitted. This guide was generally considered less authoritative than the second edition of Peterson *et al* (1965) so for most Cyprus birders it supplemented rather than replaced the latter. That the pages soon fell out of the first printing after little use also discouraged its acceptance, though one enterprising Cyprus birder hole-punched and ring-bound the loose pages.

The *Handbook of the Birds of Cyprus and Migrants of the Middle East* (Bannerman & Bannerman 1971) was intended as a field guide/avifauna but was eclipsed for the former purpose by the Peterson and Hamlyn guides and for the latter by the more authoritative *A Checklist of the Birds of Cyprus 1971* (Stewart & Christensen 1971). It was more readily available than the 1971 *Checklist* though and visitors unfamiliar with the endemics will have found it useful (Flint & Cole 1973). Later well-illustrated books on Cyprus birds include the simple *Common Birds of Cyprus* (Took 1973, 1977, 1982), its enlarged edition *Birds of Cyprus* (Took 1992) and the glossy, large format *Birds of Cyprus* (Christophorou 1998) and *Breeding Birds of Cyprus* (Kourtellarides 1998). All included the endemics but otherwise were not birders' books. The first, a mini field-guide for novices and the general reader,

sold well over many years and may have nurtured an interest in birdwatching among its users.

With the publication of *The Birds of Britain and Europe with North Africa and the Middle East* (Heinzel *et al* 1972), there finally appeared a field guide which included the birds of the east Mediterranean and the Middle East south to the heads of the Red Sea and the Persian Gulf: thus including Turkey, Cyprus, the Levant, northern Egypt, Syria and Iraq. While it did not have the quality of current guides, its much greater coverage compared with the Peterson and Hamlyn guides can be shown by the number of wheatear *Oenanthe* species (an archetypal middle-eastern genus) that it describes and illustrates: 13, compared with six each in the former two guides. It was also the first field guide to include Cyprus Warbler and Dead Sea Sparrow *Passer moabiticus*, enabling the identification of the latter when it was found breeding on Cyprus in 1980 (Mick Lobb pers comm). It did not however, include Didric Cuckoo *Chrysococcyx caprius*, and when the first for the Palearctic occurred on Cyprus in 1982, it was identified only after descriptions and sketches were sent to Ian Lyster at the Royal Scottish Museum, Edinburgh and to Hilary Fry and others outside Cyprus (Lobb 1983). This species is now in regional field guides.

These earlier field guides and the fifth edition of the Peterson (1993) were eclipsed by *Birds of Europe with North Africa and the Middle East* (Jonsson 1992); quite similar to the Heinzel in its scope but with much higher quality illustrations and text. Throughout most of the 1990s this was the most frequently cited reference in unusual record forms submitted to the Cyprus Ornithological Society. The later decades of the last century also saw the growth of 'scientific' identification papers in popular bird journals, typified by *Frontiers of Bird Identification* (Sharrock 1980), but, perhaps surprisingly, there are very few references to such papers in the Cyprus unusual record forms. The two notable exceptions (Clement 1987, Small 1994) both dealing with identification of wheatears. The new information in such papers has of course been incorporated into and improved subsequent field guides and handbooks.

Over the last three decades Middle-Eastern birders have become almost spoil for choice, with a series of increasingly excellent regional guides, notably *Birds of the Middle East and North Africa* (Hollom *et al* 1988), with now 17 wheatears including, for the first time, Cyprus Wheatear. This evolved into *Field Guide to the Birds of the Middle East* (Porter *et al* 1996), the first field guide to deal exclusively and comprehensively with the birds of the region. Its extensively revised and updated second edition *Birds of the Middle East* (Porter & Aspinall 2010) has a greatly improved user-friendly layout though at the cost of a smaller print size; the wheatear count meanwhile has increased to 21 species. Finally, there is the masterly *Collins Bird Guide* (Svensson *et al* 1999, 2009); although a European field guide it includes Turkey, Cyprus, the Levant, Syria and northern Egypt; to me it is a worthy replacement for the Peterson and after its publication was the one book I always kept with me in Cyprus.

Just published is *Birds of Cyprus* (Richardson & Porter 2020); in the style of *Birds of the Middle East* (Porter & Aspinall 2010) it describes and illustrates every species on the Cyprus list. It also includes concise but accurate details of their status, phenology and habitats on the island, with distribution maps. There can be few if any other countries of the size of Cyprus to possess such a high quality field guide; it looks set to become widely accepted.

Definitely not a field guide, but of great value in assessing many Cyprus records, and much else, in past decades was the monumental *Birds of the Western Palearctic* (Cramp and various co-authors and editors 1977-1994), and which, despite its size and cost, was the second most cited reference in the Cyprus unusual record forms mentioned above. For the identification and taxonomy of passerines this has been superseded by the almost equally monumental *Handbook of Western Palearctic Birds* (Shirihai & Svensson 2018), a work so



Plate 5. Western Black-eared Wheatear *Oenanthe hispanica*, pale-throated morph male, Spain, 6 April 2017. © Paul Coombes

thorough in its research, detail and authority that it is difficult to see it being improved upon, though in time it surely will be. I imagine it will be of great value to rarities committees, and if for example Western Black-eared Wheatear *Oenanthe hispanica* (Plate 5) is ever reliably reported from the eastern Mediterranean, the information presented in these volumes should enable the identification to be confirmed beyond reasonable doubt. We must surely now be on the cusp of the transition from print to digital as far as such massive and ill-named 'Handbooks' are concerned, and I suspect, and hope, that any future such will be published digitally.

In a niche of its own, *The Macmillan Birders Guide to European and Middle Eastern Birds* (Harris *et al* 1996) covers the identification of 70 particularly confusing/difficult species groups, *eg* Sand Plovers, in much greater detail than in field guides. This and its near contemporary *A Field Guide to the Rare Birds of Britain and Europe* (Lewington *et al* 1991) were both frequently cited in the Cyprus unusual record forms. There are now of course extensive on-line identification resources, including photo galleries and the comprehensive *Handbook of the Birds of the World Alive* (del Hoyo *et al* 2020, <https://www.hbw.com/>). Also on-line, the regularly updated OSME Region List (Blair *et al* 2019, <https://www.osme.org/ORL>) is the best and indeed only source for the latest information on changes to the nomenclature, taxonomy, distribution and status of all the species recorded in the OSME region.

Cyprus has been fortunate, at least from an ornithological point of view, in having had for most of the last century the presence of British colonial officials and military personnel, many of them keen ornithologists. This means that for that period its ornithological history is probably better known than is the case for most Middle-Eastern countries. Even so, since Flint & Stewart (1992), 34 Asian/Middle-Eastern species have been added

to the island's list, (counted from Stylianou 2019a). In some cases these species may have become more dispersive, more numerous or have changed their distributions in response to climate or habitat change, *eg* Laughing Dove *Spilopelia senegalensis* (Hellicar 2016). But it also seems likely that many were overlooked in the past, not only because there were fewer observers then, but also because these species were inadequately covered or not included in earlier field guides. Resulting in a lack of knowledge of their identification or even of their existence. Examples from Cyprus are Oriental Turtle Dove *Streptopelia orientalis* (Richardson 2019), Crested Honey Buzzard *Pernis ptilorhynchus* (Radford 2013), Dunn's Lark *Eremalauda dunni* (Christodoulides 2008 but see Donald & Christodoulides 2018), Ménétries's Warbler *Sylvia mystacea* (*eg* Sadler 1999) and Brown-necked Raven *Corvus ruficollis* (Howard & Howard 2018). That species may have been overlooked for this reason in the past may be worth bearing in mind when assessing apparent historical changes in the status of Middle-Eastern birds. Furthermore, the example of Dunn's Lark illustrates the point that even with the benefit of current knowledge and high quality digital photographs identification beyond doubt may still not always be possible.

Records in the past were accepted with the identification knowledge then available. They included provenance, descriptions, often sketches and occasionally analogue photographs, whereas records now are usually supported by good quality digital imagery and occasionally little else (in this respect the digital camera/telephoto lens combination has replaced the shotgun). Descriptions, sketches or photographs of earlier rarities, even first records, were often not published, even when provenance and circumstances were (*eg* Hubbard 1969, Bennett 1983, Lobb 1983, Flint *et al* 1987) and in some cases the supporting evidence may now be difficult to trace, whereas photos/descriptions of current records are usually published. Something for compilers of future avifaunas/checklists to consider. There may be a case for re-assessment of earlier records, especially where they are the only record or where they now appear anomalous when compared with the pattern of more recent records.

Looking back, it can be difficult to imagine how it was for the earlier birders, with no field guides to cover unfamiliar species or checklists to give them an indication of which species they might expect to encounter. In some respects it may have been a more interesting time, with reliance on one's own experience, knowledge and wits, and with so much new to discover. Nowadays we are almost overwhelmed with easily accessible information, from multiple sources, with often seemingly little new or original to discover. The emphasis now has perhaps shifted towards regular recording to detect and monitor the many changes in status which are occurring in response to rapid climate and habitat change.

ACKNOWLEDGEMENTS

My thanks to Sophie Wilcox, librarian at the Alexander library, Oxford, for copies of literature; to John Hubbard, Richard Porter, Colin Richardson, Peter Stewart and Jane Stylianou (BirdLife Cyprus Bird Recorder) for their comments on an earlier draft and for answers to queries, to Mick Lobb for copies of literature and answers to queries and to Stuart Allen and Jane Stylianou for putting me in touch with Paul Coombes and Dave Walker respectively. Finally my thanks to Paul Coombes, Darren Frost, Alison McArthur, Colin Richardson, Jane Stylianou and Dave and Jan Walker for giving me a choice of their photographs, and particularly to Paul and Dave whose photographs are included here.

LITERATURE CITED

- Bannerman, DA & WM Bannerman. 1958. *Birds of Cyprus*. Oliver & Boyd, Edinburgh and London.
- Bannerman, DA & WM Bannerman. 1971. *Handbook of the Birds of Cyprus and Migrants of the Middle East*. Oliver & Boyd, Edinburgh.
- Belcher, CF. 1929. Something about Cyprus. *The Oologists' Record* 9: 49-52.
- Bennett, CJL. 1983. *Annual Report* 29. Cyprus Ornithological Society.

- Benson, S. Vere. 1970. *Birds of Lebanon and the Jordan area*. ICBP, London.
- Blair, M, S Preddy & AA Alenezi. 2019. The OSME Region List of bird taxa. Version 5.1: July 2019. Ornithological Society of the Middle East. <https://www.osme.org/ORL>. [Accessed 1 Jan 2020]
- Bucknill, JA. 1909-10. On the ornithology of Cyprus. *Ibis* 1909: 569–613, 1910: 1–45, 385–435.
- Christodoulides, S. 2008. Dunn's Lark *Eremalauda dunni* at Agia Napa, 10 April 2007, the first record for Cyprus. *Cyprus Bird Report* 2007: 161-162.
- Christophorou, L. 1998. *Birds of Cyprus*. Nicolaou & Sons Ltd, Cyprus.
- Clement, P. 1987. Field identification of West Palearctic wheatears. *British Birds* 80: 137-157, 187-238.
- Cramp, S and various co-authors/editors. 1977-1994. *Birds of the Western Palearctic*. 9 Vols. Oxford University Press.
- Coward, TA. 1920-26. *The Birds of the British Isles and their eggs*. 3 Vols. Frederick Warne & Co, London.
- Cyprus Natural History Society. 1908-1913. *Annals* 1-4. Nicosia.
- Donald PF & S Christodoulides. 2018. The 2007 record of 'Dunn's Lark' on Cyprus revisited, with notes on the separation of Dunn's Lark *Eremalauda dunni* and Arabian Lark *E. eremodites*. *Sandgrouse* 40: 17-24.
- Dresser, HE. 1871-1896. *A History of the Birds of Europe : including all the species inhabiting the Western Palearctic region*. Volumes 1-9. The author, London.
- Dresser, HE. 1902, 1903. *A Manual of Palearctic Birds*. The author, London.
- Ferrier JM. 1936. Sixteen days in Cyprus. *The Oologists' Record* 16: 53-59.
- Flint, PR & LR Cole. 1973. Reviews of *A Checklist of the Birds of Cyprus 1971* and *Handbook of the Birds of Cyprus and Migrants of the Middle East*. *Cyprus Ornithological Society Bird Report* 3: 81-84.
- Flint, PR & PF Stewart. 1983 (first edition), 1992 (second edition). *The Birds of Cyprus*. British Ornithologists' Union, Tring, UK.
- Flint, PR, PF Stewart & GM Kirwan. 1997. A review of claimed records of Lesser Sand Plover *Charadrius mongolus* from Cyprus and Turkey. *Sandgrouse* 19: 133-139.
- Gooders, J. (ed). 1969-70. *Birds of the World*. IPC Magazines, London.
- Guillemand, FHH. 1888. Ornithological notes of a tour in Cyprus in 1887. *Ibis* 1888: 94–124.
- Haifa Naturalists' Club Bulletin. 1945. List of birds seen in Cyprus 26 July – 5 August 1945. *Bulletin* 1: 1. Middle East Biological Scheme.
- Hamilton, W & T Parkin. 1946. Notes on birds seen during a visit to Cyprus 23 June-5 July 1946. *Jerusalem Naturalists' Club* 32: 5-6. Middle East Biological Scheme.
- Hardy, E. 1946a. The winter distribution of the Gannet in the Eastern Mediterranean. *British Birds* 39: 255-256.
- Hardy, E. 1946b. Probable nesting of the Rose-coloured Pastor in Lebanon in 1945. *Ibis* 88: 398.
- Hardy, E. 1947. The Northern Lappet-faced Vulture in Palestine – A new record for Asia. *Auk* 64: 471.
- Harris, A, H Shirihai & D Christie. 1996. *The Macmillan Birders Guide to European and Middle Eastern Birds*. Macmillan, London.
- Hartert, E. 1903–1922. *Die Vögel der Paläarktischen Fauna*. Friedländer, Berlin.
- Heinzel, H, R Fitter & J Parslow. 1972. *The Birds of Britain and Europe with North Africa and the Middle East*. Collins, London.
- Hellicar, M. 2016. The Laughing Dove *Streptopelia senegalensis* in Cyprus—the state of play in 2014. *Cyprus Bird Report* 2014: 174–175.
- Hollom, PAD, RF Porter, S Christensen & I Willis. 1988. *Birds of the Middle East and North Africa*. T & AD Poyser Ltd, Calton, England.
- Horner, KO & JP Hubbard. 1982. An analysis of birds limed in spring at Paralimni, Cyprus. *Cyprus Ornithological Society Bird Report* 7: 54–104.
- Howard, K & R Howard. 2018. First record of Brown-necked Raven *Corvus ruficollis* for Cyprus. *Cyprus Bird Report* 2016: 169 and Plate 27.
- del Hoyo, J, A Elliott, J Sargatal, DA Christie & E de Juana (eds). 2019. *Handbook of the Birds of the World Alive*. Lynx Edicions, Barcelona. <https://www.hbw.com/>. [Accessed 24 November 2019]
- Hubbard, JP. 1968. Bird liming in Cyprus. *Cyprus Ornithological Society Bird Report* 15: 23-26.
- Hubbard, JP. 1969. *Phylloscopus fuscatus* (Blyth) in Cyprus. *Bulletin of the British Ornithologists' Club* 89: 116.
- Kourtellarides, L. 1998. *Breeding birds of Cyprus*. Bank of Cyprus Group, Nicosia.
- Lewington, I, P Alström & P Colston. 1991. *A Field Guide to the Rare Birds of Britain and Europe*. HarperCollins, London.
- Lobb, M. 1983. Didric cuckoo *Chrysococcyx caprius* in Cyprus - new to the Palearctic. *Bulletin of the British Ornithologists' Club* 103: 111.
- Lilford, TP. 1889. A list of the birds of Cyprus. *Ibis* 1889: 305-350.
- Meinertzhagen, R. 1930. *Nicoll's Birds of Egypt*. 2 Vols. Hugh Rees, London.
- Meinertzhagen, R. 1954. *Birds of Arabia*. Oliver & Boyd, Edinburgh and London.
- Moreau, RE. 1961. Problems of Mediterranean-Saharan migration. *Ibis* 103a: 373-623.

- Moreau, RE. 1972. *The Palearctic-African Bird Migration System*. Academic Press, London.
- Müller, A. 1879. Zur Ornithologie der Insel Cypem. *Journal für Ornithologie* 27: 385-393.
- Nature. 1946. Birds of Palestine. *Nature* 12th October 1946. 158: 526.
- Payn, WA. 1939. Notes on the birds of Cyprus. *Ibis* 81: 735-742.
- Peterson, R, G Mountfort & PAD Hollom. 1954 (first edition), 1965 (second edition), 1993 (fifth edition). *A Field Guide to the Birds of Britain and Europe*. Collins, London.
- Porter, RF, I Willis, S Christensen & BP Nielsen. 1974, 1976, 1981. *Flight Identification of European Raptors* (three editions). T & AD Poyser, Berkhamsted/Calton, UK.
- Porter, RF, S Christensen & P Schiermacker-Hansen. 1996. *Field Guide to the Birds of the Middle East*. T & AD Poyser, London.
- Porter, RF & S Aspinall. 2010. *Birds of the Middle East* (second edition). Christopher Helm, London.
- Radford, D. 2013. First record of Crested (Oriental) Honey Buzzard *Pernis ptilorhynchus* in Cyprus. *Cyprus Bird Report* 2012: 147-148 and Plate 17.
- Richardson, C. 2019. The first record of a live Oriental Turtle Dove *Streptopelia orientalis* in Cyprus. *Sandgrouse* 41: 201-204.
- Richardson, C & RF Porter. 2020. *Birds of Cyprus*. Christopher Helm, London.
- Riddell, WH. 1927. On some birds of Cyprus in the spring. *Cyprus Agricultural Journal* 22: 94-98, 129-134.
- Roselaar, CS. 1995. *Songbirds of Turkey: an atlas of biodiversity of Turkish passerine birds*. Pica Press, Robertsbridge, UK.
- Sadler, AE. 1999. *Annual Report* 45: 62. Cyprus Ornithological Society.
- Sharrock, JTR (ed). 1980. *Frontiers of Bird Identification*. British Birds Ltd, UK.
- Shirihai, H & L Svensson. 2018. *Handbook of Western Palearctic Birds: Passerines*. 2 Vols. Helm, London.
- Small, BJ. 1994. Separation of Pied Wheatear and Cyprus Pied Wheatear. *Dutch Birding* 16: 177-185.
- Stewart, PF & SJ Christensen. 1971. *A Checklist of the Birds of Cyprus 1971*. Peter Stewart, Plymouth.
- Stresemann, E. 1953. On a collection of birds made in Cyprus in 1820. *Ibis* 95: 549-550.
- Stylianou, J. 2019a. *Birds of Cyprus. Table of monthly sightings and yearly occurrences. Checklist 2013-2018*. BirdLife Cyprus.
- Stylianou, J. 2019b. *Cyprus Bird Report 2017*.
- Svensson, L. 1970, 1975, 1984, 1992. *Identification Guide to European Passerines* (four editions). The author, Stockholm
- Svensson, L, PJ Grant, K Mullarney & D Zetterstöm. 1999 (first edition), 2009 (second edition). *Collins Bird Guide*. HarperCollins, London.
- Taylor, PB. 1983. Field identification of sand plovers in East Africa (Part 2). *Dutch Birding* 5: 37-66.
- Taylor, PB. 1987. Field identification of Greater and Lesser Sandplovers. In: *International Bird Identification: Proceedings of the 4th International Identification Meeting, Eilat, 1st - 8th November 1986*: pp18-20. International Birdwatching Centre, Eilat.
- Took, JME. 1973, 1977, 1982 (three editions). *Common Birds of Cyprus*. The author, Nicosia.
- Took, JME. 1992. *Birds of Cyprus*. The author, Nicosia.
- Vaurie, C. 1959, 1965. *The Birds of the Palearctic Fauna*. 2 Vols. Witherby, London.
- Williamson, K. 1962, 1968. *Identification for Ringers*. 3 Vols. British Trust for Ornithology, UK.
- Wilson, GF. 1928. The shooting and bird season 1927-28. *Cyprus Agricultural Journal* 23: 64-65.
- Witherby, HF. (ed). 1919-1920. *A Practical Handbook of British Birds*. 2 Vols. Witherby, London.
- Witherby, HF, FCR Jourdain, NF Ticehurst & BW Tucker. 1938-1941. *The Handbook of British Birds*. 5 Vols. Witherby, London.

Peter Flint peterflint123@btinternet.com

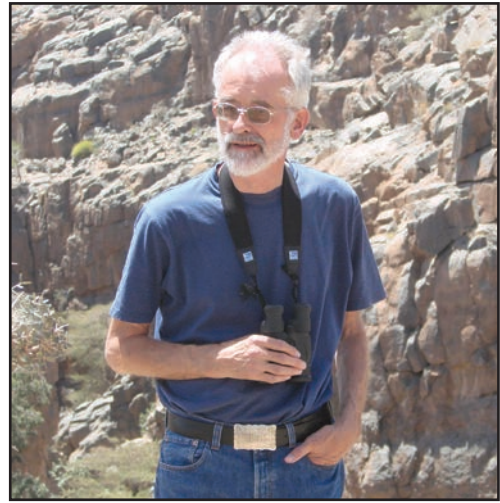
OBITUARIES

Peter John Cowan (1947 – 2019)

Peter, known to many as PJ, was born on 5 November 1947 at Kingsbury, London. The family moved to Hastings in 1962, with Peter then attending Hastings Grammar school. A teacher at his school encouraged Peter and his friends to watch birds and keep records, and so his natural history journey began. As was so typical of Peter he took up this challenge with enthusiasm and even at the young age of 14 he volunteered at RSPB Minsmere during the school summer holidays. The following year he was at Havergate Island guarding breeding Avocets *Recurvirostra avosetta* and the next summer at Abernethy protecting Ospreys *Pandion haliaetus*.

It was at the University of Hull in late 1966 that he met his future wife Elaine. Soon after graduating they married and sailed off into the sunset with one-way tickets to the University of Manitoba in Winnipeg, Canada via Montreal (courtesy of a wedding gift from Elaine's father). Peter went on to complete his Masters and PhD at the University of Manitoba under his supervisor Dr Roger Evans, a 'gull man' who, once Peter had successfully passed his PhD oral, said he never really understood what PJ's research was all about but just let him get on with it as it always seemed to work out OK with good publications. Peter's Masters was on *The contrast and coloration of seabirds* and his PhD on *Parental recognition of voice in Canada Geese*.

Peter and Elaine moved to Aberdeen for five years where Peter became a Poultry Research Specialist at the College of Agriculture at Craibstone. Then came Peter's first encounter with the desert environment that helped shape his later life. In September 1980, the family (Anne-Marie was born in August 1979) moved to Libya, as Peter was appointed as Assistant Professor in Zoology at the Higher College of Technology, or HIT, 400 km south of Tripoli. Here he enjoyed regular trips into the desert to explore dunes, wadis and shrimp lakes, and to learn more about associated species and cultural history. Peter loved his time in the deep deserts of Libya and established himself as a desert biologist with a special interest in birds and



a general interest in other taxa. It was during this time that Peter became a member of OSME and in the following years did his best to attend the AGM if his travels allowed.

The family returned to Scotland for a few years before Peter and Elaine once again headed back to the desert, this time to the Middle East where he taught at the University of Kuwait from 1988 until 1998, with a brief spell back in the UK during the Iraq war. Prior to the war, Peter often visited the border area hoping to get into Iraq to do some ornithological exploration, but his attempts were politely curtailed by the border guards. Such attempts became impossible from the early 1990s; even trips within Kuwait were curtailed due to the chance of coming across unexploded munitions. Consequently a safe trip was planned to Dubai, where Peter narrowly missed drowning in a flash flood! Although many areas of the Kuwaiti desert were out of bounds, there were still places where Peter and his friend David Newman could go out looking for the specialist desert larks – mainly in the areas that had been supposedly cleared. At this time Peter also became good friends with Gary Brown, a birder and botanist who was equally hooked on deserts. He also had a stint working on Kuwait's new aquarium project, where his key task was to help populate the various exhibits with species ranging from Black-winged Stilts *Himantopus himantopus* to Saltwater Crocodiles *Crocodylus porosus*! Rather romantically, he purchased two Brown-necked Ravens *Corvus*

ruficollis as a birthday present for Elaine. In the early 2000's Peter did some consultancy work on the biodiversity of Wadi Bura (also known as Jabal Burra) in Yemen enabling him to travel to Sana'a and Hodeidah.

Most recently he worked for 10 years at the University of Nizwa in Oman. Here, he and Elaine commenced joint studies of dragonflies at various springs and wadis across Oman. One wadi pool became scientifically their own after so many repeated visits. As Elaine stated in their joint talk at the OSME Summer Meeting in 2019, "I did the photos but Peter always did the real science".

It was during his time in Oman when Peter took over as Editor of the OSME journal *Sandgrouse*. He was co-opted onto OSME Council in 2008 and edited his first issue that year (Volume 30, issue 2). Peter made an immediate impact on the journal with a new style and layout which is still evident more than a decade later. As Editor he introduced a new scientific rigour to the journal and insisted that papers should be peer-reviewed prior to acceptance. He oversaw the editing and production of 22 issues of *Sandgrouse* along with several special issues, most notably the 50th Anniversary Supplement for which he also contributed a paper *The unnatural history of desert birds in the Arabian Peninsula*.

From the time that he spent in Kuwait, Oman and Yemen he submitted many records and observations to the *Arabian Breeding Bird Atlas* project as well as contributing to *Phoenix*. In the words of Mike Jennings "he was one of the few Arabian birders who had an interest in the more mundane records of Crested Larks, Bulbuls and Sand partridge!" Towards the end of 2018 Peter emailed me to say that he felt the time was right to stand down as *Sandgrouse* Editor and he edited his final issue in the spring of 2019. His significant contribution to OSME was recognised at the Summer meeting in 2019, when the OSME Council was able to present Peter with a print of his favourite *Sandgrouse* cover – Cream-coloured Coursers *Cursorius cursor* taken by Amir Ben Dov. His love for desert wildlife was clearly illustrated in the talk he gave with Elaine at that same meeting entitled *Diurnal wildlife at a wadi pool in northern Oman*.

Peter passed away peacefully after a short illness on 3 August 2019. He will be sadly

missed, but his many contributions to Middle Eastern ornithology will live on.

Rob Sheldon

Chris Naylor (1961-2019) and Susanna Naylor (1965-2019)



Chris and Susanna lived and worked in the Middle East for 20 years, from 1989-2009. In 1995 they set up home in the Bekaa Valley, Lebanon, where Chris, a keen birder and science teacher, frequented the Aammiq Wetland (Plate 1) which they could see from the roof of their apartment. They discovered that it was a Ramsar site, but that conservationists had given it up for lost. The ever-shrinking marshes were being encroached for agriculture and afflicted by over-pumping of water, fertiliser pollution, pesticide abuse, over-grazing, fires and hunting. Susanna was not a birder, but she appreciated the high value of the wetland for local wildlife and vast numbers of migrating birds which used it as a stopover site. They agreed that action was needed. Talking to Dr Chris Walley, a geology lecturer at the American University of Beirut, they heard about A Rocha, a Christian organization engaged in scientific research, community-based conservation and environmental education. Now working in 21 countries, at that time A Rocha was a single project in Portugal and A Rocha Lebanon became the second when Chris and Susanna became Team Leaders in autumn 1997. At the start of the year, Susanna had given birth to Josh in Zahlé Hospital, so now had three children under the age of seven, but for the next twelve years she hosted visitors, welcomed volunteers and undertook much of the admin and financial management. It was essential



Plate 1: The Aammiq Wetland (Lebanon), eight years after A Rocha began working with local landowners to restore it. © Rich Prior

to have the support and understanding of Lebanese churches and so, in May 1998, a large assembly of Christian leaders met in Beirut to hear Rev Dr John Stott and Colin Chapman plead for environmental stewardship as a normal part of Christian discipleship.

Chris Walley recalls those early years of A Rocha Lebanon: "Chris and Susanna made their home, with their children, in Qabb Elias, an area that the British Embassy considered unsafe for UK citizens to visit, let alone inhabit. The rumbles of artillery from the southern Bekaa were a normal background noise and Israeli air raids in the valley were not uncommon. It was bitterly cold in winter and baking hot in summer. The road over to Beirut was legendary in its difficulty with Syrian army checkpoints, snowdrifts in winter and an unnerving number of accidents. Indeed, for the first few years of the work, the northern limit of the Aammiq Wetland was marked by an ominous line of south-facing Syrian tanks and armoured vehicles. Chris and Susanna were, in every sense of the word, on the frontline. They achieved an enormous amount. They had studied Arabic and worked hard to develop their skills with the colloquial form, and through it made many friends and contacts. Chris was remarkably gifted at getting alongside people and soon won the friendship – and certainly the respect – of the landowners, hunters and often volatile mixture of individuals in Qabb Elias. There was a gentle grace about him that placated even men with automatic weapons who either had – or claimed they had – authority in this part

of the Bekaa. Chris's ability to make friends was also apparent in the endless meetings with landowners, the various government ministries in Beirut and with other concerned NGOs. When I was with him I was always impressed by his courage, wisdom and grace. In a culture which depended on the creation of links, loyalties and obligations, the way that Chris and Susanna displayed an open and unshakeable integrity was impressive. Everyone knew they could not be bought or manipulated: and that meant that they could be trusted."

As local and expatriate scientists and artists joined the team, Chris and Susanna oversaw the development of outdoor environmental education to enhance school curricula (nationally, a novel concept) based at a centre on the Skaff Estate. Chris was in his element when busloads of youngsters arrived at the marsh. Their first reaction was usually fear of the bugs and attempts to kill them. Chris would calmly split the students into groups, to pond-dip or birdwatch, and delighted in the transformation as they responded with awe to storks drifting overhead and curiosity as they examined tadpoles and freshwater invertebrates. The team encouraged young naturalists by publishing bird and butterfly identification booklets in Arabic and launching wildlebanon.org with entirely Lebanese content, still a unique resource for schools that rely heavily on American or British text books.

Research was an important element. In April 2001, A Rocha Lebanon re-launched the ringing scheme (abandoned in the early 1970s)

and was rewarded on the very first evening when a Barn Swallow *Hirundo rustica*, roosting in the reed beds, was found to be carrying a Budapest ring. Bird studies included autumn raptor counts, winter surveys of waders and ducks and a year-long study of harriers at Aammiq, which showed that once the annual burning of the reedbeds stopped, Western Marsh Harrier *Circus aeruginosus*, Hen Harrier *C. cyaneus*, Montagu's Harrier *C. pygargus* and Pallid Harrier *C. macrourus* used them to roost, particularly in January and February. A detailed hydrological survey throughout a 12-month period during 2002/2003 provided baseline data on water sources, water quality and recommendations for management. Amphibians were studied at Aammiq by visiting herpetologists in 2004, leading to a survey of 76 sites throughout the country in 2005, bringing together herpetologists from A Rocha, the Université du Liban and the American University of Beirut.

Once the urgent need to protect Aammiq was being met, and the wetland was expanding in size, Chris turned his attention to other hotspots. In partnership with the Society for the Protection of Nature in Lebanon (SPNL), for three years from 2005-2007 he led field research on a national scale: over 30 sites were assessed with a total of 320 site visits and over 3000 hours of field monitoring. It was the most extensive bird research project ever undertaken in Lebanon and led to the establishment of a national bird database. Before the work started, there had been four Important Bird Areas (IBAs) in the country (including the Aammiq Wetland and the adjacent Chouf Cedar Reserve). The work resulted in the declaration of 11 new IBAs by BirdLife International. Afterwards, Chris and colleagues from SPNL ran courses in bird identification, conservation advocacy and site protection at each of the new IBAs so that local people could look after their forest, valley or mountain.

Perhaps Chris and Susanna's most ambitious dream was to set up an eco-restaurant in the Bekaa Valley to provide employment, using local, mostly organic food and wines, thus benefiting small businesses, with a percentage of the income going to the ongoing protection of the Aammiq Wetland and nearby Chouf Cedar Reserve. Funded

through the Swiss Development Agency and with support from Susanna's accounting skills, Tawlet Aammiq opened in 2012 and provides much-needed facilities for visitors from near and far.

By then, the Naylor's were supporting A Rocha Lebanon from a distance, living in England where they had first met, though Susanna's childhood was spent in Ghana, Mexico and the USA. Both had degrees from Cambridge University, Susanna in Medical Sciences MA, BA (Hons), and Chris in Natural Sciences MA, BA (Hons). As a newly married couple they moved to Kuwait to teach, planning to stay for at least a few years, but the invasion by Saddam Hussein inevitably changed their plans, though not their desire to embed themselves in the Middle East. They studied Arabic for a year and a half in Jordan, expecting to teach somewhere in the Gulf States, but Susanna had a recurring dream of them living in a red-roofed house on a mountain which descended to the sea, with a clear sense that it was where God intended them to be. One day a postcard arrived, showing the hills above Beirut, which was exactly as she had described to Chris, even to the position of the trees. They had already agreed to work with the Christian mission agency, Interserve, which was looking for a science teacher for the secondary Evangelical School in Zahlé. Qabb Elias became their home for the next five years, then Zahlé, and then Beirut. They moved to the UK in 2009, and the following year Chris became Executive Director of A Rocha International. In 2012, once their three children, Sam, Chloe and Joshua had begun adjusting to life in England, Susanna became a Form Teacher and then Head of Science at Kitebrook Prep School, Gloucestershire. She was just six weeks into her new role as Head of Science at Christ Church Cathedral School in Oxford when she and Chris died together in a car accident during a working visit to A Rocha South Africa.

For more information, see the obituary in *British Birds*, a short video of Chris at www.arocha.org/en/people/chris-naylor/ and his book, *Postcards from the Middle East: How our family fell in love with the Arab world* (2015).

Barbara Mearns

FROM THE RARITIES COMMITTEES

Ian Harrison (compiler)

Observers who have had a country first record accepted by a rarities committee are encouraged to write it up as a note or paper for publication in *Sandgrouse*.

CYPRUS

The Cyprus Rare Birds Committee comprises: Jane Stylianou (Chair), Melis Charalambides, Stavros Christodoulides, Chris Stavrou, Martin Hellicar, Johannes Honold, Filippos Georgiades. A full list of Cyprus birds requiring rarity descriptions and rare bird report forms are available from Jane Stylianou janestycy@yahoo.co.uk, to whom claims should be sent.

Since the report in *Sandgrouse* 41(2) the committee has accepted the following claims.

Namaqua Dove *Oena capensis*. One Petounta point, 21 April 2018 (J Stylianou). Seventh record.

Terek Sandpiper *Xenus cinereus*. One Oroklini marsh, 28 August 2018 (J Stylianou). 15th record since 2000.

Great Grey Shrike *Lanius (excubitor) excubitor*. One Agios Theodoros, Larnaca, 10 February 2018 (M Passman, F Georgiades, J Stylianou, S Christodoulides). First record of nominate.

'Mauryan Grey Shrike' *Lanius (excubitor) lahtora* (= 'Steppe' Grey Shrike *L. (excubitor) pallidirostris*). One Lara Beach, Paphos, 9 December 2018 (R Bailey, D Walker, J Walker, C Richardson). 18th record

Yellow-browed Warbler *Phylloscopus inornatus*. One Agia Varvara, Paphos, 25 October 2018 (D Walker, J Walker, Plate 1). 20th record.

Red-breasted Flycatcher *Ficedula (parva) parva*. One Agios Minas, Neo Horio, 8 October 2018 (M Jeffrey, M Preston). Rare passage migrant.

'Caspian Stonechat' *Saxicola maurus hemprichi*. One Paphos headland, 19 March 2018 (A Loutsios); one Akrotiri gravel pits, 2 April 2018 (A Crane); one Cape Greco, 3 April 2018 (J Stylianou, K Howard, R Howard, A Loutsios). Rare passage migrant.



Plate 1. Yellow-browed Warbler *Phylloscopus inornatus* 26 October 2018, Agia Varvara, Paphos, Cyprus. © Dave Walker



Plate 2. Red-fronted Serin *Serinus pusillus* 2 November 2018, Akrounta, Limassol, Cyprus. © Jane Stylianou

'Western Siberian Stonechat' *Saxicola maurus maurus*. One Mandria, 3 March 2018 (C Richardson). Rare passage migrant.

Red-fronted Serin *Serinus pusillus*. One Akrounta, Limassol, 31 October 2018 (S Spyrou, Plate 2); one Nicosia, 9 December 2018 (V Vasiliou). 14th-15th records.

EGYPT

The Egyptian Ornithological Rarities Committee (EORC) comprises Sherif Baha El Din (chair), Pierre André Crochet (vice-chair), Frédéric Jiguet (secretary), Lukasz

Lawicki (joint secretary), Arnoud van den Berg, Andrea Corso, Mohamed Habib, Richard Hoath and Manuel Schweizer. Claims should be sent to eorc.secretary@gmail.com.

See also <http://www.chn-france.org/eorc/eorc.php> where claim forms can be downloaded.

In addition to the report in *Sandgrouse* 41(2), EORC has evaluated the following previously published records and determined that they are not proven.

Wedge-tailed Shearwater *Ardenna pacifica*. Port Said, 10 March 1988.

African Grey Hornbill *Lophoceros nasutus*. Aswan, 30 December 1996.

Crimson-rumped Waxbill *Estrilda rhodopyga*. Aswan, 30 December 1996.

African Silverbill *Euodice cantans*. Aswan, 27 December 1996.

EORC has also determined that the following record is not proven.

African Desert Sparrow *Passer simplex*. Farafra oasis, 14 February 2003.

Further details can be obtained at the EORC website http://www.chn-france.com/upload_content/EORC_report_2018.pdf

IRAN

The Iran Bird Records Committee (IBRC) comprises Abolghasem Khaleghizadeh (co-ordinator and recorder), Mohammad Tohidifar, Ali Adhami-Mirhosseini, Seyed Babak Musavi, Meysam Ghasemi, Parviz Bakhtiari, Abbas Ashoori, Ali Sangchooli, Mohammad Safrang, Mohammad E. Sehhtisabet, Ramezanali Ghaemi, Alireza Hashemi and Arash Habibi-Azad. Derek Scott, Magnus Ullman, Raffael Ayé, Ian Harrison, Richard Porter and Mike Blair act as external consultants when necessary. Claims should be sent to Abolghasem Khaleghizadeh: akhaleghizadeh@gmail.com.

IBRC has accepted the following record.

Long-tailed Shrike *Lanius schach*. A pair with one juvenile near Bideskan, Ferdows, south Khorasan province, 27 July 2015 - first breeding for Iran and the Middle East (*Iranian Journal of Animal Biosystematics* 13: 285-288, 2017).

ISRAEL

The Israel Rarities and Distribution Committee (IRDC) comprises Avner Cohen (Secretary), Barak Granit, Yosef Kiat, Yoav Perlman, James P Smith. Claims should be sent to Avner Cohen israbirding@gmail.com. See also www.israbirding.com/irdc, where claim forms can be downloaded. IRDC has accepted the following records since the last report in *Sandgrouse* 38(2) (for further details see https://www.israbirding.com/irdc/bulletins/bulletin_11/).

Barnacle Goose *Branta leucopsis*. One Agamon Hula, 25 November 2018-8 February 2019 (H Seif *et al*). First record.

Bean Goose *Anser fabalis*. One Agamon Hula and adjacent Hula valley, 8 December 2016-18 February 2017 (H Hochman, Y Dax *et al*). Fifth record. Taxonomy of all Bean Goose records in Israel still requires clarification.

Lesser White-fronted Goose *Anser erythropus*. Two Maoz Haim, Bet Shan valley, 31 October-26 November 2016 (N Bessor *et al*); an immature, Hula valley, 25 December 2016-20 March 2017 (H Musa Heib *et al*); an immature, IBRCE Eilat, 3 January-25 March 2018 (R Shaish *et al*). This bird returned in November 2018, and commuted between Eilat and Aqaba (Jordan), accompanying two **Egyptian Geese** *Alopochen aegyptiaca* until at least July 2019. Seventh-ninth records.

Greater Scaup *Aythya marila*. Two Km19 Sewage Treatment Plant (STP), Eilat, 9-16 December 2016 (S Shalev *et al*). 19th record.

Great Bustard *Otis (tarda) tarda*. One male, Hayogev, Jizreel valley, 12-14 December 2015 (A Sasson). Eighth record.

Rufous Turtle Dove *Streptopelia (orientalis) meena*. One Einot Gibton, coastal plains, 5 May 2016 (R Haran); one 1cy Agamon Hula, 12-13 October 2016 (Y Koren, S Agmon); one Yotvata, 17 April 2018 (F Moffat *et al*). 13th-15th records. A 1cy bird Ga'ash turf fields, 31 October 2018 (A Livne) could not be assigned to a ssp and remains therefore **Rufous/Oriental Turtle Dove** *Streptopelia (orientalis) ssp*. 16th record.

Horned Grebe *Podiceps auritus*. One Ein Hamifratz, 10-15 November 2016 (D Melamed *et al*); one Maayan Zvi, 15-18 December 2016 (R Blank *et al*); one Kfar Ruppin, 3-14 January 2017 (G Moshe *et al*). Third to fifth records.



Plate 3. Buff-breasted Sandpiper *Calidris subruficollis* October 2017, Ga'ash turf fields, Israel. © Lior Kislev

Lesser Flamingo *Phoenicopterus minor*. One Km20 salt pans, Eilat, 4 March 2018 to at least 27 April 2018 (G Grandāns *et al.*). Third record - both previous records from this same site, most recently 2014-15.

Crab Plover *Dromas ardeola*. One North Beach, Eilat, 7 May 2016 (E Didner, P-A Crochet *et al.*); three same location, 10 May 2018 (R Shaish, N Weiss, F Moffat, O Sherer). Fifth and sixth records.

Red-wattled Lapwing *Vanellus indicus*. One Kfar Blum, Hula valley, 13-18 November 2017 (Y Porat *et al.*); one Afikim, Jordan valley, 12 January-16 February 2018 (Y Porat *et al.*). Third and fourth records, first for 15 years.

Pectoral Sandpiper *Calidris melanotos*. One Gan Shmuel, 17-26 September 2017 (D Kotter, I Solnik *et al.*). 14th record.

Buff-breasted Sandpiper *Calidris subruficollis*. One Icy, Ga'ash turf fields, 24-26 October 2018 (G Sherbelis *et al.*, Plate 3). First record.

Long-billed Dowitcher *Limnodromus scolopaceus*. One Km20 salt pans, Eilat, 22-26 April 2017 (P Pynnönen *et al.*, Plate 4). Second record, last 1984.

Dowitcher sp. *Limnodromus sp.* One Ma'ayan Zvi and Nakhsholim, Carmel coast, 15 October-27 November 2017 (A Pedros *et al.*). Although the consensus was for **Long-billed Dowitcher** *Limnodromus scolopaceus*, **Short-billed Dowitcher** *Limnodromus griseus* could not be ruled out.

Pin-tailed Snipe *Gallinago stenura*. One Einot Tzukim nature reserve, Dead Sea, 12 October 2018 (R Haran, R Paz). 11th record.



Plate 4. Long-billed Dowitcher *Limnodromus scolopaceus* April 2017, Km20 salt pans, Eilat, Israel. © Mickey Laloum

Atlantic Puffin *Fratercula arctica*. One found dead, Bustan Hagalil, northern Mediterranean coast 15 September 2018 (P Shilo). First record (accepted to Category A despite doubt about the location of its decease).

Wilson's Storm Petrel *Oceanites oceanicus*. One off Eilat 12-13 September 2016 (N Weiss *et al.*) and one there 12-15 September 2017 (I Shanni, R Shaish *et al.*). Second and third records.

European Storm Petrel *Hydrobates (pelagicus) pelagicus*. Two 10 km off Haifa, 24 October 2016 (H Shirihai, M Goren *et al.*). Sixth record.

Swinhoe's Storm Petrel *Hydrobates monorhis*. All records from deep water off Eilat: one, possibly two, 13 September 2016 (N Weiss *et al.*), one 11 June 2017 (N Weiss), one 15 July 2017 (N Weiss, R Shaish, Y Charka), one 12-15 September 2017 (I Shanni, R Shaish *et al.*). Seventh to tenth

- records. This species seems to be regular in the Gulf of Aqaba almost year round, as indicated by a series of records at sea and also from land.
- Yellow-billed Stork** *Mycteria ibis*. An immature, Neve Ur, Jordan valley, 5 March 2016 (I Sade *et al*); an immature Bet Shean and Harod valleys, 9-30 July 2017 (O Lotan *et al*); an immature, Agamon Hula, 6-9 May 2018 (M Charter *et al*). 26th-28th records. This species is now considered an almost annual, regular rare to very rare summer visitor; claims for future records need no longer be submitted to IRDC.
- Pink-backed Pelican** *Pelecanus rufescens*. Several immature birds roamed around northern Israel during 2017 and 2018 (ninth to 13th records): one Neve Eitan, Bet Shean valley, 9-26 April 2017 (T Kahn *et al*); one Yerucham lake, 30 May-25 August 2017 (E Banker, T Kahn *et al*); one Ein Hamifratz, Zvulun valley, 9 June 2017 (I Shimshon) (possibly the same bird as the one in Bet Shean valley); one Gesher fishponds, 18 May 2018 (E Banker *et al*); one Hula nature reserve, 27 August-28 September 2018 (D Rezek *et al*).
- Lammergeier** *Gypaetus barbatus*. One immature, Golan Heights, 15 November 2016-14 January 2017 (E Banker *et al*).
- Bateleur** *Terathopius ecaudatus*. In addition to the long-staying individual that roamed mainly in the southern Judean plains January 2015-March 2017, four more individuals were recorded: an immature migrating over Eilat mountains, 9 May 2016 (J Bertrands *et al*); a juvenile migrating over Rehaniya, Galilee, 15 May 2017 (R Hazan); an immature, IBRCE, Eilat and southern Arava, 13 February 2018-7 April 2018 (G Grandāns, S Gorransson *et al*); an immature, Eilat, 10-20 April 2019 (T Lilja *et al*). 10th-13th records.
- Tawny Eagle** *Aquila rapax*. A 3cy bird Gvulot, 14 July 2016-9 August 2016 (O Chagina, B Granit *et al*). Sixth record.
- Verreaux's Eagle** *Aquila verreauxii*. One Eilat mountains, 5 February 2018 (R Smith). This species has become extremely rare.
- Yellow-billed Kite** *Milvus (migrans) aegyptius*. One Km19 STP, Eilat, 18 July-7 September 2018 (S Shalev *et al*). Third record.
- Rough-legged Buzzard** *Buteo lagopus*. A 2cy near Kiryat Gat, 4 February-25 March 2016, often associated with the resident Bateleur *Terathopius ecaudatus* (I Solnik, Y Perlman *et al*); a 3cy Kedma, 16-23 February (N Primo *et al*). Third and fourth records.
- Turkestan Shrike** *Lanius phoenicuroides*. One 2cy male Ovda valley, 21-22 March 2018 (H Shirihai, G Kirwan *et al*) and possibly the same individual Yotvata, 24-28 March 2018 (Y Perlman *et al*).
- Asian House Martin** *Delichon (urbicum) dasypus*. One 1cy Maagan Michael, 16-27 December 2016 (B Granit, T Landsberger *et al*). First record.
- Pallas's Leaf Warbler** *Phylloscopus proregulus*. One Yerucham lake, 28 October-1 November 2016 (R Livne *et al*); one Ein Gedi, 26 January-17 March 2017 (J Noordhuizen *et al*). Fourth and fifth records.
- Dusky Warbler** *Phylloscopus fuscatus*. One Ma'ayan Zvi, 16 October 2018 (Y Kiat *et al*). Eighth record.
- Green Warbler** *Phylloscopus nitidus*. One Jerusalem bird observatory, 10 June 2018 (E Gur *et al*). Eighth record (second in June).
- Arctic Warbler** *Phylloscopus borealis*. One IBRCE, Eilat, 23 September 2018 (K Clare, L Parau, N Weiss *et al*). First record, confirmed by DNA.
- Basra Reed Warbler** *Acrocephalus griseldis*. One IBRCE Eilat, 8-11 May 2018 (R Shaish, N Weiss *et al*). Bred Hula valley 2006-2008 but has returned to its previous status as a very rare vagrant.
- Paddyfield Warbler** *Acrocephalus agricola*. One IBRCE Eilat, 8 May 2016 (N Weiss *et al*); one Midreshet Ben Gurion, 25 April 2017 (D Burns). 11th-12th records.
- Western Grasshopper Warbler** *Locustella naevia*. One Agamon Hula, 24 August 2016 (Y Kiat, Y Lenard *et al*); one Wadi Kelt, 26-29 March 2017 (Y Goldreich *et al*); one Midreshet Ben Gurion, 17 August 2018 (D Burns *et al*); one Yeruham, 10 May 2019 (R Livne *et al*). 12th-15th records.
- Red-rumped Wheatear** *Oenanthe moesta*. One female, Uvda valley, 21 October 2017-18 February 2018 (S Shalev, J Vastamäki *et al*, Plate 5). Most probably the same individual was seen at the same site 2 November 2018. A male and female Km94, Arava valley, 4 November 2017-15 February 2018 (S Shalev *et al*). Fifth and sixth records (first for 30 years).
- Basalt Wheatear** *Oenanthe (lugens) warriar*. Many records in the winters of 2016-2017 and 2017-2018 indicate that Basalt



Plate 5. Red-rumped Wheatear *Oenanthe moesta* 17 November 2017, Uvda Valley, Negev, Israel. © Yoav Perlman

Wheatear is a regular winter visitor to southern Israel. One 2cy male, Km94, Arava valley 12 January 2016 (L Kislev *et al*); one Amram pillars, 1 January-mid-February 2017 (B Steffen, K Menke *et al*) (returned winter 2017-2018); one Beer Ora, 5 January-late February 2017 (I Shanni *et al*) (returned winter 2017-2018); one Uvda valley, 17 January-late February 2017 (O Ovadia *et al*); one Beer Ora, 16 February 2017 (D Kotter *et al*); one Eilat mountains, 3-7 February 2017 (IBRCE team); one Uvda valley, 28 October 2017-16 February 2018 (D & S Tabak *et al*); one Uvda valley, 14 November 2018-January 2019 (L Kislev *et al*). 7th-14th records.

Iranian Wheatear *Oenanthe (lugens) persica*. One 2cy male, Har Amasa, 10 March-2 April 2018 (I Milchtech, D Raved *et al*). DNA confirmed. Returned to same location 8 November 2018 to early April 2019. Second record.

Yellow-throated Sparrow *Gymnoris xanthocolis*. One 1cy IBRCE Eilat, 11-16 September 2017 (O Sherer *et al*) and another 1cy Mitzpe Shalem, 30 September 2017 (K Levi). Fifth and sixth records.

Alpine Accentor *Prunella (collaris) collaris*. One Mount Arbel, 30 December 2015-9 January 2016 (L Kislev *et al*). First record since 2005.

'Masked Wagtail' *Motacilla (alba) personata*. One male, southern Dead Sea, 23-25 March 2016 (M Guyt *et al*). Third record.

Blyth's Pipit *Anthus godlewskii*. One Arsuf, 19 March 2016 (O Naor *et al*); one same location 11 March-16 April 2017 (I Gurfinkel, E Dvir *et al*). Fifth and sixth records.

Red Crossbill *Loxia curvirostra*. Three Mount Herzl, Jerusalem, 19-27 November 2016 (A Rinot *et al*).

IRDC did not accept the following records because the identification was not fully established; this was most often due to a lack of adequate documentation or, more rarely, because the information contradicted the identification of the species being claimed.

Pacific Swift *Apus pacificus*. One IBRCE Eilat, 2 March 2018.

Rufous Turtle Dove *Streptopelia (orientalis) meena*. Agamon Ha'Hula, 12-13 October 2016; Yotvata, Eilat region, 12 September 2018.

Red-necked Grebe *Podiceps grisegena*. Km20 salt pans, Eilat, 9 March 2017.

Long-toed Stint *Calidris subminuta*. One IBRCE Eilat, 25 February 2018.

Sooty Tern *Onychoprion fuscata*. One North Beach, Eilat, 15 July 2016.

Red-billed Tropicbird *Phaethon aethereus*. North Beach, Eilat, 31 July 2015.

Swinhoe's Storm Petrel *Hydrobates monorhis*. South Beach, Eilat, 8 May 2016; off Haifa, 12 June 2017; North Beach, Eilat, 19 June 2017; North Beach, Eilat, 6 February 2018.

Great Shearwater *Ardenna gravis*. North Beach, Eilat, 16 June 2018.

European Shag *Gulosus aristotelis*. One Jaffa port, 18 January 2016.

Red Kite *Milvus milvus*. One near Kiryat Gat, 5 October 2012; two south-west of Ovda airport, 22 March 2017.

Brown Shrike *Lanius cristatus*. One Eilat, 27 March 2019.

Turkestan Shrike *Lanius phoenicuroides*. One Be'er Ora, Eilat region, 28 March 2018 and one Neot Smadar, Eilat region, 27 April 2018.

Basra Reed Warbler *Acrocephalus griseldis*. One Kfar Ruppim, 31 March 1999.

Eyebrowed Thrush *Turdus obscurus*. One Jerusalem bird observatory, 16 November 2010.

Taiga Flycatcher *Ficedula albicilla*. A 2cy female, Jerusalem bird observatory, 27 April 2007 and one same location, 3 May 2011.

The identification of the following records was established but a (former) captive origin could not be ruled out:

Red-billed Teal *Anas erythrorhyncha*. Iddan area, northern Arava. January 2015-April 2016.

Magpie *Pica pica*. Kfar Etzion, Judea, 3 Jun 1994.

Arabian Golden Sparrow *Passer euchlorus*. An adult male IBRCE, Eilat, 4 August-29 November 2016.

IRDC has removed the following species from the Israel list: **Saunders's Tern** *Sternula saundersi*. IRDC writes: "The complexity and diversity within **Little Tern** *Sternula albifrons* plumages has been thoroughly studied in Israel and neighbouring countries in recent years and as such, the IRDC decided to treat all previous and future Israeli claims of this species with extreme caution. A review of all historical records in Israel revealed that this species has been inadequately documented in the past and that none of the previous reports rule out a variation within Little Tern especially the variation in the upper-tail colour and the difference between Saunders's Terns and Little Terns of the eastern Mediterranean."

JORDAN

The Jordan Bird Records Committee (JBRC) comprises Fares Khoury (secretary), Feras Rahahleh, Erik Hirschfeld, Richard Porter and Ian Andrews. Claims should be sent to Fares Khoury at avijordan2000@yahoo.com. Alternatively a claim form can be completed online on the Jordan Birdwatch website: <http://www.jordanbirdwatch.com/birds-in-jordan/jbrc/bird-records-form/>

JBRC has accepted the following records since the report in *Sandgrouse* 41(1).

Red-crested Pochard *Netta rufina*. One adult male in eclipse plumage Azraq wetland reserve, 3 November 2018 (N Hamidan). Eighth record.

Lichtenstein's Sandgrouse *Nyctiperdix lichtensteinii*. Four adults Aqaba bird observatory, 20 November 2018 (F Rahahleh). Fifth record.

Pygmy Cormorant *Phalacrocorax pygmeus*. One 1cy Aqaba (Ayla oasis project), 15 September 2018; one adult Aqaba bird observatory, 4 April 2019 (both F Rahahleh). Third and fourth records (excluding old records before 2000).

Crested Honey Buzzard *Pernis ptilorhyncus*.

At least four including adult males and females and one 1cy female Aqaba bird observatory, 11 December 2018 (D Drukker). These birds stayed in the area (including Eilat) for several months. Fifth record. An adult female there 10 March 2019 (J Szabó) and another 6 April 2019 (F Khoury). Sixth and seventh records.

Peregrine Falcon *Falco peregrinus*. One 1cy near Al Jafr, 6 October 2018 (F Khoury). Tenth record.

The following claims have not been accepted:

Peregrine Falcon *Falco peregrinus*. Al-Jafr, 12 October 2018.

Pied Wheatear *Oenanthe pleschanka*. Burqu, 2 April 2019.

KUWAIT

The Kuwait Ornithological Rarities Committee (KORC) comprises Neil Tovey (chair), AbdulRahman Al-Sirhan (secretary), Markus Craig, Mike Pope, Humoud Al-Shayji and Omar Al Shaheen. Oscar Campbell and Peter Kennerley are both external adjudicators with voting rights. Claims should be sent to the secretary at alsirhan@alsirhan.com or the chair at neiltovey@gmail.com.

KORC has accepted the following records since the report in *Sandgrouse* 41(2).

JPR = Jahra pools reserve.

Rufous Turtle Dove *Streptopelia (orientalis) meena*. One JPR, 24 October 2019 (K Al Ghanem). 17th record.

Lesser Flamingo *Phoeniconaias minor*. One Shuwaikh bay, 1 November 2019 (A Al Shatti, Plate 6). Fourth record (returning bird).

Sociable Lapwing *Vanellus gregarius*. One Sulabiya pivot fields, 6 October 2018 (M Pope); one there 8 October 2019 increasing to nine on 23 October 2019 (N Tovey). 11th-12th records.

Great Knot *Calidris tenuirostris*. One Sulaibikhat bay, 19 September 2019 (Abdulrahman Al-Sirhan). Eighth record.

Grey Phalarope *Phalaropus fulicarius*. One JPR, 20 May 2019 and one there, 5 June 2019 (both O Al Shaheen). 11th-12th records.

Sabine's Gull *Xema sabini*. One JPR, 16 June 2019 (O Al Shaheen). Second record.

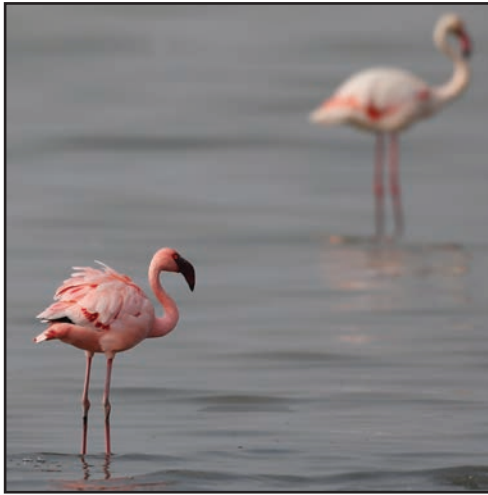


Plate 6. Lesser Flamingo *Phoeniconaias minor* 1 November 2019, Shuwaikh Bay, Kuwait. © Mike Pope



Plate 9. Purple Sunbird *Cinnyris asiaticus* 7 December 2019, Funaitees, Kuwait. © Mike Pope



Plate 7. Ring Ouzel *Turdus torquatus* 21 November 2019, Jahra Pools Reserve, Kuwait. © Mike Pope



Plate 8. Pied Stonechat *Saxicola caprata* 22 August 2019, Nuwaiseeb, Kuwait. © L J Mathew

Arctic Tern *Sterna pardisaea*. One JPR, 5 June 2019, a different bird there 9 June 2019 and four 4 July 2019 (all O Al Shaheen). 9th-11th records.

White-tailed Eagle *Haliaeetus albicilla*. One JPR, 7 November 2019 (K Al Ghanem). Seventh record.

Dalmatian Pelican *Pelecanus crispus*. Four Boubyan island, 14 November 2019 (A Al Yousef, O Al Shaheen). 12th record.

'Arabian Grey Shrike' *Lanius (excubitor) aucheri*. One Sulabiya pivot fields, 30 October 2019 (Abdulrahman Al-Sirhan); one Al Salmi, 3 November 2019 (A Al Yousef); one Sulabiya pivot fields, 16 November 2019 (M Pope). 9th-11th records.

Thick-billed Lark *Ramphocoris clotbey*. One Al Abraq, 29 July 2019 (O Al Shaheen). Eighth record.

Booted Warbler *Iduna caligata*. One Al Abraq, 13 August 2019 (M Pope). Eighth record.

Ring Ouzel *Turdus torquatus*. One JPR, 21 November 2019 (M Pope, Plate 7). Ninth record.

Pied Stonechat *Saxicola caprata*. One Nuwaiseeb, 22 August 2019 (LJ Mathew, Plate 8). Third record.

Purple Sunbird *Cinnyris asiaticus*. One Funaitees (male), 6 December 2019 joined by a female 17 December 2019 onwards (N Tovey, Plate 9). Fourth record.

Little Bunting *Emberiza pusilla*. One Al Abraq, 16 November 2019 (I Sabastian, S Raju, P Chaudhary). 15th record.



Plate 10. Lesser Whistling Duck *Dendrocygna javanica* 7 January 2019, Khawr Dahariz, Salalah, Oman. © H & J Eriksen



Plate 11. African Sacred Ibis *Threskiornis aethiopicus* 11 January 2019, Khawr Setima, Dhofar, Oman. © H & J Eriksen



Plate 12. Asian Brown Flycatcher *Muscivora latirostris* 15 November 2019, Muntasar, Oman. © H Dufourny

OMAN

The Oman Bird Records Committee comprises Jens Eriksen (Recorder), Ian Harrison, Dave Sargeant, Graham Searle, John Atkins, Waheed Al Fazari, Zahran Al Abdulasalam and Manal Al Kindi. Claims should be sent to Jens Eriksen hjoman@gmail.com from whom claim forms can be obtained.

Lesser Whistling Duck *Dendrocygna javanica*. Ten at Khawr Dahariz, Salalah, 7 January-26 February 2019 (H & J Eriksen, Plate 10). Tenth record.

Canada Goose *Branta canadensis*. One Muscat, 23-24 November 2017 (M D'Souza). First record, considered an escape.

African Sacred Ibis *Threskiornis aethiopicus*. Four at Khawr Setima, 11 January 2019 (H & J Eriksen, Plate 11); five Raysut, 28

October 2019 (C Lefèvre). Ninth and tenth records.

Northern Red-billed Hornbill *Tockus erythrorhynchus*. One Muscat, 23 July 2019 (K Bavish). First record, considered an escape.

Pied Kingfisher *Ceryle rudis*. A male at Khawr Dahariz, Salalah, 12 October 2019 (C Lefèvre). Ninth record.

Plum-headed Parakeet *Psittacula cyanocephala*. Female at Muscat, 29 March 2019 (J Estrada). Fifth record, considered an escape.



Plate 13. White-crowned Wheatear *Oenanthe leucopyga* 15 November 2019, As Sayh, Musandam, Oman. © Stephen Taylor

Black Scrub Robin *Cercotrichas podobe*. One Shisr, 1 November 2018 and probably the same individual there, 31 October 2019 (both M Wikström, Plate 12). Fourth record.

Asian Brown Flycatcher *Muscicapa latirostris*. One Muntasar, 15 November 2019 (H Dufourny). Fourth record.

Pied Stonechat *Saxicola caprata*. One Ayn Hamran, 17 Nov 2019 (A Malengreau). Ninth record.

White-crowned Wheatear *Oenanthe leucopyga*. One As Sayh, Musandam, 15-16 November 2019 (S Taylor, Plate 13). Ninth record.

QATAR

The Qatar Birds Record Committee comprises Gavin Farnell (Recorder), Richard Porter (Honorary President), Neil Morris and Simon Tull. Claims should be sent to gavin.farnell@gmail.com. Refer to qatarbirds.org for the Qatar Birds official list.

Greater White-Fronted Goose *Anser albifrons*. Three at an undisclosed location, 17 November 2019. Tenth record.

Pied Cuckoo *Oxylophus jacobinus*. A male and female Irrikaya farm, 6 November-late December 2019 (H Al Khulaifi, Sh. M Al Thani, S Tull, G Farnell *et al*, Plate 14). Second record.

Stock Dove *Columba oenas*. One Irrikaya farm, 3 December 2019 (Sh. M Al Thani). First record.

Lesser Flamingo *Phoeniconaias minor*. A single bird Al Shamal, 3 December 2013. (Only recently brought to the attention of QBRC) First record.

Spur-winged Lapwing *Vanellus spinosus*. Four (including one juvenile) West Saliya



Plate 14. Pied Cuckoo *Oxylophus jacobinus* 30 November 2019, Irrikaya Farm, Qatar. © Simon Tull

lagoons, 27 September 2019 with two birds at nearby Abu Nakhla the following day (D Adams, D Sanders). Eighth record.

White-tailed Lapwing *Vanellus leucurus*. One at Al Khor mangroves, 1 November 2019 (M Halonen). 20th record.

Eurasian Bittern *Botaurus stellaris*. A single bird Irrikaya farm lagoons, 1 November 2019 (J Mohanen). Ninth record.

European Honey Buzzard *Pernis apivorus*. A single pale form bird Irrikaya farm, 24 November 2019 (Sh. Mohamed Al Thani). Eighth record.

Crested Honey Buzzard *Pernis ptilorhyncus*. Two birds Al Aamriya, 9 December 2019 (H Al Khulaifi); an adult male Irrikaya farm, 31 December 2019 (Z Abdul Rahman). Sixth and seventh records.

Short-toed Snake Eagle *Circaetus gallicus*. Single birds various locations, mid-October to mid-December 2019 (Sh. M Al Thani, H Al Khulaifi). Rare but regular visitor.

Black-eared Kite *Milvus (migrans) lineatus*. A juvenile Irrikaya farm, 12 October 2019 (S Tull, Plate 15). 21st record.

Northern Steppe Buzzard *Buteo b. vulpinus*. Two Irrikaya farm, 2 November-late December (G Farnell, S Tull, Sh. M Al Thani). Eighth and ninth records.

Amur Falcon *Falco amurensis*. A single female/1cy bird Irrikaya farm, 26 November 2019 (Sh. M Al Thani). Seventh record.



Plate 15. Black-eared Kite *Milvus (migrans) lineatus* 12 October 2019, Irrikaya Farm, Qatar. © Simon Tull



Plate 16. Yellow-browed Warbler *Phylloscopus inornatus* 11 October 2019, Al Shamal Park, Qatar. © Simon Tull

Yellow-browed Warbler *Phylloscopus inornatus*. One Al Shamal park, 11 October 2019 (S Tull, G Farnell, Plate 16). Fourth record.

Black-throated Thrush *Turdus atrogularis*. An adult male Irrikaya farm, 14 November 2019 (S Abdullah). Fifth record.

White-crowned Wheatear *Oenanthe (leucopyga) leucopyga*. One Irrikaya farm, 22 December 2019 (Z AbdulRahman). Third record.

Masked Wagtail *Motacilla (alba) personata*. One Al Shamal park, 11 October 2019 (G Farnell, S Tull). Fifth record.

Richard's Pipit *Anthus richardi*. One Irrikaya farm, 9 November 2019 (G Farnell). Eighth record.

Yellow-Throated Sparrow *Gymnoris xanthocollis*. Two Abu Dhalouf park, 6 September 2019 (G Farnell). 12th record.

TURKEY

The Turkish Bird Records Committee comprises Kerem Ali Boyla (secretary), Kiraz Erciyas, Korhan Özkan, Kuzey Cem Kulaçoğlu, Mustafa Erturhan, Nizamettin Yavuz, Ömral Ünsal Özkoç and Ali Atahan (observer). Claims should be entered as a sighting at the eBird portal <http://ebird.org>. More information can be obtained at: <http://www.kustr.org/kuskayitkomitesi/turkishbird-record-committee/>

UNITED ARAB EMIRATES

The Emirates Bird Records Committee (EBRC) comprises Oscar Campbell (Chair), Mark Smiles (Secretary), Khalifa al Dhaheri, Simon Lloyd, Huw Roberts (all voting members) plus Tommy Pedersen (UAE Bird Recorder), Peter Hellyer and Jacky Judas (all non-voting members). Records are circulated and assessments published two times per year, as per the timetable outlined at <http://www.uaebirding.com/ebrc.html>. Decisions on assessments, plus the EBRC's constitution and information about the assessment process and downloadable report forms are all available at the same location. The UAE Bird Checklist, in both short and annotated forms, is also available at <http://www.uaebirding.com/uaechecklist.html>, along with published annual reports for 2010 to 2015 inclusive. The annotated checklist was updated extensively in July 2016 with category definitions adjusted, categorisation of a number of species altered and a number of records of certain species reviewed.

Claims, preferably on report forms downloadable from <http://www.uaebirding.com/ebrc.html> should be sent to ebrcuae@gmail.com or to Tommy Pedersen (tommypepe63@gmail.com).



Plate 17. Lesser Noddy *Anous tenuirostris* 20 July 2019, off Khor Kalba, United Arab Emirates. © Simon Lloyd



Plate 19. Swinhoe's Storm Petrel *Hydrobates monorhis* 6 September 2019, off Khor Kalba, United Arab Emirates. © Simon Lloyd



Plate 18. Long-tailed Skua *Stercorarius longicaudus* 20 July 2019 off Khor Kalba, United Arab Emirates. © Simon Lloyd

EBRC has accepted the following records since the report in *Sandgrouse* 41(2).

Red-breasted Merganser *Mergus serrator*.

Two Al Barsha pond park, 6-20 March 2019 (M Freeman *et al*). Sixth record, last 2006.

Little Crake *Zaporna parva*. One at a private estate near Green Mubazzarah, 19-31 March 2019 (P Arras). 26th record, last 2016.

Lesser Noddy *Anous tenuirostris*. One Khor Kalba pelagic trip, 20 July 2019 (J Judas *et al*, Plate 17). Tenth record, last 2017.

Little Gull *Hydrocoloeus minutus*. One Fujairah Port beach, 24 January 2019 (S Thomson, N Moran *et al*). 18th record, last 2018.

Long-tailed Skua *Stercorarius longicaudus*. One immature Khor Kalba pelagic trip, 20 July 2019 (J Judas *et al*, Plate 18). 23rd record, last 2018.

Swinhoe's Storm Petrel *Hydrobates monorhis*. Two Khor Kalba pelagic trip, 31 May 2019

(H Roberts, S Lloyd, A Alzaabi *et al*) and a single, 6 September 2019 (H Roberts, A Alzaabi *et al*, Plate 19). 12th and 13th records, last 2017.

Frigatebird sp. *Fregata sp.* One adult male Jumeirah public beach, 17 March 2019 (*per* Emirates Natural History Group). First record.

Eastern Cattle Egret *Bubulcus (ibis) coromandus*. One on a private estate near Green Mubazzarah, 25 September 2017 (P Arras); one Wamm farms, 3 April 2019, presumed a returning bird (S Lloyd) and one Ajman STP, 12 April 2019 (A Al Ali). Sixth to eighth records, now recorded virtually annually.

Intermediate Egret *Ardea (intermedia) intermedia*. One Al Marmoom desert conservation reserve - Al Qudra lake, 15 November 2014 (R Khan); one Ra's al-Khor wildlife sanctuary, 20 December 2014 (M Barth); one same location, 12-14 October 2017 (H Heaton, M Smiles); a long-staying bird Al Badia golf club, 21 October-14 November 2018 (A Schmidt *et al*) and then Ra's al-Khor wildlife sanctuary, 15 November-26 December 2018 (H Heaton *et al*) and again 3-18 April 2019 when in breeding plumage (V Sladariu, L Negulescu, K Al Dhaheri). Fourth-seventh records - previous records 1995, 2001 and 2007.

Northern Goshawk *Accipiter gentilis*. One immature Wadi Wurayah national park, 3 February 2019 (S Majeed). Seventh record, last 2006.

Blyth's Reed Warbler *Acrocephalus dumetorum*. One Dubai safari park, 18 August 2019 (R Khan); one Mushrif Palace gardens, 19 August 2019 and another there, 31 August



Plate 20. Blyth's Reed Warbler *Acrocephalus dumetorum* 31 August 2019, Mushrif Palace gardens, United Arab Emirates. © Oscar Campbell



Plate 21. Hume's Whitethroat *Curruca (curruca) althaea* 14 March 2019, Jebel Dhanna, United Arab Emirates. © Simon Lloyd



Plate 22. 2cy male European Pied Flycatcher *Ficedula (hypoleuca) hypoleuca* 6 May 2019, Umm al-Emarat park, United Arab Emirates. © Simon Lloyd



Plate 23 Cretzschmar's Bunting *Emberiza caesia* 14 March 2019, Saadiyat beach golf club, United Arab Emirates. © Simon Lloyd

2019 (both S Lloyd, Plate 20). 20th-22nd records, last 2018 (now seemingly regular in very small numbers on early autumn passage).

Hume's Whitethroat *Curruca (curruca) althaea*. One Jebel Dhanna, 12-15 March 2019 (K Al Dhaheri, S Lloyd, Plate 21) and another Ain al-Waal, 13 March 2019 (H Roberts). Third and fourth records, last 2015.

Wattled Starling *Creatophora cineracea*. One Al Ain zoo, 21 March 2018 (R Khan *et al*). Identification accepted but placed in Category D on basis of doubts about origin. (One previous record of a bird believed to be wild, 1998.)

Black Scrub Robin *Cercotrichas podobe*. One Jebel Dhanna, 12-13 March 2019 (K Al Dhaheri *et al*) and another Sila'a peninsula, 14 March 2019 (S Lloyd). Eighth and ninth records, last 2016.

European Pied Flycatcher *Ficedula (hypoleuca) hypoleuca*. One 2cy male Umm al-Emarat

park, 6 May 2019 (O Campbell, S Lloyd *et al*, Plate 22). Second record, last 2003.

Cretzschmar's Bunting *Emberiza caesia*. One Saadiyat beach golf club, 14-16 March 2019 (S Lloyd, O Campbell, Plate 23). Third record, last 2013.

ACKNOWLEDGEMENTS

The following assisted in the compilation of this review: Jane Stylianou (Cyprus), Fares Khoury, Feras Rahahleh (Jordan), Abolghasem Khaleghizadeh (Iran), Avner Cohen, Yoav Perlman (Israel), Neil Tovey (Kuwait), Ghassan Ramadan Jaradi, (Lebanon), Jens Eriksen (Oman), Simon Tull, Gavin Farnell (Qatar), Oscar Campbell, Tommy Pedersen (United Arab Emirates).

Ian Harrison, Llyswen Farm, Lôn y Felin, Aberaeron, SA46 0ED, UK. ianbirds@gmail.com

LETTER FROM THE CHAIRMAN

OSME in 2019

The last 12 months have seen a number of long-running key projects reach their completion and the launch of several new initiatives. All of these were only possible due to the increased generosity of OSME members and supporters. The donations we received reached an all-time high, allowing us to increase our Conservation Fund expenditure to record levels. After a period of slow but continued decline, our membership numbers stabilised and we welcome two new corporate members, Oriole Birding and Birdtour Asia.

Field guides and mobile apps in Arabic

The production of an Arabic version of the *Field Guide to the Birds of the Middle East* was completed this year with the launch of the free-to-download smartphone app for Android users. The Field Guide is now available as a book, and is freely available on both Apple and Android platforms. Funds have been set aside to help us maintain the both versions of the app for the next 10 years, and we will also be looking at the possibility of adding more sound recordings and other content such as video footage.

Illegal bird killing

An assessment of the extent of illegal bird killing in the Arabian Peninsula, Iran and Iraq has been a major project for OSME, in collaboration with BirdLife International (Plate 1). The project was started in 2016 and the final research paper was published in

Volume 41(2) of our journal *Sandgrouse*, and is freely available via our website. The final estimates were presented by me and Ibrahim Khader, Director of BirdLife Middle East, in August at a workshop on the illegal trade in birds of prey at the Abu Dhabi Hunting and Equestrian Exhibition (ADIHEX2019) in the United Arab Emirates (Plate 2). The project was widely reported in the local press and our associated post on the OSME Facebook page was the most shared article since our page was established, with 452 'likes', 63 comments and 602 shares, resulting in a total reach of just over 125,000 people. It is clearly an area of work that is popular with our members and supporters. During 2020, OSME will be continuing to work with BirdLife International to develop a plan of action to tackle this ongoing threat to the region's birds which claims an estimated 1.7 – 4.6 million birds each year.



Plate 1. Each year up to 4.6 million birds are estimated to be illegally killed in the Arabian Peninsula, Iran and Iraq. Anon, from social media



Plate 2. OSME Chairman, Rob Sheldon, presenting the results of the illegal bird killing assessment at a workshop on the illegal trade in birds of prey, ADIHEX2019, Abu Dhabi. © Nick Williams

Funding conservation work in the OSME region

A key focus for OSME Council in recent years has been to try and increase the amount of funding we provide to conservation projects across the region. The number of projects we are asked to support each year exceeds our financial resources. In recent years there has been an increase in the number of project applications that focus on youth development and education. Council see the support of such projects as key to securing the next generation of birdwatchers and conservationists across the region. To help us expand our expenditure in this area, Council agreed to establish a dedicated small grants programme – the Youth Development Fund. This was announced at the 2019 Birdfair and will enable us to approach specific funders and trusts that focus on youth development and education. The fund is overseen by OSME's Youth Development Officer, Tomas Haraldsson, who has been instrumental in developing bird camp initiatives. Whilst all the projects supported financially this year were in Lebanon, Tomas has been working up concepts for new bird camps in Egypt and northern Cyprus, as well as repeat camps in Azerbaijan and Lebanon. There is an ambitious programme of work coming in 2020! Three projects were supported by the Youth Development Fund in 2019:

- Spring bird camp in Lebanon: £1,000
- Autumn raptor migration count and bird camp in Lebanon: £2,250
- Developing eco-tourism in Lebanon: £1,177

The spring bird camp in Ras al-Maten, Lebanon, ran from the 5- 8 April and involved young Swedish birdwatchers and Lebanese students taking part in various activities such as bird-ringing demonstrations, bird-watching excursions, social events and visits by local schools (Plate 3). The exchange was such a success that four Lebanese students visited Sweden in August and spent two weeks at Ottenby and Falsterbo Bird Observatories (jointly funded by Birdlife Sweden and the Ras al-Maten community). The autumn raptor count and bird camp ran from 9 September to 3 October at a dedicated watch point near the town of Hammana. The aim was to get an



Plate 3. A local school visit to the raptor count watchpoint at Ras-al-Maten, Lebanon in September 2019. © SPNL

updated estimate of the numbers of raptors and storks migrating through the area, as well as to train young Lebanese birdwatchers in raptor identification and counting techniques. This was an excellent collaborative project hosted by the local BirdLife partner, the Society for the Protection of Nature in Lebanon (SPNL) and co-funded by OSME, BirdLife Sweden and BirdLife Switzerland.

For the fifth year in a row we increased our expenditure through the OSME Conservation Fund to an impressive £19,124, up from £17,349 in 2018, and from £10,450 in 2015. Council were especially pleased to support our first OSME-funded project in Jordan. From the countries and territories that make up the OSME region, only Cyprus, Kuwait, Qatar and Turkmenistan are yet to receive project support via the Conservation Fund, and future applications from there would be especially welcome.

The Conservation Fund supported 11 projects during 2019:

- Breeding ecology of Turkestan Ground Jay, Uzbekistan: £1,900
- Strengthening the knowledge base of threatened eagle species of central Anatolia, Turkey: £2,000
- Building capacity of Talimarzhan Site Support Groups for the long-term protection of Sociable Lapwing, Uzbekistan: £2,800
- Documentation of special species in Jordan: £2,000

- Great Bustard year-round monitoring in the south of Kazakhstan: £1,000
- Family of websites for the development of birdwatching in countries of Central Asia: £1,715
- Gyzylygach Wader Project, Azerbaijan: £1,032
- Socotra environment events for International Vulture Awareness Day, Yemen (Plate 4): £1,635
- Assessing the status of breeding birds of the Son-kul Lake, Kyrgyzstan: £1,942
- Developing educational programmes for local communities to ensure safeguarding bird diversity in Qeshm Islands's Hara Biosphere reserve, a Marine IBA in southern Iran: £1,600
- Monitoring Sociable Lapwing migration through Kumo-Manych depression, south-west Russia: £1,500

This continued growth in expenditure would not have been possible without the direct support of the March Conservation Fund of the Tides Foundation, who increased their financial contribution to US\$20,000. A longstanding supporter, who wishes to remain anonymous, increased their donation to specifically help us launch the Youth Development Fund. All the project applications are reviewed by an independent Conservation Fund Committee which assesses each one and makes recommendations to Council for final approval. This year there were several changes on the committee with Mick Green stepping down, and Hana Raza and Maïa Sarrouf Willson accepting



Plate 4. Birdwatching at Sirhen Lagoon, Socotra. One of a number of events supported by a Conservation Fund grant to promote International Vulture Awareness Day on Socotra. © Ali Yahya Ali

invitations to join. Maxim Koshkin continues to Chair the committee along with Richard Porter, Nabegh Ghazal Asswad, Sharif Jbour, as well as Hana and Maïa.

Another key development for us in relation to small grants was the establishment of the Trevor Poyser Species Conservation Fund. Trevor Poyser was a keen supporter of OSME, and as the joint founder of the renowned publishers T & AD Poyser, published a number of books of great value to our region, including the *Birds of the Middle East and North Africa*. Very sadly Trevor died in his nineties in 2018 but he kindly left us a significant legacy to spend on research and conservation within the OSME region. At the OSME Summer Meeting and AGM we announced the Trevor Poyser Species Conservation Fund in his memory. One award will be made each year and the first grant will be announced in early 2020.

OSME meetings and events

The Summer Meeting was again held at the British Trust for Ornithology (BTO) headquarters in Thetford, and included a series of excellent talks from Derek Robertson, Guy Kirwan, Kabir Kaul, Elaine and Peter Cowan. We continued our offer to OSME corporate members to present a talk on a birding destination, and the talk (and stunning photographs) on birding in Kazakhstan by Vaughan and Svetlana Ashby (Birdfinders) went down well with attendees. At the Annual General Meeting (AGM) we were posed two questions which Council have been considering and will report back in 2020. Firstly, the role of OSME Vice-presidents and secondly on establishing a carbon off-setting scheme.

We continued with our enhanced stand at the British Birdfair at Rutland Water in August and this continued to be well received (Plate 5). As always, the Birdfair is an excellent opportunity to meet existing members and supporters, as well as to promote OSME and its work to new ones. We took the opportunity at the Birdfair to announce the launch of the Youth Development Fund and many positive discussions were held about our approach to engage the next generation of bird enthusiasts in the region. A huge thanks to Ian Thomson (Head of RSPB Investigations in Scotland) for



Plate 5. Setting up the OSME stand at the British Birdfair 2019. © Guy Shorrocks

representing OSME in the annual Bird Brain contest. Ian came a very respectable second with OSME receiving £500 that will be used to support projects via the Conservation Fund.

In September we also had a stand at the Spurn Migration Festival, although it was primarily un-manned; many thanks to Paul Stancliffe, Nick Moran and Richard Porter for keeping an eye on interest and answering any questions. In 2020 we plan to have a manned stand at both the Spurn and Falsterbo bird migration festivals.

Sandgrouse

After more than 10 years, Peter Cowan stepped down as Editor of *Sandgrouse* early in the year after overseeing issue 41(1). OSME were delighted that Dr Paul Donald agreed to take over the Editor's role and he worked closely with Peter to enable a successful hand over of the Editorship. Peter's significant contribution to OSME was recognised at the summer meeting, where Council presented Peter with a print of his favourite *Sandgrouse* cover from 2014 – Cream-coloured Coursers taken by Amir Ben Dov. Sadly, Peter passed away after a short illness on 3 August (see his obituary in this issue of *Sandgrouse*). This year we have also started to provide *Sandgrouse* in a high quality digital format which is available to members who prefer to receive their journal electronically. A digital version will enable us to save on ever increasing postal charges as well as ensure that members from countries with unreliable postal services continue to reliably receive their journal. By the end of the 2019 more than 100 members had opted to receive *Sandgrouse* digitally.

OSME on social media

The OSME Facebook page continued to grow throughout 2019 and reached the 3,000 follower milestone on the eve of 2020. Guest articles from the field, as well as those that linked to the 'I Love Nature' blog series on the website were especially popular. Our Twitter account reached more than 4,450 followers. We continue to post updates on the OSMEBirdNet Yahoo discussion group but changes to the functionality limits the amount of information that can be posted. We are keen to utilise other social media outlets such as Instagram and YouTube but currently lack the capacity and expertise on OSME Council. Guest blogs, co-ordinated by Richard Porter, are posted regularly, and offers of content for the website are always welcome, so please contact us if you would like to discuss a possible contribution.

Taking OSME forward

At our Council meeting in November we started planning for the upcoming decade and agreed that OSME would continue to grow our small grants programmes and seek new ways to build on our recent record expenditure. A key area that we will focus on is the subject of bird migration and connecting countries across the OSME region.

The last few years have been exceptionally busy for OSME and have seen the delivery of a number of substantial projects. I'd like to take this opportunity to thank all OSME Council members who have worked hard supporting these projects as well as the day-to-day running of the society. Much of what we have achieved in the last 12 months and more is down to their sterling efforts.

Finally, on behalf of OSME Council, a huge thanks to all OSME members and supporters who continue to contribute to our work in so many ways. We are always looking for people to become OSME Council members to help with the running of the society, so please get in contact with me if you would like to discuss how you can help. If you have any comments on the work of OSME, or would like to support our work, then please feel free to contact me by email at chairman@osme.org.

Rob Sheldon, Chairman, OSME

BOOK REVIEW

Birds of Cyprus

by Colin Richardson and Richard Porter. Helm Field Guides, Bloomsbury Publishing plc. London. 2020. Illustrations by John Gale, Mike Langman and Brian Small. Maps by Julian Baker from original artwork by Colin Richardson. Softback.

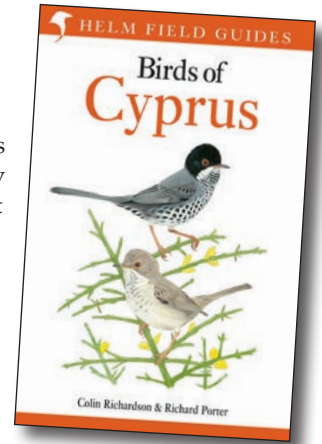
First, a declaration of interest. I know both the authors and over the years have met or corresponded with the artists. I've been to Cyprus many times, my first visit being in 1966 when I was in the RAF. I've participated in many bird surveys on the island for the RAF Ornithological Society in conjunction with Cyprus conservation groups, both before and after the founding of BirdLife Cyprus, and know at first hand its recent history and the problems that keen and determined conservationists have faced.

What inspires me about this book is that it presents the joint effort of conservationists in both parts of this divided island. As Tasso Leventis states in the Foreword, "The recent signing of a Memorandum of Cooperation between BirdLife Cyprus and KUŞKOR, the Turkish Cypriot bird protection society is a welcome step for better nature protection, island-wide."

Cyprus lies on the East Mediterranean/Black Sea migration flyway; migrant and resident birds alike may concentrate in the island's 34 Important Bird Areas, but there are also many other locations that deserve protection. Illegal bird trapping and killing on Cyprus remains a serious problem (Brochet *et al* 2016, 2019, Shialis 2017), but recent prosecutions have been successful and there is considerable work now done through school visits to conservation centres. Education is always the key and this book will undoubtedly play its part in the many challenges ahead. Support of Cypriot conservation initiatives continues from RSPB UK and from Naturschutzbund Deutschland (Nature and Biodiversity Conservation Union, Germany). It remains to be seen whether the UK leaving the EU will improve or complicate conservation issues in Cyprus.

The format of this field guide generally is similar to the rest of the Helm stable, but the structure and content of the species accounts have been changed, the status data now opening the account, and the maps of this relatively small area are to a more useful scale. The introductory material is pleasingly both plainly expressive and literate. It covers:

- Taxonomy, Nomenclature and Sequence (mostly IOC-style with some sensible minor departures)
- Illustrations and ID text (straightforward)
- Bird Topography (succinct yet detailed)
- Voice (short and sweet)
- Status, Distribution and Habitat (standard status abbreviations; for habitat information, you are directed to the excellent Birdwatching Site section and to the species accounts)
- Maps (brief and helpful)
- Important Dams and Reservoirs (17 indicated: perhaps this idea will feature more often in future field guides?)
- Code of Conduct and Submitting Records (good basic common sense)
- Bird Killing in Cyprus (what to do and who to contact – vital information)
- Bird Conservation in Cyprus (useful context and detail concerning BirdLife Cyprus and KUŞKOR)
- Birdwatching Sites (an excellent innovation and a mine of very useful information about 69 sites by district or region: Paphos, Akrotiri Peninsula and Limassol District, Larnaca District, Troodos Forest, Nicosia District, Northern Cyprus). The directions are clear, all site descriptions include GPS data, many are illustrated by a photograph and the principal species of each site are listed in seasonal contexts.



The book rightly makes no mention of the rules of travelling to and from the Republic of Cyprus to Northern Cyprus, because these are subject to change: you need to do your homework on these rules if you are considering crossing from one side to the other before you go to the island.

Turning now to the species accounts, they are succinct and informative, with maps not being provided for vagrants. I would like to see the IUCN Red List Category symbols used in all field guides on the same line as the species name, and also the local/regional equivalents, where available; after all, a widespread numerous but declining species may be classed as Least Concern, but in any single country, it could deserve Vulnerable status, useful context for the reader. That apart, I have no dissatisfaction to record about the information packaged in each account. Indeed, I'm very glad to see enlarged accounts to cover subspecies differences, as for Common Chiffchaff *Phylloscopus collybita*. Here, *brevirostris*, *abietinus* and *tristis* are all illustrated. Although many of the illustrations by the artists have appeared in other Helm Field Guides, many have been made for the book. The print quality and colour rendering show no annoying inconsistencies. One tiny print copy-editing glitch is that although the three subspecies of Black Redstart illustrated are identified on Plate 77, the species name has been omitted. Maybe this might just have been done to ensure reviewers actually looked at each Plate!

Taking a couple of examples of Cyprus taxa of intrinsic interest, one such whose species status has only recently been generally accepted is the breeding endemic Cyprus Scops Owl (or as BirdLife International puts it 'Cyprus Scops-owl') *Otus cypricus*. Its call differs from all other taxa that comprise the single-note European Scops Owl *O. scops* in that it has a double-note, with the emphasis on the first; that's so striking and obvious, but until plumage and DNA differences were published in 2015 (Flint *et al* 2015), the case for species status was somewhat threadbare.

The authors take the prudent line of listing Cyprus Coal Tit as the *cypriones* subspecies of Eurasian Coal Tit *Periparus ater*. That *cypriones* has a low level of genetic variation indicating long isolation, a characteristic common to

island endemics, does not respond to playback of a selection of European subspecies and has striking plumage differences from the nominate and all subspecies that reach or pass Cyprus on migration has been deemed by some authorities as insufficient for elevation to species rank.

This is because such playback tests have not featured all 21 subspecies, nor has this exercise been carried out for all subspecies on all 21 breeding grounds. For those subspecies which have been researched, the data are extensive enough for the opposite conclusion to be drawn until such time it is disproven, a null hypothesis approach. I might add in my view that Cyprus Coal Tit forages very differently; it is less dainty, perhaps better described colloquially as 'more butch'. Indeed, in comparison to Coal Tit in the UK, it looks structurally different, squarer and bulkier. The head in particular looks angular most of the time. In the OSME Region List, based on how many similar cases have developed over the last decade amongst other passerines, we treat it as a full species, part of the superspecies thus: *P. [ater] cypriones*. It may become part of a smaller species-group.

This book, being small enough to fit into a large pocket, will be very useful to visiting birders, especially to those who are inexperienced or new to Cyprus. Although the text is only in English, it would seem straightforward for local conservation organisations to produce Greek and Turkish supplementary indexed lists, referable by page or Plate number, so that the book finds the widest possible audience on the island.

Going through these texts brought memories of many happy discoveries and frustrating failures concerning vagrants and uncommon passage migrants, of which there are many in Cyprus. Amongst those memories are: seeing a huge flock of Greater Flamingo *Phoenicopterus roseus* through the shimmering heat-haze of Akrotiri Salt Lake; catching brief sight of a Levant Sparrowhawk *Accipiter brevipes* speeding into Chrysochou Bay from Turkey and passing overhead; missing Cream-Coloured Courser *Cursorius cursor* at Akrotiri Gravel Pits and Mandria beach; participating in a month-long survey of Eleonora's Falcons *Falco eleonora*; being totally awed by an immensity of Western

Yellow Wagtails *Motacilla flava* covering many fields at Mandria; finding a Bimaculated Lark *Melanocorypha bimaculata* near St George Church just south of Akrotiri Gravel Pits and photographing in a ploughed field near Mandria a large pipit that my better half had found that turned out to be Blyth's Pipit *Anthus godlewskii*. If that doesn't fire your imagination enough to persuade you to buy this book...

My wish is that anyone in or visiting Cyprus who buys this book will have such joyful experiences!

LITERATURE CITED

- Brochet, A-L, W van den Bossche, S Jbour, PK Ndang'ang'a, VR Jones, WAI Abdou, AR al-Hmoud, NG Asswad, JC Atienza, I Atrash, N Barbara, K Bensusan, T Bino, C Celada, SI Cherkaoui, J Costa, B Deceuninck, KS Etayeb, C Feltrup-Azafzaf, J Figelj, M Gustin, P Kmecl, V Kocevski, M Korbeti, D Kotrošan, JM Laguna, M Lattuada, D Leitão, P Lopes, N López-Jiménez, V Lucić, T Micol, A Moali, Y Perlman, N Piludu, D Portolou, K Putilin, G Quaintenne, G Ramadan-Jaradi, Milan Ružić, A Sandor, N Sarajli, D Saveljić, RD Sheldon, T Shialis, N Tsiopelas, F Vargas, C Thompson, A. Brunner, R Grimmett & SHM Butchart. 2016. Preliminary assessment of the scope and scale of illegal killing and taking of birds in the Mediterranean. *Bird Conservation International* 26: 1-28.
- Brochet, A-L, S Jbour, RD Sheldon, R Porter, VR Jones, W al-Fazari, O al-Saghier, S Alkhuzai, LA al-Obeid, R Angwin, K Ararat, M Pope, MY Shobrak, MS Willson, SS Zadeghan & SHM Butchart. 2019. A preliminary assessment of the scope and scale of illegal killing and taking of wild birds in the Arabian Peninsula, Iran and Iraq. *Sandgrouse* 41: 154-175.
- Flint, PR, D Whaley, GM Kirwan, M Charalambides, M Schweizer & M Wink. 2015. Reprising the taxonomy of Cyprus Scops Owl *Otus (scops) cyprius*, a neglected island endemic. *Zootaxa* 40: 301-316.
- Pentzold, S, C Tritscha, J Marten, DT Tietze, G Giacalone, M Lo Valvo, AA Nazarenko, L Kvist & M Päckert. 2013. Where is the line? Phylogeography and secondary contact of western Palearctic coal tits (*Periparus ater*: Aves, Passeriformes, Paridae). *Zool. Anzeiger*. 252: 367-382.
- Pentzold, S, MI Förschler, DT Tietze, C Randler, J Martens & M Päckert. 2016. Geographic variation in coal tit song across continents and reduced species recognition between Central European and Mediterranean populations. *Vert. Zool.* 66: 191-199.
- Shialis, T. 2017. *Update on illegal bird trapping activity in Cyprus*. BirdLife Cyprus, Nicosia.

Mike Blair

AROUND THE REGION

Ian Harrison (compiler)

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 records refer to 2019 unless stated otherwise.

Records and photographs for *Sandgrouse* 42(2) should be sent by 31 May 2020 to atr@osme.org or ianbirds@gmail.com.

AZERBAIJAN

Migration counts at Besh Barmag 17 Oct-10 Nov and 20-24 Nov resulted in 771 500 birds including 1174 **Dalmatian Pelicans** *Pelecanus crispus*, 223 **Great Black-headed Gulls** *Ichtyaetus ichtyaetus*, two **Siberian Buff-bellied Pipits** *Anthus (rubescens) japonicus* and two **Pine Buntings** *Emberiza leucocephalus*. In addition 450 **White-headed Ducks** *Oxyra leucocephala* Zabrat lake, near Baku, 17 Nov. The fourth record of **Macqueen's Bustard** *Chlamydotis macqueeni* was found exhausted at Lenkoran (from a breeding project in Kazakhstan) 27 Oct, six **Hyrceanian Tits** *Poecile hyrcanus* near breeding site at Lerik, Talysh mountains 16 Nov, 26 **Black-throated Thrushes** *Turdus (ruficollis) atrogularis* at different sites in the Talysh mountains 17-18 Nov and a high count of 12 **Siberian Buff-bellied Pipits** *Anthus (rubescens) japonicus* Kizil Agach 15 Nov.

BAHRAIN

A **European Turtle Dove** *Streptopelia turtur* ringed as a chick June 2016 found breeding same location late June 2019; 26 chicks ringed



Plate I. European Turtle Dove *Streptopelia turtur* chicks 27 July 2019, Bahrain. © Abdullah Al Kaabi

in the 2019 breeding season (adults arrive 1 May onwards, breed in 45-51° heat and then depart end Aug - two recoveries west Saudi Arabia; Plate 1). A **White-cheeked Tern** *Sterna repressa* ringed as a chick on 27 June 2011 at a colony in western Bahrain was found at a nest with two eggs in a different colony in southern Bahrain 9 Jul 2019.

CYPRUS

Turkish names of places (in brackets) for records in the northern part of the island are included to assist birders in locating records.

Only two wintering **Greater White-fronted Geese** *Anser albifrons* Larnaca Sewage Treatment Plant (STP) 13 Nov to year end - numbers have been decreasing each year. A **Ruddy Shelduck** *Tadorna ferruginea* on Akrotiri salt lake 22 Nov. One **Northern Shoveler** *Spatula clypeata* still at Larnaca STP 5 Jul after the first successful breeding since 2013 (see *Sandgrouse* 41(2)) and more than 800 **Mia Milia** (Haspolat) STP 7 Oct increasing to 1150 on 20 Oct. A male **Eurasian Wigeon** *Mareca penelope* Larnaca STP 5 Jul was an unusual summer record. Eight **Red-crested Pochards** *Netta rufina* Kapouti (Kalkanlı) dam 15 Aug and 26 **Common Pochards** *Aythya ferina* Kouklia (Kukla) wetlands 30 Nov. Four **Tufted Ducks** *Aythya fuligula* Athalassa dam 20-30 Nov, five **Agia Eirini** dam 7 Dec, three **Bishop's pool** 10 Dec and up to two **Oroklini marsh** 17-28 Dec. A female **Red-breasted Merganser** *Mergus serrator* feeding off Paphos headland 26-30 Dec.

A **Little Swift** *Apus affinis* Akrotiri salt lake 23 Sep and two **Zakaki marsh** 25 Sep. A **Corncrake** *Crex crex* was found dead in the **Agia Napa area** 19 Sep while a **Little Crane** *Zapornia parva* **Mia Milia** (Haspolat) STP 18 Dec is a rare record. 2110 **Eurasian Coots** *Fulica atra* Kouklia (Kukla) wetlands 28 Jun.

Demoiselle Crane *Grus virgo* migration mainly 22-28 Aug with 59 at Akrotiri salt lake 27 Aug and 60+ over Tala (Paphos) 23 Aug; a juvenile Syngراس (Sinürüstü) dam 31 Aug-8 Sep and a flock heard over Polis Chrysochou bay 5 Sep, the only Sep reports. A single **Common Crane** *Grus grus* Koukλια (Kukla) wetlands 28 Sep was the first one of the year; bad weather 23-25 Oct grounded large groups of birds – at least 4000 Koukλια (Kukla) wetlands, 1000 Larnaca salt lake area and at least 400 at Akrotiri salt lake being the largest concentrations and 18 Koukλια (Kukla) wetlands 13-17 Nov the last record. After a successful breeding season, adult and juv **Great Crested Grebes** *Podiceps cristatus* present at many wetlands with 71 Koukλια (Kukla) wetlands on 2 Aug the largest count. Eight **Black-necked Grebes** *Podiceps nigricollis*



Plate 2. Eurasian Dotterel *Charadrius morinellus* 31 August 2019, Koukλια (Kukla) wetlands, Cyprus. © Birtan Gökeri



Plate 3. Red Knot *Calidris canutus* 19 October 2019, Akrotiri Gravel Pits, Cyprus. © John East

including a brood of three juveniles Koukλια (Kukla) wetlands 28 Jun; fewer wintering birds than in previous years although six at Larnaca STP 16 Dec and 11 Larnaca salt lake 31 Dec. At least 2600 **Greater Flamingos** *Phoenicopterus roseus* at Akrotiri salt lake during Aug but despite at least four colonies forming with displaying birds, nest mound building and apparent incubation, no young were hatched - this behaviour repeated in early Dec until water levels rose; 108 including two adults nest building Koukλια (Kukla) wetlands 28 Jun (450 on 30 Sep).

Eight **Eurasian Oystercatchers** *Haematopus ostralegus* flying west at Polis Chrysochou bay 26 Aug was a high number - a rare migrant to Cyprus. 370 **Black-winged Stilts** *Himantopus himantopus* Koukλια (Kukla) wetlands 28 Jun including adults and juveniles, 800 there 2 Aug presumably including migrants, reducing to 90 by 2 Sep. Four **Pied Avocets** *Recurvirostra avosetta* migrating at the same location 13 Aug with singles various locations Sep-Oct and three Akrotiri salt lake area 17 and 24 Dec and Larnaca salt lake area 16 & 31 Dec. A **Eurasian Dotterel** *Charadrius morinellus* Koukλια (Kukla) wetlands 30-31 Aug (Plate 2). Single **Eurasian Whimbrels** *Numenius phaeopus* various locations 13 Aug-7 Oct while the regular, overwintering bird present Paphos headland 17 Aug-31 Dec. A juvenile **Bar-tailed Godwit** *Limosa lapponica* Akrotiri gravel pits 16 & 28 Sep and again 10-23 Oct. A **European Black-tailed Godwit** *Limosa (limosa) limosa* Koukλια (Kukla) wetlands 5 Sep and two 24 Sep. Nine **Ruddy Turnstones** *Arenaria interpres* Meneou pool 15-18 Sep - a high count for this species while single **Sanderling** *Calidris alba* Koukλια (Kukla) wetlands 19 Sep and Glapsides beach 20 Sep (rare in the north of the island). 14 **Temminck's Stints** *Calidris temminckii* were at Leivadia 13 Dec. A juvenile **Red Knot** *Calidris canutus* was at Koukλια (Kukla) wetlands 11-13 Oct and another Akrotiri salt lake 15 Oct and the nearby gravel pits 19 Oct (Plate 3). Two **Broad-billed Sandpipers** *Calidris falcinellus* at Meneou pool 7 Sep, Syngراس (Sinürüstü) dam 8 Sep and Lady's Mile 16-17 Sep with a single Koukλια (Kukla) wetlands 10 and 23 Oct. Six **Jack Snipe** *Lymnocyptes minimus* Koukλια (Kukla) wetlands 13 Nov, 65 **Common Snipe** *Gallinago gallinago* Larnaca salt lake 16 Dec. 12 **Collared Pratincoles** *Glareola pratincola*



Plate 4. Black-winged Pratincole *Glares gull nordmanni* 17 September 2019, Kouklia (Kukla) wetlands, Cyprus. © Birtan Gökeri

Kouklia (Kukla) wetlands 2 Aug and at least two **Black-winged Pratincoles** *Glares gull nordmanni* there 14 Sep (one 17 Sep; Plate 4).

An early **Little Gull** *Hydrocoloeus minutus* Akrotiri salt lake 15 Oct and then small numbers in Dec various locations and a maximum of 45 in pools south of Larnaca airport 31 Dec. A **Great Black-headed Gull** *Ichthyaeetus ichthyaeetus* off Livera (Sadrazamköy), Cape Kormakitis, 29 Nov, one off Oroklini 30 Nov and a 1cy bird Larnaca STP 7-21 Dec. One very early **Sandwich Tern** *Thalasseus sandvicensis* Polis Chrysochou bay 2 Aug. **Little Terns** *Sternula albifrons* successfully fledged at least seven young in the Larnaca area and juveniles seen there and Oroklini Jul-Aug. A very late **White-winged Tern** *Chlidonias leucopterus* still in breeding plumage Larnaca STP 21 Dec while a **Black Tern** *Chlidonias niger* Polis Chrysochou bay 2 Aug (and later the same day at Evretou dam) and another Akrotiri salt lake 12 Sep. Four **Arctic Skuas** *Stercorarius parasiticus* Polis Chrysochou bay 27 Sep, two pale phase birds off Cape Pomos 16 Oct and one Kyrenia (Girne) 19 Oct. Up to six **Scopoli's Shearwaters** *Calonectris diomedea* off Polis Chrysochou bay 6-26 Jul, nine there 7 Oct, 25 off Akamas 8 Oct, 20 off Pomos 16 Oct, 64 off Cape Kormakitis (Koruçam) 17 Oct, 69 off Agios Amvrosios (Esentepe) same day and



Plate 5. Eurasian Spoonbill *Platalea leucorodia* 16 October 2019, Kouklia (Kukla) wetlands, Cyprus. © Andy Grant

20 off Orga 18 Oct. A **Yelkouan Shearwater** *Puffinus yelkouan* in Polis Chrysochou bay 22 Jul, one Agios Amvrosios 1 Sep, three off Cape Kormakitis 17 Oct and one off Orga 18 Oct.

Two **Black Storks** *Ciconia nigra* Akrotiri salt lake 13 Sep and singles Kouklia (Kukla) wetlands 27 Sep, Phasouri 11 Oct and Akhna dam 25 Oct. Single figure groups of **Western White Storks** *Ciconia ciconia ciconia* various locations 25 Aug-27 Nov. A **Northern Gannet** *Morus bassanus* Paphos headland 16 Nov. Fifteen **Eurasian Spoonbills** *Platalea leucorodia* Akrotiri salt lake 9 Sep, ten there 3-4 Oct and 11 at Kouklia (Kukla) wetlands 2 Sep, 14 there 29 Sep and 36 there 11 Oct were the noteworthy counts (Plate 5). Single **Eurasian Bitterns** *Botaurus stellaris* Akrotiri marsh 18-19 Aug and 29 Nov, Akhna dam 19 Aug, Kouklia (Kukla) wetlands 13-17 Oct, Zakaki marsh 18 Nov and Paralimni lake 22 Dec, while two were seen migrating off Zygi 10 Oct and up to two Agia Varvara (Paphos) several dates



Plate 6. Eurasian Bittern *Botaurus stellaris* 19 November 2019, Agia Varvara, Paphos, Cyprus. © Dave Walker



Plate 8. Lesser Short-toed Lark *Alaudala (rufescens) rufescens* 23 October 2019, Akrotiri Salt Lake, Cyprus © John East



Plate 7. Short-eared Owl *Asio flammeus* 23 October 2019, Kazivera (Gaziveran), Cyprus. © Kenan Hürdeniz

24 Oct-22 Dec (Plate 6). A late **Little Bittern** *Ixobrychus minutus* Athalassa dam 30 Nov. 320 **Western Cattle Egrets** *Bubulcus ibis* Akova dam 1 Sep, 230 Kouklia (Kukla) wetlands and over 500 Syngراسي (Sınırüstü) dam 8 Sep. **Great White Pelicans** *Pelecanus onocrotalus* seen in ones and twos at various locations during the period while up to four juveniles moved between Athalassa dam and Mia Milia (Haspolat) STP 23 Oct-15 Dec (last record).

Autumn raptor migration over Cyprus included single **Short-toed Snake Eagles**

Circaetus gallicus Bishop's pool 12 & 13 Sep and 3 Oct, three over Phasouri 18 Sep, two 8 Oct, one 13 Oct and one Kouklia (Kukla) wetlands 12 Nov. 1cy **Lesser Spotted Eagles** *Clanga pomarina* were over Phasouri 26 Sep, Akrotiri salt lake 2 Oct and Akrotiri marsh 4 Nov. A pale morph **Booted Eagle** *Hieraaetus pennata* over the fields north of Mandria 27 Dec. Single 1cy **Levant Sparrowhawks** *Accipiter brevipes* Phasouri 26 Sep and Akrotiri salt lake 15 Oct. A **Short-eared Owl** *Asio flammeus* Kazivera (Gaziveran) 23 Oct (scarce in the north of



Plate 9. Yellow-browed warbler *Phylloscopus inornatus* 19 October 2019, Livera (Sadrazamköy), Cyprus. © Eren Aksoylu



Plate 10. Red-breasted flycatcher *Ficedula parva* 28 November 2019, Livera (Sadrazamköy), Cyprus. © Ali Özdiñç

the island; Plate 7). Two **Common Hoopoes** *Upupa epops* still in the Nicosia area during Dec and seemed to be overwintering. Two **Blue-cheeked Bee-eaters** *Merops persicus* at Akrotiri marsh 28-31 Aug (one 2 Sep) and possibly the same two birds Kantou 31 Aug. A **Pied Kingfisher** *Ceryle rudis* Akhna dam 28 Jul and 2 Sep, a female Famagusta freshwater lake south (Ayluga) 8 Sep, one Agia Napa 10 Dec and one Glapsides lagoon 31 Dec. A **Eurasian Wryneck** *Jynx torquilla* in June at Prodromos seen there and heard singing 26 Jul. Two very early reports of **Red-footed Falcon** *Falco vespertinus* - a 1cy Erimi 15 Aug and a male Akrotiri salt lake 26 Aug. A **Merlin** *Falco columbarius* Kouklia (Kukla) wetlands 1 Nov and one Livera (Sadrazamköy) 8 Nov.

A **Turkestan Shrike** *Lanius phoenicurioides* Kamares aqueduct, Larnaca, 8 Aug. Single **Northern Ravens** *Corvus corax* Giouti, Eptakomi, 5 Sep, Pentadactylos 6 & 9 Sep, three outside Rizokarpasos 5 Oct with two Orga 17-18 Oct and Syngrasi (Sinürüstü) dam 14 Nov. A **Lesser Short-toed Lark** *Alaudala rufescens* Mandria (Paphos) 8 Sep and again 29-31 Oct, one Akrotiri salt lake 23 Oct (Plate 8) and another Paphos headland 29 Dec. December **Eurasian Barn Swallows** *Hirundo rustica* from Akrotiri and Oroklini marsh may be over-wintering individuals. A *Phylloscopus* sp. at Livera (Sadrazamköy) 25 Nov was thought to be a **Hume's Leaf Warbler** *Phylloscopus humei* but other species could not be ruled out. A **Yellow-browed Warbler** *Phylloscopus inornatus* there 19 Oct (Plate 9) and another Souni 26 Nov. An **Icterine Warbler** *Hippolais icterina* Armou Hills 22 Sep and



Plate 11. Hooded Wheatear *Oenanthe monacha* 21 July 2019, Livera (Sadrazamköy), Cyprus. © Birtan Gökeri

single **Savi's Warblers** *Locustella luscinioides* Akhna dam 19 Sep and Larnaca STP 25 Sep. **Barred Warblers** *Currucula nisoria* Agia Napa STP 22 Aug and Agios Theodoros (Larnaca) 24 & 31 Aug. A **Common Whitethroat** *Currucula communis* Panagia Stazousa 30 Nov was a late record. Ten '**European Goldcrests**' *Regulus regulus* Mount Kyparissovouno (Selvili Tepe), a single Livadi tou Pashia, Troodos, 29 Nov and 19 Dec with two found there 2 & 6 Dec. At least one **Wallcreeper** *Tichodroma muraria* overwintering in Avakas gorge 4 Nov to year-end and one Kensington cliffs 22 Nov. A juv **Rose-coloured Starling** *Pastor roseus* Paphos STP 9 Nov. **Collared Flycatchers** *Ficedula albicollis* were seen at Armou Hills 22 Sep and Troodos 24 Sep – unusual autumn migrants. Single **Red-breasted Flycatchers** *Ficedula parva* Bishop's pool 24 Sep and Akrotiri gravel pits 30 Sep, while two at Secret valley golf course



Plate 12. Rock Bunting *Emberiza cia* 23 December 2019, Pileri (Göçeri) Cyprus. © Kenan Hürdeniz

21 Oct and another Livera (Sadrazamköy) 28 Nov (Plate 10).

A fem **'Western Siberian Stonechat'** *Saxicola maurus* Larnaca STP 19 Oct and a male at Timi beach 28 Oct. A **Hooded Wheatear** *Oenanthe monacha* Livera (Sadrazamköy) 21 Jul (Plate 11) and a very late **Cyprus Wheatear** *Oenanthe cyprica* at Cape Greco 20 Dec. Single **'Western Citrine Wagtails'** *Motacilla (citreola) werae* Akrotiri salt lake, Kouklia (Kukla) wetlands, Mandria (Paphos), Mia Milia (Haspolat) STP, Paphos headland, Rizokarpaso (Dipkarpaz) and Syngراسي (Sınırüstü) dam 2 Sep-27 Nov and two Akrotiri salt lake 10 Oct. A **Richard's Pipit** *Anthus richardi* Mandria (Paphos) 2-11 Nov and 120 **Red-throated Pipits** *Anthus cervinus* Kouklia (Kukla) wetlands 16 Oct. Six **Bramblings** *Fringilla montifringilla* Platania and four Troodos 16 Nov with singles at Almyrolivado (Troodos), Goudi, Nicosia and Tsada, and two Potamia 23 Nov while up to three Troodos area 2-19 Dec. Five **Hawfinches** *Coccothraustes coccothraustes* Platania 18 Oct was the first record for the autumn and then a maximum of c20 at Platania 16 & 20 Nov, while away from Troodos two were at Avakas gorge 10 Dec. The highest count of **Eurasian Siskins** *Spinus spinus* this autumn was 20 at Platania 20 Nov, while two were at Asprokremmos dam 28 Dec, away from their usual wintering grounds. A **Rock Bunting** *Emberiza cia* was near Pileri (Göçeri) 23-25 Dec (Plate 12) while several **Yellowhammers** *Emberiza citronella* near Troodos square 16



Plate 13. Common Myna *Acridotheres tristis* 16 November 2019, Sharqia, Nile Delta, Egypt. © Ahmed Riad

Nov (two there 19 Dec); some birds seemed to be possible **Yellowhammer** x **Pine Bunting** *Emberiza leucocephalos* hybrids.

EGYPT

A female **Ferruginous Duck** *Aythya nyroca* with five pulli Aswan 17 Aug – a very rare breeder. The first documented record of breeding **Greater Sand Plover** *Anarhynchus leschenaultii* – a few days old chick with an adult female, Mediterranean coast, northeast of Port Said, 30 Jun. Five **European Shags** *Gulosus aristotelis* Mediterranean coast, 200 km west of Alexandria, 9-10 Nov (last recorded 1997, first photo-documented record). Four **Common Mynas** *Acridotheres tristis* Sharqia, Nile delta, 16 Nov (Plate 13) - further proof of this species' expansion from Sinai to the delta. Ten **Indian Silverbills** *Euodice malabarica* 6 Oct at a touristic village 200 km west of Alexandria (two nests) - most westerly record to date.

ISRAEL

The tenth record of **Lesser White-fronted Goose** *Anser erythropus* Mash'en reservoir, southern coastal plains, 1 Dec onwards while the long-staying individual roaming between Eilat and Aqaba seen several times during December. Single **Rufous Turtle Doves** *Streptopelia (orientalis) meena* Yotvata 7 Nov, Tirat Yehuda, Dan region, 8 Nov and Eilat 11 Nov. A **Demoiselle Crane** *Grus virgo* at Agamon Hula 15 Oct-31 Dec. A returning **Pacific Golden Plover** *Pluvialis fulva* Tel Barukh beach, Tel Aviv, 1 Sep-12 Nov, one Kfar Barukh reservoir, Jizreel valley, 23-24 Sep, one Habesor reservoir, north-west

Negev, 27 Oct-8 Nov. A **Caspian Plover** *Anarhynchus asiaticus* Ma'ale Gilboa fishponds, Bet Shean valley, 8 Aug. Small numbers of **Bar-tailed Godwits** *Limosa lapponica* and **Red Knots** *Calidris canutus* Ma'agan Michael and elsewhere along the Mediterranean coast during Sep (very scarce in Israel). A **Pin-tailed Snipe** *Gallinago stenura* HaMa'apil fishponds 2 Nov and a **Great Snipe** *Gallinago media* Yotvata STP 31 Oct. The two **Grey Phalaropes** *Phalaropus fulicarius* first reported in May at Km20 salt pans, Eilat, remained there until end July, one staying to 14 Aug. An **Audouin's Gull** *Ichthyaetus audouinii* Zikim beach, south Mediterranean coast, 17-31 Jul. In addition to **Lesser Crested Terns** *Thalasseus bengalensis* and **Bridled Terns** *Onychoprion anaethetus* seen almost daily off North Beach, Eilat during July, an **Arctic Tern** *Sterna paradisaea* there 20 Jul and two 29 Jul. A **Swinhoe's Storm-Petrel** *Hydrobates monorhis* off Eilat 1 Aug and another 6 Sep (13th and 14th records).

The first record of **Broad-billed Roller** *Euryostomus glaucurus* was at Karmiya, southern coastal plains, 12-18 Sep. A **White-throated Bee-eater** *Merops albicollis* west of KM20 salt pans, Eilat, 13 Aug-5 Oct was also the first record and was often accompanied by a female **Hypocolius** *Hypocolius ampelinus* 14-24 Aug (18th record). **Hume's Leaf Warblers** *Phylloscopus humei* Tel Aviv 1 and 25 Nov, one west of Kfar Ruppim, 6 Dec, one near Even Yehuda, Dan region, 31 Dec. Five **Yellow-browed Warblers** *Phylloscopus inornatus* various locations during Oct and several during Nov. A **Paddyfield Warbler** *Acrocephalus agricola* Neve Ur, Jordan valley, 19-22 Oct (13th record). A **Booted Warbler** *Iduna caligata* ringed IBRCE, Eilat, 16 Oct (fourth record). A **Common Grasshopper Warbler** *Locustella naevia* picked up exhausted at Palmahim, south of Tel Aviv 22 Aug (subsequently died - 16th record). Single **Wallcreepers** *Tichodroma muraria* Zefira cistern, Judean desert, 23 Nov, one Ein Avdat 28 Nov-19 Dec one mount Arbel 16-29 Dec and Wadi Amud 24 Dec.

A **Black-throated Thrush** *Turdus (ruficollis) atrogularis* Jerusalem 11 Dec. A **Kurdistan Wheatear** *Oenanthe (xanthoprymn) xanthoprymna* Ashdod beach 26 Oct and another Ovda valley 5-31 Dec. A **Basalt Wheatear** *Oenanthe warriar* Ovda valley 26

Nov increasing to three by 5 Dec which remained to 31 Dec. A **Blyth's Pipit** *Anthus godlewskii* over Hatzuk beach, Tel Aviv 26 Oct and an **Olive-backed Pipit** *Anthus hodgsoni* near Lotan 14 Nov. A **Red Crossbill** *Loxia curvirostra* mount Herzl, Jerusalem, 13-30 Nov (two 21 Nov), one Haifa 26 Nov (two 30 Nov) and singles Jerusalem 6 and 14 Dec. Five **Little Buntings** *Emberiza pusilla* various locations during Oct and several during Nov.

JORDAN

A **Striated Heron** *Butorides striata* Ayla project, Aqaba, 7 Nov (Plate 14) and a **Crested Honey-Buzzard** *Pernis ptilorhynchus* Aqaba bird observatory, 27 Oct (Plate 15).



Plate 14. Striated Heron *Butorides striata* 7 November, Ayla project, Aqaba, Jordan. © F Rahahleh



Plate 15. Crested Honey-Buzzard *Pernis ptilorhynchus* 27 October, Aqaba bird observatory, Jordan. © F Rahahleh

KAZAKHSTAN

A **Red-breasted Goose** *Branta ruficollis* seen on five occasions 7-26 Oct at Sorbulak lake (70 km north of Almaty) while two were at Kachagai reservoir (70 km north-east of Almaty) 18 Nov - all were with a flock of **Ruddy Shelducks** *Tadorna ferruginea*; first records of Red-breasted Goose for both locations. A **Barnacle Goose** *Branta leucopsis* with a **Greater White-fronted Goose** *Anser albifrons* flock 24 Apr in Kostanai province while five **Bewick's Swans** *Cygnus columbianus* were at Sorbulak lake 2 Dec. Approximately 750 **Garganey** *Spatula querquedula* at Pavlogradka 8 Jun while 450 **Common Goldeneye** *Bucephala clangula* were at Zhangyzkuduk (both Akmola province) 19 Jun. A probable breeding pair of **White-headed Duck** *Oxyura leucocephala* at Krasnoyarka 8 Jun and another pair at Zhangyzkudu 14 Jun.

At least three **Yellow-eyed Pigeons** *Columba eversmanni* Turanga forest (Almaty province) 23 Jun. A single **Little Grebe** *Tachybaptus ruficollis* winter 2018-2019 in Ust-Kamenogorst city - the most northerly winter record while another (the same bird?) at the same location 27 Nov. High water levels on



Plate 16. Ashy Drongo *Dicrurus leucophaeus* 12 June 2019, Korgalzhyn village, Kazakhstan. © Alexander Fedulin



Plate 17. Western Black Redstart *Phoenicurus (ochruros) gibralteriensis* 24 October 2019, Karazhar, Korgalzhyn state reserve, Kazakhstan. © Alexei Koshkin

Tengiz lake meant a poor year for breeding **Greater Flamingos** *Phoenicopterus roseus* with approximately 4000 breeding adults and 1000 juveniles counted; 1528 non-breeders were at Shalkar lake (Akmola province) 2 Jun. A repeat survey of breeding **Sociable Lapwing** *Vanellus gregarius* located only 18 nests (Korgalzhyn and surrounding area) while a post-breeding flock of 245 birds was at Arykty 17 Jul.

Approximately 3000 **Red-necked Phalaropes** *Phalaropus lobatus* 30 May at Ashiokol lake, Myshukur (Akmola province). Three **Collared Pratincoles** *Glareola pratincola* 3 Aug on the north-eastern shore of Tengiz lake were outside the usual range while a colony of **Black-winged Pratincoles** *Pratincola nordmanni* at Kyzylkol lake (south Kazakhstan) in July is an estimated 650 km south of the usual breeding range. A group of two adult and three juvenile **Little Gulls** *Larus minutus* 12 Oct was the fifth record for Sorbulak lake since 2003.

125 **Gull-billed Terns** *Gelochelidon nilotica* nesting on a small island on a lake adjacent to Ushshart village (Akmola province) 7 Jun. A single **Whiskered Tern** *Chlidonias hybrida* Shalkar lake 2 Jun while a single bird Sorbulak lake 10-12 Oct (third record for this location). A **White-winged Tern** *Chlidonias leucopterus* at Karakol lake (Mangistau region) first seen 28 Oct 2018 and then 20 Jan 2019 - thought to be the first wintering record. An **Arctic Skua** *Stercorarius parasiticus* 11 Nov at Kapchagai reservoir (Almaty region) - first record for the south-east. The second record of **Black-throated Diver** *Gavia arctica* for Sorbulak lake on 10 Oct. An **Indian Pond Heron** *Ardeola grayii* recorded central Kazakhstan 10 Jul - fourth (and the most northerly) record.

A sub-adult **Eastern Imperial Eagle** *Aquila heliaca* 1 Jun approximately 10 km east of Kosaral village (Karaganda province) while two **White-tailed Eagles** *Haliaeetus albicilla* Sorbulak lake 22 Jun. One male **Woodchat Shrike** *Lanius senator* 8 May in Aktau (Mangistau region) - second record. An **Ashy Drongo** *Dicrurus leucophaeus* Korgalzhyn village 12 Jun - first record (Plate 16). **Woodlark** *Lullula arborea* is a rare passage migrant but one recorded 11 Jul in Kirsanov state nature reserve (west Kazakhstan) while a '**Steppe Horned Lark**' *Eremophila (alpestris) brandti* seen near Barshino

village 12 Jun. A male **White-browed Tit-warbler** *Leptopoeile sophiae* at Big Almaty lake 21 Jun. A **Long-tailed Tit** *Aegithalos caudatus* 11 Nov in Aktau city, the second record on the Mangyshlak peninsula. Four **Eurasian Blackcaps** *Sylvia atricapilla* Korgalzhyn village 22 Apr. Two **Fieldfares** *Turdus pilaris* in flight near Kyzlkoya village (Karaganda province) 3 Jun. A female **Red-flanked Bluetail** *Tarsiger cyanurus* Korgalzhyn village 6 May - third record for central Kazakhstan and the first spring record. Four **Western Black Redstarts** *Phoenicurus (ochruros) gibralteriensis* Karazhar in the Korgalzhyn state reserve 24 Oct (Plate 17).

A pair of **Saxaul Sparrows** *Passer ammodendri* feeding chicks at a nest at a bus stop near Topar village (Almaty region) 23 Jun. A female **Spanish Sparrow** *Passer hispaniolensis* 24 Apr on the north-western shore of Sultankeldy lake (Korgalzhyn state nature reserve). Two **European Greenfinches** *Chloris chloris* Korgalzhyn village 31 Oct and 7 Nov. A single **Ortolan Bunting** *Emberiza hortulana* Kyzlkoya village 4 Jun, and a further four singing males about 20 km north of the village while at least 15 singing males 5 Jun near Beket village (Karaganda province). The first record of **Yellow-browed Bunting** *Ocyris chrysophrys* (and for Central Asia) in a flock of **Pine Buntings** *Emberiza leucocephalos* at Kanshengel (south-east Kazakhstan) 21 Sep (Plate 18).



Plate 18. Yellow-browed Bunting *Ocyris chrysophrys* 21 September 2019, Kanshengel, south-east Kazakhstan. © Askar Isabekov

KUWAIT

Further records during the period can also be found in From the Rarities Committees in this issue.

JPR - Jahra Pools Reserve; SPF - Sulabiya pivot fields.

A **Ruddy Shelduck** *Tadorna ferruginea* JPR 27-29 Nov. A **European Nightjar** *Caprimulgus europaeus* Al Shaheed park 17 Jul and **Egyptian Nightjars** *Caprimulgus aegyptius* JPR 5 Jun and 9 Jul. Nine **Common Wood pigeons** *Columba palumbus* SPF 10 Dec and a **Namaqua Dove** *Oena capensis* nest with eggs JPR 9 Jun. A **Corncrake** *Crex crex* Al Abra q 31 Oct. A **Northern Lapwing** *Vanellus vanellus* JPR 20 Nov. **Spur-winged Lapwings** *Vanellus spinosus* present SPF and JPR during the period (maximum 15 SPF on 10 Dec) while nine **Sociable Lapwings** *Vanellus gregarius* SPF 23 Oct, six 26 Oct and seven 14 Nov (last record). 60 **White-tailed Lapwings** *Vanellus leucurus* SPF 10 Dec was a high count. A **Caspian Plover** *Anarhynchus asiaticus* JPR 30 Jul. A **Collared Pratincole** *Glareola pratincola* fledgling Al Zour STP, Nuwaiseeb, 27 Jul. 21 **Bridled Terns** *Onychoprion anaethetus* Ras Al Salmiya 23 Jun and a **Black Tern** *Chlidonias niger* KISR outfall, Sulaibikhat, 19 Aug. A **Black Stork** *Ciconia nigra* SPF 14 Sep and returning 'Western White Storks' *Ciconia ciconia ciconia* first seen JPR 20 Aug (one, same date as 2018). Two **Great White Pelicans** *Pelecanus onocrotalus* JPR 15 Nov.

Single **Black-winged Kites** *Elanus caeruleus* recorded various dates SPF from 13 Jul with a maximum of three 14 Sep (also last date). **European Honey Buzzards** *Pernis apivorus* JPR 5 Jun and 8 Sep (five individuals), Al Abra q 14-16 Sep and 5 Oct and Kuwait city 3 Oct. **Crested Honey Buzzards** *Pernis ptilorhynchus* Al Abra q 16 Sep, Qadisayah 16 Nov, Abu Halifa 1 Dec (two individuals), Corniche club, Salmiya 3 Dec and Shuwaikh 12 Dec. 21 **Eurasian Griffon Vultures** *Gyps fulvus* Al Abra q/Salmi area 12 Nov. The first migrating **Steppe Eagle** *Aquila nipalensis* arrived Kuwaitat 20 Sep while the first **Greater Spotted Eagle** *Clanga clanga* arrived Al Abra q 5 Oct when also present were a 'Northern Shikra' *Accipiter (badius) cenchroides*, a **Levant Sparrowhawk** *Accipiter brevipes* a **Eurasian Sparrowhawk** *Accipiter nisus*, a **Pallid Harrier** *Circus macrourus* and



Plate 19. Black Throated Thrush *Turdus (ruficollis) atrogularis* 25 October 2019, Sulabiyah Pivot Fields, Kuwait. © Mike Pope

a **Eurasian Black Kite** *Milvus migrans*. 1000 'Northern Steppe Buzzards' *Buteo buteo vulpinus* passing over Khuwaisat 08.00-14.00 on 20 Sep but only 180 on 21 Sep. A **Long-legged Buzzard** *Buteo rufinus* Al Abra q 5 Oct. A **Pallid Scops Owl** *Otus brucei* and a **European Scops Owl** *Otus scopus* Mutla'a ranch 26 Sep and a **Western Barn Owl** *Tyto alba* SPF 11 Aug. A **Eurasian Hobby** *Falco subbuteo* Kuwait city 3 Oct.

A juvenile **Black-crowned Sparrow-Lark** *Eremopterix nigriceps* SPF 1 Jun and an **Oriental Skylark** *Alauda gulgula* there 14 Nov. Two **Hume's Leaf Warblers** *Phylloscopus humei* Al Abra q 9 Dec and a **Yellow-browed Warbler** *Phylloscopus inornatus* British Embassy gardens 30 Sep. A **Basra Reed Warbler** *Acrocephalus griseldis* Al Shaheed park 18 Nov and an **Upcher's Warbler** *Hippolais languida* JPR 18 Jul. A **Booted Warbler** *Iduna caligata* Al Abra q 13 Aug and a **Sykes's Warbler** *Iduna rama* Al Shaheed park 17 Nov. Two **Western Grasshopper Warblers** *Locustella naevia* Al Abra q 19 Aug. Single **Savi's Warblers** *Locustella luscinioides* British Embassy gardens 30 Sep and SPF 10 Aug.

A **Ring Ouzel** *Turdus torquatus* JPR 22 Nov and a **Common Blackbird** *Turdus merula* Al Abra q 11 Nov. A **Black-throated Thrush** *Turdus (ruficollis) atrogularis* SPF 25 Oct (Plate 19) and 9 Nov, two Jahra farm 7 Nov. A **Pied Stonechat** *Saxicola caprata* Nuwaiseeb 22 Aug. Two juv **White-crowned Wheatears** *Oenanthe (leucopyga) leucopyga* Kabd 20 Jun

and an adult Wafra 25 Jun. A **Rüppell's Weaver** *Ploceus galbula* (of captive origin) British Embassy gardens 23 Jul. A **Brambling** *Fringilla montifringilla* Al Abra q 9 Nov, a **Desert Finch** *Rhodospiza obsoleta* Khiran resort 22 Jun and ten **Eurasian Siskins** *Spinus spinus* Al Abra q 11 Nov. Two **Eastern Cinereous Buntings** *Emberiza (cineracea) semenowi* Khuweisat 13 Sep, a **Little Bunting** *Emberiza pusilla* Al Abra q 16 Nov, a **Black-headed Bunting** *Emberiza melanocephala* JPR 22 Jul and one Al Abra q 13 Aug.

KYRGYZSTAN

Raptor surveys in the central and southern part of Naryn province 27 May-1 June recorded 11 **Lammergeiers** *Gypaetus barbatus*, one **Egyptian Vulture** *Neophron percnopterus*, 20 **Himalayan Griffon Vultures** *Gyps himalayensis*, five **Cinereous Vultures** *Aegypius monachus*, eight **Golden Eagles** *Aquila chrysaetos*, eight **Long-legged Buzzards** *Buteo rufinus* and two **Barbary Falcons** *Falco pelegrinoides*. Two **Eastern Orphee Warblers** *Sylvia hortensis* near Bishkek 1 Mar - first record - while another first record was a male **Pied Stonechat** *Saxicola caprata* near Bishkek 26 Sep.

LEBANON

The OSME-led raptor migration count at Hammana, east of Beirut, 10 Sep-3 Oct produced 20 698 raptors of 25 species including three **Crested Honey Buzzards** *Pernis ptilorhynchus* and two more migrating along Mount Lebanon outside the count (third-seventh records). In addition the count included 7116 **Great White Pelicans** *Pelecanus onocrotalus* and 4897 **European Bee-eaters** *Merops apiaster*. Although there were only two records of **Black-winged Kite** *Elanus caeruleus* in Lebanon before 2013, there has been a significant northward and westward expansion through Jordan, Israel and to south-east Turkey since then; there were several sightings in the Bekaa valley Sep-Oct of what is now considered a scarce migrant visitor rather than a vagrant.

OMAN

An **Eastern Greylag Goose** *Anser anser rubrirostris* East Khawr 14 Nov and a **Greater**



Plate 20. Swinhoe's Storm Petrel *Hydrobates monorhis* 20 November 2019, off Mirbat, Oman. © Hugues Dufourny

White-fronted Goose *Anser albifrons* there 16 Nov. Eight **Ruddy Shelducks** *Tadorna ferruginea* A'Shuwaymiyyah 1 Dec. An **Alpine Swift** *Tachymarptis melba* Wadi Darbat 2 Dec and three Wadi Ashawq 8 Dec. A **Little Swift** *Apus affinis* Raysut STP 10 Nov. Single **Pied Cuckoos** *Oxylophus jacobinus* Ayn Tobroq 7 & 30 Nov, Ayn Hamran 7-16 Nov, Al Mughsayl 19 Nov, Ayn Athun 21 Nov. **Asian Koels** *Eudynamis scolopaceus* Hilf, Masirah island, 12 Nov, Qatbit 15 Nov and Ayn Tobroq 30 Nov. The third record of **Stock Dove** *Columba oenas* ssp. Jarziz farm, 23 Oct. A **Spotted Crake** *Porzana porzana* Raysut STP 24 Oct and a **Watercock** *Gallicrex cinerea* Raysut lagoons 23 Oct (eighth record). A **Demoiselle Crane** *Grus virgo* and seven **Common Cranes** *Grus grus* Sahanawt farm 4 Dec.

Four **Spur-winged Lapwings** *Vanellus spinosus* Raysut STP 19 Oct (three 10 Nov) while six **Sociable Lapwings** *Vanellus gregarius* at Shisr 5 Nov and 14 Sahanawt farm, Salalah, 6 Nov. 300 **Common Ringed Plover** *Charadrius hiaticula* and 500 **Little Stints** *Calidris minuta* Raysut 2 Nov were high counts away from Barr Al Hikman. A **Pectoral Sandpiper** *Calidris melanotos* Raysut 8 Dec. Two **Great Knot** East Khawr 29 Nov-4 Dec - rare away from the usual wintering Barr al Hikman area where 122 counted 13 Nov. A **Jack Snipe** *Lymnocyptes minimus* Hilf, Masirah island, 12 Nov and seven **Pin-tailed Snipe** *Gallinago stenura* there 13 Nov. 18 **Cream-coloured Coursers** *Cursorius cursor* Shisr 1 Dec and nine at Al Beed farms 4 Dec. Two **Small Pratincoles** *Glareola lactea* East Khawr 4 Dec.

2000 **Great Black-headed Gulls** *Ichthyaetus ichthyaetus* Ras Al Hadd 1 Dec and a **Baltic Gull** *Larus fuscus fuscus* Raysut harbour 14 Nov. 50 **Gull-billed Terns** *Gelochelidon nilotica* and 40 **Caspian Terns** *Hydroprogne caspia* Raysut 2 Nov. A pelagic trip off Mirbat 25 Oct produced three **Bridled Terns** *Onychoprion anaethetus*, two **Pomarine Skuas** *Stercorarius pomarinus*, a **Red-billed Tropicbird** *Phaethon aethereus*, two **Wilson's Storm Petrels** *Oceanites oceanicus*, three **Flesh-footed Shearwaters** *Ardenna carneipes* and 80 **Jouanin's Petrels** *Bulweria fallax*. Two **Swinhoe's Storm Petrels** *Hydrobates monorhis* in heavy moult off Mirbat 20 Nov (Plate 20). Two **Black Storks** *Ciconia nigra* Khawr Rouri and Wadi Darbat area, 16 Nov-6 Dec, 150 **Abdim's Storks** *Ciconia abdimii* and 100 **Western White Storks** *Ciconia ciconia* Raysut STP 10 Nov. Four **African Sacred Ibis** *Threskiornis aethiopicus* Raysut lagoons 23 Oct and five there 28 Oct-14 Nov (tenth record). An **Intermediate Egret** *Ardea intermedia* Raysut 2 Nov.

Single **Black-winged Kites** *Elanus caeruleus* Sohar sun farms 1 Nov and 1 Dec, Seeb airport 22 Nov and possibly the same bird Al Mouj golf course 3 Dec. Three **Crested Honey Buzzards** *Pernis ptilorhynchus* Salalah-Taqah area 22 Sep-8 Nov. A **Eurasian Griffon Vulture** *Gyps fulvus* Wadi Rabkut 12 Nov, two Tawi Atayr 20 Nov and 22 near Jabal Samhan 28 Nov. A **Western Barn Owl** *Tyto alba* Khatmat Milahah 24 Nov. 15 **Arabian Scops Owls** *Otus pamela* Wadi Darbat 23 Oct and a **Eurasian Scops Owl** *Otus scops* Muntasar 1 Dec. A **Short-eared Owl** *Asio flammeus* Nizwa 10 Nov.

A migrating flock of 93 **Blue-cheeked Bee-eaters** *Merops persicus*, West Khawr, Salalah 21 Nov. Four **Indian Rollers** *Coracias benghalensis* Shisr 13 Oct - unusual in southern Oman. An **Amur Falcon** *Falco amurensis* (adult female) Crowne Plaza hotel, Salalah 23 Oct, three Qurayyat 16 Nov, and one at Fins 29 Nov. A **Eurasian Hobby** *Falco subbuteo* Wadi Rabkut 12 Nov and one Mudday 13 Nov while a **Lanner Falcon** *Falco biarmicus* at Khawr Sallan, Sohar, 10 Nov. A **Masked Shrike** *Lanius nubicus* Ayn Hamran 16 Nov. Two **Drongos** *Edolius* sp. Qatbit 15 Nov. A **Hypocolius** *Hypocolius ampelinus* Qurayyat 10 Nov - extremely rare in the north - while six Mudday 13 Nov and a pair Qatbit 15 Nov were in the

more usual wintering areas. A **Hume's Leaf Warbler** *Phylloscopus humei* Muntasar 5 Nov and a fairly late **Green Warbler** *Phylloscopus nitidus* Khawr Dirif 12 Nov. A **Black-throated Thrush** *Turdus (ruficollis) atrogularis* Al Qurm natural park (Muscat) 10 Nov and two at Sall Ala, Musandam, 15 Nov. Five **Eversmann's Redstarts** *Phoenicurus erythronotus* at usual wintering location A'Sayh, Musandam 16 Nov while one at Sayq plateau 2 Dec was more unusual. Two **Blyth's Wheatears** *Oenanthe (picata) picata* (formerly Variable/Eastern Pied Wheatear) Khatmat Milahah 9 Nov. Four **Scaly-breasted Munias** *Lonchura punctulata* Taqah 7 Nov. Two **Forest Wagtails** *Dendronanthus indicus* Wadi Darbat 28 Nov and one there 4 Dec. Six '**Western Citrine Wagtails**' *Motacilla (citreola) werae* Muntasar 15 Nov. A Richard's Pipit *Anthus richardi* Khatmat Milahah 9 Nov and five Jarziz farm (Salalah) 18 Nov. An **Olive-backed Pipit** *Anthus hodgsoni* Hilf, Masirah island, 13 Nov and five **Siberian Buff-bellied Pipits** *Anthus (rubescens) japonicus* Muntasar 5 Nov (ninth record).

QATAR

Regrettably, due to an oversight, the Qatar section of Around the Region was omitted from *Sandgrouse* 41(2). Our apologies for this. The following report therefore relates to the period 1 January-30 June 2019; note that this includes some records published in the *From the Rarities Committees* section of *Sandgrouse* 41(2) but we include them here for the sake of completeness and to present some previously unpublished photographs. Records for the period July-December 2019 are included in the *From the Rarities Committees* section of this issue.

The January-June 2019 period was marked by the protracted, but sporadic appearance of passage migrants with a number of species recorded in significantly smaller numbers than in past years – most notably **Yellow Wagtails** *Motacilla flava* ssp.

A **European Nightjar** *Caprimulgus europaeus* Al Bidda park, central Doha 8 Feb - an exceptionally early record; higher numbers at the beginning of May were more typical. An **Egyptian Nightjar** *C. aegyptius* Irkayya farm 12 Apr - another early record. A **Baillon's Crake** *Zapornia intermedia/pusilla* West Saliya



Plate 21. Western or Eastern Baillon's Crake *Zapornia pusilla/intermedia* 12 March 2019, West Saliya Lagoons, Qatar. © Gavin Farnell



Plate 22. Little Crake, female *Zapornia parva* 12 March 2019, West Saliya Lagoons, Qatar. © Gavin Farnell



Plate 23. Spur-Winged Lapwing *Vanellus spinosus* 3 June 2019, West Saliya Lagoons, Qatar. © Simon Tull

lagoons 10-12 Mar (Plate 21) and up to three **Little Crakes** *Zapornia parva* there 9 Mar-5 Apr (first records of both species since 2013; Plate 22). **Spotted Crakes** *Porzana porzana*, a more regular visitor, West Saliya lagoons and nearby Abu Nakhla various dates 27 Feb-5 Apr. A **Grey-headed Swamphen** *Porphyrio (porphyrio) poliocephalus* at Irkayya lagoons 22 May (only the fourth record but possibly under-recorded in comparison with the more abundant **African Swamphen** *P. (p.) madagascariensis*). Two **Spur-winged Lapwings** *Vanellus spinosus* West



Plate 24. Female Greater Painted-snipe *Rostratula benghalensis* 4 May 2019, Irkayya Lagoons, Qatar. © Simon Tull

Saliya lagoons 1 Mar and 22 Mar-3 Jun (Plate 23) – breeding suspected based on the pair's behaviour. A single **White-tailed Lapwing** *Vanellus leucurus* at Irkayya farm 1 Feb and a summer plumage **Caspian Plover** *Anarhynchus asiaticus* there 30 Apr. The first record of **Greater Painted-snipe** *Rostratula benghalensis* (an adult female; Plate 24) Irkayya lagoons 3-10 May. An **Intermediate Egret** *Ardea (intermedia) intermedia* at West Saliya lagoons 8 Mar.

A **Black-winged Kite** *Elanus caeruleus* (ssp *vociferus*) Irkayya farm 18 May. A sub-adult male **European Honey Buzzard** *Pernis apivorus* with some characteristics suggesting a hybrid **European x Crested Honey Buzzard** *Pernis ptilorhynchus* at Shahiniya 30 Apr. A **Eurasian Black Kite** *Milvus migrans* at Al Shamal park 17 May. A juvenile **Short-toed Snake Eagle** *Circaetus gallicus* Irkayya farm 1 Jun and up to four **Greater Spotted Eagles** *Clanga clanga* there throughout the winter - last record 10 May.

A single **Pied Kingfisher** *Ceryle rudis* at al Khor 23 Mar. Numbers of **Red-backed Shrikes** *Lanius collurio*, **Lesser Grey Shrikes** *L. minor* and **Masked Shrikes** *L. nubicus* peaked in mid-May when they were widespread but numbers reduced in comparison with



Plate 25. Flock of Calandra Larks *Melanocorypha calandra* 22 February 2019, Irkayya farm, Qatar. © Gavin Farnell



Plate 26. Yellow-Throated Sparrow *Gymnoris xanthocollis* 22 March 2019, Abu Dhalouf Park, Qatar. © Gavin Farnell

past years. A flock of at least 40 **Calandra Larks** *Melanocorypha calandra* Irkayya farm 16-22 Feb - only the second record (Plate 25). A **Black Scrub Robin** *Cercotrichas podobe* at Irkayya farm 10 May while a **European Robin** *Erithacus rubecula* seen intermittently there early Jan-29 Mar. A **Thrush Nightingale** *Luscinia luscinia* was at Al Shamal park 26 Apr. **White-throated Robins** *Irania gutturalis* arrived as usual in the last week of April but numbers peaked later than usual - singles at Al Shamal park 17 May and Al Wakra 19 May were also particularly late records. A female

Semi-collared Flycatcher *Ficedula semitorquata* at Al Shamal park 26 Apr. Two **Yellow-throated Sparrows** *Gymnoris xanthocollis* Abu Dhalouf park 22-29 Mar (Plate 26).

SAUDI ARABIA

Twelve **Helmeted Guinea-fowls** *Numida meleagris* at Abu Arish waste water pools 5 Jul, a very scarce and decreasing species, only found in the extreme south-west. Two male **Ferruginous Ducks** *Aythya nyroca* at Sabkhat Al Fasl, 6 Oct. Eighteen **Egyptian Nightjars** *Caprimulgus aegyptius* near Jubail mid-June including the first record of juveniles (seven) indicating possible breeding, although breeding elsewhere cannot be excluded; four birds stayed to 30 Aug with one at Khafra marsh, Jubail the same date and twelve birds later seen in Dhahran where they remained to year-end. Over 20 **Nubian Nightjars** *Caprimulgus nubicus* at Abu Arish waste water pools after dark, 5 Jul, with three **Plain Nightjars** *Caprimulgus inornatus* (Plate 27). A group of over 20 **Chestnut-bellied Sandgrouse** *Syrrhaptes exustus* in flight near Haradh 6 Dec - only the fifth record for the Eastern province but the second winter running at this site.

A single **African Olive Pigeon** *Columba arquatrix* near Abha and on the Raydah escarpment 29 & 30 June with two present 12 Oct (Plate 28). Four **Grey-headed Swamphens** *Porphyrio (porphyrio) poliocephalus*



Plate 27. Plain Nightjar *Caprimulgus inornatus* 5 July 2019, Abu Arish Waste Water Pools Jizan Province, Saudi Arabia. © Jem Babbington



Plate 28. African Olive Pigeon *Columba arquatrix* 12 October 2019, Raydah Escarpment, Asir Province, Saudi Arabia. © Jem Babbington



Plate 29. White-tailed Lapwing *Vanellus leucurus* 4 November 2019, Sabkhat Al Fasl, Jubail, Eastern Province, Saudi Arabia. © Phil Roberts

Al Asfar lake, Hofuf, 30 Aug indicate the species is continuing to expand its range in the country. At least 50 **Lesser Flamingos** *Phoeniconaias minor* were several kilometres south of Jizan on the coast, 6 Jul. Three **Spur-winged Lapwings** *Vanellus spinosus* Sabkhat Al Fasl intermittently throughout the summer with seven present 30 Aug. Five **Sociable Lapwings** *Vanellus gregarius* were at Haradh 18 Oct, one of their favoured wintering sites.

A **White-tailed Lapwing** *Vanellus leucurus* at Sabkhat Al Fasl, 3 Nov, with four 4-10 Nov (Plate 29). Two 1cy **Caspian Plovers** *Anarhynchus asiaticus* (Plate 30) and a **Terek Sandpiper** *Xenus cinereus* were well inland at Al Asfar lake, Hofuf, 30 Aug. Ten **Cream-coloured Coursers** *Cursorius cursor* Haradh 18 Oct, a high count.

A flock of over 100 **Black-crowned Night Herons** *Nycticorax nycticorax* at Al Hair river



Plate 30. Caspian Plover *Anarhynchus asiaticus* 30 August 2019, Al Asfar Lake, Hofuf, Eastern Province, Saudi Arabia. © Jem Babbington

near Riyadh 25 Oct, a very large count. A **Striated Heron** *Butorides striata* was in Al Khobar near to the Bahrain causeway 3 Nov, a rare but increasing visitor to the Eastern province. A **Crested Honey Buzzard** *Pernis ptilorhynchus* at the Raydah escarpment farm 7 Aug adding to one at Dhahran hills 15 Oct-Dec and up to five (adult male, immature female and three juveniles) Deffi park, Jubail 17-29 Nov (Plate 31). An **Eurasian Griffon Vulture** *Gyps fulvus* heading south between Billasmer and Abha, 12 Oct and a juvenile at Ushaiqer 15 Nov. A **Cinereous Vulture** *Aegypius monachus* at Ushaiqer dump site 22 Nov. Over 30 **Steppe Eagles** *Aquila nipalensis* migrating south between Billasmer and Abha, 12 Oct with 100 at a new landfill south-east of Riyadh 25 Oct and 6000 at a dump site near Ushaiger 15 Nov with 700 nearby at Sahqra landfill the same day. This is easily the largest group ever seen together in the Kingdom and is almost 10% of the world's population (see the article in this issue of *Sandgrouse* for further details). A **Bonelli's Eagle** *Aquila fasciata* Al Asfar lake 26 Oct. Ten **Greater Spotted Eagles** *Clanga clanga* Sabkhat Al Fasl 3 Nov increasing to 20 on 29 Nov; a single scarce 'fulvescens' type was present 3-27 Nov.

Arabian Scops Owls *Otus pamela* calling at various locations around Tanoumah and Abha 11-12 Oct and a **Eurasian Scops Owl** *Otus scops* at Talea valley 10 Oct. Two **Arabian Spotted Eagle Owls** *Bubo (africanus) milesi*



Plate 31. Crested Honey Buzzard *Pernis ptilorhynchus* 22 November 2019, Deffi Park, Jubail, Eastern Province, Saudi Arabia. © Phil Roberts

near Abha 27 & 29 June (Plate 32) and two there 12 Oct. Five **Desert Owls** *Strix hadorami* near Abha 27 & 29 June (Plate 33) with two calling there 12 Oct. A **White-throated Kingfisher** *Halcyon smyrnenensis* at Sabkhat Al Fasl 15-27 Nov. Twenty **Arabian Magpies** *Pica asirensis* between Tanoumah and a site 20 km south of Billasmer, the largest single day count; this site is the most southerly location for the species in the last ten years.

An **Oriental Skylark** *Alauda gulgula* was in Deffi park, Jubail 29 Nov while ten '**Arabian Rufous-capped Larks**' *Calandrella (blanfordi) eremica* in the Talea valley 29-30 Jun, with a single bird there 11 Oct. A 1cy **Black-throated Thrush** *Turdus atrogularis* Sabkhat Al Fasl 18 Nov and four, one adult male and three



Plate 32. Arabian Spotted Eagle Owl *Bubo (africanus) milesi* 29 June 2019, near Abha, Asir Province, Saudi Arabia. © Jem Babbington



Plate 33. Desert Owl *Strix hadorami* 27 June 2019, near Abha, Asir Province, Saudi Arabia. © Jem Babbington



Plate 34. African Pipit *Anthus cinnamomeus* 4 Aug 2019, Al Quraish Valley, Tanoumah, Asir Province, Saudi Arabia. © Phil Roberts

females, Deffi park, Jubail, 22 Nov. 33 **White-throated Robins** *Irania gutturalis* at various sites including Raydah escarpment, Talea valley and Tanoumah 4-7 Aug. Two **African Pipits** *Anthus cinnamomeus* Al Quraish valley, Tanoumah, 4 Aug (Plate 34). A flock of over 20 **Arabian Golden Sparrows** *Passer eucherlorus* Al Hair river near Riyadh with over 100 **Streaked Weavers** *Ploceus manyar* and eight **Red Avadavats** *Amandava amandava* 25 Oct. All are suspected to originate from escaped cage birds, with the last two species successfully breeding in this area for many years; Arabian Golden Sparrow only recorded as breeding since 2015 but appears now to be increasing in numbers.

TURKEY

Three **Lesser White-fronted Geese** *Anser erythropus* Çavuşçu Gölü 20 Nov. A single **Marbled Duck** *Marmaronetta angustirostris* Milleyha 29 Sep, a potentially returning individual from Çukurova wetlands or Göksu delta where it is considered to be locally extirpated since 2013. Two **Greater Scaups** *Aythya marila* Kocaçay delta 7 Dec was the only record. The usual November influx of **Little Bustards** *Tetrax tetrax* - singles at Karacabey 11 Nov and Kızılırmak delta 19 Nov. A **Demoiselle Crane** *Anthropoides virgo* Mogan Gölü 25 Aug, one Kızılırmak delta

on the same day with five there 26 Sep. Two **Horned Grebes** *Podiceps auritus* at İğneada 8 Dec and one Gediz delta 24 Nov. Two wintering **Black-winged Stilts** *Himantopus himantopus* remained at Büyükçekmece Gölü throughout Nov. A **Great Snipe** *Gallinago media* Kamil Abduş Gölü 12 Oct.

Probably the returning **Great Black-backed Gull** *Larus marinus* Küçükçekmece Gölü 9 Nov to year end. A **European Herring Gull** *Larus argentatus* Riva, İstanbul, 17 Dec and another at İyidere, Rize province, 19 Dec. **White-winged Terns** *Chlidonias leucopterus* overwintered at various locations - eight at lake Terkos 11 Nov and 6 Dec, singles Umurbey delta, Çanakkale, 28 Nov and İyidere 19 Dec, two near Edremit, lake Van, 17 Nov and two at Tuzla Gölü, Adana, 28 Nov. A record count of nearly 1000 *Hydrobates* petrels off Didim 20 Jul were probably **Mediterranean Storm Petrels** *Hydrobates (pelagicus) melitensis*.

A single **Daurian Shrike** *Lanius isabellinus* Yumurtalık on 20 Oct and single '**Mauryan Grey Shrikes**' *Lanius (excubitor) lahtore* (= 'Steppe' Grey Shrike' *L. (excubitor) pallidirostris*) at Şanlıurfa 24 Nov and Trabzon 4 Dec. Two **White-eared Bulbuls** *Pycnonotus (leucogenys) leucotis* (=White-cheeked Bulbul *P. (leucogenys) leucogenys*) at Silopi in south-east Turkey was the first record along the river Tigris. Single **Yellow-browed Warblers** *Phylloscopus inornatus* Kızılırmak delta 14-22 Oct (total six), Subaşı, Hatay 24 Oct and Sankum Gölü, Sinop, 26 Oct. A **Blyth's Reed Warbler** *Acrocephalus dumetorum* Milleyha 12 Oct and one ringed at Kızılırmak delta 5 Sep. Single **Booted Warblers** *Iduna caligata* on the Black Sea coast of Rize province, 6, 7 and 28 Aug. A better year for **Black-throated Thrushes** *Turdus (ruficollis) atrogularis* - more than 30 at Van 23 Nov and 11 at Yüksekova on 16 Nov. A **Red-flanked Bluetail** *Tarsiger cyanurus* ringed Kızılırmak delta 21 Oct (third record). A number of pipit species in Hatay province as usual - a **Blyth's Pipit** *Anthus godlewskii* Kızılırmak delta 28 Oct and Milleyha on 7 Dec and an **Olive-backed Pipit** *Anthus hodgsoni* Subaşı 22 Oct, in addition to the normal **Richard's Pipits** *Anthus richardi* and **Siberian Buff-bellied Pipits** *Anthus (rubescens) japonicus*. A single **Rustic Bunting** *Emberiza rustica* ringed at Aras ringing station 14 Oct.

TURKMENISTAN

A goose survey north of Sevdar 17 Jan 2019 recorded 400 **Eastern Greylag Geese** *Anser anser rubrirostris*, 5000 **Greater White-fronted Geese** *Anser albifrons* and 10 **Lesser White-fronted Geese** *Anser erythropus*. The same team surveyed Chelegen peninsula on 14 Jan and recorded 5000 **Red-Crested Pochards** *Netta rufina*, 32 000 **Common Pochards** *Aythya ferina*, 15 000 **Tufted Ducks** *Aythya fuligula* and a record 17 000 **White-headed Ducks** *Oxyura leucocephala*. 16 **Greater Flamingos** *Phoenicopterus roseus* Soymonov bay, near Turkmenbashi, 7 Jul with 536 there 26 Nov.

UNITED ARAB EMIRATES

An influx of **Greater White-fronted Geese** *Anser albifrons* from mid-Nov (Plate 35), including 31 Ras al Khor, 19 Nov. **Egyptian Nightjars** *Caprimulgus aegyptius* were present at the Ajban breeding site until 10 Oct (two) with a maximum 20 on 13 Sep; up to eight Qudra lake 30 Jul throughout Aug, with one remaining to 18 Sep; one on a private estate near Al Ain, 2 Dec. An **Asian Koel** *Eudynamis*

(*scolopaceus*) *scolopaceus* Hatta Hill park, 6 Nov. A **Water Rail** *Rallus (aquaticus) aquaticus* private estate near Green Mubazzarah, 5 Nov onwards and a **Corncrake** *Crex crex* Jebel Dhanna, 17 Sep. An **Eastern Baillon's Crake** *Zapornia pusilla* private estate near Green Mubazzarah 7 Sep increasing to two 15 Sep, still present 29 Dec, and two **Spotted Crakes** *Porzana porzana* there 25 Oct-29 Nov, with one Qudra lake 11 Oct (found dead), one Abu Dhabi golf & equestrian club 7-8 Oct and two there 15-16 Oct. A **Grey-headed Swamphen** *Porphyrio (porphyrio) poliocephalus* private estate near Green Mubazzarah, 7 Jul-28 Aug, reported again 27 Nov-29 Dec. A juvenile **Common Crane** *Grus grus* Arabian ranches, Dubai, 28 Oct-8 Nov (Plate 36) and one on a private estate near Green Mubazzarah, 23 Dec.

25 **Red-billed Tropicbirds** *Phaethon aethereus* Qarnein island 25 Nov. Pelagic trips off Kalba produced 50 **Wilson's Storm Petrels** *Oceanites oceanicus* 6 Sep and one 27 Oct, a **Swinhoe's Storm Petrel** *Hydrobates monorhis* 6 Sep, two **Cory's Shearwaters** *Calonectris borealis* in international waters 12 Oct, four



Plate 35. Greater White-fronted Goose *Anser albifrons* 20 November 2019, Abu Dhabi Golf Club, United Arab Emirates. © Oscar Campbell

Jouanin's Petrels *Bulweria fallax* 6 Sep, five 11 Oct and 68 on 27 Oct. 36 **Western White Storks** *Ciconia c. ciconia* Maha pivot fields 16 Sep increasing to 56 on 24 Oct. A **Masked Booby** *Sula dactylatra* off Kalba 17 Oct. Possibly the returning **Eurasian Bittern** *Botaurus stellaris* from Feb 2019 seen sporadically Al Marmoom desert conservation reserve 8 Sep-15 Nov; another possible returning bird from winter 2018-19 was on a private estate near Green Mubazzarah, 19 Oct onwards, where up to six displaying **Little Bitterns** *Ixobrychus minutus* present 29 Jun-10 Jul. Also on the same estate confirmed breeding **Squacco Heron** *Ardeola ralloides* 16 Jun-17 Aug (up to seven juveniles seen) and an unusual inland record of **Indian Pond Heron** *Ardeola grayii* 16 Jun-28 Aug. An **Intermediate Egret** *Ardea (intermedia) intermedia* Ras al Khor, 16-18 Nov (probably a returning bird).

The 11th record of **Spur-winged Lapwing** *Vanellus spinosus* Saadiyat beach golf club, 30 Dec. Five **Sociable Lapwings** *Vanellus gregarius* Al Saad farms, Al Ain, 31 Oct-1 Nov, one Wamm farms, 26 Nov-6 Dec, nine Al Qa'a fodder field, Al Ain, 2 Dec (Plate 37), three Al Marmoom desert conservation reserve 3 Dec and 12 (UAE highest count) Sharjah university, 20-24 Dec. Single **Caspian**



Plate 36. Common Crane *Grus grus* 8 November 2019, Arabian Ranches, Dubai, United Arab Emirates. © Oscar Campbell



Plate 37. Sociable Lapwing *Vanellus gregarius* 2 December 2019, Al Qa'a fodder field, Al Ain, United Arab Emirates. © Simon Lloyd



Plate 38. Black-winged Kite *Elanus caeruleus* 11 October 2019, Wamm Farms, United Arab Emirates. © Simon Lloyd



Plate 39. Indian Paradise Flycatcher *Terpsiphone paradisi* 30 December 2019, Mushrif Palace Gardens, United Arab Emirates. © Simon Lloyd

Plovers *Anarhynchus asiaticus* Maha pools, 5 Sep, Sila 27 Sep, Ajban 30 Oct-6 Nov, Wamm farms and Hamraniya fields, 8 Nov. A **Jack Snipe** *Lymnocyptes minimus* Al Saad, 1 Nov, two near Green Mubazzarah, 2 Nov, three there 12 Nov-29 Dec, one Al Marmoom desert conservation reserve 24 Nov and 14 Dec, two Sila 1 Dec. A **Black-winged Pratincole** *Glareola nordmanni* Wamm farms 23 Aug. Two **Brown Noddy** *Anous stolidus* on a pelagic trip off Kalba, 20 Jul (a single there 11 Oct), while two **Lesser Noddy** *Anous tenuirostris* seen on the same 20 Jul trip. A **Common Gull** *Larus (canus) canus* Kalba, 28-29 Dec while a **Bridled Tern** *Onychoprion anaethetus* Al Marmoom desert conservation reserve 29 Jun was an unusual inland record. A **Long-tailed Skua** *Stercorarius longicaudus* on the pelagic trip off Kalba, 20 Jul.

A **Black-winged Kite** *Elanus caeruleus* Banyan fodder field, 23 Aug, probably the

same bird seen at same site May-Jun, and two adults seen mating and carrying nesting material Wamm farms, 11 Oct into Nov (Plate 38), (one previous breeding record). A number of summer records of **Crested Honey-Buzzard** *Pernis ptilorhynchus* - singles Al Ain, Abu Dhabi and Dubai Jun-Aug. A **Cinereous Vulture** *Aegypius monachus* 3 Nov Al Marmoom desert conservation reserve where up to five **Lappet-faced Vultures** *Torgos tracheliotos* seen throughout Sep and nine 3 Dec, with one Jebel Hafeet 2 Nov. A '**Northern Shikra**' *Accipiter (badius) cenchroides* Al Sila'a 1 Dec, a **Black-eared Kite** *Milvus (migrans) lineatus* Abu Dhabi 24 Sep-28 Nov, a '**Northern Steppe Buzzard**' *Buteo buteo vulpinus* Al Hamra, 25-26 Dec and a **Merlin** *Falco columbarius* Khor al Beida, 22 Nov.

A juvenile **Bay-backed Shrike** *Lanius vittatus* landed on a boat off Kalba 12 Jul. An **Indian Paradise Flycatcher** *Terpsiphone*



Plate 40. Mourning Wheatear *Oenanthe (lugens) lugens* 1 November 2019, Maha pivot fields, Abu Dhabi, United Arab Emirates. © Oscar Campbell



Plate 42. Olive-backed Pipit *Anthus hodgsoni* 2 November 2019, Emirates Palace Hotel, Abu Dhabi, United Arab Emirates. © Oscar Campbell



Plate 41. White-crowned Wheatear *Oenanthe leucopyga* 6 December 2019, Al Jarooof village, Fujairah, United Arab Emirates. © Oscar Campbell



Plate 43. Siberian Buff-bellied Pipit *Anthus (rubescens) japonicus* 6 December 2019, Hamraniyah fields, United Arab Emirates. © Oscar Campbell

paradisi Mushrif Palace gardens 30 Dec onwards (second record; Plate 39). 80 **Hypocolius** *Hypocolius ampelinus* back on Lulu island, 15 Nov and one Jebel Dhanna 30 Nov. A **Streak-throated Swallow** *Petrochelidon fluvicola* Maha pools 31 Oct. A **Hume's Leaf-Warbler** *Phylloscopus humei* Wamm farms 20 Dec and a **Green Warbler** *Phylloscopus nitidus* Mushrif Palace gardens 18 Oct. A **Blyth's Reed Warbler** *Acrocephalus dumetorum* Dubai safari park 18 Aug, one Mushrif Palace gardens and another there 31 Aug. Up to three **Ring Ouzels** *Turdus torquatus* Jebel Hafeet 5-10 Dec and one still there 21 Dec. Single **Black-throated Thrushes** *Turdus (ruficollis)*

atroregularis Lulu island 15 Nov, Al Sila'a 22 Nov, Al Saad 14-22 Dec, Al Ain zoo 18 Dec and Wamm farms 28 Dec. A **European Robin** *Erithacus rubecula* Qarnein island, 25 Nov and two **White-throated Robins** *Irania gutturalis* near Green Mubazzarah, Al Ain, 22 Aug (unusual in autumn). A '**Caspian Stonechat**' *Saxicola maurus hemprichi* Al Marmoom desert conservation reserve 15 Nov. A **Mourning Wheatear** *Oenanthe (lugens) lugens* Western Region desert, 22 Oct and one Maha pivot fields, Abu Dhabi, 1 Nov (Plate 40) while the 14th record of **White-crowned Wheatear** *Oenanthe leucopyga* was at Al Jarooof village, Fujairah, 6-16 Dec (Plate 41).

Single **Olive-backed Pipits** *Anthus hodgsoni* Emirates Palace hotel 2 Nov (Plate 42) and Mushrif Palace gardens 12-13 Dec. A **Siberian Buff-bellied Pipit** *Anthus (rubescens) japonicus* Al Marmoom desert conservation reserve 3 Dec, one Wamm marm, one Dibba park and three Hamraniyah fields, all 6 Dec (two remaining Hamraniyah fields to 20 Dec; Plate 43) and one Al Saad 13-14 Dec. A **Common Rosefinch** *Carpodacus erythrinus* Lulu island, 4 Oct. An influx of **Eurasian Siskins** *Spinus spinus* late Nov - two Al Sila'a 22 Nov, one remaining to 1 Dec, four Al Marmoom desert conservation reserve 22 Nov, one still present 1 Dec, two Jebel Dhanna 1 Dec, two Jebel Hafeet, 4-5 Dec.

UZBEKISTAN

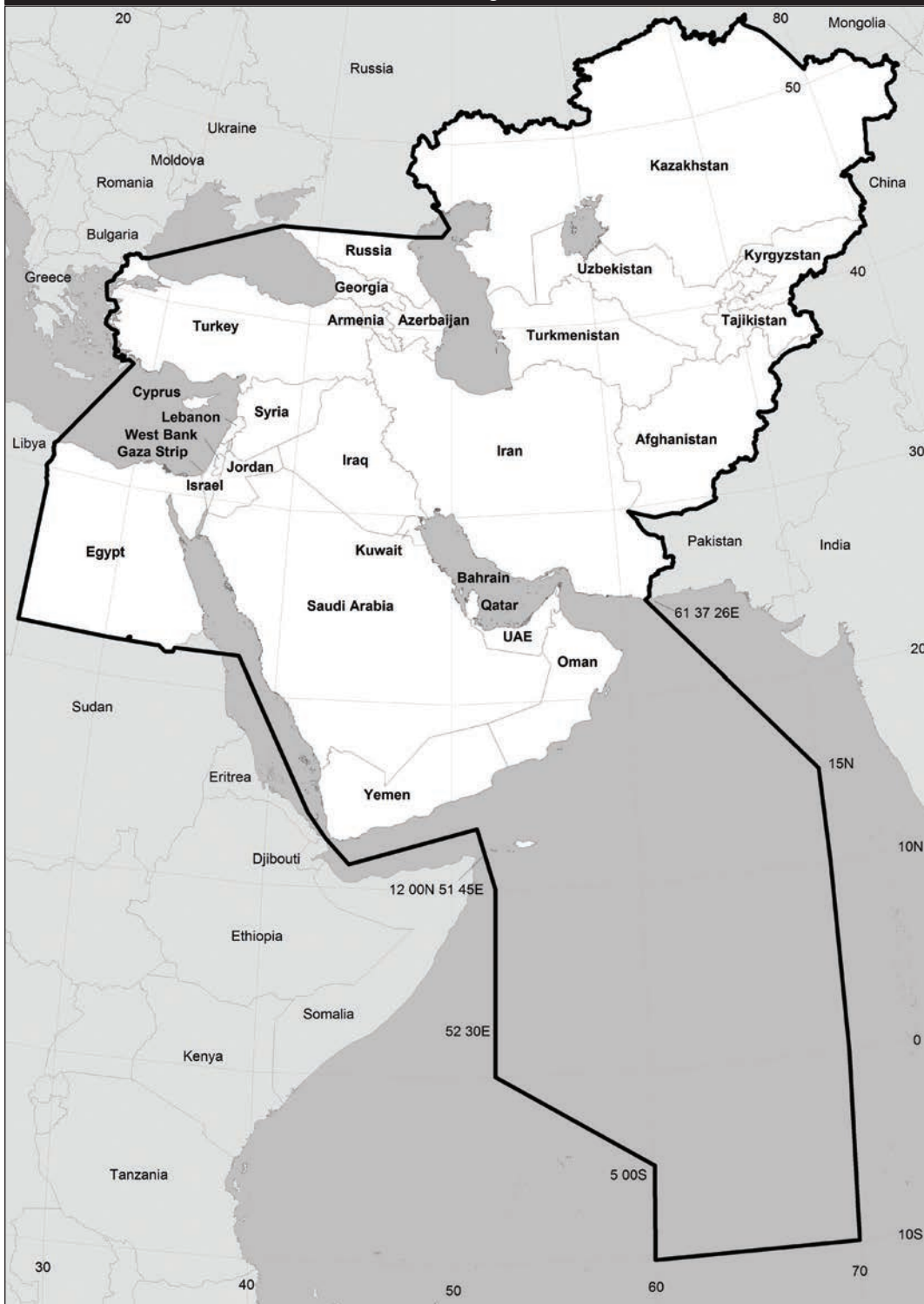
The first autumn record of **European Nightjar** *Caprimulgus europaeus* in Tashkent 24 Nov. 4685 **Sociable Lapwings** *Vanellus gregarius* Talimarzhan reservoir 26 Sep while ten **Black Storks** *Ciconia nigra* feeding along the shore of Tuyabuguz reservoir IBA (Tashkent region) 4 Nov. An **Indian Pond Heron** *Ardeola grayii* Chelek (Samarkand province) 2 Jun could be the same bird seen 10 Jul in Kazakhstan. The fifth record of **Western Cattle Egret** *Bubulcus ibis* at Gazli

(Bukhara region) 30 Apr. The first record of **Blue Tit** *Cyanistes caeruleus* and the second record of **Long-tailed Tit** *Aegithalos caudatus* both on 7 Nov at Karaqalpakstan (eastern Usturt).

ACKNOWLEDGEMENTS

Azerbaijan: Michael Heiss, Zülfü Ferecli, Andy Buttler; Bahrain: Abdullah Al Kaabi; Cyprus: Jane Stylianou, Damla Beton, Robin Snape; Egypt: Tomas Haraldsson, Mohammed Habib, Mohamed Farouk, Ahmed Riad; Iran: Abolghasem Khaleghizadeh; Israel: Yoav Perlman (also <https://www.birds.org.il/en/ObsRarityRecords.aspx>); Jordan: Fares Khoury, Feras Rahahleh; Kazakhstan: Alexandr Fedulin, Askar Isabekov, Alexei Koshkin, Rob Sheldon; Kyrgyzstan: Askar Isabekov, Maxim Koshkin, Irina Romanovskaia; Lebanon: Ghassan Jaradi, Tomas Haraldsson, Martin Käch; Kuwait: Neil Tovey; Oman: Jens Eriksen (www.birdsoman.com), Hugues Dufourny; Saudi Arabia: Jem Babbington (www.birdsofsaudiArabia.com), Philip Roberts; Turkey: Kerem Ali Boyla, Ali Atahan, Nizamettin Yavuz; Turkmenistan: Anna Belousova, Toni Eskelin, Petri Lampila, Samuli Lehtikoinen, Eldar Rustamov, Alexander Shcherbina; United Arab Emirates: Oscar Campbell, Tommy Pedersen (www.uaebirding.com/uae_news.html); Uzbekistan: Askar Isabekov, Oleg Kaskharov, Maksim Mitropolsky, Anna Ten.

Ian Harrison, Llyswen Farm, Lôn y Felin, Aberaeron, SA46 0ED, UK. ianbirds@gmail.com



ISSN 0260-4736
 OSME region map design by Ian Fisher and colleagues at the RSPB
 Typesetting & layout by Eng-Li Green engli.green@gmail.com
 Printed by Swallowtail Print of Norwich, UK sales@swallowtailprint.co.uk



Copyright statement: When submitting articles, letters, commentary, text, photographs, artwork, figures or images (the 'Copyright Work') to the Editor, you are agreeing to grant to Sandgrouse a perpetual, irrevocable, non-exclusive, royalty-free, copyright licence to use, edit, alter, adapt, translate, copy, publish, continue to publish or re-publish the Copyright Work (and/or an edited, adapted, or translated version of it or part of it) in all forms, formats and media (including, but not limited to, print, digital and electronic forms) anywhere in the world. You must ensure that by submitting a Copyright Work you are warranting that you are the Copyright Work owner and that you have the right to grant the non-exclusive licence described above. For the avoidance of doubt, the Author/Artist shall remain the owner of the Copyright Work.

The Best Birdwatching Optics since 1970



Natura BGA ED

Wide-field optics, ED objectives and a micro hinge body combine to give benchmark feel and performance.
8x42, 10x42 Prices from £309

Imagic IS

Innovative design and technology to give you the freedom to accurately observe wildlife like never before.
10x30, 12x30 Prices from £499

Imagic BGA VHD

Award winning binocular designed to offer a genuine alternative to premium brands at a fraction of the price.
8x42, 10x42 Prices from £489



MM4 Travelscopes

Outstanding performance in a compact body, an MM4 is the natural choice for anyone wanting a versatile, high quality, fully armoured waterproof travelscope to accurately observe and record nature from a distance.

Bodies (Str or 45°): MM4 50 GA ED £329, MM4 60 GA ED £429
Recommended eyepieces:
SDLv2 12-36x/15-45x £329, HDF T 12-36x/15-45x £209

MM4 77 Fieldsopes

100% Made in Japan, the latest model in the MM4 series delivers 80mm HD class performance in a body 320mm long and weighing 1260g.

Bodies (Str or 45°): MM4 77 GA ED £649
Recommended eyepieces:
SDLv2 18-54x £329, HDF T 18-54x £209