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Photo above: Ferruginous Duck *Aythya nyroca*, Dhahran, Eastern Province, Saudi Arabia, December 2014. © *Jem Babbington*

Cover photo: Purple Sunbird *Cinnyris asiaticus*, Al-Ain city, United Arab Emirates, February 2015. © *Ashraf Kotb*

Genetic analysis of a Western Reef Egret *Egretta gularis* from Israel

J MARTIN COLLINSON, EUAN FERGUSON, TIM JONES & CHEN ROZEN

The Western Reef Egret *Egretta gularis* is a small Palearctic heron with two subspecies, *E. g. gularis* in West Africa and *E. g. schistacea* in East Africa and the Middle East, east to India. It occurs in pale, dark and 'intermediate' plumage morphs. On 7 May 2015 EF, TJ and CR visited a large sewage lake a few km north of Eilat, southern Israel, a site known locally as K19. Ten species of heron had been seen there spring 2015, and an outflow at the north end of the lake, which attracts thousands of small fish, constantly has herons fishing around it. There were numerous Little Egrets *Egretta garzetta* and Black-crowned Night Herons *Nycticorax nycticorax* feeding at the outflow. EF, TJ and CR caught an intermediate morph Western Reef Egret (Plates 1–3) that had been present at the site a few days previously. Western Reef Egrets breed in Kuwait (Pope & Zogaris 2012) but otherwise are found extremely locally in the Western Palearctic with small numbers of birds seen regularly in Eilat and at some sites in Morocco, along with some occasional vagrants sighted in the Mediterranean. Identification as a Western Reef Egret was confirmed by the following features (Cramp & Simmons 1977, Dubois & Yésou 1995): it was noticeably larger in the field compared to the surrounding Little Egrets and with more aggressively dominant behaviour; the bill was long, thick and slightly decurved with a yellow lower mandible (not slender, pointed and all-dark); yellow colouration extended all the way up the tarsus (not confined to just the feet) and several of the wing feathers were tipped or completely dark grey (Plates 1–3). There were no abnormalities that might be indications of hybrid origin. Few, if any, Western Reef Egrets have previously been ringed in Israel. The bird was metal ringed (number G23994), full biometrics were taken (Table 1) and it was released on site after ringing. During the ringing process a feather was shed which was kept for DNA analysis, as no sequence from this species had been deposited in public databases.

DNA was extracted from the feather sample using the DNA Micro Kit (Qiagen, UK) with addition of dithiothreitol to 0.1 M concentration in the digestion mix and elution in 80 µl of Qiagen buffer AE. A 1074 bp polymerase chain reaction (PCR) fragment was amplified from the cytochrome b (*cytb*) gene using primers L14993 and H16065 and conditions described in Helbig *et al* (1995). PCR was performed using BIO-X-ACT Short thermostable DNA Polymerase (Bioline, UK). The 50 µl PCR reaction contained 28.5 µl of ddH2O, 5 µl of 10x Optibuffer, 1 µl of 50 mM $MgCl_2$ solution, 3 µl of 2 mM dNTPs, 5 µl of 10 mM primers, 2 units of DNA Polymerase and 2 µl of template DNA. The PCR thermal cycling programme was: 3 minutes of DNA denaturation at 95°C, 35 cycles of 95°C for 30 seconds, 45°C for 30 seconds and 72°C for 1 minute, then final extension of 72°C for 5 minutes. The PCR product was separated on a 1.5% agarose gel and isolated using the QIAquick Gel Extraction Kit (Qiagen, UK) according to the manufacturer's protocols. Gel extracted DNA was diluted to 10 ng/ml and sequenced by Source BioScience (Cambridge). The forward and reverse sequences were aligned with no discrepancy. Verified sequence was uploaded to the European Nucleotide database (accession number LN901327). This represents the

Table 1. Biometrics of Western Reef Egret *Egretta gularis*, ring number G23994, ringed at K19, near Eilat, Israel, 7 May 2015.

Euring Age	Wing	Tail	Tarsus + toe	Head + bill	Bill to feather
4	287 mm	98 mm	182 mm	160 mm	93.5 mm

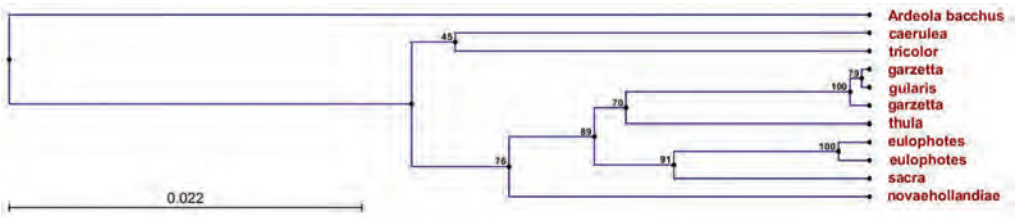

Figure 1 (above). UPGMA gene tree based on *cytb* sequence of Western Reef Egret *Egretta gularis* from Israel compared with all *Egretta cytb* sequences previously deposited in public databases. *Ardeola bacchus* was used as an outgroup. The tree demonstrates the close relationship of *gularis* and *garzetta* and their divergence from all other taxa. Sequence accession numbers of birds in this table: *Ardeola bacchus* KJ190952, *Egretta caerulea* AF193825, *E. tricolor* AF193824, *E. garzetta* KJ192197 (top) and KJ190950 (lower), *E. thula* AF193826, *E. eulophotes* KJ190949 (top) and EU072995 (lower), *E. sacra* KJ190951, *E. novaehollandiae* DQ780878. Statistical bootstrap support is indicated at the nodes, based on 100 replicates.

Plates 1–3 (right and below). Western Reef Egret *Egretta gularis*, ring number G23994, ringed at K19, near Eilat, Israel, 7 May 2015.

first deposition of Western Reef Egret sequence to a public repository.

The DNA fragment encompassing the entire coding region of the mitochondrial *cytb* contained no premature stop codons or frameshift mutations. It was aligned to comparable sequence from other previously sequenced Ardeidae species using Nucleotide BLAST (http://blast.ncbi.nlm.nih.gov/Blast.cgi). Surprisingly, the sequences from Western Reef Egret and Little Egret were almost identical. There was 1073/1074 bp identity to a Little Egret with accession number KJ192197 and 1071/1074 bp identity with another Little Egret with accession number KJ190950. Both these Little Egrets (the only ones in the European Nucleotide database) were from China, where Western Reef Egret does not occur. The *E. gularis* and *E. garzetta cytb* sequences were, in contrast, divergent from all other

Egretta species. The closest other species was Snowy Egret *E. thula* (31 bp difference). A gene tree was compiled using CLC sequence viewer (Figure 1). Western Reef Egret and Little Egret formed a clade with 100% bootstrap support. Western and Eastern (Pacific) Reef Egrets *E. sacra* were resolved only as distant relatives. No Western Reef Egret sequence has previously been published, but these data are consistent with a report in Christidis & Boles (2008) that Little and Western Reef Egrets had yielded identical sequences in a previous study for which the data are not publicly available.

Tentatively our data suggest a very close relationship and/or ongoing or recent gene flow between Little and Western Reef Egrets. Although most authorities and major world checklists (*eg* Howard & Moore, IOC, Clements) treat Little and Western Reef Egrets as separate species, primarily following Payne (1979), Western Reef Egret taxonomy has swung back and forth (summarised in Turner 2010) and is not yet fully agreed or resolved. BirdLife International (2015) continues to treat them as conspecific. The uncorrected genetic *cytb* divergence between the taxa (<0.2%) is smaller than that often observed between sister species and is more typical, though not conclusive, of a conspecific relationship (Helbig *et al* 1995). Occasional interbreeding has been reported or suspected between *garzetta* and *gularis* (Dies *et al* 2001, Kayser *et al* 2000, Qninba *et al* 2011) and it is conceivable that the level of gene flow is sufficient to maintain homogeneity at morphologically neutral genetic loci while selection on genes affecting morphology maintains the structural and plumage differences between the taxa. Further study is required to determine why these morphologically divergent birds appear to retain near-identical mtDNA alleles, and more individuals of both taxa from across their ranges need to be genetically sampled.

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J Martin Collinson, University of Aberdeen, Institute of Medical Sciences, Foresterhill, Aberdeen AB25 2ZD, UK. m.collinson@abdn.ac.uk

Euan Ferguson, 7 Howie Lane, Peterculter, Aberdeen AB14 0LJ, UK. E.ferguson17@hotmail.co.uk

Tim Jones, 40 Redhill Gardens, West Heath, Birmingham B38 8JF, UK. timdjones10@gmail.com

Chen Rozen, Kfar Vitkin, Mool Hayam 14, Israel. chenr91@gmail.com

A Long-tailed Shrike *Lanius schach* in Khorasan-e Razavi province, northeastern Iran

A KHANI, M REZAYI & MJ ALI POOR

The Long-tailed Shrike *Lanius schach* breeds to the east and northeast of Iran in Turkmenistan and Afghanistan (Ayé *et al* 2012) and is a vagrant in Israel, Jordan, Kuwait, Oman, Turkey and UAE (Porter & Aspinall 2010). Long-tailed Shrike occurs as a rare migrant in northeast Iran (Mansoori 2008). Roselaar & Aliabadian (2009) in their review of rare birds in Iran wrote of the Long-tailed Shrike, "Noted by Zarudny (1900) in the Kopet Dagh Mountains of northern Khorasan near Emam-Qoli on 5 Apr. 1896, at Kjardy on 2 Aug. 1896 and a few days later on the Marish river near Muzdaran Mountain and near Khakestar; Zarudny assumed they bred there. As Radde observed birds at Garmab in the breeding season (4 Jun. 1886) and collected an adult male then (Radde & Walter 1889), this assumption may be right. Though Garmab is a mountain village in Turkmenistan, the habitat of open juniper forest there extends across the border into Iran 10 km away. Zarudny also observed one bird on the next voyage: a male collected at Kalat (Khorasan) on 25 Apr. 1898, but he found no evidence of breeding here (Zarudny 1903). *L. s. erythronotus* is listed as common breeder and migrant in northern Great Khorasan and as a rarer breeder and migrant for southern Great Khorasan (Zarudny 1911), but other data than those given above are not in Zarudny's travel reports for these areas." Khaleghizadeh *et al* (2011) mentioned in their table 1 some unaccepted records of Long-tailed Shrikes in Iran.

On 10 August 2013 at *c*10.00 h, while we were carrying out a bird survey in agricultural land of the mountainous region of Kooh Bazangan protected area, we recorded a Long-tailed Shrike at Mamor-Abad (36° 25′ 45″ N, 60° 02′ 59″ E), Mashhad county, Khorasan-e Razavi province and near the protected area. The bird was hunting insects and sitting on sunflower plants (Plate 1a,b). There was no indication of its breeding. We watched the bird for about an hour, the weather was sunny.

The Long-tailed Shrike may have been a scarce breeding bird and passage migrant in northeastern Iran throughout the 20th century and was simply overlooked, as this is one

Plate 1a,b. The Long-tailed Shrike *Lanius schach* watched near Kooh Bazangan protected area, northeast Iran. © *Ali Khani*

of the least well known parts of Iran bird-wise. Clearly more ornithological investigations are needed for the region.

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A Khani, M Rezayi & MJ Ali Poor, Khorasan-e Razavi Department of Environment, Iran DoE, Mashhad, Iran. akhani2004us@yahoo.com.

The oasis effect: bedouin gardens benefit resident and migratory birds in southern Sinai, Egypt

ANDREW POWER, OLIVIA NORFOLK & FRANCIS GILBERT

St Katherine protectorate in southern Sinai is an important bird area (BirdLife International 2012). Despite this classification there is little quantitative data relating to birds there, with no bird observatories or ringing stations, and no long-term data available on birds in the Sinai as a whole (Goodman *et al* 1989, Ibrahim 2011). This is in contrast to neighbouring Israel, which has an established history of bird-ringing and has been extensively studied as an important migratory corridor (Shirihai 1996). In the 1970s an Israeli study demonstrated that migratory species were feeding in the gardens associated with St Catherine's monastery and suggested that the southern Sinai oases were acting as important refuelling sites for migratory birds (Lavee & Safriel 1974). More recent surveys have been conducted in St Katherine protectorate by Operation Wallacea, 2006–2009, and these recorded a high diversity of migratory birds in addition to resident species (White *et al* 2008).

St Katherine protectorate covers much of southern Sinai (435 000 ha) and encompasses the entire Ring Dyke massif (BirdLife International 2012), a mountain range that includes Egypt's highest peaks, Gebel Katherina (2641 m), Gebel Um Shomar (2586 m) and Gebel Musa (2280 m). The habitat within the massif is typified by rugged granite mountains which are interspersed by a network of deeply cut wadis and ravines. The higher altitudes are associated with a milder climate, which facilitates the cultivation of orchard gardens that are exclusive to the mountain region. These oasis-like gardens form a distinctive part of the landscape (Plate 1) and contain a higher diversity of plants and insects than surrounding habitat (Norfolk *et al* 2013, 2014). During our most recent expedition to the region, February–March 2014, we observed higher densities of birds within the gardens. It was also noted that spring migrants were exclusively utilising the gardens and were absent from surrounding sparsely-vegetated habitat (Norfolk *et al* 2015). Here we report bird sightings from a previous expedition in 2012 carried out in later spring and summer.

METHODS

The expedition took place 15 April–15 August 2012, with the primary aim of collecting population data on the rare endemic butterfly, the Sinai Hairstreak *Satyrium jebelia* (Power *et al* 2014). The butterfly has a small range and persists only in the high mountain region within the St Katherine protectorate. Throughout the entire period all bird sightings were recorded, along with their location and abundance. Birds were observed with binoculars or identified by call. Field work was restricted to the high mountain region (>1300 m asl), with surveys conducted in the wadis surrounding St Katherine town (Wadi Shraig, Wadi Arbein, Wadi Ahmar, Jebel Katherine, Abu Druce, Wadi El-Freya, Wadi Jebel, Abu Towaita). The majority of time was spent in the unmanaged mountainous habitat where the butterfly was present, or within the bedouin gardens. Bird sightings were classified according to their location, with habitats categorised as either gardens (Plate 2; areas actively irrigated and managed for agriculture) and unmanaged habitat (Plate 3; wadi beds and mountain slopes). Individual sightings of Rock Dove/Feral Pigeon *Columba livia*, Laughing Dove *Spilopelia senegalensis*, White-crowned Black Wheatear *Oenanthe leucopyga*, Sinai Rosefinch *Carpodacus synoicus*, Desert Lark *Ammomanes deserti* and Rock Martin *Ptyonoprogne fuligula* were not noted due to their high numbers.

RESULTS

In total we recorded 51 bird species. Of these 18 were residents (Table 1) and 33 were migrants (Table 2). Twenty two migratory species were observed exclusively within the gardens (all passerines) and six were seen in both habitat types (Figure 1). These species are insectivorous and frugivorous, and many were observed feeding in the gardens. Blackcap, Golden Oriole and Garden Warbler were seen feeding on apricots and plums, and a small flock of Eastern Orphean Warblers and a Hooded Wheatear were seen feeding on mulberries. Several migrant insectivores were also observed foraging within the gardens, such as Spotted Flycatcher, Semi-Collared Flycatcher, Wood Warbler, Common Redstart and European Bee-eater.

Only five migratory species were seen exclusively in the unmanaged habitat and three of these were large raptors in flight. These raptors were observed migrating through Wadi Jebel in a large mixed-species group of over 100 individuals which comprised mostly of Steppe Buzzard and Long-legged Buzzard, with one Honey Buzzard. Ortolan Bunting and Eastern Bonelli's Warbler were also observed only in unmanaged habitat in the well-vegetated Wadi Ahmar.

Of the 18 resident bird species recorded, four species were observed exclusively within the gardens (Table 1). Four resident species were only recorded in the unmanaged habitat; Chukar, Sand Partridge, Desert Lark and Bonelli's Eagle. The other nine resident species were recorded in both habitats and tended to be observed in relatively well-vegetated areas in both the gardens and unmanaged habitat. White-crowned Black Wheatear and Rock Martin were observed using bedouin structures for nesting.

Plate 1. View of St Katherine town from Abu Gifa shows the distinctive presence of walled gardens in the protectorate, southern Sinai, Egypt. © *Olivia Norfolk*

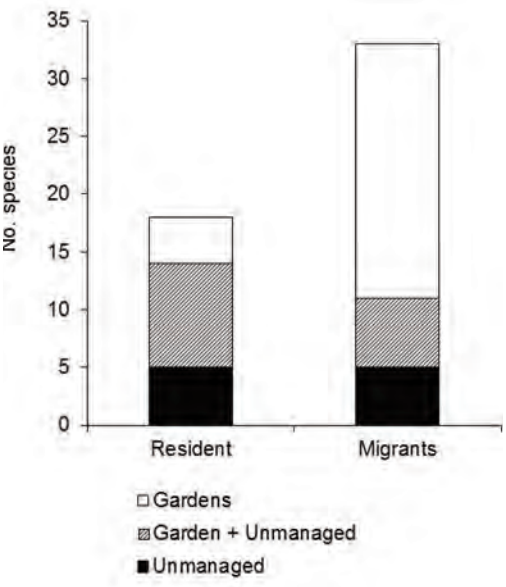

Figure 1. Total number of bird species observed and habitat type, 15 April–15 August 2012, St Katherine protectorate.

DISCUSSION

These data confirm the value of St Katherine protectorate for birdlife, particularly for migratory species which consisted of over half the species recorded. Though designated an IBA for its range-restricted resident species, the region clearly plays an important role for migratory birds as well. The oasis-like bedouin gardens supported high numbers of both migrant and resident species suggesting that they are important for birds throughout

Table 1. Resident breeding bird species observed showing number of sightings and location, 15 April–15 August 2012, St Katherine protectorate. Y = Birds present.

Species	Feeding guild	Sightings	
		Gardens	Unmanaged habitat
Chukar *Alectoris chukar*	Granivore	0	16
Sand Partridge *Ammoperdix heyi*	Granivore	0	5
Kestrel *Falco tinnunculus*	Carnivore	2	3
Bonelli's Eagle *Aquila fasciata*	Carnivore	0	1
Laughing Dove *Spilopelia senegalensis*	Granivore	Y	0
Rock Dove *Columba livia*	Granivore	Y	Y (Feral)
Collared Dove *Streptopelia decaocto*	Granivore	2	0
Hoopoe *Upupa epops*	Insectivore	1	0
White-spectacled Bulbul *Pycnonotus xanthopygos*	Frugivore + insectivore	4	1
Palestine Sunbird *Cinnyris osea*	Nectarivore	7	14
Tristram's Starling *Onychognathus tristramii*	Insectivore + frugivore	8	7
White-crowned Black Wheatear *Oenanthe leucopyga*	Insectivore	Y	Y
Hooded Wheatear *Oenanthe monacha*	Insectivore	1	14
Rock Martin *Ptyonoprogne fuligula*	Insectivore	Y	Y
Scrub Warbler *Scotocerca inquieta*	Insectivore + frugivore	4	7
House Sparrow *Passer domesticus*	Granivore	5	0
Sinai Rosefinch *Carpodacus synoicus*	Granivore	Y	Y
Desert Lark *Ammomanes deserti*	Granivore	0	Y
Total		**34**	**68**

Plate 2. A typical bedouin garden, Abu Towaita, St Katherine protectorate, Egypt. Garden habitats typified by the presence of orchard trees, interspersed by herbs, vegetables and wild shrubs. © *Andrew Power*

Plate 3. Example of unmanaged habitat, Wadi El-Freya, St Katherine protectorate, Egypt. Unmanaged habitat typified by sparse shrubby vegetation. © *Andrew Power*

the year and not just in spring (*cf* Norfolk *et al* 2015). The bedouin utilise rainwater harvesting to boost the agricultural potential of the land, which results in a higher plant density than the outside environment (Norfolk *et al* 2013). The mountain gardens thus provide valuable additional resources, and appear to act as refuelling stations for migrant birds whilst bolstering the resources available to resident species. Other studies have demonstrated the value of oases for breeding birds in arid Tunisia (Selmi & Boulinier 2003) and it is perhaps inevitable that irrigated land in arid climates has a positive effect on bird diversity, in contrast to temperate and tropical countries, where agricultural land generally has a negative impact on biodiversity (Benayas & Bullock 2012).

Table 2. Migrant bird species observed showing number of sightings and location, 15 April–15 August 2012, St Katherine protectorate.

Species	Feeding guild	Sightings	
		Gardens	Unmanaged Habitat
Sparrowhawk *Accipter nisus*	Carnivore	1	4
Long-legged Buzzard *Buteo rufinus*	Carnivore	0	1
Steppe Buzzard *Buteo buteo vulpinus*	Carnivore	0	2
Honey Buzzard *Pernis apivorus*	Carnivore	0	1
Turtle Dove *Streptopelia turtur*	Granivore	3	0
European Bee-eater *Merops apiaster*	Insectivore	2	3
Golden Oriole *Oriolus oriolus*	Frugivore + insectivore	5	0
Wheatear *Oenanthe oenanthe*	Insectivore	2	0
Rock Thrush *Monticola saxatilis*	Insectivore	2	0
Whinchat *Saxicola rubetra*	Insectivore	1	0
House Martin *Delichon urbicum*	Insectivore	2	1
Swallow *Hirundo rustica*	Insectivore	2	1
Red-rumped Swallow *Cecropis daurica*	Insectivore	1	0
Swift *Apus apus*	Insectivore	1	1
Wood Warbler *Phylloscopus sibilatrix*	Insectivore	3	0
Garden Warbler *Sylvia borin*	Insectivore + frugivore	4	0
Blackcap *Sylvia atricapilla*	Insectivore + frugivore	4	1
Eastern Olivaceous Warbler *Iduna pallida*	Insectivore + frugivore	1	0
Eastern Bonelli's Warbler *Phylloscopus orientalis*	Insectivore	0	1
Eastern Orphean Warbler *Sylvia crassirostris*	Insectivore + frugivore	1	0
Lesser Whitethroat *Sylvia curruca*	Insectivore + frugivore	1	0
Semi-collared Flycatcher *Ficedula semitorquata*	Insectivore	4	0
Spotted Flycatcher *Muscicapa striata*	Insectivore	8	0
Masked Shrike *Lanius nubicus*	Insectivore + carnivore	5	0
Isabelline Shrike *Lanius isabellinus*	Insectivore + carnivore	2	0
Ortolan Bunting *Emberiza hortulana*	Granivore + insectivore	0	1
Black-headed Bunting *Emberiza melanocephala*	Granivore + insectivore	1	0
Yellow Wagtail *Motacilla flava*	Insectivore	1	0
Redstart *Phoenicurus phoenicurus*	Insectivore	5	0
Tree Pipit *Anthus trivialis*	Insectivore	2	0
Barred Warbler *Sylvia nisoria*	Insectivore + frugivore	1	0
Subalpine Warbler *Sylvia cantillans*	Insectivore + frugivore	1	0
Eastern Reed/Marsh Warbler *Acrocephalus* sp	Insectivore	1	0
Total		**67**	**17**

If climate change predictions for Egypt are correct, the St Katherine protectorate will become hotter and drier (Hulme *et al* 2001) and bedouin gardens may take on added importance as the food supply and resources in unmanaged habitat decrease. Maintaining the gardens is becoming increasingly challenging as bedouin become more reliant on paid employment and have less time to devote to garden maintenance (Gilbert 2011). According to local bedouin the increase in illegal growing of opium poppies and cannabis is also a threat to the traditional gardens, diverting water from both natural habitats and the gardens. Increasing populations and tourism pressures could also place further constraints on water demand (Abdulla *et al* 2003, Hilmi *et al* 2012). Despite the multiple-

pressures being placed on these gardens, their maintenance is likely to be highly beneficial for birdlife within the St Katherine protectorate IBA.

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Andrew Power, Olivia Norfolk & Francis Gilbert, School of Biology, University of Nottingham, NG7 2RD, UK. powera2@tcd.ie

Recent status and occurrence of Crested Honey Buzzards *Pernis ptilorhynchus* in the Arabian peninsula, with emphasis on Saudi Arabia and the United Arab Emirates

JEM BABBINGTON & OSCAR CAMPBELL

The status and occurrence of Crested Honey Buzzard *Pernis ptilorhynchus* in the Middle East and particularly the Arabian peninsula is not well documented and has changed markedly in recent years. The region's latest field guide (Porter & Aspinall 2010) indicates it is rare in winter and on passage to the United Arab Emirates, Kuwait and southern Iran and a vagrant elsewhere. Orta & Marks (2014) make no mention of its occurrence in the Arabian peninsula whilst a paper concerning distribution and movements in the westernmost part of its range (Faveyts *et al* 2011) only gives three records for Saudi Arabia (although status in the UAE is correctly reported). Here we clarify the changing status of Crested Honey Buzzard (CHB) in the Arabian peninsula, primarily using recent data from Saudi Arabia and the UAE.

Orta & Marks (2014) recognised six subspecies of CHB, although noted that all may approach the threshold for specific status. *P. p. orientalis*, breeding from southern Siberia east to Sakhalin, Russian Federation, and south to northern Mongolia, northeast China, North Korea and Japan is the only migratory subspecies, although caution is needed in assigning sub-specific names to birds in the OSME region as a wintering bird in Israel was mooted as potentially not representing *P. p. orientalis* (Kloos *et al* 2008) and Oman records are believed to be *P. p. ruficollis* from the Indian subcontinent (Eriksen & Victor 2013). In autumn, northern populations of *P. p. orientalis* migrate south to winter on the Indian subcontinent, in southeast Asia, Indonesia and the Philippines (Orta & Marks 2014) with passage through Chumphon, Thailand, peaking late September–early October (DeCandido *et al* 2015). There is, however, a western migration route passing through Central Asia (as defined by Ayé *et al* 2012, aka Middle Asia), mainly Kazakhstan (Wassink & Oreel 2007) and Uzbekistan that possibly involves several hundred birds (Faveyts *et al* 2011) and could be a consequence of an unrecorded westward breeding-range expansion, or part of a migration route utilised to avoid the Himalayas (Schweizer & Mitropolskiy 2008). Birds migrating through Central Asia (and possibly Batumi, Georgia) are likely to be responsible for the increasing number of sightings in the Arabian peninsula. CHB is currently a much commoner species than European Honey Buzzard *Pernis apivorus* in much of the Arabian peninsula (in particular eastern Saudi Arabia, UAE and Oman). Further, it is increasingly over-wintering and even locally over-summering.

THE PROBLEM OF HYBRIDS

A very important identification issue is the problem of hybridization between CHB and European Honey Buzzard. Respective breeding ranges overlap in southern Siberia (Stepanyan 1983) and there have been a number of records of apparent hybrids in Oman, Kazakhstan, Georgia, Israel and Egypt (Faveyts *et al* 2011, Jansen 2013, Jiguet *et al* 2014) from as long ago as 1993 (Forsman 1994). Until western breeding populations of CHB are fully studied, the limits of plumage variation (extensive in both species) remain little known, so making genuine hybrids, especially in non-adult male plumages, very difficult to identify with certainty. Apparent hybrids are likely to be commoner than currently documented and some records incorporated in the analysis that follows presumably refer

to hybrids. Even so, the main conclusion on the changing status of CHB in the Arabian peninsula is not affected. A full evaluation of hybrid characters is beyond the scope of the present paper. Faveyts *et al* (2011) discussed birds showing intermediate characteristics from Kazakhstan and Israel, whilst Scuderi & Corso (2011) discussed the variability of certain plumage features within both species. Plates 1–7 in the current paper document classic CHBs photographed in Saudi Arabia and the UAE, followed by two individuals (Plates 8 & 9), from Kuwait and the UAE, that show characteristics more suggestive of

Plate 1. Second calendar year female Crested Honey Buzzard *Pernis ptilorhynchus* with Fan-tailed Raven *Corvus rhipidurus*, Tanoumah park, Asir province, Saudi Arabia, 5 July 2013. © *Jem Babbington.* Note this bird is moulting its inner primaries, which are new, whilst the sixth primary (counting inwards) is missing or growing, so one of the 'fingers' is absent, giving the bird a wing formula as European Honey Buzzard *Pernis apivorus*. Aged as a second calendar year due to pale cere, diffusely dark 'fingers' and thinly barred tail pattern and as a female due to moulted primary pattern and pale iris (visible in field but not in this image). Rather uniformly dark birds like this lack the distinctive pale carpals and pale-centred, dark-edged throat that are important separation criteria from *P. apivorus.* Structure and flight are important identification characters for such birds.

Plate 2 (left). Adult male Crested Honey Buzzard *Pernis ptilorhynchus*, Hamraniyah fields, United Arab Emirates, 13 June 2008. © *Ahmed al Ali.* Adult males like this are straightforward to identify, but form a minority of birds observed in Arabia.

Plate 3 (right). Adult male Crested Honey Buzzard *Pernis ptilorhynchus* Dhahran Hills residential area, Dhahran, Eastern province, Saudi Arabia 6 May 2011. © *Jem Babbington.* In this plate, as Plate 2, note grey head, dark eye, prominent and very well defined dark trailing edge to the wing, lack of dark carpal patches, two thick tail bands and thick barring on the underwing.

Plate 4 (left). Second calendar year Crested Honey Buzzard *Pernis ptilorhynchus* Sila'a, United Arab Emirates, 8 January 2010. © *Oscar Campbell.* Plumage broadly similar to the bird in Plate 1, but being some seven months younger, the plumage is much less abraded. Extensively (but rather diffusely) dark primary fingers, pale base to bill, and rather uniform, fairly fresh remiges and tail indicate a second calendar year. Note the obvious six primary tips and rather strong, broad tail barring: this averages weaker on all but adult male Eurasian Honey Buzzards *P. apivorus*. Despite the bird being a dark morph, some hint of the paler throat with dark fringing gorget is retained. The dark iris and the strength of the tail band suggest this bird is a male.

Plate 5 (right). Juvenile Crested Honey Buzzard *Pernis ptilorhynchus* Mushreef palace gardens, United Arab Emirates 20 December 2013. © *Mike Barth.* Broad wings with large hands and six obvious primary tips are important structural clues. Further, the lack of carpal patches, narrow but definite gorget framing pale throat and rather strong tail banding all indicate Crested rather than European Honey Buzzard *P. apivorus*. Up to five Crested Honey Buzzards have occurred at this site on Abu Dhabi island each winter in recent years, where they roost in large, secluded eucalypt and ghaf trees and disperse out each morning to smaller wooded areas elsewhere on the island. Although often shy and retiring whilst perching, birds sometimes perch in surprisingly open situations (including on street lights near busy roads) especially in the early mornings.

hybrids. Good prolonged views (and ideally photos) allowing evaluation of the age, sex, structure, under-wing details and tail pattern are required to be certain of pure parentage or hybridisation. A growing gallery of images, documenting many dozens of individuals from virtually all months of the year in the UAE is available at www.uaebirding.com/photos-birds.html with recent images from Saudi Arabia at www.birdsofsaudiarabia.com/search/label/Crested%20Honey-Buzzard. There is still much to learn concerning the

Plate 6 (left). Juvenile Crested Honey Buzzard *Pernis ptilorhynchus* Dhahran Hills residential area, Dhahran, Eastern province, Saudi Arabia 30 November 2013. © *Philip Roberts.* Note pale yellowish base to bill with multiple relatively thin tail-bands and very fresh plumage indicating a juvenile. Bulky, broad winged appearance with six primary fingers, lack of carpal patches, pale throat bordered by dark gorget and numerous, rather evenly spaced secondary bars reaching all the way to the body are all classic features of the species and important in separation from *P. apivorus*. Another photo of the same bird is featured on the cover of *Sandgrouse* 36 (2) 2014.

Plate 7 (below). Juvenile Crested Honey Buzzard *Pernis ptilorhynchus* Sila'a, United Arab Emirates, 23 November 2013. © *Oscar Campbell*. A very weakly marked juvenile. In this angle, the outer primaries are closed but the sixth primary is clearly protruding. Note lack of dark carpal patches and hint of a dusky gorget. Although this individual looks rather long winged here, other images of it indicate it was obviously bulky and broad winged.

Plate 8. Hybrid adult male European Honey Buzzard *Pernis apivorus* × Crested Honey Buzzard *P. ptilorhynchus* Sulaibiya pivot fields, Kuwait, 20 September 2011. © *Mohammed Korshed*. This bird appears to be a classic male hybrid *P. apivorus* × *P. ptilorhynchus*. Features suggestive of *P. apivorus* include pale eye, dark carpal patches, tail barring being not very thick and rather long thin wing shape. Features suggestive of *P. ptilorhynchus* include broad trailing edge to the wing (although some *P. apivorus* come quite close to this), six primary fingers and a hint of a dark gorget/pale throat (which seems rather unusual on an adult male *P. apivorus*).

migration and distribution of CHB in the western part of its range as well as the extent of the overlap zone with European Honey Buzzard and the extent of their hybridization.

STATUS IN SAUDI ARABIA

In Saudi Arabia published records of CHB are few, and recent references refer to it as a vagrant. There has, however, been a steady increase in records since 2000, and particularly since 2009. Birds have now been recorded in every month of the year (save August) and records peak during the winter months (January–March). Smaller peaks also occur in April and October–November, dates that fit well with the CHB's migration period in Kazakhstan (where birds occur late April–mid June and late August–mid October, peaking September; Wassink & Oreel 2007). The current status of CHB in Saudi Arabia is a scarce passage migrant and winter visitor that also occurs rarely in summer. Most records are from the Eastern province in winter and spring with additional records in the west of the country in autumn, winter and spring.

The first confirmed record of CHB for Saudi Arabia was in Asir province 11 October 1994, with another bird 5–10 km south on the same day (Symens *et al* 1996). The only other records prior to 2000 were in Riyadh (October 1997) and on 6 January and 25 February 1999 in Jubail, eastern Saudi Arabia (Brian Meadows pers comm). Since 2009, records of CHB have become much more frequent (Figure 1). A male at Jeddah, from mid October 2009, was observed on 13 November in active wing moult and over-wintered, the first CHB to do so in Saudi Arabia. Since then birds have wintered annually. European Honey Buzzard is less common than CHB in the Eastern province, where it is regarded as a rare passage

Plate 9. Possible female European Honey Buzzard *Pernis apivorus* × Crested Honey Buzzard *P. ptilorhynchus* Ain al-Fayda, United Arab Emirates, 23 February 2012. © *Huw Roberts.* Note this bird appears to be either a poorly marked female *P. apivorus*, or possibly a hybrid. Sexing as a female is straightforward due to the rather diffusely dark primary tips. Features suggestive of *P. apivorus* include the lack of a complete gorget surrounded by dark markings and a not very prominent sixth primary. In addition, the pattern on the underside of the secondaries, with only two dark bars, both cloaked by the under wing coverts (so not reaching the body) and the distal bar lying obviously closer to the coverts rather than the secondary tips are also indicative of *P. apivorus*. Features more suggestive of Crested Honey Buzzard include a lack of an obviously dark carpal patch (although this can very rarely occur in adult female *P. apivorus*) and, perhaps, the rather prominent tail banding (more akin to a male *P. apivorus* than a female). The wing shape appears intermediate between European Honey Buzzard and Crested Honey Buzzard.

migrant, but further west in the country the situation changes; there, European Honey Buzzard is regarded as a scarce passage migrant and is more numerous than CHB.

To date, there are three summer records of CHB from Saudi Arabia: an adult male at Dhahran, Eastern province, 30 July 2011 (Babbington 2012), a second calendar year female at Tanumah, Asir province, 5 July 2013 (Babbington 2014, Plate 1) and a male and female (both second calendar years) at Dhahran 8 June–5 July 2014 (JB pers obs). It is not yet clear if some individual CHBs spend the entire year in Saudi Arabia but the 2014 Dhahran record was from the same site as three wintering individuals (including two juveniles) present 30 November 2013–8 March 2014 (Plate 6) and it is likely that the juveniles remained all summer. Juvenile European Honey Buzzards predominately remain on the wintering grounds in their first summer (Forsman 1999) and second calendar years are exceptionally rare in Europe (Corso 2012). An adult male CHB in the Arabian peninsula in July is less expected but Wouter Faveyts (*in litt*) suggested that European Honey Buzzard may skip a breeding cycle in some years and remain on their wintering grounds; the same might be true for CHB. These summer records also support the notion that CHBs may have only recently started wintering in the region with the first wintering record (as opposed

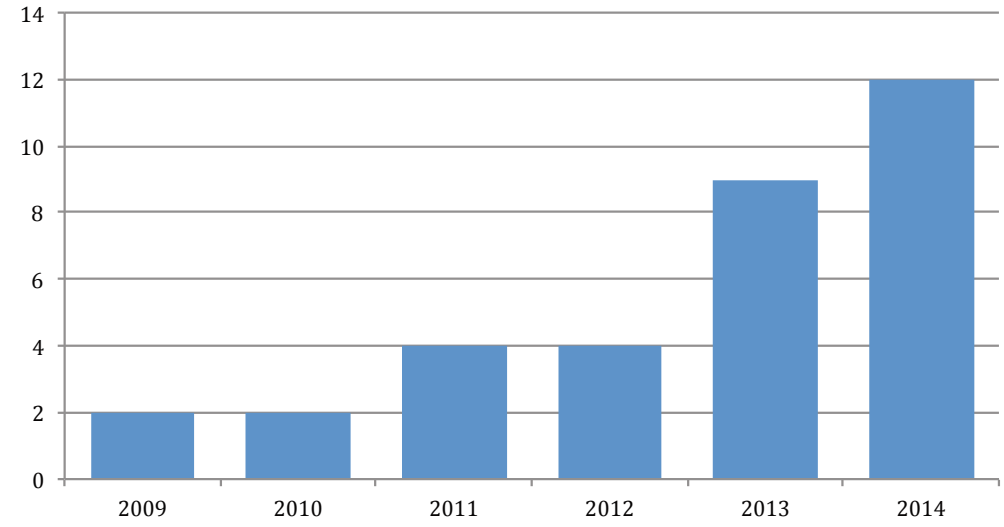

Figure 1. Number of Crested Honey Buzzard individuals recorded in Saudi Arabia 2009–2014. Some individuals remained for extended periods of time but have only been counted once (in the year of original occurrence).

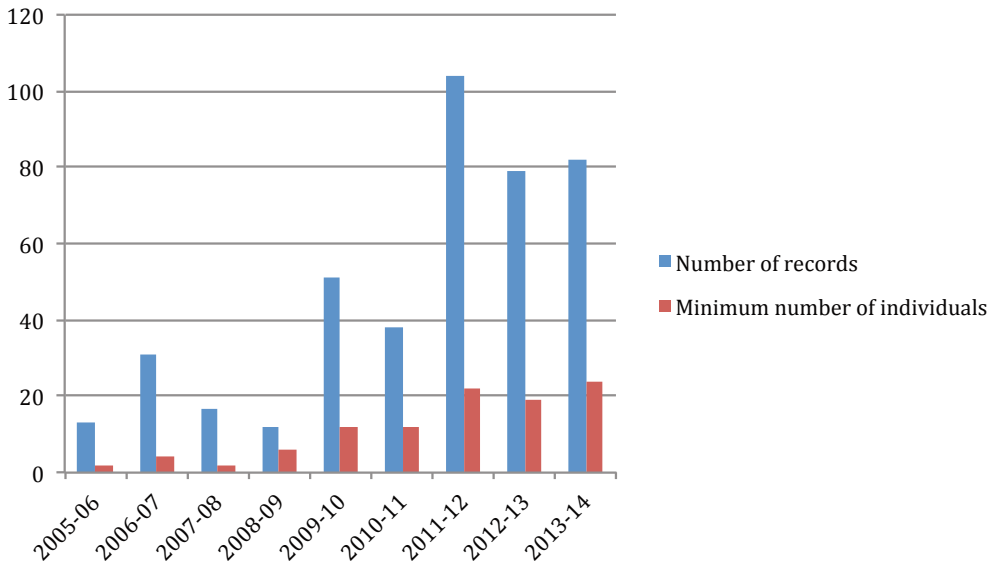

Figure 2. Number of records of Crested Honey Buzzard from the UAE and minimum number of individuals involved September–April (2005/2006–2013/2014).

to migrant) for Israel in 2008 (Kloos *et al* 2008), Saudi Arabia in 2009 and Kuwait in 2010, although mid winter records have been annual in the UAE since 1996.

STATUS IN THE UNITED ARAB EMIRATES

CHB was first recorded in the UAE in 1992 and is now regularly present October (September records are very few)–mid May, with, since 2007, an increasing number of summer (June–August) records. Numbers have increased steadily, with an especially marked increase

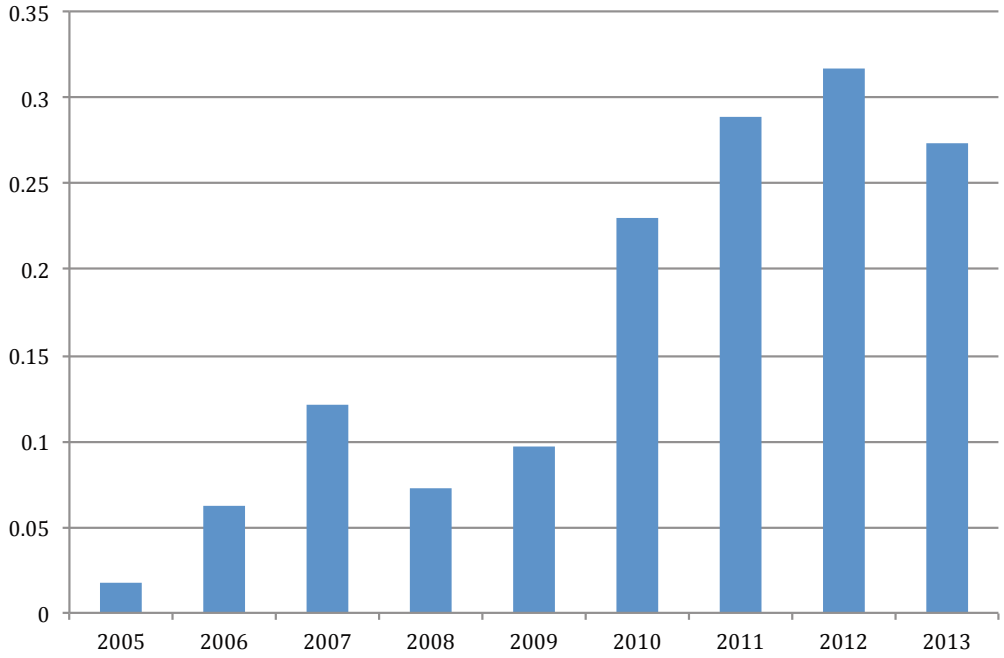

Figure 3. Number of bird-days Crested Honey Buzzard was recorded in the UAE, expressed as a percentage of the total number of records of all species in the UAE bird database, 2005–2013. Bird-days are used rather than number of individual birds as the latter is difficult to determine precisely, due to the prolonged stay and mobile nature of many individuals.

since winter 2009/2010. CHB is now recorded so frequently that it is difficult to state an exact number of individuals recorded each winter but inspection of the UAE bird database gives minimum totals of individuals recorded each 'winter' (defined as September–April inclusive) since 2005 (Figure 2). However, the number of observers (and hence number of records of all species submitted to the UAE bird database) has also increased markedly during the same period. In an attempt to correct for this overall increase in observer effort, Figure 3 illustrates the total number of bird-days recorded for the species annually from 2005 (data for all species for previous years has not yet been fully computerised) to 2013, expressed as percentage of all records in the UAE bird database. Figure 3 confirms that the marked increase in records of CHB in the UAE since 2005 appears genuine and is not an artefact of observer activity.

As well as increasing markedly in numbers, CHB is now widely recorded across the UAE. Whilst Abu Dhabi island was traditionally a favoured site, birds now regularly over-winter from Sila'a in the far west to Al Ain in the east, and north to the greater Dubai area. Records of two or three individuals together are frequent, with up to five recorded simultaneously at several sites and, twice, seven (Dubai, 23 April 2012; Abu Dhabi, 21 March 2015). Spring migrants temporarily associating with lingering over-wintering birds may account for such maxima. Adult (or near adult) male CHBs represent 30% of *c*63 individuals photographed 2007–2014 (archived at www.uaebirding.com/photos-birds.html). Individuals linger annually in the UAE until mid May but the first definite summer record for CHB was on 13 July 2007 (although one seen 30 May 1999 could conceivably have over-summered). Another summer record was 13 June 2008 and subsequent June records (often multiple records in a month) have followed 2011–2015. Since 2012, there have

been regular July/August records at a number of sites across the country. Traditionally, observer effort in the UAE is very low in summer and the species is presumably occurring more frequently in mid summer than these records alone suggest. Most summer records have involved singles but up to four were present in Abu Dhabi city in June 2013. Summer records have included adult males (Plate 2).

STATUS ELSEWHERE IN THE MIDDLE EAST

CHBs have also been occurring more frequently in other Middle Eastern countries, particularly since 2000. In Oman, there have been 124 records to September 2013 (compared to 51 records for European Honey Buzzard). A large majority are November–January, with few in spring (February–May) and no records June–August (Eriksen & Victor 2013). Mirroring the situation in the UAE, there is only one September record. The temporal distribution of records no doubt partly reflects observer activity in Oman, but the species is clearly increasing there, and the wintering population in green areas of the Dhofar region may exceed 30 individuals.

The first country record of CHB for Kuwait was 21 September 2001 and there have been 23 further records, mainly singles, to 31 May 2014 (M Pope and A Al-Sirhan *in litt*). Interestingly, almost 50% of records have occurred mid–late September, in marked contrast to Saudi Arabian, UAE and Omani records but fitting well with data from migration watch-points in Kazakhstan and Georgia where passage peaks in September (Wassink & Oreel 2007, Forsman 1994, Jansen 2013). With only five records November–March, it seems that CHBs do not regularly winter in Kuwait, again contra its status further east in the Arabian peninsula. There are only two records of CHB from Yemen: one between Al Dhahi and Al-Kadana, northern Yemen (17 January 1997, Jon Hornbuckle pers comm) and another on Socotra (28 February 2009). The true status of CHB is difficult to ascertain on mainland Yemen due to chronic under recording with a serious decline in effort since the late 1990s.

CHB is now seen annually on autumn and (especially) spring passage in Israel, where first recorded in 1994 (*eg* Faveyts *et al* 2011). Interestingly, status in Israel is rather different from that on the Arabian peninsula. In Israel, the surge in records began rather earlier and 15–20 are now recorded annually on spring passage, mainly May. Five–twelve have been recorded each autumn, mainly mid September although over-wintering is uncommon and was first documented in 2008 (Kloos *et al* 2008). In Egypt, CHB was first recorded in May 1996 (EORC undated) although it remains a national rarity with currently less than 10 accepted records. However, given the situation in Israel and that the species has been recorded as far west as Italy during spring passage (Scuderi & Corso 2011) this is presumably due to lack of observers. At Batumi, southwest Georgia, records have also increased markedly (annual in autumn since 2010 and in steadily increasing numbers including at least 47 in 2013; see Jansen 2013, Anon 2013). In Iran, CHB was first recorded as recently as 1999 but the total number of records had reached 23 by December 2010, mainly from the relatively well-watched Hormozgan province (Khaleghizadeh *et al* 2011). Other recent first country records come from Cyprus (21 October 2012), Bahrain (13 September 2013) and Qatar (12 May 2014, Morris 2014). This phenomenon of increasing records is likely to be due to increased observer awareness as well as a general westward and southward spread of the species' non-breeding range.

HOW MANY CRESTED HONEY BUZZARDS OCCUR IN THE ARABIAN PENINSULA ANNUALLY?

Combining estimates of 30 birds wintering in Oman (Eriksen & Victor 2013), with minima of 20 birds in the United Arab Emirates and five in Saudi Arabia gives an Arabian over-

wintering population of over 50 CHBs. In reality, factoring in the lack of observer coverage across the region (except the UAE) the total wintering population could be as high as 75–100 birds. Such numbers are broadly comparable to those observed on migration through watch-points in countries such as Kazakhstan. As in Israel, a small number of passage birds (especially in western Arabia) are presumably bound for Africa, although the species is unrecorded there outside Egypt. Birds seen in the west of Saudi Arabia have been recorded mainly in the southwest (Asir mountains and adjacent lowlands), on a known migration route for a number of raptor species (Welch & Welch 1988, Meadows 2001) including European Honey Buzzard (contra Cramp & Simmons 1980 who stated that little raptor passage occurs east of the western Red sea). In autumn, small numbers of European Honey Buzzards pass along the east side of the Red sea (the majority in September) and there is evidence that some birds occasionally attempt direct crossings (Meadows 2001) whilst others use the Bab el-Mandeb strait to cross into Africa. Welch & Welch (1989) suggested this is an important autumn route for European Honey Buzzards, although spring passage is much sparser (M Jennings *in litt*).

A POSSIBLE REASON FOR THE CHANGING STATUS IN THE ARABIAN PENINSULA

Whilst speculative, one reason for the dramatic increase in records of CHB is the recent availability of suitable habitat. Most records in the Arabian peninsula are from anthropogenic sites with extensive shade such as farmed areas, suburban parks, golf courses and plantations of mature watered trees (mainly ghaf *Prosopis cinerea*, but tall gum *Eucalyptus* plantations are also utilised). An investigation in Saudi Arabia found that hymenopteran nests are present every month of the year in the Eastern province, with searches revealing two to six nests each calendar month (B Meadows pers comm). As CHBs specialize in feeding on the larvae and honey of social bees and wasps (Orta & Marks 2014) potential food sources are clearly available year round. Such habitats (and densities of food sources simply did not exist in the Arabian peninsula until the early 1990s and have been created at an accelerating rate since (Jennings 2010).

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

Oscar Campbell c/o British School Al Khubairat, PO Box 4001, Abu Dhabi, UAE. ojcampbell25@yahoo.com

First confirmed evidence of Barn Swallows *Hirundo rustica* breeding on the Arabian peninsula

BERNARD BRACKEN

The Barn Swallow *Hirundo rustica* crosses the Arabian peninsula on migration to and from wintering areas in Africa and during these times many can be seen in the skies. It has been suggested that some of these birds may be breeding in the peninsula but to date definitive evidence has not been available (Jennings 2010). In November 2013, while birding with Robert Tovey, we noticed some nests in a farm building at Al Hayer, south of Riyadh, Saudi Arabia. These nests were cup shaped and made of mud gobbets which looked very like those of some members of the swallow family. Most were in a poor state of repair and looked like they may not have been used for some time. In spring 2014 while birding in the area we spotted a flock of *c*20 Barn Swallows, some of whom were flying in and out of the building in question. The building was being used by farm workers at the time so we did not enter. I returned to the site in October 2014 and noticed that many of the nests had been smashed but one which was accessible had a feather lining still in place indicating that they may have been used that year. On 14 February 2015 I visited the site again and found a considerable number of Barn Swallows flying in and out of the farm building at regular intervals. On entering the building there were 10 nests, some of which were damaged but three of the nests had sitting birds (Plate 1) and I witnessed one pair beginning to repair one of the damaged nests. I could only get access to one of the nests and found it had a clutch of 4 eggs (Plate 2). As all the other nests were too high to access I left the area to avoid disturbing the birds but took a number of photos. I returned to the site ten times over the next three months to monitor activity (Plates 1–8).

BREEDING AND FEEDING LOCATION.

The breeding site (24° 21′ 30″ N, 46° 56′ 00″ E, 430 m asl, Plate 5) is *c*25 km south of Riyadh and *c*4 km southeast of Al Hayer town. The area comprises several farms which have

Plate 1. Barn Swallow *Hirundo rustica* guarding nest number 8**,** Al Hayer, Saudi Arabia, 14 February 2015. © *Bernard Bracken*

Plate 2. Clutch of four Barn Swallow *Hirundo rustica* eggs, nest eleven, Al Hayer, Saudi Arabia, February 2015. © *Bernard Bracken*

Plate 3. Sitting Barn Swallow *Hirundo rustica*, nest three, Al Hayer, Saudi Arabia, 14 February 2015. © *Bernard Bracken*

Plate 4. Feeding Barn Swallow *Hirundo rustica* nestlings, nest three, Al Hayer, Saudi Arabia, 14 March 2015. © *Bernard Bracken*

Plate 5. View of the farm building, Al Hayer, Saudi Arabia. Note reed bed in the middle right, date palms and straw for the cattle pen to the left, 13 July 2015. © *Bernard Bracken*

grown up over the years using water from the Riyadh river, a waste water outflow from the city. Along much of its length the river is overgrown with reeds (mainly *Phragmites*) which are cut back from time to time by farmers or they get burned off in accidental fires. It is an important area for wildlife and provides a key stopover point for birds on migration. The building housing the colony of Barn Swallows is *c*10×5 m and located near the centre of the fields through which the river flows. The building's door was always left open and usually at least half of the windows also. The location is particularly good for insects. In spring the nearby reed bed, river and cattle pen provide ideal breeding grounds for a diverse insect population. The birds appeared to feed within a few hundred metres of the nest site. The fields were being used to grow hay for farm animals.

NEST SITES

During 2015 the number of nests grew from ten to fourteen, although only nine were in use. The ten original nests were in various states of repair, some relatively intact, others smashed. Nests that I numbered one, four, five, nine and twelve were not used by the swallows. Nest nine survived from the previous year but had been taken over by a pair of Laughing Doves *Spilopelia senegalensis* who raised two broods there. Nest twelve was partly constructed in early May and the basic mud cup was formed but this too was taken over by a Laughing Dove. On my first visit in 2015, 14 February, nests three, eight and eleven had sitting birds. Nests six and fourteen were being repaired having been damaged over

Plate 6 (left). Barn Swallow *Hirundo rustica* nest thirteen completed and in use, 27 March 2015, Al Hayer, Saudi Arabia. © *Bernard Bracken*

Plate 7 (right). Barn Swallow *Hirundo rustica* nest seven completed and in use, 20 March 2015, Al Hayer, Saudi Arabia. © *Bernard Bracken*

the winter. A pair had just commenced building nest thirteen which, unlike the others, was constructed as a circular platform around a cable hanging from the ceiling (Plate 6). A few weeks later nest ten was built by another pair, also hanging from electricity cables. There was ample space around the walls for these birds to build a cup shaped nest so why these locations were selected is unclear. A pair had also commenced work on a new nest, number seven, by 20 February (Plate 7). Nest two was built from scratch immediately over the doorway but was not completed until the first week in April. All nests were built of mud gobbets and lined with straw and feathers. Mud was readily available from the river bank and some birds were also seen collecting it from nearby roadside pools created by water-truck spillage.

The spacing of the nests inside the building was perhaps unusual. It was suggested by Juana (2012) that even in colonies, nesting Barn Swallow males defend a territory of *c*5 m around the nest. The nests on the south wall of the building had a much smaller spacing, a little under a metre. Nest seven, which was built from scratch in 2015, was constructed in the usual way by the pair and was a standard cup shape attached to the wall (Plate 7). Two broods were raised. However, once the second brood had left nest seven the birds added higher walls making the nest 5 or 6 cm deeper. A similar addition had been made to nest five at some point in previous years.

BREEDING SUCCESS

Breeding commenced at this site fairly early compared with other parts of the Barn Swallow's range. Turner & Rose (1989) noted that the breeding season is generally April–August but as early as March in some southerly regions. At the present site there were four eggs in nest eleven 14 February. If we assume laying intervals of one day between eggs (Møller 1994) then laying started in nest eleven around 10 February or maybe a little earlier.

I took note of the number of eggs in each of the nests starting from the first weekend in April as up to that point I could not access many of them due to their height. Møller (1994), in Denmark, found the average clutch size for Barn Swallows was 4.93 eggs and all of first clutches at the Al Hayer site had 4 eggs (8 nests, 4 eggs/nest). All of these nests had a second brood with the exception of nest eleven. I recorded eggs in nest eleven on my first visit in mid February and at one point I thought that this nest had been abandoned as I rarely encountered a sitting bird and the eggs did not seem to be developing. However, in late March they hatched, but too late I suspect for a second brood.

The second clutches at this site had four eggs each, with the exception of nest ten which had a clutch of seven eggs (Plate 8). Possibly the latter second clutch may have been added to by another female. Nest two was built in late March and I suspect there was no time to produce a second brood. (second brood, 7 nests 4 eggs/nest and 1 with 7 eggs). No pair attempted a third brood, possibly due to higher temperatures (in April these rose to 45°C).

Plate 8. Barn Swallow *Hirundo rustica* nest ten with clutch of 7 eggs, 28 March 2015, Al Hayer, Saudi Arabia. © *Bernard Bracken*

I was only able to attend the site at weekends so only witnessed the fledging of one of the nest occupants but from what I could make out all of the nests fledged successfully. I base this on checks I made around the area looking for dead chicks and broken eggs and found none. Additionally, the number of chicks in each case matched with the earlier counts of eggs. There is always the possibility that some did die and were gone in the time between visits but I am reasonably certain that the majority of the 67 eggs recorded made it to fledging. I returned to the area fairly regularly since the final nestlings fledged and spotted a good number (*c*30–35) feeding around the area. The Barn Swallow is breeding in the Arabian peninsula and possibly has been doing so since at least 2012 and maybe earlier.

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Bernard Bracken, Al Malaz, Riyadh, Saudi Arabia. Bernard@brackens.net

Cory's Shearwater *Calonectris borealis*, **Persian Shearwater** *Puffinus persicus*, **Jouanin's Petrel** *Bulweria fallax* **and Red-necked Phalarope** *Phalaropus lobatus*, **Muscat to Djibouti and into the Red sea, March/April 2015**

ROBERT L FLOOD

This note documents sightings and identification criteria for Cory's Shearwater *Calonectris borealis*, Persian Shearwater *Puffinus persicus* and Jouanin's Petrel *Bulweria fallax*, the three Procellariiformes sighted during a 'cultural cruise' aboard MV Minerva, March/April 2015. Identification criteria for Jouanin's Petrel are extended to include new insights. Sightings of Red-necked Phalarope *Phalaropus lobatus* are also given. The cruise travelled from Muscat, Oman, to Djibouti, northeast Africa, by way of the gulfs of Oman and Aden (Figure 1, Table 1). It then continued to Aqaba, Jordan, through the Red sea and gulf of Aqaba, though the four featured species were not recorded on this leg of the journey. The route passed *c*8 kilometres south of the Al-Hallaniyat (Al-Hallaniyah) islands, which are

Figure 1. Route of MV Minerva, Muscat–Djibouti, March/April 2015.

Table 1. Dates and timings of the sector Muscat–Djibouti, MV Minerva, 30 March–4 April 2015.

30 March	Morning 'dolphin cruise' out of Muscat; evening departure MV Minerva for Salalah
31 March	Continue toward Salalah
1 April	Arrival Salalah *c*16.00 h
2 April	Departure Salalah *c*15.00 h for Djibouti
3 April	Continue toward Djibouti
4 April	Continue toward Djibouti; arrival at Djibouti about midnight

*c*40 kilometres off the southeastern coast of Oman, and *c*320 kilometres north of the Socotra archipelago. These two groups of islands are thought to be the main breeding sites for Jouanin's Petrel and Persian Shearwater *Puffinus p. persicus*. The passage kept fairly close to land Muscat–Salalah but, due to the threat of piracy, joined the navy-patrolled shipping lane in the central gulf of Aden, Salalah–Djibouti.

The route is currently unpopular with passenger and research vessels because of the threat of Somali pirates. Precautions included armed guards and the vessel was dressed in rolls of razor wire, numerous water cannons, long trails of wire off the stern, *etc* (Plate 1). However, there were few restrictions to viewing. Daylight hours were spent on deck except for meals. The results provide an uncommon transect study for these waters and are broadly consistent with the earlier studies of Bailey (1966) and van den Berg *et al* (1991).

Plate 1. MV Minerva dressed in rolls of razor wire and numerous water cannons as part of the defence against the threat of Somali pirates, April 2015. © *Robert L Flood*

RESULTS

Cory's Shearwater

One was observed in the Red sea 6 April 2015 at 15° 4′ N and 4° 42′ E between Eritrea and Yemen (outside of both countries' 12-mile territorial waters). The bird was among a feeding frenzy of Brown Boobies *Sula leucogaster* and terns. This adds to a growing number of sightings of Cory's Shearwater off the Arabian peninsula, in the Red sea, and the gulf of Aqaba (*eg* Shochat *et al* 2004, Campbell *et al* 2013, Eriksen & Victor 2015, Y Perlman *in litt*).

This individual was recognised as one of the four *Calonectris* species; being a large shearwater, broad winged, with scruffy brown and white plumage. Streaked *C. leucomelas*, Cory's and Scopoli's *C. diomedea* Shearwaters have been recorded in waters around the Arabian peninsula, while Cape Verde Shearwater *C. edwardsii* has not. It was identified as Cory's Shearwater by its brownish head and neck, whitish chin and throat, distinct border

between whitish underwing-coverts and dark underwing primaries, and yellowish bill. Streaked Shearwater has a dark-streaked white head and greyish bill. Scopoli's Shearwater has a slim build and, in the underwings, typically whitish 'fingers' extending up the inner webbings of p8, p9 and p10. Cape Verde Shearwater is notably smaller with a greyish bill. Further details on identification are given in Gutiérrez (1998), Howell & Patteson (2008) and Fisher & Flood (2010).

Persian Shearwater

Only six *Puffinus* shearwaters were observed. Sightings of four birds on 31 March 2015 were evenly spread across the day. Singles were seen early morning on 1 April and late morning on 3 April.

Persian Shearwater *P. p. persicus* is a common summer breeding visitor to Oman (Eriksen & Victor 2015). The Al-Hallaniyat islands and the Socotra archipelago are the main known breeding sites. The breeding season is given as May–September (Onley & Scofield 2007), though birds are present at breeding cliffs on Socotra March/April–December/January (Jennings 2010). The full extent of post-breeding dispersal is poorly known. The few sightings on the present cruise indicate that adult populations had not yet returned to their colonies. Other similar-sized and structured *Puffinus* shearwaters nearest to the region are the closely related Mohéli Shearwater *P. persicus temptator* that breeds in the Comoros; and two subspecies of Tropical Shearwater *Puffinus bailloni* from the southwest Indian ocean, *Puffinus b. bailloni* that breeds on Réunion island, and *Puffinus b. nicolae/colstoni* that breeds in the Seychelles archipelago (following the taxonomy of Austin *et al* 2004).

The six shearwaters observed appeared fairly small, with relatively broadish wings and longish tail, and brownish-black on the upperside, browner in some light conditions. These features are consistent with Persian and Tropical Shearwaters. Underside plumage seen well on four birds indicated Persian (*eg* Plates 2–5). The underwing-coverts, axillaries

Plate 2 (left). Persian Shearwater *Puffinus p. persicus* off Oman, 9 September 2011. © *Mike Barth*

Plate 3 (right). Persian Shearwater *Puffinus p. persicus* off Oman, 22 April 2011. © *Mike Barth*

Plates 2 & 3: note the variable and extensive amount of dark in the underwing-coverts, axillaries, and flanks, giving a dirty look to the plumage.

Plate 4 (left). Tropical Shearwater *Puffinus b. bailloni* off Réunion island, southwest Indian ocean, 10 December 2014. © *Kirk Zufelt*

Plate 5 (right). Tropical Shearwater *Puffinus b. bailloni* off Réunion island, southwest Indian ocean, 10 December 2014. © *Mike Danzenbaker*

Plates 4 & 5: note the extensive amount of white in the underwing-coverts and axillaries, and the largely white flanks, giving a clean look to the plumage.

and flanks were extensively dark marked, typical of Persian Shearwater. Tropical Shearwaters have a more extensive amount of white in the underwing-coverts and largely white flanks, giving a much cleaner look to the plumage. Based on geographic range, it is assumed that the birds were nominate Persian Shearwater rather than *temptator* (similar plumage, Shirihai & Bretagnolle 2015a), movements of which are poorly known.

Jouanin's Petrel

In summary, scarce during the first morning's sailing toward Salalah, but more were seen in the afternoon. Peaked in numbers on the second day as we passed the Al-Hallaniyat islands. Fewer but steady Salalah–Djibouti, except the last day when just two birds were seen. In total, 217+ Jouanin's petrels were logged during the cruise (Table 2). A few Jouanin's Petrels occur in Omani waters mid-February, where it is common by mid-April

Table 2. Sightings of Jouanin's Petrel *Bulweria fallax* Muscat–Djibouti, 30 March–4 April 2015.

30 March	Five in morning a few miles offshore (from the 3-hour 'dolphin cruise'); two during evening departure of MV Minerva
31 March	Scarce and irregular in morning with six birds, more frequent and regular in the afternoon and evening with at least 24 birds
1 April	Over 130 birds, with a concentration of c100 birds while passing Al-Hallaniyat islands; small rafts of up to 10 birds flushed off sea mainly within 10 miles of the islands
2 April	Steady with 19 birds
3 April	Steady with 34 birds
4 April	One 08.00 h and one 17.15 h

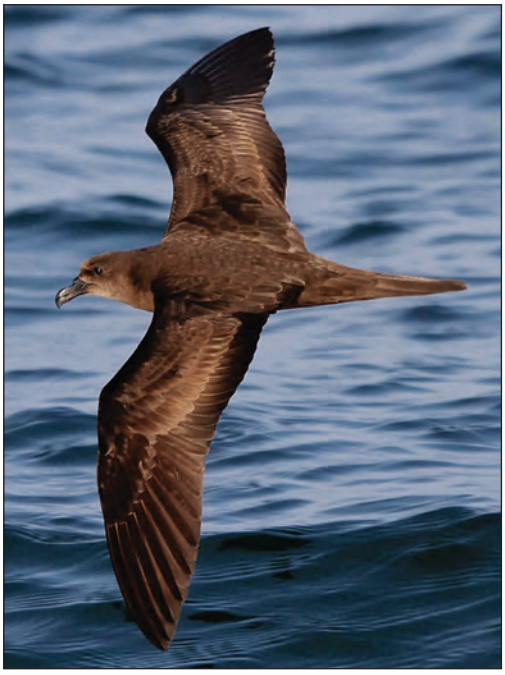

Plate 6 (left). Jouanin's Petrel *Bulweria fallax* off Oman, 8 November 2011. © *Dave Andrews*. Fresh-looking presumed juvenile. Note the indistinct pale upperwing ulnar bars.

Plate 7 (right). Jouanin's Petrel *Bulweria fallax* off Oman, 10 October 2012. © *Jens Eriksen*. Worn adult with first signs of head and body moult.

and then regular to the end of November (Eriksen & Victor 2015). The breeding season is probably concentrated in May–September (Brooke 2004, Onley & Scofield 2007), though chicks have been observed in November on Socotra (Jennings 2010). This is consistent with October/November records of fresh juveniles, worn adults, and adults in the early stages of post-breeding wing moult (*eg* Plates 6–8), and a few birds completing wing moult in April (Plate 9) (also see www.birdsoman.com, Campbell & Smiles 2013). Timing of the cruise was probably within the period of return to colony.

An identification issue to be considered in the region is published photographic evidence that reveals a possible 'new' taxon of *Bulweria*, most like Jouanin's Petrel, in the Comoros archipelago (Shirihai & Bretagnolle 2015b). It could wander to the region. That said, the recognised potential confusion species for Jouanin's Petrel is Bulwer's Petrel *Bulweria bulwerii*, though the distribution of Bulwer's Petrel in the Indian ocean is poorly known. The following records suggest a widespread distribution and that it could wander to the region. Transect studies found five Bulwer's Petrels March/April in the area *c*5°S–9°N and 50–52°E and, intriguingly, one *c*22° 5′ N and 61° 2′ E, *c*160 kilometres east-northeast of Al Hadd, Oman (Bailey *et al* 1968). One was captured in the Maldives in August 1958 (Phillips 1959) and one was captured in the Seychelles in June 2009 (Andrews & Skerrett 2012). Bulwer's Petrel was recently found breeding on Round island, Mauritius (Merton & Bell 2003). It was observed in numbers from 1–20 on eight out of nine pelagic trips off Reunion island December 2012 (Shirihai *et al* 2014) and December 2014 (Flood *et al* 2015).

Separation of Jouanin's Petrel from Bulwer's Petrel can be problematic. Poorer calibre photographs can make one species look like the other. Field experience is therefore of great value. Key characteristics are found in the structure, plumage, and flight behaviour/jizz:

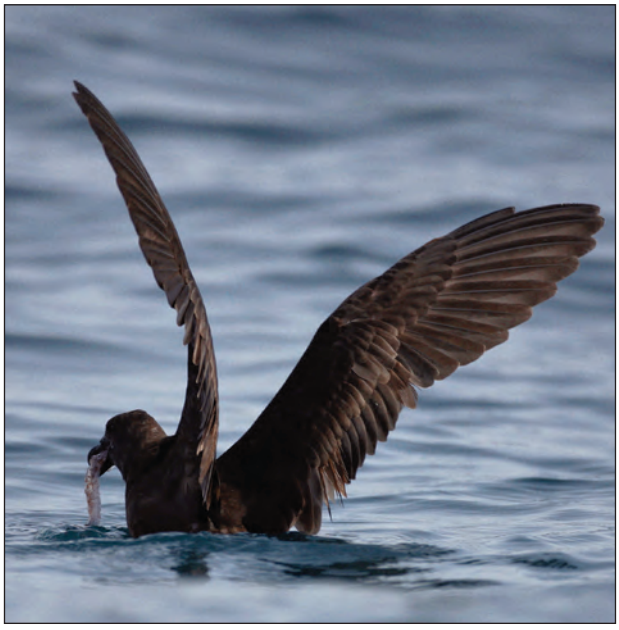

Plate 8 (left). Jouanin's Petrel *Bulweria fallax* off Muscat, Oman, November 2014. © *Peter Harrison*. Adult showing the start of wing moult.

Plate 9 (right). Jouanin's Petrel *Bulweria fallax* off Oman, 15 April 2013. © *Jens Eriksen*. Presumed adult completing wing moult with p10 half grown, and some old and heavily-worn secondaries.

Structure The relatively larger head, broader wings, and less attenuated tail of Jouanin's were most obvious at close range. Jouanin's showed a heavier and more steeply dipped bill in *travelling* flight (not always evident in photographs) (*eg* Plates 10–12).

Plumage Onley & Scofield (2007), like some other guides, stated that Jouanin's Petrel lacks the pale upperwing ulnar bars of Bulwer's Petrel, except when the plumage is very worn. This is a bit misleading. The Jouanin's Petrels that I observed were in relatively fresh plumage having undergone a complete post-breeding moult (see above). Yet, from time to time, I saw pale upperwing ulnar bars, even at mid-range, though they were less distinct than on Bulwer's (see video clips below). The bars showed during wing strokes when strong light caught and reflected off the paler feathers. Also see Plates 6, 10 and 12.

Flight behaviour/jizz This proved important to identification. The relatively large size of Jouanin's Petrel was evident in its heavier flight in the different wind conditions. The flight appeared unlike any other petrel that I have seen and quite different from Bulwer's Petrel. Links to rare clips of the *travelling* flight of Jouanin's and Bulwer's Petrels are given below (view on maximum quality). Also see the video of Bulwer's Petrel in Flood & Fisher (2013). In both species, low wing loading and very long flexible wings give an effortless buoyant flight. Both species flap wings and glide in calm conditions, and glide for longer periods and shear in moderate to strong winds. Onley & Scofield (2007) stated that Jouanin's Petrel flaps its wings almost continuously in light winds, contrary to my experience. However, the main and significant difference in flight action is the slower, typically floppy wingbeats of Jouanin's. Bulwer's Petrel's flight action is springier with faster wingbeats. It makes quicker manoeuvres, tighter turns, and will suddenly flip/change direction. Bulwer's can be quite zippy in travelling flight, while the travelling flight of Jouanin's is mostly measured.

Plate 10 (above left). Jouanin's Petrel *Bulweria fallax* off Oman, 15 September 2014. © *Jens Eriksen*

Plate 11 (above right). Jouanin's Petrel *Bulweria fallax* off Oman, 8 September 2006. © *Jens Eriksen*

Plates 10 & 11: note the large head, broad wings, and heavy, steeply dipped bill. Pale upperwing ulnar bars are visible at times, even at mid-range.

Plate 12 (left). Bulwer's Petrel *Bulweria bulwerii* off Réunion island, southwest Indian ocean, 11 December 2014. © *Mike Danzenbaker*. Better images are available from the Atlantic, but this photo shows a bird from the populations under discussion. Note the less robust, more rakish build compared to Jouanin's Petrel. Pale upperwing ulnar bars are more distinct than on Jouanin's.

Jouanin's Petrel travelling in moderate breeze (HD): www.youtube.com/watch?v=EJyJrwDUJDI

Bulwer's Petrel travelling in moderate breeze (SD): www.youtube.com/watch?v=61TZLRoaRi4

A Bulwer's Petrel on a chum slick collects food by foot-pattering and surface-seizing, like a large storm-petrel. It faces into the breeze and hovers over the spot with heavy, buzzard-like wing flaps. I saw Jouanin's Petrels collect food on several occasions and they used the same basic technique; however, the Jouanin's Petrels appeared even heavier. Also, Bulwer's Petrel manner of investigation over potential prey is more excited and energetic. Of further note, Jouanin's Petrel showed no interest in the ship and only altered flight behaviour when hastening to cross the bow. Rafting birds were flushed from the sea on several occasions. Rafts of both species take to the wing en masse when flushed; rafts of the smaller Bulwer's Petrel burst into flight and scatter in all directions (Robb *et al* 2008, Flood & Fisher 2013), while the rafts of Jouanin's Petrels that I saw lifted off the sea and steadily dispersed.

Jouanin's Petrel flushed off sea (HD): www.youtube.com/watch?v=nFzvx3N-U-E

Red-necked Phalarope

On 30 March, a total of 400+ Red-necked Phalaropes *Phalaropus lobatus* were seen, including birds from a 3-hour morning 'dolphin cruise' a few miles off Muscat. The phalaropes were very common in coastal waters, mainly in groups of up to 30 birds. On 31 March, 800+ were seen, evenly spread throughout the day. On 1 April, 30+ were seen, most around noon. There were no sightings on subsequent dates when the ship took a central route through the gulf of Aden, where food productivity is low. None were seen in the Red sea.

Red-necked Phalarope numbers and movements in the region are not well studied. It is a common migrant and winter visitor to waters off Oman (Eriksen & Victor 2015), and very erratic and prone to sudden influxes off United Arab Emirates (O Campbell *in litt*). The sightings during the cruise are in line with older records (*eg* Mörzer-Bruyns & Mörzer-Bruyns 1957) and recent geolocator studies (van Bemmelen *et al* 2015), which indicate northward movements in March/April. Van Bemmelen and co-workers retrieved four loggers; one logger died in December, so only three were functional in spring. Although two of the three phalaropes stayed in the gulf of Aden or adjacent seas October–February, they had moved out of the area by April. One went back to the Omani coast, while the others moved to the Persian gulf and Pakistan. March had few geolocator data due to problems of accuracy during the spring equinox.

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Robert L Flood, 14 Ennor Close, Old Town, St Mary's, Isles of Scilly TR21 0NL, UK. live2seabird@gmail.com

Observations of the Critically Endangered Sociable Lapwing *Vanellus gregarius* during autumn migration in Azerbaijan

PEDRO ROMERO VIDAL & ROBERT SHELDON

The Sociable Lapwing *Vanellus gregarius* is listed as critically endangered by IUCN (BirdLife International 2015). The species is a long distance migrant, breeding in the central steppes of Kazakhstan with small numbers in southern Russia. Two migratory routes have been identified, with the most well-known route through southwest Russia, around the Caspian sea, and into Turkey and then continuing through various other countries in the Middle East, with birds wintering in the Arabian peninsula and northeast Africa. A second route is less well-known (but see Donald *et al* 2016) where birds migrate east and winter in Pakistan and northwest India (Sheldon *et al* 2012).

During autumn and winter 2013, counts of migrating waterbirds were undertaken at Hajigabul lake in Azerbaijan. The lake (39° 58′–40° 01′ N, 48° 54′–48° 56′ E) is located between the cities of Hajigabul and Shirvan in the centre of the country, within the Kura-Araz lowlands, *c*40 km west of the Caspian sea. Hajigabul lake is a shallow salty waterbody that was once connected to the Caspian. The water level is seasonally influenced by rainfall and inundations from the river Kura when it floods. There are no inflows or outflows to the lake and in some periods the lake can dry out. There are also occasional inputs of warm water from the Alibayramly government electric power station. The lake does not freeze in winter. Hajigabul lake and its adjacent land have a dry subtropical climate, with arid plains and hills. Temperatures can be high in summer

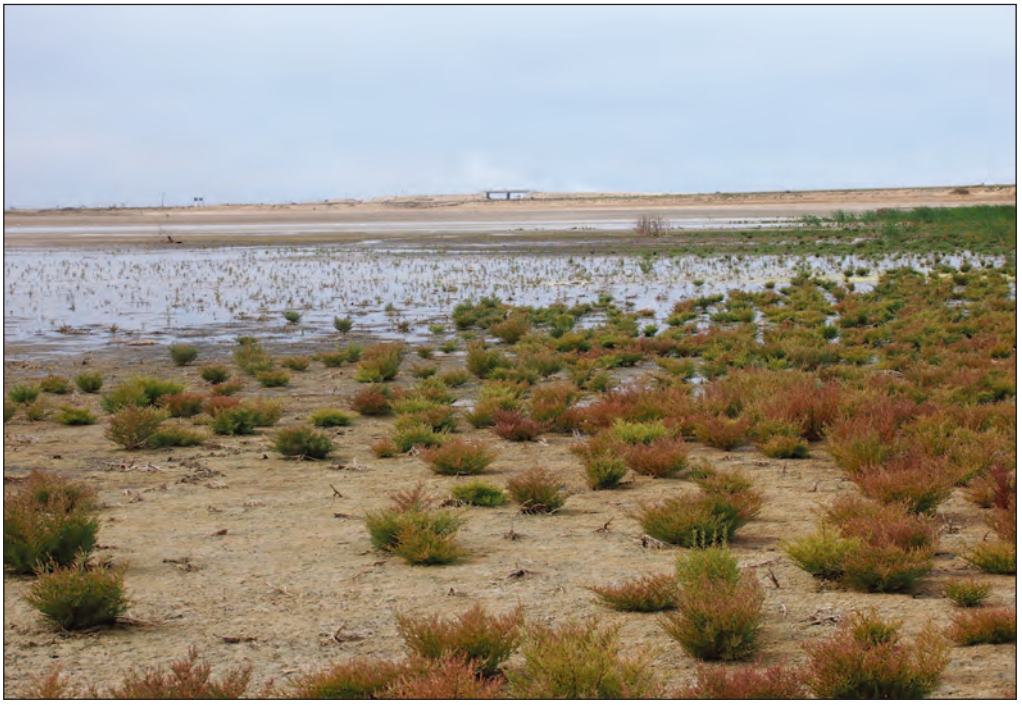

Plate 1. The lake Hajigabul shore (Azerbaijan), where Sociable Lapwings *Vanellus gregarius* were observed.

(*c*40°C) and low during winter (between 0°C and 10°C). Precipitation is low throughout the year, varying between 100–300 mm, and is especially low in summer (0–10 mm).

During the waterbird counts, Sociable Lapwings were observed on two separate occasions in single species flocks. The first observation was of a flock of 45 individuals on the shores of the lake, 20 October 2013. Habitat was a muddy substrate interspersed with patches of water (Plate 1). The birds were primarily resting with little movement, although a few individuals were feeding occasionally. Within the flock, four colour-ringed birds were watched. Due to the large distance between observers and flock, the exact colour ring combinations could not be determined. For two of the individuals we could make out that blue and white were part of the combination. For the other two marked birds, only white could be detected with any degree of certainty. Sociable Lapwings have been colour-ringed for more than 10 years in central Kazakhstan as part of a long-term study undertaken by the Royal Society for the Protection of Birds and the Association for the Conservation of Biodiversity of Kazakhstan. From the partial colour-ring information we are unable to specify which individuals were present in the flock. However, the vast majority of colour-ringed Sociable Lapwings have been marked in a study area 120 km southwest of Astana, near lake Tengiz (50° 59′ N, 70° 05′ E) and it is highly likely that these birds are from that population. The second observation was of 15 unringed individuals at the same location on 7 November 2013. Initially, only two individuals were observed, at 11.22 h in the morning. However, additional birds arrived and a peak count of 15 was made in the next 2 hours. The birds were observed mainly resting, with the exception of two individuals that were regularly feeding.

Until recently, autumn records of Sociable Lapwing in Azerbaijan were scarce, but there are an increasing number of records being reported and added to a Sociable Lapwing sightings database compiled and maintained by the RSPB (Johannes Kamp pers comm). Through the use of satellite tracking, understanding of the migration routes of the Sociable Lapwing has increased in recent years. The observations presented here suggest that in some years autumn migration may not always follow the route north of the Caspian sea, but Sociable Lapwings might cross the Caspian from western Kazakhstan or northern Turkmenistan. Further surveys of key sites in Azerbaijan are required.

ACKNOWLEDGEMENTS

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Pedro Romero Vidal, L/Reboredo 30 Ordes (A Coruña), Spain CP 15689. pedro.romero@udc.es

Robert Sheldon. vanellus1970@yahoo.co.uk

Phenology of spring landbird migration through Abu Dhabi island, United Arab Emirates, 2007–2014

OSCAR CAMPBELL & NICK MORAN

Spring migration of passerines and near-passerines through Abu Dhabi island, UAE, was studied 1 February–31 May, 2007–2014 inclusive. An average of 145 h (range 127–170 h) was spent surveying each spring, with *c*85% of this 2 March–20 May each year. In all, 41 species (totalling 21 594 bird-days) were recorded in numbers sufficient for phenological analysis. This is presented, along with an annual value for birds per hour and mean dates of arrival and departure for each species. Data are presented for three species concerning differential timing in migration between sexes and comments are made regarding subspecific identity of certain species. Comparisons are made of extent of passage and peak timing with data published from other parts of the Middle East, particularly from Cyprus, Bahrain, Oman, Israel and Jordan. A further 29 species are listed which were recorded regularly but in numbers too small for detailed analysis.

INTRODUCTION

The annual passage of migratory species is an ornithological highlight for resident and visiting birdwatchers alike in the Middle East. Some four to five billion individual birds are estimated to migrate south from Eurasia into Africa every autumn (Newton 2010). Despite the magnitude of migration, and notwithstanding the notable exception of Israel (Morgan & Shirihai 1997, Shirihai 1996), surprisingly little data on basic migration phenology, collected in a systematic manner over a medium or long term, has been presented from the Middle East. There are general statements and broad outlines in country checklists (*eg* Pedersen & Aspinall 2010, Eriksen & Victor 2013). Khoury (2003, central Jordan) and Cleere & Kelly (2009, Kuwait) provide a snapshot of a short time period (one year or less), whilst Kreuzberg-Mukina (2003) reported on an unusual concentration of migrants in Uzbekistan in spring 2002. Meadows (2010) focused on three species of shrikes *Lanius* in Saudi Arabia over a 21 year period. Hirschfeld (1995) documented all species passing through Bahrain in both migration periods over three years, 1990–1992. Only Richardson (2014) tackled the status, abundance and frequency of a broad spectrum of passerine migrants over an extended period, 2003–2013 in Cyprus. Recent data is especially lacking from eastern Arabia, where the barrier of the straits of Hormuz seems to deter large soaring species which, elsewhere in much of the OSME region, are amongst the most conspicuous and therefore best-studied migrants. However, nocturnal migrant passerines and near-passerines are not deterred. This paper presents spring migration data collated by the authors, 2007–2014 inclusive, based on systematic ornithological surveying of Abu Dhabi island, United Arab Emirates.

The scale of bird migration across the Middle East was investigated by Bruderer (1996) who found, using radar studies, that densities of nocturnal migrants may be as high as four million birds per night along a 100 km transect in particularly favourable locations (such as Israel). He estimated that, due to mortality in the wintering grounds, the spring total is 40–65% of the autumn value. However, although spring passage thus involves significantly fewer individuals, for many species it is significantly more conspicuous to ground-based observers than autumn passage, due to a variety of climatological and geographical reasons (Shirihai 1996, Newton 2010). Songbird migration through the Sahara has been demonstrated to be intermittent (active migration during darkness and days spent resting or feeding) and not, as was long hypothesised, non-stop (Schmaljohann *et al* 2007, Salewski *et al* 2010). Spring migration is generally understood to take place at

higher flight altitudes than autumn migration (Newton 2010), possibly to avoid southward winds that prevail, during both seasons, at lower altitudes. The cooler air temperatures at higher altitudes may allow some diurnal migration in spring, though birds arriving in Abu Dhabi are likely to have just completed crossing the interior of Arabia, possibly including the barren and hostile sand seas of the Rub' al-Khali. Although the recent development of scattered agricultural projects and other irrigation renders the crossing of the Arabian interior a little less arduous than in the past, the verdant vegetation and shade available in Abu Dhabi remains very attractive to these migrants.

Spring data from the western Sahara suggests that many migrants resting in the desert by day possess sufficiently high fuel loads to continue migration and that other migrants trapped at oases do not exhibit significantly lower fuel loads (Salewski *et al* 2010). Yohannes *et al* (2008) demonstrated, however, that a majority of species on spring passage, having made considerable gains in mass in northeast Africa prior to attempting a desert crossing, then exhibit a substantial body mass loss during migration across the desert (study sites from Egypt to Oman). This physiological need to replenish fuel reserves, presumably exhibited *eg* in longer stopovers and use of suboptimal sites, may further enhance the conspicuousness of spring migration relative to autumn migration.

The resumption of publication of UAE Bird Reports (*eg* Smiles *et al* 2014) and the recent provision of some older reports online (*eg* Richardson *et al* 2003) is welcome. However, the large body of data collated on regular migrant species nationally is gathered non-systematically and is, by necessity, treated very briefly therein. It is also prone to the inevitable bias in observer effort as outlined by Richardson (2014). Further, the data for any one year is subject to annual fluctuation in numbers of grounded migrants which, as revealed by our data and reported elsewhere (*eg* Shirihai 1996), can be extreme. Hence a report or study covering just one, or even just several years, may not portray migration phenology through a particular location accurately. Pioneering work by Richardson & Chapman (1988, see also Richardson 1990), based on observations made in Dubai, was one of the first systematic analyses of bird phenology in the UAE. In the present study we aim to further refine the picture and present for the first time for the UAE, data collected over an extended period and standardised for observer effort. We hope that this study will act as a baseline reference for future investigations concerning bird migration both within the UAE and across the Middle East as a whole.

STUDY AREA

The city of Abu Dhabi, 24° 26′ N 54° 23′ E, entirely covers a low-lying island that runs on an ESE–WNW orientation. Abu Dhabi island (ADI) is separated from the mainland by a 300 m wide channel. The island is 17 km long and 9 km wide at its greatest span. Average monthly maximum temperatures range from 24°C (January)–40°C (July–August) and average monthly rainfall from 1–38 mm, with a significant peak in February and March (data Bateen airport, ADI, 1971–1989 as presented by Aspinall 2010). Urban development now covers almost the entire island, with extensive mangrove (*Avicennia marina*, *Rhizophora*) forests on the sheltered northeast fringe being the only remaining semi-natural vegetation. All study sites used are almost entirely anthropogenic. The city has a number of public parks and recreational areas, mostly extremely manicured and some subject to heavy disturbance. These are planted mainly with exotic grasses and shrubs such as *Bougainvillea*, although shady plantations of mature, native (and hence food rich) trees (mainly ghaf *Prosopis cineraria* but also sidr *Ziziphus spina-christi*) also occur. On ADI, there is little or no ground vegetation, save for ornamental hedging plants and flowerbeds. Lulu island (Plate 1), a 4.5 km × 1 km sandy island created by dredging in the 1990s lies parallel to the northwest-facing edge of ADI, *c*500 m offshore. It is easily reached

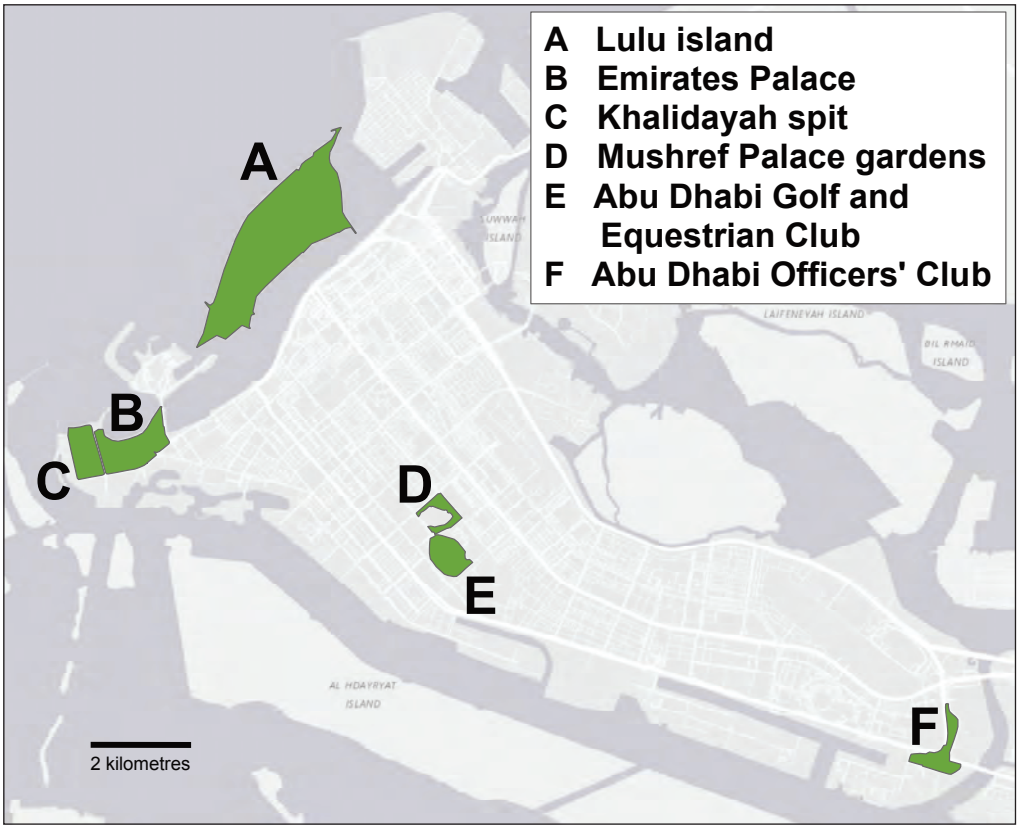


Figure 1. Abu Dhabi island, United Arab Emirates, with the main survey subsites (see text) highlighted in green.

by private craft but, following the cancellation of the public boat service in January 2009, is now relatively undisturbed. Specific ADI subsites utilised (A–F, Figure 1), years studied, approximate number of visits/week and some comments on habitat follow.

A Lulu island 2009–2014, one visit/two weeks, Plate 1. Large areas of open, stunted, plantations of sidr, *Eucalyptus* sp, date palms *Phoenix dactylifera* and suwak *Salvadora persica*, and bare gravel plains and sand dunes naturally colonised by low shrubby vegetation including *Zygophyllum* sp, *Heliotropium* sp and *Tribulus* sp. There is also a small lake, the edges of which are being rapidly colonised by giant reed *Arundo donax*.

B Emirates Palace 2009–2014, one–two visits/week, Plate 2. Extensive parkland and lawns with ornamental trees, shrubbery and flowerbeds.

C Khalidayah spit 2007–2010, one–two visits/week. Formerly a dense 'square' of shady trees, mainly mature ghaf. In 2009–2010 denuded of vegetation in preparation for development.

D Mushref Palace gardens 2007–2014, up to five or six visits/week, Plate 3. Heavily disturbed, especially during the cooler part of the year, this site comprises a small area of parkland and lawn and more extensive, rather open plantations, comprising mainly ghaf but also with scattered sidr and *Eucalyptus* trees.

E Abu Dhabi Golf and Equestrian Club 2007–2014, up to five or six visits/week. A small city golf course, surrounded by sand and grass racing tracks. Two small ornamental lakes with small areas of *Arundo donax* comprise the only native vegetation.

Plate 1. Lulu island (see text, A in Figure 1), Abu Dhabi, UAE, May 2010. © *Oscar Campbell*

Plate 2. Emirates Palace (see text, B in Figure 1), Abu Dhabi, UAE, May 2012. © *Oscar Campbell*

Plate 3. Mushref Palace gardens (see text, D in Figure 1), Abu Dhabi, UAE, June 2012. © *Oscar Campbell*

F Abu Dhabi Officers' Club 2007–2014, two–three visits/week. Extensive areas of open lawns, with planted date palms and small areas of ornamental flowerbeds and ghaf plantations. Increasingly disturbed during later years of present study.

METHODS

The survey period each spring was 1 February–31 May. Subsites were surveyed in a broadly systematic manner. Visits were regular (see above), with certain easily accessed subsites visited almost daily, particularly early March–mid May. Timing of visits was mainly 16.00 h–dusk, but also mornings (dawn–12.00 h) at weekends and 06.00–07.00 h daily April–late May. A similar route (generally walked at a similar pace) was covered on each visit to each subsite and all wintering and migrant birds detected were counted and recorded. Virtually all identifications were made visually. Records were compiled for 5-day periods ('pentads'), running from 1–5 February until 26–31 May. This gave a total of 24 pentads annually. Search time, to the nearest 5 minutes, was also logged. An average of 145 h/spring (range 127–170 h) was spent surveying, with an average of 85% of this effort (range 83–88%) made 2 March–20 May inclusive. Migrant numbers outside this period were relatively very low, particularly during the first half of February and last third of May. Totals for each species were then expressed as bird-days/hour for each pentad. Finally, the annual values for each pentad were averaged to obtain an overall value, in bird-days/hour for each pentad for the eight year duration of the study. In addition, maximum daily count is presented in the systematic list. This is the greatest total of all individuals recorded on one day by one observer during the survey period, obtained by summing counts from all subsites visited that day.

LIMITATIONS TO THE DATA SET

Data were collated solely by detection of grounded migrants, which will generally represent only a small proportion of all migrants at any one time and whose stopovers may well be due to local weather conditions very different to those optimal for migration. This problem has long been recognised (Lack 1960). Due to regular observer absence, two pentads (11–15 February and more problematically, 1–5 April) received very limited coverage over the eight-year period. For these two pentads a value generated by averaging the data for the preceding and subsequent pentads was used.

RESULTS AND DISCUSSION

The 41 species with a bird-day total exceeding 50 during the whole study period are listed in Table 1. These represent a total of 21 594 bird-days. A bird-day total of less than 50 would tend to make patterns less reliable, more prone to random arrivals and one-off spikes *etc*. In addition, a further 29 species were recorded regularly but in numbers too small to analyse (Appendix 1). Scientific names of all species recorded, excluding vagrants, are presented in Table 2 and Appendix 1. English names, taxonomy and species order follow OSME (2015), with the exception of the Lesser Whitethroat complex, recorded and analysed simply as *Sylvia* [*curruca*] due to the extreme difficulty of reliable field differentiation of the taxa involved. In contrast, the majority of 'Isabelline' Shrikes observed could confidently be assigned to specific level as Daurian or Turkestan Shrikes. Hence, these taxa are recorded and analysed individually; individuals that could not be assigned specifically have been omitted. Finally, all records of Yellow Wagtail and Common Redstart are treated each as a single taxon, although comments are provided in the analysis concerning subspecies.

Further, it should also be noted that the total numbers of birds counted (sample sizes for entire study are presented in Table 1) are not particularly high compared to comparable data from *eg* Israel or Kuwait. Eastern Arabia is on the edge of the main migration stream through the region and, in addition, many birds arriving on ADI disperse quickly to private gardens and areas to which observers have no access. However, the sensitivity of the methodology used, including virtually daily searches, and the extended period of the study will at least partially offset this. Particular issues for species which migrate diurnally in flocks (in this study only European Bee-eater and Barn Swallow) are discussed in the systematic list below. Certain species that are common or quite common spring migrants through the UAE as a whole (for example Sand Martin, Blue Rock Thrush, Citrine Wagtail and Greater Short-toed Lark) are actually very uncommon on ADI, presumably due to lack of suitable habitat, and a detailed analysis of their phenology would require utilisation of additional study sites. Campbell & Smiles (in prep) seek to address this.

Mean first arrival and last departure date for each species analysed are presented (Table 2) and their standard deviation. First arrival and last departure dates are easily measured and have often been used historically to assess phenology but may correlate only weakly with mean arrival date, especially for long-distance migrants (Goodenough *et al* 2015). Nine species regularly overwinter on ADI and, for these, mean arrival date was not calculated (although all, with the exception of Song Thrush, also occur equally or more commonly as passage migrants, mainly in the early spring period). One species, Eastern Olivaceous Warbler, has a small breeding population (as well as occurring on passage) and hence is classified in Table 2 as resident, with no mean departure date calculated.

When analysing the results of this study, it is important to bear in mind the extreme yearly variation in abundance of many of the species that use the area on their northbound migration. Species may pass through ADI (and the UAE as a whole) in large numbers one spring then be almost absent the next. Ortolan Bunting and Tree Pipit are examples of this,

Table 1. The 41 species (scientific names in Table 2) with a bird-day total equal to or exceeding 50 for the whole study period (n). Total birds per hour for each year of the study period is presented and mean BPH over the study period (with associated standard deviation and coefficient of variation).

	n	2007	2008	2009	2010	2011	2012	2013	2014	Mean BPH	SD	CV
European Nightjar	94	0.14	0.13	0.11	0.02	0.08	0.02	0.03	0.12	0.083	0.051	0.622
European Roller	337	0.49	0.08	0.22	0.45	0.25	0.40	0.16	0.32	0.297	0.144	0.487
European Bee-eater	257	0.30	0.73	0.21	0.01	0.20	0.18	0.15	0.01	0.222	0.230	1.033
Eurasian Hoopoe	502	0.05	0.67	0.32	0.27	0.41	0.48	0.65	0.50	0.419	0.207	0.493
Red-backed Shrike	375	0.07	0.35	0.40	0.43	0.10	0.10	0.69	0.37	0.314	0.214	0.682
Daurian Shrike	529	0.47	0.48	0.66	0.43	0.70	0.33	0.39	0.26	0.464	0.153	0.329
Turkestan Shrike	788	0.45	0.35	0.56	0.44	0.64	0.84	1.23	0.78	0.662	0.288	0.435
Lesser Grey Shrike	50	0.00	0.02	0.06	0.04	0.08	0.05	0.08	0.02	0.042	0.028	0.664
Mauryan Grey Shrike	164	0.17	0.01	0.08	0.14	0.19	0.31	0.12	0.12	0.142	0.086	0.607
Woodchat Shrike	145	0.10	0.10	0.05	0.04	0.11	0.40	0.14	0.06	0.123	0.117	0.953
Barn Swallow	201	0.17	0.15	0.07	0.13	0.23	0.39	0.18	0.06	0.172	0.105	0.609
Willow Warbler	761	0.52	0.74	0.10	1.34	0.24	0.29	1.36	0.52	0.638	0.482	0.755
Common Chiffchaff	382	0.52	0.11	0.32	0.19	0.38	0.22	0.46	0.42	0.328	0.143	0.436
Marsh Warbler	961	0.43	0.42	0.91	1.28	0.47	0.94	1.38	0.74	0.820	0.377	0.460
Eastern Olivaceous Warbler	674	0.65	0.59	0.57	0.41	0.54	0.61	0.65	0.62	0.579	0.079	0.136
Upcher's Warbler	173	0.08	0.29	0.09	0.19	0.39	0.07	0.08	0.03	0.151	0.129	0.854
Eurasian Blackcap	125	0.05	0.09	0.07	0.04	0.04	0.26	0.18	0.11	0.104	0.077	0.743
Barred Warbler	138	0.00	0.05	0.02	0.02	0.11	0.46	0.19	0.06	0.114	0.153	1.343
Lesser Whitethroat [All taxa]	221	0.08	0.27	0.09	0.13	0.17	0.13	0.29	0.31	0.184	0.092	0.499
Common Whitethroat	255	0.12	0.21	0.14	0.21	0.18	0.24	0.42	0.18	0.214	0.091	0.427
Ménétries's Warbler	171	0.18	0.06	0.08	0.10	0.19	0.17	0.15	0.23	0.146	0.060	0.407
Song Thrush	551	0.10	0.46	1.39	0.18	1.24	0.28	0.08	0.25	0.496	0.520	1.048
Rufous-tailed Scrub Robin	228	0.25	0.24	0.16	0.15	0.34	0.18	0.15	0.12	0.198	0.072	0.365
Spotted Flycatcher	811	0.64	1.01	0.73	0.56	0.78	0.49	0.56	0.83	0.700	0.172	0.246
Common Nightingale	349	0.24	0.54	0.28	0.16	0.48	0.41	0.15	0.16	0.303	0.154	0.507
White-throated Robin	68	0.02	0.13	0.00	0.00	0.01	0.07	0.06	0.15	0.055	0.057	1.027
Common Redstart	971	0.40	1.71	0.57	0.42	0.73	0.89	0.88	0.97	0.819	0.419	0.512
Common Rock Thrush	182	0.05	0.24	0.06	0.11	0.17	0.32	0.14	0.15	0.154	0.091	0.595
Whinchat	247	0.01	0.35	0.18	0.07	0.13	0.26	0.51	0.11	0.203	0.166	0.820
Northern Wheatear	315	0.13	0.11	0.22	0.13	0.21	0.43	0.69	0.17	0.260	0.200	0.770
Isabelline Wheatear	747	0.24	0.37	0.61	0.42	0.54	1.53	1.02	0.33	0.632	0.434	0.687
Desert Wheatear	92	0.08	0.04	0.10	0.05	0.18	0.05	0.09	0.05	0.080	0.047	0.588
Eastern Black-eared Wheatear	78	0.03	0.06	0.06	0.04	0.00	0.12	0.16	0.05	0.064	0.052	0.810
Pied Wheatear	736	0.27	0.18	0.79	0.43	0.66	1.22	0.86	0.62	0.628	0.338	0.538
Yellow Wagtail [All taxa]	1017	0.39	0.58	0.61	0.30	0.32	0.56	3.40	0.35	0.814	1.054	1.295
White Wagtail	2762	0.16	1.58	2.18	1.71	3.11	4.47	2.87	2.63	2.339	1.267	0.542
Tawny Pipit	178	0.09	0.02	0.12	0.19	0.24	0.43	0.06	0.08	0.156	0.133	0.855
Tree Pipit	717	0.40	0.56	0.61	0.02	0.40	0.43	1.89	0.36	0.586	0.557	0.950
Red-throated Pipit	2072	2.16	0.69	1.70	0.71	1.69	1.86	4.63	0.47	1.738	1.326	0.763
Water Pipit	1251	0.30	0.33	3.20	0.19	0.86	0.98	1.72	1.08	1.085	0.995	0.917
Ortolan Bunting	919	0.07	1.23	0.66	0.00	1.21	0.92	1.89	0.04	0.753	0.686	0.911

but there are many others. Such variation is well known from other migration studies in the region (*eg* Shirihai 1996). Reasons for this variation are currently poorly understood but likely to include, amongst others, weather conditions during time of peak passage (both locally and elsewhere on the flight path) and variation in breeding success and winter survival.

Table 2. Mean first arrival and mean last departure dates, 2007–2014, for each species of Table 1, with standard deviation in days. For example, mean arrival date of European Nightjar had a SD of 7.41 days either side of 24 April.

		Arrival	SD	Departure	SD
European Nightjar	*Caprimulgus europaeus*	24 Apr	7.41	11 May	5.50
European Roller	*Coracias garrulus*	18 Apr	4.39	17 May	5.55
European Bee-eater	*Merops apiaster*	20 Apr	13.36	2 May	13.95
Eurasian Hoopoe	*Upupa epops*	overwinterer		30 Apr	9.19
Red-backed Shrike	*Lanius collurio*	27 Apr	9.64	18 May	5.85
Daurian Shrike	*Lanius isabellinus*	overwinterer		15 Apr	14.75
Turkestan Shrike	*Lanius phoenicuroides*	6 Mar	1.35	12 May	7.67
Lesser Grey Shrike	*Lanius minor*	26 Apr	5.39	10 May	6.92
Mauryan Grey Shrike	*Lanius pallidirostris*	overwinterer		9 Apr	16.95
Woodchat Shrike	*Lanius senator*	3 Mar	4.24	10 Apr	21.49
Barn Swallow	*Hirundo rustica*	3 Mar	16.00	16 May	4.65
Willow Warbler	*Phylloscopus trochilus*	11 Apr	7.85	23 May	4.19
Common Chiffchaff	*Phylloscopus collybita*	overwinterer		14 Apr	11.46
Marsh Warbler	*Acrocephalus palustris*	1 May	4.18	26 May	3.46
Eastern Olivaceous Warbler	*Iduna pallida*	resident			
Upcher's Warbler	*Hippolais languida*	9 Apr	11.67	14 May	8.01
Eurasian Blackcap	*Sylvia atricapilla*	7 Apr	15.32	9 May	7.93
Barred Warbler	*Sylvia nisoria*	18 Apr	6.71	14 May	9.02
Lesser Whitethroat [All taxa]	*Sylvia curruca*	overwinterer		5 May	25.02
Common Whitethroat	*Sylvia communis*	15 Apr	27.51	21 May	4.50
Ménétries's Warbler	*Sylvia mystacea*	3 Mar	10.53	16 Apr	18.93
Song Thrush	*Turdus philomelos*	overwinterer		8 Apr	20.51
Rufous-tailed Scrub Robin	*Cercotrichas galactotes*	27 Mar	13.39	15 May	6.64
Spotted Flycatcher	*Muscicapa striata*	15 Apr	3.20	23 May	2.45
Common Nightingale	*Luscinia megarhynchos*	8 Apr	10.87	21 May	6.65
White-throated Robin	*Irania gutturalis*	1 Apr	15.21	23 Apr	3.31
Common Redstart	*Phoenicurus phoenicurus*	13 Mar	16.15	16 May	3.76
Common Rock-Thrush	*Monticola saxatilis*	10 Mar	19.22	30 Apr	20.54
Whinchat	*Saxicola rubetra*	14 Apr	11.70	16 May	6.23
Northern Wheatear	*Oenanthe oenanthe*	10 Mar	12.99	30 Apr	7.86
Isabelline Wheatear	*Oenanthe isabellina*	14 Feb	12.61	1 May	8.67
Desert Wheatear	*Oenanthe deserti*	overwinterer		27 Mar	10.25
Eastern Black-eared Wheatear	*Oenanthe hispanica*	11 Mar	7.87	28 Mar	13.42
Pied Wheatear	*Oenanthe pleschanka*	28 Feb	3.15	28 Apr	9.47
Yellow Wagtail [All taxa]	*Motacilla flava*	1 Mar	8.42	9 May	3.70
White Wagtail	*Motacilla alba*	overwinterer		19 Apr	18.01
Tawny Pipit	*Anthus campestris*	3 Mar	13.77	8 Apr	19.16
Tree Pipit	*Anthus trivialis*	18 Mar	11.79	9 May	10.01
Red-throated Pipit	*Anthus cervinus*	18 Mar	16.82	5 May	7.07
Water Pipit	*Anthus spinoletta*	overwinterer		27 Mar	19.85
Ortolan Bunting	*Emberiza hortulana*	12 Apr	7.66	6 May	6.02

The coefficient of variation, calculated as the ratio of standard deviation to mean value, was used to rank species by their between-year variation in bird-days/hour and values obtained are given in Table 1. CV has been included so that the standard deviation around the annual mean values of birds/hour for each species can be expressed as a proportion. This in turn allows the extent of between-year variation of birds/hour to be compared between species. The five most variable species provide an informative cross-

section of possible explanations for some of the more extreme between-year differences observed. Barred Warbler (CV = 1.343, n = 138) is a relatively scarce migrant in the study area, although present for reasons that are not obvious in exceptionally high numbers in 2012. Such between-year variability will always have a greater effect on the CV for scarce migrants than more numerous ones. Although typically a rather furtive species, a proportion of males sing during their spring stopovers in ADI, enhancing the detectability of these individuals. In addition to the inherent between-year variation in numbers present, if the sex ratio or the proportion of males singing varies annually, as might be expected, then so will detection rate. Yellow Wagtail (CV = 1.295, n = 1017), while lacking the conspicuous near-absences of Ortolan Bunting and Tree Pipit, is prone to large influxes in some years. Such an influx happened in 2013, when peak passage coincided with severe dust storms that grounded large numbers of many migrant species. In years like this, it was easily possible to encounter several hundred individuals during the window of heaviest passage. Song Thrush (CV = 1.048, n = 551) winters in the Arabian peninsula in variable numbers. The highest annual figure for birds/hour, 1.39 in 2009, followed an extremely good winter for that species on ADI and this will have had a consequent effect on the numbers recorded during the spring. In addition to individuals that wintered locally, it is probable that numbers were swelled by birds that had wintered elsewhere in the Arabian peninsula. The occurrence and detection rates of European Bee-eater (CV = 1.033, n = 257) in the region are always erratic. Being an aerial insectivore with a strong tendency to form flocks, it is an 'all-or-nothing' species in most areas where it occurs only as a passage migrant. This is borne out by our results and the variability is exacerbated in spring (relative to autumn) by the fact that spring passage flocks rarely linger, so lowering detection rate. Like Barred Warbler, White-throated Robin (CV = 1.027, n = 68) is a scarce migrant in ADI. It is renowned for 'influx years', much anticipated and enjoyed by local birdwatchers but impossible to predict on current knowledge. In the study period, numbers recorded in 2008 and 2013 were considerably higher than average.

The slightly unstructured nature of the data collection—in particular, the less well-covered 'holiday' pentads—does render it possible that the peak passage of such species may have been missed in one particular season. However, the tendency for birds to linger in the study area for at least a few days, even on northbound migration, and the reasonably intensive coverage over eight successive years, lend credence to an alternative explanation. Variables such as population fluctuations and the (poorly understood) effects of weather on migration through the region make it more than plausible that such wide fluctuations are genuine, rather than an artefact of the methodology.

A number of species in our data set show double or even multiple peaks in passage through ADI. Reasons for this will include different subspecies (and different populations of the same subspecies) exhibiting different passage periods. Both phenomena are known from migration studies in Israel (Shirihai 1996). Where subspecies are distinguishable in the field, discussion is provided in the species accounts. Note that no trapping was undertaken, so identification to subspecific level is based solely upon plumage characteristics and not biometrics. Consequently, subspecific identifications discussed below should be regarded as tentative, although generally are based on observations of large numbers of individuals. Another reason for multiple peaks is the general tendency, in spring, for males to migrate earlier than females (Newton 2010 and references therein). Data (gathered as part of the current study but also incorporating data from other migration sites on the Arabian gulf coasts of the UAE; OC pers obs) is presented to illustrate this for three species (Red-backed Shrike, Common Redstart and Pied Wheatear) in which sexes are easily distinguishable in the field (Figures 43–45). It is possible that the double peak exhibited by *eg* Isabelline Wheatear is a product of differential timing of passage between sexes.

As anticipated, and as illustrated in many Figures in the systematic list below, most species show clear trends in periods of passage that vary little between years. Even species with particularly protracted passage periods (*eg* Common Rock Thrush) typically show a relatively narrow and consistent period during which the majority of birds move. Analysis of the dates on which annual daily maxima are recorded reveals that, in many cases, these dates fall within the same few days most years, regardless of the strength of the passage. Where appropriate, such narrow periods are noted in the systematic list.

In the species accounts, data from this study are compared with those from elsewhere in the region, where relevant and available. The most comprehensive studies, incorporating data accumulated over many years, are for Israel (Shirihai 1996), Oman (Eriksen & Victor 2013) and Cyprus (Richardson 2014). We also draw on results from a comparable study in Bahrain, conducted over three springs 1990–1992 (Hirschfeld 1995). Specific references to these studies are made by noting the country in the species accounts. Note that Richardson (2014) considers only passerines and those data presented by Eriksen & Victor (2013) are not scaled with regard to observer effort. Further, the highest counts during spring passage for many species in Oman come from Musandam, which has been covered far more extensively in April than in March or May (J Eriksen *in litt*). Whilst comparing ADI data with locations both distant and at different latitudes may seem fanciful, anecdotal observations (most easily made on rare and hence noteworthy species) suggest that sudden arrivals of migrants across a very large area of the Middle East may be timed extraordinarily closely. For example, from 21 April 2008 the southern Arava, Israel (2000 km WNW of ADI and 5° further north), witnessed a marked influx of *c*20 White-throated Robins (Anon 2008, Landsberger 2008), the first recorded in that area since April 2004. Simultaneously, a marked influx began in the UAE, with records totalling 51 bird-days countrywide during 19–27 April, compared to just five for the entire spring prior to 19 April (T Pedersen *in litt*, UAE Bird Database). Similarly, a marked influx of *Ficedula* flycatchers to Israel in mid April 2009 (Granit 2009) was matched by a smaller but locally exceptional arrival of Semi-collared Flycatchers in the UAE (records totalling 20 bird-days 14–19 April compared to four prior to this date in 2009 and an average of 5.8 bird-days 2007–2013, excluding 2009). However, in contrast, data obtained in the current study for some of the more common species (*eg* Common Whitethroat and Common Rock Thrush) also reveal marked differences in the timing of passage through ADI compared to *eg* Israel. Such differences likely relate to populations or subspecies breeding in different regions and adopting different migratory strategies, and would certainly warrant further investigation.

Variations in annual passage between years (see Table 1 and discussion above) and mean first arrival and last departure dates for each species (summarised in Table 2) are not repeated in the accounts that follow.

SYSTEMATIC LIST

European Nightjar *Caprimulgus europaeus* (Figure 2). *Uncommon migrant mid April–mid May, mainly 1–5 May*. Disorientated birds regularly occur in unlikely situations (on windowsills, under artificial shade, even on vehicle roofs), although most occur on boughs under the canopy of native woodland or, less often, in flowerbeds. Whilst most occur singly, small arrivals can result in multiple birds in quite close proximity. All records involved individuals found or inadvertently disturbed at roost. The maximum day counts were 10 (5 May 2007) and eight (3 May 2008) although an annual daily maximum of just four has been more typical since then. The timing of passage through ADI closely matches that through

both Oman and Israel, although there is no evidence of passage waves in late March and mid May–early June, as reported from Israel.

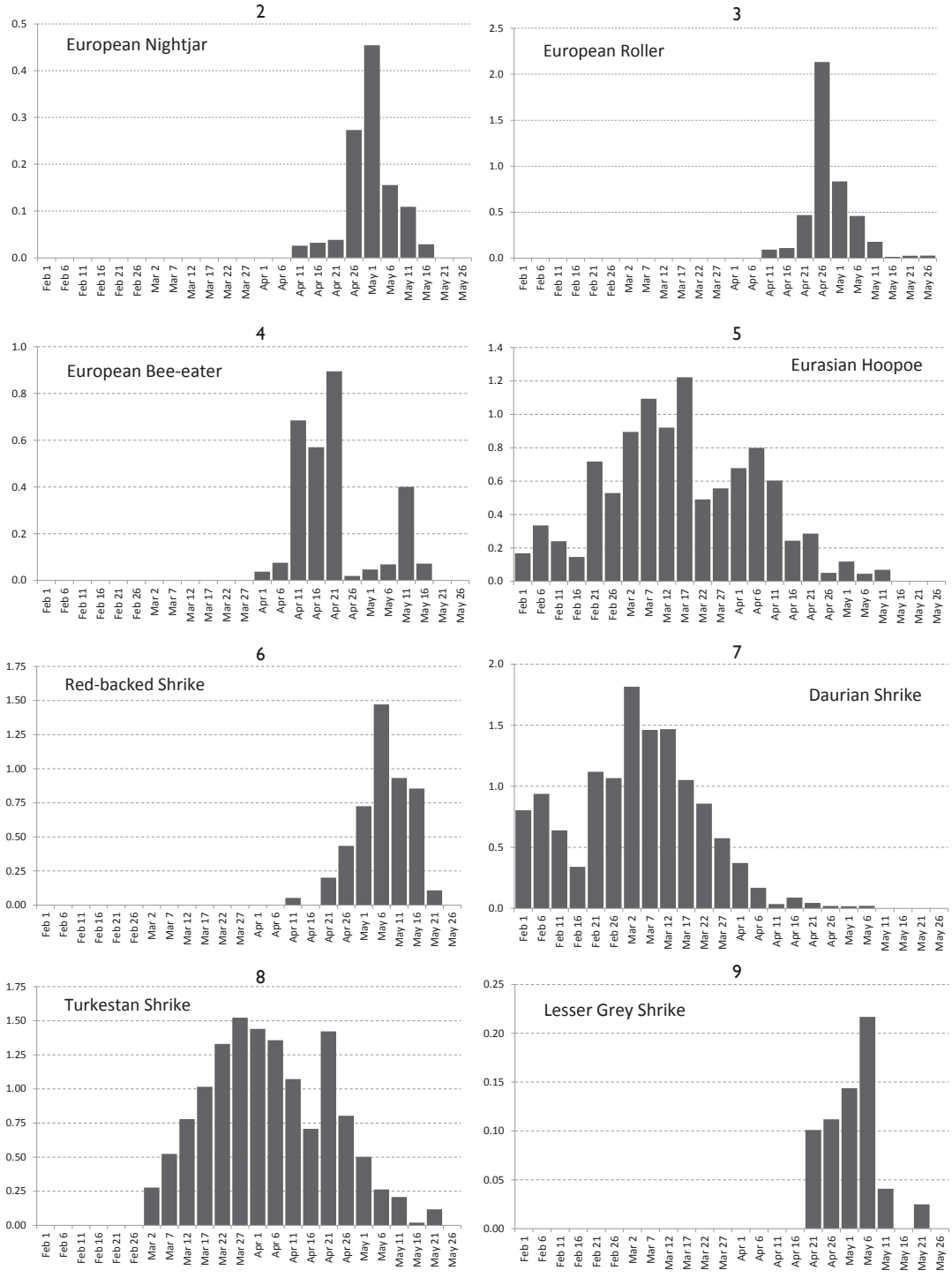
European Roller *Coracias garrulus* (Figure 3). *Common migrant mid April–May, mainly 26–30 April.* This conspicuous species often arrives in pronounced numbers, with individuals then loosely spreading out to feed. They show a strong preference for open, grassy areas with many low perches from which to forage but also utilise higher perches in native woodland. The maximum daily counts were 25 (29 April 2012) and 16 (25 April 2010, 26 April 2014). Passage timing through Oman is very similar to that through ADI, with a very marked peak in late April. In Israel, passage of this species peaks third week April–mid May.

European Bee-eater *Merops apiaster* (Figure 4). *Quite common migrant mid April–mid May, peaking 11–25 April*. This species migrates diurnally in fast-moving flocks and the all-or-nothing nature of this, coupled with significant variation between years, means that data are likely to be less reliable. Birds can appear overhead anywhere and actively migrating flocks have been observed following the leading line formed by Lulu island, in a northeast direction. The maximum daily count was 70 on 25 April 2008, all in a single flock. There was no evidence in spring of birds lingering to roost or forage (which they commonly do in autumn). Timing of passage through Oman is similar to that through ADI *ie* strongest in mid April with smaller numbers into May. The main passage through Israel is very similar, from 6–21 April. Records from Kuwait span 31 March–14 May (M Pope *in litt*). In Bahrain, the majority of birds passed in the first 10 days of April with records 27 March–19 May.

Eurasian Hoopoe *Upupa epops* (Figure 5). *Common migrant March–mid April, peaking 6–21 March, with an apparent secondary peak 1–15 April. Also an uncommon overwinterer in variable numbers*. This species shows a strong preference for open grassy areas, especially where shade exists, but will also forage on the ground under native woodland. The maximum daily counts were 14 (13 April 2013) and 12 (8 March 2008). In Oman, birds are significantly more numerous in March than April, with a similar pattern in Bahrain. Passage through ADI appears to be a little earlier than that through Israel, where the peak is third week March–third week April.

Red-backed Shrike *Lanius collurio* (Figure 6). *Common migrant late April–late May; mainly 1–20 May*. Like the following two taxa, Red-backed Shrikes on passage through ADI favour secluded perches over or adjacent to open grassy areas, although the canopy of native woodland is also used, particularly in May (perhaps in response to increased ambient temperatures). Two individual males showing characters of hybridisation between this species and Turkestan Shrike were recorded, on 11 May 2013 and 17–19 March 2014; these are excluded from the data set. Red-backed and Turkestan Shrikes show relatively low levels of reproductive isolation (Yosef *et al* 2008) and, whilst the proportion of suspected hybrids detected was very low in this study, doubtless some female hybrids were overlooked. Small multiple arrivals are quite frequent and the species shows a steady change in sex ratio through the passage period (Figure 43). Maximum daily counts were 26 (11 May 2013) and 23 (7 May 2010). Passage through ADI is slightly earlier than peak passage through Oman and Israel (main arrivals in the latter 17–27 May) but slightly later than that through Cyprus (where the spring peak occurred late April). However, it closely matches the pattern in Bahrain, where spring migration peaked first half of May.

Daurian Shrike *Lanius isabellinus* (Figure 7, Plate 4). *Winter visitor and common migrant until early April, mainly 21 February–21 March*. Widespread in almost any habitat,



Figures 2–9. Mean bird-days/h/pentad, 2007–2014, for European Nightjar, European Roller, European Bee-eater, Eurasian Hoopoe and Red-backed, Daurian, Turkestan and Lesser Grey Shrikes.

although invariably in rather low numbers; maximum daily counts were 16 (5 March 2011) and 13 (18 March 2007) although annual peaks up to seven/day are more typical. This taxon and the next, both migrating mainly through eastern Arabia, have often been considered conspecific and many older sources do not distinguish them. Campbell (2012) presented a more detailed description of the phenology and abundance of these two taxa, based on an analysis of records on ADI and elsewhere in UAE 2007–2012. Main passage through Oman, albeit based on rather few records specifically identified, is April rather than March. This taxon also winters in and passes through Bahrain, where it was recorded until 22 April. Numbers recorded there during March and the first 10 days of April were broadly comparable with *phoenicuroides*, after which records of the latter taxon dominated.

Plate 4. Daurian Shrike *Lanius isabellinus*, Dibba, UAE, February 2007. © *Nick Moran.* Common throughout the winter and as an early spring migrant through Abu Dhabi island.

Turkestan Shrike *Lanius phoenicuroides* (Figure 8). *Very common migrant early March–late May, mainly 17 Mar–15 Apr with a marked second peak 16–30 April*. As Daurian Shrike (which see for additional comments and under Red-backed Shrike for comments concerning hybridisation), this species usually passes in rather small numbers; maximum daily counts 24 (30 March 2013) and 22 (13 April 2013). Eight individual males showing characteristics of '*karelini*' (treated within *phoenicuroides* by Yosef *et al* 2008) recorded late February–early May. In ADI, Turkestan Shrike has a more protracted passage period which peaks later in spring than *L. isabellinus*, and it is virtually unknown in winter. In Oman, passage of birds identified as *L. phoenicuroides* much stronger April than March and also generally true Bahrain, where birds recorded 4 March–18 May.

Lesser Grey Shrike *Lanius minor* (Figure 9). *Uncommon migrant late April–late May, mainly 26 April–10 May*. Occurs almost exclusively over grassy areas and generally avoids shade. In common with data from elsewhere, it passes at low densities; maximum daily count four (5–6 May 2009, 8 May 2011 and 29 April 2012). Timing of spring passage through ADI is very similar to that through Bahrain, Oman and Cyprus (though this species is rare in Cyprus in spring) and broadly similar to passage through Israel, although peak numbers there are slightly later (mainly 10–14 May). In Kuwait, records range 30 April–18 May (M Pope *in litt*).

Mauryan Grey Shrike *Lanius lahtora* (Figure 10, Plate 5). *Regular winter visitor (in very small numbers) and quite common migrant late February–early April, mainly 26 February–21 March*. On passage shows distinct preference for open grassy areas and, especially scrubby desert. Numbers almost invariably small, maximum daily count 11 (9 March 2013), next highest daily maxima five (11 March 2010, 29 March 2014). All records refer to *L. l. pallidirostris*

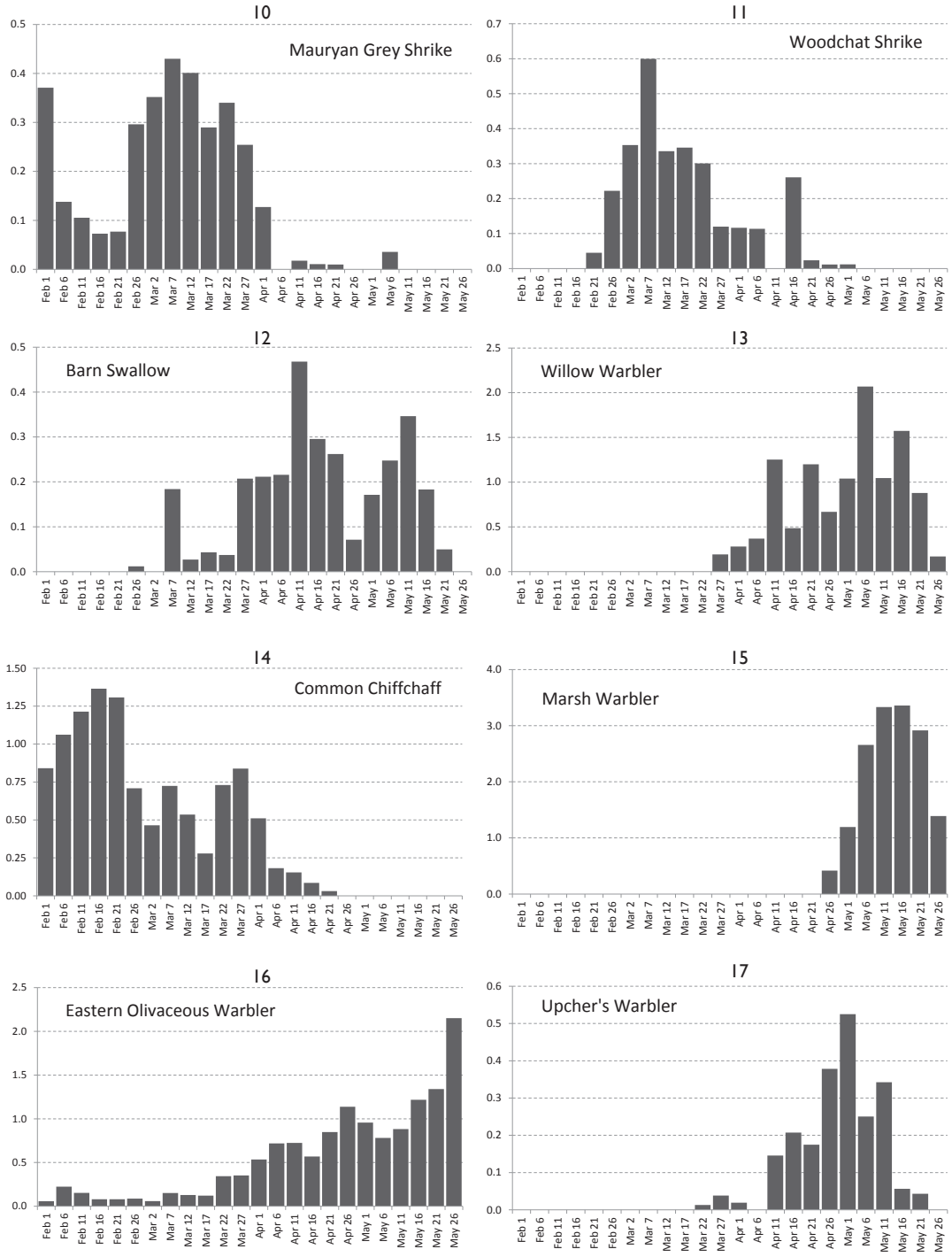
Plate 5. Mauryan Grey Shrike *Lanius lahtora*, Abu Dhabi, UAE, March 2007. © *Nick Moran* Whilst lone birds may remain throughout the winter, this species is much more numerous as a March migrant through Abu Dhabi island. All records are referable to *L. l. pallidirostris*.

(Steppe Grey Shrike although 'Steppe' is not appropriate: Panov & Bannikova 2010, OSME 2015). Spring passage through Oman difficult to detect due to wintering birds but a small peak in first three weeks of March.

Woodchat Shrike *Lanius senator* (Figure 11). *Quite common migrant late February–late April, mainly 2–26 March*. Favours open grassy areas and low scrubby desert. Numbers always small; maximum daily count eight (9 March 2012) though annual daily maxima of two or three more typical. Data from Oman, Israel and Cyprus all indicate a distinct passage peak late March–late April, *ie* rather later than ADI.

Barn Swallow *Hirundo rustica* (Figure 12). *Quite common migrant early March–mid May, peaking 1–25 April with secondary peaks 7–11 March (small) and 6–20 May*. Appears over any habitat, migrating diurnally in small flocks and never lingering; a general lack of any rich feeding opportunities on ADI contributes to this. Data likely to be less reliable. Flocks always very small; maximum daily count 26 (14 April 2012). The rather complicated pattern of movements through ADI has also been noted in Israel and Cyprus, where it is attributed to the passage of several different populations from different latitudes. In Oman, there is a small but noticeable peak in records 11 April–10 May. In Bahrain, a large build-up started in March, peak reached beginning April.

Willow Warbler *Phylloscopus trochilus* (Figure 13). *Very common migrant late March–late May, mainly 1–15 May but with a marked arrival mid April in some years*. Favours canopy of native woodland although newly arrived migrants also recorded feeding low amongst desert scrub (Campbell 2011). Numbers recorded rather modest (maximum daily counts 42 on 7 May 2010, 31 on 10 May 2008) although significant falls also recorded May in previous



Figures 10–17. Mean bird-days/h/pentad, 2007–2014, for Mauryan Grey and Woodchat Shrikes, Barn Swallow, Willow Warbler, Common Chiffchaff and Marsh, Eastern Olivaceous and Upcher's Warblers.

years (*eg* 2005, NM per obs). Passage in May often dominated by noticeably drab, greyish birds with diffuse breast streaking (presumably the eastern *yakutensis* or *acredula*). Timing of passage through ADI agrees closely with the main wave through Israel (late April–mid May) although records from Oman and Bahrain indicate a marked peak earlier than this (mid–late April).

Common Chiffchaff *Phylloscopus collybita* (Figure 14). *Common winter visitor and quite common migrant until late March (rare into April) with many wintering birds departing by early March*. Most birds favour the canopy of native woodland, underneath which they also feed on the ground and show an attraction to leaking irrigation pipes. Compared to autumn, when significant falls sometimes occur, numbers in winter and spring are rather low (maximum daily count 21 on 27 March 2014, second highest 12 on 24 March 2007). Based on plumage characteristics, call and song (quite a frequent singer during winter and early spring) virtually all referable to *P. c. abietinus*, a similar situation to that indicated by ringing studies in Eastern province, Saudi Arabia (J Babbington *in litt*). Timing in Oman very similar to that through ADI and neither show the marked peak reported in Israel, Bahrain and Cyprus late March. In Kuwait, occurs quite frequently throughout April (M Pope *in litt*).

Marsh Warbler *Acrocephalus palustris* (Figure 15). *Very common migrant late April–late May, mainly 6–25 May*. A classic late spring migrant through eastern Arabia and, whilst often unobtrusive, large arrivals occur each year. Birds may occur in any habitat, including exotic shrubbery and flowerbeds that likely offer limited foraging possibilities. Due to this ready utilisation of most microhabitats, counts are often much lower in ADI than they are in 'hotspots' of small parks and plantations in barren desert in the western region of Abu Dhabi emirate (OC pers obs). Maximum daily count 34 (5 May 2013) although this was rather early; in most years maximum daily count 9–16 May (*eg* second-highest maximum daily count 25 on 11 May 2013). Data from Oman shows dramatic peak first two thirds of May and all records from a Kuwait ringing study were 22 April–24 May (Cleere & Kelly 2009) with most 30 April–14 May (M Pope *in litt*). Marsh Warbler takes an easterly route through Arabian peninsula in spring and hence absent from Cyprus then; uncommon in Jordan (Khoury 2003) and Israel (main passage coincides closely with that through ADI).

Eastern Olivaceous Warbler *Iduna pallida* (Figure 16). *Localised but quite common (and conspicuous) breeding resident and passage migrant*. Breeding birds, exclusively in shady native woodland, mask passage of migrants through ADI but analysis of records from sites not utilised for breeding indicate passage mid April–mid May, mainly 26 April–15 May. The pattern of records of migrants from other (non-breeding) locations across the UAE (mainly on the Arabian gulf coast) broadly concur with this (OC pers obs). The maximum daily count in this study, which will include some breeding birds, was 11 (28 April 2007). Passage through Oman is concentrated mid April–mid May, whilst records from Israel and Cyprus peak a little later (mid and late May respectively). One of the two main known breeding sites, Khalidayah spit, was destroyed by development in 2010 and an estimate of *c*100 breeding pairs for ADI (Aspinall 2010) is now almost certainly far too high.

Upcher's Warbler *Hippolais languida* (Figure 17). *Quite common migrant late March–late May, mainly 26 April–10 May*. Predominantly in edges of canopy in native woodland but will also accept scrub on desert fringes. Never numerous; maximum daily count nine (10 May 2008, 1 May 2011) although annual daily maxima of five or less individuals more typical. Strong passage through Oman from mid April, earlier than peak passage in ADI, although

in Israel, where the species is rare in spring, most records from second half May. In Kuwait, timing of passage 27 April–10 May (M Pope *in litt*) and hence similar to Abu Dhabi.

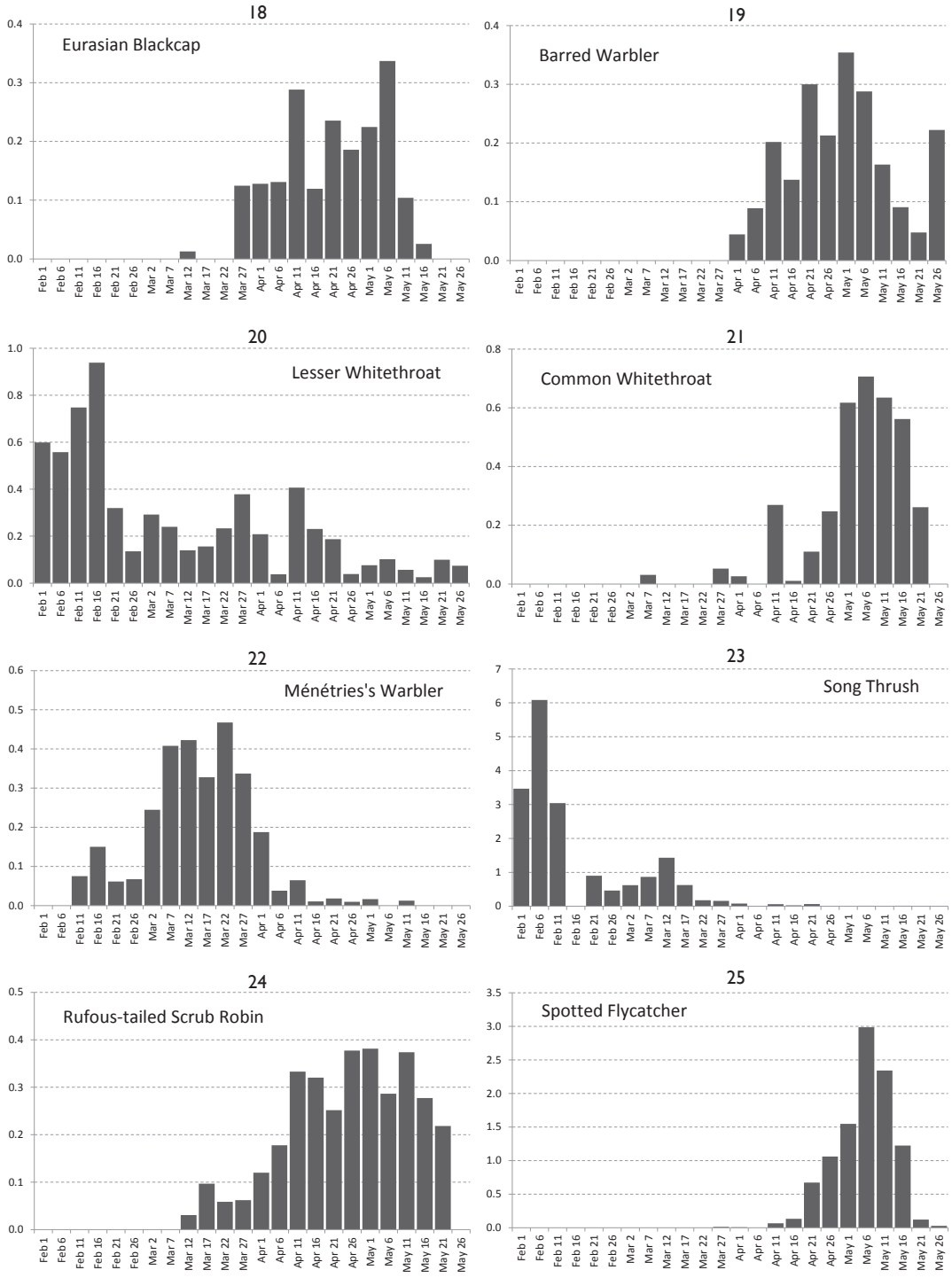
Eurasian Blackcap *Sylvia atricapilla* (Figure 18). *Quite common migrant late March–mid May, peaking 26 April–10 May with a secondary peak 11–15 April*. On passage through ADI, most birds favour canopy of native woodland, from where they are often heard singing. This species is much more numerous in the eastern Mediterranean region and Kuwait (OC pers obs); numbers recorded in our study were comparatively very small, maximum daily count four (23 April and 7–8 May 2013, 30 March 2012 and 11 April 2014). Timing of passage through Abu Dhabi broadly matches that in Oman, Bahrain, Israel and Cyprus.

Barred Warbler *Sylvia nisoria* (Figure 19). *Quite common migrant mid April–mid May, peaking 21 April–10 May*. In 2012 individuals remained, singing, into June. Barred Warbler favours canopy of tall native woodland from where they regularly sing but new arrivals will also frequent low plantation trees on the edges of scrubby desert. Maximum daily count five on 26 April 2013. Passage through Oman, where there are few May records, is earlier than ADI but in Israel the main passage, in two arrivals, coincides with ADI. Peak passage through Bahrain occurred late April.

Lesser Whitethroat *Sylvia* [*curruca*] (Figure 20). *Common winter visitor and migrant to mid April, and uncommon migrant to late May*. Apparent peak in February likely to be due to overwintering birds (possibly singing and becoming more conspicuous prior to departure) as passage not noted Bahrain, Israel or Cyprus then. Accepts any areas of native woodland, including plantations. Whilst frequent and widespread, numbers often rather low; maximum daily count nine (27 March 2014). Taxonomic identity in eastern Arabian peninsula has long been uncertain; formerly *minula* was default form (*eg* Aspinall & Porter 2011) but Olsson *et al* (2013) suggested *halimodendri* to be more likely. Vast majority of birds in this study and elsewhere in the UAE, correspond to *halimodendri*-type birds but those in May (and sometimes in obvious arrivals as early as late March) are noticeably cleaner, greyer and somewhat larger and may represent nominate *curruca* or possibly *blythi* (Svensson 1992). The extreme difficulty of distinguishing the various taxa within *S. curruca* in the absence of trapping and biometric data, confounds a more detailed analysis of the phenology of this species complex through ADI. Data from trapped birds in Saudi Arabia and Bahrain (J Babbington *in litt*) suggest that both *halimodendri* and *curruca* types occur at those locations, although, as in ADI, the latter are much less common and occur mainly on passage in April and early May.

Common Whitethroat *Sylvia communis* (Figure 21). *Common migrant 26 April–25 May; very uncommon prior to this period*. Perhaps surprisingly, given the timing of this species' migration further west in its range *eg* Israel (see below), a decidedly late spring migrant through ADI. It favours canopy of native woodland but also ground cover comprising low, exotic shrubs. Daily numbers are generally quite low; maximum daily counts 13 on 9 May 2008, 10 on 7 May 2010). Most birds appear to be *S. c. icterops* or, perhaps more likely, the very similar, more easterly breeding *S. c. rubicola* (Cramp 1992). Timing of passage through ADI closely matches that through Bahrain and Oman (where *icterops* is stated to occur) but through Israel is noticeably different, peaking March–April, with most birds identified as *icterops* reported February–March.

Ménétries's Warbler *Sylvia mystacea* (Figure 22). *Quite common migrant 2 March–5 April with a (small) secondary peak mid February*. Probably, at least occasionally, overwinters on ADI. Although utilising native woodland like other *Sylvia*, this species shows a strong



Figures 18–25. Mean bird-days/h/pentad, 2007–2014, for Eurasian Blackcap, Barred Warbler, Lesser and Common Whitethroats, Ménétries's Warbler, Song Thrush, Rufous-tailed Scrub-Robin and Spotted Flycatcher.

preference for low plantations on the edge of scrubby desert, where it may be locally numerous; maximum daily counts 13 (27 March 2014) and 11 (4 March 2011). At least some males, being obviously rosy-washed on the breast in spring, are nominate *S.m. mystacea* or *S. m. turcmenica* (Cramp 1992). Ménétries's Warbler migrates predominantly through eastern Arabia, being rare in Israel, but shows a marked peak throughout March Oman and Bahrain. Most spring records Kuwait mid–late March (M Pope *in litt*).

Song Thrush *Turdus philomelos* (Figure 23). *Common winter visitor to late February and uncommon passage migrant mainly mid March*. Favours ground below native woodland but also utilises undisturbed, open grassland, as long as sufficient shady vegetation nearby. Most individuals shy and unobtrusive, especially on arrival in autumn, although often tamer as winter progresses. Numbers frequently low, but occasional winter influxes result in larger counts. Maximum daily count 50 (7 and 9 February 2009) but less than 15 is typical in non-influx years. Most individuals have departed by March and migrants very rare into April. Data from Oman, Bahrain, Cyprus and Kuwait (M Pope *in litt*) show similar steady declines in records throughout the early spring. A marked passage 26 February–10 March documented in Israel but not detected in our study.

Rufous-tailed Scrub Robin *Cercotrichas galactotes* (Figure 24, Plate 6). *Quite common migrant mid March–late May, mainly 10 April–25 May*. This species occurs at ground level in any shady areas and numbers are always small; maximum daily counts seven (6 May 2007) and six (13 May 2011). Migrants in May sometimes sing and perform song-flights but June records very infrequent. Birds obviously grey-tinged on the back and probably *C. g. familiaris*. Passage tails off rather sooner in Oman and Bahrain (few records from either after 10 May) than ADI and our study gave no strong evidence for the double peak exhibited in Israel late April and mid May.

Plate 6. Rufous-tailed Scrub Robin *Cercotrichas galactotes*, Sila'a, UAE, April 2010. © *Oscar Campbell.* This species is much more numerous as a migrant through westernmost UAE (where it breeds) than Abu Dhabi island.

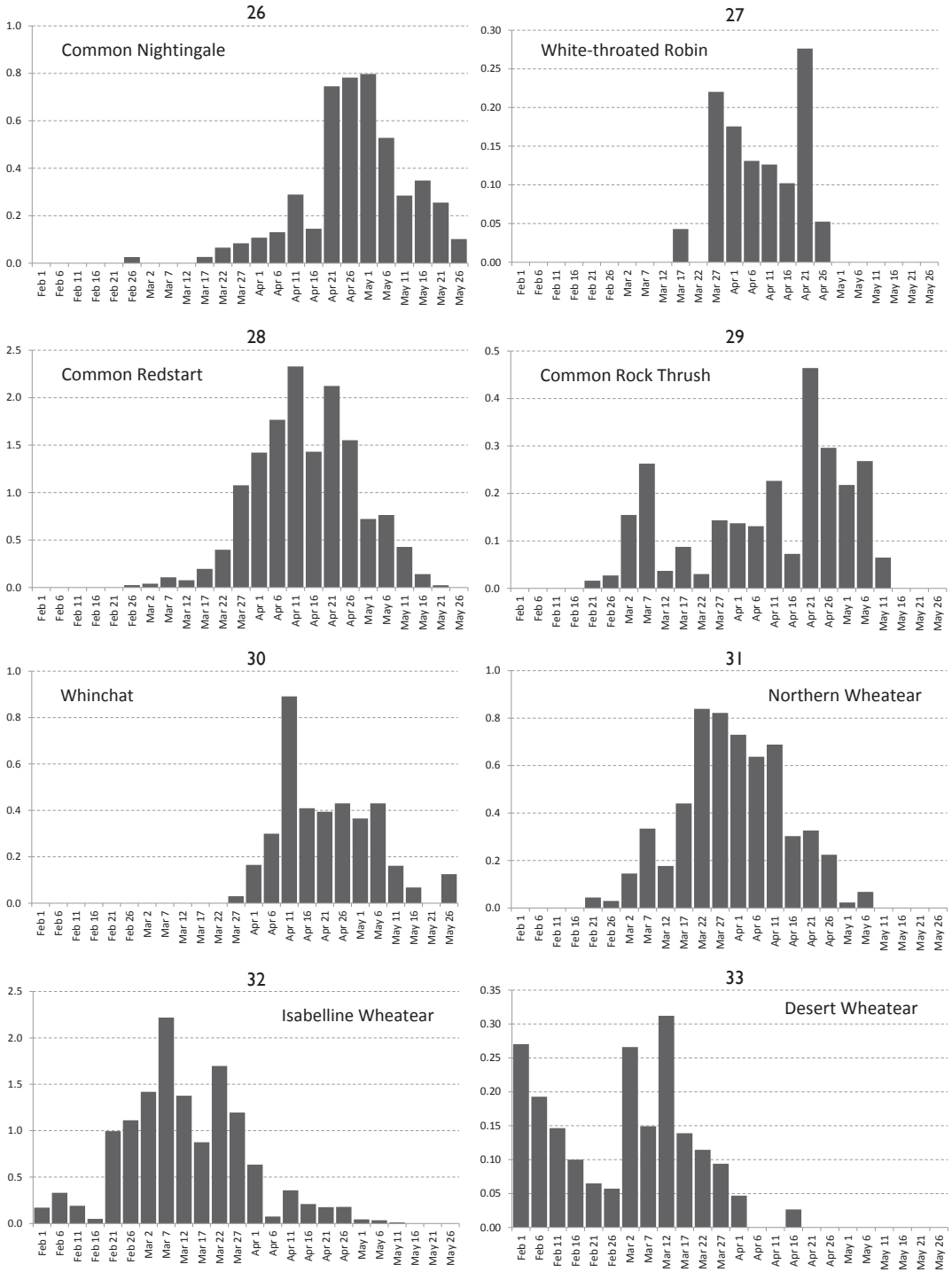
Plate 7. Spotted Flycatcher *Muscicapa striata*, Al Wathba lake, UAE, May 2013. © *Oscar Campbell.* A common and sometimes numerous migrant through Abu Dhabi island, mainly May.

Spotted Flycatcher *Muscicapa striata* (Figure 25, Plate 7). *Very common migrant mid April–late May, mainly 1–20 May*. Utilises a wide range of habitats as long as low perches are available from which to forage. Birds are widely scattered but major arrivals result in sharp peaks; maximum daily count 49 (9 May 2008) although 20 or fewer is more typical in most years. Generally, highest day counts fall within 5–12 May but in both 2012 and 2013 the peak fell earlier (26–28 April). Timing of passage through Oman, Bahrain and Cyprus is very similar to that of ADI, whilst Israel witnesses a large peak early May.

Common Nightingale *Luscinia megarhynchos* (Figure 26, Plates 8, 9). *Very rare overwinterer and common migrant late March–late May, with marked peak 21 April–15 May*. A strong

Plate 8 (left). Common Nightingale *Luscinia megarhynchos*, Abu Dhabi, UAE, April 2014. © *Oscar Campbell.* The vast majority of migrant Common Nightingales through Abu Dhabi island are identifiable as *L.* (*m.*) *golzi*, a taxon sometimes given specific status. The rather obvious pale supercilium, pale fringes to the wing coverts, greyish tinge to the upperparts and long tail are all distinctive in the field.

Plate 9 (right). Common Nightingale *Luscinia megarhynchos*, Abu Dhabi, UAE, April 2008. © *Oscar Campbell.* A very small minority of Common Nightingales using Abu Dhabi island are markedly plain on the head and wing coverts and richly russet-brown on the upperparts. Such birds are referable to *L. m. africana* or (perhaps less likely on range) nominate *L. m. megarhynchos.*



Figures 26–33. Mean bird-days/h/pentad, 2007–2014, for Common Nightingale, White-throated Robin, Common Redstart, Common Rock Thrush, Whinchat and Northern, Isabelline and Desert Wheatears.

Plate 10. White-throated Robin *Irania gutturalis*, Al Ain, UAE, April 2008. © *Oscar Campbell.* An uncommon migrant through Abu Dhabi island in highly variable numbers, mainly April. As with a number of other more common species, there is a marked difference in timing of migration between the sexes.

preference for low perches in native woodland and often sings strongly in the early morning, especially later in spring. In four springs during the eight-year study period, the daily maxima were 21–24 April; maximum daily counts 13 (22 April 2008) and 10 (2 May 2011). As in Oman, the vast majority of birds are clearly referable to Eastern Nightingale *L.* (*m.*) *golzii* (very rare western Arabia and Israel) although a few show plumage characters reminiscent of nominate *megarhynchos* (Campbell 2014). As would be anticipated for different taxa inhabiting different breeding ranges, spring passage peaks rather earlier in Israel and Cyprus than in this study, although timing in Oman and Bahrain is similar to ADI.

White-throated Robin *Irania gutturalis* (Figure 27, Plate 10). *Uncommon migrant late March–late April, mainly 27 March–10 April and 20–30 April*. Uses any area with significant ground cover, including ornamental hedgerows and scrubby desert. It is a virtually annual migrant through ADI in highly variable numbers and the first peak in passage is invariably dominated by males; maximum daily counts 9 (including eight males, 29 March 2014) and five (22 April 2008 and 29 March 2013). The obvious double peak in ADI is not detectable in data from Oman, where almost all records are April, mainly the middle third. In Bahrain the monthly spread of records over a 3-year period was six March, 18 in April and two May. Except in exceptional influx years, this species does not make staging stops in Israel, despite breeding in the far north of that country.

Common Redstart *Phoenicurus phoenicurus* (Figure 28, Plates 11, 12). *Very common migrant early March–mid May, mainly April*. Occurs anywhere there is shade and some open ground for foraging. Passage of nominate birds during April is often strong and this is often the most obvious migrant in native woodland then; maximum day count 30 (11 April 2008). In most years, maximum daily count occurs 11–25 April. Prior to the current study, during an exceptionally large (and late) arrival in 2005, 89 were recorded 3 May alone (NM *pers obs*). The relative proportion of each sex changes markedly during April (Figure 44) with peak passage of males preceding that of females by *c*10 days. A very small

Plate 11 (left). Common Redstart *Phoenicurus phoenicurus*, Sila'a, UAE, March 2014. © *Oscar Campbell.* A very common migrant through Abu Dhabi island, mainly April. Uncommon late February–mid March, during which period most males are the more southerly-breeding *P. p. samamisicus*.

Plate 12 (right). Common Redstart *Phoenicurus phoenicurus*, Abu Dhabi, UAE, March 2014. © *Oscar Campbell.* Female *P. p. samamisicus* are generally regarded as indistinguishable from nominate females. However, some females, invariably seen early in the season, are somewhat different from females seen April–May, being strikingly grey-toned above and exhibiting a pale panel on the folded wing.

peak in early March comprises mainly *P. p. samamisicus* and passage of this taxon, despite low numbers, is also detectable in the data detailing relative proportions of males and females (Figure 44). Data from Oman shows an even more marked peak in April, presumably *P. p. phoenicurus*, but remarkably few May records, whilst those from Bahrain are very similar to ADI. Peak migration through Israel is mainly March–April, hence a little earlier than ADI; passage in Israel exhibits a similar marked difference in timing between sexes and, based on males, a similar early arrival of *samamisicus*.

Plate 13. Common Rock Thrush *Monticola saxatilis* Al Ain, UAE, March 2006. © *Nick Moran.* This species is notable for its very protracted passage period through Abu Dhabi island, perhaps surprising given that its breeding range spans a rather narrow band of southerly latitudes within the Palearctic.

Common Rock Thrush *Monticola saxatilis* (Figure 29, Plate 13). *Quite common migrant late February–mid May, mainly 1–16 March (not every year) and, especially, 20 April–10 May*. Whilst generally occurring at low densities, this conspicuous species appears to show some evidence of a change in habitat choice during spring; most early records are from grassy lawns or scrubby desert whilst May birds preferentially use the shady underside of native woodland canopy; maximum daily count seven (21 April 2013) and five (8 March 2008). This species has a remarkably protracted period of passage and is regularly recorded across the UAE from early February or even late January (UAE Bird Database, T Pedersen *in litt*). Oman shows

a similar marked spike in passage in late April, although no peak in early March, while records from Bahrain were spread 6 March–14 May, peaking in late April and early May. In Israel timing is significantly different, with birds absent prior to mid March and passage peaking 25 March–10 April.

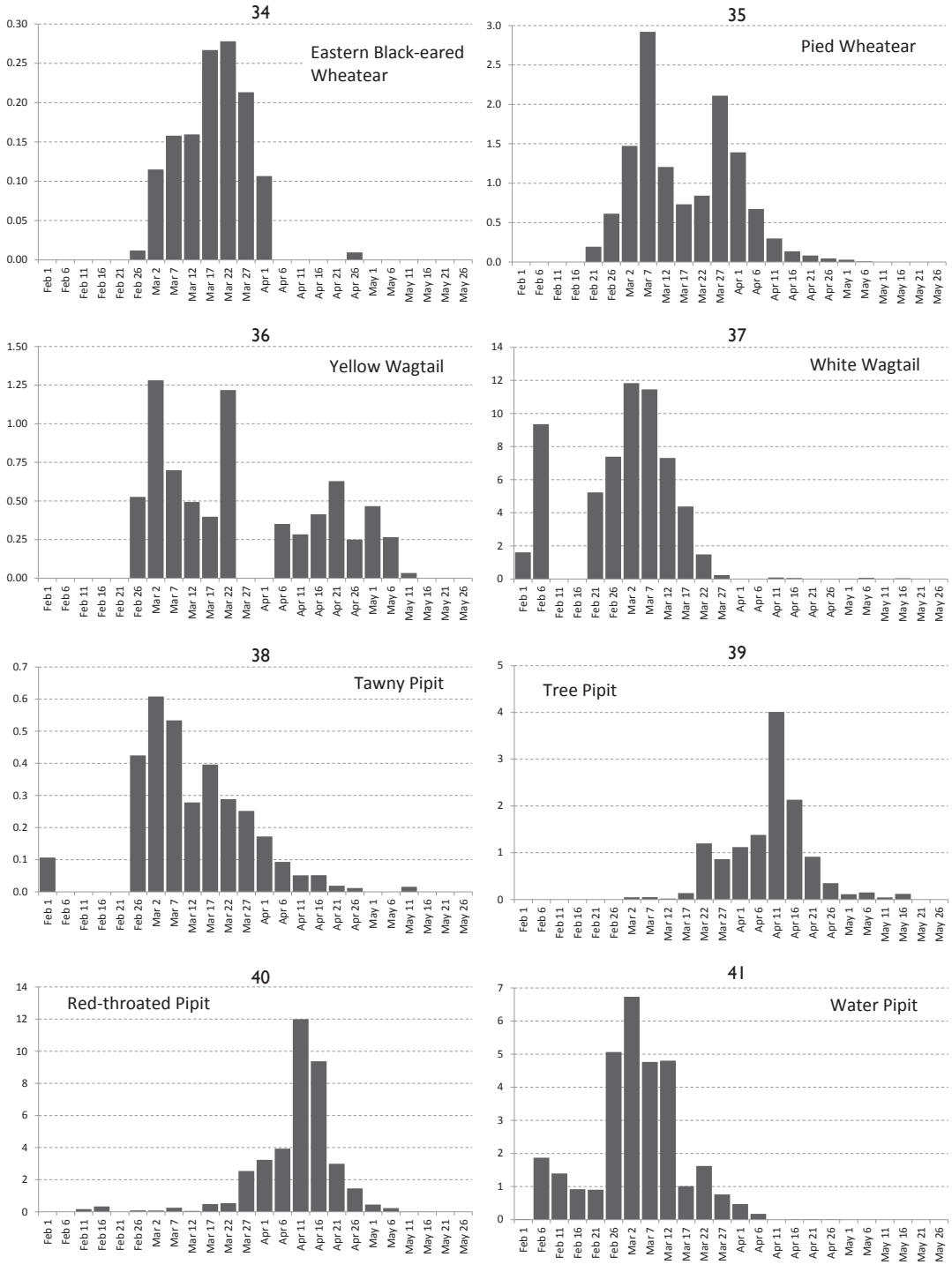
Whinchat *Saxicola rubetra* (Figure 30). *Quite common migrant late March–late May, mainly 10 April–10 May. A marked peak 10–20 April is almost entirely due to an exceptional influx in 2013 and normally passage peaks slightly later than this, from 16 April–10 May*. Favours open grassy areas with convenient perches and normally occurs at low densities; maximum daily count (excluding 2013) was seven (26 April 2012). In 2013, a count of 37 on 13 April was unprecedented. Oman shows a peak 11–30 April and in Bahrain migration peaked late April and early May, with females slightly more dominant in the latter part of the period. Peak passage in Cyprus and Israel is also from late April and early May; there was no evidence during our study for the peak exhibited in the third week of May seen in some years in Israel.

Northern Wheatear *Oenanthe oenanthe* (Figure 31, Plate 14). *Common migrant, late February–early May with a broad peak 22 March–20 April*. Utilises open grassy areas (although also occurs in scrubby desert to a lesser extent); maximum daily count 23 (13 April 2013) but annual daily maxima of up to 10 are more typical. Commensurate with a breeding range at much greater latitudes, this species is a later migrant than the more southerly breeding wheatears. Data from Oman, Bahrain, Israel and Cyprus show a similar pattern to our study.

Plate 14. Northern Wheatear *Oenanthe oenanthe*, Abu Dhabi, UAE, March 2011. © *Oscar Campbell.* On average, the last wheatear species to migrate through Abu Dhabi island in spring.

Isabelline Wheatear *Oenanthe isabellina* (Figure 32). *Very common migrant early February–early May, peaking 26 February–26 March*. Preference for open, scrubby desert areas and, to a lesser extent, grassy lawns. Small arrivals quite frequent early February but normally peaks first half March; maximum daily counts were 38 (9 March 2012) and 26 (13 March 2012). A daily maximum in 2013 of 19 on 29 March was rather late; normally annual daily maxima fall in the first half of March. Although numbers are small throughout April, passage is quite protracted with birds often appearing as late as early May. Passage in Oman shows a much smaller peak in March and disproportionately more in early April whilst passage in Bahrain and Cyprus shows a comparable pattern to ADI, with a similarly protracted passage period. In Kuwait, passage peaks late February–March (M Pope *in litt*).

Desert Wheatear *Oenanthe deserti* (Figure 33, Plate 15). *Uncommon winter visitor and uncommon migrant to late March and very rare to mid April*. Mainly occurs sparsely vegetated desert or, to a much lesser extent, open grassy areas, hence finds limited suitable habitat within the study area. Wintering birds depart from February, followed by a pronounced



Figures 34–41. Mean bird-days/h/pentad, 2007–2014, for Eastern Black-eared and Pied Wheatears, Yellow and White Wagtails, Tawny, Tree, Red-throated and Water Pipits.

but minor influx of migrants 2–26 March; maximum daily count five (5 February 2009) and presumably comprised some wintering birds. Data from Oman show a steady decline of records during early spring and little evidence of passage, in contrast to Israel which witnesses a limited passage in March and, to lesser extent, April. Most have departed Kuwait by mid March (M Pope *in litt*).

Plate 15. Desert Wheatear *Oenanthe deserti*, Abu Dhabi, UAE, December 2008. © *Nick Moran.* Passage of this species through Abu Dhabi island is small, although it is a widespread and rather common overwinterer in suitable habitat across the UAE.

Eastern Black-eared Wheatear *Oenanthe* (*hispanica*) *melanoleuca* (Figure 34). *Uncommon migrant end February–early April, mainly 12–31 March*. Occurs in similar habitats to Pied Wheatear (although seemingly found more often in or alongside sparse cover). A generally erratic and uncommon migrant, reflecting its breeding areas predominately well to the northwest of UAE (Collar 2005a). Small arrivals sometimes occur; maximum daily count eight (27 March 2013). Annual daily maxima normally second half March, and so on average later than Pied Wheatear. (Some females, especially in the early years of the study, could not be distinguished from Pied Wheatear, and such individuals have been omitted as also was one obvious male Black-eared × Pied Wheatear hybrid). In Oman, Eastern Black-eared Wheatear is peculiarly rare considering its status in UAE (31 records Oman to 2013; mainly 11 March–10 April), presumably due to its more westerly breeding distribution in Asia Minor, although less observer effort may also be a factor. In Israel, where the species is very common, passage is obvious late February–10 April, whilst in Cyprus passage peaks later, 21 March–20 April. During the Bahrain study it was recorded 9 March–16 May, with an exceptional June record from outside the study period. Timing of passage in Kuwait very similar to that through ADI (M Pope *in litt*).

Pied Wheatear *Oenanthe pleschanka* (Figure 35). *Very common migrant late February–mid April, with strong double peak 2–16 March and 27 March–10 April*. See comments under Eastern Black-eared Wheatear concerning habitat usage and difficulties of identification. In autumn, big arrivals (generally early–mid October) occur almost exclusively in scrubby desert, whereas spring birds are equally accepting of open grassy areas. Unknown on ADI in winter, this species represents an obvious harbinger of spring and is prone to sudden arrivals at multiple sites; maximum daily count 57 (27 March 2014) and 40 (29 March 2013). However, daily maxima in most years are significantly lower than this and occur in the first third of March (*eg* 22 on 7 March 2008 and 35 on 9 March 2012). Males dominate passage throughout March (over 70% until 20 March) with females not dominating until 1 April (Figure 45). A very small proportion of records (1.6%) were of *vittata*, a form that comprises 2.8% of the population as a whole (Collar 2005b). 67% of *vittata* records occurred in the first third of March, the remainder evenly spread 11–31 March. Passage in Oman peaks early April, numbers appearing to increase steadily through March. In Israel, where the species is rare, passage concentrated late March–mid April with no evidence of an early March arrival. In Bahrain, timing of spring migration identical to ADI.

Yellow Wagtail [all sspp] *Motacilla flava* (Figure 36, Plates 16–18). *A quite common passage migrant late February–mid May; most numerous early–mid March and late March–mid April*. Small groups of migrants occur in open, grassy habitats, often alongside Red-throated Pipits. Note that data from 2013, when there was an exceptional arrival in mid April (mainly *M. f. beema* and, to a much lesser extent, *M. f. lutea*) have been omitted from Figure 36. Precipitated by a period of strong winds and reduced visibility due to dust and rain, that year witnessed a maximum daily count of 337 on 13 April; otherwise maximum daily counts are normally lower than 15 and fall any time between early March and late April. As determined by observations on breeding plumaged males, the four marked peaks in

Plate 16 (top). Yellow Wagtail *Motacilla flava*, Sila'a, UAE, March 2015. © *Oscar Campbell.* Of the four subspecies of Yellow Wagtail that regularly migrate through the UAE, *M. f. feldegg* is the earliest on spring migration.

Plate 17 (bottom left). Yellow Wagtail *Motacilla flava*, Abu Dhabi, UAE, May 2008. © *Nick Moran*

Plate 18 (bottom right). Yellow Wagtail *Motacilla flava*, Abu Dhabi, UAE, April 2014. © *Oscar Campbell.* Very occasionally, Yellow Wagtails resembling the Mongolian-breeding *M. f. leucocephala* have been recorded on Abu Dhabi island (also Plate 17). This subspecies has been confirmed from Turkey and Azerbaijan (Heiss & Eidam 2015) but identification is fraught with difficulty due to head pattern variability and intergrades between other subspecies. A trace of yellowish suffusion on parts of the head (more obvious on the individual featured in Plate 18, which also shows a hint of a dark loral bar) may indicate that birds such as these are intergrades.

Figure 36 correspond broadly to the passage of four different subspecies: *feldegg* (1–11 March), *beema* (possibly including some nominate *flava*, 22 March–10 April; *beema* is the most numerous taxon, as in Oman), *lutea* (16–26 April, generally scarce) and *thunbergi* (1–10 May). Discussion on birds showing characteristics of the white headed subspecies *leucocephala* is provided as the caption to Plates 17 and 18. Data from Bahrain, Eilat, Israel and Kuwait (M Pope *in litt*) indicate a very similar order of passage and timing to that through Abu Dhabi.

White Wagtail *Motacilla alba* (Figure 37). *Common winter visitor and abundant passage migrant February–late March, mainly 1–16 March*. The secondary peak in February is due to a combination of wintering birds departing and passage birds. Note that data from 2012, when there was an unprecedented and atypical arrival in mid February, have been omitted from Figure 37. A common and conspicuous visitor to grassy areas, particularly if damp. Large, rather loose flocks may occur where conditions are favourable and often coincide with the presence of many Water Pipits. The maximum daily counts of White Wagtails were 61 (10 March 2014) and 60 (8 March 2008 and 6 March 2009). Annual daily maxima invariably fall in the first third of March. All spring records refer to the nominate subspecies. Masked Wagtail *M. a. subpersonata*, a very local winter visitor and passage migrant to the UAE as a whole, was recorded once in autumn (in 2010). White Wagtail data from Oman indicates a steady decline from February onwards, although a small spring passage was detected in Cyprus 11–31 March and passage continues even later in Israel.

Tawny Pipit *Anthus campestris* (Figure 38). *Quite common passage migrant late February–late April, mainly 1–21 March*. Utilises open desert with small, scrubby bushes and, much less frequently, open grassy areas. Numbers always small; maximum day count 12 (4 March 2011 and 9 March 2012) but annual daily maxima of six or fewer more typical. Wintering birds mask any spring passage in Oman and Bahrain, but by April almost all have departed. In contrast, whilst passage peaks late March in Israel and Cyprus, it remains strong until mid April, although most passage through desert regions of Israel occurs late February–mid March. Main passage period Kuwait 1–27 March (M Pope *in litt*).

Tree Pipit *Anthus trivialis* (Figure 39). *Very common passage migrant mid March–mid May, mainly 11–20 April*. The obvious peak for this species has been exaggerated somewhat by an unprecedented influx in mid April 2013, when the maximum daily count was 125 on 13 April; in more typical years annual maximum daily count is up to 16 (19–20 April 2009 and 16 April 2011). When passage is strong, this species occurs regularly in small, loose groups, usually in grassy areas, although often near or under slight shade. Very uncommon UAE prior to mid March. Data from Oman indicates relatively small spring numbers there compared to autumn. In Bahrain, Israel and Cyprus, main passage third week March–mid April, a little earlier than ADI; no evidence in our study of a second peak late April–early May as in Israel.

Red-throated Pipit *Anthus cervinus* (Figure 40). *Abundant passage migrant mid March–mid May, mainly 11–25 April*. Although overwintering in small numbers at a few favoured sites in UAE, very rare on ADI before 17 March. By April the species is normally common and obvious, often in loose flocks with Yellow Wagtails in open, grassy habitats; maximum daily count 308 (13 April 2013) during an exceptional influx. More typical annual daily maxima 70 (16 April 2007) and 69 (16 April 2011). In most years annual daily maxima are 12–20 April. Data from Oman, Bahrain, Cyprus and Israel all indicate marked April passage, although a strong arrival third week of May in Israel does not occur ADI.

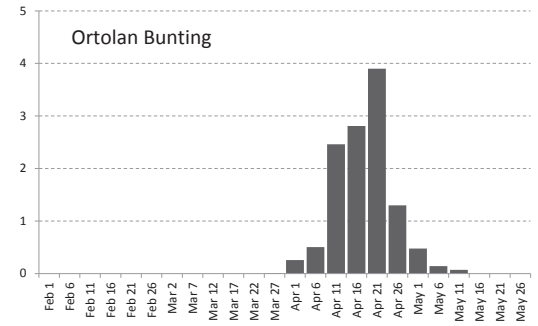
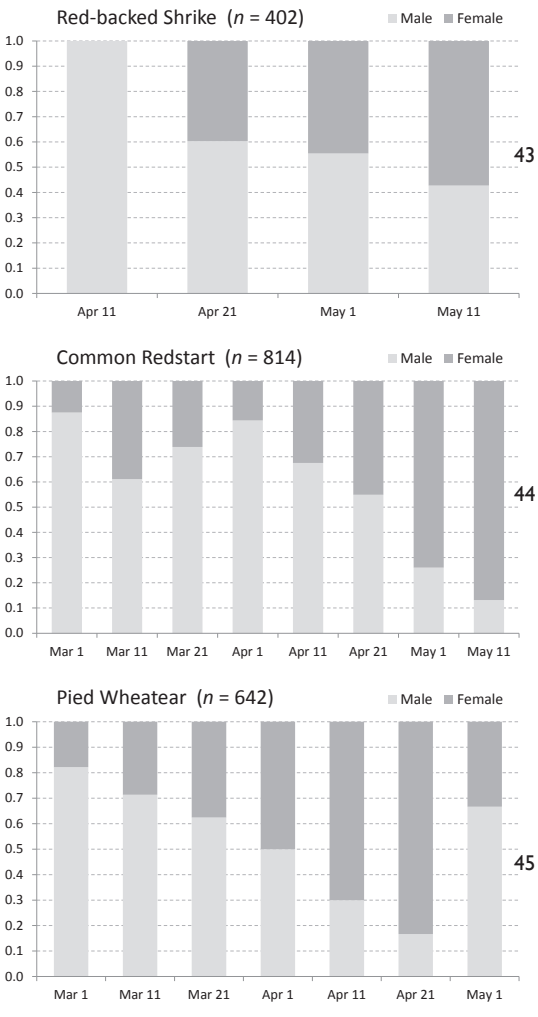


Figure 42. Mean bird-days/h/pentad, 2007–2014, for Ortolan Bunting.



Figures 43–45. Sex ratio data for Red-backed Shrike, Common Redstart and Pied Wheatear. Much of the data were obtained during the course of the present study but data from 2008–2012 at Sila'a, a coastal location 275 km west of ADI, has been included to increase sample size.

Water Pipit *Anthus spinoletta* (Figure 41). *Quite common winter visitor and common passage migrant until early April, mainly 26 February–16 March*. Winters in small, loose flocks in damp, grassy areas and much larger numbers of migrants occur in similar habitats in early spring; maximum daily counts 110 (28 February 2009) and 65 (9 March 2013). More typical annual daily maxima are less than 40 and almost invariably fall in the first third of March. The subspecies occurring appears to be solely *A. s. coutelli*. Timing through Oman of Water Pipit is very similar to ADI and rather similar to Israel's although the main passage wave in Israel peaks in second half March, slightly later than our study (and Oman).

Ortolan Bunting *Emberiza hortulana* (Figure 42, Plate 19). *Very common passage migrant early April–mid May, mainly 11–30 April*. Occurs almost exclusively in open, grassy areas, where small groups may become tame and confiding; maximum daily counts 55 (13 April 2013) and 48 (21 April 2012) though in most years annual maxima less than 25 and occur 16–25 April. Timing through Oman, Bahrain, Israel and Cyprus is very similar to ADI.

FURTHER WORK

Perhaps the least understood variable acting on migration through the UAE is the weather. It would be interesting to investigate if there is any correlation between the timing of significant arrivals of migrants and the prevailing wind direction over the Arabian gulf or changes in air pressure, wind direction or cloud cover over the central Arabian peninsula. Anecdotally, arrivals often seem to coincide with the onset of northwesterly (*ie* onshore) winds blowing across the Arabian gulf but it would be desirable to investigate this quantitatively. Furthermore, dramatic arrivals have occasionally been triggered by high winds, reduced visibility due to dust storms, and rain but, conversely, significant arrivals have also occurred in

Plate 19. Ortolan Bunting *Emberiza hortulana*, Abu Dhabi, UAE, April 2008. © *Oscar Campbell* Typically a common migrant through Abu Dhabi island, mainly second half of April, though numbers vary greatly annually.

the absence of any such local meteorological cues. Analysis of conditions further south along the migration route could be revealing. Another interesting issue, accessible to analysis by the simple acts of field observation and effort standardisation (see below) is the magnitude of spring passage relative to that in autumn. Consistent differences for a given species would be a useful indication of different migration strategies (such as refuelling stops) or usage of different routes (including so-called 'loop' migrations) during respective seasons. Such an analysis for UAE as a whole is underway (Campbell & Smiles in prep).

The advent and rapid advance of tracking technologies presents exciting opportunities to start exploring the entire migration route of species that pass through Arabia. A better understanding of these would illuminate differences within the region in migration timing, and open up the possibility of investigating the effect on migration of weather patterns in both the source and destination areas of northbound migrants. Most importantly from a conservation perspective, tracking work would help to quantify the relative importance of Arabia for different migratory bird species, as well as highlight other key staging areas along the migration routes. Such tracking has already been carried locally out on certain 'flagship' species (*eg* Javed & Khan 2007, Javed *et al* 2011) but there remains great potential to apply it to smaller, nocturnal migrant landbirds.

A recurring theme for birdwatchers and professional ornithologists operating in the region is the myriad of taxonomic complexities. Further ringing studies to gather more data on the taxa passing through the region would be welcome. European Nightjar, Willow Warbler and Lesser Whitethroat are just a few examples of where robust morphological and biometric data, coupled with DNA analysis, could reveal novel and intriguing results.

The survey protocol employed in this study was no more complex than the 'standard' birdwatching activities practised by countless amateur birdwatchers in the OSME region and beyond. Careful searching for and recording of birds during regular visits to a local patch is an ingrained behaviour for many birders. Data collection for this study certainly involved many hundreds of hours in the field but this is not unique to birdwatchers on ADI. However, a central element to this study worth emphasising is that of consistent application and recording of effort. This can be broken down into three elements: recording visit duration, logging all (migrant) species that were positively identified by sight or sound, comprehensive coverage of each site during a single visit.

By noting a start and end time for each visit then calculating visit duration, the core metric of birds per hour could then be derived. This is vital in accounting for observer effort when analysing the data. Logging and counting all migrant species encountered is equally important. This is because it provides a measure of detectability that is lacking from 'casual' recording (where the observer notes down only the more interesting species, usually chosen in a subjective and potentially variable manner). These simple recording behaviours are catered for and encouraged by a number of internet-based bird recording schemes. BirdLife International recently recommended BirdTrack (www.birdtrack.net) for consideration by BirdLife partners on the African–Eurasian flyway who are seeking to replace the decommissioned WorldBirds system. BirdTrack offers birdwatchers a wide range of free tools through which to record and interact with their observations. At the heart of the project is the notion of birdwatchers collecting complete lists, with a start and end time, from regular visits to local sites, exactly in line with the methodology employed in this study. Beyond the inherent advantages to the observer of having records stored in a safe, flexible system such as BirdTrack, the data are readily available for national and flyway-scale uses by research or conservation organisations and collaborative projects such as AEMLAP (BirdLife International 2015). It is sincerely hoped that this study will encourage even more amateur birdwatchers to mobilise their routine observations as valuable data for science and conservation.

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Oscar Campbell, c/o British School Al Khubairat, PO Box 4001, Abu Dhabi, United Arab Emirates. ojcampbell25@yahoo.com

Nick Moran, c/o British Trust for Ornithology, The Nunnery, Thetford, IP24 2PU, UK. nickmoran76@yahoo.co.uk

APPENDIX 1

Species recorded in numbers too small to analyse, excluding vagrants, with timing of occurrence.

European Turtle Dove *Streptopelia turtur*, mainly April.

Blue-cheeked Bee-eater *Merops persicus*, erratic March–May.

Eurasian Wryneck *Jynx torquilla*, March–mid April.

Masked Shrike *Lanius nubicus*, erratic, to early May; overwinters annually.

Hypocolius *Hypocolius ampelinus*, localised winter visitor to late March; some passage March–rarely mid-April.

Eurasian Golden Oriole *Oriolus oriolus*, late April, mainly early–mid May.

Greater Short-toed Lark *Calandrella brachydactyla*, March.

Sand Martin *Riparia riparia*, March.

Common House Martin *Delichon urbicum*, late February–March.

Red-rumped Swallow *Cecropis daurica*, late February–March.

Plain Leaf Warbler *Phylloscopus neglectus*, occasionally overwinters, remaining until February.

Great Reed Warbler *Acrocephalus arundinaceus*, mainly May.

Clamorous Reed Warbler (Indian) *A. s. brunnescens*, erratic; local breeder at two study sites.

Sedge Warbler *Acrocephalus schoenobaenus*, late April–May.

Eastern Orphean Warbler *Sylvia crassirostris*, February–March.

Asian Desert Warbler *Sylvia nana*, mainly February–March.

Rose-coloured Starling *Pastor roseus*, February–March.

Thrush Nightingale *Luscinia luscinia*, end April–early May.

Black Redstart *Phoenicurus ochruros*, overwinters–mid March.

Blue Rock Thrush *Monticola solitaries*, mainly March.

European Stonechat *Saxicola rubicola*, overwinters in some years; mainly February–March.

Siberian Stonechat *Saxicola maurus*, March.

Red-tailed Wheatear *Oenanthe chrysopygia*, March.

Semi-collared Flycatcher *Ficedula semitorquata*, mainly mid March–mid April.

Red-breasted Flycatcher *Ficedula parva*, mainly March.

Yellow-throated Sparrow *Gymnoris xanthocollis*, April–May.

Pale Rockfinch *Carpospiza brachydactyla*, March.

Citrine Wagtail *Motacilla citreola*, March–April.

Grey Wagtail *Motacilla cinerea*, March.

First breeding record of Lesser Grey Shrike *Lanius minor* in Iraq

RF PORTER

In June 2012, as part of a Nature Iraq conservation programme, I spent two days surveying birds and other wildlife on the slopes of Shirin mountain (36.94° N 44.20° E), above the town of Barzan, Iraqi Kurdistan, close to the border with Turkey. On 8 June 2012 at *c*1780 m asl, I noticed two Lesser Grey Shrikes *Lanius minor*, which I quickly realised were a pair, actively catching insects and carrying them to what I presumed was a nest site in an oak *Quercus aegilop.* Oaks, mostly scattered, but also in fairly dense patches, were the dominant tree on the rocky slopes (Plate 1). I watched the shrikes for over an hour as they hunted grasshoppers (Orthoptera: Caelifera), taking them to the nest site. The birds spotted the grasshoppers from a prominent look-out at the top of a *Pistacia eurycarpa* (Plates 2, 3). The pair made at least five visits to the nest site during the hour. I made a cursory look for the nest, which appeared to be *c*4–5 m above the ground, but I could not locate it looking up through the dense foliage and I didn't want to draw attention to it as a shepherd boy seemed curious about my activities. On the following day, 9 June, the pair was still taking food to the nest site, regularly from 07.00–at least 10.00 h. During this time I located another pair *c*200 m away, which were engaged in full courtship with much bowing and tail raising by the male; nearby a third male was singing, which suggests they were breeding in a loose group. Lesser Grey Shrike is sometimes solitary, but more typically breeds in neighbourhood groups of 3–7 pairs (Cramp & Perrins 1993).

Incubation and fledging periods for Lesser Grey Shrike are 15–16 and 16–18 days respectively, with an additional five days prior to incubation for egg laying (Harrison & Castell 2002). Thus the first egg could have been laid as early as 3 May (if chicks were close to fledging) or as late as 22 May, if the chicks were hatched on 8 June. In detailed studies in Slovakia, egg-laying of first clutches has been recorded 6–26 May (Kristin *et al* 2000) whilst for Turkey 21 May is the earliest date (Kirwan *et al* 2008).

This is, surprisingly, the first record of Lesser Grey Shrike breeding in Iraq, as it breeds throughout neighbouring Turkey (Kirwan *et al* 2008). Hitherto in Iraq, it has only been recorded as a passage migrant (Salim *et al* 2012). Shirin mountain is part of the Gali Balnda key biodiversity area (Nature Iraq 2016) and falls in the Zagros mountains forest steppe ecoregion. The Gali Balnda KBA is one of the richest areas for biodiversity in

Plate 1. Oak woodland nesting habitat of Lesser Grey Shrike *Lanius minor* on Shirin mountain, Iraqi Kurdistan, June 2012. © *RF Porter*

Plate 2. Lesser Grey Shrike *Lanius minor* with prey in top of *Pistacia eurycarpa*, Shirin mountain, Iraqi Kurdistan, 8 June 2012. © *RF Porter*

Plate 3. Lesser Grey Shrike *Lanius minor* waiting to carry prey to the nest, Shirin mountain, Iraqi Kurdistan, 8 June 2012. © *RF Porter*

Iraqi Kurdistan holding two globally endangered mammals, one endangered breeding bird (Egyptian Vulture *Neophron percnopterus*) as well as eight Irano-Turanian, and five Mediterranean, biome-restricted bird species. In addition the KBA has seven species of Iraqi endemic plants (Nature Iraq 2016).

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RF Porter, c/o BirdLife International, David Attenborough Bldg, Pembroke St, Cambridge CB2 3QZ, UK. RFPorter@talktalk.net

First confirmed breeding of the European Serin *Serinus serinus* in Lebanon. A potential threat to Lebanese breeding Syrian Serins *Serinus syriacus*?

GHASSAN RAMADAN-JARADI, ASSAD SERHAL & MONA RAMADAN-JARADI

During a monitoring visit 27 April 2015 to the Anjar IBA (33° 43′ 51″ N, 35° 55′ 59″ E, BirdLife International 2008) in Lebanon, we heard unusual bird songs in an area in which all breeding and wintering birds are monitored on a yearly basis. We identified the singing males as European Serins *Serinus serinus*. During the last five years, the European Serin has been seen at Anjar in winter to late February only. In Lebanon European Serin is an uncommon passage migrant early March–late April, early October–late November, and common in winter December–mid March (Ramadan-Jaradi *et al* 2008). We counted 7 singing male European Serins 27 April within a rectangle of 14 ha. Males (Plate 1), females (Plate 2) and even one juvenile (Plate 3) were photographed. Reproductive activities of the European Serins continued with additional breeding evidence being gathered *eg* carrying nest materials and/or nests seen with young heard, until our last spring visit to the site 21 June 2015. On 4 May there was an observation of a youngster on a tree seeking food from his mother present on a nearby wall higher than the tree. The mother anxiously called or screamed at the juvenile or at us (because of our close distance to the youngster).

Plate 1. Male European Serin *Serinus serinus* on Mulberry tree Anjar IBA, Lebanon, 27 April 2015. © *Ghassan Ramadan-Jaradi*

Plate 2. Female European Serin *Serinus serinus* Anjar IBA, Lebanon, 21 May 2015. © *Ghassan Ramadan-Jaradi*

Plate 3. Juvenile European Serin *Serinus serinus* Anjar IBA, Lebanon, 27 April 2015. © *Ghassan Ramadan-Jaradi*

Plate 4. Female European Serin *Serinus serinus* hunting spiders Anjar IBA, Lebanon, 28 April 2015. © *Ghassan Ramadan-Jaradi*

Plate 5. Female Syrian Serin *Serinus syriacus* hunting spiders Anjar IBA, Lebanon, 1 May 2014. © *Ghassan Ramadan-Jaradi*

Plate 6. Juvenile Syrian Serin *Serinus syriacus* on Mulberry tree Anjar IBA, Lebanon, 20 July 2013. © *Ghassan Ramadan-Jaradi*

Plate 7. Male Syrian Serin *Serinus syriacus* on Mulberry tree Anjar IBA, Lebanon, 20 July 2013. © *Ghassan Ramadan-Jaradi*

Plate 8. Aggressive encounter between Syrian Serins *Serinus syriacus* Anjar IBA, Lebanon, 22 July 2013. © *Ghassan Ramadan-Jaradi*

Plate 9. Aggressive encounters between Syrian Serins *Serinus syriacus* Anjar IBA, Lebanon, 20 July 2013. © *Ghassan Ramadan-Jaradi*

Plate 10. Aggressive encounters between Syrian Serins *Serinus syriacus* Anjar IBA, Lebanon, 1 May 2014. © *Ghassan Ramadan-Jaradi*

On both 8 and 9 June 2011, we observed a female European Serin in the Beirut pine forest coming to drink at a water point but without any evidence of breeding. Macfarlane (1978) recorded a male singing 1 May 1975 at Beiteddine of Jabal Barouk. On 24 August 2010, the sighting by GRJ of a suspected European Serin at Jabal Moussa triggered a discussion on the Yahoo Group BirdtalkLebanon, which contributed to considering European Serin as a possible Lebanese breeding species. This discussion revealed the following three singing males: one Jabal Barouk 22 April 1996 close to the nest of a Syrian Serin (Thierry Bara), one Taanayel in the central Beqaa valley 2 April 2006 (Richard Prior and Colin Conroy) and one observed by Ansii Kullberg at Ksara in the west Beqaa 3 April or May, 2007 or 2008 (Richard Prior pers comm). Porter & Aspinall (2010) indicated that this species may breed

in Lebanon. European Serin breeds in Turkey, Georgia, Jordan, Israel (Shirihai *et al* 1999) and Syria (Murdoch & Betton 2008).

The appearance of European Serin in the main area for Syrian Serins *Serinus syriacus* in Lebanon, at Anjar, is worrying because Syrian Serin is a rare species endemic to Lebanon, Syria, Jordan and Israel, and considered vulnerable by IUCN (2014). The year 2015 is the first in which both species were found breeding in the same area. We saw both species eating seeds from the same types of plants, capturing small spiders and aphids (Plates 4 & 5) in the same manner, and nesting in cypress *Cupressus* and, to a much lesser extent, in pine *Pinus* trees. Many of our photos, of both species, were taken of them in the same mulberry tree (Plates 1, 6 & 7). Despite observed aggressive encounters between Syrian Serins (Plates 8–10) we didn't see individuals fighting with European Serins. Do they compete? Future research is planned. Perhaps colonization by European Serin will be temporary.

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Ghassan Ramadan-Jaradi, Faculty of Science, Section 1, Lebanese University, Beirut, Lebanon. ghassan@jaradi.org

Assad Serhal, Society for the Protection of Nature in Lebanon, Beirut, Lebanon. aserhal@spnl.org

Mona Ramadan-Jaradi, National Council for Scientific Research, Beirut, Lebanon. Mona.karakira@gmail.com

First record of Eastern Buzzard *Buteo japonicus* for Tajikistan

RAFFAEL AYÉ

The taxon *japonicus* has been treated as a subspecies of Common Buzzard *Buteo buteo* by most authors (Vaurie 1965, Orta 1994, Ferguson-Lees & Christie 2001, Dickinson 2003). Based on mitochondrial DNA, it was suggested that *japonicus* better be given species status as Eastern Buzzard *Buteo japonicus* (Riesing *et al* 2003, Kruckenhauser *et al* 2004, do Amaral *et al* 2009). This treatment has been followed by several authors since (Rasmussen & Anderton 2005, Brazil 2009, Ayé *et al* 2012), but not by others (*eg* Naoroji 2006).

Eastern Buzzard breeds from Irkutsk oblast, Russian Federation, in the west to the sea of Okhotsk and Japan in the east (Dementyev *et al* 1966, Ferguson-Lees & Christie 2001). It winters mainly in east and southeast Asia. In Central Asia/Middle Asia it is a rare passage migrant and wintering bird recorded mainly in Kazakhstan, but also in Kyrgyzstan, Turkmenistan and Uzbekistan (Dementyev *et al* 1966, Gavrilov & Gavrilov 2005, Wassink & Oreel 2007, Ayé *et al* 2012). Although Zarudnyi & Bilkevitch mentioned it for the upper Amudarya under the name '*burmanicus*' (cited in Dementyev *et al* 1966), the species has apparently not been documented in Tajikistan thus far (Abdusalomov 1971).

Plate 1. Juvenile Eastern Buzzard *Buteo japonicus*, Dushanbe, Tajikistan, 13 February 2005. © *R Ayé*. Told from Steppe Buzzard *B.* (*b.*) *vulpinus* by combination of characters including prominent carpal patch, otherwise pale underwing-coverts, very limited streaking on body and underwings, prominent narrow patch across belly and somewhat broader wings.

THE OBSERVATION

On 13 February 2005 I was watching birds in the park-like compound (*c*38° 35′ 12″ N, 68° 46′ 25″ E) of Tajik State University in Dushanbe. The site is located near the periphery of the city and 3 km south of the foothills of the Hissor mountains, which form the edge of the large plain in which Dushanbe is situated. It was a misty day with a little bit of snowfall and the sun barely shone through the clouds. The ground was partly covered in snow and reflected the light well. Between 10.00 and 11.00 h, two juvenile Eastern Buzzards flew north over the site in close succession. A description was taken in the field and the second of the two birds was photographed (Plate 1).

Both of them showed conspicuous black carpal patches, pale underwing coverts with fine markings, pale body with a dark brown bar from the flanks across the upper belly (broader in the second bird), prominent whitish primary patch on the upperwing, a rather dark uppertail, and paler undertail with fine barring merging into a diffuse dark terminal band. The head had a creamy-whitish base colour and showed contrasting dark moustachial and eye-stripes merging with the brown neck sides.

The first individual, which was not photographed, showed a narrower and less solid brown bar across the upper belly. Moreover, its head pattern was probably not quite as clear-cut and contrasting, but my notes are not precise on this point.

The birds did not fit the two species that are common in Tajikistan, Steppe Buzzard *Buteo* (*buteo*) *vulpinus* and Long-legged Buzzard *B. rufinus*. Also the potential vagrants Upland *B. hemilasius* and Rough-legged Buzzards *B. lagopus* could be excluded. The birds showed a general underparts pattern that resembles Rough-legged Buzzard with

prominent black carpal patches, otherwise pale underwing coverts and a dark belly patch. However, the wings were narrower than in Rough-legged Buzzard (and the same is true in comparison to Long-legged and Upland Buzzards). Most importantly, the tail showed discernible barring on the undertail and rather dark grey-brown uppertail, which does not fit Rough-legged Buzzard. Long-legged Buzzard, apart from size and structure, has been excluded due to the strong head markings (for a pale bird), the dense tail barring and the lack of rufous. Steppe Buzzard would usually be smaller and more narrow-winged and a majority of individuals would show some rufous in the plumage. The unstreaked central breast, lower belly and trousers contrasting with the very dark band across the upper belly and the moustachial and eye stripe are not consistent with Steppe Buzzard and neither are the unstreaked underwing-coverts contrasting with the prominent carpal patch. Upland Buzzard was excluded mainly due to size and structure. Moreover, it would typically show a different distribution of dark on the underparts, with the trousers and flanks often darkest and the central belly less heavily marked or even whitish. During the observation I suspected that these two birds were *japonicus* and wrote them down as such. Literature search later on seemed to support this and Dick Forsman kindly confirmed that the bird in Plate 1 is a classical juvenile *japonicus* (*in litt* August 2014).

DISCUSSION

The observation constitutes the first record of Eastern Buzzard for Tajikistan. Given the low ornithological coverage of the country, we can only speculate how commonly the species actually occurs in Tajikistan and during which seasons. The two birds were observed early in the year, when the numbers of the most similar species, Steppe Buzzard, are still rather low. However, the latter regularly winters in lowland Tajikistan in certain numbers (Vaurie 1965, Ayé *et al* 2012). Further careful observation is needed to clarify how regularly Eastern Buzzard occurs in Tajikistan and other countries of the region.

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Raffael Ayé, BirdLife Switzerland, Wiedingstr 78, PO Box 8036 Zurich, Switzerland. raffael.aye@birdlife.ch

Diet of Barn Owl *Tyto alba* and Tawny Owl *Strix aluco* in central Anatolia, Turkey

NEDKO NEDYALKOV & ZLATOZAR BOEV

Data are presented on the diet of Barn Owl and Tawny Owl in central Anatolia, Turkey. Diet of the two species differed in type and number of prey species. The predominant prey were small mammals, comprising up to 96.9% of the Barn Owl's diet, as voles *Microtus* spp and house mice *Mus* sp, together representing 76.3%. The Tawny Owl utilized more diverse food resources than Barn Owl, with small mammals comprising 76.3% and birds 23.7%. New locality records of two rare small mammals (*Suncus etruscus, Chionomys nivalis*) from this part of Turkey are presented.

INTRODUCTION

The Barn Owl *Tyto alba* and Tawny Owl *Strix aluco* are widespread in Europe, but in Anatolian Turkey they occur mainly along the coast (König & Weick 2008). Records of Barn Owl from inner Anatolia are scarce (Kasparek 1988). In contrast with Europe, where the feeding biology of both owl species is well studied (Cramp & Simmons 1988), data from Anatolia have been collected sporadically by various authors. Contributions to the Barn Owl's diet from Turkey were made by Hope (1986), Kasparek (1988), Niethammer (1989), Brinkmann *et al* (1990) and Obuch & Benda (2009), mainly from the coast and islands. Data on Tawny Owl diet were provided by Kock (1990), Obuch (1994, 2011) and Arslangündoğdu *et al* (2013). We present additional data on the diet and distribution of these owl species in central Anatolia.

MATERIAL AND METHODS

The material was collected during a field survey in April 2009 in central Anatolia. Pellets and food remains were collected from Kilbasan village and its surroundings, Karaman district. Barn Owls inhabited an old barn in the village (37.3206° N, 33.1871° E, 1070 m asl). Tawny Owl pellets and food remains were found in a 2 m high, 4 m deep rock recess in Karadağ mountain (37.3582° N, 33.1722° E, 1390 m asl), near the village. The straight-line distance between the two sites is about 5.5 km. Pellets of a given taxon were identified (based on differences in size, color and shape) by following recommendations of Toms (2014). Mammal remains were identified according to Kryštufek & Vohralik (2001, 2005, 2009) mainly by skulls, mandibles and single teeth. Bird remains were identified through comparison using the osteological bird collection of the National Museum of Natural History, Sofia, Bulgaria. Diet width was calculated using Levins' index (Levins 1968) $B = 1/P_i^{\,2}$, where P_i is the proportion of the i^{th} prey or prey group.

RESULTS

In the diet of the Barn Owl, 32 prey items were found from 8 species of small mammals and a small passerine (Table 1). Small mammals represented 96.6 % of the diet. The main prey components, 78.1%, were Macedonian House Mouse *Mus macedonicus*, voles *Microtus* spp and shrews (*Crocidura*, *Suncus*). An interesting record is the finding of Pygmy White-toothed Shrew *Suncus etruscus*. This species occurs mainly along the Mediterranean coast of Anatolia and is rare inland (Kryštufek & Vohralik 2001). This is a new location for the species in Turkey.

In the diet of the Tawny Owl, 38 prey items were found, both small mammals and birds (Table 1). Small mammals represented 76.3% of the diet, and involved 12 species. Most prevalent were middle-sized small mammals such as Turkish Hamster *Mesocricetus brandti* and Tristram's Jird *Meriones tristrami*, in contrast to the Barn Owl's diet. We found a left

mandible of a Snow Vole *Chionomys nivalis*, which is a rare species in inner Anatolia (Kryštufek & Vohralik 2005). Birds were represented by 8 species (23.7%). It is worth noticing the presence of two typical wetland bird species, *Porzana porzana* and *Rallus aquaticus*.

DISCUSSION

Our data on the diet of the Barn Owl, predominantly house mice *Mus* sp and white-toothed shrews *Crocidura* sp, are similar to some previous research on this species in Turkey. They constituted 83.7% at lake Bafa (Kasparek 1988), 65.8% from Hatay (Hope 1986) and 84.4% from Milet (Niethamer 1989); in other studies house mice *Mus* sp and voles *Microtus* sp formed the bulk of prey: 81.2% from Menderes delta (Brinkmann *et al* 1990) and 73.6% from Adana (Obuch & Benda 2009). Only two studies on the diet of Tawny Owl in Anatolia have been published. Obuch (1994, 2011) found a very diverse diet of the Tawny Owl there: small mammals (30 taxa, 38.4%), birds (42 taxa, 17.7%), but also amphibians, reptiles and fish were important (43.6%). In spite of the 980 prey items in their study, Turkish hamster was absent from the Tawny Owl diet which contrasts with that of the Eagle Owl *Bubo bubo*, where this prey predominated (Obuch 1994).

Table 1. Diet composition of *Strix aluco* and *Tyto alba* from central Anatolia

	Strix aluco		*Tyto alba*	
Taxon	**N**	**%**	**N**	**%**
Erinaceus concolor	1	2.6		
Suncus etruscus			1	3.1
Crocidura suaveolens			5	15.6
Lepus europeus	1	2.6		
Microtus cf levis	7	18.4	6	18.8
Microtus cf guentheri	2	5.3	1	3.1
Chionomys nivalis	1	2.6		
Mesocricetus brandti	8	21.1	1	3.1
Cricetulus migratorius			4	12.5
Meriones tristrami	6	15.8	1	3.1
Mus macedonicus	1	2.6	12	37.5
Mus sp	1	2.6		
Spalax xanthodon	1	2.6		
Mammalia subtotal	29	76.3	31	96.9
Columba livia	1	2.6		
Columba palumbus	1	2.6		
Crex crex	1	2.6		
Fringilla coelebs	1	2.6		
Melanocorypha calandra	1	2.6		
Porzana porzana	2	5.3		
Rallus aquaticus	1	2.6		
Athene noctua	1	2.6		
Anthus sp			1	3.1
Aves subtotal	9	23.7	1	3.1
Total	38	100	32	100
Levin's index	10.65		5.11	

The diet width of Tawny Owl in our study was almost twice that of the Barn Owl, likely due to the different feeding habits and behaviour of these owls. The Tawny Owl is a generalist and uses diverse food resources, in contrast to the Barn Owl, which is specialized in hunting and feeding on small mammals (consisting up to 90% of its diet, Cramp & Simmons 1988). Tawny Owl is one of the most aggressive species amongst European owls (after Eagle Owl), and it attacks and eats other owl species (Mikkola 1982).

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Nedko Nedyalkov & Zlatozar Boev, National Museum Natural History, 1 Tsar Osvoboditel Blvd, 1000 Sofia, Bulgaria. nnedko@gmail.com

A globally important migration staging site for Sociable Lapwings *Vanellus gregarius* in Turkmenistan and Uzbekistan

PAUL F DONALD, NODIR N AZIMOV, ELIZABETH BALL, RHYS E GREEN, JOHANNES KAMP, SHIRIN KARRYEVA, ROMAN KASHKAROV, AMAN KURBANOV, ELDAR RUSTAMOV, JUMAMURAD SAPARMURADOV, ROBERT SHELDON, VALENTIN SOLDATOV, ANNA TEN, REG THORPE, MARK UNDERHILL, RUSLAN URAZALIYEV & ATAMYRAT VEYISOV

Since 2010, several Sociable Lapwings fitted with satellite transmitters on the breeding grounds in Kazakhstan have been tracked on southward migration to an area that straddles the border between southeastern Turkmenistan and southern Uzbekistan. The birds tracked along this migration route stopped at this site, called Tallymerjen in Turkmenistan and Talimarzhan in Uzbekistan, for prolonged periods, suggesting that it might be an important staging site for birds en route to wintering grounds in India and Pakistan. In September and October 2015, we undertook coordinated counts on either side of the border to assess the number of birds using the site, their habitat use and diet and the threats they may face. Counts of 4225 in Uzbekistan and 3675 in Turkmenistan represent the highest numbers of the species recorded anywhere since the 19th century. Movements of birds between the two countries were hard to quantify because of the restricted border zone, but the total number of birds using the area was estimated at between 6000 and 8000. This may represent the species' entire eastern flyway population and perhaps half of its global population. Field observations and data from two satellite-tagged birds present at the same time suggested a complex pattern of daily movements and resource use, which may have been influenced in part by the intensity of moonlight. Birds moved between heavily grazed steppe-like areas, irrigated arable fields and the shoreline of a large reservoir. The large number of birds present and the long period they remain here on south-bound migration make this one of the most important sites in the world for this critically endangered species. The sensitive border zone is likely to deter hunting by people, a significant threat in other areas of the species' flyway. There has been a huge expansion of irrigated agriculture on both sides of the border since the mid 1970s, with a consequent loss of steppe-like habitats. Desertification caused by overgrazing has caused the appearance of shifting sand dunes in areas where they were not previously present. Many of the key areas for Sociable Lapwings fall within two existing Important Bird and Biodiversity Areas (IBAs), which are listed for their importance for other species. Regular monitoring of this staging area and the number of Sociable Lapwings using it will be a key action in global efforts to protect the species and reduce threats to it. The discovery of this staging site is an example of the significant contribution that even small numbers of satellite tracking devices can make to our knowledge of threatened species.

INTRODUCTION

The breeding range of the Sociable Lapwing *Vanellus gregarius* is now limited almost entirely to the steppe zone of Kazakhstan, although small numbers still breed in southern Russia. Historically the species bred from Ukraine in the west to western China in the east (Kamp *et al* 2010). It is confined as a breeding bird to heavily grazed steppe, which due to changes in steppe management since the breakup of the former Soviet Union is now restricted largely to the immediate surroundings of villages (Kamp *et al* 2009). The Sociable Lapwing is listed by IUCN as Critically Endangered on the basis of severe declines in population and range (Eichhorn & Khrokov 2002), and current trends in land use suggest further declines are likely (Kamp *et al* 2011). Although the demographic drivers of this decline are still unclear, it seems more likely to be driven by poor survival than by low productivity, probably resulting from hunting pressure along its migration routes and in its wintering grounds (Sheldon *et al* 2013). For this reason, a research project on the species' migration strategy and winter distribution was established in 2007 using a combination of analyses of historical records, targeted field surveys, colour-ringing and satellite tracking. Preliminary results of this ongoing work suggest that there are two distinct migration flyways; a western flyway through the Caucasus and Syria to wintering grounds in the

Arabian peninsula and eastern Africa, particularly Sudan, and a much shorter eastern flyway to wintering grounds in Pakistan and northwestern India. The western route is now reasonably well known and a number of important staging areas have been identified along it, some of which hold hundreds or thousands of birds each autumn (*eg* Field *et al* 2007, Hofland & Keijl 2008, Biricik 2009). The eastern flyway is less well known, but all five of the Sociable Lapwings satellite-tagged in Kazakhstan 2010–2014 that took the eastern flyway visited an area known in Turkmenistan as Tallymerjen, and in Uzbekistan as Talimarzhan, which straddles the border between the two countries (Figure 1). The area comprises the pediment of Gaurdak mountain, *c*60 km to the east, and is made up of alluvial soils around the Amu Darya river and loess and clay deserts and semi-deserts in the north.

There have been very few documented records of the species from either Uzbekistan (Martin *et al* 2014) or Turkmenistan (Rustamov 2015), and no records of large flocks until *c*200 were seen in Uzbekistan in October 2010 (Golder Associates 2011). However, the consistent and lengthy use of this small area by tagged birds over several years suggested the presence of a regular staging site. This prompted a series of visits to a reservoir on the

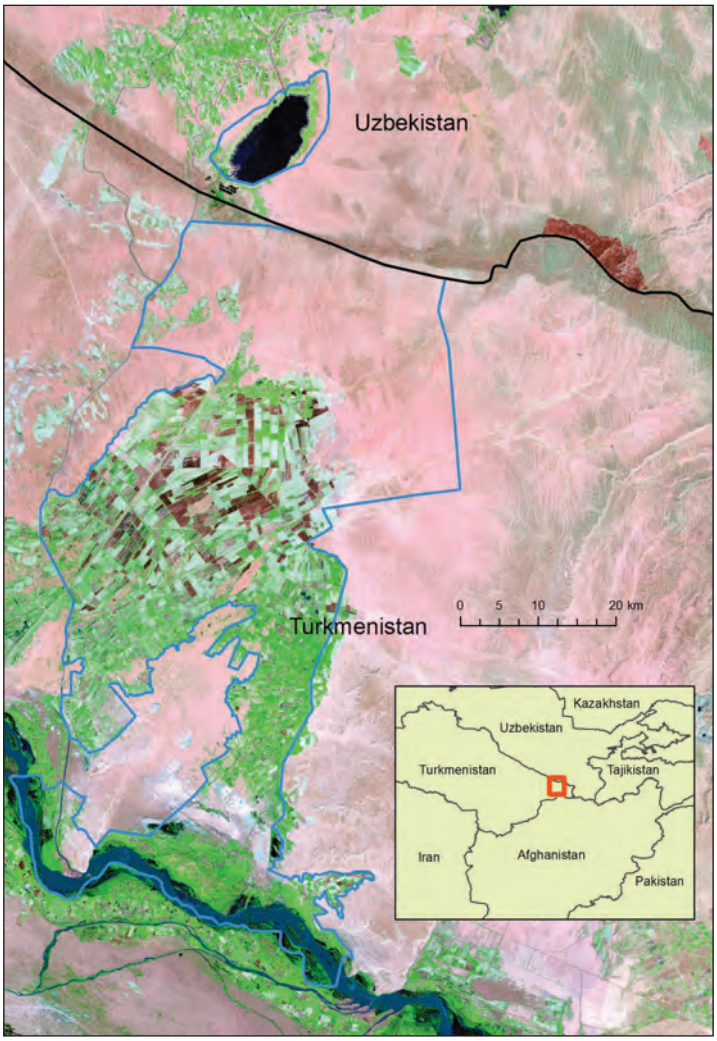

Figure 1. False-colour Landsat 8 TM image of the study area, taken in August 2015. Green and brown areas are irrigated arable land, pink and grey areas are pseudo-steppe and semi-desert. The Amu Darya river is in the bottom left of the Landsat image. The two IBAs are outlined in blue, the dark area filling most of the IBA in Uzbekistan is Talimarzhan reservoir. The boundary of the southern half of the IBA in Turkmenistan was drawn to follow the edge of the agriculture.

Uzbek side of the site September–November 2012, when up to 400 Sociable Lapwings were counted (Kashkarov *et al* 2012). At the time this was the largest count of the species ever made in Uzbekistan.

We describe the results of an expedition late September–mid October 2015 that involved field teams on each side of the border between Turkmenistan and Uzbekistan. The aims were to assess the numbers and habitat use of birds using the site, and to identify any threats they may face there.

METHODS

Satellite tracking

Sociable Lapwings have been fitted with Argos solar-powered PTT-100 satellite tags (Microwave Telemetry Inc, USA) on the breeding grounds in central Kazakhstan using a custom designed Rappole-Tipton leg-loop harness (Rappole & Tipton 1991). The first three birds, tagged in 2007, were fitted with 9.5-g tags, but since then only 5-g tags have been used. We tagged a total of 28 birds, 6 of whose tags or harnesses failed, or which died between tag attachment and autumn migration, leaving usable data from 22 birds. Tagged birds were also fitted with unique combinations of plastic colour rings. These tags deliver locations every two or three days via the Argos satellite system, which estimates locations using Doppler shift. The estimated accuracy of the locations is also given, although true accuracy and precision may be considerably lower than these estimates suggest (Boyd & Brightsmith 2013), and Central Asia (aka Middle Asia) may be a poor region generally for Argos Doppler tags (Dubinin *et al* 2010). However, the frequency and quality of locations received improved greatly between 2007 and 2015. Furthermore, our experiences of following tagged birds suggested that even locations with low estimated accuracy (Argos accuracy classes 0, A and B) could be sufficient for locating flocks in the field, and in many cases accuracy appeared higher than estimates of error suggested. We used satellite location data from five birds tagged before 2015 that migrated towards India and Pakistan to plan field surveys in advance. Data from the two birds tagged in 2015 that were present throughout our visits were downloaded in the UK and shared immediately with the field teams through mobile phone text messages. Locations from these two birds helped in the location of flocks and one of the tagged birds was sighted and photographed in Uzbekistan.

Numbers, movements and habitat use

Field teams were present intermittently 25 September–13 October 2015 in Uzbekistan, and continuously 3 October–13 October 2015 in Turkmenistan. In Turkmenistan, flocks were first found in the field by visiting locations from a satellite-tagged bird that was present at that time. Observations soon revealed that large numbers of birds were consistently using the same relatively small area of closely-grazed steppe-like habitat in a predictable way. Birds started to arrive at *c*14.00 h and continued to arrive till dusk. We therefore undertook counts late afternoon–dusk either by counting birds on the ground in flocks (on 3, 7 and 10 October), or by counting birds as they flew into the site (on 4, 5 and 13 October). Counts were coordinated between two field teams at the site, using walkie-talkie radios to avoid double counting. As the survey progressed, it became clear that many of the birds arriving at this site were then moving on towards arable agricultural areas (mostly wheat, cotton and lucerne) to the south, a pattern matched by one of the two satellite-tagged birds present and by birds recorded previously at stop-over sites elsewhere (Field *et al* 2007, Biricik 2009), so efforts were then made to locate birds in the arable areas. However, access in arable areas was difficult because of farming operations such as irrigation and the area to be searched was huge. In Uzbekistan, birds were counted regularly as they roosted

along the shoreline of Talimarzhan reservoir, and then followed out into adjacent steppe-like areas where they flew to feed.

Diet and food availability

In order to assess what Sociable Lapwings were feeding on, we set a transect line of 12 pitfall traps filled with water near the main evening gathering site on the heavily grazed steppe-like area in Turkmenistan. These were emptied twice and the contents examined and identified by eye and photographed (we had no permit to export samples). We also collected *c*50 fresh faecal samples, presumed to be those of Sociable Lapwings as they littered the area in which large numbers of this species, and no other species of equivalent size, had been feeding overnight. These were dried, then broken up in water and examined under a binocular microscope.

RESULTS AND DISCUSSION

Movements of satellite-tagged birds

Of the 22 birds satellite tagged during 2007–2015 for which the migration route could be unambiguously assessed, seven took the eastern route towards India and Pakistan, including two birds tagged in 2015. The tagged birds arrived at Tallymerjen between 9 and 22 September, and stayed in the area for between 32 and at least 59 days (Table 1). The five birds for which a large number of locations were available differed in their patterns of distribution and habitat use during their stay at Tallymerjen (Figure 2). One bird (123083) remained in Uzbekistan for the whole of its visit but was never recorded at the reservoir, spending most of its time in arable fields. One (123087) divided its time between semi-natural habitats and arable areas in Turkmenistan, and was never recorded on the Uzbek side of the border. Two birds (123082, 142944) moved between steppe-like semi-desert and arable areas in Turkmenistan and the reservoir in Uzbekistan. Finally, one bird (142940) remained in Uzbekistan, moving between the reservoir and adjacent steppe-like habitats.

Numbers, movements and habitat use

In Turkmenistan, birds were initially located on 1 October using the Argos Doppler locations from a tagged bird present in the area. Thereafter, birds were followed as they moved to or from this site. The locations of the two tagged birds present in the area at the time of the surveys matched well the location of birds found in the field (Figure 2). Initially, birds were found only in an area of heavily sheep-grazed steppe-like habitat with little or no vegetation other than a sparse ground layer (Plate 1). These habitats are formed on loess and clay semi-deserts and resemble true steppe in the short, open sward of the

Table 1. Approximate arrival and departure dates of seven satellite-tagged Sociable Lapwings at Tallymerjen, 2010–2015. All birds were fitted with 5-g Argos PTT-100 tags in central Kazakhstan in May–Aug of the same year. One bird (55023) had too few data to estimate arrival and departure dates precisely. Two birds (55094, 123082) arrived at the site but did not leave, due either to death or tag detachment/failure.

Tag number	Year	Arrival	Departure	Days
55023	2010	(2 Sept–1 Oct)	(1 Oct–12 Nov)	<71
55094	2010	22 Sept	-	-
123087	2013	18 Sept	15 Nov	59
123082	2014	9 Sept	-	-
123083	2014	19 Sept	5 Nov	48
142940	2015	11 Sept	12 Oct	32
142944	2015	18 Sept	30 Oct	42

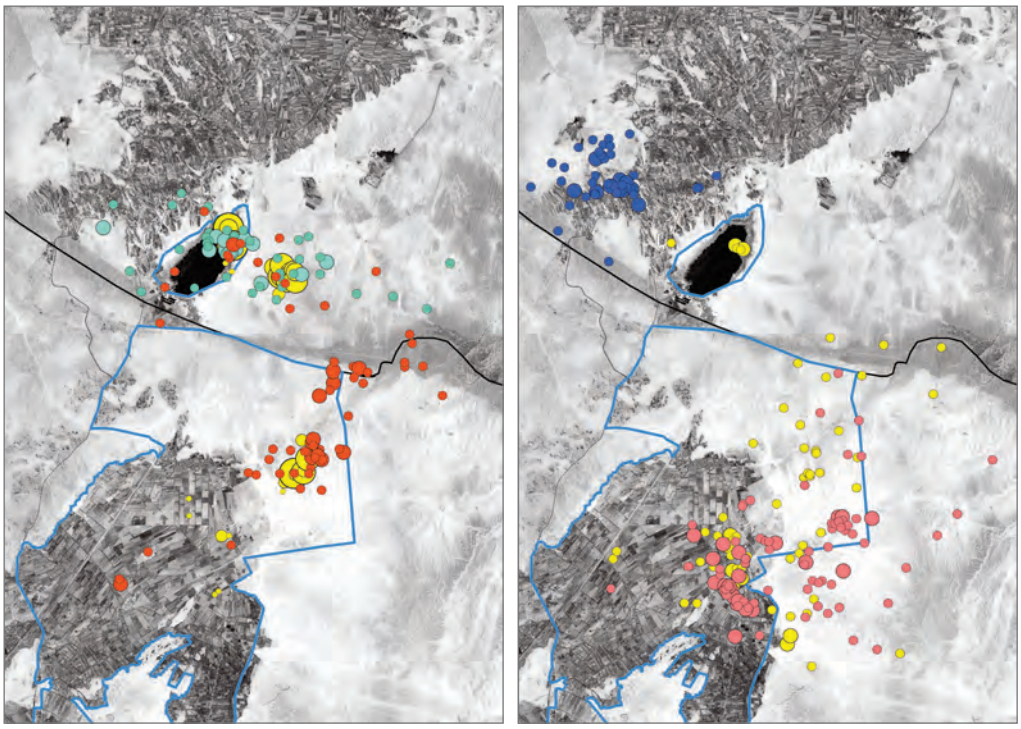

Figure 2. (left) Locations of two satellite-tagged Sociable Lapwings at the study area in 2015 (pale blue and red circles) and the location of birds found during field surveys in October 2015 (yellow circles). The size of the yellow circles is proportional to the number of birds seen. **(right)** Locations of three satellite tagged birds present in 2014 (dark blue and yellow circles) and 2013 (pink circles). Larger circles for tagged birds in both figures indicate those with higher location accuracy (Argos location classes 1, 2 and 3).

Plate 1. In Turkmenistan, Sociable Lapwings *Vanellus gregarius* favoured an area of heavily-grazed steppe-like habitat, where they roosted from mid afternoon onwards and fed at night. No birds were seen in moult, indicating that moult is complete by the time birds leave the breeding grounds in Kazakhstan. Turkmenistan, October 2015. © *Paul F Donald*

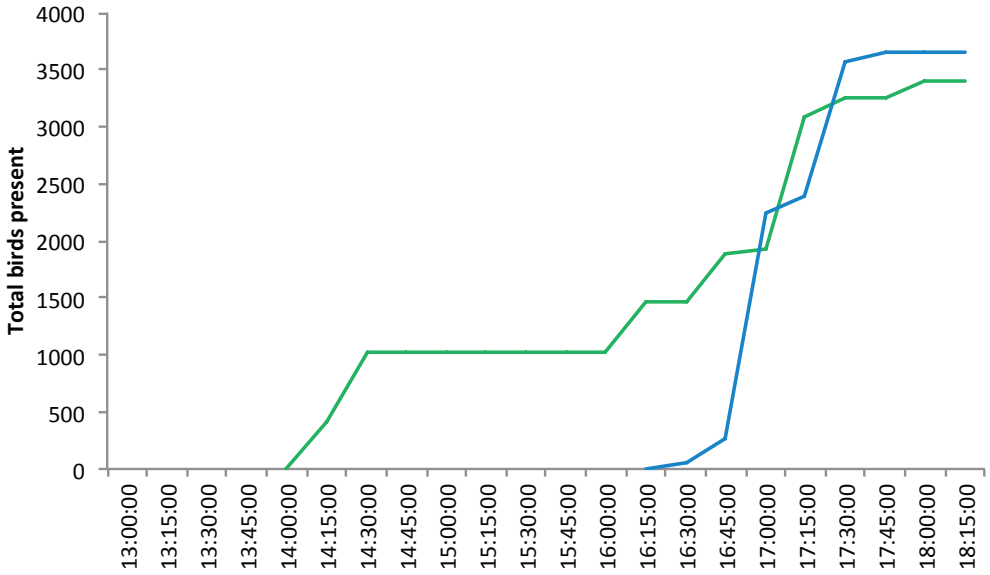

Figure 3. Count of Sociable Lapwings at the pseudo-steppe site in the Turkmenistan part of Tallymerjen in relation to time of day on 4 October 2015 (green line) and 13 October (blue line). Sunset was *c*18.00 h.

Plate 2. Although very large flocks of Sociable Lapwings *Vanellus gregarius* were encountered, birds moved between sites in smaller groups, which coalesced to form very large aggregations at a few regular sites. Turkmenistan, October 2015. © *Paul F Donald*

vegetation, although there are no true steppe vegetation communities in Turkmenistan or Uzbekistan. Areas of steppe-like habitats nearby that had a scattering of low bushes were avoided by birds. The heavily grazed open areas used by birds were fairly restricted in extent, estimated at no more than a few square kilometres in the areas visited in Turkmenistan. An area of similar habitat 11 km to the south, which had been extensively used by a tagged bird in 2013, was checked several times but no birds were seen.

Birds began to arrive from a northeasterly direction from *c*14.00 h in the first week of October, and from *c*16.00 h in the second week (Figure 3). They arrived in flocks of tens to *c*1000 birds, flying in low across the desert at estimated heights of 5–20 m (Plate 2). Birds arriving at the site in smaller groups coalesced to form larger flocks; the maximum

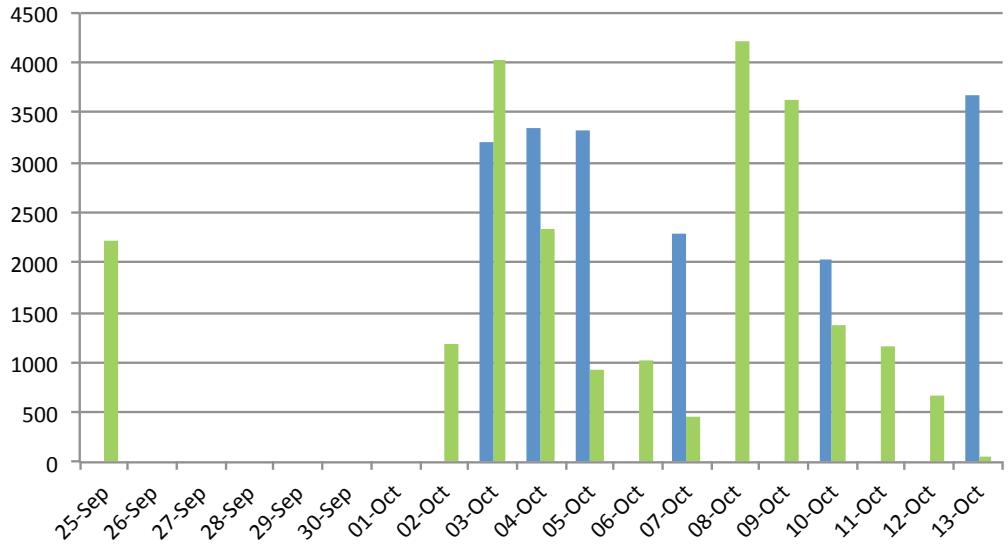

Figure 4. Maximum counts of Sociable Lapwings recorded in Turkmenistan (blue bars) and Uzbekistan (green bars). These counts were generally not simultaneous, so the overall total present is not necessarily the sum of the maximum counts in each country.

Plate 3. Sociable Lapwing *Vanellus gregarius* bathing in Talimarzhan reservoir, Uzbekistan. October 2015. © *Asif Khan*

recorded single flock size was 2650. By dusk, three or four larger flocks formed: the later arriving birds forming flocks to the northeast of the earlier arrivals with a distance of 1–2 km between the widest separated flocks. Birds arriving early spent the afternoon resting (many of them sitting on the ground rather than standing) and preening but by the evening some flocks started to spread out and birds started to feed in a typical lapwing 'walk, stop-and-scan, peck' manner. Total counts of birds at this site varied between 2000 and 3764 (Figure 4). Dawn visits to the same area showed that birds were still spread widely across the steppe-like areas and still feeding, and the abundance of fresh droppings suggested that the birds had been feeding all night. These birds started to leave the site in a northeasterly direction not long after dawn and by 08.30 h very few birds were left. Due to security constraints, we were unable to approach the border, so we could not ascertain where the birds that left the steppe-like site to the northeast, in Turkmenistan, in the morning and returned to it from the same direction in the afternoon, had spent the day. Movements of the single tagged bird in this group (Figure 2) suggested that they may have moved to an area very close to the border, with some birds continuing on to the reservoir. Birds departed in, and arrived from, a northeasterly direction, suggesting that they were not moving directly to or from Talimarzhan reservoir, which lies to the northwest of the site (Figure 1).

In Uzbekistan, birds moved between Talimarzhan reservoir, where they were recorded in highest numbers resting and bathing during the middle of the day on the dried mud along the edge of the water (Plate 3), and an area of steppe-like habitat *c*10 km to the east

Plate 4 (left). In Uzbekistan, the steppe-like areas used by roosting and feeding Sociable Lapwing *Vanellus gregarius* contained a higher proportion of taller grass stems, faintly visible in the photo, than the site used by birds in Turkmenistan. Uzbekistan, October 2015. © *Asif Khan*

Plate 5 (right). Birds allowed close approach and a few colour-ringed Sociable Lapwings *Vanellus gregarius* were detected during the surveys. This bird had been ringed as a chick in central Kazakhstan in 2010. Uzbekistan, October 2015. © *Asif Khan*

(Figure 2, Plate 4). Here, birds were seen roosting during the day (as they were on steppe-like habitats in Turkmenistan) suggesting that these birds were also feeding at night. The movements of the single tagged bird on that side of the border conformed to this pattern of movement (Figure 2). This habitat differed from that used in Turkmenistan in that there was a greater cover of taller grass stems. Few birds remained at the reservoir by the evening, with birds heading south towards the border, although the timing of departure from here and the arrival of birds at the steppe-like site in Turkmenistan, which came from a northeasterly direction, suggested that not all of them could have been heading to the known steppic site, and that there must have been other nocturnal feeding areas in between.

In the second week of October 2015, increasing numbers of birds in Turkmenistan left the evening gatherings on the steppe-like areas and headed further southwest at dusk towards arable agricultural areas, where over 500 birds were subsequently found (Figure 2). The same pattern was apparent from data from the single satellite tagged bird in Turkmenistan, which was only recorded in arable areas in the second week of October and after. This change in behaviour may have been due to reduced light for nocturnal foraging on the steppe-like areas as the new moon approached, with birds instead roosting in arable areas at night. Temperature may also have been a factor, since the very high daytime temperatures in the first week of October, which exceeded 35°C at times, had fallen considerably by the second week of October, perhaps making different prey groups more or less active. A fall was also noted in the number of birds recorded at the reservoir in Uzbekistan, with fewer than 50 birds recorded on 13 October, suggesting that this is used primarily when daytime temperatures are high. This may explain the variable use made of the reservoir by satellite tagged birds in different years. In Turkmenistan, birds roosted on dry fields without irrigation that may have been recently planted with wheat, though with wet fields close by. It is not clear why birds moved from the steppic site to roost in fields, involving flights of between 12 and 35 km, as birds were not seen to feed there, but it could be that when the fading moonlight precluded nocturnal foraging on the steppe-like area, a lower density of predators in the arable areas made the extra flight to a safe roost site worthwhile. Birds on the steppe-like area were very sensitive to the large number of raptors using the area, particularly Pallid Harriers *Circus macrourus*, and on two

Plate 6. For most of the time, roosting flocks of Sociable Lapwings *Vanellus gregarius* were very approachable, not flying far even when disturbed by fast moving motorcycles. Uzbekistan, October 2015. © *Nodir Azimov/Anna Ten*

occasions we saw flocks of Sociable Lapwings being attacked by Sakers *Falco cherrug* (both times unsuccessfully).

Because of the complex pattern of movements of birds around the area, and because we could not survey much of the area in the sensitive border zone between the main sites in Uzbekistan and Turkmenistan, it is not possible to estimate accurately the total number of birds present at Tallymerjen at the time of our visit. The maximum number of birds recorded at any one time was 4225, a count made in Uzbekistan on a day that the field team in Turkmenistan was searching extensive areas of arable land, and so did not make a simultaneous count at the main steppe-like site. However, there were rarely fewer than 2000 birds present at this site so a total of around 6000 may be a reasonable minimum estimate. Furthermore, the data from tagged birds suggest that movement between the main sites in Turkmenistan and Uzbekistan is not frequent, and that some birds never cross the border at all. It is therefore possible that the peak counts of 4225 birds in Uzbekistan (8 October) and 3675 in Turkmenistan (13 October) may have been largely or wholly independent, and that the total population in the area was 8000 or more. The highest combined count made on any one day was 7226 (3 October). The population of birds in the area surveyed was therefore likely to be between 6000 and 8000, although there may have been many more birds present in areas we could not access, or in the vast areas of arable land to the north and south of our surveyed area.

Diet

In a total of 61 h, the 12 pitfall traps set near the main nocturnal feeding site in Turkmenistan between them yielded 111 adult tenebrionid beetles (Coleoptera: Tenebrionidae: probably *Adesmia*), 6 unidentified ants (Hymenoptera: Formicidae) and 2 unidentified moths (Lepidoptera). The numbers captured, and possibly the species composition, were likely to

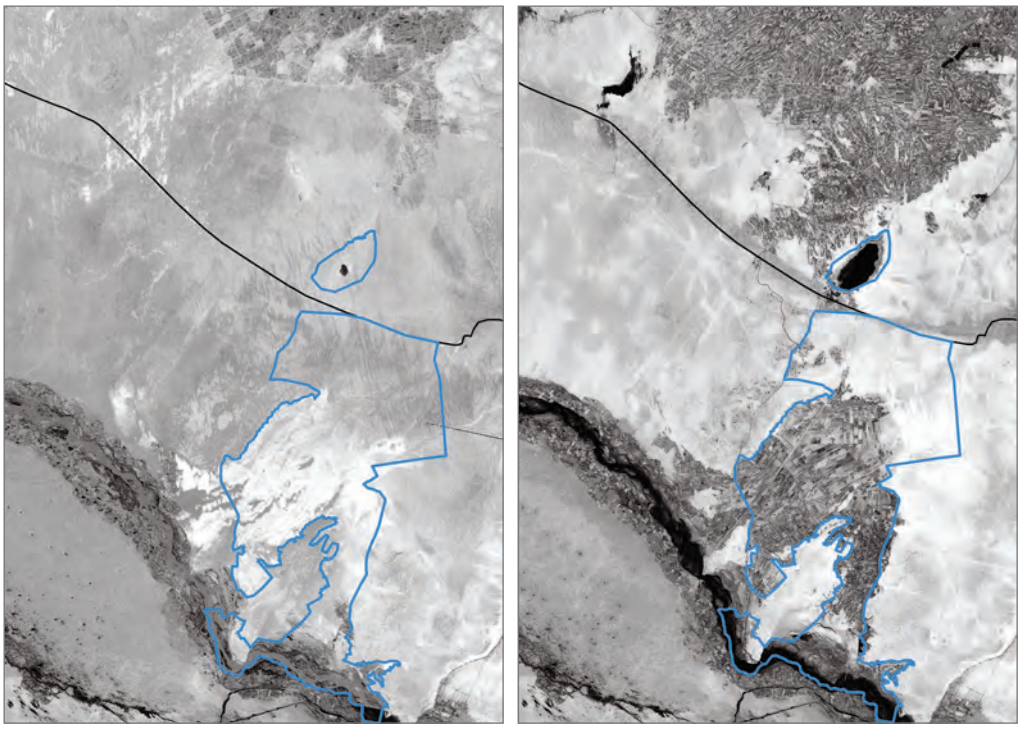

Figure 5. Landsat images of the Tallymerjen/Talimarzhan area in June 1975 **(left)** and August 2015 **(right)**, showing the rapid spread of agriculture. In Turkmenistan, this has followed almost exactly the area showing up as white in the 1975 image; it represents a large *takyr* (see text). In 1975, Talimarzhan reservoir in Uzbekistan had only just been created and had not reached its present size. The blue outlines represent the two IBAs (see Figure 1).

have been affected by the tendency of the traps to fill with sand, allowing animals falling into them later to escape. Tenebrionid beetles are largely nocturnal and tend to be among the most abundant arthropods in many of the world's arid systems. In North Africa, tenebrionid beetles become active around dusk (Maeno *et al* 2014), the time at which Sociable Lapwings started feeding at Tallymerjen. Daytime temperatures at Tallymerjen exceeded 35°C during early October, temperatures likely to inhibit beetle activity. The specimens caught in the traps measured 1.5–2.0 cm and so were likely to be within the upper prey size range of Sociable Lapwings, and observations of feeding birds suggested that they were catching small numbers of larger items that required several bill movements to process. Analysis of Sociable Lapwing faecal samples suggested that tenebrionid beetles made up the bulk of the diet, but the shape of the mandibles and maxillae and the absence of fragments of elytra all pointed to larval stages being consumed, rather than adults. These are less mobile than adults and so less likely to be recorded in pitfall traps. Observations in Uzbekistan of feeding birds suggested that they were feeding during the day on termites, moths, dipteran flies associated with grazing herds and, at the shores of the reservoir, large mosquitoes.

Changes in land-use at Tallymerjen

We assessed long-term changes in land use in the area through visual interpretation of Landsat imagery. The reservoir in Uzbekistan first appears on Landsat images in 1975 as a small area of water and by 1976 it had grown to its current extent. In both Uzbekistan and Turkmenistan, the area of arable land increased greatly in the area after the 1970s.

The main crops here are cotton (cultivated for *c*3 years continuously), followed by 1–2 years of wheat, with lucerne planted at the end of the 5-year rotation as a break crop. All of these crops are heavily irrigated throughout the growing season with large quantities of water extracted from the Amu Darya river to flood over the crops. The spread of arable agriculture in Turkmenistan followed almost exactly the extent of an area that clearly shows up in Landsat images as a paler area that was quite different to the surrounding land cover types (Figure 5). This probably represents a large *takyr*, an area of heavy alluvial clay deposited in a shallow depression during periodic inundation from flooding of the Amu Darya that subsequently dries into a hard crust. The historic spread of arable agriculture suggests that the areas not so far converted to agriculture are inherently less suitable for it. Even in the earliest available Landsat images, the steppe-like area used by Sociable Lapwings in 2015 has a very different reflectance signature to the area that was converted to cropland, suggesting that the area converted was not pseudo-steppe. In Uzbekistan, however, crops have expanded into areas with a satellite reflectance signature very similar to that of pseudo-steppe, suggesting that there may have been considerable loss of such habitats there.

Further discussion

The existence of a migration stopover site at Tallymerjen had been suspected because of the previous occurrence here of satellite tagged birds, but the size of the population found to be using this site was unexpected. With the exception of a record of 8000–10 000 birds made in Kazakhstan in the late summer of 1898 (Dolgushin 1962), counts at Tallymerjen in October 2015 are the largest ever made of the species, exceeding the 3200 birds recorded along the western flyway at Ceylanpinar in eastern Turkey on 15 October 2007 (Biricik 2009). Although the size of the global population is not known with any accuracy, the 6000–8000 birds at Tallymerjen in October 2015 are likely to comprise a substantial proportion of the world population, which one estimate puts at *c*16 000 individuals (BirdLife International 2015).

All seven of the satellite tagged birds using the eastern flyway have stopped here, suggesting that the site holds most or all of the eastern flyway population at this time of year. No other staging sites are known along the eastern flyway, and there has been no consistent pattern in the data from our tagged birds to suggest that others exist. Birds arrive at Tallymerjen shortly after leaving their breeding grounds, and arrive in Pakistan shortly after leaving Tallymerjen, so if there are other regular gathering points along this flyway, they are not used for long. There have been very few records of the species from elsewhere in Turkmenistan and Uzbekistan and, prior to the record of 200 birds in 2010, none of large flocks. However, the fact that the very large population at Tallymerjen has hitherto evaded discovery suggests that other populations could remain undetected. Whether or not this is the only staging site on the eastern flyway, Tallymerjen is clearly an internationally important site for the species, both in terms of the number of birds using the site and the lengthy period they spend here. The site may be essential to birds preparing for their crossing of the mountains of Afghanistan on their way to wintering grounds in India and Pakistan. The site may also be important as a migration stopover site for other species. In October 2015, tens of thousands of Bimaculated Larks *Melanocorypha bimaculata* were seen moving, like the Sociable Lapwings, between irrigated arable land and semi-natural steppic habitats. The Bimaculated Lark has a winter distribution and habitat associations in Africa and India that are very similar to those of the Sociable Lapwing, and so may use the same stopover sites on migration.

Quite why Sociable Lapwings select this particular site is uncertain, but it is intriguing that Tallymerjen shares with Ceylanpinar the close proximity of open, heavily grazed

steppe-like habitats, irrigated cropland with a mix of wet and dry fields, open water and an international border. At Tallymerjen, Sociable Lapwings fed both on cropland and steppic areas, the latter particularly on moonlit nights. The combination of different types of open habitat in a small area may allow birds to adapt to different conditions during their lengthy stay. Large numbers of birds use Talimarzhan reservoir for resting, drinking and bathing, though data from tagged birds suggest that some birds rarely visit the reservoir and some may not use it at all, and numbers using the site appear to fall during cooler weather. The sensitive border zone may result in lower disturbance and reduced hunting pressure, and we found no evidence that birds using the site are being hunted. Birds showed no nervousness of cars and could easily be approached in vehicles, or even on foot to within 50 m (Plates 5, 6). Birds flying into the steppe-like site in Turkmenistan in the evening showed no reluctance to fly low over the heads of observers standing outside cars. However, observers in Uzbekistan noticed a change in behaviour over the period of observation. Before 9 October, birds showed no fear of people, cars or even dogs, whereas after that date, birds appeared much more nervous and would fly off long distances when approached. The reasons for this are unclear but coincided with a change in the weather, which became cooler and windier.

While hunting appears not to be a threat at Tallymerjen, it is clear that there have been a number of significant land use changes in the area that could affect the site's value to Sociable Lapwings. Irrigation canals from the Amu Darya, the source of the water in Talimarzhan reservoir, have allowed arable agriculture to spread far from the river and across the border into Uzbekistan, where satellite imagery suggests that significant areas of steppe-like habitats have been lost to arable agriculture since the 1970s. How much of a problem this is for Sociable Lapwings is unclear, because for some of the time at least, birds chose to roost and feed in arable land in preference to steppe-like areas. However, the birds showed a pattern of habitat use that suggests that both pseudo-steppe and agriculture are important to them under different conditions. Overgrazing by sheep and goats is causing desertification and extensive shifting sand dunes (barchans) have appeared in recent years where none were present before, some of them close to the areas of pseudo-steppe used by Sociable Lapwings. These are causing significant problems in the area by blocking roads and filling irrigation channels with sand. Changes to the current pasture grazing regulations to reduce grazing pressure could, conversely, lead to the growth of taller vegetation unsuited to Sociable Lapwings (Plate 7). There are a number of small oil wells and associated infrastructure in the area; currently none of these are close to the areas used by birds but any future discovery of oil in the area could lead to significant changes and loss of semi-natural habitats.

Satellite-tagged birds using the western flyway use known stopover sites for relatively short periods, with a consequent high rate of turnover. However, birds using Tallymerjen stay for prolonged visits of a month or more, so it is likely that most or all of the eastern flyway population is present at one time. This offers the possibility of using counts at this site to estimate trends in the overall population of the species, which is almost impossible to assess on the breeding or wintering grounds because birds are spread out over vast areas and because breeding site fidelity is known to be very low. Standardised counts at Tallymerjen could be used as an index of trends in the overall population, or at least the part of the population using the eastern flyway.

The species is already included in the Red Data Books of Uzbekistan and Turkmenistan, but there are no environmental protection measures in place in Tallymerjen. Much of the area used by Sociable Lapwings falls inside the two Important Birds and Biodiversity Areas (IBAs) in the area, UZ023 'Talimarzhan Reservoir' (Kashkarov *et al* 2008) and TM049 'Tallymerjen' (Rustamov *et al* 2009), which were designated for other species

Plate 7. The balance of grazing needed to maintain the open steppe-like habitats used by Sociable Lapwings *Vanellus gregarius* is a fine one; too much grazing and desertification sets in, too little and the vegetation grows too tall. Turkmenistan, October 2015. © *Paul F Donald*

(particularly winter aggregations of Common Cranes *Grus grus*, Greylag Geese *Anser anser* and other waterbirds), but this does not confer legal protection. The IBA in Uzbekistan needs to be expanded to include key steppic areas to the east and south of the reservoir, and both need recognition as sites vital to the survival of a critically endangered bird. A system of monitoring needs to be developed to track future changes and, if necessary, protective measures will need to be drawn up. The spread of arable agriculture, and perhaps desertification, can be monitored from satellite imagery, but periodic field visits should be undertaken to assess trends in numbers and threats to birds using the site. The AEWA international species action plan for Sociable Lapwing (Sheldon *et al* 2012) requires updating in the light of the discovery that both Turkmenistan and Uzbekistan are important range states. Our results indicate that the eastern flyway population is substantially larger than previously recognised, and that more work is required in range states along this flyway to ensure that threats are monitored and minimised.

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Paul F Donald, Elizabeth Ball, Rhys E Green, Mark Underhill, Robert Sheldon, Reg Thorpe, RSPB, The Lodge, Sandy, Beds SG19 2DL, UK. paul.donald@rspb.org.uk

Nodir N Azimov, Roman Kashkarov, Uzbekistan Society for the Protection of Birds, off 51, Inst. Gene Pool plants animals of Academy of Sciences, Bogi Shamol Str 232 B, Tashkent, Uzbekistan, 100053.

Johannes Kamp, Ecosystem Research Grp, Inst Landscape Ecology, University of Muenster, Heisenbergstr 2, room 505, D-48149 Muenster, Germany.

Aman Kurbanov, Eldar Rustamov, Jumamurad Saparmuradov, Atamyrat Veyisov, Azadi St 59, Natl Inst Deserts, Flora and Fauna, Bldg 2, Office 38, Project RSPB/Ministry Nature Protection Turkmenistan, Ashgabat, Turkmenistan.

Valentin Soldatov, Anna Ten, Ecocenter 'Djeyran', 200700 Kagan town, Bukhara region, Uzbekistan.

Ruslan Urazaliyev, ACBK, 18 Beibitshilik St, off 406, Astana 010000, Kazakhstan.

Egyptian record of Wahlberg's Eagle *Hieraaetus wahlbergi* is the first in the Western Palearctic and Middle East

AHMED WAHEED

On 3 May 2013, I photographed a Wahlberg's Eagle *Hieraaetus wahlbergi* near Ras Gharib (gulf of Suez, Egypt). This is the first documented record of this Afrotropical species not only in Egypt but also in the Middle East as well as in the entire Western Palearctic (Dick Forsman pers comm). The Egyptian Ornithological Rarity Committee approved the record.

Ibrahim Saad and I were birdwatching in a tiny oasis southwest of Ras Gharib, 28° 13′ 48″ N, 33° 04′ 35″ E. Passerine and soaring raptor migration was taking place including a number of pale morph Booted Eagles *Hieraaetus pennatus*. What I took to be a dark morph Booted Eagle came close and I concentrated on getting some photographs of it as it flew over. Ibrahim advised me that the eagle had settled in a nearby palm tree and I got additional shots of it sitting and shortly after it had taken off. Afterwards I filed the pictures in my Booted Eagle folder. Almost a year later, in April 2014 while compiling photos for the BirdLife Migratory Soaring Birds project, I wondered about that eagle's identification. I sent the photos to the Finnish raptor-specialist Dick Forsman for help. He replied the next day "Congratulations! First WP record of Wahlberg's Eagle". I then sent the photos to Sherif Baha el Din and Uffe Gjøl Sørensen and both immediately confirmed the ID.

The record of the eagle was well documented from my photographs of which three are presented here (Plates 1–3). In flight when seen from below (Plate 1), the profile is characteristic with long, fairly parallel-edged but slightly slim wings and a long, narrow and squared-ended tail. Except for dark tips to primaries, all flight feathers from below are faintly barred and without the pale notch on inner primaries shown by Booted Eagle. Translucent pale fringes to inner primaries and the secondaries form a narrow but distinct trailing edge to the wing. Underwing coverts are uniform buffy with only the outer large primary coverts being darker brown creating a small dark patch in contrast to the pale bases of the outer primaries. The underside of the body is uniform buff in contrast to the darker tail. The upper-side is very distinct (Plate 2). All flight feathers are uniform dark brown except for the narrow trailing edge made by pale fringes to inner primaries and secondaries. All coverts on wing and back have distinct pale fringes and a thin central line runs down the wing formed by the narrow fringes to the greater coverts while the broader fringes to the remaining wing-coverts are confluent creating a pale forewing in contrast to the otherwise dark upperside. The uppertail is uniform dark brown in contrast to paler tail-coverts tipped white. On the sitting bird (Plate 3) the underside is uniform buff (faintly mottled), and the distinct head has prominent dark eyes.

Wahlberg's Eagle is one of the smaller eagles being only slightly larger than Booted Eagle. I did not notice this difference in the field when this sole bird passed overhead. Wahlberg's Eagle is a polymorphic species with highly variable plumage. A dark brown morph is the most numerous but pale and intermediate-colour morphs occur as well. The uniform buffy plumage of this record indicates that it is a pale morph. Adult and immature Wahlberg's Eagles exhibit similar plumage characters according to even the most recent field-guides, but Dick Forsman supplied the following information. "This eagle is a juvenile. First of all, the plumage is very uniform indicating that all feathers have been

Plate 1 (top). Wahlberg's Eagle *Hieraaetus wahlbergi* from below, near Ras Gharib, Egypt, 3 May 2013. © *Ahmed Waheed*

Plate 2 (above). Wahlberg's Eagle *Hieraaetus wahlbergi*, the upperside photographed right after the bird took off, near Ras Gharib, Egypt, 3 May 2013. © *Ahmed Waheed*

Plate 3 (right). Wahlberg's Eagle *Hieraaetus wahlbergi* sitting in a date palm, near Ras Gharib, Egypt, 3 May 2013. © *Ahmed Waheed*

grown at the same time. This is only the case with juveniles. In addition, the pale tips to flight-feathers and tail are diagnostic of juveniles only, as is the pattern of the underwing flight-feathers (where adults will have much more distinctly barred flight-feathers with a broad, dark trailing edge). Actually, the shape of the wing with the bulging trailing edge is also typical for a juvenile—adults will have parallel-edged, rectangular wings".

Wahlberg's Eagle is a widely but unevenly distributed breeding bird in sub-Saharan Africa outside the central rainforest belt. In savannahs in west and northeast Africa

relatively few breeding records are known (del Hoyo *et al* 1994), though the species is common in parts of southern Africa (Simmons 1997). North of the equator, this species is either resident or shows only limited movements (del Hoyo *et al* 1994). The eagles of the southern population are intra-African migrants being present in the breeding territories August (late July)–April and spend the non-breeding season north of the equator (Simmons 1997). Details of occurrence north of the equator are obscured as migrants from the south move into savannahs with a resident population. Meyburg *et al* (1995) satellite-tracked one breeding bird from Namibia to northeast Nigeria and another breeder from northeast South Africa to southeast Chad.

The timing of the Egyptian record in early May fits well with northbound post-breeding migration of a bird from southern Africa. The nearest non-breeding records to Egypt seem to come from Eritrea (Ash & Atkins 2009) *ie* the present bird overshot its presumed non-breeding area by at least 1400 km. The species was until recently classified as an African representative of the *Aquila* eagles, but genetic studies have shown that it is not an *Aquila* (Wink & Sauer-Gürth 2004, Helbig *et al* 2005, Lerner & Mindell 2005). The similarity of Wahlberg's Eagle to Booted Eagle is obvious and this is the ID challenge in the years to come.

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Dick Forsman made the initial identification and commented on the age of the eagle. Sherif Baha el Din and Uffe Gjøl Sørensen confirmed the ID. Uffe Gjøl Sørensen helped considerably with analysis of the photos, review of relevant literature and improving the draft manuscript. Lene Smith provided linguistic improvements.

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Ahmed Waheed, El Arish, North Sinai, Egypt. awaheed.lifesinai@gmail.com

Counts of Egyptian Vultures *Neophron percnopterus* and other avian scavengers at Muscat's municipal landfill, Oman, November 2013–March 2015

WA AL FAZARI & MJ MCGRADY

Oman is important to migrant and resident scavenging raptors, including the globally endangered Egyptian Vulture *Neophron percnopterus*. We counted birds scavenging at Muscat's main (Al Multaqa) municipal landfill, November 2013–March 2015. A maximum of 458 Egyptian Vultures was observed during monthly counts. On average 216.3 ±149.5 Egyptian Vultures were observed during winter months (October–March), and 72.4 ±7.6 during summer months (April–September). Adults were typically the most common age class, on average 67% of the Egyptian Vultures seen. Although limited, these data confirm Oman's importance for Egyptian Vultures, and highlight the potential that waste disposal sites in the country have for monitoring local and migrant population fluctuations. Opportunities exist to use waste disposal sites and Egyptian Vultures to promote public education and citizen science that might benefit scavenging birds and other wildlife. Upgrades in solid waste disposal in Oman need not have a negative impact on scavenging birds, and governments and waste management companies can play a significant role in conserving these species while realizing the human health benefits of improved waste disposal.

INTRODUCTION

Amongst the avian raptor species that will scavenge, Oman is used by some of conservation concern, including the globally endangered Egyptian Vulture *Neophron percnopterus*, Lappet-faced Vulture *Torgos tracheliotos* and Steppe Eagle *Aquila nipalensis* and the vulnerable Eastern Imperial Eagle *Aquila heliaca* and Greater-spotted Eagle *Clanga clanga* (BirdLife International 2015, Eriksen & Victor 2013). Egyptian Vultures are partial migrants; birds that breed in northern areas move south for the non-breeding season. Also, juvenile Egyptian Vultures that migrate from northern areas probably dwell in southern areas like Oman for at least some years before returning to their natal areas (Oppel *et al* 2015), and these birds are to some unknown extent nomadic (http://egyptianvultureoman.blogspot.co.at/). Populations of Egyptian Vultures are in decline across their wide range (Birdlife International 2015), although Socotra (Porter & Suleiman 2012) and Masirah (Angelov *et al* 2013) islands are exceptions in Arabia. Egyptian Vultures face a great variety of threats on breeding and non-breeding grounds and on migration that include targeted and inadvertent poisoning, habitat loss, decline of food availability, persecution, use of body parts for traditional 'medicine', and interactions with electrical power infrastructure (BirdLife International 2015). Declines in eastern Europe may be the most obvious (Velevski *et al* 2015). Assumed declines in southern areas may be masked by the arrival of migrants during the non-breeding season and the lack of good survey data. Oman supports a resident population of Egyptian Vultures, and is host to non-breeding season visitors. Migrant Egyptian Vultures are in Oman mostly October–March; the largest recorded count at a rubbish dump in Oman is 1000 birds at Al Buraymi November 2005 (Eriksen &Victor 2013). Breeding by Egyptian Vultures in Oman occurs mostly in the northern mountains (eastern and western Hajar mountains including the Jebel Al Akhdar range), and Masirah island (Angelov *et al* 2013, Eriksen & Victor 2013). Records of birds at other places maybe mostly of non-resident or non-breeding birds, although single pairs and pockets of pairs breed where nesting habitat exists, especially in the northern half of the country. Past estimates of Oman holding *c*100 breeding pairs (Jennings 2010) are most likely too low (Al Bulushi *et al* 2013), as the population on Masirah alone is estimated to

be 65–80 breeding pairs (Angelov *et al* 2013). The number of migrant Egyptian Vultures that visit Oman is unknown, but the use of waste disposal sites by scavenging birds is common, and they have been identified as good places to watch eagles and vultures particularly October–March (Sargeant *et al* 2008).

Despite the apparent importance of Oman to scavenging birds of conservation concern (Environment Society of Oman 2012), very little published information is available on the numbers that occur in the country throughout the year or the locations that are most important. This lack of information may undermine conservation efforts in this rapidly developing country, both for resident populations and populations that migrate to Oman. We counted scavenging birds at the main municipal landfill for Muscat, Al Multaqa (aka 'New Al Amerat'), to better understand the species composition and numbers of avian scavengers using the dump, and how those varied throughout the year. These data provide a first glimpse at the likely importance of Al Multaqa for scavenging birds, and provides baseline data on numbers and monthly variation at the site.

STUDY AREA AND METHODS

The Muscat municipal landfill at Al Multaqa is located *c*15 km south of the built up areas of the city at *c*23.34º N 58.46º E, and is well-known amongst birdwatchers for the Egyptian Vultures, Lappet-faced Vultures and migrant *Aquila*/*Clanga* eagles that scavenge there (Plate 1). It is located to the north and at the base of the eastern Hajar mountains, where Egyptian Vultures are known to nest (Eriksen & Victor 2013), and where abundant nesting habitat exists.

We counted and aged (when possible) the raptors scavenging at the landfill on or around the third weekend of most (15 of 17) months November 2013–March 2015. Counts were made around noon using 10×42 binoculars and 25–60×65 telescopes from

Plate 1. View of the Al Multaqa landfill, which serves municipal Muscat, Oman, showing numerous Egyptian Vultures *Neophron percnopterus* flying around while workers cover rubbish (mostly household waste) with soil, 19 November 2014. © *W Al Fazari*

three vantage points (23.34171° N 58.45410° E, 23.33795° N 58.45923° E and 23.34695° N 58.45939° E), which together gave us a view of the entire site. All vantage points were 200–500 m from the main dumping area, where many birds congregated, though the actual distance varied throughout the study period, and birds could be more distant (or closer) as they soared and perched away from the dump itself or as the precise dumping location at the site changed. We attempted to count all scavenging birds observed from the vantage points, even those that were very distant. The numbers we report are an index of the scavenging birds using the site, as it was impossible to rule out some low level of double counting or that some birds were not counted.

At the site there were sometimes many birds perched, walking through the rubbish and flying at different distances from the observer. To improve count accuracy, multiple (typically 2–3) counts were made at each vantage point until consistency in count values was achieved. The duration of observation bouts at individual vantage points was *c*10 minutes, but varied depending upon the number of birds. This meant that it took about 1–1.5 h to complete the count, including travel time between vantage points. The great majority of birds at the landfill were Egyptian Vultures, which can be aged by their plumage up to the age of five (Clark & Schmitt 1998, Plate 2). We recorded the age of Egyptian Vultures as: < 1 year (juveniles), 1–4 years (subadults) and > 4years (adults).

We recorded the total number of birds observed per age class, and classified the months of October–February as 'non-breeding' or 'winter', and March–September as 'breeding' or 'summer' (no counts were made in April). From limited data from Masirah island it seems that most breeding by Egyptian Vultures occurs in the spring, and that many start incubating in February (Angelov & Yotsova 2012). A *t*-test was used to determine significance of differences between summer and winter counts.

RESULTS

Fifteen counts were made November 2013–March 2015. Egyptian Vultures were by far the most common scavenging raptor to use the site, and comprised 90% of the avian scavengers

Plate 2. Egyptian Vultures *Neophron percnopterus* of various ages roosting near the Al Multaqa landfill, Muscat, Oman, 13 January 2015. © *M McGrady*

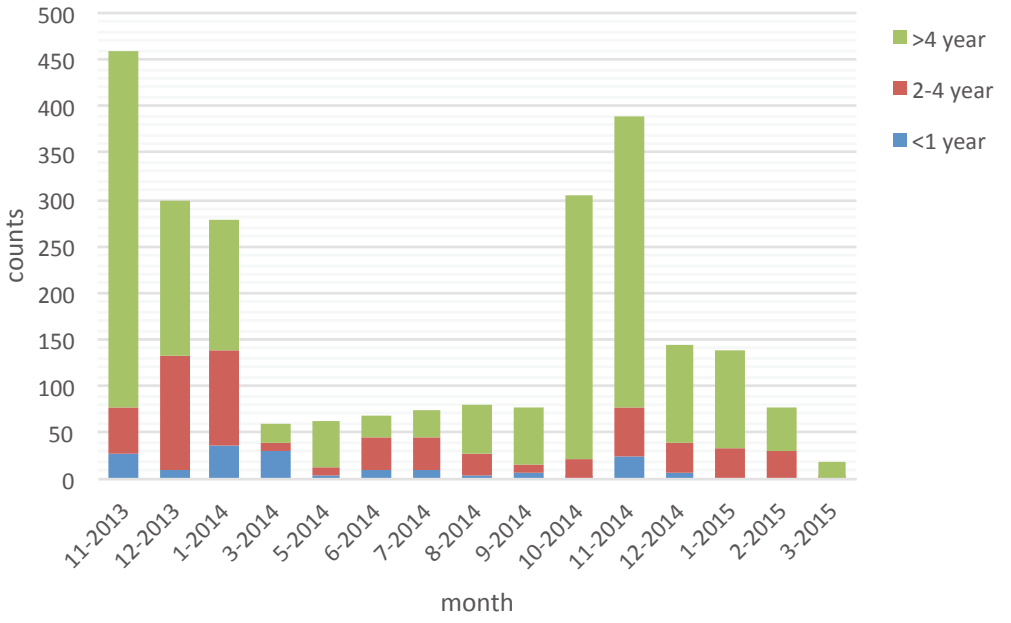

Figure 1. Counts of Egyptian Vultures November 2013–March 2015 at Al Multaqa landfill, Oman.

there. Counts of Egyptian Vultures are plotted in Figure 1. The highest count of Egyptian Vultures (458) occurred in November 2013, the lowest (19) in March 2015. Mean number of Egyptian Vultures during winter months (October–March) was 216.3 ±149.5 (SD); during summer months (May–September) it was 72.4 ± 7.6 (Table 1).

Table 1. Mean counts (SD) of Egyptian Vultures at the Al Multaqa landfill near Muscat, Oman, during November 2013–March 2015.

Age (years)	Summer	Winter	P
< 1	9.5 (9.6)	13.2 (13.9)	0.369
1–4	26.4 (14.5)	55.1 (37.2)	0.017
>4	36.4 (18.9)	192.4 (117.9)	0.003
all ages	62.7 (20.9)	260.7 (131.6)	0.001

In 11 of 15 months adults were the most common age class amongst Egyptian Vultures. On average adults comprised 67% (32.4–94.7) of the Egyptian Vultures seen at the landfill, subadults 24% (6.5–36.7), and juveniles 9% (0–51.7). No juvenile Egyptian Vultures were observed at the site January–March 2015. Significantly more Egyptian Vultures were counted at the site during the winter, and there were more subadults and adults counted in winter than in summer (Table 1). Other scavenging raptor species were recorded, but in very low numbers and only during the winter months. Over the study period, we observed Lappet-faced Vultures five times, Steppe Eagles (all juveniles) 27 times, Greater-spotted Eagles seven times and Eastern Imperial Eagles (Plate 3) 10 times.

DISCUSSION

Because migrant Egyptian Vultures leave Oman every spring, the numbers of vultures seen during summer at Al Multaqa should be an index of the 'local' population plus the number of immature birds from the north that remain in Oman. The number of adults in summer should be linked to the number of local breeding birds, and the number of individuals in late summer to the number of chicks being produced locally. Any link between the number of subadults and the status of the local population is less clear

Plate 3. Globally endangered Egyptian Vulture *Neophron percnopterus* and globally vulnerable Eastern Imperial Eagle *Aquila heliaca* flying over the landfill at Al Multaqa, Oman, 19 November 2014. © *W Al Fazari*

because some subadults will be from elsewhere, mostly farther north (Oppel *et al* 2015), the precise character of this species' nomadism is not understood, and some sub-adult birds return to breeding areas in the north (www.lifeneophron.eu/en/Tagging.html).

During May–August 2014, when migrant adult birds are not present Oman, an average of 38.7 ±16.2 adult and 7.2 ±2.6 juvenile Egyptian Vultures were seen at Al Multaqa. These numbers might suggest that the local breeding population was 15–25 pairs, and that they produced 5–10 chicks in 2014. There also might have been some non-territorial floating birds amongst those in adult plumage. Although these may seem like plausible estimates, factors such as age-specific rates of use of disposal sites (Turrin *et al* 2015) might affect these. We must emphasize that the main feature of the breeding Egyptian Vulture population in northern Oman is that it is poorly known. More research is needed to better understand the likely relationship between the counts at the landfill and the size and productivity of the local population, and to identify the areas from which birds using the site come.

Similarly, the number and ages of Egyptian Vulture migrants arriving every autumn is related to the number of breeding birds farther north and their productivity, but this relationship is less clear because little is known about the provenance of migrant vultures wintering in Oman, and the amount of nomadism that occurs during the non-breeding season. Data from radiotracking of two 2–3 year old vultures show that they range over large areas and don't always frequent the large rubbish disposal sites (International Avian Research unpublished data, http://egyptianvultureoman.blogspot.co.at/). The lack of a significant increase in the number of juveniles during the non-breeding season could result from low productivity from northern areas or migration of juveniles to places other than Al Multaqa.

Oman has developed rapidly, particularly in the last 45 years. During that time the human population has grown from *c*723 000 to 4.3 million (Oman National Center for Statistics and Information 2015), and there has been a societal shift from village to large towns and cities; about 1/3 of the population now lives in Greater Muscat. What this has meant for the availability of food for vultures is unclear because while fewer Omanis are engaged in extensive livestock husbandry now, increased wealth and a strong tradition of extensive livestock rearing (mostly goats and camels), means that more animals are kept (2 327 071 in 2004, 3 235 777 in 2013, Oman Ministry of Agriculture and Fisheries 2013) and mortality is lower, and throughout the country there is more waste of all types. Ingestion of toxic and indigestible matter are known to harm avian scavengers (Henry *et al* 2011, Houston *et al* 2007, Mee *et al* 2007). Since *c*2009, waste disposal in Oman has been changing as part of a national strategy (www.ecomena.org/tag/waste-management-strategy/) that aims to reduce the number of waste disposal sites from over 300 to 12 (Be'ah company pers comm). The large number of avian scavengers that use Al Multaqa and the landfill at Tahwa, south of Sur (unpubl data: Environment Society of Oman, M McGrady) two of the most modern disposal sites in Oman, suggests that scavengers may still feed at improved sites, and benefit from the separation and improved handling of toxic material. Also, a modernized waste management effort in Oman may harness the scavengers' ecosystem service value (Markandya *et al* 2008) as part of a comprehensive strategy to reduce waste and cost, and promote human health, while providing access to safe food for scavenging birds (Dupont *et al* 2012). Further, the ability of all vultures to adapt to changing food availability by foraging over large areas (López-López *et al* 2014) supports the idea that waste management solutions can be employed that both meet public health objectives and are not detrimental to vultures. Best practice guidance (BirdLife International *et al* 2015) for waste management is available, and could form a substantial basis for developing the best approach to take in Oman.

Much needs to be done before the potential for monitoring population trends through rubbish disposal site counts can be realized. Surveys for local breeding populations and improved surveys at rubbish disposal sites used by large numbers of Egyptian Vultures appear to be good first steps, but tracking (http://egyptianvultureoman.blogspot.co.at/) and marking of individuals are also important tools that can be used to better understand this globally endangered species. Indeed, the limited work done so far (unpublished data: M McGrady, Environment Society of Oman) points to factors such as dump location, topography, time of year and waste type affecting the numbers and species composition of scavenging birds that uses any particular waste disposal site. More immediate, durable conservation benefit may be found by promoting birdwatching and public education at the waste disposal sites where scavengers congregate. The Egyptian Vulture is relatively well known by the public in Oman, albeit negatively, but even that presents an opportunity for changing public opinion. The rubbish disposal sites themselves are regularly visited by local and foreign birdwatchers and are good stages for educating the public about scavenging birds and wider issues about waste production and management, the important ecological services provided by wildlife, and migration.

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WA Al Fazari, Office of Conservation of the Environment, Diwan of Royal Court, PO Box 246, Muscat, PC 100, Oman.

MJ McGrady, International Avian Research, Am Rosenhügel 59, 3500 Krems, Austria. mikejmcgrady@aol.com

First record of Lesser Spotted Eagle *Clanga pomarina*, first breeding record of Eurasian Penduline Tit *Remiz pendulinus* and first records of Eastern Bonelli's Warbler *Phylloscopus orientalis*, Olive Tree Warbler *Hippolais olivetorum* and Goldcrest *Regulus regulus*, for Iraq

KORSH ARARAT

LESSER SPOTTED EAGLE

During a field trip 13 July 2013, 08.39 h, an eagle was observed in Penjween, Kurdistan, northern Iraq at 35° 44′ 18″ N, 45° 57′ 32″ E. The eagle was soaring and moving northeast. Photographs were taken (Plates 1–3) and later examined by Dick Forsman, Barak Granit, Richard Porter, Hadoram Shirihai and Lars Svensson who confirmed that it was an adult Lesser Spotted Eagle *Clanga pomarina,* the first record for Iraq (Salim *et al* 2012). The bird had a relatively small bill and dark unbarred flight and tail feathers contrasting with pale–medium brown upperwing and underwing coverts and head/neck. It had an obvious white primary patch on its upperwing, two light 'commas' on the underwing and a white 'V' on the rump. The overall proportions and wing-formula are correct for Lesser Spotted Eagle, with smaller bill, more slender wings and slightly longer tail than Greater Spotted Eagle *Clanga clanga.*

Plate 1 (above left). Lesser Spotted Eagle *Clanga pomarina* 13 July 2013, Penjween, Kurdistan, Iraq. © *Korsh Ararat*

Plate 2 (left). Lesser Spotted Eagle *Clanga pomarina* 13 July 2013, Penjween, Kurdistan, Iraq. © *Korsh Ararat*

Plate 3 (above). Lesser Spotted Eagle *Clanga pomarina* 13 July 2013, Penjween, Kurdistan, Iraq. © *Korsh Ararat*

Plate 4 (above). Habitat where Eurasian Penduline Tit *Remiz pendulinus* was found breeding, near Khewata village (northwest of Sulaymaniyah city, Kurdistan, Iraq), 17 April 2013. © *Korsh Ararat*

Plate 5 (right). Eurasian Penduline Tit *Remiz pendulinus* weaving a nest near Khewata village (northwest of Sulaymaniyah city, Kurdistan, Iraq), 17 April 2013. © *Korsh Ararat*

Plate 6 (below). Pair of Eurasian Penduline Tits *Remiz pendulinus* nest building near Khewata village (northwest of Sulaymaniyah city, Kurdistan, Iraq), 17 April 2013. © *Korsh Ararat*

EURASIAN PENDULINE TIT

In the Middle East, the Eurasian Penduline Tit *Remiz pendulinus* breeds in northwest Iran, Lebanon and parts of Turkey and Syria (Porter & Aspinall 2010). It is an uncommon winter visitor for Iraq (Salim *et al* 2012). Proof of breeding for Iraq was obtained 17 April 2013. The nest site was a willow *Salix* tree at a stream bank (Plate 4) near Khewata village (northwest of Sulaymaniyah city, Kurdistan, northern Iraq), at 35° 45′ 36″ N, 45° 27′ 47′ E. It was studied for more than two hours and many photos were taken (Plates 5, 6). Both female and male Eurasian Penduline Tits were actively collecting threads from willow plants at *c*5 m height and they were weaved into the nest by both birds. After two weeks the nest site was visited again and the nest was complete, it was like a basket with one opening which fitted a penduline tit, and it was occupied.

EASTERN BONELLI'S WARBLER

Plate 7 (top). Sakran mountain 8 May 2010, Kurdistan, Iraq. © *Korsh Ararat*

Plate 8 (above). Eastern Bonelli's Warbler *Phylloscopus orientalis* 8 May 2010, Sakran mountain, Kurdistan, Iraq. © *Korsh Ararat*

This species was observed for the first time in Iraq 8 May 2010 during a field survey in deciduous oak forest (with a few walnut trees) on Sakran mountain (Plate 7) in Kurdistan, northern Iraq. The Eastern Bonelli's Warbler *Phylloscopus orientalis* was seen at 36° 34′ 51″ N, 44° 55′ 35″ E at *c*1800m asl. The bird was observed singing on a branch of an oak tree and I photographed it (Plate 8). The bird was similar in size to a Willow Warbler *P. trochilis* but had a rounded head and grey mantle, white underparts and throat and grey-brown upperparts. Its supercilium was indistinct and it had a large dark eye, grey ear-coverts and a pale and relatively strong lower mandible. The unbroken pale eye-ring, a characteristic feature, can be clearly seen in Plate 8. The greater coverts and tertials were green-brown with pale worn edges. Identification of the bird was confirmed by Richard Porter and the British Birds Rarities Committee.

In addition, a singing male was recorded on Peramagroon mountain, Kurdistan, in May 2010 and on 5 June 2015 a singing male was observed on Sakran mountain near the location of the 2010 record above. It is possible that future surveys may discover the species breeding in northern Iraq (proven in southeast Turkey close to the Iraq border, Kirwan *et al* 2008).

OLIVE TREE WARBLER

An Olive Tree Warbler *Hippolais olivetorum* was singing in trees of the campus of Sulimaniye University (Sulaymaniyah city, Kurdistan, northern Iraq) on 10 May 2012. I was attracted to the bird by its loud song which at first reminded me of a Great Reed Warbler *Acrocephalus arundinaceus*. It was quite harsh in tone, but in some ways was like a loud, harsh Eastern Olivaceous Warbler *Iduna pallida*, a species I know well in Iraqi Kurdistan. It continued


Plate 9 (left). A male Goldcrest *Regulus regulus* 1 March 2015, Qara Dagh, Kurdistan, Iraq. © *Korsh Ararat*
Plate 10 (right). A male Goldcrest *Regulus regulus* 1 March 2015, Qara Dagh, Kurdistan, Iraq. © *Korsh Ararat*

singing, with only occasional breaks, for at least 30 minutes. The bird was a large greyish warbler, noticeably larger than Upcher's Warbler *Hippolais languida* that I am familiar with as a breeding bird in the scrubby woodland of the nearby mountain slopes. Although I did not have binoculars I was able to get quite close and observed a large, orange-yellow bill and orange gape when it sang. There was a quite prominent pale wing-panel. I was able to record the song on my phone and later in the year played it to Richard Porter, who confirmed the identification. Olive Tree Warbler is to be expected on migration in Iraq as it occurs on passage in Syria and the Levant. It also breeds along the Levant coast and in western and southern Turkey, close to the Iraqi Kurdistan border (Porter & Aspinall 2010).

GOLDCREST

The Goldcrest *Regulus regulus* is known in the Middle East from the nominate subspecies in Turkey and Iran. It is a vagrant to Jordan and Syria (Porter & Aspinall 2010). On 1 March 2015 in a coniferous woodland at 35° 20′ 23″ N, 45° 23′ 47″ E in the Qara Dagh area southeast of Sulaymaniyah city, Kurdistan, northern Iraq, a small bird was seen perched on a branch of a pine tree and photographed (Plates 9, 10). The bird had buff-white underparts, olive-green upperparts and two wing bars. It had a plain face, black irises, two black lateral crown-stripes and a yellow crown-stripe with an orange rear indicating a male.

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Korsh Ararat, Kurdistan Botanical Foundation and University of Sulaimani, Kurdistan, Iraq. korsh.majeed@univsul.edu.iq

Rare and localised Audouin's Gull *Larus audouinii* declining in Cyprus; results from systematic monitoring 2007–2015 and data for Yellow-legged Gulls *Larus michahellis* and Mediterranean Shags *Gulosus aristotelis desmarestii*

MARTIN HELLICAR

The results are presented of nine successive years of standardised breeding season counts by boat survey at the world's easternmost colony of Audouin's Gull *Larus audouinii*, a species of global conservation concern, at the Kleides islets off the tip of the Karpasia peninsula, northeast Cyprus. Regression analysis of log-transformed breeding pair data shows an overall downward trend that is near significant. Simple comparison of the early survey period (2007–2009) with the late survey period (2013–2015), suggests a drop in average number of breeding pairs of *L. audouinii* of *c*37% (range 21–57%). This raises concerns and highlights the need for continued monitoring of the only breeding colony in Cyprus. Disturbance by anglers and boat users and competition from Yellow-legged Gulls *Larus michahellis* are identified as possible threats and relevant conservation measures are suggested. In 2012 and 2013, *L. audouinii* was recorded breeding at Lefkoniso rock, *c*17 km away from the Kleides colony. This was the first known expansion in breeding range for the species in Cyprus, but may have been temporary, as no breeding evidence was found at Lefkoniso 2014 or 2015.

INTRODUCTION

Audouin's Gull *Larus audouinii* (Payraudeau, 1826) breeds only around the Mediterranean coastline (plus a few pairs in Portugal), in monospecific colonies, the largest of which are in Spain (Ebro delta) and off Morocco (Chafarinas islands), with smaller colonies in Portugal, France, Croatia, Italy, Greece, Turkey and Cyprus. *L. audouinii* is classified as near threatened on a global scale by IUCN (BirdLife International 2015a). Though recent population increases in Europe have led to it being down-listed to least concern at a European level (BirdLife International 2015b), the species is of conservation concern due to its dependence on a small number of localised breeding colonies. Four sites hold over 90% of the breeding population, while the Ebro delta alone held 14 177 pairs, representing 67% of the *L. audouinii* breeding population in 2007 (Oro & Pradel 2000, Tavecchia *et al* 2007).

Plates 1 & 2. Audouin's Gulls *Larus audouinii* on Kleidi rock, Kleides archipelago, Cyprus, May 2010. © *Mike Miltiadou*

Audouin's Gull (Plates 1 & 2) is a medium-sized gull characterised as a coastal species, rarely occurring inland and generally, in contrast to what was once thought, not travelling far offshore (Cramp & Simmons 1983). Its diet consists mostly of epipelagic fish, especially Clupeiformes (herrings, sardines, anchovies) for which it sometimes forages at night, taking advantage of the upward movement at night of these fish, but is also affected by patterns in commercial fishing activity, trawler discards having become an important food source in many areas (Maňosa *et al* 2004, Pedrocchi *et al* 2002). The gull is also known to occasionally take aquatic and terrestrial invertebrates, small birds and plant material including olives (Cramp & Simmons 1983). Breeding colonies are located on cliffs or rocky islands, preferably with some vegetation, though the Ebro delta saltmarsh colony is an exception. Audouin's Gulls are faithful to their nest sites, though in the Aegean birds return to the same island group but not necessarily the same island (BirdLife International 2015a). The nest is a shallow scrape among rocks and vegetation (del Hoyo *et al* 1996). After breeding the birds disperse widely around the Mediterranean coast and beyond, to wintering grounds on the North African coast, as far south as Gambia. The species is long-lived and generally has high adult survival rates but low fertility, though recruitment can be high given good food availability (Oro & Pradel 2000, Tavecchia *et al* 2007). Threats to the conservation of the species include coastal development, unsustainable fishing practices but also reduction of bycatch/fish offal disposal at sea, entanglement in fishing gear, disturbance at nest sites and predation by dogs, Yellow-legged Gulls *Larus michahellis* and Peregrine Falcons *Falco peregrinus* at nest sites (Cooper *et al* 2003, Tavecchia *et al* 2007). Oro & Martínez-Abrain (2007) noted that *Larus audouinii* has high dispersal rates from year to year and seems to avoid large densities of *L. michahellis*.

In Spain, conservation action (mainly site protection) and the availability of discarded fish from trawlers around the Ebro delta have contributed to significant population increases since 1981 (Criado 1997, Guitierrez & Guinart 2008), but smaller breeding colonies in the eastern Mediterranean are still considered threatened and do not show increases in breeding pairs (del Hoyo *et al* 1996, BirdLife International 2004). The conservation actions in Spain included site protection and management to reduce disturbance from fishermen and visitors, the culling of Yellow-legged Gulls, which can compete with *Larus audouinii* mainly for nesting space, and control of rats, which can be serious nest predators on some nesting islands (del Hoyo *et al* 1996, Oro *et al* 2006, 2009).

In Cyprus, Audouin's Gull was first recorded in 1954, in the Karpasia area (Bannerman & Bannerman 1958) and first recorded breeding in 1960, at the Kleides archipelago off the tip of the Karpasia peninsula, northeast Cyprus (Flint & Stewart 1992, Figures 1 & 2). The Kleides comprise a relatively remote chain of ten low-lying, rocky islets, with only the largest three supporting low scrubby vegetation. The other seven islets are essentially low rocks. The largest islet, Kastelleta, is *c*1.5 km from the tip of the Karpasia peninsula and is 10 ha in size and up to 70 m high asl. Zinaritou, the next largest, is only a few metres from the Karpasia mainland, *c*2 ha in size and up to 20 m high asl. Kleidi rock is the furthest from the mainland (*c*2.5 km offshore) and is a small, low islet not more than 5 m high asl.

Murray (1987) reported that 12 pairs were found on Kasteletta in 1960, while in subsequent years the Kleides colony had six nests in 1961, none in 1966 and one in 1968 (Flint & Stewart 1992). Records in the 1970s and especially the 1980s are sparse: Murray (1987) reported 7–10 nests 1971–1974 and 15 occupied nests and 36 adults, all on Zinaritou, in 1987. After 1987, there is a 20-year gap in breeding records from Kleides until 2007, when a detailed census was carried out (Charalambidou & Gucel 2008). Charalambidou & Gucel reported that the gulls arrived at the colony mid-April and had started nesting by the end of April. On the basis of repeat visits in the spring and summer of 2007, Charalambidou & Gucel (2008) reported that Kasteletta was abandoned mid-May after a maximum of 6

Figure 1. Location of the Kleides archipelago off the tip of the Karpasia peninsula, Cyprus.

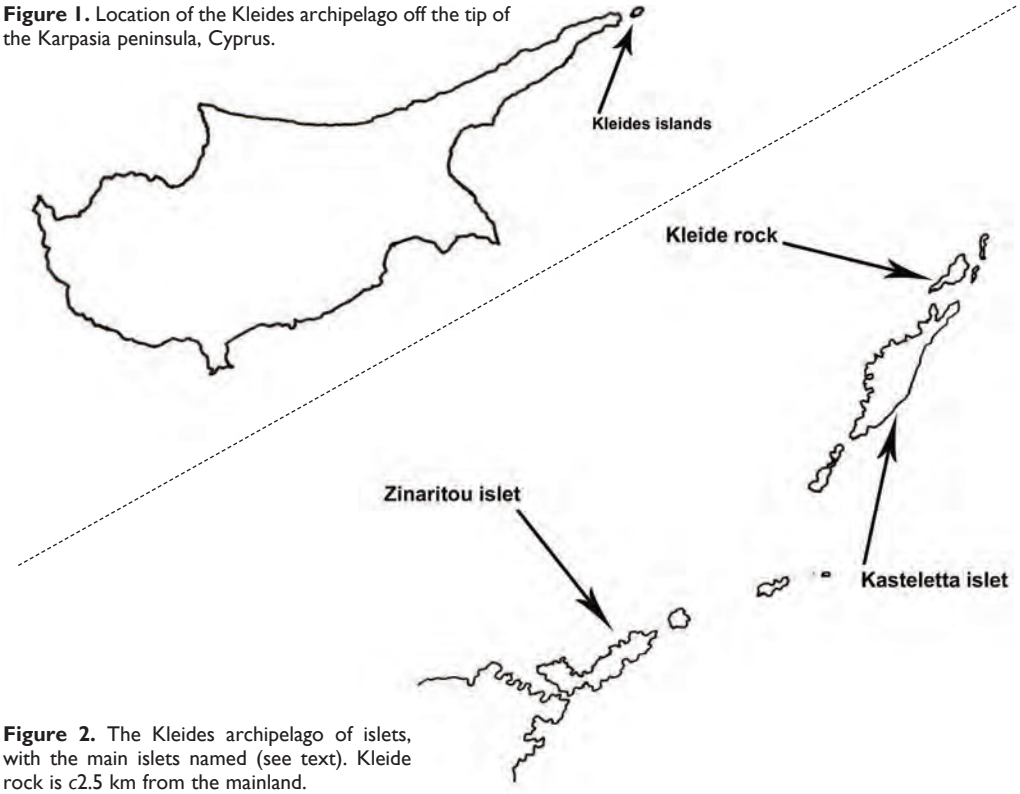


Figure 2. The Kleides archipelago of islets, with the main islets named (see text). Kleide rock is *c*2.5 km from the mainland.

nests had been occupied, while Zinaritou had 38 occupied nests on 15 May 2007, down to 26 by the end of the month.

Starting in May 2007, and returning in the same month every year thereafter, BirdLife Cyprus and the Turkish Cypriot bird protection society, Kuşkor, undertook boat-based surveys of the Kleides colony. The results are presented here. The Kleides archipelago of islets is also the best known breeding site in Cyprus for both Yellow-legged Gulls *Larus michahellis* and Mediterranean Shags *Gulosus aristotelis desmarestii*, both localised breeding birds in Cyprus, and the survey covered these species also. The Kleides were included in the 'Karpasia peninsula & Kleides islands' IBA in the 2000, 2004 and 2014 IBA inventories for Cyprus (Charalambides 2000, Iezekiel *et al* 2004, Hellicar *et al* 2014) because of their importance for *Larus audouinii* and *Gulosus aristotelis desmarestii*. The qualification threshold for an IBA site for *L. audouinii* is 20 breeding pairs, regularly occurring, while for *G. a. desmarestii*, Kleides qualifies as an IBA as the top breeding site for the species in Cyprus.

METHODS

The BirdLife Cyprus/Kuşkor surveys took place *c*20 May every year 2007–2015, to coincide with the period just before peak hatching for *Larus audouinii* chicks (del Hoyo *et al* 1996), a pattern broadly confirmed in studies of the Kleides colony by Murray (1987). A team of 6–8 recorders conducted counts from a small inflatable or fishing boat, making two circuits around all the main Kleides islands (Zinaritou, Kasteletta and Kleidi, Figure 2), keeping at a distance of at least 50–80 m from the shore to minimise disturbance to the gulls. For the same reason, no landing surveys were carried out, with the exception of a brief landing

on Zinaritou in late May 2014. Sea conditions were usually calm, though rougher seas did on occasion (*eg* 2013) make surveying harder. This obstacle and possible source of bias was overcome by conducting a longer boat survey when sea conditions were rougher.

Counts were made for *Larus audouinii*, *L. michahellis* and *Gulosus aristotelis desmarestii*, with adult and immature individuals recorded separately and apparently occupied nests and flightless chicks recorded for the two gull species. Counts for each species were conducted independently by two observers and the average of the two counts was taken as the final estimate for a given year. Separate counts were made for each of the main islands (islets) in the Kleides chain, with birds recorded over the sea or on smaller rocks being added to the total for the nearest sizeable island (Zinaritou, Kasteletta or Kleidi). Audouin's Gull pair numbers were estimated on the basis of the number of birds seen apparently sitting on nests. In addition, rocky islets on the north coast of the Karpasia peninsula were regularly checked for the presence of either gull species or shags during the 9-year survey period. In 2014, and because the standard boat count was carried out unusually early in the season (3 May), a follow-up landing survey was conducted 31 May, involving two observers swimming to Zinaritou islet and conducting a 5-minute search for *Larus audouinii* nests and counting the number of adults present. For 2014, data for Kasteletta was taken from the 3 May boat count and for Zinaritou from the 31 May survey.

RESULTS

Between 1960 and 2007, Audouin's Gull was recorded breeding only on Kasteletta and Zinaritou but the BirdLife Cyprus/Kuşkor survey teams subsequently recorded nesting at Kleidi rock in the Kleides archipelago, and also at an entirely new location, at Lefkoniso rock on the north coast of the Karpasia peninsula (Table 1). Lefkoniso lies *c*60 m off the north coast of the Karpasia peninsula and *c*17 km from the Kleides (Figure 3). This is the first known evidence of breeding beyond the Kleides for the Audouin's Gull in Cyprus. It was estimated that three pairs were nesting on Lefkoniso in the summer of 2012. The species was seen on Lefkoniso in May 2013 and a subsequent (early June 2013) landing survey identified two adult *Larus audouinii* behaving in an agitated manner, suggesting one pair was nesting on the rock. However, no *L. audouinii* were recorded on Lefkoniso in either May 2014 or May 2015.

The breeding Audouin's Gulls at Kleides were always found in a colony, with the perimeter nests at least 10 m from the nearest identifiable Yellow-legged Gull nest, a pattern which held irrespective of which islet they were using in a given year. Only in 2014 was the Audouin's Gull located nesting on two different islets within the Kleides,

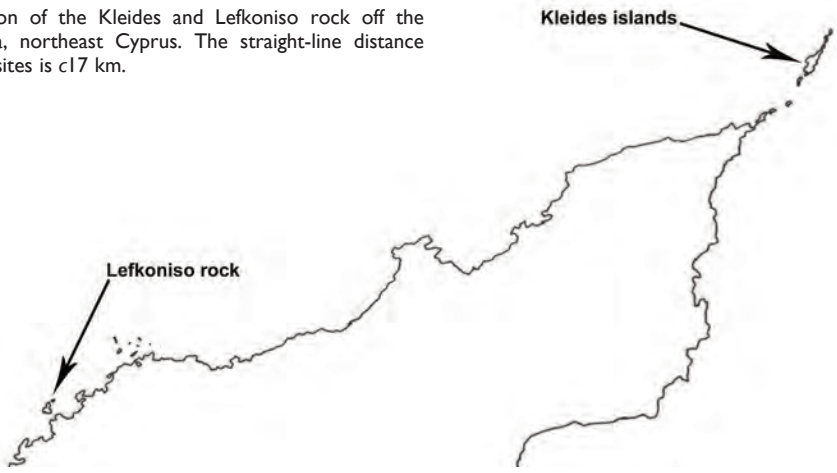


Figure 3. Location of the Kleides and Lefkoniso rock off the Karpasia peninsula, northeast Cyprus. The straight-line distance between the two sites is *c*17 km.

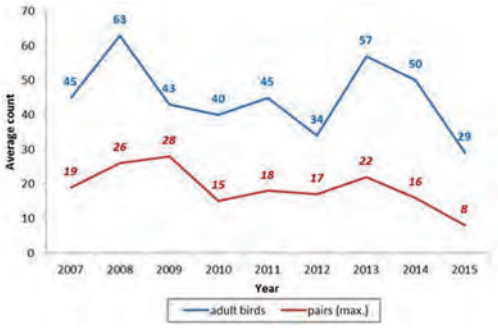
Table 1. Systematic counts at Kleides (and Lefkoniso) 2007– 2015. Numbers shown are the average of two counts by two separate observers on the same date (see Methods). Number of breeding pairs was estimated on the basis of number of birds seen sitting on nests. Other probable breeding species recorded regularly at the Kleides during the annual boat surveys were Peregrine Falcon *Falco peregrinus*, Rock Dove *Columba livia*, Common Swift *Apus apus* and Blue Rock Thrush *Monticola solitarius.*

		***Larus audouinii* survey data**			***Larus michahellis* survey data**	***Gulosus aristotelis desmarestii* survey data**
Year	Survey date(s)	Adult birds counted	Number of breeding pairs	Location of breeding colony	Estimated number of adult birds (all nesting was on Kasteletta, except where noted)	Estimated number of adult and (immature) birds (all immature birds on Kasteletta)
2007	19 May	45	18–19	Zinaritou	161	29 (81)
2008	17 May	63	26	Zinaritou	146	22 (79)
2009	21 May	43	28	Zinaritou	142	28 (34)
2010	22 May	40	15	Kleidi rock	140	12 (20)
2011	21 May	45	18	Kasteletta (1 pair Kleidi rock)	156	45 (87)
2012	19 May	34	14 (+ 3 pair Lefkoniso)	Zinaritou + Lefkoniso rock	150	18 (64)
2013	25 May	57	19–21 (+ 1 pair Lefkoniso)	Kasteletta + Lefkoniso rock	110	32 (25)
2014	3 May, 31 May	50	14–16	Zinaritou (12–15 pairs) + Kasteletta (2–3 pairs)	95	46 (32)
2015	31 May	29	8	Kleidi rock	100 (1 nest and 2 adults Kleidi rock)	15 (32)

though in 2012 and 2013 they also had a smaller breeding group at Lefkoniso. The count data for *Larus audouinii* (Figure 4, Table 1) show that the estimated number of nesting pairs (taking the maximum count for each year) varied 2007–2015, with the estimated number for adult birds varying in a similar manner. A regression analysis of the log-transformed breeding pair data shows an overall downward trend over the nine-year period that is near significant [$F_{1,8}$ = 5.260, P = 0.056]. A simple comparison of the early survey period (2007–2009) with the late survey period (2013–2015), suggests there was a drop in average number of breeding pairs of *L. audouinii* of *c*37% (from 24 for 2007–2009 to 15 for 2013–2015). Comparing maximum and minimum breeding pair counts for the early and late period suggests a drop range of 21–57% (19–28 pairs 2007–2009, 8–22 pairs 2013–2015).

The count data for Yellow-legged Gull (Figure 5, Table 1) show that the estimated numbers of adults varied 2007–2015 with a generally downward trend. A regression analysis of log-transformed adult numbers data shows an overall downward trend over the nine-year period that is significant [$F_{1,8}$ = 15.361, P = 0.006]. A simple comparison of the early survey period (2007–2009) with the late survey period (2013–2015), suggests a drop in average number of adult *Larus michahellis* of *c*32% (149 2007–2009, 101 2013–2015). Comparing maximum and minimum adult counts for the early and late period suggests a drop range of 31–33% (142–161 adults 2007–2009, 95–110 adults 2013–2015).

The count data for Mediterranean Shag (Figure 6, Table 1) show that the estimated numbers of both adult and immature birds fluctuated 2007–2015. Regression analyses of log-transformed data show no overall clear trend over the nine-year period, either for adult shags [$F_{1,8}$ = 0.004, P = 0.95] or immatures [$F_{1,8}$ = 2.062, P = 0.194]. A simple comparison of



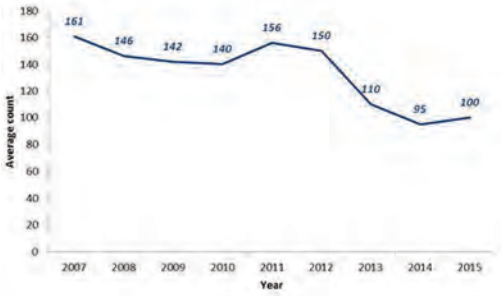


Figure 4 (left). Trend in estimated maximum numbers of adults and breeding pairs of *Larus audouinii* at the Kleides archipelago, Karpasia peninsula, 2007–2015, based on data from boat counts in May of each year. Note that for 2012 and 2013, the estimated maximum counts include pairs at Lefkoniso rock, *c*17 km from the Kleides (see Table 1 for details). A regression analysis of log-transformed breeding pair data shows an overall downward trend over the nine-year period that is near significant [$F_{1,8}$ = 5.260, P = 0.056].

Figure 5 (right). Trend in the average count of adult *Larus michahellis* at the Kleides archipelago, Karpasia peninsula, 2007–2015, based on data from boat counts in May of each year. A regression analysis of log-transformed adult numbers data shows an overall downward trend over the nine-year period that is significant [$F_{1,8}$ = 15.361, P = 0.006].

the early survey period (2007–2009) with the late survey period (2013–2015), suggests an increase in average number of adults of *c*19% (26 2007–2009, 31 2013–2015), but comparing maximum and minimum adult shag counts for the early and late period suggests a wide range from +58% to −31% (22–29 2007–2009, 15–46 2013–2015). For young shags, a comparison of averages for the early and late periods suggests a 53% reduction in numbers of immatures (65 2007–2009, 30 2013–2015), but there is much fluctuation in the numbers overall. Comparing maximum and minimum young shag counts for the early and late period suggests a reduction of 26–60% (34–81 2007–2009 to 25–32 2013–2015).

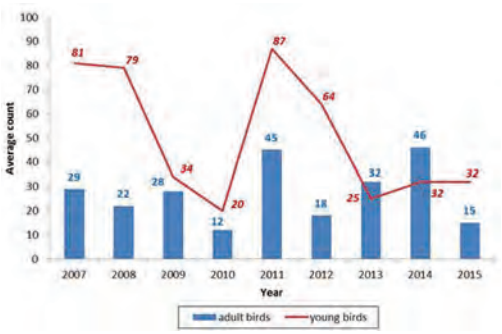


Figure 6. Trend in the average count of adult and immature *Gulosus aristotelis desmarestii* at the Kleides archipelago, Karpasia peninsula, 2007–2015, based on data from boat counts in May of each year. Regression analyses of the log-transformed data show no overall significant trend direction over the nine-year period, either for adult shags [$F_{1,8}$ = 0.004, P = 0.95] or immatures [$F_{1,8}$ = 2.062, P = 0.194].

DISCUSSION

Though the count numbers detailed above could represent underestimates of real population levels due to the difficulties inherent in counting birds from a small boat, the standardised method followed over the nine years of the Kleides survey means the trend data shown can be considered reliable. It is therefore of concern that the only breeding colony for the near threatened Audouin's Gull in Cyprus (easternmost colony for the species globally) seems to be suffering a decline in numbers.

The range of 8–28 breeding pairs recorded since 2007, shows the Kleides archipelago is still a significant colony site for Audouin's Gull, and indeed the data available from the 1960s and 1970s, though sparse, suggests the number of Audouin's Gulls breeding at Kleides may have been lower in the past: only 1–12 pairs were reported from Kleides in the 1960s and 1970s. Given that the species disperses widely in the non-breeding period, it is likely that the Audouin's Gulls of the Kleides are part of an eastern Mediterranean

population, a factor which should act as 'genetic insurance' against in-breeding in the small Cyprus colony. However, relevant ringing and/or genetic data do not exist to confirm this and if the apparent downward trend recorded over the period 2007–2014 were to continue, the threat to the future of the Kleides colony is evident and conservation action is called for. The downward trend for all three breeding seabirds at Kleides suggests a common factor may be at play, and disturbance may be a serious threat. The need for continued monitoring is obvious.

Though it is known from Audouin's Gull studies in the Aegean that the species does move around islands within its breeding colonies, the 'island-hopping' recorded 2007–2015 in Cyprus could be indicative of disturbance. Having been found at Zinaritou in the three years 2007–2009, there was a shift to Kleidi rock in 2010 (which was also the first ever recorded breeding beyond Zinaritou or Kasteletta), then to Kasteletta (and Kleidi) in 2011, back to Zinaritou (and to a new site 17 km away at Lefkoniso) in 2012, back to Kasteletta (and Lefkoniso) in 2013, then to Zinaritou with a 'sub-colony' at Kasteletta in 2014 and finally at Kleidi in 2015. Two changes of breeding island also occurred in the 1960s and 1970s.

Potential sources of disturbance are many. Anglers and small fishing vessels were not infrequently seen on and around the Kleides throughout the survey period, both during the surveys themselves and during other visits to the area. In the 1960s and 1970s eggs and young suffered very heavy predation from fishermen (*Cyprus Ornithological Society Bulletins* 8, 10 & 19 and *Report* 15, in Flint & Stewart 1992). It could be that local fishermen are still targeting seabirds there, which they may perceive as competitors for fish. The declaration of the Kleides as a protected area and the recent erection of information signs in the area, warning against disturbance and landing, is a very positive step. Disturbance from the far more abundant Yellow-legged Gulls, even if the larger gull is suffering a sharper decline than Audouin's Gull, is likely to be another negative factor, with similar threats reported for other Audouin's Gull colonies. Yellow-legged Gulls also represent a predation risk for Audouin's, and this may be increased with reductions in other food sources (though data on fish stocks in the area are not available). Peregrine Falcons are an additional predation risk for Audouin's Gulls, while it is not known if the Kleides harbour rats, another potential predation risk. These competing species are candidates for management action, though the need to conserve a rare breeding raptor such as Peregrine Falcon and the status of the Kleides as the most important breeding site for Yellow-legged Gull in Cyprus should not be left out of the management equation. Another potential threat to Audouin's Gull worth investigating is that of entanglement with fishing gear. Precautionary prevention measures relating to fishing practices could usefully be implemented in a radius around both the Kleides archipelago and Lefkoniso rock (within the 10 km seaward extension of the IBA boundary). Ocean warming, which can affect fish populations and cause seabird declines is another potential threat. Success achieved in Spain through targeted conservation action for the Audouin's Gull including site protection and management to reduce disturbance from fishermen and visitors and the culling of Yellow-legged Gulls and control of rats (del Hoyo *et al* 1996, Oro *et al* 2006) could be instructive in the case of the small, vulnerable and apparently declining population at Kleides.

The Kleides archipelago is the most important breeding site for Mediterranean Shag in Cyprus, where its population is small and localized. Though it is difficult to see any clear patterns from the 2007–2015 Mediterranean Shag field data, the fluctuating population at the site (and especially the wide variation and apparent downward trend in immature birds, perhaps reflecting fluctuating recruitment) are a cause for concern and highlight the need for continued monitoring and investigation of potential threats and for conservation actions for a species that has hardly been studied in Cyprus.

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Plate 3. The 2014 survey team about to set off for the Kleides count, Cyprus (left–right: Robin Snape, Andy Simpkin, Derek Pomeroy, Damla Beton, Melis Charalambides, Martin Hellicar). © *Olkan Erguler*

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Martin Hellicar, BirdLife Cyprus. martin.hellicar@birdlifecyprus.org.cy

A survey of Little Tern *Sternula albifrons* colonies at Port Said, Egypt, in 2015 with notes on behaviour

MOHAMED I HABIB

The global population of Little Tern *Sternula albifrons* is estimated at *c*190 000–510 000 individuals; the overall population trend is decreasing due to changing habitats, although some populations have unknown trends (Wetlands International 2014). In Egypt, it is a fairly common breeder along the Mediterranean coast; the total breeding population was estimated at 2000 pairs by Goodman & Meininger (1989). Between 800–1200 pairs were thought to nest on the coast of the northern Sinai (Meininger & Baha El Din 1986) and 700 pairs were located at lake Bardawil there (Atta 1986). Baha El Din (1999) mentioned 1200 pairs at lake Bardawil, 1500 at lake Manzala (coastal Nile delta) and 600–800 at lake Burullus (coastal Nile delta). Eason *et al* (2012) found 439 nests in Zaranik protectorate, northern Sinai. The seashore near Port Said was missing from any previous survey and the first sighting of breeding birds in the Port Said region was July 2007 (Habib 2014a). The present survey was made to investigate breeding status in 2015 at five breeding colonies near Port Said and two new colonies found east of Port Fouad and south of Port Said respectively. An important objective was to see whether breeding colonies still existed given the continual development of the Port Said area *eg* construction of the new corniche road, gas exploration and drilling facilities and new roads, and to provide recommendations for protection. Behavioural observations were also made.

STUDY AREA

The study area is within the Port Said region, along the Mediterranean coast including east of Port Fouad but is not part of the Ashtum El Gamil protected area. All colonies are spread along the coast and the study area was divided into seven counting sections:

Colonies 1–2: situated east and west of the drainage lake (31° 16′ 45″N, 32°13′ 09″E) in a shallow hypersaline lake with small, scattered sandy islets, the water coming from two main small canal discharge drains crossing lake Manzala. The terns nest on small patches of exposed sand and the area is occupied by nesting terns and other wading birds.

Colony 3: at the sea shore of El Manasra village (31° 20′ 06″N, 32° 06′ 36″E), a sandy shore covered with vegetation dominated by *Nitraria retusa* bushes. The beach nesting area measures *c*1500 × 150 m^2, with one third occupied.

Colonies 4–5: located at two hypersaline lagoons east of El Deba village along the Mediterranean shore, on the western side of Port Said (31° 21′ 02″N, 32° 04′ 58″E). The lagoons reach their maximum size in winter and become nearly dry in summer. The terns nest near the shore in an area 2.5 km long × 150–500 m wide. The area is densely covered with halophytic vegetation, mainly *Nitraria retusa*.

Colony 6: located east of Port Fouad at Boughas El Qalaa, a huge lake less than 90 cm deep. The lake is a fish nursery ground and protected by coast guard and fishery authorities. A small fishing boat was used to reach this newly discovered breeding colony.

Colony 7: located south of Port Said governorate at El Rswa (31.23392°N, 32.29278°E) where birds are breeding on both sides of the Suez canal. Newly discovered.

METHODS

The nesting colonies cover about half of the areas surveyed. Access is restricted due to large natural gas production and piping facilities *c*10 km east of Port Said on the Mediterranean shore. Most of the area was reached by car and boat, and birds were identified and counted with binoculars. Counting units were apparently occupied nests, which are defined as the summed numbers of occupied nests and unoccupied nests that appear to have been used during the present breeding season (Bibby *et al* 2007). I used line transects by using natural marks to prevent over counting and marked each counting spot by GPS and photographs. Air temperature varied from 37°C at the beginning of the season in late May to over 40°C at midday in June and July. Visits to each colony were kept short, less than 20 min (*cf* Walsh *et al* 1995), with visits 07.00–15.00 h. Five visits were made to each colony in the 2015 breeding season. Most of the behavioural observations were made using a telescope and photographed from vantage points, as the muddy substrate prevented closer access.

RESULTS AND DISCUSSION

Number of nests

The counting revealed the following number of nests for each colony: colony 1 (500 nests); colony 2 (five nests); colony 3 (300 nests); colony 4 (1272 nests); colony 5 (25 nests); colony 6 (200 nests); and colony 7 (350 nests). The total number of nests was 2652. The previous counts in 2014 produced 2591 nests in total. The situation in colonies 1–2 had changed due to disappearance of many small islets where terns had been breeding. In colony 3, decline occurred from 794 nests in 2013 to 300 in 2015; the reasons are not clear and need further study. Colonies 4–5 showed a small increase and colonies 6 and 7 were newly discovered.

Behaviour (Plates 1–16)

Parent birds were observed to wet their breast and belly-feathers with fresh water from a nearby broken freshwater pipeline to cool incubating eggs and chicks or to let fledglings drink water from the wetted feathers. When the temperature rose above 40°C, parents buried eggs in very shallow wet sand and, during the hottest part of the day, continually soaked their belly-feathers in fresh water and placed them over the buried eggs, wetting the sand to lower the egg temperature. After hatching, especially during the first few days, parents covered the chicks with fresh water and sand to cool and shield them from the sun (observed in both August 2012 and June/July 2015). Wader species stand over hatchlings in order to shade them from the sun (Podulka *et al* 2004) but this behaviour has apparently not been recorded before in Little Tern. From five days after hatching, chicks independently sought shade for sun protection, waiting for both parents to bring fresh fish and shrimps

Birds arrived at Port Said in early April, scouting the area and forming territories for display and mating. A male attracted the attention of females by performing advertising flights over his territory while carrying small fish, being pursued usually by one to three females. After landing, he was followed by the lead female, and then he started to approach with fish and performing display posture, dropping bill and wing and encircling each other. Then, the female would start the begging call and perform the hunched posture, with the male approaching from the rear, wagging his head from side to side, then jumping over her back and delivering a small fish, raising wings and dropping the tail for copulation. After copulation, the female started to build a few nests in the sand by digging first with feet and then pressing the sand back and forth with its belly and chest, forming a cup-shape dent. The nest was a scrape or a little deeper cup-shaped dent, sometime lined with a small amount of dried vegetation or ornamented with shells. Birds

Plate 1 (left). Breeding display of Little Tern *Sternula albifrons*, Port Said, Egypt, 2015. © *Mohamed I Habib*

Plate 2 (right). Breeding display of Little Tern *Sternula albifrons*, Port Said, Egypt, 2015. © *Mohamed I Habib*

Plate 3 (left). Breeding display of Little Tern *Sternula albifrons*, Port Said, Egypt, 2015. © *Mohamed I Habib*

Plate 4 (right). Breeding display of Little Tern *Sternula albifrons*, Port Said, Egypt, 2015. © *Mohamed I Habib*

Plate 5 (left). Breeding display of Little Tern *Sternula albifrons*, Port Said, Egypt, 2015: receiving fish before mating. © *Mohamed I Habib*

Plate 6 (right). Copulation by Little Terns *Sternula albifrons*, Port Said, Egypt, 2015. © *Mohamed I Habib*

Plate 7 (left). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: chicks hiding behind stone. © *Mohamed I Habib*

Plate 8 (right). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: eggs and damp sand. © *Mohamed I Habib*

Plate 9 (left). Little Tern *Sternula albifrons* chick partially covered with sand, Port Said, Egypt, 2015. © *Mohamed I Habib*

Plate 10 (right). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: chicks and damp sand. © *Mohamed I Habib*

Plate 11 (left). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: adult shading two chicks. © *Mohamed I Habib*

Plate 12 (right). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: adult shading chick. © *Mohamed I Habib*

Plate 13 (left). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: adult drinking and wetting belly. © *Mohamed I Habib*

Plate 14 (right). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: standing rather than incubating in over 40°C. © *Mohamed I Habib*

Plate 15 (left). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: covering young with wet mud. © *Mohamed I Habib*

Plate 16 (right). Protecting Little Tern *Sternula albifrons* young and eggs from hot weather, Port Said, Egypt, 2015: muddy belly of adult. © *Mohamed I Habib*

started to lay eggs in clutches from one–three and rarely four. In June 2015, I found a nest with six eggs and one just hatched chick and another nest with 11 eggs, indicating more than one female laying in the same nest.

The terns preferred to nest on the mainland rather than on islands. Eason *et al* (2012) found that Little Terns in the northern Sinai (439 nests in total) preferred to nest on islands (69% of nests), rather than on the mainland (31%). This could be because of disturbance from the salt production company or fishermen. This is opposite to my results from the survey of the Port Said colonies, where birds preferred to nest on the mainland in four colonies, except for colonies 1–2 and 6 where they preferred to nest on islands. Birds bred in loose colonies on sandy sea shores with nests placed 5–15 m apart, in a rare case only 1 m. The territory was restricted to just enough space around the nest to allow mating and nesting activity without physical contact with neighbouring pairs

After *c*20 days, eggs hatched asynchronously. The chicks learnt the parent's calls on the first day, especially the call of the male, which brought food the first few days. The

chicks emerged from under the female's belly, flapping and running towards the male and getting small fish or shrimps.

The chicks left the nest *c*5 days after hatching, when the parents with their short legs could no longer shade them. The chicks sought shade and protection from predators between vegetation, boats or rocks. They were able to 'fly' very short distances (*c*5 m) after two weeks. After four weeks, fledglings flew with adults to fishing grounds nearby and waited to be fed on small fish by the parents.

Port Said is an important nesting area for Little Terns in the Middle East, representing more than 11% of the current Black sea and Mediterranean sea breeding population, estimated at 63 500–113 000 birds (Wetlands International 2014). Little Terns in Port Said face disturbance during the breeding season, such as fishermen walking through the area, minitrucks carrying fish which were seen to destroy nests and people collecting *c*1-week-old chicks which are not yet able to fly. In June 2015, more than 500 chicks were collected by people visiting the area; only after long discussion, they released all of them after being informed that they might be infected by bird influenza but unfortunately 50 chicks had already died. Building the corniche road (*c*3 km, El Manasra–El Deba) will increase tourism and visitor pressure on the beaches.

These seven colonies merit protection from further development within the breeding areas and from disturbance. Colonies 3–4 are located within the gas industry zone and colonies 4–5 will be disturbed by building the new corniche road. Populations of many seabirds and other species that nest along the coasts are declining due to habitat degradation and habitat loss. An improved understanding of the species-specific factors that determine nest densities is therefore a critical factor for conservation efforts. Signs should be posted forbidding any human traffic in the breeding areas during mating, nesting and fledging.

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Mohamed I Habib, PO Box 432, Hurghada, Egypt. mrhydro35@hotmail.com

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.

CYPRUS

BirdLife Cyprus Rarities Committee: Jane Stylianou (chair), Melis Charalambides, Stavros Christodoulides, Hugh Buck, Chris Stavrou, Martin Hellicar, Johannes Honold. 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.

EGYPT

The Egyptian Ornithological Rarities Committee comprises Sherif Baha El Din (chair), Frédéric Jiguet (secretary), Wed Abdel Latif Ibrahim, Richard Bonser, Andrea Corso, Pierre André Crochet, Andrew Grieve, Richard Hoath and Manuel Schweizer. Official external advisers are Istvan Moldovan, Ahmed Riad and Mary Megalli. Claims should be sent to eorc.secretary@gmail.com. See also www.chn-france.org/eorc/eorc.php?id_content=1 where claim forms can be downloaded.

IRAN

The Iran Bird Records Committee comprises Abolghasem Khaleghizadeh (recorder), Mohammad Tohidifar, Parviz Bakhtiatir, Seyed Babk Miusavi, Mohammad E Sehhatisabet, Meysam Ghasemi, Ali Khani, Abbas Ashoori and Ahmad Barati plus Derek Scott, Richard Porter and Ian Harrison as external consultants as and when necessary. Claims should be sent to Abolghasem Khaleghizadeh at akhaleghizadeh@gmail.com. The committee accepted the following records in 2015.

Taiga Bean Goose *Anser fabalis*. One Mamloo dam, Tehran province, winter–7 March 2015 (A Hashemi, D Mojab). Ninth record.

Socotra Cormorant *Phalacrocorax nigrogularis*. One Bushehr, Bushehr province, 3 March 2015 (M Ghasemi, M Tohidifar). Apparently 42nd record.

White-breasted Waterhen *Amaurornis phoenicurus*. One Chabahar bay, Sistan & Baluchestan province, November 2015 (A Hosseini). Third record.

Glaucous Gull *Larus hyperboreus*. One juvenile Khoor-e Tiab, Hormozgan province, 22 January 2015 (M Ghasemi, B Nezami, A Sangchooli). First record.

Namaqua Dove *Oena capensis*. One Zanjan, Zanjan province, 2 May 2015 (A Sangchooli). Apparently third record outside Khuzestan province (where it is increasing).

Great Spotted Cuckoo *Clamator glandarius*. Two Ilam, 2 April 2015 (Y Sadafzadeh). Eighth record.

Western Brown Fish Owl *Ketupa zeylonensis*. One Bashagard, Hormozgan province, 9 September 2015 (G Ghader). Tenth record.

Omani Owl *Strix butleri*. One Mashhad, Khorasan-e Razavi province, 21 January 2015 (S Musavi, A Khani). One Jam, Bushehr province, July 2015. One Mehriz, Yazd province, 13 October 2015 (T Ghadirian). First–third records.

Sooty Falcon *Falco concolor*. One Damavand, Tehran province, July 2015 (M Kashfi). Apparently eighth record.

Long-tailed Shrike *Lanius schach*. A pair with a juvenile, Ferdows, South Khorasan province, 27 July, 3 & 5 August 2015 (H Ostovari). Seventh record (and first breeding record).

Wire-tailed Swallow *Hirundo smithii*. Two juveniles Aji-Gol, Golstan province, 27 December 2015 (H-R Rezaie). First record.

Kurdish Wheatear *Oenanthe xanthoprymna*. One Oraman, Kordestan province, September 2015 (P Bakhtiari). Apparently fifth record.

ISRAEL

The Israel Rarities and Distribution Committee comprises Avner Cohen (secretary), Barak Granit, Yosef Kiat and Yoav Perlman. Claims should be sent to Avner Cohen at israbirding@gmail.com. See also www.israbirding.com/irdc where claim forms can be downloaded.

JORDAN

The Jordan Bird Records Committee comprises Fares Khoury (secretary), Richard Porter, Ian Andrews, Feras Rahahleh and Khaldun Al-Omari. Claims should be sent to Fares Khoury at avijordan2000@yahoo.com.

Crested Honey Buzzard *Pernis ptilorhynchus*. One adult Aqaba bird observatory, 12 April 2015 (J Sykes, D Dridi, A Mustafa, A Dodd, J & A Luker, R Sinclair & A Edwards). First record.

Black-winged Kite *Elanus caeruleus*. Three individuals (one adult, two juveniles) Jordan valley, 25 June 2015 (F Khoury, R Massis, Plate 1). Second record.

Eurasian Whimbrel *Numenius phaeopus*. Two Aqaba bird observatory, 26 April 2015 (F Rahahleh, Plate 2). One Aqaba bird observatory, 26 May 2015 (F Rahahleh, Plate 3). Ninth & tenth records.

Common Myna *Acridotheres tristis*. At least 26 birds at six sites (Amman, Na'ur, Dead sea road, Dead sea hotel area, Wadi Bahhath, east of Na'ur), 3 April–30 May 2015 (F Khoury, R Massis). Sixth–18th records. This species apparently now well established in parts of Jordan and claims no longer required by JBRC.

Rose-coloured Starling *Pastor roseus*. One adult Aqaba bird observatory, 23 June 2015 (F Rahahleh, Plate 4). Seventh record.

Plate 1. Juvenile Black-winged Kite *Elanus caeruleus* 25 June 2015, Jordan valley, Jordan. © *Fares Khoury*

Plate 2. Eurasian Whimbrel *Numenius phaeopus* 26 April 2015, Aqaba bird observatory, Jordan. © *Fares Rahahleh*

Plate 3. Eurasian Whimbrel *Numenius phaeopus* 26 May 2015, Aqaba bird observatory, Jordan. © *Fares Rahahleh*

Plate 4. Rose-coloured Starling *Pastor roseus* 23 June 2015, Aqaba bird observatory, Jordan. © *Fares Rahahleh*

Rustic Bunting *Emberiza rustica*. One Petra, 30 November 2014 (O Jonsson, K Jonsson, E Sivencrona, H Sivencrona). Second record.

The following claim was rejected: Ruppell's Vulture *Gyps rueppellii* (12 May 2014 Dana).

KUWAIT

The Kuwait Ornithological Rarities Committee comprises Mike Pope (chair), AbdulRahman Al-Sirhan (secretary), Markus Craig, Neil Tovey and Humoud Al-Shayji. 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 mikeinq8@gmail.com.

Greater White-fronted Goose *Anser albifrons*. Two Jahra Pools reserve (JPR), 20 January 2015 (H Bouresli). Fourth record.

Red-breasted Merganser *Mergus serrator*. One on sea off JPR, 11–14 February 2015 (M Craig). Second record.

Sooty Shearwater *Puffinus griseus*. A single moulting bird Mina Al Zour, 23 May 2015 (M Pope) and two birds offshore JPR 25 May (O Al Shaheen) are considered as the fourth record.

Striated Heron *Butorides striata*. One Khiran Marchina, 21 February 2015 (M Pope). Fourth record.

Masked Booby *Sula dactylatra*. One flying north at coast JPR area, 1 April 2015 (O Al Shaheen). First record.

Spur-winged Lapwing *Vanellus spinosus*. Two JPR, 3 March 2015 (O Al Shaheen). 14th record.

Great Snipe *Gallinago media*. One JPR, 13 April 2015 (M Craig, N Tovey). 13th record.

Grey Phalarope *Phalaropus fulicarius*. One winter plumage Jahra bay off Entertainment City, 28 February 2015 (A Al Sirhan) and a different bird Jahra East outfall 16 April 2015 (M Craig). Eighth & ninth records.

Sabine's Gull *Xema sabini*. One JPR, 31 July–1 August 2015 (M Pope, N Tovey, Plate 5). First record.

Little Gull *Hydrocoloeus minutus*. One JPR, 1 April 2015 (M Craig). Sixth record.

Arctic Tern *Sterna pardisaea*. Two JPR, 13 June 2015 (O Al Shaheen). Sixth record.

Plate 5. Sabine's Gull *Xema sabini* 31 July–1 August 2015, Jahra Pools reserve, Kuwait. © *Mike Pope*

Long-tailed Skua *Stercorarius longicaudus*. One offshore JPR, 1 July 2015 (O Al Shaheen). Fourth record.

Pallid Scops Owl *Otus brucei*. One Green island, 30 January 2015 (N Tovey). One Al Abraq, 3 February 2015 (M Craig). One Al Liyah, 5 February 2015 (A Al Jeraiwi, O Al Shaheen). 12th–14th records.

Hooded Crow *Corvus cornix*. One JPR, 7 February 2015 (M Craig). Second record.

Pale Crag Martin *Ptyonoprogne obsoleta*. One and then two Jal Al Zour ridge, 14–25 January 2015 (O Al Shaheen, A Jamal). Ninth record.

Plain Leaf Warbler *Phylloscopus neglectus*. One Mutla'a ranch, 15–19 April 2015 (M Craig). First record.

Black Scrub Robin *Cercotrichas podobe*. One Kuwait zoo, 9 May 2014 (F Al Nomas). One Al Dhahar area (southern Kuwait), 24 April 2015 (M Shah). Third & fourth records.

Masked Wagtail *Motacilla* (*alba*) *personata*. One Jahra East outfall, 15 February 2015 (N Tovey). Fifth record.

Desert Finch *Rhodospiza obsoleta*. Eight 21 February 2015, Khiran (south of khor) (A Al Jeraiwi, M Pope), two north of khor 7 March 2015 (M Pope), three north of khor 23 May 2015 (A Al Jeraiwi, M Pope). 12th–13th records (small localised population).

Grey-necked Bunting *Emberiza buchanani*. One Al-Abraq, 23–24 January 2015 (M Craig, H Bouresli). Fourth record.

Red-headed Bunting *Emberiza bruniceps*. One male Mutla'a ranch, 24 April 2015 (M Craig). Sixth record.

OMAN

The Oman Bird Records Committee comprises Jens Eriksen (recorder), Ian Harrison, Dave Sargeant, Graham Searle, John Atkins, Peter Cowan, Waheed Al Farsi, Zahran Al Abdulasalam and Manal Al Kindi. Claims should be sent to Jens Eriksen hjoman@gmail.com from whom claim forms can be obtained. OBRC has accepted the following records since the report in *Sandgrouse* 37(2).

Brahminy Kite *Haliastur indus*. One adult Wadi Darbat, 20 November 2015 (G Sahlstrand). First record.

Cinereous Vulture *Aegypius monachus*. One Wadi Aydam, 10 February 2015 (B De Schutter). Fifth record.

Eleonora's Falcon *Falco eleonorae*. A 2nd calendar year bird Jarziz farm, Salalah, 12–14 June 2015 (T Pedersen *et al*). First record.

Watercock *Gallicrex cinerea*. One Khawr Taqah, 16 November 2015 (D Gustafsson). Sixth record.

Greater Painted-snipe *Rostratula benghalensis*. Adult female Raysut sewage treatment plant, 26–28 August 2015 (R Tovey, H & J Eriksen). Seventh record.

Asian Dowitcher *Limnodromus semipalmatus*. One Al Ansab wetland, Muscat, 3 November 2015–at least 5 January 2016 (T Epple, M Al Kindi *et al*). First record.

Red Knot *Calidris canutus*. One breeding plumage Barr Al Hikman, 12 November 2015 (J van de Kam & R Bom). Seventh record.

Black Tern *Chlidonias niger*. One Khawr Dhurf, 10 February 2015 (A B Kristensen). Tenth record.

Long-tailed Skua *Stercorarius longicaudus*. One off Bandar Khayran, 29 May 2015 (P Batty) and two off Al Qurm park, Muscat, 19 September 2015 (G Kirwan, N Redman). Seventh & eighth records.

South Polar Skua *Stercorarius maccormicki*. One The Wave, Muscat, 24 June 2015 (H & J Eriksen, Plate 6). Fifth record.

White-throated Kingfisher *Halcyon smyrnensis*. One Hilf, Masirah, 2 November–13 December 2015 (B Vandenbergh, H & J Eriksen). First record.

Malachite Kingfisher *Corythornis cristatus*. One Khawr Rawri, 11 June 2015 (T Pedersen *et al*) and up to two there 25 October 2015–at least 12 January 2016 (C Lazaro *et al*, Plate 7). Ninth & tenth records.


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Plate 6. South Polar Skua *Stercorarius maccormicki* 24 June 2015, The Wave, Muscat, Oman. © *H & J Eriksen*

Plate 7. Malachite Kingfisher *Corythornis cristatus* 1 November 2015, Khawr Rawri, Oman. © *H & J Eriksen*

Pale Martin *Riparia diluta*. One Raysut sewage treatment plant, 7 January 2015 (H & J Eriksen). Fourth record.

Streak-throated Swallow *Petrochelidon fluvicola*. Adult Raysut 6–11 December 2015 (H & J Eriksen, Plate 8). Sixth record.

Plate 8. Streak-throated Swallow *Petrochelidon fluvicola* 11 December 2015, Raysut, Oman. © *H & J Eriksen*

Dusky Warbler *Phylloscopus fuscatus*. One Al Mughsayl 9–12 November 2015 (H & J Eriksen). Third record.

Forest Wagtail *Dendronanthus indicus*. One Qatbit, 14–21 November 2015 (P Berglin *et al*). One Dhahariz park, Salalah, 21 November–at least 12 January 2016 (D Gustafsson *et al*). Tenth & eleventh records.

Amur Wagtail *Motacilla* (*alba*) *leucopsis*. One Sohar, 15 September 2015 (J Atkins). Fourth record.

Eurasian Siskin *Spinus spinus*. One Dawkah farm, 14 November 2015 (Stig Holmstedt). Ninth record.

QATAR

Qatar Bird Records Committee members are Jamie A Buchan (recorder), Neil G Morris (secretary), Richard F Porter (honorary president), Keith Betton and Simon J Tull. Claims should be sent to jamie_buchan@yahoo.com. QBRC has accepted the following records since the report in *Sandgrouse* 37(1).

Greater White-fronted Goose *Anser albifrons*. Six Doha golf club, 17 November 2014–11 February 2015 (S Price). Ninth record.

Black-winged Kite *Elanus caeruleus*. One Irkayya farm 18 & 24 November 2014 (S Al Aseeri, S Price, Sheikh M A Al Thani, J Thompson). Fourth record.

European x Crested Honey Buzzard *Pernis apivorus* × *P. ptilorhynchus*. One Doha golf club 17 November 2014–9 Mar 2015 (S Price). The only Crested Honey Buzzard in Qatar was recorded 13 May 2014.

Short-toed Snake Eagle *Circaetus gallicus*. All records Irkayya farm. One 6 July 2013 (D Kumar, T Chirakuzhi). Tenth record. One 8 March 2014 (D Kumar, T Chirakuzhi, S Kalliparambil). 12th record. One 22 April 2015 (D Kumar). 14th record. One (a juvenile), 7 November 2015 (D Kumar). 15th record.

Eastern Imperial Eagle *Aquila heliaca*. Juvenile Irkayya farm, 6 November 2015, relocated Sailiya (west) lagoon (aka Al Riffa), 16 November 2015 (P Shellard, J Thompson, S Tull *et al*). Fifth record.

Steppe Buzzard *Buteo buteo vulpinus*. One Irkayya farm, 1–13 November 2015 (A Everester, S Price). Fourth record.

Corncrake *Crex crex*. One Al Shamal park, 10 October 2015 (D Bishop, D Colbourne). Eighth record.

Spur-winged Lapwing *Vanellus spinosus*. One Sailiya (west), 11 November 2014 (S Al Aseeri, S Odeh, Sheikh MA Al Thani *et al*). Second record.

White-tailed Lapwing *Vanellus leucurus*. One Sailiya (west), 22 April 2015 (S Price). 15th record.

Arctic Skua *Stercorarius parasiticus*. One pale phase Al Wakrah, 28 March 2015 (S Al Aseeri). Ninth record.

Pin-tailed Sandgrouse *Pterocles alchata*. A small breeding population discovered, 3 June 2015 (S Al Aseeri, Sheikh MA Al Thani *et al*). Considered probably wild, not feral. First record.

Barbary Falcon *Falco* (*peregrinus*) *pelegrinoides*. One Sailiya (west), 4 November 2014 (S Al Aseeri, A Al Khulaifi, Sheikh MA Al Thani). Second record.

Long-tailed Shrike *Lanius schach.* One Al Shamal park, 25 October 2014 (G Farnell). Second record. One Sheraton park, 16–17 October 2015 (D Colbourne, J Miles *et al*). Third record.

Eurasian Crag Martin At least eight Abu Nahkla, 28 March 2015 (D Bishop). At least three Irkayya farm, 3 April 2015 (N Morris). Thirteenth & fourteenth records.

Thrush Nightingale *Luscinia luscinia*. One Irkayya farm, 21 September 2015 (G Farnell *et al*). Two Sheraton hotel gardens, 16–at least 18 October 2015 (G Farnell, S Price *et al*). Eleventh & 12th records.

White-crowned Wheatear *Oenanthe leucopyga*. One Irkayya farm, 30 May–2 June 2015 (R Angwin, Sheikh MA Al Thani). Second record.

Kurdistan Wheatear *Oenanthe xanthoprymna*. One male Khasooma, 11 September 2015 (P Shellard, S Tull). Third record.

Masked Wagtail *Motacilla* (*alba*) *personata*. One Al Shamal park, 20 December 2014 (D Bishop). Second modern record.

Common Linnet *Linaria cannabina*. One female/first-winter Sailiya (west), 18 November 2015 (S Al Aseeri, Sheikh MA Al Thani). First record.

UNITED ARAB EMIRATES

The Emirates Bird Records Committee comprises Oscar Campbell (chairman), Mark Smiles (secretary), Simon Lloyd, Huw Roberts and Neil Tovey (voting members) plus Tommy Pedersen (UAE bird recorder), Ahmed al Ali and Peter Hellyer (non-voting members). Records are circulated and assessments published three times per year, according to the timetable outlined at 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 available at www.uaebirding.com/uaechecklist.html, along with annual reports for 2010–2013 inclusive. Claims, preferably on the downloadable report forms should be sent to ebrcuae@gmail.com or to Tommy Pedersen at tommypepe63@gmail.com. EBRC has accepted the following records since the report in *Sandgrouse* 37(2).

Cory's/Scopoli's Shearwater *Calonectris* (*diomedea*) *borealis/diomedea*. Singles pelagic trips from Khor Kalba 30 August and 14 September 2015 (A Alzaabi). Sixth & seventh records (four previous records attributed to Cory's Shearwater and one unspecified; last recorded 2014).

Amur Falcon *Falco amurensis.* One second calendar year male and female Wamm farms, 13–18 June 2015 with the female to 26 June 2015. A different second calendar year male with three second calendar year females there 3–4 July 2015 (M Smiles *et al*). 18th–19th records; last recorded 2014.

Jacobin Cuckoo *Oxylophus jacobinus.* One Wamm farms, 4 July 2015 (K Echtay *et al*). Fourth record; last recorded 2011.

Omani Owl *Strix butleri.* One heard calling and sound-recorded Wadi Wurayah national park, 8 and 13 March 2015 (E Miller, P Cabrera, J Judas). First record of this presumed elusive resident.

Black Drongo *Dicrurus macrocercus.* One Mushrif national park 10–16 June 2015 (M Francis *et al*) and presumed to be the same bird there 15 October–15 November 2015 (S Abdikhalyk, V Sharma *et al*). Seventh record, although a Black Drongo reported at several sites in the greater Dubai area from March 2014 might have been the same individual.

Green Warbler *Phylloscopus nitidus.* One Dubai pivot fields, 12 September 2015 (OJ Campbell, M Smiles, N Strycker). 14th record; last two autumn 2014 but prior to that not recorded since 2007.

Blyth's Reed Warbler *Acrocephalus dumetorum.* One Al Mamzar park, 4 September 2015 (M Smiles). 16th record but some older records are in the process of being re-evaluated. Last recorded 2012.

Collared Flycatcher *Ficedula albicollis.* One Al Mamzar park, 3–9 October 2015 (M Smiles *et al*). First record.

ACKNOWLEDGEMENTS

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

Around the Region

Ian Harrison & Chris Lamsdell (compilers)

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 2015 unless stated otherwise.

Records and photographs for *Sandgrouse* 38 (2) should be sent by 15 June 2016 to atr@osme.org.

AZERBAIJAN

A Swedish birding group monitored the migration site Besh Barmag (BB) on the Caspian coast north of Baku 26–28 Oct and counted *c*250 000 birds, mainly starlings, larks and corvids, but also thousands of waterfowl. Shirvan national park (SNP) and the inland lake Haji Gaboul (HG) were visited 29 Oct. 63 **Marbled Ducks** *Marmaronetta angustirostris* SNP and 3000 **Pygmy Cormorants** *Microcarbo pygmeus* BB. Two **White-tailed Lapwings** *Vanellus leucurus* SNP and two **Black-winged Pratincoles** *Glaerola nordmanni* BB. Second or third record **Black-legged Kittiwake** *Rissa tridactyla* HG and one **Great Black-headed Gull** *Ichthyaetus ichthyaetus* BB. Several **Caucasian Chiffchaffs** *Phylloscopus* (*collybita*) *lorenzii* and first record **Yellow-browed Warbler** *P. inornatus* (28 Oct) BB. Probably fifth modern record **Desert Wheatear** *Oenanthe deserti* (a female) BB and a **Citrine Wagtail** *Motacilla citreola* SNP.

BAHRAIN

Fourth record **Woodlark** *Lullula arborea* Adhari 21 Oct while fifth record **Yellow-browed Warbler** *Phylloscopus inornatus* Jidhaf 15 Oct. Eighth record **Eurasian Siskin** *Carduelis spinus* 20 Oct Buri.

CYPRUS

First **Red-breasted Goose** *Branta ruficollis* since 2002 (eighth record) Larnaca sewage works 4–23 Nov. A **Ruddy Shelduck** *Tadorna ferruginea* Zakaki marsh 15 and 22 Aug first August record. Also one Bishop's pool 17 Aug and one Oroklini lake 3–6 Nov. Another Larnaca sewage works 22 Sep–at least 24 Nov, two there 14–21 Dec and two eastern Mesaoria 10 Dec. One **Red-crested Pochard** *Netta rufina* Oroklini marsh 3 Nov (rare migrant, recent breeding species). 40 **Ferruginous Ducks** *Aythya nyroca* Kouklia dam wetlands 30 Aug, 75 Kapouti 3 Sep and 79 Lefkoniko reservoir 7 Nov. Three **White-headed Ducks** *Oxyura leucocephala* Oroklini marsh 14–31 Dec (Plate 1) and into 2016 (16th record since 1989).

Plate 1. White-headed Duck *Oxyura leucocephala* 21 December 2015, Oroklini marsh, Cyprus. © *Colin Richardson*

Large numbers **Scopoli's Shearwaters** *Calonectris diomedea* off north coast at Agios Amvrosios mid Oct with 380 floating offshore there 11 Oct, 320 migrating west 14 Oct, 88 moving east 16 Oct and 155 heading west 18 Oct. Single **Red-necked Grebes** *Podiceps grisegena* (different birds) Polis Chrysochou bay 2 and 27 Aug and five Paphos harbour 4 Nov (seven previous records). A melanistic **Greater Flamingo** *Phoenicopterus roseus* seen March present in the flock Akrotiri and Larnaca salt lakes from 8 Jun (still present Akrotiri 21 Dec). Eighteen **Black Storks** *Ciconia nigra* Vasilia 11 Sep, three Akrotiri 21 Sep, two Kouklia dam wetlands and two Phasouri 5 Oct, four Acheleia dam 19 Oct. 350 **Glossy Ibises** *Plegadis falcinellus* Polis Chrysochou bay 15 Aug was largest daily number recorded on autumn migration. 24 **Eurasian Spoonbills** *Platalea leucorodia* Kouklia dam wetlands 9 Sep. Two groups of **Great White**

Pelicans *Pelecanus onocrotalus*, 27 birds, arrived from northwest 2–4 Jul remaining to 14 Jul. They travelled up to 200 miles/day visiting numerous wetlands. 25 Kouklia dam wetlands 7 Jul and nine there 30 Oct while 28 migrated southeast over Gallinoporni 11 Oct (very rare summer, otherwise scarce migrant usually late autumn). One **Northern Gannet** *Morus bassanus* off Paphos headland 18 Nov.

Juvenile **Egyptian Vulture** *Neophron percnopterus* Akrotiri gravel pits 16 Sep and a sub-adult Akrotiri 6 Oct. One **Short-toed Snake Eagle** *Circaetus gallicus* (not annual Cyprus) over Akrotiri 23 Sep, and a juvenile there 30 Sep and two 3 Oct. Single immature **Lesser Spotted Eagles** *Aquila pomarina* Bishop's pool 5 Oct, Akrotiri 6 Oct and Phasouri reed-beds 8 Oct (possibly same bird) and one cape Aspro 16 Oct. At least 20 **Western Marsh Harriers** *Circus aeruginosus* Kouklia dam wetlands 23 Sep. A good autumn for less than annual **Levant Sparrowhawk** *Accipiter brevipes*: two Akrotiri 23 Sep and 6 Oct, singles Agia Varvara (Paphos) 7 Oct, Phasouri 8 Oct, Achelia dam 16–17 Oct and Konia lower farm 27 Oct. Up to three **Lesser Kestrels** *Falco naumanni* Androlikou area Paphos June and July but no proof of breeding (last recorded breeding 1929). 10 **Eurasian Hobbies** *F. subbuteo* Karpasia (near Davlos) 1 Oct. A **Baillon's Crake** *Porzana pusilla* Bishop's pool 16 and 19 Aug, with one, probably the same bird, dead under overhead wires Akrotiri 19 Aug. Three **Spotted Crakes** *P. porzana* Kouklia dam wetlands 15 Oct. 1400 **Eurasian Coots** *Fulica atra* Kouklia dam wetlands 9 Sep. 86 **Common Cranes** *Grus grus* over northern coast of Agios Therissos 9 Oct and 80 on 11 Oct. *c*280 **Demoiselle Cranes** *G. virgo* Mandria, Paphos, 28 Aug and smaller numbers migrated south several dates: Akrotiri salt lake 25 Aug–18 Sep with largest flocks 13 on 25 Aug, 25 on 26 Aug, 92 on 29 Aug and 11 on 2 Sep. Also, one Evretou dam 3 Sep, two Paphos sewage plant 11 Sep and one Kouklia dam wetlands 5–6 Oct.

Over 100 **Eurasian Stone-curlews** *Burhinus oedicnemus* Filia 5 Dec while 300 **Black-winged Stilts** *Himantopus himantopus* Kouklia dam wetlands 7 Jul. One **Eurasian Oystercatcher** *Haematopus ostralegus*, a scarce passage migrant, Polis Chrysochou bay 28 Jul, three there 19 Aug two Agios Amvrosios 5 Sep and one Spiros beach 10 Sep. A **Jack Snipe** *Lymnocryptes minimus* Nicosia 6 Nov and 65 **Common Snipes** *Gallinago gallinago* Kouklia dam wetlands 15 Oct. A **Bar-tailed Godwit** *Limosa lapponica* Spiros beach 3–9 Oct. A juvenile **Red Knot** *Calidris canutus* Akrotiri gravel pits 3–24 Sep and another Larnaca sewage works 4–23 Nov (10th & 11th records in last 10 years). One **Broad-billed Sandpiper** *Limicola falcinellus* Lady's Mile 4 Sep and two Kouklia dam wetlands 7–9 Sep (unusual autumn). A **Cream-coloured Courser** *Cursorius cursor* Akrotiri gravel pits 20 Aug first for August. One **Black-winged Pratincole** *Glareola nordmanni* Akhna dam 3 Oct (ninth record since 2005). Four **Great Black-headed Gulls** *Ichthyaetus ichthyaetus* Paphos headland 27 Nov and two cape Greco 18 Dec. A juvenile **Great Black-backed Gull** *Larus marinus* cape Drepanum 1 Dec. Two **Caspian Terns** *Hydroprogne caspia* Paphos lighthouse 21 Jul, two Polis Chrysochou bay 8 Aug and three there 10 Aug and 27 Sep.

Laughing Dove *Spilopelia senegalensis*, formerly an accidental visitor but now increasing as a breeding resident, with two Kouklia, Paphos, 29 Jun, one Athalassa 12 Sep, one Asprokremmos dam 21 Oct and seven Kouklia from 27 Oct. 18+ **European Nightjars** *Caprimulgus europaeus* after dark Mandria coastal ploughed fields 4 Sep, with 32 there 7 Sep. Flock of 250 **Alpine Swifts** *Tachymarptis melba* Tsada and Armou 22 Oct, with 110 there 31 Oct (very late passage). One **Little Swift** *Apus affinis* Akrotiri gravel pits 4 Sep. A **White-throated Kingfisher** *Halcyon smyrnensis* Kouklia soakaways 23–29 Sep and probably same bird Paphos airport beach 12 Oct, with one Phasouri reed-beds 21 Nov and 9 Dec. Single **Pied Kingfishers** *Ceryle rudis* Achelia dam 15–16 Oct, Achelia/Timi canal 4 Nov (possibly same bird) and Oroklini marsh 21 Dec. A probable juvenile **Turkestan Shrike** *Lanius* (*isabellinus*) *phoenicuroides* Meneou beach 7 Sep. One male and one female **Bearded Reedling** *Panurus biarmicus* lower Ezousas pool 14–19 Nov and singles Zakaki marsh 16 Nov and Phasouri reed-beds 21 Nov (sixth–eighth records since 1999). A **Lesser Short-toed Lark** *Calandrella rufescens* Akrotiri gravel pits 3 Nov. One **Eastern Bonelli's Warbler** *Phylloscopus orientalis* Souni 11 Aug (unusual autumn record) while a

Marsh Warbler *Acrocephalus palustris* lower Ezousas pools 14 Nov (rare migrant). **Icterine Warbler** *Hippolais icterina* is a rare autumn migrant but singles Minthis hills 2 Sep and Armou hills 3 Sep. Two **Barred Warblers** *Sylvia nisoria* Agia Napa sewage works 6 Sep only autumn record. A female **Rüppell's Warbler** *S. rueppelli* Agios Nikolaos 30 Sep.

Almost annual **Wallcreeper** *Tichodroma muraria* first reported Avagas gorge 1 Nov with up to three present there that month and another Kensington cliffs 7 Nov. Single juvenile **Rose-coloured Starlings** *Pastor roseus* (rare migrant) Phasouri reed-beds 9 Aug and Larnaca airport coast 24 Aug. A **Ring Ouzel** *Turdus torquatus* Troodos 20 Nov only tenth record since 1994. One **Redwing** *Turdus iliacus* Troodos area 9 Nov (14th record past 10 years). Black and white *Ficedula* flycatchers rare autumn passage though a **Eurasian Pied Flycatcher** *F. hypoleuca* Asprokremmos dam 5 Sep and single **Collared Flycatchers** *F. albicollis* Akrotiri gravel pits 29 Aug and Agios Nikolaos 2 Oct. One **Red-breasted Flycatcher** *F. parva* ringed Polis reed-beds 13 Oct and one near Larnaca sewage works 19 Oct. **Two Richard's Pipits** *Anthus richardi* Phasouri reed-beds 6 Nov, five Paphos headland 15 Nov and one Germasogeia dam 19 Nov (rare autumn migrant). Five **Yellowhammers** *Emberiza citronella* Livadi tou Pashia (Troodos) 14 Nov, two Almirolivado 17 Nov and one there 20 Nov (previously less than annual, now more frequent).

EGYPT

An adult **Red-billed Tropicbird** *Phaethon aethereus* off Wadi Lahami 10 Sep. One second-year **Yellow-billed Stork** *Mycteria ibis* Hurghada sewage works 9 and 12 Sep while up to 33 Abu Simbel, 12–14 Sep. An adult **White-tailed Plover** *Vanellus leucurus* Ragaba village (north of Aswan) 11 Sep, one juvenile **Terek Sandpiper** *Xenus cinereus* Wadi Lahami mangroves 11 Sep, a **Broad-billed Sandpiper** *Limicola falcinellus* there 8 Sep and one juvenile **Black-winged Pratincole** *Glareola nordmanni* Hamata mangroves 10 Sep.

GEORGIA

Several **Crested Honey Buzzards** *Pernis ptilorhynchus* Batumi (Shuamta) 28 Aug–30 Sep and Batumi (Makhinjauri) 5, 13 and 21 Sep. A **Sociable Lapwing** *Vanellus gregarius* Chorokhi delta, (just south of Batumi) 19 Sep and 1 Oct while first record of **Audouin's Gull** *Ichthyaetus audouinii* there 28 Aug. A **Great Spotted Cuckoo** *Clamator glandarius* there 4 and 8 Aug. One **Daurian Shrike** *Lanius* (*i.*) *isabellinus* Chorokhi delta 1 Oct and an adult male there 11–12 Oct while another male Batumi 8–9 Oct. First record **Oriental Skylark** *Alauda gulgula* Ajaria 31 Oct and first record **Black-crowned Sparrow-Lark** *Eremopterix nigriceps* (a male) Chorokhi delta 2–3 Oct. One **Dusky Warbler** *Phylloscopus fuscatus* Ajaria 16 Oct (second record). First record **Pallas's Leaf Warbler** *P. proregulus* Batumi park 29–31 Oct. One **Siberian Buff-bellied Pipit** *Anthus* (*rubescens*) *japonicus* Ajaria 31 Oct and a **Lapland Longspur** *Calcarius lapponicus* Chorokhi delta 26 Oct.

ISRAEL

One **Red-billed Teal** *Anas erythrorhyncha*, a returning bird from 2014, Hazeva, north Arava, 19 Nov onwards (second record if accepted as wild origin). A **Pink-backed Pelican** *Pelecanus rufescens* (eighth record) Harod and Jizreel valleys during September until at least 13 Oct while one reported Agamon Hula 10 Nov possibly same bird. A **Yellow-billed Stork** *Mycteria ibis* Tirat Zvi, Bet Shean valley, 17–18 Sep. One immature **Lappet-faced Vulture** *Torgos tracheliotus* (first record since 2001) Hai Bar reserve, Mt Carmel, Haifa, 14 Jun (taken into care 24 Jun). A **Verreaux's Eagle** *Aquila verreauxii* Judean desert 28 Nov. One immature **Bateleur** *Terathopius ecaudatus* southern Judean plains June–13 Aug (sightings Beer Sheva 20 Sep, Oranit 17 Oct and south Judean plains 13 Nov probably this long-staying individual). A **Demoiselle Crane** *Grus virgo* IBRCE, Eilat, 11 Nov. One **Sociable Lapwing** *Vanellus gregarius* Yotvata, 10–20 Oct, a **White-tailed Lapwing** *V. leucurus* Ein Hamifratz, north coastal plains, 8–30 Jun and a **Pacific Golden Plover** *Pluvialis fulva* Bet Shean valley 24–31 Oct. **Pin-tailed Snipes** *Gallinago stenura* Nir Oz, northwest Negev, 5–7 Oct, Kfar Ruppin 7–17 Oct and Habesor reservoir, northwest Negev, 12 Oct, were ninth–11th records. One **Great Snipe** *G. media* Nizzana 5 Nov. A **White-eyed Gull** *Ichthyaetus leucophthalmus* Zikim beach, Mediterranean coast, 3 Oct. A

Saunders's Tern *Sternula* (*albifrons*) *saundersi* Eilat 18 Aug. First breeding record **White-cheeked Tern** *Sterna repressa* Eilat (pair with two eggs, probably failed). A **Rufous Turtle Dove** *Streptopelia* (*orientalis*) *meena* Yotvata 12 Nov. Injured fledgling **Pallid Scops Owl** *Otus brucei* in date plantation near Mitzpe Shalem (Dead sea) 2 Jun followed by survey of most of potential range in Israel indicated that several tens of pairs breed in date plantations along Jordan valley and Dead sea (first breeding records since 1904). One **Steppe Grey Shrike** *Lanius* (*meridionalis*) *pallidirostis* Yotvata 8–17 Oct and another Beer Sheva 20 Oct. A female **Hypocolius** *Hypocolius ampelinus* KM76, Arava, 21 Nov. An **Arabian Dunn's Lark** *Eremalauda dunni eremodites* Bet Yanay beach, Mediterranean coast, 23 Oct. One **Dusky Warbler** *Phylloscopus fuscatus* Kiryat Gat 28 Oct and a **Hume's Warbler** *P. humei* Bat Shlomo, Carmel, from 12 Nov onwards. A **Basra Reed Warbler** *Acrocephalus griseldis* ringed Agamon Hula 19 Aug while a **Paddyfield Warbler** *A. agricola* was ringed IBRCE, Eilat, 5 Oct (tenth record). One **Ring Ouzel** *Turdus torquatus* Nafha, central Negev, 14 Nov. A pair **Black Scrub Robins** *Cercotrichias podobe* breeding Yotvata June successfully raised two young. A male **White-throated Robin** *Irania gutturalis* Sde Boker July–7 Aug and a first year bird ringed Jerusalem bird observatory 4 Aug. Unprecedented influx **Cyprus Wheatears** *Oenanthe cypriaca* along Mediterranean coast 28 Oct, with *c*100 in total observed numerous locations (a few singles earlier in the month). Highest concentration 40 Tel Barukh beach, northern Tel Aviv. One **Pied Wheatear** *O. pleschanka* KM20 saltpans, Eilat, 24 Oct and another KM76, Arava, 20 Nov. A male **Kurdistan Wheatear** *O.* (*x.*) *xanthoprymna* Arsuf, north of Tel Aviv, 7 Nov and another male mount Gilboa 21 Nov onwards. Fourth record **Yellow-throated Sparrow** *Gymnoris xanthocollis* Kfar Ruppin, Bet Shean valley, 25 Sep (previous record 2001–2002). A **Little Bunting** *Emberiza pusilla* Tel Aviv, 11 Nov and another KM76, Arava, 27 Nov.

KAZAKHSTAN

One **Lesser Flamingo** *Phoeniconaias minor* northeast bay Maly Tengiz 8 Sep while a **Spotted Crake** *Porzana porzana* Aktau, Mangystau, 1 Sep. A **Sharp-tailed Sandpiper** *Calidris acuminata* Almaty Sorbulakskaj sistema ozer 25 Jul and a **Broad-billed Sandpiper** *Limicola falcinellus* Almatinskaja obl Sorbulakskaja sistema ozer 25 Jul. One **Mediterranean Gull** *Larus melanocephalus* eastern Caspian sea 19 May (70 km northwest from Buzachi peninsula). A **Great Grey Owl** *Strix nebulosa* Lebazie village SKO 10 Oct.

LEBANON

Lebanese hunters' use of social media to post photos of killed birds produced some records of interest autumn 2015. A male **Namaqua Dove** *Oena capensis* shot Labwe, east Bekaa, 18 Oct, while two more shot 24 Oct Okaybeh Keserwan, mount Lebanon, and Qaa, east Bekaa (2nd–4th records). One **Common Firecrest** *Regulus ignicapilla* shot 13 Nov Zayneye lake (above Yammouneh) prompted debate among hunters, bringing to light a record of a bird shot Oct 2013, Behouita, northern Lebanon (2nd & 3rd records). Following reports of 'many' **Rose-coloured Starlings** *Pastor roseus* shot in the north and west Bekaa in spring, a juvenile was shot Qab Elias early Sep, suggesting possible breeding. Lebanon's first **White-crowned Wheatear** *Oenanthe leucopyga* 14 Sep Beit Mery, mount Lebanon was shot following day.

OMAN

One **Greater White-fronted Goose** *Anser albifrons* 9 Nov Khawr Rawri, increasing to two 18 Nov, and one remained to 28 Dec. Three **Ruddy Shelducks** *Tadorna ferruginea* Raysut lagoons 16 Nov increasing to six 11 Dec and still there 25 Dec (Plate 2). Two **Cotton Pygmy Geese** *Nettapus coromandelianus* Khawr Rawri 17–18 Nov. A **Gadwall** *Anas strepera* Al Ansab wetland 16 Dec. **Garganeys** *A. querquedula* Raysut sewage treatment plant (STP) on several occasions, max 44 (21 Sep). 200 **Eurasian Teals** *A. crecca*, 100 **Northern Shovelers** *A. clypeata* (130 on 4 Nov) and 20 **Ferruginous Ducks** *Aythya nyroca* Al Ansab wetland 16 Dec. Five **Wilson's Storm Petrels** *Oceanites oceanicus* (100 off Ras Abu Rasas 28 Sep) and ten **Swinhoe's Storm Petrels** *Oceanodroma monorhis* Ras Janjari 17 Nov (and ten Mirbat 26 Nov). 480 **Persian Shearwaters** *Puffinus persicus* and 214 **Jouanin's Petrels** *Bulweria fallax* Mirbat 26 Nov. **Two Wedge-tailed Shearwaters** *Puffinus pacificus* Ras Abu

Plate 2. Ruddy Shelducks *Tadorna ferruginea* 6 December 2015, Raysut, Oman. © *H & J Eriksen*

Plate 3. Amur Falcon *Falco amurensis* 13 November 2015, Shelim, Oman. © *H & J Eriksen*

Plate 4. Amur Falcon *Falco amurensis* 10 December 2015, Jarziz farm, Salalah, Oman. © *H & J Eriksen*

Rasas 28 Sep. 103 **Little Grebes** *Tachybaptus ruficollis* Al Ansab wetland 4 Sep and 84 there 4 Nov with three **Black-necked Grebes** *Podiceps nigricollis*.

One **Lesser Flamingo** *Phoeniconaias minor* Khawr Rawri 26 Dec and seven there 28 Dec are seventh record. One **Black Stork** *Ciconia nigra* Wadi Baqlat 10–17 Nov and one Wadi Darbat 17 and 25 Nov. **Abdim's Storks** *C. abdimii* Raysut STP from 27 Oct (max 625 on 20 Nov) while 500 over Salalah 9 Dec. An **African Sacred Ibis** *Threskiornis aethiopicus* Qatbit 2 Dec**.** 80 **Glossy Ibises** *Plegadis falcinellus* Al Baleed 19 Sep and 90 East Khawr 19 Oct. A juvenile **Little Bittern** *Ixobrychus minutus* Al Ghaftayn, central desert, 1 Sep. A **Yellow Bittern** *I. sinensis* Al Qurm park 22 Oct (very rare north). 15 **Indian Pond Herons** *Ardeola grayii* Al Baleed park 21 Oct, an unusually high number. **Intermediate Egrets** *Egretta intermedia* Al Ansab wetland (up to two, Jul–Dec), one central desert 12 Sep (Dawqah farm) and in the south (Al Baleed, Khawr Rawri, Raysut, Al Mughsayl) up to two Nov–Dec). 2000 **Great Cormorants** *Phalacrocorax carbo* 20 Nov Al Qurm beach. 17 **Western Ospreys** *Pandion haliaetus* Raysut 6 Dec. Two adult **Black-winged Kites** *Elanus caeruleus* Barka 19 Oct. 260 **Egyptian Vultures** *Neophron percnopterus* Fahud 2 Oct. **Crested Honey Buzzards** *Pernis ptilorhynchus* East Khawr park 26 Nov (two)–30 Dec (one), max four 10 Dec. One **Eurasian Griffon Vulture** *Gyps fulvus* Tawi Atayr 10 Nov, five Wadi Darbat 25 Nov, two Raysut STP 26 Nov and four Al Mazyunah 28 Nov. 14 **Lappet-faced Vultures** *Torgos tracheliotus* Al Mazyunah 28 Nov. A *fulvescens* **Greater Spotted Eagle** *Clanga clanga* Raysut STP 3 Nov and 12 Al Ansab wetland 16 Dec. Two **Yellow-billed Kites** *Milvus aegyptius* East Khawr park area

Plate 5. Corncrake *Crex crex* 1 September 2015, Al Ghaftayn, Oman. © *H & J Eriksen*

Plate 6. Spur-winged Lapwing *Vanellus spinosus* 3 November 2015, Raysut, Oman. © *H & J Eriksen*

17 Nov–30 Dec. First record **Brahminy Kite** *Haliastur indus* Wadi Darbat 20 Nov. **Long-legged Buzzard** *Buteo rufinus* Dawkah farm 28 Aug. **Amur Falcons** *Falco amurensis* Shelim 13 Nov (Plate 3), Hilf 15 Nov, Jarziz farm 10 Dec (Plate 4).

One **Corncrake** *Crex crex* Al Ghaftayn 1 Sep (Plate 5). Single **White-breasted Waterhens** *Amaurornis phoenicurus* Khawr Rawri 9 Nov, Hilf 14–19 Nov, Al Mughsayl 18–27 Nov. **Little Crakes** *Porzana parva* Rakhyut 20 Sep, Al Mazyunah STP 24 Nov, Al Mughsayl 27 Nov while **Baillon's Crakes** *P. pusilla* Raysut STP 21 Sep (three), Khawr Rawri 18 Nov (two), 25 Nov (two) and 28 Dec (one), Al Mughsayl 27 Nov (two), Taqah 23 Dec and one East Khawr 24 Dec. Two **Spotted Crakes** *P. porzana* Al Mazyunah STP 24 Nov and singles Khawr Rawri 25 Nov (two there 28 Dec) and Taqah 23 Dec. Sixth record **Watercock** *Gallicrex cinerea* Khawr Taqah 16 Nov. Six **Red-knobbed Coots** *Fulica cristata* Khawr Rawri 28 Dec and smaller numbers there other dates. Unseasonal **Eurasian Stone-curlew** *Burhinus oedicnemus* Raysut lagoons 11 Dec. One **Spur-winged Lapwing** *Vanellus spinosus* frequented both Raysut lagoons and Raysut STP 26 Aug–11 Dec (Plate 6) while a juvenile **Sociable Lapwing** *V. gregarius* Qatbit 27 Oct and 56 Sahanawt farm 16 Nov. A **Eurasian Golden Plover** *Pluvialis apricaria* Qatbit 2 Dec. Seventh record **Greater Painted-snipe** *Rostratula benghalensis* (an adult female) Raysut STP 26–28 Aug (Plate 7). **Pheasant-tailed Jacana** *Hydrophasianus chirurgus* records included five Raysut lagoons 26 Nov and 6 Dec, six Taqah 23 Dec and three Khawr Rawri 28 Dec. First record **Asian Dowitcher** *Limnodromus semipalmatus* Al Ansab wetland 3 Nov–at least 31 Jan 2016 while seventh record **Red Knot** *Calidris canutus* Barr Al Hikman 12 Nov. One **Long-toed Stint** *C. subminuta* East Khawr 4 (Plate 8) and 27 Nov and one Filim 12 Nov. A **Pectoral Sandpiper** *C. melanotos* Muscat 18 Nov (Plate 9). 905 **Ruffs** *Philomachus pugnax* East Khawr 11 Nov. 750 **Red-necked Phalaropes** *Phalaropus lobatus* off Mirbat 26 Nov. A **Brown Noddy** *Anous stolidus* Damaniyat islands 6 Sep and two off Mirbat 6 Nov and at Al Fazayh 9 Nov. One **Lesser Noddy** *A. tenuirostris* Ras Abu Rasas, Masirah island, 28 Sep. An early adult **Pallas's Gull** *Ichthyaetus ichthyaetus* Quriyat 21 Nov**.** Six **Sooty Terns** *Onychoprion fuscatus* Al Fazayh 9 Nov. Fifth record **South Polar Skua** *Stercorarius maccormicki* Muscat 24 Jun. Three **Pomarine Skuas** *S. pomarinus* off Muscat 8 Nov, one Ras A'Sawadi 16 Oct and one Hilf 16 Nov; two **Long-tailed Skuas** *S. longicaudus* off Al Qurm park 19 Sep (eighth record).

One **Oriental Turtle Dove** *Streptopelia orientalis* Sahanawt farm 2 Oct and two Hilf 19–20 Nov. Three **African Collared Doves** *S. roseogrisea* Dawqah farm 14 Nov (new location, northerly spread?) and six at the more usual Mudhay 4 Dec. A **Pied Cuckoo** *Oxylophus*

Plate 7. Greater Painted-snipe *Rostratula benghalensis* 28 August 2015, Raysut, Oman. © *H & J Eriksen*

Plate 8. Long-toed Stint *Calidris subminuta* 4 November 2015, East Khawr, Salalah, Oman. © *H & J Eriksen*

Plate 9. Pectoral Sandpiper *Calidris melanotos* 18 November 2015, Muscat, Oman. © *H & J Eriksen*

jacobinus Al Ghaftayn 21 Nov. **Asian Koel** *Eudynamys scolopaceus* records away from Masirah island (Plate10) included Dawqah farm 14 Nov, Mudhay 4 Dec, Taqah 23 Dec. Third record **Common Hawk-cuckoo** *Hierococcyx varius* Shisr 15 Nov. **Eurasian Scops Owls** *Otus scops* Al Ghaftayn 15–16 Sep, Qatbit 18 Sep, Dawqah farm 22 Sep. One **Short-eared Owl** *Asio flammeus* East Khawr 19 Nov. 14 **European Nightjars** *Caprimulgus europaeus* Qatbit and seven Dawqah farm 18 Sep. An **Alpine Swift** *Tachymarptis melba* East Khawr park 24 Dec. 2000 **European Rollers** *Coracias garrulus* Hilf 16 Oct (new max count), 70 Rakhyut 23 Oct, 250 Shisr 24 Oct and 100 Dawqah farm 27 Oct. First record **White-throated Kingfisher** *Halcyon smyrnensis* Hilf, Masirah, 2 Nov–13 Dec. Two **Collared Kingfishers** *Todirhamphus chloris* Mahawt island 24 Dec. Up to two **Malachite Kingfishers** *Corythornis cristatus*

Plate 10. Asian Koel *Eudynamys scolopaceus* 13 December 2015, Hilf, Masirah Island, Oman. © *H & J Eriksen*

Khawr Rawri 25 Oct–at least 12 Jan 2016 (tenth record). 75 **Blue-cheeked Bee-eaters** *Merops persicus* Khawr Rawri 1 Nov was a late date. 14 **Eurasian Hoopoes** *Upupa epops* Dawqah farm 11 Sep, 22 there 22 Sep,13 Sallan 24 Oct and 19 there 21 Nov, one Damaniyat islands 6 Sep. Four **Eurasian Wrynecks** *Jynx torquilla* Dawqah farm 22 Sep was highest autumn number.

Five **Red-backed Shrikes** *Lanius collurio* Khawr Rawri 23 Oct and 12 **Daurian Shrikes** *L.* (*i.*) *isabellinus*, 15 **Turkestan Shrikes** *L.* (*isabellinus*) *phoencuroides* and seven **Steppe Grey Shrikes** *L.* (*meridionalis*) *pallidirostis* Dawqah farm 22 Sep, were unusual numbers. A juvenile **Masked Shrike** *L. nubicus* Muqshin 16 Sep. 20 **Eurasian Golden Orioles** *Oriolus oriolus* Dawqah farm 17 Sep (35 there 22 Sep), 18 Mudhay and 20 Shisr 19 Sep highest concentrations. One **Grey Hypocolius** *Hypocolius ampelinus* Tudho 1 Nov, seven Mudhay 18 Nov (12 on 4 Dec), five Shisr 21 Nov. An **Arabian Dunn's Lark** *Eremalauda dunni eremodites* between Mudhay and Al Maziounah 24 Oct. 400 **Sand Martins** *Riparia riparia* Sahanawt farm 20 Sep. Ninth record **Wire-tailed Swallow** *Hirundo smithii* Hilf 19 Nov–4 Dec (one and then two birds) and the tenth record (two birds) Raysut STP 26 Nov–11 Dec. A **Red-rumped Swallow** *Cecropis daurica* Sohar 10–11 Jul and one Dawqah farm 12 Sep. An adult **Streak-throated Swallow** *Petrochelidon fluvicola* Raysut 6–11 Dec (sixth record). One **Plain Leaf Warbler** *Phylloscopus neglectus* Ras A'Sawadi 16 Oct was away from usual winter stronghold Khatmat Milaha where 12 seen 9 Nov. A **Dusky Warbler** *P. fuscatus* Al Mughsayl 9–12 Nov (third record). One **Yellow-browed Warbler** *P. inornatus* Hilf 28 Sep while single **Hume's Leaf Warblers** *P. humei* Al Ghaftayn 21 Nov and Shisr 22 Nov. Third record **Olive-tree Warbler** *Hippolais olivetorum* East Khawr park 21 Nov. 120 **Rose-coloured Starlings** *Pastor roseus* Sahanawt farm 20 Sep and four **Wattled Starlings** *Creatophora cinerea* there 8 Sep. 70 **Spotted Flycatcher**s *Muscicapa striata* Dawqah farms 11 Sep and a **Blue-and-white Flycatcher** *Cyanoptila cyanomelana* Hilf 4 Dec (third record).

Single **Thrush Nightingales** *Luscinia luscinia* Al Ghaftayn 1 Sep, Qatbit 4 Sep, Dawqah farm 22 Sep. A **White-throated Robin** *Irania gutturalis* Al Ghaftayn 1 Sep (relatively unusual autumn migration). An **Eastern Black-eared Wheatear** *Oenanthe* (*hispanica*) *melanoleuca* Hilf 15 Nov. A number of **Nile Valley Sunbirds** *Hedydipna metallica*: one Wadi Aydam 19 Sep, one Wadi Rabkhut 27 Oct, four Mudhay 19 Sep, 20 on 5 Nov

Plate 11. Forest Wagtail *Dendronanthus indicus* 5 December 2015, East Khawr park, Salalah, Oman. © *H & J Eriksen*

and 4 Dec, two Qatbit 2 Dec, two Shisr 4 Dec. First record **Eurasian Tree Sparrow** *Passer montanus* Sohar 11 Dec. 50 **Yellow-throated Sparrows** *Gymnoris xanthocollis* Muscat 27 Jul. 1000 **Rüppell's Weavers** *Ploceus galbula* Al Baleed park 21 Oct was a high concentration. One **Forest Wagtail** *Dendronanthus indicus* Qatbit 14–21 Nov and one East Khawr park 21 Nov–at least 12 Jan 2016 (Plate 11, 10th & 11th records). An **Eastern Yellow Wagtail** *Motacilla* (*flava*) *tsutschensis* Khawr Rawri 1 Nov (sixth record). A **Masked Wagtail** *M.* (*alba*) *personata* Fahud 2 Oct while fourth record **Amur Wagtail** *M.* (*alba*) *leucopsis* Sohar 15 Sep. Single **Richard's Pipits** *Anthus richardi* Al Mazyounah STP 24 Oct, Al Fazyah 29 Dec. Three **Trumpeter Finches** *Bucanetes githagineus* Al Mazyounah STP 23 Nov. Ninth record **Eurasian Siskin** *Spinus spinus* Dawkah farm 14 Nov. An **Eastern Cinereous Bunting** *Emberiza* (*cineracea*) *semenowi* Al Ghaftayn 15 Sep. **Ortolan Buntings** *E. hortulana* several locations central desert from 16 Sep, max 25 Dawqah farm 27 Oct. A **Little Bunting** *E. pusilla* Shisr 23 Nov and **Black-headed Buntings** *E. melanocephala* Qatbit 16 Sep (two) and one there 22 Sep, Fahud 2 Oct and Shisr 4 Dec.

QATAR

Single **Mute Swan** *Cygnus olor* Doha golf course 19 Sep is potential first record (possibly an escape). Autumn raptor influx Irkayya farm (IF) included up to six **Greater Spotted Eagles** *Aquila clanga*, a juvenile **Eastern Imperial Eagle** *A. heliaca*, two **Long-legged Buzzards** *Buteo rufinus* 30 Oct (dark phase) and 28 Nov (pale phase) and a **'Northern' Steppe Buzzard** *B. b. vulpinus*. A single **White-tailed Plover** *Vanellus leucurus* IF 27 Nov and a **White-throated Kingfisher** *Halcyon smyrnensis* Sailiya west (aka Al Riffa) 16 Nov. One female **Pied Kingfisher** *Ceryle rudis* IF 26 Oct and four near Simsimah 26 Nov onwards. Five **Hypocoliuses** *Hypocolius ampelinus* Umm Babb 6 Nov, one or two remaining to 13 Nov. First record **Moustached Warbler** *Acrocephalus melanopogon* and two **Paddyfield Warblers** *A. agricola* Nov and Dec Sailiya west. A male **Ring Ouzel** *Turdus torquata* Sailiya west Nov apparently southwest Asian race *amicorum*. A female/first-winter **Common Chaffinch** *Fringilla coelebs* 5 Dec IF (first record).

SAUDI ARABIA

Two firsts: **Fulvous Whistling Duck** *Dendrocygna bicolor* and **Lesser Whistling Duck** *D. javanica* together Malaki dam lake 3 Sep. Eight **Harlequin Quails** *Coturnix*

Plate 12. Abdim's Stork *Ciconia abdimii* 30 June 2015, Sabya waste water lagoons, Jizan province, Saudi Arabia. © *Jem Babbington*

Plate 13. Caspian Plover *Charadrius asiaticus* 28 August 2015, Sabkhat Al Fasl, Jubail, Eastern province, Saudi Arabia. © *Jem Babbington*

Plate 14. Greater Painted-snipe *Rostratula benghalensis* 30 June 2015, Sabya waste water lagoons, Jizan province, Saudi Arabia. © *Jem Babbington*

delegorguei near Jizan 30 Jun including at least two males (species not recorded for many years). Two **Greater Flamingos** *Phoenicopterus roseus* well inland at wetland near Tabuk 25 Sep and one immature **Black Stork** *Ciconia nigra* there 16 Oct. 26 **Abdim's Storks** *C. abdimii* Sabya wastewater lagoons (SWL), near Jizan, 29–30 Jun (Plate 12). Three **Eurasian Spoonbills** *Platalea leucorodia* Sabkhat Al Fasl (SAF), Jubail, 21 Aug and a **Black-headed Heron** *Ardea melanocephala* SWL 3 Sep (becoming a regular there). Min 250 **Western Great Egrets** *A. alba* SAF 27 Nov (highest ever count). A juvenile **Great White Pelican** *Pelecanus onocrotalus* KAUST 25–27 Nov. A **Black-winged Kite** *Elanus c. caeruleus* Malaki dam lake 3 Sep (first confirmed record of this African subspecies though all previous records in southwest assumed to be this race). Another, Asian subspecies *vociferus*, Ash Shargiyah Dev Co farm 4 Sep (3rd record Eastern province, all *vociferus*). First records *vociferus* for Riyadh region Al Hayer early Oct–at least 18 Oct. One **Cinereous Vulture** *Aegypius monachus* Rabigh dam 11 Dec. At least 17 **Greater Spotted Eagles** *Clanga clanga* SAF 20 Nov (highest single day count for SAF). A fresh juvenile **Bonelli's Eagle** *Aquila fasciatus* there 10 Dec, an Eastern province vagrant. Three **Grey-headed Swamphens** *Porphyrio poliocephalus* Ash Shargiyah Dev Co farm Fadhili, near Jubail, 4 Sep, others Dammam Second Industrial city Oct (species extending range from SAF). At least 46 **Sociable Lapwings** *Vanellus gregarius* near Tabuk 20–27 Nov (largest flock in recent years) and two satellite-tagged birds wintering near border with Jordan. One moulting adult **Pacific Golden Plover** *Pluvialis fulva* SAF 21 Aug and two juvenile **Caspian Plovers** *Charadrius asiaticus* there 28 Aug (Plate 13). A male **Greater Painted-snipe** *Rostratula benghalensis* SWL 30 Jun (Plate 14), one of only two known sites for the species.

A male **Dideric Cuckoo** *Chrysococcyx caprius* Al Atta, near Bani Saad, 3 July (450 km north of previous most northerly location). 15 **Egyptian Nightjars** *Caprimulgus aegyptius* SAF 14–28 Aug (same site where 13 seen Aug–Sep 2014). A pair **Plain Nightjars** *C. inornatus* near Taif 4 Jul evening. A rarely recorded summer breeding species, although records have also occurred this summer from

Plate 15. Collared Kingfisher *Todirhamphus chloris* 29 June 2015, Al Qahma, Jizan province, Saudi Arabia. © *Jem Babbington*

Plate 16. Pied Kingfisher *Ceryle rudis* 13 November 2015, Sabkhat Al Fasl, Jubail, Eastern province, Saudi Arabia. © *Jem Babbington*

Plate 17. Arabian Golden-winged Grosbeak *Rhynchostruthus percivali* 3 July, near Bani Saad, Mecca province, Saudi Arabia. © *Philip Roberts*

Plate 18. Little Bunting *Emberiza pusilla* 19 December 2015, Sabkhat Al Fasl, Jubail, Eastern province, Saudi Arabia. © *Philip Roberts*

Najran northwards to Taif, indicating that it may be much commoner than previously realised. One **White-throated Kingfisher** *Halcyon smyrnensis* SAF 14 Aug–27 Nov at least (possibly one that wintered into 2015 remaining through summer). Another Rabigh dam 11 Dec. Nine **Collared Kingfishers** *Todirhamphus chloris* trapped and ringed in a small area of Al Qahma mangroves 29 Jun (Plate 15). A female **Pied Kingfisher** *Ceryle rudis* SAF 23 Oct, numbers increasing there to 12 by 5 Dec. Four remained until at least 31 Dec (Plate 16). Three Al Hyer 16 Dec and one Al Kharj 30 Dec.

Four **Blanford's Short-toed Larks** *Calandrella blanfordi* Sallal Al Dahna, near Tanoumah, 1 Sep. Two **'mangrove' white-eye** sp (*Zosterops abyssinicus*?) Either mangroves, Jizan province, 26 Jun (one trapped and ringed). Also, two Al Qahma mangroves 28 Jun. A **European Robin** *Erithacus rubecula* SAF from 1 Dec with second bird there 9 Dec (both birds remained until at least 31 Dec). A **Thrush Nightingale** *Luscinia luscinia* there 2 Oct. Up to five **White-throated Robins** *Irania gutturalis* KAUST late Aug, an unusual record from this locality. One **Collared Flycatcher** *Ficedula albicollis* Al Mefah park, Tanoumah, 1 Sep (species still regarded as a vagrant). A number of sightings of Arabian endemic subspecies of **African Pipit** *Anthus cinnamomeus eximius* at a location June–September first confirmed records since 1990. Three **Arabian Golden-winged Grosbeaks** *Rhynchostruthus percivali*, two adults and a juvenile, near Bani Saad 3 Jul (Plate 17) until late Jul with five birds nearby late Jul. One **Little Bunting** *Emberiza pusilla* SAF 19 Dec (Plate 18) second record Eastern province.

TURKEY

Away from Black sea, max four **Common Eiders** *Somateria mollissima* Hersek lagoons 23 Dec. In Istanbul (Güzelce, Büyükçekmece) a team counted 33 495 **Western White Storks** *Ciconia c. ciconia* 23 Aug and 59 690 on 24 Aug, the highest ever daily count away from Bosphorus. One **Little Bittern** *Ixobrychus minutus* Dalyan 23 Dec. 142 **Dalmatian Pelicans** *Pelecanus crispus* Acıgöl 3 Oct (record count away from breeding areas). A **Black-shouldered Kite** *Elanus caeruleus* near Kasımkuyu, Şanlıurfa, 22 Nov and one **Red Kite** *Milvus milvus* Toygartepe, Istanbul, 4 Oct. One **Little Bustard** *Tetrax tetrax* Gediz delta 5 Nov. **Corncrake** *Crex crex* noted Gerede plain 5 Jul suggesting a third breeding site in addition to Posof and nearby Yeniçağa Gölü. One **Demoiselle Crane** *Grus virgo* Enez lagoons 29–30 Aug (only record from west for many decades). A single **Pacific Golden Plover** *Pluvialis fulva* Kızılırmak delta 11–28 Oct. One **Terek Sandpiper** *Xenus cinereus* Karacabey Longozu 5 Jul and two Filyos delta 2–4 Sep, very unusual records for western half of country.

A **Eurasian Eagle Owl** *Bubo bubo*, possibly *omissus*, Çıldır Gölü 28 Nov (Plate 19)—it might have arrived from Central Asia or Iran. 1200 **Blue-cheeked Bee-eaters** *Merops persicus* Bozova, Şanlıurfa, might represent total national breeding population. Two late **Eurasian Hobbies** *Falco subbuteo* Boğazkent Antalya, 1 Nov. Mild autumn helped to delay some **Common House Martins** *Delichon urbicum* Bursa city centre 22 Nov. Second record **Dusky Warbler** *Phylloscopus fuscatus* Kızılırmak delta 1 Nov, and a **Yellow-browed Warbler** *P. inornatus* ringed there 16 Oct and another near Okcular, Dalyan, 30 Oct. **Booted Warblers** *Iduna caligata* Rize coastland 17 and 27 Aug, confirming regular passage. **Garden Warbler** *Sylvia borin* probably bred Bolu and Sinop. One **Wallcreeper** *Tichodroma muraria* between Kütahya and Bozüyük 30 Aug (new breeding site in NW Turkey?). First **Common Myna** *Acridotheres tristis* for Antalya at Atatürk Parkı 25 Nov. **Red-breasted Flycatcher** *Ficedula parva* bred Sinop province. A late **Common Rock-thrush** *Monticola saxatilis* METU Campus, Ankara, 10 Oct an addition to the university's species list. One **Desert Wheatear** *Oenanthe deserti* Kızılırmak delta 30 Oct. 10 **Citrine Wagtails** *Motacilla citreola* Daltan delta 14 Oct (late passage date).

Plate 19. Eurasian Eagle Owl *Bubo bubo* possibly *omissus* 28 November 2015, lake Çıldır, Ardahan, Turkey. © *Mümin Gökhan Şenocak*

UNITED ARAB EMIRATES

A pair of **Ferruginous Duck** *Aythya nyroca* Al Ain 4 Jun (possible breeding?). Various pelagic trips from Khor Kalba (most birds 30 km offshore) produced: 72 **Wilson's Petrels** *Oceanites oceanicus* 11 Jul, two **Swinhoe's Petrels** *Oceanodroma monorhis* (8th record) 9 Oct, a **Scopoli's/Cory's Shearwater** *Calonectris diomedea/borealis* 30 Aug, **Sooty Shearwater** *Puffinus griseus* 2 Jun, 90 **Jouanin's Petrels** *Bulweria fallax* 9 Oct and a **Red-billed Tropicbird** *Phaethon aethereus* 1 Aug. An unseasonal **Indian Pond Heron** *Ardeola grayii* Kalba from 23 Jul and one **Eastern Cattle Egret** *Bubulcus coromandus* Wamm farms (WF) 3 Jul. Two juvenile **Great White Pelicans** *Pelecanus onocrotalus* (8th record, last 2003) Ajman water treatment plant 12 Dec with one relocated 26 Dec Ras al Khor, Dubai (other in Oman). One **Masked Booby** *Sula dactylatra* off Dibba harbour 20–26 Sep. A **Black-winged Kite** *Elanus caeruleus* Al Wathba 31 Oct and **Crested Honey-Buzzards** *Pernis ptilorhynchus* Abu Dhabi 11 Sep and Sila 23 Sep. Up to five **Lappet-faced Vultures** *Torgos tracheliotus* Al Qudra 18–25 Sep and up to eight there 29–31 Oct. A *fulvescens* **Greater Spotted Eagle** *Clanga*

Plate 20. Spur-winged Lapwing *Vanellus spinosus* 21 November 2015, Mafraq, United Arab Emirates. © *Oscar Campbell*

Plate 21. Eurasian Golden Plover *Vanellus apricaria* 27 November 2015, Hamanriyah, United Arab Emirates. © *Oscar Campbell*

clanga Ras al Khor, Dubai, 26 Dec. Single **Amur Falcons** *Falco amurensis* WF 3 Jul (three 4 Jul) and 13 Nov. **Corncrakes** *Crex crex* Abu Dhabi 11 Oct and Al Ain 16 Oct. One **Spur-winged Lapwing** *Vanellus spinosus* Mafraq 21–28 Nov (Plate 20, 7th record and first since 2011), a **Eurasian Golden Plover** *V. apricaria* Hamraniyah 21–28 Nov (Plate 21) and three **Caspian Plovers** *Charadrius asiaticus* there 12 Sep. Third record **Pheasant-tailed Jacana** *Hydrophasianus chirurgus* Al Qudra 29–31 Oct. One **Little Gull** *Hydrocoloeus minutus* Fujairah 15 Nov (16th record). An **Oriental Turtle Dove** *Streptopelia orientalis* WF 26 Sep–early Oct and another there 17 Oct. UAE's fourth **Pied Cuckoo** *Oxylophus jacobinus* WF 4 Jul.

Plate 22. Caspian Stonechat *Saxicola* [*torquatus*] *maurus hemprichii* 27 November 2015, Wamm Farms, United Arab Emirates. © *Oscar Campbell*

One **Asian Koel** *Eudynamys scolopaceus* Green Mubazzarah, Al Ain, 27 Nov. **Eurasian Scops Owl** *Otus scops* unseasonal visitor WF several dates July. An **Egyptian Nightjar** *Caprimulgus aegyptius* near Green Mubazzarah on several dates last half December. Influx **Pied Kingfishers** *Ceryle rudis* mid Oct with two Al Wathba camel race track 15 Oct onwards, and possibly a different bird Al Wathba lake 25 Oct and one Ajban farms several days later with two birds still present there 18 Dec (first records since 2011).

Turkestan Shrike *Lanius* (*isabellinus*) *phoenicuroides* an unseasonal visitor at a location (several dates Jul), while a **Bay-backed Shrike** *L. vittatus* present 3 Jul and **Woodchat Shrike** *L. senator* several dates that month. A **Black Drongo** *Dicrurus macrocercus* Mushreef park 10 Jun seen again Jul, Oct and into Nov. Tenth record **Ashy Drongo** *D. leucophaeus* Mamzar 31 Oct and present there to mid December. **Hypocolius** *Hypocolius ampelinus* first recorded (a single) Lulu island 23 Oct; 180 counted going to roost Yas island 14 Nov and 55 Lulu island 28 Nov. First **Bimaculated Lark** *Melanocorypha bimaculata* of the winter Hamraniyah 28 Nov while first **Hume's Leaf Warbler** *Phylloscopus humei* Emirates Palace hotel 31 Oct and two more 7–8 Nov. One **Green Warbler** *P.* [*trochiloides*] *nitidus* Dubai pivot fields 12 Sep. Several

reports of **Great Reed Warblers** *Acrocephalus arundinaceus* October including Abu Dhabi 23 Oct. A **Blyth's Reed Warbler** *A. dumetorum* Mamzar 4 Sep and a possible first record of **Lanceolated Warbler** *Locustella lanceolata* Emirates Palace hotel 31 Oct. Two unseasonal reports of **Upcher's Warbler** *Hippolais languida* WF during July and a **Hume's Whitethroat** *Sylvia althaea* Delma 24 Sep.

Fourth record **Dusky Thrush** *Turdus eunomus* WF 31 Oct and two **European Robins** *Erithacus rubecula* Saadiyat island 9 Dec. First record **Collared Flycatcher** *Ficedula albicollis* Mamzar 3–9 Oct. A **Caspian Stonechat** *Saxicola* [*torquatus*] *maurus hemprichii* 7–27 Nov WF (Plate 22) only the second autumn record. One **Pied Stonechat** *S. caprata* WF 7 Nov. A **White-crowned Wheatear** *Oenanthe leucopyga* 29 Oct Jebel Hafeet (13th record, first since 2002) while a very unseasonal **Red-tailed Wheatear** *O.* [*xanthoprymna*] *chrysopygia* Green Mubazzarah 4 Jul. A **Masked Wagtail** *Motacilla* (*alba*) *personata* Hamraniyah 13 Nov. A **Blyth's Pipit** *Anthus godlewskii* at the unusual location of Mushref Palace gardens remained into 2016 while the first **Siberian Buff-bellied Pipit** *A.* (*rubescens*) *japonicus* of the winter was at Hamraniyah 21–28 Nov. A **Eurasian Siskin** *Spinus spinus* Dubai 28 Dec.

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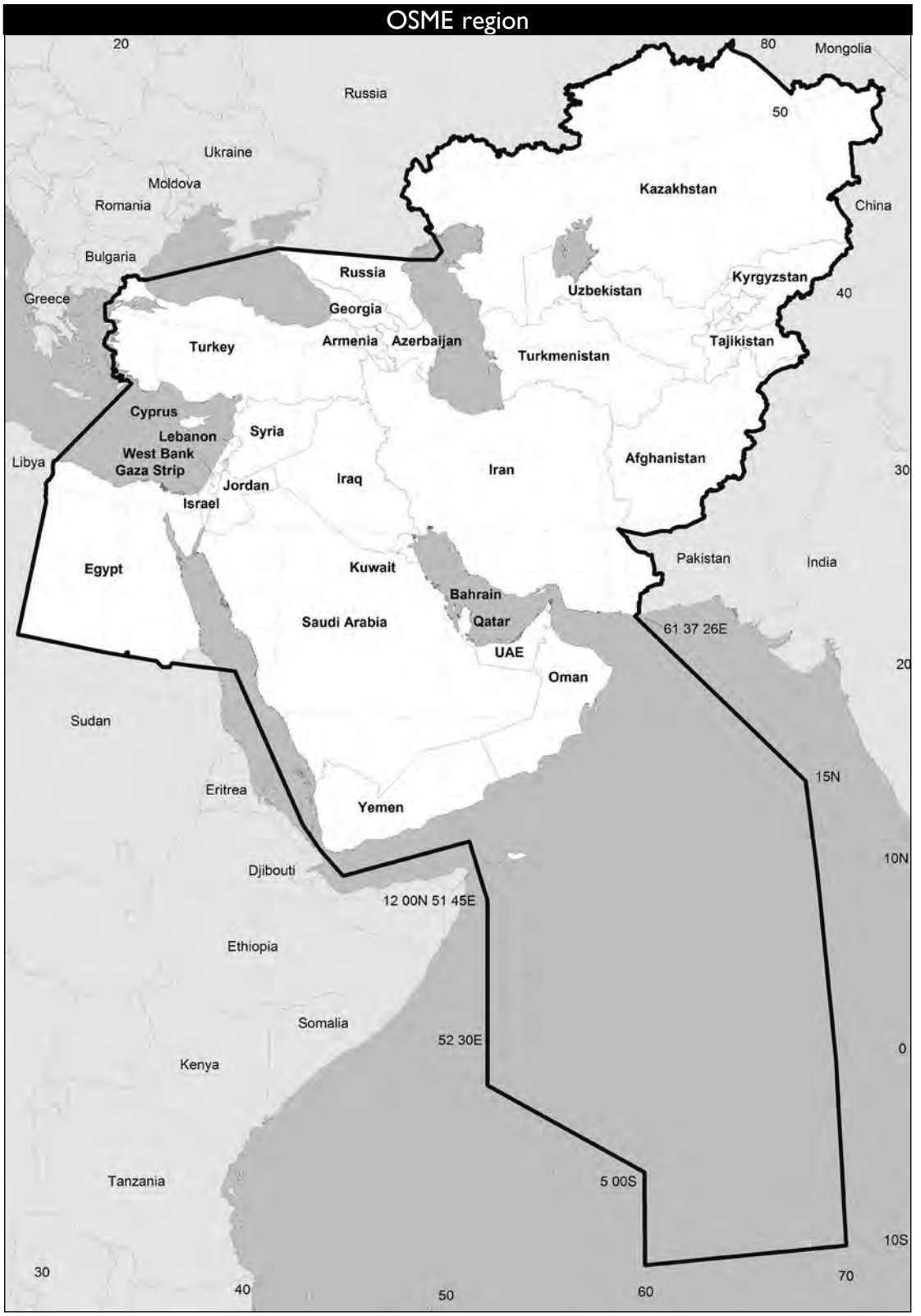
Ian Harrison, Llyswen Farm, Lôn y Felin, Aberaeron, SA46 0ED, UK. ianbirds@gmail.com

Chris Lamsdell, 4 Hardings Close, Iver, Bucks SL0 0HL, UK. clamsdell@gmail.com



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