Notable breeding records from a recently established anthropogenic, agricultural, site in the United Arab Emirates

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Whilst the breeding bird communities of natural habitats in the Arabian peninsula have often not fared well at the hands of man from the second half of the 20th century onwards, the same cannot be said of species that are pre-adapted to take advantage of opportunities presented by large-scale agricultural projects. Such farms were first established in Saudi Arabia in the 1950s, with a significant increase in number and magnitude from the 1970s onwards (Jennings 2010). Since then, the technology has been adopted by most Arabian countries, with the apparent exception of Yemen (Jennings 2010). Setting aside the likely long-term environmental consequences of large-scale water extraction from fossil aquifers, such projects have had a significant and, on the whole, largely beneficial effect on a large number of breeding and wintering species, some of which (*eg* Sociable Lapwing *Vanellus gregarius*) are of high conservation significance. As well as the high diversity of species which use such sites (albeit of which a significant proportion may be non-indigenous), densities of a given species may greatly exceed levels reached in most natural habitats in Arabia.

This paper documents significant breeding records for five species (Black-winged Kite *Elanus caeruleus*, White-tailed Lapwing *Vanellus leucurus*, Collared Pratincole *Glareola pratincola*, Western Yellow Wagtail *Motacilla flava* and Common Starling *Sturnus vulgaris*) from one recently established agricultural site in the United Arab Emirates. Important records are put in the context of status in the UAE and the wider region. Although a number of such sites exist in the UAE, none on the scale of the current site are currently accessible to observers. Hence, this paper provides an insight into what may be occurring on similar sites elsewhere in the country.

STUDY SITE AND METHODOLOGY

As the study site is private and somewhat sensitive, with no formal access arrangements, location details are not divulged here. It is found in the sandy desert interior of the UAE between the cities of Dubai, Al Ain and Abu Dhabi. The site (Plate 1) comprises a series of large circular pivot fields (most of diameter 600 m) of various exotic grasses and forbs such as Lucerne *Medicago sativa*. Most fields were planted in autumn 2016 and are irrigated by mechanized booms rotating about a central fulcrum. Different fields vary temporally in their attractiveness to birds, based on, in particular, cutting regime and availability (or otherwise) of standing water. In several places, shallow, near-permanent pools with open shorelines have become established. Several excavated ponds lined with synthetic plastic and with gravel-covered islands are present. Over-spill areas of ephemeral standing water and shallow edges in sandy depressions outside the main fields also provide important habitat. The total area occupied by the fields is *c*14km^2, although not all fields are under cultivation at any one time. In all, 46 visits totaling 79 h were made by the authors September 2017–September 2018, with a complete species list and counts for each visit recorded. Several opportunistic visits were also made in February–March 2019.

A total of 128 species (plus 6 further taxa) were recorded during these visits (Appendix 1). Birds were recorded by scanning from the edges of the pivot fields and from a general

Plate 1. Typical habitat at the study site, UAE, September 2018. © *Oscar Campbell*

viewpoint on the east edge of the site offering some elevation. Not all fields were checked on each visit, although the generally most productive areas were.

OBSERVATIONS ON SPECIES OF PARTICULAR INTEREST

Black-winged Kite

In common with the wider Middle East region and southern Europe (summarized by Lawicki & Perlman 2017; first records for a further three European countries during spring 2017 are noted by Kemp *et al* 2018), the UAE status of this species has changed markedly in recent years. To date, there have been 31 UAE records since the first in 1984. In the intervening years up to the end of 2013, the species averaged 0.5 records per year, all of which involved single birds. However, years 2014–2018 have averaged 3.4 records annually, with one record (2018, at the current study site) involving three individuals (Figure 1). The phenology of the species in the UAE has also changed somewhat; from 1994–2013 the first date for all records fell between September–March, with most (60%) in either November or February. Since 2014, the first date for records has ranged September–April, with no obvious concentrations in any particular month, and, in addition to the mid summer records made in the present study, there is one record in June. As with elsewhere in the Middle East, all UAE records of Black-winged Kite appear to pertain to the Asian subspecies *E. c. vociferus*.

The species was first recorded at the study site in September 2017, this individual remaining into October. Despite good coverage, there were no further records until the sudden appearance of three, including a fresh (but independent) juvenile in January 2018

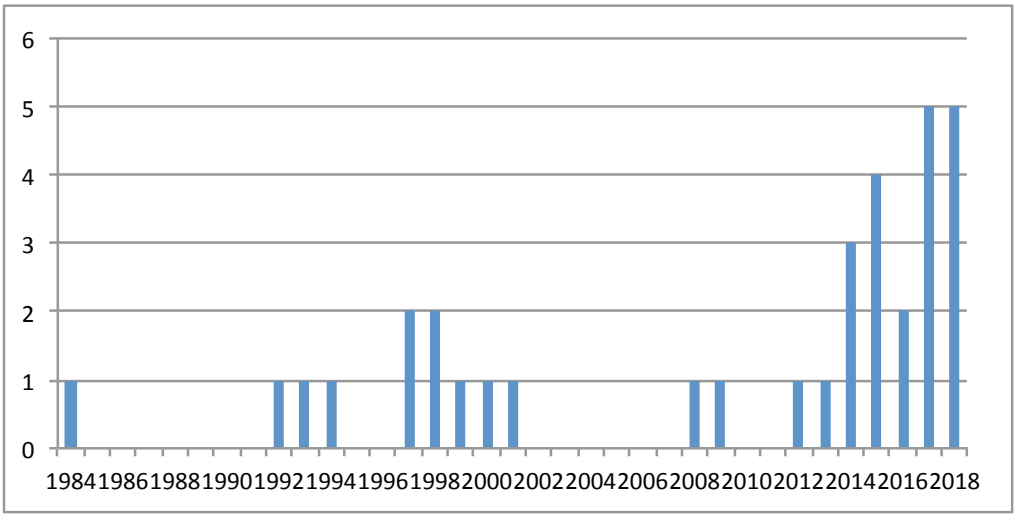

Figure 1. Number of individual Black-winged Kites *Elanus caeruleus* recorded annually in the UAE since 1984. Sources: UAE Bird Database; www.eBird.org.

(Plate 2); two adults remained thereafter. Whilst it is unlikely that such a conspicuous species could have been missed if breeding on site, the appearance of a fresh juvenile with adults is strongly suggestive of breeding somewhere nearby and quite feasibly in the UAE. Confirmation of local breeding was secured in early July 2018 with the discovery of a nest and observations of copulation on several occasions. By late July, the birds were apparently still incubating but by mid August this attempt had apparently been unsuccessful, as adults were seen again copulating. Unfortunately, access restrictions hindered follow-up visits to determine the success of the breeding attempt. Some pairs in the recently established Israeli population have bred almost year-round, completing three breeding cycles in a 13-month period (Perlman & Israeli 2013). Opportunistic observations in early March 2019 indicated that at least three (possibly four) birds were still present (OC pers obs; J. Judas pers comm).

Plate 2. Juvenile Black-winged Kite *Elanus caerulus* 20 January 2018 at study site, UAE. © *M Smiles*

Within Arabia, Black-winged Kite has traditionally been a scarce breeding resident in the Tihama foothills of Yemen; the annual breeding population there has been estimated at 10–20 pairs (Jennings 2010). However, a small population colonized Iraq in 2001 (Salim 2002) and, since 2008, a number of breeding pairs have been located (Ararat *et al* 2011). The species was recorded breeding in Israel

for the first time in 2011 (Perlman & Israeli 2013), after which the population expanded very rapidly, reaching 130–150 breeding pairs by 2016 (Lawicki & Perlman 2017). The first Jordanian record was in 2013, but there were indications of possible breeding as early as 2015 (Khoury *et al* 2017). There were 18 records in Oman up to 2015 with a marked influx in 2014–2015 (seven records, all January–March and October–November). Those records included a fresh juvenile in January 2012 (Eriksen & Victor 2013) and a pair exhibiting territorial behaviour in October 2015 (Lawicki & Perlman 2017). More recently, at least one individual was present in the Muscat area of Oman from April 2017 (possibly April 2016) to January 2018 at least (Eriksen 2018). Saudi Arabia has also seen an upsurge in records, with six 2012–2015 in the north, east and central parts of the country (Lawicki & Perlman 2017). In addition, two were observed in an agricultural area near Sajir in June 2011 (Jennings 2012). As the above context makes clear, it seems likely that the species will be recorded with increasing frequency in the UAE and further breeding attempts can be expected. This species is able to raise multiple broods per year and specializes primarily on a diet of rodents (Kemp *et al* 2018) and so is pre-adapted to rapid establishment after arrival of sufficient numbers of birds. In the UAE, species of rodents such as gerbils *Gerbillus* sp, jirds *Meriones* sp and jerboas *Jaculus* sp are likely to be common in habitats such as the study site.

White-tailed Lapwing

This species first bred in the UAE in 1996 and has done so regularly since 1999 (Jennings 2010), having previously been an uncommon autumn migrant (Richardson 1990). Since becoming an established breeder, it has been concentrated at two main sites, Al Warsan lakes and adjacent Dubai pivot fields (Dubai) and Al Wathba wetland reserve, near Abu Dhabi island. At the former site, up to 104 (December 2006) have been counted, although in recent years there has been a marked decline and the now abandoned pivot fields are now too dry for successful nesting or feeding (Figure 2). At Al Wathba, the species has been present in low numbers for many years (maximum 26); four pairs or fewer are noted most breeding seasons and the population does not seem to be increasing (Campbell *et al* 2018). Elsewhere, save for regular records of very small numbers (typically less than

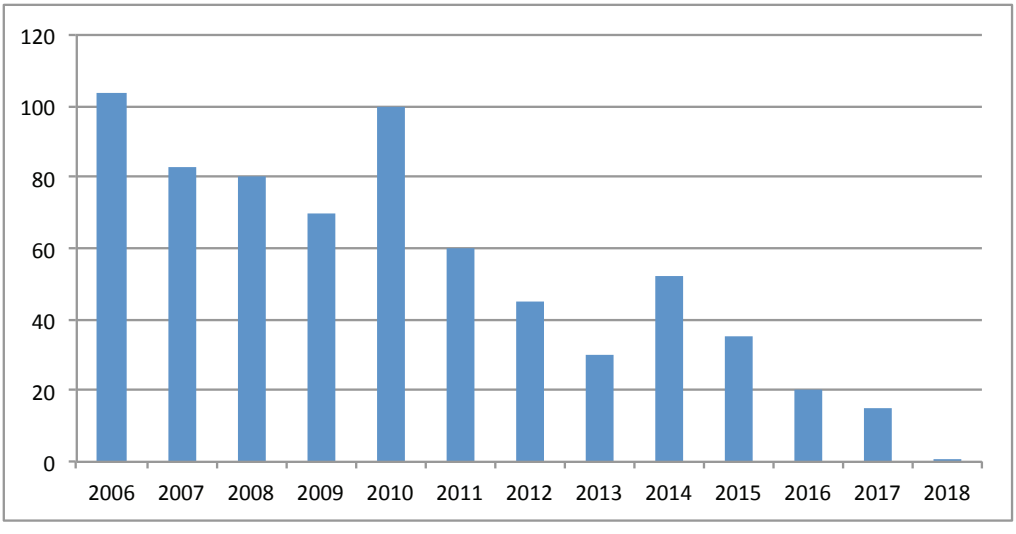

Figure 2. Trends in White-tailed Lapwing *Vanellus leucurus* numbers at Al Warsan lakes and Dubai pivot fields, 2006–2018. Data are maximum annual count recorded. Sources: UAE Bird Database; www.eBird.org.

Plate 3. Adult White-tailed Lapwing *Vanellus leucurus* mobbing observers, 27 April 2018 at study site, UAE. *© O Campbell*

10) in the Al Ain and Wasit (Sharjah) areas since 2000 and 2008 respectively, the species is very infrequent (*eg* one autumn record, Abu Dhabi island, 2007–2018 despite intensive observations; OC pers obs) with little evidence of fresh arrivals from the species' main range in south-central Asia. Given the decline at its major UAE site, the appearance, albeit of small numbers, at the study site is welcome. Up to six birds were present from October 2017 with two pairs in close proximity in late April 2018 mobbing observers furiously (Plate 3). Successful breeding was confirmed in late May 2018, when recently fledged juveniles were observed. Juveniles and demonstrative adult birds were still present into July. Subsequently, birds were observed in the breeding area in February 2019 (OC pers obs). The UAE is on the southernmost fringe of the breeding range of White-tailed Lapwing and the species has always been very local and scarce in Arabia (Jennings 2010). Outside the UAE, there are irregular breeding records only from Saudi Arabia and Kuwait. Despite being a fairly common passage migrant to northern Oman, there are no breeding records (Eriksen & Victor 2013). It is much more tied to extensive shallow water bodies than Red-wattled Lapwing *Vanellus indicus*, often feeding on open shorelines (Wiersma & Kirwan 2018) and appears to be much less adaptable to drier anthropogenic habitats.

Collared Pratincole

This species is a regular spring (mainly April) and autumn (mainly September) migrant through the UAE, often in small groups and occasionally larger flocks (up to 40) (UAE Bird Database). It is also regularly recorded in summer (June–July) with summer records in 12 years 2000–2016. The species was confirmed to breed in the UAE for the first time

Plate 4 (left)**.** Nearly-fledged Collared Pratincole *Glareola pratincola* chick at study site, UAE, 8 June 2018. © *O Campbell*

Plate 5 (right)**.** Adult Collared Pratincole *Glareola pratincola* apparently incubating at the study site, UAE, 8 June 2018. © *O Campbell*

at Al Wathba in 2005 (Jennings 2010) and breeding was strongly suspected at Dubai pivot fields in 2008 (based on agitated adults in early June and a juvenile seen in late July, Tovey 2009). The only other breeding records come from Ajban, within 50 km of the study site, in 2010 (one or two pairs), with breeding suspected there in 2011 and confirmed (one pair) in 2014. In 2018, the species was absent from the study site until mid April, when 11 were found. Birds remained obvious into June, with the first almost fledged juvenile noted on 26 May and at least four other juveniles (from 20 birds in total) on 8 June (Plate 4). On the latter date, at least one bird was still apparently incubating (Plate 5), and other adults were demonstrative and aggressive when approached. The nesting area was a very bare, flat, gravel island in a rather small ornamental pool, although it is possible that bare patches in a large pivot field were also used (an adult was seen there apparently settling with prey). Recently fledged juveniles used the shoreline of the pool for roosting and adults perched readily on the surrounding sandy edge. By 30 June 2018, most adult birds appeared to have dispersed although one juvenile was still near the nesting area and at least two adults, now in active wing moult, were feeding over fields. At least 12 full-grown juveniles were observed on adjacent pivot fields in early July 2018, indicating a good level of breeding success. Given a brood size of up to three (Maclean & Kirwan 2018), this would imply a minimum of four successful pairs at the study site in 2018. One juvenile remained until 7th September 2018.

Collared Pratincole appears to be an opportunistic breeder across Arabia, with perhaps up to 20 pairs in any one year and the range is likely to be slowly expanding (Jennings 2010). It has bred erratically at Sohar farms, northern Oman, since at least 1996, with up to

Plate 6. Juvenile Western Yellow Wagtail *Motacilla flava feldegg*, 7 July 2018. © *M Smiles* Identification to subspecies level is based on the appearance of accompanying adults.

25 pairs present in some years (Eriksen & Victor 2013). Interestingly, the species was also confirmed to breed at a new site in the UAE, a turf farm at Hamraniyah, Ras al Khaimah emirate (100 km northeast of the study site) in July 2018, and there is some evidence it may have bred (or attempted to breed) in previous years there too (MS pers obs).

Western Yellow Wagtail

This appears to be a genuinely rare species in the UAE in summer. Out of a total of 2409 records in the UAE Bird Database, only 17 (0.7%) date from the months of June or July and 10 of these records alone come from one site, the (now defunct) Dubai pivot fields in June 2011. In that year, Western Yellow Wagtail was confirmed to breed there, when a juvenile was observed being fed by a male of the subspecies *M. f. feldegg* (hereafter *feldegg*). Records of singing males and a subsequent juvenile in June 2008 from this site were highly suggestive of breeding (Tovey 2009) and was regarded as confirmed by Jennings (2010). Single, freshly-fledged juveniles were also recorded from the site in June 2013 and 2014. There are no other suspected breeding records from the UAE, but male *feldegg* have been observed singing and apparently holding territory at Mafraq water treatment plant, east of Abu Dhabi island, in June 2013 and 2014 (OC pers obs). However, small groups of *feldegg* are prone to return very early to the UAE during 'autumn' migration (or post-breeding dispersal) and at least some June and July records are likely to originate from such sources and hence may not indicate local breeding. *Feldegg* is the earliest of the four regularly occurring subspecies of Yellow Wagtail to migrate through the UAE, with

Plate 7. Common Starling *Sturnus vulgaris* nestlings, 6 July 2018. © *M Smiles*

most in late February or early March and is rare from late March onwards (Campbell & Moran 2016; contra Jennings 2010). A similar phenology is recognized for *feldegg* in Oman (Eriksen & Victor 2013). At the study site, there were no records definitely attributed to this subspecies in early spring 2018 but on a late April visit, two males were observed singing and obviously holding territory. Birds were still present until July 2018, with a maximum of four seen per visit. Most records came from a pivot field of rank grass and small open spaces, situated near overflow pools of open water, although the species was also noted flying over lucerne fields as well. On 7 July 2018, a pair was observed with two juveniles, one of which was photographed (Plate 6) and at least one of which was still present 27 July.

The subspecies *feldegg* is the most southerly breeder of all Western Yellow Wagtail subspecies and regularly breeds as close to Arabia as southern Iran (Tyler & Christie 2018). Excluding the UAE, there are only two breeding records from elsewhere in Arabia. These are from al-Karj, Saudi Arabia (from 2001, Jennings 2010) and northern Oman (May 2013, Eriksen & Victor 2013). The habitat from all these other sites is broadly comparable to that at the study site.

Common Starling

This species is a very rare breeder in Arabia, confirmed from one site only (Hamraniyah, Ras al Khaimah emirate, UAE) and recorded as a possible or probable breeder at only four further sites (Jennings 2010). All sites are in the proximity of the southern shore of the Arabian gulf. Breeding was first confirmed at Hamraniyah in 1991 and has continued there most years since (UAE Bird Database). Breeding was also confirmed from Dubai

pivot fields in 2009–2010. Otherwise, the species is a rather scarce winter visitor to the UAE. Common Starling was not recorded from the study site until January 2018 and numbers remained very small until a flock of at least 20, including many juveniles, was seen on 30 June 2018. On the same date, two adults were watched carrying food (unidentified invertebrates) back to an area of sandy dunes with isolated dead, and hence bare, *Prosopis cineraria* trees. The adults were seen sequentially to visit a nesting hole to deposit the food. The nest site was a deep cleft in the main trunk of a tree, two feet up from the ground and fully exposed to the sun. At least one blind chick was evident in the nest, with a second chick confirmed a week later (Plate 7). This appears to be the first actual nest for this species found in the UAE (Jennings 2010). The original breeding site of Hamraniyah is similar to the study site in that there are large areas of cultivated fields for foraging. However, Hamraniyah is much shadier and greener, with large, healthy *Prosopis* trees in relatively close proximity giving it a somewhat parkland effect.

Other species of interest

In addition to the five species detailed above, the study site has been rapidly colonized by a number of other breeding bird species. Black-winged Stilt *Himantopus himantopus*, Red-wattled Lapwing, Kentish Plover *Charadrius alexandrinus* and Little Ringed Plover *C. dubius* are all common, with chicks readily observed April–June. Large numbers of Pin-tailed Sandgrouse *Pterocles alchata*, originally released some years ago, are now established in the area and visit the fields in large numbers; a juvenile was observed 7 July 2018. Black-crowned Sparrow-Larks *Eremopterix nigriceps* and, to a lesser extent, Brown-necked Ravens *Corvus ruficollis* and Greater Hoopoe-Larks *Alaemon alaudipes* breed in the surrounding desert and move onto the site to feed, with Black-crowned Sparrow-Larks sometimes very numerous. European Turtle Dove *Streptopelia turtur* is present all year and breeds commonly in the surrounding area. Up to 175 have been recorded as aggregations of post-breeding adults and juveniles in October, although numbers are much lower in winter. In autumn and winter, the site attracts a wide range of waterbirds and raptors with, amongst the latter, mixed roosts of harriers *Circus* (up to 45; mainly Marsh *C. aeruginosus* and Pallid *C. macrourus*) notable, as are small numbers of both Eastern Imperial Eagle *Aquila heliaca* and Lappet-faced Vulture *Torgos tracheliotus*. Four Sociable Lapwings remained from November 2017–January 2018. It is likely that continued development and expansion of such sites will likely further influence the distributions (both breeding and in winter) of many species in the Arabian peninsula. Evidence of such changes for species of conservation significance (Sociable Lapwing) is presented in Babbington & Roberts (2017).

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Appendix 1. List of species recorded by the authors September 2017–September 2018 at the study site. A total of 128 species, plus a further 6 taxa (flagged with * in the list that follows; either distinct at subspecies level or closely related species pairs that could not be definitively identified), were recorded. Note that the total number of visits made was 46, but that not all surveyed the entire site and others were simply point counts from an elevated viewpoint on the edge of the site. The mean count data does not include visits in which the species was not recorded.

	No. of visits on which species recorded	Maximum count	Mean count
Egyptian Goose *Alopochen aegyptiaca*	20	70	12.9
Garganey *Spatula querquedula*	4	20	8.5
Northern Shoveler *Spatula clypeata*	10	60	30.7
Gadwall *Mareca strepera*	1	1	1.0
Eurasian Wigeon *Mareca penelope*	1	4	4.0
Mallard *Anas platyrhynchos*	6	25	14.3
Northern Pintail *Anas acuta*	6	6	2.0
Eurasian Teal *Anas crecca*	10	100	35.8
Grey Francolin *Francolinus pondicerianus*	9	9	5.7
Common Quail *Coturnix coturnix*	2	3	2.5
Little Grebe *Tachybaptus ruficollis*	17	45	15.7
Greater Flamingo *Phoenicopterus roseus*	6	500	135.0
White Stork *Ciconia ciconia*	2	13	8.5

	No. of visits on which species recorded	Maximum count	Mean count
Glossy Ibis *Plegadis falcinellus*	17	100	17.9
Black-crowned Night Heron *Nycticorax nycticorax*	2	150	76.0
Western Cattle Egret *Bubulcus ibis*	30	175	39.0
Grey Heron *Ardea cinerea*	21	50	11.4
Great Cormorant *Phalacrocorax carbo*	5	300	146.0
Black-winged Kite *Elanus caeruleus*	17	3	1.5
Lappet-faced Vulture *Torgos tracheliotos*	4	3	2.5
Greater Spotted Eagle *Clanga clanga*	10	4	1.7
Booted Eagle *Hieraaetus pennatus*	1	1	1.0
Eastern Imperial Eagle *Aquila heliaca*	3	2	1.7
Bonelli's Eagle *Aquila fasciata*	5	1	1.0
Eurasian Sparrowhawk *Accipiter nisus*	1	1	1.0
Western Marsh Harrier *Circus aeruginosus*	18	35	8.8
Pallid Harrier *Circus macrourus*	11	10	3.4
Montagu's Harrier *Circus pygargus*	12	4	1.9
*Pallid/Montagu's Harrier (*Circus macrourus/pygargus*)	7	5	2.6
Long-legged Buzzard *Buteo rufinus*	3	1	1.0
Common Moorhen *Gallinula chloropus*	6	6	2.5
Black-winged Stilt *Himantopus himantopus*	30	150	58.9
Pied Avocet *Recurvirostra avosetta*	14	25	6.8
Red-wattled Lapwing *Vanellus indicus*	34	200	50.9
Sociable Lapwing *Vanellus gregarius*	2	4	3.5
White-tailed Lapwing *Vanellus leucurus*	22	7	4.1
Pacific Golden Plover *Pluvialis fulva*	1	1	1.0
Grey Plover *Pluvialis squatarola*	1	2	2.0
Common Ringed Plover *Charadrius hiaticula*	13	50	14.2
Little Ringed Plover *Charadrius dubius*	22	40	9.3
Kentish Plover *Charadrius alexandrinus*	24	200	49.2
Eurasian Curlew *Numenius arquata*	7	6	2.6
Black-tailed Godwit *Limosa limosa*	1	10	10.0
Ruff *Calidris pugnax*	22	250	44.4
Broad-billed Sandpiper *Calidris falcinellus*	3	1	1.0
Curlew Sandpiper *Calidris ferruginea*	8	4	1.8
Temminck's Stint *Calidris temminckii*	18	60	17.2
Dunlin *Calidris alpina*	5	30	13.4
Little Stint *Calidris minuta*	23	300	92.2

	No. of visits on which species recorded	Maximum count	Mean count
Common Snipe *Gallinago gallinago*	17	50	13.4
Terek Sandpiper *Xenus cinereus*	2	1	1.0
Red-necked Phalarope *Phalaropus lobatus*	4	4	2.0
Common Sandpiper *Actitis hypoleucos*	6	3	2.0
Green Sandpiper *Tringa ochropus*	15	4	1.9
Common Redshank *Tringa totanus*	17	15	4.3
Marsh Sandpiper *Tringa stagnatilis*	20	25	6.4
Wood Sandpiper *Tringa glareola*	22	25	5.8
Spotted Redshank *Tringa erythropus*	3	2	1.7
Common Greenshank *Tringa nebularia*	11	3	1.5
Cream-coloured Courser *Cursorius cursor*	2	4	3.0
Collared Pratincole *Glareola pratincola*	15	20	9.9
Black-headed Gull *Chroicocephalus ridibundus*	2	1	1.0
*Large white-headed gull sp, *Larus*	1	1	1.0
Whiskered Tern *Chlidonias hybrida*	1	1	1.0
White-winged Tern *Chlidonias leucopterus*	2	1	1.0
Pin-tailed Sandgrouse *Pterocles alchata*	24	1000	224.8
Chestnut-bellied Sandgrouse *Pterocles exustus*	4	50	25.5
Rock Dove (Feral) *Columba livia*	12	100	31.5
Common Wood Pigeon *Columba palumbus*	1	1	1.0
European Turtle Dove *Streptopelia turtur*	16	175	17.2
Eurasian Collared Dove *Streptopelia decaocto*	24	1000	244.2
Laughing Dove *Spilopelia senegalensis*	21	300	99.7
Namaqua Dove *Oena capensis*	2	3	2.0
Common Cuckoo *Cuculus canorus*	2	1	1.0
Pallid Swift *Apus pallidus*	9	50	13.0
*Unidentified Swift *(Apus* sp)	1	1	1.0
Indian Roller *Coracias benghalensis*	24	14	4.1
European Roller *Coracias garrulus*	4	2	1.5
Green Bee-eater *Merops orientalis*	1	1	1.0
Blue-cheeked Bee-eater *Merops persicus*	13	85	31.3
Eurasian Hoopoe *Upupa epops*	18	10	2.7
Lesser Kestrel *Falco naumanni*	1	1	1.0
Common Kestrel *Falco tinnunculus*	19	15	5.7
Eurasian Hobby *Falco subbuteo*	1	1	1.0
Red-backed Shrike *Lanius collurio*	1	2	2.0

	No. of visits on which species recorded	Maximum count	Mean count
Isabelline Shrike *Lanius isabellinus*	7	5	3.1
Red-tailed Shrike *Lanius phoenicuroides*	11	12	3.1
*Isabelline/Turkestan Shrike *Lanius isabellinus/phoenicuroides*	4	2	1.5
Great Grey Shrike *Lanius excubitor*	21	7	3.0
Steppe Grey Shrike *Lanius pallidirostris*	12	5	2.3
Woodchat Shrike *Lanius senator*	1	1	1.0
Brown-necked Raven *Corvus ruficollis*	20	8	3.6
Greater Hoopoe-Lark *Alaemon alaudipes*	1	1	1.0
Black-crowned Sparrow-lark *Eremopterix nigriceps*	23	50	14.0
Eurasian Skylark *Alauda arvensis*	5	6	2.6
Crested Lark *Galerida cristata*	30	100	30.5
Greater Short-toed Lark *Calandrella brachydactyla*	7	50	23.7
Bimaculated Lark *Melanocorypha bimaculata*	1	1	1.0
White-eared Bulbul *Pycnonotus leucotis*	6	15	6.3
Sand Martin *Riparia riparia*	11	100	19.9
Barn Swallow *Hirundo rustica*	28	400	58.3
Common House Martin *Delichon urbicum*	1	1	1.0
Clamorous Reed Warbler *Acrocephalus stentoreus*	10	13	4.6
Graceful Prinia *Prinia gracilis*	15	5	2.8
Asian Desert Warbler *Sylvia nana*	2	2	1.5
Menetries's Warbler *Sylvia mystacea*	1	1	1.0
Bank Myna *Acridotheres ginginianus*	1	2	2.0
Common Myna *Acridotheres tristis*	20	50	20.9
Rosy Starling *Pastor roseus*	1	1	1.0
Common Starling *Sturnus vulgaris*	9	25	9.0
Song Thrush *Turdus philomelos*	1	1	1.0
Rufous-tailed Scrub Robin *Cercotrichas galactotes*	2	1	1.0
Spotted Flycatcher *Muscicapa striata*	1	1	1.0
Bluethroat *Luscinia svecica*	7	3	2.4
Common Rock Thrush *Monticola saxatilis*	1	2	2.0
European Stonechat *Saxicola rubicola*	1	1	1.0
Siberian Stonechat *Saxicola maurus*	5	2	1.4
*Siberian Stonechat (Caspian) *Saxicola maurus hemprichii*	1	1	1.0
Isabelline Wheatear *Oenanthe isabellina*	11	6	3.1
Desert Wheatear *Oenanthe deserti*	13	15	5.7
Pied Wheatear *Oenanthe pleschanka*	7	10	3.4

	No. of visits on which species recorded	Maximum count	Mean count
Red-tailed Wheatear *Oenanthe chrysopygia*	2	1	1.0
Purple Sunbird *Cinnyris asiaticus*	5	7	3.0
House Sparrow *Passer domesticus*	22	500	208.6
Indian Silverbill *Euodice malabarica*	6	11	3.8
Western Yellow Wagtail *Motacilla flava*	11	10	3.1
*Western Yellow Wagtail (Black-headed) *Motacilla flava feldegg*	9	8	2.9
Citrine Wagtail *Motacilla citreola*	4	6	2.5
White Wagtail *Motacilla alba*	12	50	17.9
Richard's Pipit *Anthus richardi*	1	1	1.0
Tawny Pipit *Anthus campestris*	11	30	11.8
Red-throated Pipit *Anthus cervinus*	5	2	1.4
Water Pipit *Anthus spinoletta*	10	15	7.2
Black-headed Bunting *Emberiza melanocephala*	1	2	2.0