A proposed Important Bird Area and Internationally Important Wetland: Meyghan wetland, west-central Iran

MOHAMMAD TOHIDIFAR & MOHAMMAD KABOLI

The criteria given by Birdlife International and the Ramsar convention on wetlands were evaluated to identify Meyghan wetland, west-central Iran, as a potential new IBA and Internationally Important Wetland. Field surveys were conducted October 2007–January 2009. The wetland meets seven criteria of BirdLife International (A1, A3, A4iii, B1i B1iv, B2, B3) and criteria 1–6 of the Ramsar convention on wetlands. This wetland supports large numbers of migrating Common Cranes *Grus grus* (3300 individuals in October 2007). Five avian species recorded from the wetland are categorized as globally threatened: Sociable Lapwing *Vanellus gregarius* (CR), Saker Falcon *Falco cherrug* (VU), Greater Spotted Eagle *Aquila clanga* (VU), Eastern Imperial Eagle *Aquila heliaca* (VU), Marbled Teal *Marmaronetta angustirostris* (VU) and three are near threatened (NT): Pallid Harrier *Circus macrourus*, Black-tailed Godwit *Limosa limosa* and European Roller *Coracias garrulus*. Meyghan wetland suffers from various human and natural threats and suggestions are made on how to overcome them.

INTRODUCTION

Despite the fact that large portions of Iran are arid or semi-arid (Scott 1995), there are several very extensive wetland systems of great importance for a wide variety of seasonal and migratory birds. These wetlands are mainly in coastal and near-coastal areas *eg* Miankaleh, Gomishan, Boujagh (Bandar Kiashahr), Uromiyeh in the north and west and Shadegan, Parishan, Bakhtegan, Mond, Heleh, Hara (Khouran straits) in southwest, south and south-central Iran (Scott 1996). The wetlands of Iran constitute vital staging and wintering areas for numerous migratory waterfowl that use the West Siberian-Caspian-East African and Central Siberian-Indus-South Asian flyways and also support large breeding populations of many species. Several million waterfowl utilize the wetlands as wintering habitat, while perhaps as many birds again use the wetlands as staging areas on their way to and from wintering areas further to the southwest or southeast (Scott 1996). At least 800 km separate the northern (Caspian sea) and southern (Persian gulf) coastal regions suggesting that staging areas exist between them.

As a contracting party to the Ramsar convention, Iran has introduced 24 wetlands as Ramsar sites (www.ramsar.org updated 4 March 2011). Furthermore, Evans (1994), in an inventory of Important Bird Areas (IBA) in the Middle East, described 105 IBAs in the Islamic Republic of Iran, though none have been added or deleted subsequently.

Situated in west-central Iran, Meyghan wetland supports a significant number of migratory birds and especially some globally threatened species including Marbled Teal *Marmaronetta angustirostris*, Sociable Lapwing *Vanellus gregarius*, Saker Falcon *Falco cherrug*, Greater Spotted Eagle *Aquila clanga* and Eastern Imperial Eagle *Aquila heliaca*. This paper summarizes information gathered during field surveys at Meyghan wetland, in particular on its avifauna, to evaluate its potential as a Ramsar site and IBA.

STUDY AREA

Meyghan wetland (34° 11′ 59″ N, 49° 50′ 32″ E, 1660 m asl), also called Kavir Meyghan, is a playa or kavir (base-level plain of inland drainage basin) covering an area of *c*10 640 ha located 17 km northeast of Arak (Markazi province) in west-central Iran (Figure 1, Sadough & Jalalvand 1999). This area consists of a complex of sabkhas (salt-encrusted flats) (Akhani 2006), mudflats, marsh, artificial islets (resulting from exploitation of sodium sulphate) and open water (Plates 1–4). After good rainfall, mainly in autumn or late winter,

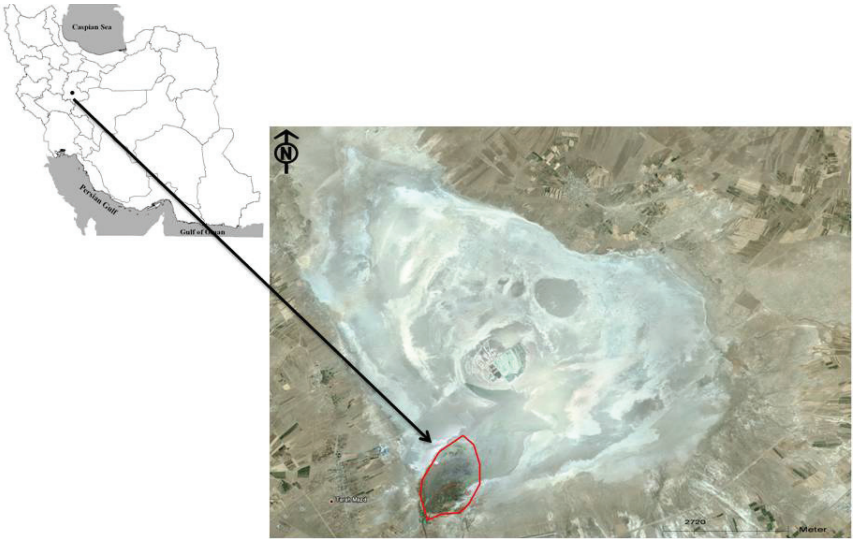

Figure 1. Meyghan wetland (the white-coloured playa or kavir) in west-central Iran. The red polygon indicates the only permanent water body and which was used by the authors for monitoring birds in the present study.

Plate 1. A view of southwest Meyghan wetland, west-central Iran, October 2007, with thousands of waterfowl present. © *Mohammad Tohidifar*

the whole area is covered with a shallow layer of water but this is temporary and in a few days the water drains, the sea-like landscape vanishes, and salt desert reappears. This site is known as an autumn habitat for up to 5000 Common Cranes *Grus grus* (Behrouzi-

Plate 2. Flocks of hundreds of Common Cranes *Grus grus* and ducks *Anas* spp, southwest Meyghan wetland, west-central Iran, January 2009. The ground is snow covered and water partially frozen over. © *Mohammad Tohidifar*

Plate 3. Artificial islets in centre of playa resulting from sodium sulphate extraction, December 2007, Meyghan wetland, west-central Iran. © *Mohammad Tohidifar*

Plate 4. A temporary red river (they disappear after good rains or evaporate away in hot months), June 2008, Meyghan wetland, west-central Iran. Coloration due to *Dunaliella salina*, a halophilous micro-alga. © *Mohammad Tohidifar*

Rad *et al* 1997). Meyghan has a valuable flora and about one quarter of Iranian halophyte species have been found there (Akhani 2006). Three main plant genera are *Centaurea* spp, *Astragalus* spp and *Lepidium* spp (Akhani 1989). The highest density of vegetation occurs mostly in the southwest and mainly includes *Phragmites australis* and *Cyperus eremicus*. The climate of the area is on the border of warm and cold semi-arid based on the Köppen-Geiger climate classification (Kottek *et al* 2006). Mean annual precipitation is 258 mm and maximum water depth *c*220 cm (Sadough & Jalalvand 1999). The Meyghan wetland is a major site for industrial exploitation of sodium sulfate in Iran and in recent years the southwest of the wetland has received a large inflow of treated wastewater from Arak city which has changed the southwest to a brackish permanent wetland with open water (Figure 1, Ansari *et al* 2008).

MATERIALS AND METHODS

Data collection

Until recently, only a very few ornithological studies have been carried out at Meyghan wetland: collection of bird specimens for the Danish zoological museum (Paludan 1940) and a population survey of Greater Flamingos *Phoenicopterus roseus* which was carried out 21–22 June 1957 (Read 1958). In recent years, several studies have been done at Meyghan wetland. Behrouzi-Rad *et al* (1997) mentioned autumn occurrence of 5000–6000 Common Cranes in Meyghan. Another study concerned ecological assessment of Meyghan for Common Cranes (Ansari *et al* 2008).

We carried out surveys every month, October 2007–January 2009, for 15 months. Counts were done mostly in the southwestern part of the wetland (an area of *c*350 ha,

Table 1. Biome-restricted bird species of Meyghan wetland, west-central Iran.

		Biome
Pallid Harrier	*Circus macrourus*	Eurasian Steppe and Desert
Steppe Eagle	*Aquila nipalensis*	Eurasian Steppe and Desert
Imperial Eagle	*Aquila heliaca*	Eurasian Steppe and Desert
Caspian Plover	*Charadrius asiaticus*	Eurasian Steppe and Desert
Sociable Lapwing	*Vanellus gregarius*	Eurasian Steppe and Desert
Water Pipit	*Anthus spinoletta*	Eurasian High-Montane
White-throated Robin	*Irania gutturalis*	Irano-Turanian
Finsch's Wheatear	*Oenanthe finschii*	Irano-Turanian
Streaked Scrub-warbler	*Scotocerca inquieta*	Sahara-Sindian Desert
Black-headed Bunting	*Emberiza melanocephala*	Mediterranean

Figure 1) and at the islets in the centre of the wetland, with a maximum area of 50 ha, due to physical inaccessibility (mud *etc*) of other areas. Observations were carried out using 10×40 binoculars and 20×60 telescopes. Digital SLR cameras were also used.

Data analysis

To identify whether the wetland qualifies for IBA and Ramsar status, we used the new IBA criteria proposed by Birdlife International (www.birdlife.org/datazone/info/ibacritme) and the criteria approved by the Ramsar convention on wetlands (www.ramsar.org/ris/key_ris_index.htm.). An IBA is defined as a key site for conservation that is small enough to be conserved in its entirety and is often already part of a protected area network. They do at least one of the following three things: hold significant numbers of one or more globally threatened species; are one of a set of sites that together hold a suite of restricted range species or biome-restricted species; have exceptionally large numbers of migratory or congregatory species. In the Middle East, there are two levels of IBAs—sites of global importance (A-level sites) and those that do not meet the criteria for global importance but which nonetheless are of Middle Eastern importance (B-level sites) (*eg* Khairallah & Conroy 2010). These criteria are available in detail on the BirdLife and Ramsar websites.

Table 2. Estimated/counted numbers of Common Cranes *Grus grus*, 2007–2009, Meyghan wetland, west-central Iran. * denotes a minimum estimate or count.

Date of observation	Number of individuals
26 Oct 07	2750–3300
6 Nov 07	2500*
23 Nov 07	100
14 Dec 07	100
19 Jan 08	27
29 Feb 08	11
30 Mar 08	324
25 Apr 08	1
23 May 08	2
5 Jun 08	2
20 Jun 08	1
22 Aug 08	2
5 Sep 08	150
19 Sep 08	21
17 Oct 08	3
25 Oct 08	500
7 Nov 08	500*
5 Dec 08	1000*
12 Dec 08	2100*
26 Dec 08	910
23 Jan 09	1200*

RESULTS

In total, 126 bird species from 38 families were identified at Meyghan wetland. The highest species number belongs to the Scolopacidae with 13 species, Anatidae has 11 and Accipitridae 10. Thirty-seven species met one of three categories of breeding evidence: possible, probable and confirmed breeding. Appendix 1 lists bird species, their status and maximum numbers counted on a monthly basis during the survey period. We recorded three species listed as threatened (VU, vulnerable) on the IUCN Red List: Saker Falcon, Greater Spotted Eagle, Eastern Imperial Eagle, and three near threatened (NT), Pallid Harrier *Circus macrourus*, Black-tailed Godwit *Limosa limosa* and European Roller *Coracias garrulus*.

Our study shows that Meyghan wetland meets the criteria for both an IBA and an Internationally Important Wetland. The wetland meets seven criteria of BirdLife International, as below.

A1. Species of global conservation concern

Five such species have been recorded in Meyghan, namely Sociable Lapwing (Tohidifar & Zarei 2007), Saker Falcon, Greater Spotted Eagle, Eastern Imperial Eagle and Marbled Teal *Marmaronetta angustirostris* (F Mobaser pers comm).

A3. Biome-restricted species

For 10 species, the breeding distributions are largely or wholly confined to one biome. Table 1 lists these species and their biomes.

A4. Congregations

This site meets the third article of this criterion (A4iii), the holding of ≥20 000 individuals of waterbirds on a regular basis. This occurs October–December (Appendix 1) when more than twenty thousand ducks assemble in Meyghan wetland.

B1. Regionally important congregations

This indicates sites which are known or thought to hold ≥1% of a flyway or other distinct population of a waterbird species and two species qualify. Greylag Goose *Anser anser* (1% of the regional population of western Siberia and the Caspian sea was determined to be 800 individuals—Evans 1994). One thousand five hundred individuals were counted 1 December 2006, and 800 and 1000 individuals were present 14 December 2007 and 7 December 2008 respectively. The Common Crane (1% of regional population in southwest Asia is 200 individuals—Evans 1994) which on nine visits by ourselves numbered in excess of 200 individuals (Table 2). The site is a 'bottleneck' where over 3000 cranes regularly pass on autumn migration. In the present study, due to limitation of researcher numbers and the scattering of Common Cranes in adjacent agricultural fields outside the wetland, a complete count of the species was not possible but previous studies mentioned 5000–11 000 individuals in early autumn of the 1990s and early 2000s (Ansari *et al* 2008, Behrouzi-Rad *et al* 1997).

B2. Species with an unfavourable conservation status in the Middle East

The site is one of the five most important sites in the country/territory (*ie* Iran) for a species with an unfavourable conservation status in the Middle East (threatened or declining throughout all or part of their range in the region). The three species are Bittern *Botaurus stellaris*, White Stork *Ciconia ciconia* and Saker Falcon *Falco cherrug*, which occur at Meyghan wetland and are listed in this category. For these species, site-protection approaches are thought to be appropriate.

B3. Species with a favourable conservation status but concentrated in the Middle East
The area meets this criterion (Evans 1994) with occurrence of two species, namely White-throated Robin *Irania gutturalis* and Finsch's Wheatear *Oenanthe finschii* (Appendix 1).

The Meyghan wetland meets 6 out of 9 Ramsar convention criteria for qualifying as an Internationally Important Wetland.

Criterion 1. A wetland contains a representative, rare, or unique example of a natural or nearly natural wetland type found within the appropriate biogeographic region

Meyghan wetland is a unique wetland located in the Irano-Turanian biome and almost all other wetlands of Iran are located more peripherally.

Criterion 2. A wetland should be considered internationally important if it supports vulnerable, endangered, or critically endangered species or threatened ecological communities

As A1 of IBA criteria.

Criterion 3. A wetland should be considered internationally important if it supports populations of plant and/or animal species important for maintaining the biological diversity of a particular biogeographic region

A total of 129 bird species have been recorded at Meyghan wetland as well as various mammals *eg* Red Fox *Vulpes vulpes*, Golden Jackal *Canis aureus*, European Hare *Lepus europaeus* and Persian Jird *Meriones persicus*. Moreover, three plant species *Microcnemum coralloides*, *Arabidopsis parvula* and *Aspargous licoenicus* found in the wetland are either near endemic (*M. coralloides* is also found at lake Orumiyeh) or endemic to the wetland (Akhani 1989).

Criterion 4. A wetland should be considered internationally important if it supports plant and/or animal species at a critical stage in their life cycles, or provides refuge during adverse conditions

Of the 37 breeding species recorded at Meyghan, at least 21 are ecologically dependent on wetlands during the breeding season. The breeding season presents a period of intense activity and sensitivity to disturbance for most bird species when nests, eggs, chicks, and adults at the nest are vulnerable to predation (Sutherland *et al* 2004). During severe winters (*eg* January–February 2008) most parts of the wetland are frozen and at these times, vegetated areas (especially the *Cyperus eremicus* community) provide good cover and food for waterbirds or cranes.

Criterion 5. A wetland should be considered internationally important if it regularly supports 20 000 or more waterbirds

As A4 of IBA criteria.

Criterion 6. A wetland should be considered internationally important if it regularly supports 1% of the regional population of one species or subspecies of waterbird

As B1 of the IBA criteria.

CONSERVATION AND THREATS

Wetlands in arid ecosystems play a major role in producing and supporting the floral and faunal diversity of an area. Such wetlands are very sensitive and fragile especially in response to human-made threats (Madjnoonian 1999). Wetlands in Iran, as elsewhere in the region, are increasingly coming under pressure from human activities.

Meyghan wetland is 250 km away from Gavkhoni wetland (Evans 1994) and 140 km away from the Howz-Sultan salt lake in Qom. In recent years, Gavkhoni has faced severe ecological devastation (drought and extensive extraction of salt) and was not being used

by migratory waterbirds (Shayan Kia 2003). This highlights the value of Meyghan wetland for migratory species as well as breeders and winter visitors. Meyghan wetland is the second known breeding site of Armenian Gull *Larus armenicus* in Iran whilst the first, at lake Orumiyeh, is threatened by drought (Tohidifar *et al* 2010).

Meyghan wetland is degraded not only because of construction of a road (compacted sabkha covered with a thin layer of asphalt) to the centre of the saline to exploit sodium sulphate, and changes in its hydrologic balance, but also due to the extreme grazing and agricultural activities around it (Akhani 2006). The extensive mining of sodium sulphate at Meyghan wetland is reducing the number of islets suitable for breeding of Armenian Gulls and other islet-related breeding species *eg* Pied Avocet. The Markazi provincial office of the Department of the Environment has no plans as yet for controlling the mining of sodium sulphate.

Disturbance by feral dogs of breeding birds was seen several times during the period of this study and including destruction of landbird nests. At the same time, water level fluctuations and drought are threatening the breeding waterbirds at Meyghan. Meyghan has a unique ecosystem and eutrophication in the southwest mostly caused by discharge from water treatment facilities in Arak is a problem. Industrial pollutants also enter the wetland.

Ansari *et al* (2008) recommended that hunting should be better controlled in the area. The no-hunting area (*c*30 000 ha) declared on 6 November 2008 by the Department of the Environment includes the Meyghan wetland. Conservation measures in place to protect the area must be enforced and eco-tourists and bird watchers should be encouraged to visit the wetland (Ansari *et al* 2008, Tohidifar *et al* 2009).

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Mohammad Tohidifar, Biodiversity & Habitats Division, Environment & Energy Faculty, Science and Research Branch, Islamic Azad University, Tehran, Iran. mohammad.tohidifar@yahoo.com

Mohammad Kaboli, Fisheries and Environment Department, Natural Resources Faculty, University of Tehran, Karaj, Iran.

Appendix 1. Bird species and maximum numbers counted at the Meyghan wetland, west-central Iran, in the present study (October 2007–January 2009). Nomenclature and order follows Scott & Adhami (2006). P = passage migrant, R = resident, W = winter visitor, B = breeding, b = may breed, snb = summer non-breeder, pnc = present but not counted.

	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Status
Great Crested Grebe *Podiceps cristatus*															1		**P**
Black-necked Grebe *Podiceps nigricollis*													1	1			**P**
Great White Pelican *Pelecanus onocrotalus*								1									**P**
Great Cormorant *Phalacrocorax carbo*					5									2			**P**
Little Egret *Egretta garzetta*			1			5				1			3				**P**
Grey Heron *Ardea cinerea*									1	1			1	3			**P**
Purple Heron *Ardea purpurea*										2							**P**
Great Egret *Casmerodius albus*						1									7		**P**
Cattle Egret *Bubulcus ibis*								12	3	36	14	13					**b**
Squacco Heron *Ardeola ralloides*							2	9	pnc								**P**
Little Bittern *Ixobrychus minutus*								1	4	1							**P**
Eurasian Bittern *Botaurus stellaris*		2				1								2			**P**
White Stork *Ciconia ciconia*						15	10										**P**
Glossy Ibis *Plegadis falcinellus*						5	3	13	4	35		33	4				**b**
Eurasian Spoonbill *Platalea leucorodia*										1	2						**P**
Greater Flamingo *Phoenicopterus roseus*					165	530	518	1050	672	450	360	300	200	150	2		**PW snb**
Greylag Goose *Anser anser*		150	800		150	50							15	1000	200	17	**WP**
Common Shelduck *Tadorna tadorna*	15	2												4	10	160	**P**
Ruddy Shelduck *Tadorna ferruginea*	60	30	3		21	41	1	4		35			10	30	176	100	**WP**
Eurasian Teal *Anas crecca*	15	2	1			30	100	1	2	90	2000	4500	1500	pnc	8000	40	**BW**

	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Status
Mallard *Anas platyrhynchos*	10	50	4		10	10	2	5	40	400	50	100	1	10	20	170	**WP**
Northern Pintail *Anas acuta*												5	10		1		**P**
Garganey *Anas querquedula*							2	3	1								**P**
Northern Shoveler *Anas clypeata*		1				30	20	2	1		1			2	3	1	**WP**
Red-crested Pochard *Netta rufina*			1														**P**
Common Pochard *Aythya ferina*												1					**P**
Tufted Duck *Aythya fuligula*														3			**P**
Unidentified Duck		6500	7500									10 000	25 000	25 000	30 000	750	
White-tailed Eagle *Haliaeetus albicilla*													1		3		**P**
Western Marsh Harrier *Circus aeruginosus*	2	2	1			2						3	3	4	2		**WP**
Hen Harrier *Circus cyaneus*		1	2												4		**P**
Pallid Harrier *Circus macrourus*		1															**P**
Common Buzzard *Buteo buteo*						12									1		**P**
Long-legged Buzzard *Buteo rufinus*	2	1	1	1	1	1	1			1			1	1	2		**R**
Greater Spotted Eagle *Aquila clanga*														1			**P**
Steppe Eagle *Aquila nipalensis*															1		**P**
Eastern Imperial Eagle *Aquila heliaca*		1			1										2		**P**
Golden Eagle *Aquila chrysaetos*	1	1		1													**W**
Common Kestrel *Falco tinnunculus*	2				1	1								1			**R**
Eurasian Hobby *Falco subbuteo*												1	2				**P**
Saker Falcon *Falco cherrug*												2	1				**P**
Peregrine Falcon *Falco peregrinus*	1		1														**W**
Common Quail *Coturnix coturnix*							1	1	1								**B**
Common Crane *Grus grus*	3300	2500	100	27	11	324	1	2	2		2	150	500	500	2100	1200	**PW**
Water Rail *Rallus aquaticus*	1	1									2	2	1				**R**
Unidentified crake *Porzana* spp													1				**P**
Purple Swamphen *Porphyrio porphyrio*		1															**P**
Common Moorhen *Gallinula chloropus*		1				1		2	1	1	2	3	5			15	**R**
Eurasian Coot *Fulica atra*		130	55					2		2	1	1	10	100	27	40	**BW**

	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Status
Black-winged Stilt *Himantopus himantopus*	25	5	1			50	50	100	200	1000	15		10	pnc			**BP**
Pied Avocet *Recurvirostra avosetta*							2	2	80	70		5	10	5	2		**BP**
Collared Pratincole *Glareola pratincola*							10	10	2	30	15	1					**B**
Little Ringed Plover *Charadrius dubius*						5											**P**
Kentish Plover *Charadrius alexandrinus*									20								**P**
Caspian Plover *Charadrius asiaticus*										15							**P**
Northern Lapwing *Vanellus vanellus*	10	9	3		3	20	15	10	30	50		15	15	1	3	8	**BW**
White-tailed Lapwing *Vanellus leucurus*						3	10	12	5	5		8					**B**
Common Snipe *Gallinago gallinago*	1	10	2		5	5	10	2			10	10	8	15	15		**PW**
Black-tailed Godwit *Limosa limosa*						4	10										**P**
Spotted Redshank *Tringa erythropus*							1	4		25	1	2					**P**
Common Redshank *Tringa totanus*		6				1	5	15	9	25	1	2	pnc	20	3		**BW**
Marsh Sandpiper *Tringa stagnatilis*							15	10									**P**
Green Sandpiper *Tringa ochropus*					2			2	3	2	15		2	2	2		**P**
Wood Sandpiper *Tringa glareola*							1	25				15					**P**
Common Sandpiper *Actitis hypoleucos*						1	5	1		8							**P**
Sanderling *Calidris alba*														1			**P**
Dunlin *Calidris alpina*															8		**P**
Curlew Sandpiper *Calidris ferruginea*							2	1									**P**
Ruff *Philomachus pugnax*								5			10		1				**P**
Red-necked Phalarope *Phalaropus lobatus*								15				11					**P**
Armenian Gull *Larus armenicus*									60	61	65	10					**B**
Caspian Gull *Larus cachinnans*					44												**P**
Black-headed Gull *Larus ridibundus*	25	55	150		400	1000	1	2				25	120	200			**PW**
Slender-billed Gull *Larus genei*									1								**P**
Gull-billed Tern *Sterna nilotica*							20	5	pnc	70	2	5					**b**
Common Tern *Sterna hirundo*								2									**P**
Whiskered Tern *Chlidonias hybrida*								5	37	100							**b**
White-winged Tern *Chlidonias leucopterus*							2	50	15	100							**b**

	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Status
Black Tern *Chlidonias niger*							3	2									**P**
Black-bellied Sandgrouse *Pterocles orientalis*	1								2	5	9					130	**R**
Rock Dove *Columba livia*	25				30	2		6	pnc	10	10	5		pnc	3	6	**R**
European Turtle Dove *Streptopelia turtur*												2					**P**
Laughing Dove *Streptopelia senegalensis*						1							1				**R**
Little Owl *Athene noctua*									1			1					**R**
Common Swift *Apus apus*						40	pnc	pnc	10								**B**
Blue-cheeked Bee-eater *Merops persicus*								2				3	120	10			**P**
European Bee-eater *Merops apiaster*							10	5	6	1	1		20				**B**
European Roller *Coracias garrulus*									1	2	2	1					**B**
Eurasian Hoopoe *Upupa epops*								3	2	1		5	1				**B**
Calandra Lark *Melanocorypha calandra*								6				1					**b**
Bimaculated Lark *Melanocorypha bimaculata*					3	7	2	3									**P**
Greater Short-toed Lark *Calandrella brachydactyla*									1	1							**P**
Lesser Short-toed Lark *Calandrella rufescens*				7		5		1	4		3	1				pnc	**R**
Crested Lark *Galerida cristata*	2		1	2	3	8	2	2	2	5	2	1	pnc	1			**R**
Eurasian Skylark *Alauda arvensis*	25	3	25	1	10	10						25	1			30	**PW**
Barn Swallow *Hirundo rustica*								10		20	20	50	18	3			**B**
White Wagtail *Motacilla alba*						13	1						2		3		**P**
Citrine Wagtail *Motacilla citreola*						1		1	1						2		**P**
Yellow Wagtail *Motacilla flava*						5		10	20	10	2	1					**B**
Meadow Pipit *Anthus pratensis*															1		**W**
Water Pipit *Anthus spinoletta*		1		1		1							1				**W**
Red-backed Shrike *Lanius collurio*								1				2					**P**
Isabelline Shrike *Lanius isabellinus*											2	2	4				**P**
Great Grey Shrike *Lanius excubitor*											2	5	1				**P**
Bluethroat *Luscinia svecica*			1			2							1		2		**P**

	Oct 07	Nov 07	Dec 07	Jan 08	Feb 08	Mar 08	Apr 08	May 08	Jun 08	Jul 08	Aug 08	Sep 08	Oct 08	Nov 08	Dec 08	Jan 09	Status
White-throated Robin *Irania gutturalis*		1															**P**
Rufous Bush Robin *Cercotrichas galactotes*													3				**P**
Common Stonechat *Saxicola torquata*														1			**P**
Finsch's Wheatear *Oenanthe finschii*							1										**P**
Desert Wheatear *Oenanthe deserti*													3				**P**
Isabelline Wheatear *Oenanthe isabellina*	3				2	6	1	5	2	pnc	5	2	2				**B**
Moustached Warbler *Acrocephalus melanopogon*		10	1									1	1	2	3		**PW**
Sedge Warbler *Acrocephalus schoenobaenus*	1							4					1				**P**
Great Reed Warbler *Acrocephalus arundinaceus*								5	3	2	1			1			**B**
Willow Warbler *Phylloscopus trochilus*												1	5				**P**
Common Chiffchaff *Phylloscopus collybita*									1								**P**
Common Whitethroat *Sylvia communis*								1									**P**
Spotted Flycatcher *Muscicapa striata*											1	3					**P**
Black-headed Bunting *Emberiza melanocephala*								2			2						**B**
Common Reed Bunting *Emberiza schoeniclus*			2		6	1	1								3	7	**W**
Corn Bunting *Emberiza calandra*		2				2	3	1					1				**R**
Desert Finch *Rhodopechys obsoleta*													1				**P**
House Sparrow *Passer domesticus*						pnc	pnc	10	3				pnc	pnc		pnc	**R**
Spanish Sparrow *Passer hispaniolensis*													pnc				**P**
Common Starling *Sturnus vulgaris*		1500	50	1	60	100	50	50	3		50		100	pnc	11		**BW**
Eurasian Magpie *Pica pica*				3	4		2	pnc	3	2	2	4	10	pnc	5	6	**R**
Rook *Corvus frugilegus*		3	30		200	1	2	3	25		15	pnc	20	pnc	100		**BW**
Carrion Crow *Corvus corone*	1	5	1	5	6	2	2	3	1	6	3	1	6	pnc	5	3	**R**