

A summary of birds recorded in the marshes of southern Iraq, 2005–2008

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Abstract

The marshlands of Lower Mesopotamia witnessed severe draining programs during late 1980s and early 2000s, which turned vast areas of the former water body into desert areas. New field surveys of birds and their habitats in the marshes of southern Iraq were launched in 2005 through a national and international partnership of non-government organizations, ministries and donor agencies. This has resulted in the collection and collation of new data on the status, distribution and habitat requirements of birds and other biota in Key Biodiversity Areas (KBAs) in Iraq from 2005 to 2008. This paper summarizes the bird data obtained in these surveys in the southern marshes, during which 159 species of birds were recorded; of these 34 are considered to be of conservation concern, including eight that are globally threatened.

Keywords

KBA, Iraq, birds

Introduction: The focus on birds

Birds have become an important component of the Iraq Key Biodiversity Areas (KBA) Project that has been conducted by Nature Iraq (NI) since 2004. This is being done in cooperation with the Iraq Ministry of Environment (MoE), Birdlife International and Iraqi universities with international financial support by several donors including

the Canadian International Development Agency (2004–2006) and the Italian Ministry of Environment, Land and Sea (2006–2008). An overview of the KBA Project is presented in Rubec and Bachmann (2009). This has been helped by the availability of historical data for critical biodiversity areas in Iraq, thus enabling comparison with current observations, facilitating the analyses of ecosystem changes and assessing the ecological status of each site. Comprehensive waterbird counts made over the last 40 years throughout Europe and Asia – notably by Wetlands International and BirdLife International – are facilitating such regional comparisons.

Other wildlife groups and ecological data have a less well developed history of record in Iraq and fewer international networks on which to draw survey expertise. Thus, birds are being used as the major indicator of the health of Iraq's biological resources, particularly as they are also an important component of global efforts to conserve and ensure wise use of wetlands and other biologically important habitats. Comprehensive field observations and interviews since 2004 with local residents have enabled development of a good indication of the biological health of Iraq's key sites for biodiversity.

As a part of the KBA Project, bird surveys were conducted at selected wetland areas in southern Iraq during each of the summers and winters from 2005 to 2008. As noted in Fig. 1, seven major wetland areas were surveyed in three governorates (Basrah, Misan and Thi-Qar) in southern Iraq. KBA surveys of the three governorates of Kurdistan (Erbil, Sulaimani and Dohuk) in the northern area of Iraq were added to the overall project in 2007 (Nature Iraq 2007). These are also shown for information on Fig. 1, but results of that work are otherwise not included in this paper. Initial selection of potential KBA sites drew upon Important Bird Areas described by Evans (1994) and potential Ramsar Wetlands of International Importance described by Scott (1995). At most of these southern Iraq KBA complexes, especially the larger ones, multiple sampling sites (referred in the species section below as "monitoring" sites) were required to obtain a proper picture of bird populations and distribution. These KBA survey sites are often found within very extensive wetlands (as described in Rubec and Bachmann 2009). The individual area of southern KBA sites ranges from 50 to 350,000 hectares, making selection of sampling sites difficult. Reports on the field surveys for the southern and northern KBA projects have been prepared by Nature Iraq (Abdulhasan and Salim 2008; Ararat et al. 2008). In the south, the teams must also seriously consider security issues and this has had a bearing on the selection of sites for survey.

About 70% of the bird surveys were conducted using motorized boats, otherwise travel was by car or on foot. The main fieldwork and surveys in the Hammar and Sinaf Marshes were done by vehicle, to reduce travel time required between sites. Due to the occurrence of dense vegetation in the Central and the Hawizeh Marshes, the main means of transportation was motorized canoes. Local residents were extremely helpful in assisting with information on the presence or absence of certain species.

Observations were made using 30 X telescopes and 8 X binoculars, with recording back-up by photography. Indeed, Nature Iraq has a comprehensive library of bird photographs and videos taken during the surveys. All bird data was checked and vetted by Richard Porter of BirdLife International before being entered into Nature Iraq's database.

Sites and survey locations were plotted by GPS or Thuraya satellite phone with the aid of 1:100,000 and 1:250,000 scale maps. *Collins Bird Guide* (Mullarney et al. 1999) and the *Field Guide to the Birds of the Middle East* (Porter et al. 1996) were initially the main references used. Later, the new book *Birds of Iraq* (Salim et al. 2006), was also used. Designation of the status of specific species follows standardized international protocols developed by BirdLife International (2000).

Summary of bird observations

The following information summarizes some of the more important observations made during the 2005 to 2008 surveys. It is not intended to be a comprehensive account but to highlight those records of conservation significance. Some comparisons with the counts made in the late 1970s have been attempted. Population counts have not been included but constitute a growing database being managed by BirdLife International and Nature Iraq. They are the subject of ongoing analyses and are included in detailed

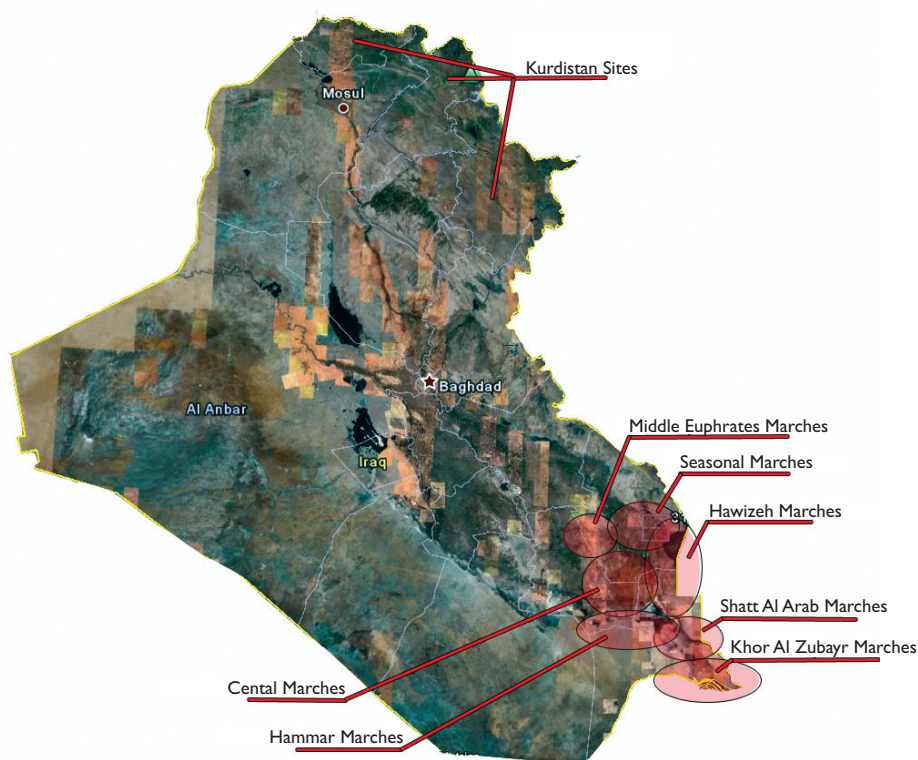


Figure 1. The seven major wetland survey areas of southern Iraq and the locations of survey sites in Kurdistan, northern Iraq.

project reports (e.g. Abdulhassan and Salim 2008, Ararat et al. 2008) and in BirdLife International's global database. A full report on all the bird data collected is in preparation.

The list of birds recorded during the summer and winter surveys from 2005 to 2008 are presented in Table 1. This shows that 159 species were recorded, of which 53 were breeding with a further 10 probably or possibly breeding. A total of 44 species are considered to be resident. In addition, 110 species were observed as winter visitors from their European and Asian breeding areas. As would be expected, the majority of species observed in the southern marshes are wetland dependant – 107 in total.

Of great significance is the fact that eight species recorded in the southern surveys are “globally threatened (GT)” and a further 26 species are judged to be of “conservation concern (CC)”. Particular attention to these two groups of birds was paid during the surveys. These groups of birds are defined by BirdLife International as:

Globally threatened (GT): Red Data species identified by BirdLife International because of their global endangered, vulnerable or near-threatened status.

Conservation concern (CC): This category includes globally threatened species; Iraq endemic species; species known to be declining in all or most of their range; species for which Iraq has a significant Middle East breeding population; and species for which Iraq is known to have a globally important wintering population. These criteria are still being assessed and developed by Richard Porter of BirdLife International.

Globally threatened birds in the southern marshes of Iraq

Of the 34 species of conservation concern recorded during the 2005 to 2008 KBA surveys, eight are globally threatened. Brief notes on their occurrence are given below. They are either resident breeders, winter visitors, or passage migrants.

Marbled Duck (*Marmaronetta angustirostris*): This globally vulnerable species was observed in both summer and winter at over 30 monitoring sites. Breeding was proven and the largest flock recorded was 1300 in winter 2008. Salim (2004a, b, c) has previously recorded Marbled Duck in recent years and it is likely that the southern marshes are a major global stronghold for both breeding and wintering birds of this species. In winter 2007, a number were found being sold live in the local markets and this has prompted a poster-backed public awareness campaign that will attempt to help control indiscriminate and illegal hunting.

Ferruginous Duck (*Aythya nyroca*): This globally near-threatened species was recorded at 12 monitoring sites in winter and seen in all winters, with the largest flock being 74 in winter 2006; several smaller flocks (for example of 16, 47 and 60) were also observed. Scott and Carp (1982) did not record this species in their southern marshes survey of 1979, but the highest number counted historically is 31 individuals by George and Vielliard (1970). It is likely that further surveys will show this duck to be more common and more widespread in the Mesopotamian marshes, as it has been recorded in flocks of up to 344 in winter in neighboring Syria (Porter and Scott 2005).

Table 1. Birds recorded during KBA surveys of the southern marshes of Iraq in winter and summer 2005 to 2008 (GT = globally threatened, CC = conservation concern)

Common name (English)	Scientific name	Summer	Winter	Status as determined by these surveys
Black Francolin	<i>Francolinus francolinus</i>	+	+	Resident breeder
Common Quail	<i>Coturnix coturnix</i>	+	+	Passage migrant and winter visitor
Greylag Goose	<i>Anser anser</i>	-	+	Winter visitor
Whooper Swan	<i>Cygnus cygnus</i>	-	+	Rare winter visitor
Greater White-fronted Goose	<i>Anser albifrons</i>	-	+	Winter visitor
Common Shelduck	<i>Tadorna tadorna</i>	-	+	Winter visitor
Ruddy Shelduck	<i>Tadorna ferruginea</i>	-	+	Winter visitor
Gadwall	<i>Anas strepera</i>	-	+	Winter visitor
Eurasian Wigeon	<i>Anas penelope</i>	-	+	Winter visitor
Mallard	<i>Anas platyrhynchos</i>	+	+	Winter visitor; some remain in summer
Northern Shoveler	<i>Anas clypeata</i>	+	+	Winter visitor; some present in summer
Northern Pintail	<i>Anas acuta</i>	-	+	Winter visitor
Garganey	<i>Anas querquedula</i>	+	+	Winter visitor; may also breed
Eurasian Teal	<i>Anas crecca</i>	-	+	Winter visitor
Marbled Duck CC, GT	<i>Marmaronetta angustirostris</i>	+	+	Resident breeder and winter visitor
Red-crested Pochard CC	<i>Netta rufina</i>	-	+	Winter visitor
Common Pochard	<i>Aythya ferina</i>	-	+	Winter visitor
Ferruginous Duck CC, GT	<i>Aythya nyroca</i>	+	+	Winter visitor; some may remain to breed
Tufted Duck	<i>Aythya fuligula</i>	-	+	Winter visitor
White-headed Duck CC, GT	<i>Oxyura leucocephala</i>	-	+	Winter visitor
Little Grebe (Dabchick)	<i>Tachybaptus ruficollis</i>	+	+	Resident breeder and winter visitor
Great Crested Grebe	<i>Podiceps cristatus</i>	+	+	Resident breeder and winter visitor
Black-necked Grebe	<i>Podiceps nigricollis</i>	-	+	Winter visitor
Greater Flamingo CC	<i>Phoenicopterus [ruber] roseus</i>	+	-	Passage migrant and winter visitor
Western White Stork	<i>Ciconia ciconia</i>	+	+	Winter visitor; some may breed
Sacred Ibis CC	<i>Threskiornis aethiopicus</i>	+	+	Resident breeder
Glossy Ibis	<i>Plegadis falcinellus</i>	+	+	Winter visitor; may also breed
Eurasian Spoonbill CC	<i>Platalea leucorodia</i>	+	+	Breeding summer visitor
Eurasian Bittern CC	<i>Botaurus stellaris</i>	+	+	Resident breeder and winter visitor
Little Bittern	<i>Ixobrychus minutus</i>	+	+	Resident breeder and winter visitor

Common name (English)	Scientific name	Summer	Winter	Status as determined by these surveys
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	+	+	Resident breeder and winter visitor
Squacco Heron	<i>Ardeola ralloides</i>	+	+	Resident breeder and winter visitor
Cattle Egret	<i>Bubulcus ibis</i>	+	+	Resident breeder and winter visitor
Grey Heron	<i>Ardea cinerea</i>	+	+	Resident breeder and winter visitor
Goliath Heron CC	<i>Ardea goliath</i>	+	+	Reported to breed
Purple Heron	<i>Ardea purpurea</i>	+	+	Resident breeder and winter visitor
Great Egret	<i>Ardea [Egretta] alba</i>	-	+	Winter visitor
Little Egret	<i>Egretta garzetta</i>	+	+	Winter visitor; some remain in summer
Western Reef Heron (Reef Egret)	<i>Egretta gularis</i>	+	-	Present in summer
Great White Pelican CC	<i>Pelecanus onocrotalus</i>	-	+	Winter visitor
Pygmy Cormorant CC	<i>Phalacrocorax pygmaeus</i>	+	+	Resident breeder and winter visitor
Great Cormorant	<i>Phalacrocorax carbo</i>	-	+	Winter visitor
Darter (African Darter) CC	<i>Anhinga [rufa] melanogaster</i>	+	+	Resident breeder
Common Kestrel	<i>Falco tinnunculus</i>	-	+	Winter visitor
Western Marsh Harrier	<i>Circus aeruginosus</i>	-	+	Winter visitor
Black-winged Kite	<i>Elanus caeruleus</i>	+	+	Rare resident
Long-legged Buzzard	<i>Buteo rufinus</i>	-	+	Winter visitor
Hen Harrier	<i>Circus cyaneus</i>	-	+	Winter visitor
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	-	+	Winter visitor
Greater Spotted Eagle CC, GT	<i>Aquila clanga</i>	-	+	Winter visitor
Steppe Eagle CC	<i>Aquila nipalensis</i>	-	+	Winter visitor
Asian Imperial Eagle CC, GT	<i>Aquila heliaca</i>	-	-	
Macqueen's Bustard GT, CC	<i>Chlamydotis macqueenii</i>		+	Winter visitor
Water Rail	<i>Rallus aquaticus</i>	-	+	Winter visitor
Little Crake	<i>Porzana parva</i>	-	+	Winter visitor
Spotted Crake	<i>Porzana porzana</i>	-	+	Winter visitor
Purple Swamphen CC	<i>Porphyrio porphyrio</i>	+	+	Resident breeder
Common Moorhen	<i>Gallinulua chloropus</i>	+	+	Resident breeder and winter visitor
Eurasian Coot	<i>Fulica atra</i>	+	+	Resident breeder and winter visitor
Crab-plover CC	<i>Dromas ardeola</i>	+	-	Possibly resident, but only recorded in summer
Black-winged Stilt	<i>Himantopus himantopus</i>	+	+	Resident breeder and winter visitor

Common name (English)	Scientific name	Summer	Winter	Status as determined by these surveys
Pied Avocet (Avocet)	<i>Recurvirostra avosetta</i>	+	+	Resident breeder and winter visitor
Northern Lapwing	<i>Vanellus vanellus</i>	-	+	Winter visitor
Spur-winged Lapwing CC	<i>Vanellus spinosus</i>	+	+	Resident breeder and winter visitor
Red-wattled Lapwing	<i>Vanellus indicus</i>	+	+	Resident breeder and winter visitor
White-tailed Lapwing CC	<i>Vanellus leucurus</i>	+	+	Resident breeder and winter visitor
Common Ringed Plover	<i>Charadrius hiaticula</i>	-	+	Winter visitor
Little Ringed Plover	<i>Charadrius dubius</i>	+	+	Winter visitor; some may breed
Kentish Plover	<i>Charadrius alexandrinus</i>	+	+	Resident breeder and winter visitor
Common Snipe	<i>Gallinago gallinago</i>	-	+	Winter visitor
Black-tailed Godwit CC, GT	<i>Limosa limosa</i>	-	+	Winter visitor
Bar-tailed Godwit	<i>Limosa lapponica</i>	-	+	Winter visitor
Whimbrel	<i>Numenius phaeopus</i>	+	+	Winter visitor; some remain in summer
Eurasian Curlew CC	<i>Numenius arquata</i>	+	+	Winter visitor; some remain in summer
Spotted Redshank	<i>Tringa erythropus</i>	-	+	Winter visitor
Common Redshank	<i>Tringa totanus</i>	+	+	Winter visitor; some remain in summer
Marsh Sandpiper	<i>Tringa stagnatilis</i>	-	+	Winter visitor
Common Greenshank	<i>Tringa nebularia</i>	+	+	Winter visitor; some remain in summer
Green Sandpiper	<i>Tringa ochropus</i>	-	+	Winter visitor
Wood Sandpiper	<i>Tringa glareola</i>	-	+	Winter visitor
Common Sandpiper	<i>Actitis hypoleucos</i>	+	+	Winter visitor; some remain in summer
Ruddy Turnstone	<i>Arenaria interpres</i>	+	-	Recorded in summer, but these are wintering birds that have not returned
Little Stint	<i>Calidris minuta</i>	+	+	Winter visitor; some remain in summer
Temminck's Stint	<i>Calidris temminckii</i>	-	+	Winter visitor
Curlew Sandpiper	<i>Calidris ferruginea</i>	+	+	Winter visitor; some remain in summer
Dunlin	<i>Calidris alpina</i>	-	+	Winter visitor
Ruff	<i>Philomachus pugnax</i>	-	+	Winter visitor
Collared Pratincole CC	<i>Glareola pratincola</i>	+	-	Breeding summer visitor
Yellow-legged Gull	<i>Larus michahellis</i>	?	?	Status uncertain
Armenian Gull CC	<i>Larus armenicus</i>	+	+	Winter visitor; some remain in summer
Lesser Black-backed Gull	<i>Larus fuscus graellsii/intermedius/ fuscus</i>	-	+	Winter visitor

Common name (English)	Scientific name	Summer	Winter	Status as determined by these surveys
White-headed Gull sp.	<i>Larus sp</i>		+	
Great Black-headed Gull (Pallas's Gull)	<i>Larus ichthyaetus</i>	-	+	Winter visitor
Common Black-headed Gull	<i>Larus ridibundus</i>	+	+	Winter visitor; some remain in summer
Slender-billed Gull CC	<i>Larus genei</i>	+	+	Resident breeder and winter visitor
Little Gull	<i>Larus minutus</i>	-	+	Winter visitor
Gull-billed Tern	<i>Gelochelidon [Sterna] nilotica</i>	+	+	Winter visitor and breeding resident
Caspian Tern CC	<i>Hydroprogne [Sterna] caspia</i>	+	+	Winter visitor; also recorded in summer
Common Tern	<i>Sterna hirundo</i>	+	-	Breeding summer visitor
White-cheeked Tern	<i>Sterna repressa</i>	+	-	Status uncertain
Little Tern	<i>Sternula [Sterna] albifrons</i>	+	-	Breeding summer visitor
Whiskered Tern	<i>Chlidonias hybrida</i>	+	+	Breeding resident and winter visitor
Black Tern	<i>Chlidonias niger</i>	+	-	Vagrant
Pin-tailed Sandgrouse CC	<i>Pterocles alchata</i>	+	-	Breeding resident
Spotted Sandgrouse CC	<i>Pterocles senegallus</i>	+	-	Breeding resident
Rock Dove	<i>Columba livia</i>	+	-	Probably a breeding resident
Stock Dove	<i>Columba oenas</i>	-	+	Winter visitor
Common Woodpigeon	<i>Columba palumbus</i>	-	+	Winter visitor
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	-	+	Probably a breeding resident
Laughing Dove	<i>Streptopelia senegalensis</i>	-	+	Probably a breeding resident
Egyptian Nightjar	<i>Caprimulgus aegyptius</i>	+	-	Breeding summer visitor
Indian Roller	<i>Coracias benghalensis</i>	+	-	Breeding summer visitor
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	+	+	Breeding resident
Common Kingfisher	<i>Alcedo atthis</i>	+	+	Winter visitor; also recorded in summer
Pied Kingfisher	<i>Ceryle rudis</i>	+	+	Breeding resident
Blue-cheeked Bee-eater	<i>Merops [superciliosus] persicus</i>	+	-	Breeding summer visitor
Eurasian Hoopoe	<i>Upupa epops</i>	+	-	Status uncertain
Daurian/Turkestan Shrike	<i>Lanius isabellinus</i>	-	+	Winter visitor
Great Grey Shrike/ Southern Grey Shrike	<i>Lanius excubitor/ meridionalis</i>	-	+	Winter visitor
Eurasian Magpie	<i>Pica pica</i>	-	+	Winter visitor
Rook	<i>Corvus frugilegus</i>		+	Winter visitor
Hooded Crow CC, Endemic Race	<i>Corvus [corone] cornix</i>	+	+	Probably a breeding resident

Common name (English)	Scientific name	Summer	Winter	Status as determined by these surveys
Grey Hypocolius CC, Endemic	<i>Hypocolius ampelinus</i>	+	+	Breeding resident and winter visitor
Sand Martin	<i>Riparia riparia</i>	+	-	Breeding summer visitor
Barn Swallow	<i>Hirundo rustica</i>	+	-	Probably a breeding summer visitor
Greater Hoopoe-Lark	<i>Alaemon alaudipes</i>	+	-	Probably a breeding resident; not yet recorded in winter
Desert Lark	<i>Ammomanes deserti</i>	-	+	Probably a breeding resident; not yet recorded in summer
Crested Lark	<i>Galerida cristata</i>	+	+	Breeding resident
Eurasian Skylark	<i>Alauda arvensis</i>	+	-	Status uncertain; probably a winter visitor that occasionally remains in summer
Zitting Cisticola	<i>Cisticola juncidis</i>	-	+	Probably a breeding resident; not yet observed in summer
Graceful Prinia	<i>Prinia gracilis</i>	+	+	Breeding resident
White-cheeked Bulbul CC	<i>Pycnonotus leucogenys</i>	+	+	Breeding resident
Cetti's Warbler	<i>Cettia cetti</i>	-	+	Winter visitor
Basra Reed Warbler CC, GT, Endemic	<i>Acrocephalus griseldis</i>	+	-	Breeding summer visitor
Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	+	-	Breeding summer visitor
Clamorous Reed Warbler	<i>Acrocephalus stentoreus</i>	+	-	Breeding summer visitor
Eurasian Reed Warbler	<i>Acrocephalus scirpaceus</i>	+	-	Breeding summer visitor
Chiffchaff	<i>Phylloscopus collybita</i>	-	+	Winter visitor
Iraq Babbler CC, Endemic	<i>Turdoides altirostris</i>	+	+	Breeding resident
Common Babbler	<i>Turdoides caudata</i>	+	+	Breeding resident
Common Starling	<i>Sturnus vulgaris</i>	-	+	Winter visitor
Common Blackbird	<i>Turdus merulus</i>	-	+	Winter visitor
European Robin	<i>Erithacus rubecula</i>	-	+	Winter visitor
Bluethroat	<i>Luscinia svecica</i>	-	+	Winter visitor
Rufous-tailed Scrub Robin	<i>Cercotrichas galactotes</i>	+	-	Breeding summer visitor
Black Redstart	<i>Phoenicurus ochruros</i>	-	+	Winter visitor
Eurasian Stonechat	<i>Saxicola torquatus</i> (S. rubicola)	-	+	Winter visitor
Isabelline Wheatear	<i>Oenanthe isabellina</i>	+	+	Winter visitor: some may remain to breed
Desert Wheatear	<i>Oenanthe deserti</i>	-	+	Winter visitor
House Sparrow	<i>Passer domesticus</i>	+	+	Breeding resident
Spanish Sparrow	<i>Passer hispaniolensis</i>	-	+	Winter visitor
Dead Sea Sparrow CC	<i>Passer moabiticus</i>	+	+	Breeding resident

Common name (English)	Scientific name	Summer	Winter	Status as determined by these surveys
Chestnut-shouldered Petronia	<i>Gymnoris [Petronia] xanthocollis</i>	+	-	Breeding summer visitor
Western Yellow Wagtail	<i>Motacilla flava</i>	+	-	Status uncertain; summer visitor that may breed
White Wagtail	<i>Motacilla alba</i>	-	+	Winter visitor
Tawny Pipit	<i>Anthus campestris</i>	-	+	Winter visitor
Water Pipit	<i>Anthus spinoletta</i>	+	+	Winter visitor; some remain in summer.
Reed Bunting	<i>Emberiza aureola</i>		+	Winter visitor
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	-	+	Winter visitor

White-headed Duck (*Oxyura leucocephala*): The 2005 winter survey identified 19 White-headed Duck at Umm an-Ni'aaj Marsh during February and March. They were found in waters of 2.0–2.8 m depth, together with large groups of other diving ducks. Previously unrecorded in the southern marshes of Iraq, this observation clearly indicates the importance of the area, at least in winter, for a species identified by BirdLife International as globally endangered.

Basra Reed Warbler (*Acrocephalus griseldis*): Because of the difficulties of access and surveys, the Basra Reed Warbler had not been recorded in Iraq in recent years although it had continued to be trapped at banding stations on its African migration route. It was thus exciting to have confirmed sightings in the marshes of Iraq during all summers from 2005 to 2008. This Iraqi breeding endemic has been designated as globally endangered by BirdLife International, as a result of the destruction of its *Phragmites* habitat through drainage in the last 25 years. The Basra Reed Warbler was recorded at 25 monitoring sites at three KBAs with up to 37 individuals recorded on transects at one site in the Hawizeh Marsh. There was an apparent increase in the number of Basra Reed Warbler trapped on migration in East Africa in 2005, possibly indicating a correlation with the restoration of the marshes of Iraq. This species is now the subject of an intensive scientific and photographic study by Nature Iraq.

Black-tailed Godwit (*Limosa limosa*): This wetland dependant species was recently assigned near-threatened status by BirdLife International. It was recorded in winter at 20 monitoring sites in southern Iraq in all years from 2005 to 2008, with the highest count being 2010 individuals in the winter of 2008.

Asian Imperial Eagle (*Aquila heliaca*): This large eagle was recorded in winter at six sites in the southern marshes with a highest count of eight birds in a loose association. It is a globally near-threatened species.

Greater Spotted Eagle (*Aquila clanga*): Recorded at eight sites, with a highest count of eight individuals, it has been observed during three of the four winters from 2005 to 2008. It is another wetland-dependant, globally near-threatened species.

Macqueen's Bustard (*Chlamydotis macqueenii*): This is another globally near-threatened species that was recorded in the winter of 2008 in areas near to the Hawizeh

Marsh. These observations came to light as a result of hunters displaying shot birds. The status of this species in Iraq requires detailed study.

Other birds of conservation concern in the southern marshes of Iraq

The southern KBA marshland sites harbour good populations of three Mesopotamian endemic/near endemic birds, namely the Basra Reed Warbler (*Acrocephalus griseldis*), Iraq Babbler (*Turdoides altirostris*) and the Grey Hypocolius (*Hypocolius ampelinus*). The status of the Basra Reed Warbler has already been mentioned, the other two are discussed below. These endemic/near-endemic species constitute three of the 34 birds of conservation concern recorded during the KBA surveys in the southern marshes. In addition to globally threatened species (described above), the status of seven other species of conservation concern is outlined below.

Sacred Ibis (*Threskiornis aethiopicus*): The southern marshes of Iraq are one of only two known breeding sites in the Middle East for this ibis. It was recorded in all years, both summer and winter from 2005 to 2008, in three monitoring sites. A total of 26 adults were observed at the Umm an-Ni'aaj Marsh breeding colony in Hawizeh Marsh in the summer of 2005. This site is a multi-species colony with Pygmy Cormorants, several heron species and African Darters.

Eurasian Bittern (*Botaurus stellaris*): Eurasian Bitterns have been seen or heard booming at a total of 11 monitoring sites throughout the southern marshes. Locals interviewed believed that its distinctive booming call came from a strange "monster" living inside the dense reed beds, heard only in the past year. In the summer of 2006, a total of 52 Eurasian Bittern were seen or heard throughout the marshes, with a highest count of eight birds. Previous winter surveys in 1968 to 1979 only recorded one Eurasian Bittern (Scott and Carp 1982). The southern marshes of Iraq would appear to be an important breeding and wintering area for this species. The Eurasian Bittern is otherwise believed to be declining throughout much of its range.

Goliath Heron (*Ardea goliath*): Although the largest of the heron species, the Goliath Heron remains quite elusive in Iraq. However, reports from local tribesman had indicated that it was still present in small numbers and was probably breeding. Recent observations with photographic documentation have confirmed the presence of this species in the Hawizeh Marsh during the summer and winter months of 2008 (Hussain personal communication).

Pygmy Cormorant (*Phalacrocorax pygmaeus*): Recorded at 25 monitoring sites, the Pygmy Cormorant was observed to be most common in the eastern areas of Hawizeh Marsh in both summer and winter of all years from 2005 to 2008, with a few scattered individuals in the central marsh. The highest counts were in the summer of 2006 when the birds at the 'Umm an-Ni'aaj breeding colony numbered over 1500. In the winter of 2006, a total of 1621 were recorded, suggesting that it is resident, though it is likely that these birds also arrive from European breeding grounds to spend the winter in the southern Iraqi marshes. This species was previously designated as a globally threatened species by BirdLife

International, but now, with increasing numbers observed in Eurasia, it is no longer assigned to this category. Historical records indicate the Pygmy Cormorant occurred in very large numbers in the southern Iraq marshes (Allouse 1953, 1962) but observations from 1968 to 1979 (Scott and Carp 1982) appear to be similar to those of the present survey.

African Darter (*Anhinga rufa*): This darter was recorded at five monitoring sites in two KBAs (the Hammar and Hawizeh Marshes) in all years and seasons from 2005 to 2008. The highest count was 21 at Umm an-Ni'aaj and Al-'Udhaim in Hawizeh Marsh during the February to March and summer surveys of 2005. This species nests in these locations and young were observed, showing that the species still breeds in Iraq. Locals indicated that the African Darter is common in the area, but that its numbers decrease in the winter. They further noted that its eggs and chicks used to be a source of food and that it breeds in colonies with herons, Sacred Ibis and European Spoonbill. It seems likely that the African Darter never disappeared as a breeding bird from the marshes of southern Iraq where it was formerly recorded by Allouse (1962). This is the only known area in the Middle East where the African Darter breeds.

Grey Hypoclious (*Hypoclious ampelinus*): This near-endemic species was observed in several sites throughout the southern marshes and their environs in all years, with counts of over 20 birds. In 2006 the summer survey occurred over a month later (in late July and early August) and this may account for only three being seen. By late summer breeding birds and their young would have dispersed. In the winter of 2006, six birds were seen at the Hammar Marsh. It is evident that southern Iraq is a very important breeding and wintering area for this Middle Eastern species.

Iraq Babbler (*Turdoides altirostris*): This Mesopotamian endemic has recently extended its range to Syria and Turkey, indicating that an expansion northwards has occurred, particularly along the Euphrates River. During all the marshland surveys, it was frequently encountered in small numbers in *Phragmites* reed beds in most sites visited, suggesting a healthy population.

Finally, it is worthy of mention that several species of waterbirds observed during the winter surveys were in good numbers, especially waterfowl, herons, their allies and waders with Gadwall (*Anas strepera*), Northern Shoveler (*Anas clypeata*), Northern Pintail (*Anas acuta*) and Eurasian Teal (*Anas crecca*) being the most common ducks. Of particular note among other waterbirds were the large flocks of Great White Pelicans (*Pelecanus onocrotalus*) – up to 1800 and Eurasian Spoonbill (*Platalea leucorodia*) – up to 512. The most common wader was the Ruff (*Philomachus pugnax*), with one flock totaling 3120 individuals.

Other linked conservation developments

A comprehensive bird field guide: In November 2006, Nature Iraq and BirdLife International published a field guide, “The Birds of Iraq” (Salim et al. 2006). This book was derived from the text and colour plates of the Arabic and English language versions of the publication “Birds of the Middle East” (Porter et al. 1996, 2006). Covering the

387 species recorded in Iraq, this is the first comprehensive bird guide for an Arabic-speaking country. With the support of several international agencies, “Birds of Iraq” has been distributed to biologists, conservationists and students in Iraq and is now the definitive bird identification tool for those undertaking the KBA surveys.

A children’s book: Also in 2006 Nature Iraq published a children’s book on birds, supported and encouraged by the Ministry of Environment. It has been distributed to schools throughout the southern governorates of Iraq.

Sustainable Hunting Education Program: Considerable hunting pressure on globally threatened species (notably Macqueen’s Bustard and Marbled Duck) was witnessed during the KBA surveys. As a result, Nature Iraq has started a poster-backed campaign to educate those hunters in the southern marshes in an attempt to reduce indiscriminate hunting of endangered species.

Conclusions

The most encouraging finding of the 2005 to 2008 KBA bird surveys is that no bird species has become extirpated in the southern marshes of Iraq despite the drainage and water flow reductions of the previous 25 years. Out of 159 bird species noted in these surveys, some 34 species are of “conservation concern” including eight species that are “globally threatened”. Indeed, many species appear to still have healthy breeding and wintering populations. What may be Iraq’s most important species, the globally endangered Basra Reed Warbler, was found in good numbers in several areas. It was also exciting to discover that the African Darter, Sacred Ibis and Goliath Heron still breed here.

Moreover, key results of this work include the: (a) establishment of a good foundation for national biodiversity programs; (b) creation of a significant baseline for a national biodiversity assessment; (c) assisting the capacity of the Government of Iraq to make sound decisions on future environmental management areas, creation of protected areas and the nomination of additional Wetlands of International Importance under the Ramsar Convention (as now successfully done for Hawizeh Marsh); and (d) initiation of science and public awareness initiatives.

Recommendations

As the southern marshes of Iraq are a critical refuge for at least eight globally threatened bird species and 26 additional species of birds of conservation concern, it is recommended that:

- Both summer and winter bird population monitoring should continue in the southern marshes (and now in northern Kurdistan KBA sites) of Iraq, to strengthen the reliability of bird data accumulated over the 2005 to 2008 period;
- Long-term monitoring of habitats using bird species as key biological indicators of the health of the southern marshes and other biologically important areas of Iraq

should continue and should be seen as a vital source of biodiversity management information;

- The results of these surveys should be used to help in the appraisal of the recovery of the southern marshes in general and for these bird species in particular;
- The results of these surveys should be used to facilitate identification of protected areas and local community-based biodiversity management programs that can assist in establishing economic opportunities for those communities; and
- Monitoring of bird species and key habitat areas through the further extension of the KBA Project into additional areas of Iraq (as now being done in Kurdistan in northern Iraq) should be considered when it is feasible and safe.

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References

- Abdulhasan NA, Salim MA (2008) Key Biodiversity Survey of Southern Iraq. A. Bachmann, J. Davies and L.R. Malone (Eds) Field Report. Sulaimani, Kurdistan, Iraq: Nature Iraq.
- Allouse B (1953) Avifauna of Iraq. Baghdad, Iraq: Al-Tafyudh Press.
- Allouse B (1962) Birds of Iraq Vol. I-II. (in Arabic). Baghdad, Iraq: Al-Rabita Press.
- Ararat K, Abid IM, Rahman SA (2008) Key Biodiversity Survey of Kurdistan, Northern Iraq. A. Bachmann, J. Davies and LR Malone (eds.). Field Report. Sulaimani, Kurdistan, Iraq: Nature Iraq.
- BirdLife International (2000) Threatened Birds of the World. Barcelona, Spain and Cambridge, United Kingdom.
- Evans MI (1994) Important Bird Areas in the Middle East, BirdLife Conservation Series No. 2. Cambridge, United Kingdom: BirdLife International.

- George PV, Vielliard J (1970) Midwinter Observations on Birds of Central and South Iraq, 1968. Baghdad, Iraq: Iraq Natural History Museum Bull. Vol. IV (4).
- Hussain NA Personal communication. Basrah, Iraq: Department of Biology, College of Science, University of Basrah.
- Mullarney K, Svensson L, Zetterstrom D, Grant PJ (1999) Collins Bird Guide. London, United Kingdom: Collins Publishing.
- Nature Iraq (2007) Key Biodiversity Areas, Kurdistan, Northern Iraq Winter 2007. A Preliminary Report. Sulaimani, Kurdistan Iraq: Nature Iraq.
- Porter RF, Scott DA (2005) Report on the Environmental Training Programme for Iraqis and Birds Recorded in Syria – January 20–29, 2005. Canada-Iraq Marshlands Initiative Technical Report No. 3. Waterloo. Canada: University of Waterloo.
- Porter RF, Christensen S, Schiermacker-Hansen P (1996) Field Guide to the Birds of the Middle East. Helm Field Guides. United Kingdom, A&C Black Publishers Ltd. London.
- Porter RF, Christensen S, Schiermacker-Hansen P (2006) Field Guide to the Birds of the Middle East (in Arabic). Beirut, Lebanon: Society for the Protection of Nature in Lebanon.
- Rubec CDA, Bachmann A (2009) The Key Biodiversity Areas Program in Iraq: Objectives and Scope 2004–2008. Project Report. Sulaimani, Kurdistan, Iraq: Nature Iraq.
- Salim MA (2004a) I: Field Observations on Birds at Abu-Zarag and Kirmashiya Wetlands, Southern Iraq, 30 June – 4 July 2004. Project Report. Baghdad, Iraq: Nature Iraq.
- Salim MA (2004b) II: Field Observations on Birds in Abu-Zarag and Kirmashiyah Wetlands, Southern Iraq, 24 – 28 July 2004. Project Report. Baghdad, Iraq: Nature Iraq.
- Salim MA (2004c) III: Field Observations on Birds in Iraq since 1990 Project Report. Baghdad, Iraq: Nature Iraq.
- Salim M, Porter RF, Christensen S, Schiermacker-Hansen P, Jbour S (2006) Birds of Iraq. Amman Jordan: Nature Iraq and BirdLife International. (In Arabic).
- Scott DA (1995) A Directory of Wetlands of the Middle East. Slimbridge, United Kingdom: International Waterfowl and Wetlands Research Bureau.
- Scott DA, Carp E (1982) A midwinter survey of wetlands in Mesopotamia, Iraq: 1979. Sandgrouse No. 4.