



R. Rogers, Palm Grove near Al Asad (Dec 2008)

Key Biodiversity Survey of Central and Western Iraq

Sites Review 2009 Survey

By

Omar Fadhil, Mudhafar A. Salim, & Ibrahem M. Abd
with additional observations from Randy Rodgers

Edited by

Anna Bachmann & Daniel Hudson Burnham V

December 2009
Nature Iraq
Sulaimani, Kurdistan, Iraq

Nature Iraq Draft Report



© 2009 Nature Iraq
Sulaimani, Kurdistan, Iraq

This report was prepared to summarize and inform partner agencies on the status and progress of the biodiversity initiatives of Nature Iraq. For more information please refer to Nature Iraq's web site: www.natureiraq.org or write to info@natureiraq.org or to:

Nature Iraq Office
PO Box 249
Sulaimaniya, Iraq

Nature Iraq Draft Report

Table of Contents

List of Tables	4
List of Figures	4
List of Plates	4
Acknowledgements.....	6
Introduction.....	8
KBA Process.....	8
Survey Area	9
Methods & Procedures.....	14
Birds.....	15
Fish.....	18
Site Reviews	21
I. Sites in Anbar Province.....	22
KBA (AN1) - Haur Al Habbaniya and Ramadi Marshes - (IBA 016)	22
KBA (AN2) – Haditha Wetland & Wahat Al Baghdadi – Potential KBA site.	24
KBA (AN3) - Anah and Rawa – (IBA 006).....	26
KBA (AN4) - Nekheab district and Hussaniya Oases – Potential KBA site.....	27
KBA (AN5) - Augla - (IBA 010)	29
KBA (AN6) - Gasr Muhaiwir - (IBA 012).....	29
KBA (AN7) - Qadissiya or Haditha Dam - Potential KBA site.....	31
KBA (AN8) -Haweijat Albu Alwan and Ramadi Marshes- Potential KBA site.....	33
KBA (AN9) - Western Edge of Tharthar Lake - (IBA 007)	35
KBA (AN10) – Al Asad Oasis (Al Anbar Airbase)	37
II. Sites in Salah Ad Din Province.....	41
KBA (SD1) - Samara Dam & Wetlands - (IBA 008).....	41
KBA (SD2) - Thathar Lake and Dhebaeji fields- (IBA 007).....	43
KBA (SD3) - Mahzam and Al Alam district - (IBA 007)	45

Nature Iraq Draft Report

KBA (SD4) - Abu Dalaf and Shari Lake - (IBA 009).....	47
III. Sites in Diyala Province.....	49
KBA DY1 - Himreen Lake - (Potential KBA Site)	49
KBA (DY2) - Baquba Wetland - (IBA 011)	50
KBA (DY3) - Attariya Plains - (IBA 013)	50
KBA (DY4) - Mandli - Potential KBA Site	52
IV. Sites within the Capital Baghdad.....	54
KBA (BG1) - Jadriyah and Umm Al Khanazeer Island (IBA 015).....	54
KBA (BG2) - Abu Habba - (IBA 014).....	56
V. Sites in At Ta'mim/Kirkuk Province.....	57
KBA (KK1) - Huweijja Marshes and Beaji - (IBA 005).....	57
Summary & Conclusions	59
Introductory remarks.....	59
Important Bird Areas.....	60
Important Fish Areas.....	61
Conservation Issues for Sites.....	63
KBA Site Delineation	66
Recommendations.....	67
Annex A: Bird seen in Central & Western Iraq with Provisional Status.....	73
Annex B: Some Key Bird Species seen in the winter & summer surveys of 2009	79
Annex C: Some Key Vertebrates Species have been observed during summer surveys in center and west of Iraq 2009.	80
Annex D: Some of archeological and historical features within the sites that have been visited during the field surveys.....	81
Annex E: Iraq Fish Species List with Provisional Conservation Status	82
Annex F: Photos of important fish and fisheries at potential KBA sites in Central & Western Iraq.....	83

List of Tables

Table 1: The targeted surveyed sites in Central and Western Iraq during 2009.	12
Table 2: KBA sites and their criterion, only according to winter & summer 2009 surveys:.....	60
Table 3: Shows the main threats and impacts as well as positive qualities at the sites that were visited during the summer survey in Central and Western Iraq during 2009.	64

List of Figures

Figure 1: Shows the provinces that the KBA team visited during the summer survey in Central and Western of Iraq 2009 with total surveyed sites in each province.	14
Figure 2: Shows the IUCN Redlist ranks (IUCN, 2008).....	14
Figure 3: Number of fish species in selected site	62
Figure 4: The total length of the sampled fish by fish species for some selected sites.	62
Figure 5: The total weight of the sampled fish by fish species for some selected sites.....	63

List of Plates

Plate 1: Microsoft Access 2007 Interface for entering bird trip data	17
Plate 2: Microsoft Access 2007 Interface for entering bird field data.....	18
Plate 3: Microsoft Access 2007 Interface for entering fish trip data.....	19
Plate 4: Microsoft Access 2007 Interface for entering Fish field data.	19
Plate 5: General Google Earth (2009) map showing the visited sites in Central and Western Iraq during the KBA summer 2009 field survey (red indicates IBA sites as defined by Evans (1994), green indicates potential KBA site).	21
Plate 6: <i>Left:</i> Road map to the site highlighted in red (Google Earth, 2009). <i>Right:</i> The team at the KBA site AN1 - Habbaniya Lake. A.F. Omar 2009.	22
Plate 7: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The KBA team at the site AN2 Wahat Al Baghdadi alongside the characteristic irrigation structures unique to the Baghdadi and Haditha region. © A.F. Omar 2009.	24
Plate 8: <i>Left:</i> Road map to the site highlighted in yellow. <i>Right:</i> The KBA team members counting birds and taking photographs at site AN3 Ana shores with the use of a spotting scope. © A.F. Omar 2009.	26

Nature Iraq Draft Report

Plate 9: <i>Left:</i> Road map to the site highlighted in Red. <i>Right:</i> The KBA site as seen from the northeast. © A.F. Omar 2009.	27
Plate 10: <i>Left:</i> Road map to the site is highlighted in red. <i>Right:</i> The KBA team car parked beside the main archeological feature of the site. © A.F. Omar 2009.	29
Plate 11: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> Qadissiya Dam - downstream from one of the main strategic facilities in Western Iraq. © A.F. Omar 2009.	31
Plate 12: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The dominant marshy habitat of the site. © A.F. Omar 2009.	33
Plate 13: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The muddy shores of Al Tharthar Lake with scattered fishing boats photographed from the northwest. © A.F. Omar 2009.	35
Plate 13: <i>Left:</i> Abraham’s Well Area (Google Earth, 2009) <i>Right:</i> Al Asad wetlands at dawn © R. Rogers 2009.	37
Plate 14: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The general scene of the Samara Lake from one of the monitoring towers belonging to the Iraqi Army based beside the Lake. Note the Malwea (Mosque) of Samara from the distance. © A.F. Omar 2009.	41
Plate 15: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The fishermen camp on the muddy shores of Tharthar Lake. © A.F. Omar 2009.	43
Plate 16: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The photographer standing on the Mahzam ground looking at Al Alam on the opposite side. © A.F. Omar 2009.	45
Plate 17: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The local landscape with marshlands in the distance. © A.F. Omar 2009.	47
Plate 18: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The site itself. © A.F. Omar 2009.	50
Plate 19: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The Bride of Mandli statue, the main art feature in the city memorializing the Iraq-Iranian war victims. © A.F. Omar 2009.	52
Plate 20: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> The University of Baghdad is a major feature of the site. © A.F. Omar 2009.	54
Plate 21: <i>Left:</i> Road map to the site highlighted in red. <i>Right:</i> Himreen Hills with open arid steppes representative of the main habitat at the site. © A.F. Omar 2009.	57

Acknowledgements

The contents of this report are derived from work conducted in 2009. The Program would not have been possible without the key partnership arrangements and personal commitments of colleagues at Nature Iraq (Dr. Azzam Alwash and Anna Bachmann), Minister Narmin Othman (Iraqi Ministry of Environment), and at BirdLife International in the United Kingdom (Mr. R. F. Porter), in Jordan (Mr. Sharif Jbour) and their national partner organizations in Syria (the Syrian Society for the Conservation of Wildlife), Jordan (the Royal Society for Conservation of Nature) and also to Mauro Randone (Medingegneria Ltd. for the Italian Ministry of Environment, Land and Sea).

This program was initially supported by the Canadian International Development Agency from 2004 -2006. From 2006 to the present, generous support has been provided by the Italian Ministry of Environment, Land and Sea.

The authors would like to thank the staff of the Environment Departments in Anbar, Diyala and Salah Ad Din for their help and guidance, especially with regards to the new sites surveyed in Central and Western Iraq.

The Key Biodiversity Areas (KBA) teams for winter and summer 2009 consisted primarily of staff from Nature Iraq (NI) and the Iraqi Ministry of Environment (MoE):

Birds

- Mudhafar Salim (NI) -winter survey, Omar Fadhil Abdulrahman (NI) -summer survey,
- Sadik Hadi Hussen (trainee) -winter survey, Kadhim Jawad Lefta (trainee) -winter survey, and Laith Ali (trainee) -winter survey,
- Mohammed Fadhil Abd (BSc in Agriculture Sciences; Biodiversity Directory, Baghdad MoE) -summer survey.

Fish Ibrahim M. Abd (NI) -winter survey

In Anbar province:

- Haithem Nafe'e Asad – Diploma in Agricultural Sciences - Natural Ecosystems Division -Anbar Environmental Directory
- Dheaa Mahmmud Al Mandalawi – B.Sc. in Agricultural Sciences - Biodiversity Division - Anbar Environmental Directory.
- Qais Najih Abid - Anbar Environmental Directory.
- Mustafa Saeed - Anbar Environmental Directory.

In Salah Ad Din province:

- Samer Abd Al Razak – B.Ss. in Agricultural Sciences, Environmental Directorate in Northern Region – Tikrit Office.

In Diyala province:

Nature Iraq Draft Report

- Ahmad Nafe'e Abass - B.Sc. in Mechanical Engineering – Diyala Environmental Directory.
- Mahmood Ali - Diyala Environmental Directory.

In addition, local partners have assisted the project logistically and with information about the survey sites. These have included the many guards, guides, fisherman and hunters with whom the team has worked and we include them in our thanks.

Introduction

Nature Iraq has conducted many environmental field surveys in the southern Iraqi marshes since 2004 dealing with local fauna and flora in order to document the wildlife of the marshes as this was an area that had undergone dramatic environmental transformation (drainage and reflooding) during the 1990s and into the present. One of the most important initiatives that began here during the winter of 2004 was the Key Biodiversity Areas (KBA) project, initially established by the Canada–Iraq Marshlands Initiative (CIMI) with additional support from BirdLife International and now funded by the Italian Ministry of Environment, Land & Sea (IMELS) and Nature Iraq.

The project focused the efforts of Iraq’s environmental agencies on restoring the damaged ecosystems in southern Iraq with an initial focus on avian habitats supported by BirdLife International and the Important Bird Areas (IBA) Program. The project was then widened to encompass the general flora and fauna of the marsh habitat with the primary objective being to identify areas of key biological diversity of global and regional significance within Iraq. An additional goal was to monitor the restoration process of the marshland ecosystem and identify priority areas and sites for biodiversity conservation which hopefully can be protected.

In doing so, Nature Iraq and the Iraqi Ministry of Environment (MoE) have reinvigorated wildlife research in the country by introducing new methodology and scientific field procedures to Iraqi scientists, with the intent to profile Iraq’s relatively unknown plant and animal populations. Though the KBA project was started in southern Iraq, it was extended to Kurdistan, northern Iraq in the winter of 2007 and in the winter of 2009, it was extended again to include sites in central and western Iraq, making these the most comprehensive environmental surveys conducted in Iraq at this time. This report will present the findings for the 2009 survey for Central & Western Iraq (additional reports will be released concurrently on survey results from the south and Kurdish north).

KBA Process

KBAs are sites that are large enough or sufficiently interconnected to support viable populations of the species to which they are important. Originally based on the criteria of Important Bird Areas (IBA) developed by BirdLife International, the KBA criteria in Iraq was expanded to address a wide range of species. The KBA selection process uses four basic criteria based on the presence of four categories of species for which site-scale conservation is appropriate:

Nature Iraq Draft Report

1. Globally or regionally threatened species;
2. Assemblage of restricted-range species;
3. Congregations of species that concentrate in large numbers at particular sites during some stage in their life cycle;
4. Assemblages of biome-restricted assemblages.

The KBA process is part of a large international effort to help in the establishment and prioritization of sites that are of global, regional and/or national importance. All sites are worthy of protection but conservation funds are limited and it is important to identify unique sites in Iraq that are at risk of being lost or irreversibly damaged. The environment in Iraq has, after decades of war and civil strife, faced massive changes and degradation. In a recent publication by the World Conservation Union (Langhammer, et al., 2007), the two key variables that determine how sites should be prioritized are “Irreplaceability” and “Vulnerability”. A site is irreplaceable if it contains species that occur nowhere else or where an important segment of a species population utilizes the site consistently during part of the year (e.g. for migration or breeding). Vulnerability relates to sites where species can be found that are vulnerable or threatened from extirpation either locally or globally.

Survey Area

Central and Western Iraq harbors an ancient landscape of grassy highlands, forming a continuous arc through many countries of the northern Mesopotamia, beginning along the eastern border with Iran and traveling across the open grasslands and penetrating the western borders between Syria, Jordan, and the Kingdom of Saudi Arabia.

These remarkable habitats are of fundamental importance to Iraq’s environment as a whole, making their study an important scientific and environmental priority. Accordingly, to profile these homogeneous habitats occupying large portions of the survey area it is difficult to choose which is the most interesting to study. Bird populations, of international importance in particular, are distributed over a very large area. While there is no doubt that conserving and studying these habitats is important, it is difficult and in some ways inappropriate to prioritize small parcels of land for preservation apart from the ecosystem as a whole. Thus, finding a successful methodology for the KBA project is a complicated matter.

Determining the main points of interest with regards to the bird population and other related animals across such a diverse habitat was a difficult task for the KBA team who visited this area for the first time in winter and summer 2009. The KBA research methods that were used to identify habitats and animal species in northern and southern Iraq were based upon the BirdLife

Nature Iraq Draft Report

International IBA's diagnostic criteria that prioritized and regulated unique bird habitats. Many of these areas have not been surveyed or identified as yet.

The IBA sites of the Middle East that were published by Evans (1994) according to his bio-statistical studies were an important scientific reference and identified various sites inside Iraq that were used as the starting point of the 2009 surveys in Central & Western Iraq. There are many good reasons for this, including the following:

A. Geography

- Iraq's arid central and western areas are comprised of two main ecoregions as defined by the World Wildlife Funds (2006). These are the Mesopotamian shrub desert and the Arabian Desert and East Sahero-Arabian xeric shrublands. The former has a vulnerable conservation status, whereas the latter is listed as Critical/Endangered. The habitats found in this region are described in a Iraqi Natural History Museum newsletter (Mahdi, N. and P. V. George, 1969) as existing only in limited parts of the Middle East and Asia.
- While this habitat naturally extends into many countries, Iraq occupies a central location between Iran, the Republic of Syria, and the Kingdoms of Jordan and Saudi Arabia. Thus, Iraq is inevitably affected by all environmental actions and activities concerning bird life in these countries.
- Anbar province alone accounts for approximately 40–45 % of Iraq's total geographic area. In addition, the Salah ad Din, Mosul, Kirkuk, Diyala and Baghdad regions increase this average total to 60% of Iraq's total land space.
- Iraq holds three of the largest seasonal streambeds in the Middle East which are of great historical and biological important, namely the Wadi Horan (Iraq–Jordan), Wadi Badeat Al Sham (Iraq–Syria) and Wadi Arar (Iraq–KSA).
- Iraq contains the biggest bodies of water in the Middle East. The survey area alone holds seven lakes (Thathar Lake, Habaniyah Lake, Qadissia Dam and Lake Shari, Lake Hemrin Lake, Samara Dam and Razaza Lake) and these are of great importance for studying and conserving wildfowl populations.
- The strategic highway system that connects Iraq with neighboring countries passes through the study area which makes it a transportation hub for all Iraqi districts.

B. Biological/Ornithological

The steppe region provides one of the suitable habitats of the critically endangered Sociable Lapwing, *Vanellus leucurus* (*Chettusia leucura*) that dwell mainly in Western and Central Iraq. Many bodies of water and oases are lost in the middle of the desert, which, from an ornithological

Nature Iraq Draft Report

perspective, are important resting and feeding places for migrating birds. They are useful for tracking large flocks of birds during the spring and fall migration. For example, the Samara Dam site was classified under the IBA “Bottleneck Criteria” established by BirdLife as more than 3000 migrant raptors, 5000 storks and 2000 cranes were identified passing through during the migration season.

- Desert fauna are living specifically within this area and are rarely found in the other parts of Iraq.
- Contiguous animal habitats exist between Iraq, Syria, Jordan, KSA, and Iran which allow for interaction between the bird populations in those countries.
- The ancient homeland for two threatened species of bird, the Saker Falcon (*Falco cherrug*) and Houbara (McQueen) Bustard (*Chlamydotis macqueenii*), which live and breed primarily in the steppe region. The local Bedouin of this area have historically bred the Saker Falcon to hunt Houbaras.
- The area holds approximately 17 birds species classified as globally endangered species according to the International Union of Conservation of Nature (IUCN, 2008) such as Ferruginous Duck *Aythya nyroca* , Lesser White-fronted Goose *Anser erythropus*, Marbled Duck *Marmaronetta angustirostris*, Red-breasted Goose *Branta ruficollis*, White-headed Duck *Oxyura leucocephala* , Asian Imperial Eagle *Aquila heliaca* ,Egyptian Vulture *Neophron percnopterus* , Greater Spotted Eagle *Aquila clanga*, Pallas's Fish Eagle *Haliaeetus leucoryphus* , Levant Sparrowhawk *Accipiter brevipes*, Saker Falcon *Falco cherrug* , Corncrake *Crex crex* , Macqueen's Bustard *Chlamydotis macqueenii*, Black-tailed Godwit *Limosa limosa* , Black-winged Pratincole *Glareola nordmanni* , Sociable Lapwing *Vanellus gregarius*(*Chettusia gregaria*), and Basra Reed Warbler *Acrocephalus griseldis* .

This document presents field observations from the Key Biodiversity Areas (KBA) Project in Western and Central Iraq with regards to the bird and animal species observed in each site by Nature Iraq field teams in winter (10 February to 21 February) and Summer (May 24 to June 4) for 2009. The field effort focused on bird and fish surveys for winter but only bird surveys for summer, though in all cases incidental and anecdotal information is presented on other species.

The areas that the KBA team was able to visit in summer 2009 were located in a wide range of habitats and were distributed in different Iraqi governorates (primarily within Diyala, Salah Ad Din, & Anbar but also Ta'mim, & Baghdad) spanning the country from east to west and extending into the northern provinces. These formed a broad arc across Iraq containing many magnificent landscapes including grassy hills, arid pastures with bushes and scrub as well as

Nature Iraq Draft Report

farmland containing wheat and corn crops. Elsewhere, the team encountered desert and semi-desert terrain with sand dunes in addition to many bodies of water such as lakes, rivers, marshlands and oases scattered throughout Iraq's western desert. All the sites that the team visited were listed in previous environmental studies and had been previously studied by many environmental scientists and ornithologists (Iraqi Natural History Museum field surveys in 1980s of the past century).

As stated above, this information was gathered from one primary document, *The Important Bird Areas of the Middle East* (Evans, 1994) published by BirdLife International. This work included site coordinates for regular biological monitoring and conservation legislation upon which the KBA team based its research. The following table shows the governorates and KBA/IBAs visited by the survey team in summer 2009. This table includes the IBA criteria that these sites originally met. These criteria were developed by Birdlife International to identify the IBAs throughout Iraq and the Middle East and are listed below the table.

Table 1: The targeted surveyed sites in Central and Western Iraq during 2009.

Governorate	Site Name	Site Code	Old Site Codes	Evan's Criteria*	GPS Coordinates		Primary Habitat Type	Date of visit
					N	E		
Anbar	Habbaniya Lake	AN1	IBA 016	1,2i,4	N33 11 48	E 43 27 38	Permanent Wetlands	11-Feb & 26-May
Anbar	Haditha Wetlands & Baghdadi	AN2	-	PK	N33 51 50	E42 31 30	Permanent Wetlands	21-Feb & 24-May
Anbar	Anah & Rawa	AN3	IBA 006	1,3	N34 22 37	E42 1 4	Permanent Wetlands	24-May
Anbar	Nekheab district and Hussaniya Oases	AN4	-	PK	N33 25 9	E41 1 17	Seasonal Wetlands	29-May
Anbar	Augla	AN5	IBA 010	4	N33 55	E41 2		not visited by KBA survey
Anbar	Gasr Muhaiwir	AN6	IBA 012	0	N33 32 37	E41 0 14	Desert	29-May
Anbar	Qadissiya or Haditha Dam	AN7	-	PK	N34 12 23	E24 21 18	Permanent Wetlands	24-May
Anbar	Hawijat Albu Alwan and Ramadi Marshes	AN8	combined with IBA 016	PK	N33 28 31	E43 16 5	Permanent Wetlands	27-May
Anbar	Western Edge of Al Tharthar Lake	AN9	IBA 007	1,2i,3,4,5i	N33 42 60	E43 17 24	Permanent Wetlands	28-May
Anbar	Asad Oasis	AN10	-	PK				not visited by KBA survey
Baghdad	Jadriyah and Umm Al Khanazeer Island	BG1	IBA 015	1,3,4,5i	N33 16 31	E44 22 36	Permanent Wetlands	17-May
Baghdad	Abu Habba	BG2	IBA 014	4,5i	N33 20	E44 20		not

Nature Iraq Draft Report

Governorate	Site Name	Site Code	Old Site Codes	Evan's Criteria*	GPS Coordinates		Primary Habitat Type	Date of visit
								visited by KBA survey
Diyala	Himreen lake	DY1		PK	N34 11 35	E45 0 0	Permanent Wetlands	10-Feb (not visited in summer)
Diyala	Baquba wetlands	DY2	IBA 011	1,2i,2ii,3	N33 55	E44 50		not visited by KBA survey
Diyala	Attariya Plains	DY3	IBA 013	1,2i,3,5i,5ii	N33 4 6	E44 45 47	Seasonal Wetlands	3-Jun
Diyala	Mandli	DY4	-	PK	N34 4 6	E45 27 38	Mixed Woodlands /brush/grasses	4-Jun
Kurkuk/Ta'mim	Huweija Marshes & Beagi	KK1	IBA 007	1,2i,3,5ii	N34 58 36	E44 0 8	Permanent Wetlands	2-Jun
Salah Ad Din	Samarra dam & Wetlands	SD1	IBA 008	1,2i,2iii	N33 25 9	E41 0 17	Permanent Wetlands	12-Feb & 31-May
Salahdin	Tharthar Lake & Dheba'aji Field	SD2	IBA 007	1,2i,3,4,5i	N33 48 19	E43 28 37	Permanent Wetlands	18-Feb & 25-May
Salahdin	Mahzam and Al Alam district	SD3	IBA 007	1,2i,3,4,5i	N34 43 52	E43 39 27	Permanent Wetlands	1-Jun
Salahdin	Abu Dalaf & Shari Depression	SD4	IBA 009	1,2i,4,5i	N34 21 43	E43 48 9	Desert	3-Jun

***Original Important Bird Area Criteria:**

- 1:** Regularly holds a significant numbers of globally threatened species.
- 2i:** Regularly holds 1% or more of a species "biogeographically or flyaway or Middle Eastern population (water birds and sea birds only).
- 2ii:** Regularly holds 20,000 or more water birds.
- 2iii:** Migratory "Bottle Neck" site, more than 3000 raptors, 5000 white stork, and more than 2000 cranes passing in a season.
- 3:** Regularly holds a significant number of a species which is threatened or declining within the Middle East. Only the five top sites for each such species in the country qualify as IBAs.
- 4:** Regularly holds a significant number of a species whose world population is wholly or largely restricted in the Middle East. Only the five top sites for each such species in the country are considered to qualify as IBAs.
- 5i:** Representative example of habitat, associated with characteristic assemblage of bird species.
- 5ii:** Rare/threatened/unique habitat, associated with characteristic assemblage of bird species.
- 6:** Site important for bird conservation through education/research/tourism.
- 0:** Selected for other reasons.
- PK** Potential KBA site.

Nature Iraq Draft Report

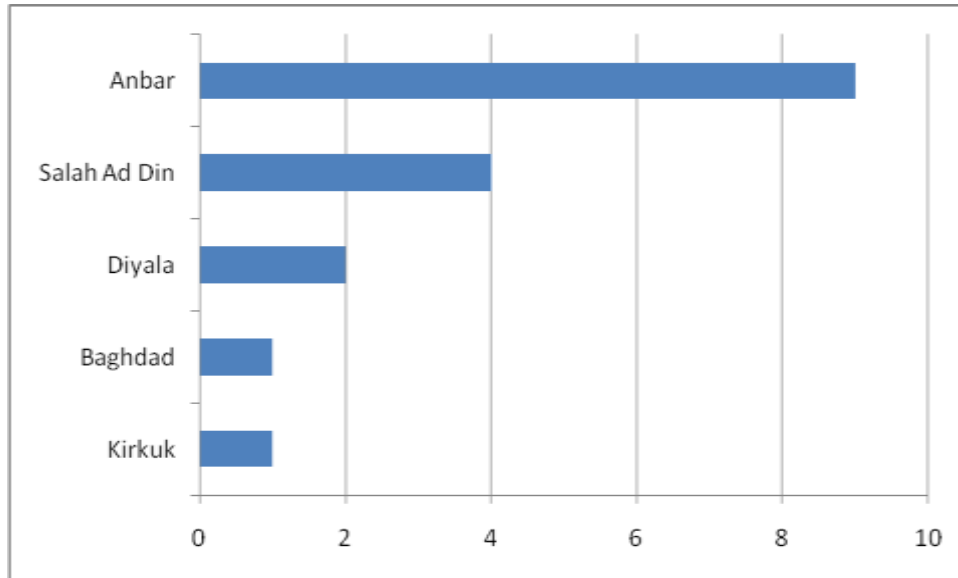


Figure 1: Shows the provinces that the KBA team visited during the summer survey in Central and Western of Iraq 2009 with total surveyed sites in each province.

Methods & Procedures

This document reports on birds and other wildlife such as mammals, reptiles and amphibians that were observed in the Central and Western regions of Iraq. In this case, the bird species recorded were restricted to the species that were categorized by the International Union of Conservation of Nature (IUCN) as shown by the following diagram:

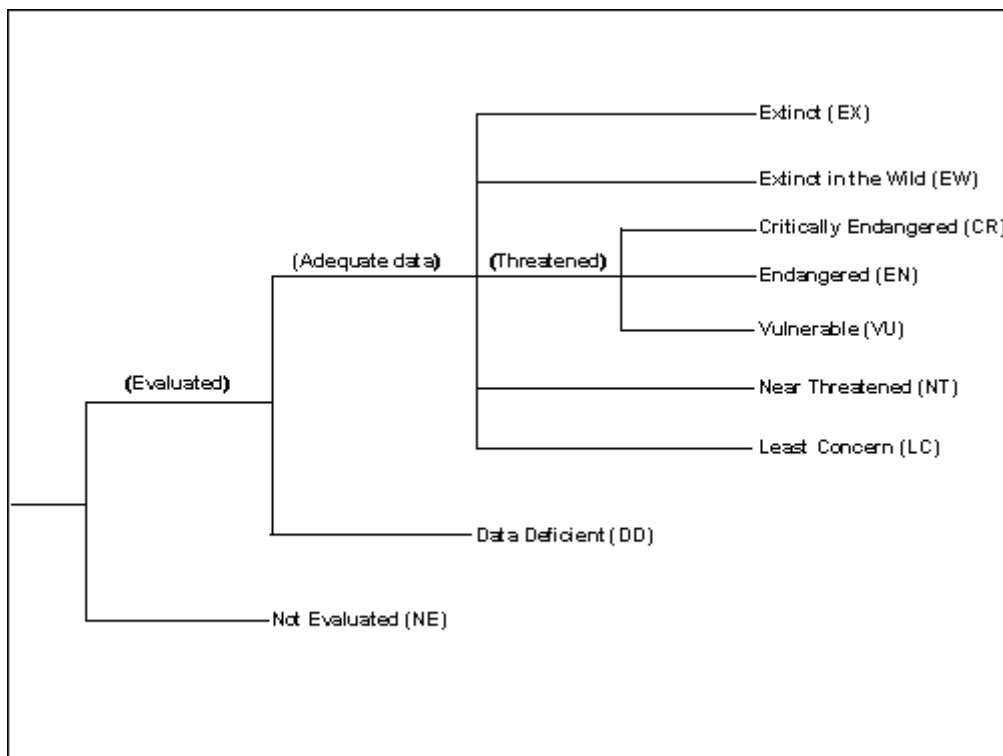


Figure 2: Shows the IUCN Redlist ranks (IUCN, 2008).

Nature Iraq Draft Report

A complete list of all these species recorded for Iraq in 2009 and some additional images on sites are presented in Annexes A through F.

Birds

In order to observe individual birds species, study entire bird populations, or estimating the various impacts upon local birds and their habitat, different methods and field procedures were applied during the fields surveys prioritizing the species that were listed as a threatened species according to the IUCN's red list, such as "Critically Endangered", (CR) "Endangered" (EN), "Vulnerable" (VU) and "Near threatened" (NT) bird species. It was hoped that the surveyed sites would hold a significant number of these species within a wide variety of habitats and distributional ranges. The time that was spent during observation varied according the observation method, and the size of the site, to the logistic plan and to the security conditions. To describe the conservation status of the threatened bird species, the following abbreviations were used in the text:

1. GT: Globally Threatened.
2. EN: Endemic or Endemic race
3. CC: Bird species of Conservation Concern.

Sites were assessed for their conservation significance in terms of the IUCN Red List (2008) status of the birds found at the site. This included birds that were Critically Endangered (CR), Endangered (EN), Vulnerable (VU), Near Threatened (NT), and an additional category specific to Iraq of Conservation Concern (CC) developed by Richard Porter with the staff of Nature Iraq in an attempt to determine those species for which Iraq has a special responsibility and are a priority for conservation action. These species include all globally threatened species; Iraq endemics/near-endemics; those known to be seriously declining in all or most of their Eurasian/Middle East range; those with a major proportion (over 50%) of their world population breeding in the Middle East and those which have, or are believed to have, important wintering populations in Iraq.

In addition, the text notes bird counts for the species mentioned and the breeding status if known. The following lists the methodology and field procedures that the team used to locate the targeted birds species above:

A. Field Procedures and Methods:

The main methodological approaches used to study bird populations according to their habitat and other local limiting factors that exist within the surveyed territories included:

Nature Iraq Draft Report

A.1 Whole Area Count: This is considered the main field procedure applied to most of the surveyed areas which aimed to count all the birds species that could found in the surveying area, particularly the large KBAs that hold significant numbers of threatened species or meet the criteria for an annual migratory "Bottle Neck" such as Samara Lake and Dam, Habaniya and Tharthar Lake. This procedure was widely used by the KBA team in the visited areas.

A.2 Spot Count: A common field method used in multi-habitat ecosystems and in habitats that are difficult to access or move around in is to stand in a single observation point and simply count the birds species that are seen during the observation period. This procedure has been used by the KBA team in many of the study areas, such as Qadissiya or Haditha Dam.

A.3 Transportation Method Survey Count: This is an easy method to count bird species that might be discovered accidentally during the transportation to and from a site by land or water. This method is quite similar to the whole area count, but extends to cover the logistic roads and transportation route to and from the survey site. It was used during the long distance trips to distant locations such as Qasir Mahawier and the Nekheab desert.

A.4 Transect Count: Unfortunately, as the team worked rapidly in unstable surveying areas often with limited mobility, Transect Counts (recording observations between a start and end GPS locations) could not be done.

In addition, in winter and summer directional pictures were taken of the site, in summer this was done using directional signs within the pictures themselves.

The following field guides were used during the field work in winter: Mullarney, Svensson, Dan, & Grant (2001), Porter, Christensen, & Hansen (1996), and Salim, Porter, Christensen, Schiermaker-Hanson, & Jbour (2006). In summer only Mullarney et al (2001) was used. Allouse (1953 & 1963) was used to review and compare the bird populations over the area as a whole. Additional references used for birds and other species in summer included: Anderson (1999), Baker & Baker (1997), Clark (2000), Moore & Boswell (1956), O'Brian, Crossley & Karlson (2009), Sibley (2007) and Svensson (1995).

B. Field Equipment:

The KBA team used various type of monitoring and documentary equipment, which included: a variety of Canon digital cameras during both the winter and summer survey along with several attachments including telephoto zoom lenses of between 100 to 400 mm. In summer a Sony

Nature Iraq Draft Report

Handycam GXC DVD recorder with a 40X optical zoom to 2000X digital zoom was also used. In order to improve the chances of seeing birds and not startling them away from the survey sites, camouflaged clothing was used as well as a duck blind in certain situations. In addition the team also carried a Kawa 20x60 spotting scope attached to a Manafroto tripod and Nikon 8x10 mm travel binoculars. Location coordinates were plotted using a Garmin GPS device. Various military and civilian maps were used to locate sites.

C. Data Entry

In the winter and summer surveys for 2009, Nature Iraq instituted the use of field databases for entering species information. A field database for entering bird data was developed for KBA surveys using Microsoft Access 2007 software. The following two plates show the user interface for entering trip information and field data related to birds.

The image shows a screenshot of the Microsoft Access 2007 interface for a database named 'MIBRD Database'. The main window displays the 'Trips' table with a 'Field Data' view. The data entry form includes the following fields and values:

Field	Value
Date	14 May 09
Time	1:35:00 PM
Survey	KBA Summer 09 Central
Site	AN7 - Qadisiya or Haditha Dam
Weather	Sun
Wind direction	
Wind speed	Light winds
Date of Last Form	
Temperature	43
Transportation Notes	Boat, Car, Foot
Site Photos	Directional, Survey site
Site Observations	The KBA team survey from higher ground above the dam body on the military monitoring tour and it observed the whole its habitat panoramas in the forth direction, and then heading upstream toward the lake body.
Notes	
Method	Area, Point
Additional Notes	The point count done on the dam. The dam manager Mr. Hussan Fehya Hussan Al Haditha was very co operative and welcoming man introduce a great assistance and subordinate to the team to enter the facility and arrange a detailed.

The interface also shows a 'Bird Type' section with a dropdown menu and a text area for additional notes. The bottom of the window displays the Windows taskbar with various open applications and the system clock showing 11:18 AM on 5/14/09.

Plate 1: Microsoft Access 2007 Interface for entering bird trip data

Nature Iraq Draft Report

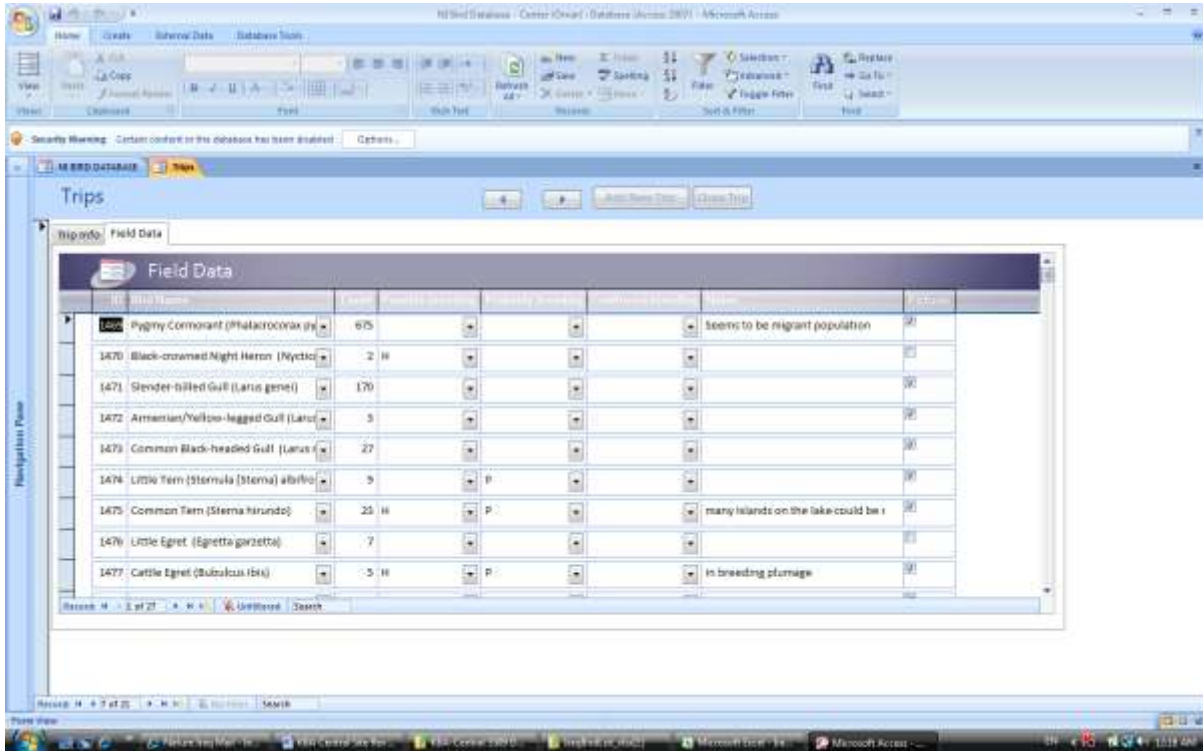


Plate 2: Microsoft Access 2007 Interface for entering bird field data

Fish

During the winter 2009 survey, fish samples were taken from fishermen at some of the sites who caught them using different methods such as floating gill nets with mesh sizes of 0.5 to 4cm, fixed gill nets with mesh sizes of 0.5 to 4cm, and seine nets with a mesh size of 0.5 cm. Occasionally there is no or limited net fisheries and samples were obtained from fisherman using electrofishing to catch fish, though this is no longer Nature Iraq policy. Often the total catch was limited and the entire catch was assessed but if the catch was larger than 30 kilos, the team took approximately 20% to 25% of the catch by random sample for assessment and categorized the catch according to species directly in the field or, after preservation in formaldehyde (10%) at the field base or the lab. For identification, the following references were used: Al-Daham (1982), Mahdi (1962); and the personal website of fisheries expert Brian Coad (www.briancoad.com). Photographs were taken using a Canon digital point & shoot camera. After that we calculate the ratio of each species in the sample and their length and weight were then measured.

Net gear type and mesh sizes were also recorded and fishermen or locals were asked questions about the number of fishing boats at the site and the catch per day for different fishing gear. If no fishermen were present, interviews were conducted with other locals at the site.

Nature Iraq Draft Report

During the winter survey, the fish observations were entered into a new database developed for KBA surveys in Microsoft Access 2007. The following two plates show the main entry interface for both trip information and field data.

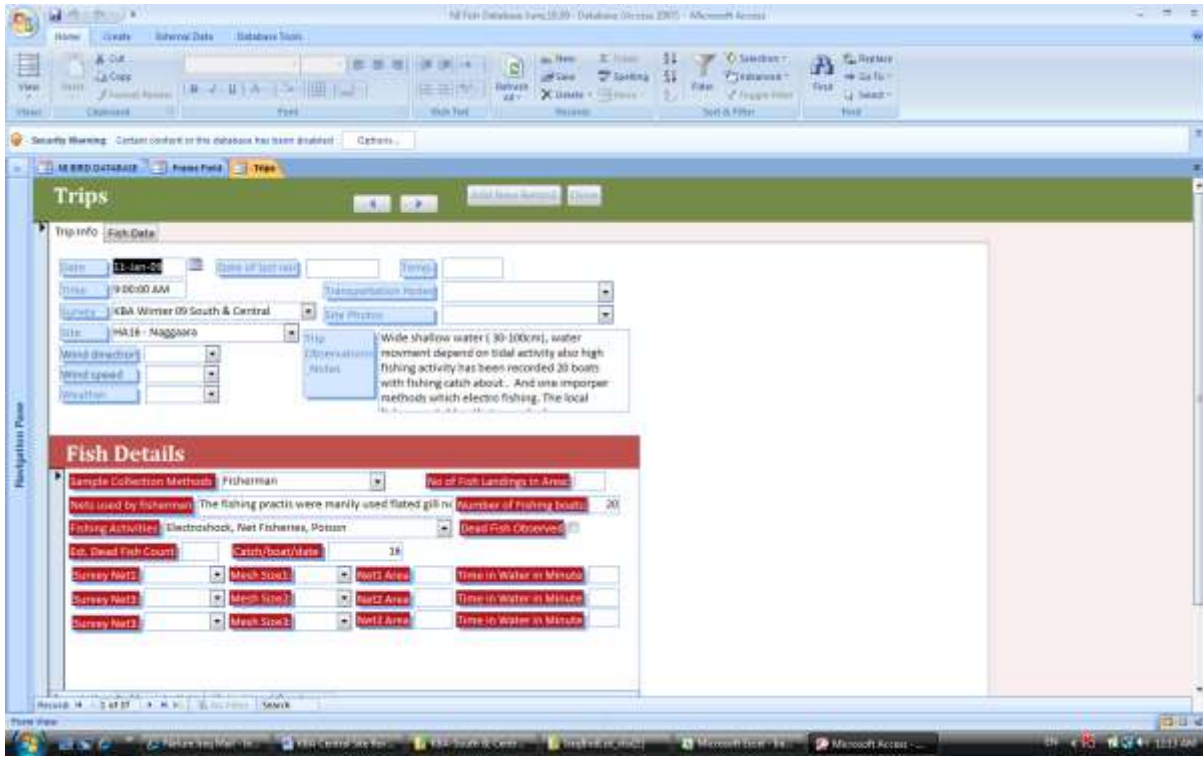


Plate 3: Microsoft Access 2007 Interface for entering fish trip data

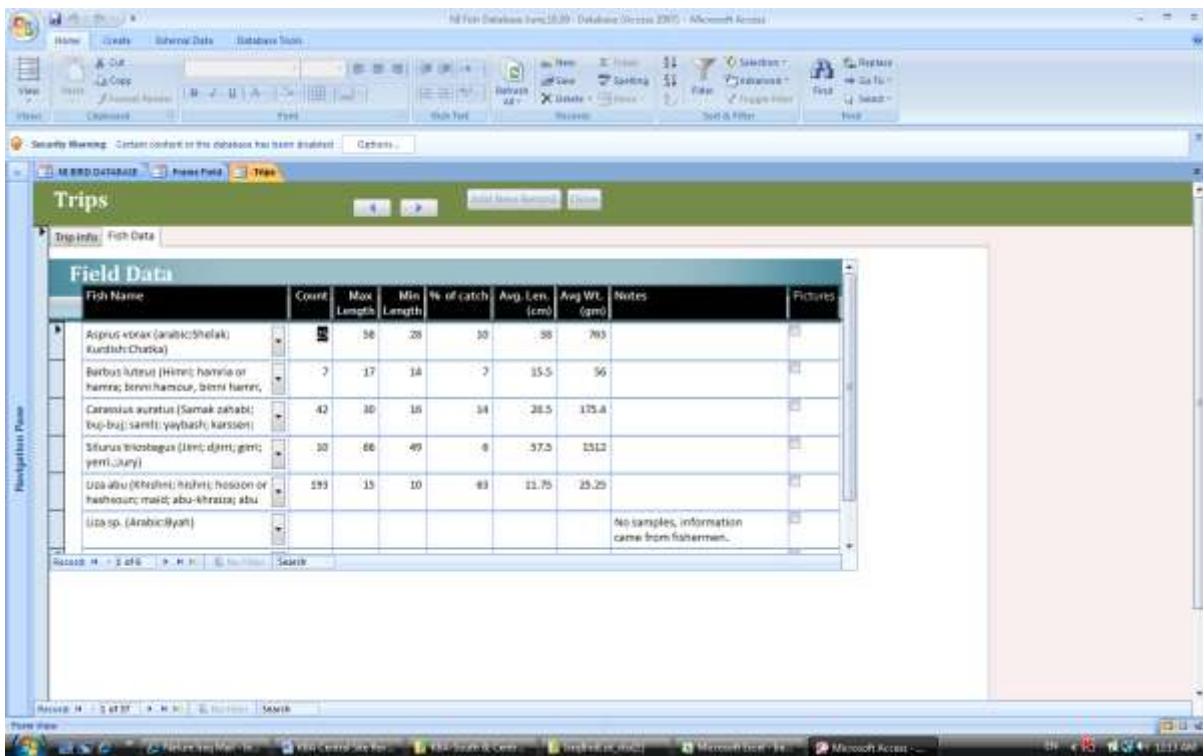


Plate 4: Microsoft Access 2007 Interface for entering Fish field data.

Nature Iraq Draft Report

Unfortunately, the KBA team lacked any fish specialists during the summer 2009 survey and thus the summer fish report depends on the fish diversity documentation that was recorded during the winter 2009 survey. For later surveys, especially in the large lakes, marshlands and rivers in the Central and Western Iraq region, a team including ichthyologists and aquatic biologists will be crucial (Please see the recommendations section).

Site Reviews



Plate 5: General Google Earth (2009) map showing the visited sites in Central and Western Iraq during the KBA summer 2009 field survey (red indicates IBA sites as defined by Evans (1994), green indicates potential KBA site).

Based upon the map shown above, the sites will be reviewed by governorate or province, starting from the province with the highest number of surveyed sites downward to the provinces with the lowest number of visited sites.

I. Sites in Anbar Province

KBA (AN1) - Haur Al Habbaniya and Ramadi Marshes - (IBA 016)



Plate 6: *Left:* Road map to the site highlighted in red (Google Earth, 2009). *Right:* The team at the KBA site AN1 - Habbaniya Lake. A.F. Omar 2009.

Site Description: Habbaniya Lake is situated to the southeast of Ramadi, the capital city of Al Anbar province, and west of Baghdad. Habbaniya represents one of the largest water reservoirs in Iraq, accommodating the excess of the floodwaters from the Euphrates during summer time through a small canal near Ramadi called Sin Al Dhuban. The canal passes through Al Saglawiya and the calcareous Al Guss hill, which separates the canal from Habbaniya. The excess flood water drains out the southern edge of the lake through a narrow water canal called Al Majarah Canal which drains the excess floodwater to Bahar Al Milih and the northern part of Razaza Lake in Karbala province. In winter, the southern portion of the lake was surveyed and good numbers of waterfowl. There is a fish landing near the site and the lake is subject to heavy fishing.

The main habitat of the site is an inland wetland, including Al Habbaniya Lake and its wide, muddy shoreline. The shore is widely exposed during the winter time when the water levels are reduced to their minimum levels. The lake is surrounded by open, arid land with halophytic desert and semi-desert vegetation with a small elevation gain near the southern edge of the lake. A few wetland habitats with submerged aquatic vegetation have been observed near the Al Majarah water regulation canal, including a limited number of reed beds. The Habbaniyah tourism village is one of the most significant landmarks in the Habbaniya site, located on the southeast edge of the lake (South west of Ramadi). This habitat holds more terrestrial vegetation and Eucalyptus trees across a wide range, as well as some dense shrubs and thickets. There is strong evidence of human environmental impact on the lake.

Main highways to the site:

- From Baghdad: Baghdad – Falluja – Habbaniya

Winter Observations were made on 11th of February 2009 & Summer Observations were made on 26th of May 2009 at the site:

Winter Birds: 27 species, 1584 individuals. The most important species were:

Great Cormorant *Phalacrocorax carbo* 45, Mallard *Anas platyrhynchos* 74, Eurasian Teal *Anas crecca* 38, Pygmy Cormorant *Phalacrocorax pygmaeus* 34, Common Moorhen *Gallinula chloropus* 19, Eurasian Coot *Fulica atra* 540, Spur-winged Lapwing *Vanellus (Hoplopterus) spinosus* 9, Armenian/Yellow-legged Gull *Larus armenicus/michabellis* 14, Common Black-headed Gull *Larus ridibundus* 26, Common Woodpigeon *Columba*

Nature Iraq Draft Report

palumbus 7, Eurasian Magpie *Pica pica* 9, Eurasian Magpie *Pica pica* 16, Rook *Corvus frugilegus* 454, Graceful Prinia *Prinia gracilis* 4, Common Chiffchaff *Phylloscopus collybita* 2, Common Starling *Sturnus vulgaris* 30, Slender-billed Gull *Larus genei* 330 and Common Pochard *Aythya ferina* 11.

Summer Birds: 30 species, 87 individuals. The most important species were:

Nycticorax nycticorax, 1; *Egretta garzetta*, 5; *Ardeola ralloides*, 3; *Larus armenicus/michabellis*, (CC), 2; *Himantopus ostralegus*, 3; *Charadrius hiaticula*, 2; *Gelochelidon [Sterna] nilotica*, 2, Possible breeding; *Charadrius alexandrinus*, 3, Probable breeding; *Charadrius dubius*, 5, Possible breeding; *Sternula [Sterna] albifrons*, 8, Probable breeding; *Vanellus (Hoplopterus) indicus*, 1, Possible breeding; *Arenaria interpres*, 9; *Larus genei*, (CC), 6; *Vanellus (Hoplopterus) spinosus*, (CC), 3, Probable breeding; *Chlidonias hybrida*, 6; *Tringa glareola*, 1; *Columba palumbus*, 1, Possible breeding; *Streptopelia decaocto*, 1, Possible breeding; *Columba livia*, 2, Possible breeding; *Merops [superciliosus] persicus*, 3, Confirmed breeding; *Ceryle rudis*, 1; *Galerida cristata*, 2, Possible breeding; *Lanius excubitor*, 1; *Alaemon alaudipes*, 1, Possible breeding; *Corvus[corone] cornix*, (CC, EN race), 1; *Passer domesticus*, 4, Possible breeding; *Lanius minor*, 1; *Lanius collurio*, 7, Probable breeding; *Eremophila bilopha*, (CC), 1, and *Saxicola rubetra*, 1.

Other Fauna:

A. Invertebrates:

B. Vertebrates

Winter Fish: High winds during the survey did not allow fishermen to go out to fish but fishermen were present selling fish, and information was collected through interviews with the fishermen who were present. There were about 100 boats on the lake with an estimated average daily catch of 20 kg/boat-day using floating gill nets with mesh sizes of about 1 to 5cm and no electro-fishing was practiced on the lake.

Four fish species appear in the sample catch: *Acanthobrama marmaid* (20% of the catch), *Alburnus mossulensis* (10%), *Barbus luteus* (20%) and *Liza abu* (50%). But interview with local fishermen told us that *Aspius vorax* and *Barbus xanthopterus* also appear from time to time in catch.

Summer Fish: No survey was conducted in summer.

Invertebrates: Wide variety of mollusca and arthropods species as well as aquatic and terrestrial insects and arachnida species are present in the area. More scientific investigation will be needed to determine invertebrate diversity in Habbaniya.

Reptiles: None seen during the summer survey, but suitable habitat for desert reptilian species was present.

Amphibians: None seen during the survey.

Mammals: None discovered in field surveys or reported from the locals in the site.

Flora: Phragmites, Typha, Achillea, Artemisia, Acacia and Alhagi are the most widely distributed plant species.

Conservation Significance:

Winter Birds: The following conservation concern (CC) species were noted at the site: Armenian/Yellow-legged Gull *Larus armenicus/michabellis*, Slender-billed Gull *Larus genei*, Marbled Duck *Marmaronetta angustirostris* (GT), and Great White Pelican *Pelecanus onocrotalus*.

Summer Birds: The following conservation concern (CC) species were noted at the site:

Larus armenicus/michabellis, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), *Corvus[corone] cornix*, (CC, END race), *Eremophila bilopha*, (CC).

Winter Fish: The existence of *Barbus xanthopterus* makes this site valuable due to the threatened status of this fish in southern Iraq.

Conservation Issues & Recommendations for the Site: In winter it appeared that water shortages are increasing salinity level and there appears to be some problems with stagnation and bad water quality in parts of the lake, so increasing water flow may be important.

Nature Iraq Draft Report

The Habbaniya tourism village is considered to be the main human-caused environmental impact on the site. The village sees much of activity especially due to summer vacationers who produce much leftover waste such as cans, plastic containers and bags. These spread rapidly all over the site, carried by water currents to the lake edges. In addition, some local villages near by the southern and eastern edges of the lake deposit sewage and other wastes into the lake, and a small amount of construction has gone on in the surrounding area. Habbaniya is also used by the military as an air force base. The arid land serves as an airfield for frequent training flights which resulted in considerable noise pollution and a variety of other environmental impacts sufficient to agitate and harm both resident and migrant species.

Water quality studies are essential to understand and determine Habbaniya Lake's viability as a human and animal habitat. Filling in the remaining gaps regarding non-avian species and populations will be essential in the next survey dedicated to wild mammals. In addition, since a military base is located at Habbaniya, a great deal of cooperation and communication between civilian and military authorities is recommended in order to preserve the remaining natural habitat.

KBA (AN2) – Haditha Wetland & Wahat Al Baghdadi – Potential KBA site.



Plate 7: *Left:* Road map to the site highlighted in red. *Right:* The KBA team at the site AN2 Wahat Al Baghdadi alongside the characteristic irrigation structures unique to the Baghdadi and Haditha region. © A.F. Omar 2009.

Site Description: The site is situated northwest of Ramadi and Baghdad, located on the main highway leading towards the western border of Iraq with Syria, Jordan and Saudi Arabia and north towards Mosul. The site encompasses both banks of the Euphrates River in Baghdadi township. It is characterized by the dense date–palm orchards thickly planted on both sides of the river along with citrus and other fruits. The shores of the Euphrates are grassy and muddy as the river flows towards Ramadi, with occasional rocks cutting through the river in the middle. These are considered an elevated extension of the river matrix, and one of the main rookeries to the resident and migrant aquatic birds who reside at the site. There are also a few assemblages of submerged vegetation along the riverbank as well as dense reed beds and marsh habitats, but these are not widely distributed.

A second habitat extending alongside the main highway varies considerably from the riverbank, characterized by desert and semi-arid sands and open areas with rocky cliffs with scattered vegetation. However, date farms and fruit orchards extend as far as the eye can see up on the east bank of the Euphrates in a dramatic contrast to the flat deserts.

Nature Iraq Draft Report

Northwest of the site and south of Haditha extends one of the most biologically important river valleys in Western Iraq due to its unique habitat hosting one of the biggest fish spawning during the spring months. Protecting fish spawning grounds is one of the main conservation issues in the valley on an annual basis. West of the site is Camp Al Asad, one of the largest Iraqi and American Coalition military bases in Anbar province, which regularly deploys troops and military vehicles as roadblocks in the surrounding area.

Main roads to the site:

- From Bagdad : Baghdad – Abu Ghraib – Ramadi –Hit – Baghdadi
- From Ramadi : Ramadi – Hit – Baghdadi

Summer Observations were made on May 24th, 2009:

Birds: 31 species, 99 Individuals. The most important species were:

Bubulcus ibis, 3; *Ixobrychus minutus*, 1, Possible breeding; *Egretta garzetta*, 2; *Phalacrocorax pygmaeus*, (CC), 10; *Falco tinnunculus*, 1, Possible breeding; *Larus armenicus/michabellis*, (CC), 3; *Himantopus ostralegus*, 1, Possible breeding; *Larus ridibundus*, 5; *Sterna hirundo*, 3, Possible breeding; *Sternula [Sterna] albifrons*, 2, Possible breeding; *Philomachus pugnax*, 1; *Larus genei*, (CC), 12; *Vanellus (Hoplopterus) spinosus*, (CC), 2, Probable breeding; *Columba palumbus*, 1, Possible breeding; *Streptopelia decaocto*, 2, Probable breeding; *Streptopelia senegalensis*, 2, Probable breeding; *Columba livia*, 2, Probable breeding; *Caprimulgus europaeus*, 1, Possible breeding; *Halcyon smyrnensis*, 1, Possible breeding; *Hirundo rustica*, 20, Confirmed breeding; *Iduna [Hippolais] pallida*, 2, Probable breeding; *Pica pica*, 2, Possible breeding; *Lanius excubitor*, 1, Possible breeding; *Hypocolius ampelinus*, (CC), 3, Probable breeding; *Passer domesticus*, 7, Confirmed breeding; *Acrocephalus menanopogon*, 1, Possible breeding; *Lanius collurio*, 3, Probable breeding; *Muscicapa striata*, 1, Possible breeding; *Saxicola rubetra*, 1, Possible breeding; and *Pycnonotus leucogenys*, (CC), 2, Confirmed breeding.

Other Fauna:

A. Invertebrates: Wide variety of Mollusca and Arthropod species, aquatic and terrestrial insects such as Dragon Flies, Damsel Flies, May Flies, Water Striders, and aquatic Beetles. Arachnida family species and the existence of Scorpions have been reported by local farmers, and further scientific investigation is needed to determine the total invertebrate biodiversity of Habbaniya.

B. Vertebrates:

Reptiles: None were seen.

Amphibians: Many Green Toads (*Bufo viridis*) were observed and heard in the site.

Mammals: Common Asiatic Jackal (*Canus a.aureus*): one individual that seemed to be an older adult was seen in the area at sunset.

Flora: Mainly date-palm trees with fruits planted beneath such as pear, grape, Pomegranate, and apricot. *Phragmites*, *Typha*, *Populus*, *Ziziphus*, *Astragalus*, *Rhanterium*, *Vitis* and *Mourus* are the most widely distributed plant species along the river banks.

Conservation Significance:

Birds: The following conservation concern (CC) species were observed at the site:

Phalacrocorax pygmaeus, (CC), *Larus armenicus/michabellis*, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), *ampelinus*, (CC), *Pycnonotus leucogenys*, (CC).

Conservation Issues & Recommendations for the Site: Baghdadi's habitat is uniquely representative of Western Iraq, and as such is a strong candidate to become a nature reserve in the future. The Iraqi Ministry of Environment and Ministry of Agriculture have already made overtures to this effect, but there are several fundamental issues to be solved first. Expanding human settlements in the area combined with significant military activity both have the capacity to negatively impact the quality of the wilderness area, though of more immediate concern are overfishing and illegal hunting. More accurate environmental assessments need to be carried out in the future concerning the bird and animal populations as well as water quality research to determine the overall quality of the habitat. Also, due to the strong military

Nature Iraq Draft Report

presence near the site a great deal of cooperation and communication between civilian and military authorities is recommended in order to preserve the remaining natural habitat.

KBA (AN3) - Anah and Rawa – (IBA 006)



Plate 8: *Left:* Road map to the site highlighted in yellow. *Right:* The KBA team members counting birds and taking photographs at site AN3 Ana shores with the use of a spotting scope. © A.F. Omar 2009.

Site Description: This site is located northwest of Ramadi near Ana and Rawa townships. These are situated on opposite banks of the Euphrates, with Rawa on the east bank of the river and Ana on the west bank but still east of the main highway towards Al-Qae'em township near the Syrian border.

The main habitat is an inland river, represented by the Euphrates Valley surrounded by arid, semi-desert with exposed limestone cliffs. The western edge of the site near Ana has elevated cliffs declining gradually westward into arid steppes filled with halophytic vegetation. The water is shallow along the muddy riverbanks covered in grassy vegetation as well as date-palms, citrus and fruit orchards. Small, flat islands are sometimes observed in the middle of the river, and these are considered significant roosting spots for many resident and migrant waders and shorebirds.

Main roads toward the site:

- From Bagdad : Baghdad – Abu Ghraib – Ramadi –Hit – Baghdadi – Haditha – Anah - Rawa
- From Ramadi : Ramadi – Hit – Baghdadi - Haditha – Anah - Rawa

Summer Observations were made on 24th of May 2009 at the site:

Birds: 31species, 227 individuals. The most important species that were found in the site:

Anas querquedula, 2, Probable breeding; *Bubulcus ibis*, 5; *Ardea cinerea*, 3, Possible breeding; *Egretta garzetta*, 3; *Ardeola ralloides*, 3; *Phalacrocorax pygmaeus*, (CC), 5; *Fulica atra*, 9; *Larus armenicus/michabellis*, (CC), 3; *Himantopus ostralegus*, 20, Probable breeding; *Larus ridibundus*, 7; *Sterna hirundo*, 8, Probable breeding; *Gelochelidon [Sterna] nilotica*, 17, Possible breeding; *Charadrius dubius*, 7, Possible breeding; *Sternula [Sterna] albifrons*, 5, Possible breeding; *Vanellus (Hoplopterus) indicus*, 2, Probable breeding; *Philomachus pugnax*, 32; *Larus genei*, (CC), 21; *Vanellus (Hoplopterus) spinosus*, (CC), 27, Probable breeding; *Chlidonias leucopterus*, 3, Possible breeding; *Tringa glareola*, 5; *Streptopelia decaocto*, 4, Probable breeding; *Columba livia*, 2, Possible breeding; *Merops [superciliosus] persicus*, 3, Probable breeding; *Corvus ruficollis*, 6, Possible breeding; *Ammomanes deserti*, 1, Possible breeding; *Pica pica*, 2, Possible breeding; *Passer domesticus*, 12, Confirmed breeding; *Lanius minor*, 1; *Lanius collurio*, 6, Probable breeding; *Anthus campestris*, 1, and *Pycnonotus leucogenys*, (CC), 2, Confirmed breeding.

Other Fauna:

A. Invertebrates: Wide variety of Mollusca and Arthropods species, Arachnida family species and a few Cicadas (*Homopteras*) insects have been heard near the monitoring location.

Nature Iraq Draft Report

B. Vertebrates:

Reptiles: None, but many locals reported on a wide diversity of lizards and snakes roaming in the site.

Amphibians: Green Toads (*Bufo viridis*) were observed and heard in the site.

Mammals: None have been observed at the site.

Flora: Mainly date-palm trees with fruit plantings beneath such as fig, grape, pomegranate, apricot, and *Ziziphus*, *Astragalus*, *Albagi*, *Vitis* and *Morus* are the most widely distributed plant species that have been observed at the site.

Conservation Significance:

Birds: The following conservation concern (CC) species were observed at the site:

Phalacrocorax pygmaeus, (CC), *Larus armenicus/michabellis*, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), and *Pycnonotus leucogenys*, (CC).

Conservation Issues & Recommendations for the Site: Regular human activities such as construction, overfishing, illegal hunting, and grazing are considered to be the main negative environmental impacts in the area. Numerous fisheries, harbors, and boats have accumulated on the riverbanks, and therefore it is urgent to create and apply an environmental action plan to the site in order to estimate what amount of sustainable usage of local resources can be carried out and ascertain the present status of the site's biodiversity. Regular field monitoring programs for birds and other animals will be vital to achieving this purpose.

The main route leading to the site is heavily occupied by the Iraqi Police and Iraqi Army as well as the Sahwat (local support councils formed in Western and Central Iraq) who maintain checkpoints, which investigate any suspicious activity or search vehicles in the region. Therefore, enhanced communication with military and legal authorities is needed to facilitate the survey team's movement to and from the site as well as to allow the use of survey equipment.

KBA (AN4) - Nekheab district and Hussaniya Oases – Potential KBA site.



Plate 9: *Left:* Road map to the site highlighted in Red. *Right:* The KBA site as seen from the northeast. © A.F. Omar 2009.

Site Description: The site is situated to the southern west of Ramadi in the Nekheab Desert. One of the main desert habitats in Western Iraq located in between two large desert valleys, the Wadi Horan, the larger of the two valleys which extends west until it meets Saudi Arabia and the Wadi Amij, which extends to the northeast toward Kubeasa township near Hit.

Nature Iraq Draft Report

The dominant habitats in this site are arid desert and semi-desert regions with halophytic vegetation and limestone hillsides with occasional cliff faces. These slopes are surrounded by a seasonal pool formed by excess flood water caught as runoff by the surrounding hills. The ancient highlands of Wadi Horan were formed by erosion in a previous geological epoch, and from a distance appear as a typical Iraqi desert ecosystem. Dry streambeds extend into the valley toward the survey site, which form water pathways during the springtime harboring grassy vegetation in the middle of the desert. They also provide good grazing areas and fresh grass for Bedouin camels. The tracks of large herds of camels and sheep with Bedouin shepherds were seen in the site. These herds traditionally roam the area looking for grazing and drinking water.

Main directional roads toward the site:

- From Bagdad : Baghdad – Abu Ghraib– Ramadi –Hit – Kubeasa – Wadi Amij – Al Hussaniya oases
- From Ramadi : Ramadi – Hit – Kubeasa – WadiAmij – Al Hussaniya oases

Summer Observations on 29th of May 2009

Birds: 33 species, 89 individuals. The most important species that were found in the site:

Tadorna ferruginea, 1; *Ardeola ralloides*, 3; *Milvus migrans*, 1; *Neophron percnopterus*, (CC, GT), 2, Probable breeding; *Himantopus ostralegus*, 2; *Tringa nebularia*, 1; *Charadrius hiaticula*, 3; *Charadrius leschenaultii*, 31; *Charadrius alexandrinus*, 3; *Calidris minuta*, 2; *Sternula [Sterna] albifrons*, 2; *Vanellus (Hoplopterus) indicus*, 1; *Philomachus pugnax*, 1; *Vanellus (Hoplopterus) spinosus*, (CC), 1; *Chlidonias leucopterus*, 1; *Streptopelia turtur*, (CC), 1; *Columba livia*, 2, Probable breeding; *Hirundo rustica*, 2; *Galerida cristata*, 4, Probable breeding; *Ammomanes deserti*, 1, Possible breeding; *Passer domesticus*, 2; *Lanius minor*, 1; *Lanius collurio*, 3; *Anthus cervinus*, 1; *Riparia riparia*, 3; *Acrocephalus schoenobaenus*, 4; *Muscicapa striata*, 1; *Eremophila bilopha*, (CC), 2, Confirmed breeding; *Hippolais languida*, 2; *Motacilla flava*, 1, and *Phylloscopus trochilus*, 1.

Other Fauna:

A. Invertebrates: Some species belonging to the Coleoptera insects order have been noticed in the site.

B. Vertebrates:

Reptiles: A wide variety of reptiles were discovered in the area, and the team was faced with a significant number of reptiles dwelling in the Agamid Desert, such as the Spiny-tailed Lizard, (*Uromastix microlepis*) and members of the Lacertidae reptile family (*Acnthodactylus sp.*), and it is thought that many other species could be found during a dedicated survey.

Amphibians: None.

Mammals: Since the visit to the site was a short one at midday, and it was aimed primarily at recording bird species, the team was unable to record any wild mammal species, but noted numerous domestic species such as the One humped Camel or Dromedary (*Camelus dromedaries*), Domestic Goat (*Capra hircus*) and Fat-tailed sheep (*Ovis aries*). Many reports from local Bedouin and shepherds also indicate the presence of Striped Hyenas (*Hyaena hyaena*) and Common Asiatic jackals (*Canis aureus*). Reports from Ga'ara further to the west from the site confirmed that packs of Common Wolves (*Canis lupus*) had been heard howling during the night, and that the Common Red Fox (*Vulpus vulpus*) and most likely Ruppell's Sand Fox (*Vulpus ruppelli*) were encountered during the night as well. It is also worth mentioning the presence of Bedouin practicing Arabian Hare (*Lepus arabicus*) hunting with Saluki dogs on some occasions.

Flora: Mainly Desert and semi-desert shrubs and vegetation which consist mainly of *Artemisia*, *Astragalus*, *Achillea*, *Acacia* and *Albagi*.

Conservation Significance:

Birds: The following conservation concern (CC) species were observed at the site:

Neophron percnopterus, (CC, GT), *Vanellus (Hoplopterus) spinosus*, (CC), *Streptopelia turtur*, (CC), *Eremophila bilopha*, (CC).

Nature Iraq Draft Report

Conservation Issues & Recommendations for the Site: No direct threat or environmental impacts have been observed in this site. The site serves as an excellent natural water source for grazing camels and other cattle, while the surrounding cliffs of Wadi Horam are considered a good breeding ground for resident raptor species that could be affected by various disturbances caused by large caravans gathering near the site to collect water and supplies for days at a time. It is not known what effect this might have on biodiversity, therefore it is strongly recommended that more detailed field surveys are needed to address animal populations on the site.

Since the site is located deep in the western desert of Anbar, many civilian and military authorities are actively patrolling and defending Iraq's national borders in that area, including a number of tribal groups. Given the site's distance from any human settlement or township with paved roads as well as numerous critical security concerns, this is one of the most dangerous spots that the team visited during the survey. As a consequence, many official communications and arrangements must be made for the team to make their next survey in the region.

KBA (AN5) - Augla - (IBA 010)

This site was not surveyed by the KBA team during the Nature Iraq Summer 2009 survey in Anbar province for the following reasons:

- Lack of up-to-date information about the security status of the site or the roads toward it.
- The team could not identify which authorities administered the site in order to contact them to arrange and coordinate the field surveys.
- Lack of the experienced guides and maps which could lead the team to the site.
- The team received many warnings from locals to not visit the site.

KBA (AN6) - Gasr Muhaiwir - (IBA 012)



Plate 10: *Left:* Road map to the site is highlighted in red. *Right:* The KBA team car parked beside the main archeological feature of the site. © A.F. Omar 2009.

Site Description: Gasr Muhaiwir is an archaeological site located in the Western Iraqi desert from which the general name of the site is derived. It is an ancient site of biological and historical importance. It is known for the castle-like ruins located on the eastern edge of Wadi Horan occupies a place in the main valley leading towards Iraq's western deserts and the Euphrates River flood plain. The area was also used by British forces participating in the Arabian Revolution of 1916 against the Ottoman Empire as a field

Nature Iraq Draft Report

base in Western Iraq. It provided shelter and supplies to the engaged troops, and the tracks left by the military caravans remain to the present day.

The site is dominated by desert and semi-desert steppes, with a variety of desert vegetation. In the distance, the rocky valleys and limestone slopes of the Wadi Horan can be clearly seen, used by the Bedouin as a guidepost during desert navigation. Seasonal pools of ground and rainwater are scattered throughout the site, though these are difficult to find during the winter and accordingly are considered to be one of the main resting spots for migrant birds visiting during their long journey. The extreme temperature levels at the site are considered to be an environmental limiting factor for many organisms adapted to the desert terrain. While summer days are extremely hot, the temperature gradually drops during the night time and reaches freezing levels during the winter nights.

Main roads to the site:

- From Bagdad : Bagdad – Abu Ghraib – Ramadi – Hit – Kubeasa – Wadi Amij – Gasr Muhaiwir
- From Ramadi : Ramadi – Hit – Kubeasa – Wadi Amij – Gasr Muhaiwir

Summer Observations were made on 29th of May 2009

Birds: 11 species, 49 individuals. The most important species were:

Columba livia, 2, Probable breeding; *Ammomanes cinctura*, 1, Possible breeding; *Corvus ruficollis*, 4, Probable breeding; *Galerida cristata*, 1, Possible breeding; *Ammomanes deserti*, 2, Confirmed breeding; *Alaemon alaudipes*, 18, Probable breeding; *Lanius minor*, 1; *Lanius collurio*, 15; *Muscicapa striata*, 1, and *Hippolais languida*, 1.

Other Fauna:

A. Invertebrates: Some species belonging to the Coleoptera insect order have been noticed in the site, and report from the local guide who joined the team in its survey at the site confirming the wide existence of the desert Scorpion (*Buthus buthus*), of the Arachnida family.

B. Vertebrates:

Reptiles: Wide diversity of reptilian species discovered in the site, including a number of Agamidae family desert dwellers and the Spiny-tailed Lizard (*Uromastix microlepis*), though many other species could be found during dedicated surveys.

Amphibians: None.

Mammals: None.

Flora: Mainly desert and semi desert shrubs. Vegetation consisted widely of *Artemisia*, *Astragalus*, *Achillea*, *Acacia* and *Albagi*.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Non were listed in the site .

Conservation Issues & Recommendations for the Site: No serious threats were identified during the site. The site was forgotten during recent decades and appears to retain its original ecology which can be considered a unique specimen of desert habitat. Nature Iraq's summer survey on May 19th, 2009 was considered the first field visit to this IBA since the 1980's, and this report is the first up-to-date written documentation on the biological status of the site. As the site was not far from the AN4 Wahat Al Hussaniyah site, which is actually located in the same continuous habitat and shares a similar approach and security issues, the same conservation issues and recommendations outlined for site AN4 should be applied to this site as well.

KBA (AN7) - Qadissiya or Haditha Dam - Potential KBA site



Plate 11: *Left:* Road map to the site highlighted in red. *Right:* Qadissiya Dam - downstream from one of the main strategic facilities in Western Iraq. © A.F. Omar 2009.

Site Description: Qadissiya or Haditha Dam is one of the most important strategic industrial facilities in Northwest Iraq situated on the Wadi Haditha in the Euphrates Valley. Anah and Rawa are to the northwest and Haditha township is to the southeast based on the path taken by the river towards Ramadi. The dam was constructed and entered into service in 1980's, providing electricity to Iraq's western districts.

In winter the team was not able to reach the lake due to the rough weather (high wind and heavy dust). Instead, the team surveyed the area just to the south of the dam at the following coordinates (N34 11 15.9, E42 22 47.7). Obviously, most of the birds that were observed at that time may occur on the lake. It is still tightly protected by the army and they did not allow the team to birdwatch around the dam. Moreover, other parts of the lake which are not secured by the army are hard to reach due to the poor security condition. More of the lake was able to be surveyed in summer.

The lake is an extension of the Euphrates River floodplain due to the construction of the dam. The lake, according to officials at the dam, measures 155 km in length and 4 km in width, gradually shrinking to only 17 m wide at the western input-end of the lake. The inland wetland habitat created by this artificial freshwater lake has a sandy and muddy shore with date-palm trees more common in the downstream area. Haditha Lake is smaller by comparison to other bodies of water in Western Iraq, such as Tharthar Lake and Habbaniya. The lakeshore is mud is mixed with gravel and holds some pockets of fresh grass and vegetation, which are considered the best spots for waders and shorebirds to dwell while several gravel islands also appear near the eastern lakeshore.

The habitat downstream is characterized by moderately a wide river (30-40 meters) downstream of the dam with thick reed vegetation covering the banks. This continues until the river reaches Haditha and Baghdadi, while a small number of date-palm trees and fruit farms are also distributed along both riverbanks. The wetland area is surrounded by various desert habitats including arid steppes and dry sandy slopes, which provide a wide spectrum of potential habitats.

Main roads to the site:

- From Bagdad: Bagdad – Abu Ghraib – Ramadi – Hit– Baghdadi - Haditha – The Dam
- From Ramadi: Ramadi – Hit – Baghdadi - Haditha – The Dam

Winter Observations were made on 21 February 2009 & Summer Observations were made on 26th of May 2009 at the site:

Winter Birds: 18 species, 1662 individuals. The most important species were:

Little Stint *Calidris minuta* 72, Armenian/Yellow-legged Gull *Larus armenicus/michabellis* 18, Great Black-headed Gull *Larus ichthyæetus* 16, Slender-billed Gull *Larus genei* 95, Common Tern *Sterna hirundo* 5, Rock

Nature Iraq Draft Report

Dove *Columba livia* 65, Little Ringed Plover *Charadrius dubius* 16, Barn Swallow *Hirundo rustica* 23, Tufted Duck *Aythya fuligula* 70, Common Starling *Sturnus vulgaris* 40, Northern Wheatear *Oenanthe oenanthe* 3, Desert Wheatear *Oenanthe deserti* 4, Pied Kingfisher *Ceryle rudis* 18, Eurasian Coot *Fulica atra* 210, Western Marsh Harrier *Circus aeruginosus* 2, Great Cormorant *Phalacrocorax carbo* 450, Grey Heron *Ardea cinerea* 45, Marbled Duck *Marmaronetta angustirostris* 60, Northern Pintail *Anas acuta* 19, Northern Shoveler *Anas chrypeata* 84, Water Pipit *Anthus spinoletta* 4, Common Pochard *Aythya ferina* 62, Gadwall *Anas strepera* 9, Eurasian Wigeon *Anas Penelope* 16, Mallard *Anas platyrhynchos* 33, Great White Pelican *Pelecanus onocrotalus* 35 and Eurasian Teal *Anas crecca* 110.

Summer Birds: 27 species, 1055 individuals. The most important species were:

Nycticorax nycticorax, 2, Possible breeding; *Bubulcus ibis*, 5, Probable breeding; *Ardea cinerea*, 2; *Egretta garzetta*, 7; *Phalacrocorax carbo*, 1; *Phalacrocorax pygmaeus*, (CC), 675; *Neophron percnopterus*, (CC, GT), 2; *Larus armenicus/michabellis*, (CC), 3; *Larus ridibundus*, 27; *Sterna hirundo*, 23, Probable breeding; *Sternula [Sterna] albifrons*, 9, Probable breeding; *Larus genei*, (CC), 170; *Columba palumbus*, 2, Probable breeding; *Streptopelia decaocto*, 12, Confirmed breeding; *Columba livia*, 56, Confirmed breeding; *Merops [superciliosus] persicus*, 3, Possible breeding; *Coracias benghalensis*, 1, Possible breeding; *Ceryle rudis*, 1; *Hirundo rustica*, 13, Probable breeding; *Galerida cristata*, 1, Possible breeding; *Pica pica*, 1, Possible breeding; *Oenanthe finschii*, (CC), 1; *Prinia gracilis*, 2, Possible breeding; *Corvus[corone] cornix*, (CC, EN race), 2, Possible breeding; *Passer domesticus*, 30, Confirmed breeding; *Lanius collurio*, 2, Probable breeding, and *Pycnonotus leucogenys*, (CC), 2, Confirmed breeding.

Other Fauna:

A. Invertebrates: Wide variety of insects, especially aquatic insects on the lake downstream, such as dragonflies, damselflies with other terrestrial insects such as hymenoptera ants, wasps and honey bees, Coleoptera and species from the Lepidoptera order such as butterflies. Mollusca and Arachnid have also been reported by locals.

B. Vertebrates:

Winter Fish: Fishing was not allowed so the team conducted interviews of locals and determined that there are eight fish species in lake: *Aspius vorax*, *Barbus esocinus*, *Barbus xanthopterus*, *Barbus luteus*, *Carassius auratus*, *Cyprinus carpio*, *Silurus triostegus* and *Liza abu*.

Reptiles: Few were seen, but the site represents a good potential habitat for many reptilian species and many individuals of the Caspian Terrapin (*Clemmys caspia*) were resting on the muddy riverbanks.

Amphibians: Green Toads (*Bufo viridis*) have been seen and heard in the site.

Mammals: None seen during the survey, but the head of the Iraqi national police and many local guides that joined the team at the site reported that there were records from the 1950's to the 1970's of large and moderate-sized (20 to 100 individuals) herds of Persian Gazelle (*Gazella subgullurosa*) dwelling in Haditha Valley. They were seen on different occasions during the daylight especially at midday when they gathered to drink water from the river. At present, there were a few individuals reported in the arid grazing steppes northeast of the site, especially in spring as confirmed by the local guides. Also, some local fishermen indicated the existence of otters in the area. These were seen resting during hot summer days on the *Populus* tree trunks on the river bank, and it is worth mentioning that the local habitat is perfectly suitable to the otters' lifestyle.

Flora: Large diversity of wild and commercial plantings, but mainly date-palm trees and fruits such as grape, apricot, pear, fig, and *Morus* as well as vegetable plantings. Wild vegetation consisted of *Phragmites*, *Typha*, *Populus*, *Eucalyptus*, *Morus*, *Halaxylon*, *Zizphus*, *Astragalus*, *Alhagi* and *Acacia*.

Conservation Significance:

Winter Birds: The following conservation concern (CC) species were noted at the site in winter: Armenian/Yellow-legged Gull *Larus armenicus/michabellis*, Slender-billed Gull *Larus genei*, Pygmy Cormorant *Phalacrocorax pygmaeus*, and Spur-winged Lapwing *Vanellus (Hoplopterus) spinosus*.

Summer Birds: The following conservation concern (CC) species were noted at the site in summer:

Nature Iraq Draft Report

Phalacrocorax pygmaeus, (CC), *Neophron percnopterus*, (CC, GT), *Larus armenicus/michabellis*, (CC), *Larus genei*, (CC), *Oenanthe finschii*, (CC), *Corvus [corone] cornix*, (CC, END race), *Pycnonotus leucogenys*, (CC).

Winter Fish: *Barbus esocinus* and *B. xanthopterus* consider as very important fish even as demands fish in Iraqi markites or because they are threatened so, existence of those fish make this site valuable.

Conservation Issues & Recommendations for the Site: The site is a unique habitat with a wide spectrum of diversity in Western Iraq. Combined with natural history records, small amounts of biological data have been collected about the dam site but these lack information about the main bird species that could be found in the site. As with any other industrial facility, there are many environmental hazards that could affect local wildlife, such as the high fish mortality caused by Haditha Dam due to the lack of a fish ladder, which prevents breeding fish from reaching the open lake water and river upstream in order to migrate and spawn. This could be affecting water bird populations as well.

High levels of industrial pollution and disturbances caused by machinery coupled with the heavy output of cold water from the dam result in environmental impacts downstream of the lake. In addition to boat disturbances and illegal fishing by poison and electroshock, many nearby town direct their waste and sewage into the water without any treatment. This results in the destruction and deterioration of many natural habitats along the river. Along with cattle grazing, these raise many questions regarding the suitability of the site for habitation by birds and other wildlife. Therefore, more dedicated field surveys with additional research on animal populations and water quality are recommended to create better estimates regarding the lake and downstream ecosystems.

Logistically, the site is within the jurisdiction of many civilian and military agencies. Officially, the site is managed by the Iraqi Ministry of Electricity of Western Iraq, but its security duties belong to the National Iraqi Army assisted by the Romanian Coalition Forces. Therefore, the team must be in constant contact with officials in order to arrange for the team to gain easy access to the site in the future.

KBA (AN8) -Haweijat Albu Alwan and Ramadi Marshes- Potential KBA site



Plate 12: *Left:* Road map to the site highlighted in red. *Right:* The dominant marshy habitat of the site. © A.F. Omar 2009.

Site Description: Albu Alwan is the name of the Arabian tribe that inhabits the area northeast of Ramadi beside the Euphrates riverbank from which the site derives its name. The site is dominated by marshland with dense reed beds and typhus vegetation with submerged aquatic plants mixed with date-palms trees with fruit orchards and vegetables farms beneath. The word “Hawhija” means marshland, and this specific area of Western Iraq is similar to the large marshy ecosystems that exist in the south due to their unique species and habitat.

Nature Iraq Draft Report

On the both banks of the Euphrates River, the depth ranges from 2 m to 5 m in some places. There are a few cultivated areas with wheat and corn plantings with some uncultivated areas full of halophytic thickets passing through many suitable spots for resident and migrant bush warblers and songbirds.

Main roads to the site:

- From Bagdad : Baghdad – Abu Ghraib – Ramadi – Hawijat Abu Alwan
- From Ramadi: Ramadi – Al Grishy – Hawhijat Abu Alwan.

Summer Observations on 27th of May 2009:

Birds: 43 species, 197 individuals. The most important species were:

Francolinus francolinus, 1, Possible breeding; *Nycticorax nycticorax*, 5, Possible breeding; *Bubulcus ibis*, 12, Probable breeding; *Ixobrychus minutus*, 4, Possible breeding; *Egretta garzetta*, 2; *Ardea purpurea*, 1; *Ardeola ralloides*, 2; *Phalacrocorax pygmaeus*, (CC), 9, Possible breeding; *Fulica atra*, 1; *Himantopus ostralegus*, 5; *Actitis hypoleucos*, 1; *Gelochelidon [Sterna] nilotica*, 1; *Sternula [Sterna] albifrons*, 3; *Vanellus (Hoplopterus) indicus*, 2, Probable breeding; *Larus genei*, (CC), 5; *Vanellus (Hoplopterus) spinosus*, (CC), 3, Possible breeding; *Columba palumbus*, 7, Confirmed breeding; *Streptopelia decaocto*, 12, Confirmed breeding; *Streptopelia senegalensis*, 2, Probable breeding; *Columba livia*, 4, Possible breeding; *Apus pallidus*, 1, Possible breeding; *Merops [supercilius] persicus*, 4, Possible breeding; *Coracias benghalensis*, 1, Possible breeding; *Ceryle rudis*, 3, Probable breeding; *Halcyon smyrnensis*, 1, Possible breeding; *Hirundo rustica*, 5, Confirmed breeding; *Acrocephalus griseldis*, (CC, GT), 2, Probable breeding; *Fringilla coelebs*, 1, Possible breeding; *Sylvia communis*, 1, Possible breeding; *Galerida cristata*, 3, Possible breeding; *Pica pica*, 8, Possible breeding; *Prinia gracilis*, 4, Probable breeding; *Acrocephalus arundinaceus*, 1, Possible breeding; *Corvus[corone] cornix*, (CC, EN race), 2, Possible breeding; *Passer domesticus*, 37, Confirmed breeding; *Turdoides altirostris*, (CC), 7, Possible breeding; *Lanius minor*, 1; *Acrocephalus menanopogon*, 1, Possible breeding; *Lanius collurio*, 4, Probable breeding; *Riparia riparia*, 23, Possible breeding; *Motacilla flava*, 1; *Saxicola rubetra*, 2, Probable breeding, and *Pycnonotus leucogenys*, (CC), 2, Possible breeding.

Other Fauna:

A. Invertebrates: Dense populations of aquatic and terrestrial invertebrates include Hexapods, Arachnids, namely dragonflies with many nymphs attached to the reed leaves, groups of water striders, (*Giridae* family), and Boatmen Beetles belonging to the Aquatic Coleopteras species. Additional specimens included Hemipteras and Hymenopteras insect orders, such as Squash Bug, Stink Bug and Chinch Bug. Wasps, ants and honey bees were seen flying around the area with Lepidoptera species dwellers such as Painted Lady and Admiral Butterflies.

B. Vertebrates:

Reptiles: A wide range of reptiles were observed in the site such as Geckos sp. (*Hemidactylus spe*). Many Caspian Terrapins (*Clemmys caspia*) suddenly dropped into the water from the broken reed roots. Local reports indicate the existence of Smooth-shelled or Soft-shelled Turtles (*Trionyx euphraticus*) often seen at night in addition to a few specimens that were reported killed in the site.

Amphibians: Green Toads (*Bufo viridis*) have been seen and heard as a very low calling symphony on the muddy riverbank and scattered throughout shallow water and temporary pools in the site.

Mammals: None seen during the survey. Wild species have been seen but an examination of local tracks in appropriate habitats in the area indicated the presence of the Asiatic Jackal (*Canus aureus*), Indian Grey Mongoose (*Herpestes edwardsi*) and many bats (*Chiropteras*). Also a small herd of Water Buffalo (*Bubalus bubalus*) were seen grazing on reeds in the site similar to their relatives in the south marshes.

Flora: *Phragmites*, *Typha*, with Date-palm trees, fruits and vegetables, wheat and barley are the main commercial plantings at the site in addition to wild vegetation consisting of *Populus*, *Euocalptus*, *Morus*, *Zizphus*, and *Astragalus*.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Nature Iraq Draft Report

Phalacrocorax pygmaeus, (CC), *Larus genei*, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), *Acrocephalus griseldis*, (CC, GT), *Corvus [corone] cornix*, (CC, END race), *Turdoides altirostris*, (CC), and *Pycnonotus leucogenys*, (CC).

Conservation Issues & Recommendations for the Site: Modern agricultural methods and the use of pesticides and insecticides may be posing environmental impacts. This is in addition to other human behaviors such as overfishing using electrofishing and poison as seen in the southern marshes, fish breeding in artificial pools, grazing, and increasing human population and construction. Together, these factors can cause serious harm to a wilderness site in the absence of careful management or conservation action to preserve the site. Therefore, a more detailed and dedicated field survey is highly recommended to be carried out in the future.

Additionally, the site situated north of Ramadi is quite secure, but it is still important to arrange official contacts for the team's next entry to the site for additional freedom of movement.

KBA (AN9) - Western Edge of Tharthar Lake - (IBA 007)



Plate 13: *Left:* Road map to the site highlighted in red. *Right:* The muddy shores of Al Tharthar Lake with scattered fishing boats photographed from the northwest. © A.F. Omar 2009.

Site Description: Tharthar Lake is the largest artificial reservoir in Iraq. It is triangular in shape, in comparison to other bodies of water such as Dukan, Darbendikhan and Mosul Lake to the north, Himreen and Shari in the center, and Qadissiya in the west, and Habbaniya and Razaza in the southwest. The lake is located between the Tigris and Euphrates Rivers about 120-140 km northwest of Baghdad. The lake is very deep, reaching up to 70 m in depth at the center. It was used to collect flood and excess rain water from the Tigris River via a narrow canal near Samara called Tharthar Canal, while a second canal connected it to the Euphrates near Al Dhlue'a township north of Baghdad and east of Ramadi. Several other valleys also flow into the lake from the north and west.

The lake has a weak food chain and is low in nutrients (Evans 1994), and the dry steppes and pastures surrounding it maintain semi-desert vegetation. Tharthar Lake is bordered by limestone hills on the southwest that dwindle into a sandy and muddy shoreline with areas of fresh grassy plants which are considered to be a suitable habitat for resident and migrant waders and shorebirds. Large tracts of arid, uncultivated land surround the lake in an arc to the north. This area holds many biologically rich locations especially in the winter that had remained undiscovered until the present survey. Wadi al Gazalli is situated on the western edge of the lake and is considered the main valley through which the lake may be accessed, and contains open steppes with grazing and Bedouin activities. Halophytic or xerophytic desert plants are the dominant vegetation found on the site.

Main roads toward the site:

Nature Iraq Draft Report

- From Bagdad: Bagdad – Abu Ghraib – Ramadi – Hit– Al Gazally Valley – The site
- From Ramadi: Ramadi – Hit – Al Gazally Valley – The site.

Summer Observations on 28th May 2009:

Birds: 26 species, 114 individuals. The most important species were:

Egretta garzetta, 2; *Fulica atra*, 21; *Larus armenicus/michabellis*, (CC), 2; *Himantopus ostralegus*, 2; *Hydroprogne [Sterna] caspia*, (CC), 2; *Sterna hirundo*, 2, Possible breeding; *Cursorius cursor*, 2, Probable breeding; *Sternula [Sterna] albifrons*, 14, Probable breeding; *Vanellus (Hoplopterus) indicus*, 2, Probable breeding; *Larus genei*, (CC), 10; *Vanellus (Hoplopterus) spinosus*, (CC), 3, Probable breeding; *Pterocles alchata*, (CC), 4, Possible breeding; *Columba palumbus*, 1; *Streptopelia decaocto*, 18, Probable breeding; *Streptopelia turtur*, (CC), 1; *Merops [superciliosus] persicus*, 4, Possible breeding; *Hirundo rustica*, 3; *Galerida cristata*, 3, Possible breeding; *Alaemon alaudipes*, 2, Probable breeding; *Lanius minor*, 1; *Lanius collurio*, 3; *Riparia riparia*, 3; *Muscicapa striata*, 2, and *Saxicola rubetra*, 1.

Other Fauna:

A. Invertebrates: Large accumulations of Mollusca and large groups of mosquito spp were bothering the team at the site.

B. Vertebrate:

Reptiles: The site provided good habitat for a wide spectrum of reptilian species and the team encountered many Spiny-tailed Lizards (*Uromastix microlepis*) and their burrows.

Amphibians: None seen during the survey.

Mammals: The European Hare (*Lepus e. conneri*) was widely distributed throughout the elevated calcareous ground beside the lake and many individuals have been observed passing quickly in front of the traveling car, and many holes have been photographed and examined by the team. The officers and supporting police squad members along with the guides assisted with matching old survey records to the existing terrain. These indicated that there were many canine species such as the Common Wolf (*Canis lupus*) in packs consist of over 4 individuals as reported by the local Bedouin. Also Striped Hyenas (*Hyaena hyaena*), Asiatic Jackals (*Canis aureus*), Common Red Fox (*Vulpus vulpus*) and Ruppell's Sand foxes (*Vulpus ruppelli*) were reported roaming the area recently, and previous records by Iraqi Natural History Museum (INHM) indicate that the west and northwest arid steppes of Tharthar were the main range for the threatened Arabian Oryx (*Oryx leucoryx*) (Evans 1994). Also, the team found one dead bat near the elevated hills of Tharthar, which are assumed to be good roosting spots for the species. It is also worth noting that the team observed bat droppings in the region.

Flora: Desert and semi-desert Xerophilic and Halophytic vegetation consist mainly of *Haloylon*, *Achillea*, *Ziziphus*, *Albagi* and *Acacia* were the dominant plant species in the site.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Hydroprogne [Sterna] caspia, (CC), *Larus armenicus/michabellis*, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), *Pterocles alchata*, (CC), *Streptopelia turtur*, (CC).

Conservation Issues & Recommendations for the Site: Tharthar Valley and Lake remain one of the most important wetlands in Iraq and the Middle East. The lake itself attracts large numbers of migrant birds and waterfowl every year and the surrounding steppes are considered wintering habitats for many desert species. Therefore, conservation and protection plans are crucial for the biological future of the site; although the team could find few recognizable environmental impacts, it is important to quickly identify any such problems. Electrofishing is not a problem on the lake due to its depth, as nets are the only viable tool for catching fish. The isolation and remote location of the site pose security difficulties for civilian scientific expeditions, however, and as such in order to fully determine the scientific and biological situation at the site more detailed field expeditions must precede in conjunction with the national police and army patrols to reduce the danger of visiting the site.

KBA (AN10) – Al Asad Oasis (Al Anbar Airbase)



Plate 14: *Left: Abraham's Well Area (Google Earth, 2009) Right: Al Asad wetlands at dawn © R. Rogers 2009.*

Site Description: Nature Iraq teams have not visited this site as it is within a U.S. Airbase but an Ohio-based birder named Randel Rogers stationed at the base during 2008/2009 contacted Nature Iraq and provided some of his observations, which are included here. While Nature Iraq can not verify these findings, Mr. Rogers published many of his observations with supporting photographic evidence in a monthly newsletter entitled, *Al Asad au Natural*. The observations listed here are for the period of July 2008 to April 2009 including a noteworthy observation of a Sociable Lapwing (listed in the map above as SL sighting) on March 1, 2009, which was submitted to OSME on their Rarities Form. Also documented at this site on March 17, 2009 was Northern goshawk, the first accepted record of this species for Iraq. Mr. Rogers also conducted a Christmas Bird Count from 15 December 08 to 1 January 2009 and in addition, provided information from the bases Vector Control section, which was conducting a trapping program on the base.

The following is excerpted from the first issue of *Al Asad au Natural* (Rogers, 2008). The oasis gets its names from a legendary visit to the oasis by Abraham, the patriarch of the Hebrew Bible, the Quran, and other Islamic writings, during his journey from Ur to Haran (Gen 11:31; *Stories of the Prophets*, Al Imam Ibn Kathir, *Ibrahim*; the Quran does not mention the journey), but in fact Abraham's Well, also known as Mamre, is actually located in ancient Canaan. The Arabic name of the village near the oasis is *Eyen Al Asad*, which means *Spring of the Lion*, which may indicate that in the past the area attracted all kinds of wildlife, including lions. There were no settlements near the oasis before 1920 other than occasional occupation by Bedouins who passed through with their flocks and stopped for water.

Around 1920, six large families from a town between Kirkuk and Mosul moved to the oasis. The Shitwi group formed the largest family. These families built the buildings of the village (that now stand in ruin nearby), planted the date palm grove, and eventually built a school. In its prime, palm grove provided a good cash crop for the village, but in 1985, Saddam Hussein decided to turn the surrounding area into an Iraqi Air Base. He paid the villagers a very small sum of money for their land and moved them to other locations, but a few of the people remained behind and stayed unnoticed for ten more years, since at that time the base did not include the oasis area. However, in 1995, the base was expanded to incorporate the oasis. The commander of the base found a document stating that all of the villagers had been evicted in 1985 and so he evicted the remaining villagers.

Observations (From Jul 08 to Apr 09):

Birds: The following birds were observed in and around the Al Asad Oasis/Al Asad Airbase (no counts are included):

Barred Warbler, Bittern, Black Francolin (Confirmed or Probable Breeder), Black Kite, Black Redstart, Black-crowned Night Heron, Black-eared Wheatear, Black-tailed Godwit, Black-winged Stilt, Blue-cheeked Bee-eater (Confirmed or Probable Breeder), Bluethroat (magna), Bonelli's Warbler, Booted Eagle, Brown-necked Raven (Confirmed or Probable Breeder), Chiffchaff, Common Babbler (Confirmed

Nature Iraq Draft Report

or Probable Breeder), Common Buzzard, Common Cuckoo, Common Moorhen (Confirmed or Probable Breeder), Common Pintail, Common Redstart, Common Sandpiper, Common Snipe (Confirmed or Probable Breeder), Corn Bunting, Crested Lark (Confirmed or Probable Breeder), Dead Sea Sparrow (Confirmed or Probable Breeder), Desert Lark, Desert Wheatear, Egyptian Nightjar, Eurasian (common) Kestrel (Confirmed or Probable Breeder), Eurasian Collared Dove (Confirmed or Probable Breeder), Eurasian Coot (Confirmed or Probable Breeder), Eurasian Magpie (Confirmed or Probable Breeder), Eurasian Sparrowhawk, European Nightjar, European Roller, European Scops Owl, European Starling, Ferruginous Duck, Finsch's Wheatear, Garganey, Golden Eagle, Golden Oriole, Graceful Prinia (Confirmed or Probable Breeder), Great Grey Shrike, Great Reed Warbler, Green Sandpiper, Grey Heron, Grey Hypoclius (Confirmed or Probable Breeder), Grey Wagtail, Hen Harrier, Hooded Crow (Confirmed or Probable Breeder), Hoopoe, House Sparrow (Confirmed or Probable Breeder), Iraq Babbler (Confirmed or Probable Breeder), Isabelline Shrike (isabellinus), Isabelline Wheatear, Jack Snipe, Laughing Dove ((Confirmed or Probable Breeder), Lesser Egret, Lesser Grey Shrike, Lesser Whitethroat, Little Bittern, Little Crake (Confirmed or Probable Breeder), Little Grebe (Confirmed or Probable Breeder), Long-billed Pipit, Long-legged Buzzard, Mallard, Marbled Teal, Marsh Harrier (Confirmed or Probable Breeder), Masked Shrike, Menetries's Warbler, Moustached Warbler, Namaqua Dove, Nightingale, Northern Goshawk, Northern Shoveler (Confirmed or Probable Breeder), Northern Wheatear, Olivaceous Warbler, Orphean Warbler, Ortolan Bunting, Pallid Harrier, Pied Flycatcher, Pied Kingfisher, Pochard, Purple Heron, Red-backed Shrike, Red-rumped Swallow (Confirmed or Probable Breeder), Red-wattled Plover (Confirmed or Probable Breeder), Ring Ouzel, Robin, Rock Pigeon (Confirmed or Probable Breeder), Rook (Confirmed or Probable Breeder), Ruff, Rufous Bush Robin (Confirmed or Probable Breeder), Sand Martin (Confirmed or Probable Breeder), Sardinian Warbler, Sedge Warbler (Confirmed or Probable Breeder), Short-toed Lark, See-See Partridge (Confirmed or Probable Breeder), Slender-billed Gull, Sociable Plover, Spanish Sparrow (Confirmed or Probable Breeder), Spectacled Warbler, Spotted Flycatcher (Confirmed or Probable Breeder), Spur-winged Plover, Squacco Heron, Stock Pigeon, Stonechat (European) (Confirmed or Probable Breeder), Tawny Pipit, Trumpeter Finch, Upcher's Warbler, Water Rail (Confirmed or Probable Breeder), White Stork, White Wagtail (albodes/ocularis/leucopsis/alba), White-cheeked Bulbul (Confirmed or Probable Breeder), Whitethroat, White-throated Robin, Willow Warbler, Winchat, Wood Pigeon (Confirmed or Probable Breeder), Wood Warbler, Woodchat Shrike (Confirmed or Probable Breeder), Wryneck and Yellow Wagtail (Confirmed or Probable Breeder).

Note: There is no substantiating evidence for the records of Trumpeter Finch, Long-billed Pipit, Sardinian Warbler and Spectacled Warbler and so these have not been used in the preparation of the Checklist of the Birds of Iraq.

During the Christmas Bird count conducted between 15 DEC and 1 JAN, only the largest daily count for each species was tallied to prevent counting the same individual more than once. 2,054 individual birds were counted, representing over 47 species. One Black francolin didn't count as only its feathers were seen in the wadi after it had been eaten by one of the local carnivores.

Other Fauna:

A. Invertebrates: The following insect species (including their local status when known) were observed:

Camel spider (Solifugid Order), common; Centipede (Geophilomorpha Order); Darkling beetle (Tenebrionidae Family), common; House centipede (*Scutigera coleoptrata*), common; soft-bodied Tick sp., abundant; hard-bodied Tick sp. (possibly a dog tick var.), abundant; Spider unknown sp.; Spider (Clubiona Genus); Deathstalker Scorpion; Fat-tailed Scorpion; Dragonfly (4 var. inc.: red), common; Green Darner (*Anax junius*), common; Antlion (Neuroptera order), common; 7-Spot lady beetle (*Coccinella septempunctata*), common; Mosquito (Culicidae family), common; Blowfly (*Chrysoma albiceps*); Horsefly (Tabanidae family); Painted Lady Butterfly (Lepidoptera Order); Oleander hawk moth (*Daphnis nerii*); White Cabbage butterfly; Striped Hawk moth; Hummingbird Moth; Turkestan roach (*Blatta lateralis*), common; American roach (*Periplaneta americana*); Oriental roach (*Blatta orientalis*), common, and Termite (Isoptera Order), common

B. Vertebrate:

Reptiles: The following reptile species are seen (listed with their local status): Egyptian ratsnake (*Spalerosophis diadema*), abundant; Desert blacksnake (*Walterinnesia aegyptia*), rare; Mediterranean house

Nature Iraq Draft Report

gecko *Hemidactylus turcicus*, abundant; Skink unk. sp., abundant; Desert monitor (*Varanus griseus*), common; Caspian turtle (*Mauremys caspica*), common but localized; Arabian horned viper (*Cerastes gasperettii*), rare, and Spiny-tailed agama, common.

Amphibians: The only species observed were Green toad (*Bufo viridus*) (rare) and Marsh frog (*Rana ridibundus*) (abundant).

Mammals: In addition to commonly seen feral cats and more rare feral dogs, as well as the tracks of at least one feral goat, the following mammal species (including their local status) were observed:

Striped hyena (*Hyaena hyaena*), rare; Golden jackal (*Canis aureus*), abundant; Rueppell's fox (*Vulpes rueppelli*), abundant; Jungle cat (*Felis chaus chaus*), rare; Black rat (*Rattus rattus*), common; Persian fieldmouse (*Apodemus arianus*), abundant; Crested porcupine (*Hystrix cristata*), common; Cape hare (*Lepus capensis*), common; Bat (var. sp.), abundant; Honey Badger (*Mellivora capensis*), common; Small Asian Mongoose (*Herpestes javanicus*), rare; and House mouse (*Mus musculus*), abundant, Red fox (*Vulpes vulpes*), abundant.

During this period, two individual Jungle cats were captured, each being captured 3 times. One was a younger female, and the other an older female.

Fish: Only small minnows (unknown sp.) were observed in the oasis.

Flora: The following plant species were observed:

Tamarisk (*Tamarix* Genus), Eucalyptus (*Eucalyptus* Genus), Date palm (*Phoenix dactylifera* – 15 to 20 varieties), Oleander (*Nerium oleander*), Phoenician Juniper (*Juniperus phoenicea*), Mediterranean cypress (*Cupressus sempervirens*), Pomegranate (*Punica granatum*), Camelthorn (*Albagi maurorum*), Capers (*Capparis* Genus), Common reed (*Phragmites australis*), Spike rush (*Eleocharis* Genus), Acacia sp., Silverleaf Nightshade (*Solanum elaeagnifolium*), Thistle sp., Arugula (*Eruca sativa*), and Mustard (*Brassica* or *Sinapis* Genus), Milk vetch (*Astragalus spinosus*), Cloven-petalled flycatch (*Silene colorata*), Felty germander (*Teucrium polium*), Geranium sp. (*Geraniaceae* sp.), Broomrape (*Orobanche* sp.), Horsemint (*Mentha sylvestris*), Italian bugloss (*Anchusa italica*), Knotweed (*Rumex cyprius*), Mullien sp. (*Verbascum* sp.), Pimpernel (*Anagallis arvensis*), Spurge Euphorbia (*hierosolymitana*), Roemeria (*Roemeria hybrida*), Spiny Restharrow (*Ononis spinosa*), Oriental poppy (*Papaver* sp.), Star trigonel (*Trigonella stellata*), Wave-leaved fleabane (*Pulicaria incise*), Yarrow (*Achillea* sp.), Zilla (*Zilla spinosa*), Timothy grass (*Pheum pretense*), and Harmal (*Peganum harmala*).

Conservation Significance:

The following conservation concern (CC) bird species were noted at the site: Ferruginous Duck, Grey Hypocolius (Confirmed Breeder), Iraq Babbler (Confirmed Breeder), Marbled Teal, Pallid Harrier, Sociable Plover, and Little Grebe (Confirmed Breeder). Other important species at the site include: Arabian horned viper (Probable Breeder), Jungle cat (Probable Breeder), and Striped hyena (Probable Breeder). For non-breeding CC species, Al Asad appears to be important as a migration stopover.

Conservation Issues & Recommendations for the Site: U.S. forces have been managing the base since 2004 and have conducted a cleanup project of the oasis on April 16, 2005 to collect trash and debris from the water and surrounding area, including around the ruins of the buildings. Also in March 2006, the 67th Area Support Group, Host Nation Section, began a project with local Iraqis to clean the oasis and the surrounding palm grove. Iraqi's were brought in to clean up the oasis by removing the weeds and trash around the water. The workers also prepared the date palms, which had not been cultivated for at least three years, for the upcoming growing season. The ultimate goal of this project is to provide a source of food for the area villages. Regardless of the authenticity of Abraham's visit, people treat the oasis with reverence out of respect for local customs and beliefs.

The other wetlands at Al Asad are under constant pressure as human activity intrudes into or fragments prime habitat and also from poorly supervised contractors (local and third-country nationals) who dump concrete, asphalt, grey water, trash, and even sewage into the central drainage of the wadi. The military (both U.S. and Iraqi) leadership on base has few environmental resources and less understanding of the important role of both the permanent and vernal wetlands present on Al Asad. There is no post biologist, and only a very limited environmental compliance staff.

The U.S. Airbase has a Vector Control Unit that does regular trapping for wild and feral animals. In the past and perhaps still, many of these species have been euthanized over disease concerns such as rabies,

Nature Iraq Draft Report

there was not a single case of rabies at al-Asad (over 100 animals tested in last 3 years), and only 5 records in Anbar Province (1 jackal, 4 feral cats/dogs). At al-Asad, one Sand fox was found with Lyme disease.

Although U.S. military policy is to not target healthy, non-nuisance native wildlife with the Vector Control program, in practice the types of traps and methods of baiting and placement are often non-discriminatory, and once trapped native wildlife is then subject to the rabies testing program. At the local level, most wildlife is released or even inoculated and released, but typically native canines are euthanized. There has been a trend away from snares and seldom are dart guns or firearms used, and the cage traps tend to mostly catch foxes. Nonetheless, Jackals and Striped hyenas are also affected to some degree. At the base near Rawa, it was reported that sometimes 4-6 foxes are euthanized daily under Vector Control. At Al Asad, it was recorded that some months up to 25 to 30 foxes are killed. Jungle cats that were caught were also threatened with euthanasia and Nature Iraq released a position paper (Nature Iraq, 2009) discouraging these programs because these animals are often a form of vector control themselves and, even in cases where species may not be globally threatened, so little is known about their local status that it would not be advisable to continue an eradication campaign without more understanding of their populations in the region. The last communication from Al Asad was that in the case of some animals, such as Jungle cats, the animals were being immunized, micro-chipped and their ear clipped to identify them as a species that had been trapped before. There remains a significant concern that Sand foxes are being captured and euthanized far out of proportion to other species and the insignificant risk they pose to humans, perhaps at a rate that may decimate local populations and allow larger competing species (red fox or jackal) to take over. From the standpoint of further mammal research in the area where U.S. and other Nations have maintained a military presence, it would be important to know about these programs and the information they are generating.

Al Asad should be further surveyed and receive consideration as an Important Bird Area.

II. Sites in Salah Ad Din Province

KBA (SD1) - Samara Dam & Wetlands - (IBA 008)



Plate 15: Left: Road map to the site highlighted in red. Right: The general scene of the Samara Lake from one of the monitoring towers belonging to the Iraqi Army based beside the Lake. Note the Malwea (Mosque) of Samara from the distance. © A.F. Omar 2009.

Site Description: Samara Lake is located northwest of Baghdad and southeast from Tikrit, the capital city of Salah Ad Din province. The site is an open lake of moderate size above the Samara Dam over the Tigris River near Aldour township north of Samara City. The dam regulates the water flow toward Al Tharthar Lake through the Samara or Tharthar Canal which extends from Al Dhloee'a township towards the southeast edge of Tharthar Lake.

The dense marsh habitat with reed beds and submerged aquatic vegetation are the main features of the landscape upstream from the dam, which attract a significant number of migratory waterfowl and raptors each year. Part of the site extends northwest alongside the main highway towards Tikrit, and is characterized by the same wetland habitat on the eastern side but to the west transforms itself into an arid steppe covered with scattered xerophytic vegetation with a few farms planting wheat, corn, and date-palm trees.

The wetland adjoining the lake is bordered by a thick reed carpet that made it difficult to delineate the two from one another, though as one nears Tikrit the dense reed beds remain along the river banks in addition to scattered shrubs and thickets with an underlying gravel matrix. There are archeological relics from the Abbasid dynasty that are near the site, such as Malewat or the ancient Samara mosque which looms in the distance, and the Al Ashiq palace to the west.

Large numbers of ducks and coots were found in the area in winter. The hunting and fishing is prohibited in the area around the dam, which is likely encouraging duck populations in this area.

Main roads toward the site:

- From Bagdad: Baghdad – Tarmiya – Balad – Samara
- From Salah Adin: Tikrit – Al Dour - Al Ashiq Palace – Samara

Winter Observations were made on 12 February 2009 & Summer Observations were made on 31th May 2009:

Winter Birds: 18 species, 1286 individuals. The most important species were:

Pygmy Cormorant *Phalacrocorax pygmaeus* 14, Spanish Sparrow *Passer hispaniolensis* 26, Eurasian Stonechat *Saxicola torquatus* (*S. rubicola*) 1, Bluethroat *Luscinia svecica* 2, Common Starling *Sturnus vulgaris* 40, White-

Nature Iraq Draft Report

cheeked Bulbul *Pycnonotus leucogenys* 26, Eurasian Magpie *Pica pica* 4, Slender-billed Gull *Larus genei* 30, Gadwall *Anas strepera* 520, Little Grebe *Tachybaptus ruficollis* 19, Western Marsh Harrier *Circus aeruginosus* 5, Eurasian Coot *Fulica atra* 480, Great Black-headed Gull *Larus ichthyæetus* 4, Common Black-headed Gull *Larus ridibundus* 62, Great Cormorant *Phalacrocorax carbo* 26, Common Chaffinch *Fringilla coelebs* 3, Ferruginous Duck *Aythya nyroca* 6 and Glossy Ibis *Plegadis falcinellus* 18.

Summer Birds: 29 species, 132 individuals. The most important species were:

Aythya nyroca, (CC, GT), 2, Probable breeding; *Marmaronetta angustirostris*, (CC, GT), 4, Probable breeding; *Podiceps cristatus*, 1, Possible breeding; *Tachybaptus ruficollis*, (CC, END race), 8, Probable breeding; *Bubulcus ibis*, 6, Possible breeding; *Egretta garzetta*, 6, Possible breeding; *Ardea purpurea*, 2, Possible breeding; *Ardeola ralloides*, 3, Possible breeding; *Phalacrocorax pygmaeus*, (CC), 17, Possible breeding; *Glareola pratincola*, (CC), 3, Possible breeding; *Vanellus (Hoplopterus) indicus*, 9, Probable breeding; *Chlidonias leucopterus*, 1, Possible breeding; *Columba palumbus*, 2, Possible breeding; *Streptopelia decaocto*, 3, Confirmed breeding; *Columba livia*, 2, Probable breeding; *Merops [superciliosus] persicus*, 3, Possible breeding; *Coracias garrulus*, (CC), 1, Possible breeding; *Coracias benghalensis*, 2, Probable breeding; *Ceryle rudis*, 1, Possible breeding; *Halcyon smyrnensis*, 1, Possible breeding; *Hirundo rustica*, 5, Possible breeding; *Passer moabiticus* (CC), 37, Confirmed breeding; *Prinia gracilis*, 2, Possible breeding; *Acrocephalus arundinaceus*, 1, Possible breeding; *Corvus[corone] cornix*, (CC, EN race), 3, Possible breeding; *Turdoides altirostris*, (CC), 1, Possible breeding; *Sturnus roseus*, 1; *Cercotrichas [Erythropygia] galactotes*, 4, Confirmed breeding, and *Pycnonotus leucogenys*, (CC), 1, Possible breeding.

Other Fauna:

A. Invertebrates: Wide range of insect species and a few snail shells were examined by the team members. The site represented a good spot for invertebrate diversity.

B. Vertebrates:

Winter Fish: Fishing is not allowed in this area due to security reasons, but in winter, one person was noticed using an electro-fishing device and he collected some fish samples for the survey team.

According to the catch provided by electro-fishing, five species were recorded: *Barbus sharpeyi* (5% of the total catch), *Carassius auratus* (25%), *Cyprinus carpio* (10%), *Silurus triostegus* (10%) and *Liza abu* (50%). But from the interview with the fisherman it was learned that *Barbus esocinus* and *Barbus xanthopterus* also exist in the lake.

Reptiles: A group of Caspian Terrapins (*Clemmys caspia*) sitting on the broken reed roots were monitored from a distance through the spotting scope.

Amphibians: Individual Green Toads (*Bufo viridis*) were the only species found during the survey.

Mammals: None were seen in the site during the survey, but locals reported the existence of many canines such as Asiatic Jackals (*Canis aureus*) and Common Red Foxes (*Vulpus vulpus*). Water Buffalo (*Bubalus bubalus*) were seen crossing through some marshy areas near the site.

Flora: Mainly *Phragmites*, *Typha*, and *Tamarix*, Sedge, *Populus*, *Eucalyptus*, date-palm, fig, *Morus*, citrus trees, *Ziziphus*, pear, apricot, grape and watermelon.

Conservation Significance:

Winter Birds: The following conservation concern (CC) species were noted at the site: Ferruginous Duck *Aythya nyroca* (GT), Slender-billed Gull *Larus genei*, Pygmy Cormorant *Phalacrocorax pygmaeus*, White-cheeked Bulbul *Pycnonotus leucogenys*, and Little Grebe *Tachybaptus ruficollis*.

Summer Birds: The following conservation concern (CC) species were noted at the site:

Aythya nyroca, (CC, GT), *Marmaronetta angustirostris*, (CC, GT), *Tachybaptus ruficollis*, (CC, END race) *Phalacrocorax pygmaeus*, (CC), *Glareola pratincola*, (CC), *Coracias garrulus*, (CC), *Passer moabiticus* (CC), *Turdoides altirostris*, (CC), *Corvus[corone] cornix*, (CC, END race), *Pycnonotus leucogenys*, (CC).

Nature Iraq Draft Report

Winter Fish: The existence of three important fish species (*Barbus sharpeyi*, *Barbus esocinus* and *Barbus xanthopterus*) make this lake valuable for fisheries.

Conservation Issues & Recommendations for the Site: This site is held under strict military supervision due to the current security situation. Great political and martial obstacles within this region have led to its environmental preservation with a few exceptions, due to a lack of civilian inhabitants. This inturn precludes hunting birds, although electrofishing is still. Much remains unknown about this site despite the recent survey. But environmental impacts were observed, such as overfishing, sheep grazing, habitat destruction and an increase in building construction coupled with the disturbances caused by military vehicles and troop training exercises without the oversight or any environmental action plan for the purpose of conservation. Therefore, an especially detailed survey and water quality study are highly recommended for this site, as well as increased communication with officials and site authorities for greater access to the site in the future.

As the lake is guarded by the Iraqi army and they forbid any fishing activity (though the presence of equipment for electro-fishing seen in winter may indicate otherwise), this may help the fish assemblage to flourish, but the site needs active environmental management and more research in order to estimate the stock health and capacity to support fishing activity in a sustainable manner.

KBA (SD2) - Tharthar Lake and Dhebaeji fields- (IBA 007)



Plate 16: *Left:* Road map to the site highlighted in red. *Right:* The fishermen camp on the muddy shores of Tharthar Lake. © A.F. Omar 2009.

Site Description: The area near the northern portion of Tharthar is identical to the habitat of the western edge of Tharthar (AN9) that was discussed previously with few exceptions. These include the gravel hillsides covered in grass near the lake and a number of flat, sandy near-islands attached to the lake shore extending out into the middle of the lake. The biggest exception, however, is that it includes hectares of open, arid steppes and cultivated areas filled with wheat and corn near the Al Debe'e steppes that also harbor scattered halophyte vegetation and is considered one of the most important grazing areas in Salah Ad Din and in Iraq as a whole. While these are invaluable for cattle, they are also considered the main wintering grounds for many threatened species of migrant birds and mammals such as Saker Falcon (*Falco cherrug*), Houbaras or McQueen's Bustards (*Chlamydotis macqueenii*), Sociable Lapwings (*Vanellus gregarius*), Sociable Plover (*Chettusia gregaria*), and Arabian Oryx (*Oryx leucoryx*) (Please see the AN9 site review). This habitat dominates the landscape of the north and northeast rib of Tharthar Lake.

Poor security conditions did not allow for free field work to cover most of the targeted area in winter. The coordinates of the initial winter survey point were N33 48 19.3, E43 28 37.0, which is located on the southeastern portion of the lake.

Nature Iraq Draft Report

Main roads toward the site:

- From Bagdad: Bagdad – Tarmiya – Balad – Samara – Tikrit – Al Owja – Al Debae'e – the site.
- From Tikrit: Tikrit – Al Owja – Al Debae'e – the site.

Winter Observations were made on 18 February 2009 & Summer Observations were made on 25th May 2009:

Winter Birds: 24 birds, 539 individuals. The most important species were:

Pied Wheatear *Oenanthe pleschanka* 2, Little Egret *Egretta garzetta* 12, Slender-billed Gull *Larus genei* 180, Armenian/Yellow-legged Gull *Larus armenicus/michabellis* 17, Little Stint *Calidris minuta* 35, Common Redshank *Tringa tetanus* 3, Little Ringed Plover *Charadrius dubius* 11, White-throated Kingfisher *Halcyon smyrnensis* 4, Eurasian Coot *Fulica atra* 22, Long-legged Buzzard *Buteo rufinus* 3, Western Marsh Harrier *Circus aeruginosus* 2, Great Cormorant *Phalacrocorax carbo* 27, Common Woodpigeon *Columba palumbus* 28, Northern Wheatear *Oenanthe oenanthe* 4, Eurasian Skylark *Alauda arvensis* 2, Brown-necked Raven *Corvus ruficollis* 4, Mallard *Anas platyrhynchos* 14, Eurasian Teal *Anas crecca* 32, Red-crested Pochard *Netta rufina* 49, Common Pochard *Aythya ferina* 26, Great Crested Grebe *Podiceps cristatus* 5 and Common Kestrel *Falco tinnunculus* 1.

Summer Birds: 36 species, 198 individuals. The most important species were:

Anas penelope, 1; *Marmaronetta angustirostris*, (CC, GT), 4, Probable breeding; *Ardea cinerea*, 2; *Egretta garzetta*, 3; *Fulica atra*, 12; *Larus armenicus/michabellis*, (CC), 3; *Himantopus ostralegus*, 5; *Larus ridibundus*, 1; *Charadrius hiaticula*, 6; *Sterna hirundo*, 1, Possible breeding; *Calidris ferruginea*, 9; *Calidris alpina*, 2; *Charadrius leschenaultii*, 5; *Gelochelidon [Sterna] nilotica*, 3, Possible breeding; *Charadrius alexandrinus*, 8, Possible breeding; *Charadrius dubius*, 27, Possible breeding; *Calidris minuta*, 12; *Sternula [Sterna] albifrons*, 6, Probable breeding; *Vanellus (Hoplopterus) indicus*, 2, Probable breeding; *Philomachus pugnax*, 2; *Larus genei*, (CC), 27, Possible breeding; *Vanellus (Hoplopterus) spinosus*, (CC), 5, Probable breeding; *Vanellus leucurus*, (CC), 5; *Tringa glareola*, 2; *Pterocles alchata*, (CC), 5, Probable breeding; *Columba livia*, 4, Probable breeding; *Merops [superciliosus] persicus*, 2, Confirmed breeding; *Ceryle rudis*, 1; *Hirundo rustica*, 5, Confirmed breeding; *Galerida cristata*, 3, Possible breeding; *Corvus[corone] cornix*, (CC, EN race), 5, Probable breeding; *Passer domesticus*, 13, Possible breeding; *Lanius minor*, 2; *Oenanthe pleschanka*, 1, Possible breeding; *Lanius collurio*, 3, Possible breeding, and *Muscicapa striata*, 1.

Other Fauna:

A. Invertebrates: None, but good habitat for terrestrial insects, spiders and scorpions.

B. Vertebrates:

Winter Fish: The fish community seems very healthy and fish have good growth with some of the largest fish recorded for Iraq. Fishing was by nets with mesh size of approximately 2 to 10 cm with a daily catch of about 30 kg/boat-day and about 100 boats were noticed.

Ten fish species were recorded with a catch ration (based on sample) of: *Aspius vorax* (15% of the catch), *Barbus xanthopterus* (31%), *B. luteus* (12%), *B. sharpeyi* (3%), *Carassius auratus* (3%), *Cyprion kais* (3%), *Cyprinus carpio* (15%), *Silurus triostegus* (3%), *Chondrostoma regium* (3%) and *Liza abu* (12%).

Reptiles: None observed during the survey.

Amphibians: None observed during the survey.

Mammals: None observed during the survey, though there are many specimens in the Iraqi Natural History Museum that indicate the previous existence of various canine species.

Flora: Mainly wheat and corn fields near the site with scattered xerophytic vegetation such as *Atrémisia*, *Alhagi*, *Achillea* and *Acacia*.

Conservation Significance:

Winter Birds: The following conservation concern (CC) species were noted at the site: Armenian/Yellow-legged Gull *Larus armenicus/michabellis*, Slender-billed Gull *Larus genei*, and Red-crested Pochard *Netta rufina*.

Nature Iraq Draft Report

Summer Birds: The following conservation concern (CC) species were noted at the site:

Marmaronetta angustirostris, (CC, GT), *Larus armenicus/michabellis*, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), *Vanellus leucurus*, (CC), *Pterocles alchata*, (CC), *Corvus[corone] cornix*, (CC, END race).

Winter Fish: Existence of *Barbus xanthopterus* and *B. sharpeyi* make this site very important also the growth rate that the fish achieved was some of the highest in the surveyed areas throughout Iraq during the KBA program.

Conservation Issues & Recommendations for the Site: The main harbor for the lake was located here and there were many fishermen, boats and fishing gear present. This is the main point of departure for fish sold in the local markets in Tikrit. The fishermen were generally observed to use legal fishing nets. Due to the great depth of the lake, reaching nearly 80 m in certain places, other illegal fishing procedures are largely useless. The human environmental impacts upon the lake appear to be relatively weak, particularly given the size of the lake, although these issues are ongoing and could worsen in the future. Therefore, it is urgent to establish effective legislation governing the use of the lake for fishing along with an environmental action plan. It is also recommended that dedicated fish and water quality surveys be carried out in the future.

Also, given the vast size of the surrounding steppes, dedicated field surveys are recommended to uncover new biological sites which might hold a number of globally important species with cooperation and assistance by the authorities such as the national Iraqi police and army. Therefore, it will be necessary to engage local authorities in dialogue and communication in order to facilitate easy mobility for the survey team in the future.

KBA (SD3) - Mahzam and Al Alam district - (IBA 007)



Plate 17: *Left:* Road map to the site highlighted in red. *Right:* The photographer standing on the Mahzam ground looking at Al Alam on the opposite side. © A.F. Omar 2009.

Site Description: The site is divided into two homogeneous habitats on opposite banks of the Tigris River. It is located northeast of Baghdad and Tikrit, the capital of Salah Ad Din province, and east of the main highway towards Beji township and Mosul to the north. The local landscape includes dense fruit and date-palm orchards scattered amongst bush and thickets. The land is arid and fenced in by elevated rocky cliffs extending along the western bank of the Tigris until it reaches Tikrit. This area is considered a typical breeding habitat for many resident raptor species such as the Common Kestrel and was formerly a colony of the critically endangered Northern Bald Ibis (Armesto, M.J.J., Boehm, C. & C. Bowden, 2006, p 12), but due to security concerns, the team could not stop to confirm this.

Nature Iraq Draft Report

There are many grape farms distributed throughout the site along with other fruits and vegetables. These gave way to bushes and shrubs when the riverbanks turn to stone and gravel with thick *Populus* trees lining both sides. The eastern arm of the Tigris River is similar to Al Mahzam, but conversely the Al Alam region is characterized by date-palm trees and fruit orchards planted above wheat and barley fields. There are a few stony islands near the Al Mahzam riverbank with scattered *Tamarix* plants providing good rookeries and roosting spots for resident herons and waders. There were also some gravel mines located on the Al Mazam riverbank.

Main roads toward the site:

- From Bagdad: Baghdad – Tarmiya – Balad – Samara – Tikrit –Mahzam
- From Salah Ad Din: Tikrit –Mahzam

Summer Observations were made on 1st of Jun 2009:

Birds: 24 species, 86 individuals. The most important species were:

Ardea cinerea, 2; *Egretta garzetta*, 3; *Ardea purpurea*, 2; *Ardeola ralloides*, 1; *Falco tinnunculus*, 1, Possible breeding; *Sternula [Sterna] albifrons*, 2; *Vanellus (Hoplopterus) indicus*, 5, Probable breeding; *Columba palumbus*, 3, Confirmed breeding; *Streptopelia decaocto*, 5, Confirmed breeding; *Merops [superciliosus] persicus*, 4, Possible breeding; *Coracias garrulus*, (CC), 2, Possible breeding; *Hirundo rustica*, 6, Confirmed breeding; *Ficedula albicollis*, 2, Possible breeding; *Phylloscopus collybita*, 1; *Galerida cristata*, 3, Possible breeding; *Passer moabiticus*, (CC), 20, Confirmed breeding; *Pica pica*, 3, Possible breeding; *Prinia gracilis*, 1, Possible breeding; *Corvus[corone] cornix*, (CC, END race), 2, Possible breeding; *Passer domesticus*, 13, Confirmed breeding; *Turdoides altirostris*, (CC), 1, Possible breeding; *Lanius collurio*, 1; *Cercotrichas [Erythropygia] galactotes*, 1, Possible breeding, and *Pycnonotus leucogenys*, (CC), 2, Possible breeding.

Other Fauna:

A. Invertebrate: Snails and slugs species were distributed in the site with a wide spectrum of aquatic and terrestrial insects such as Dragon flies, Demoiselle Flies, Ants, Wasps, Honey Bees, Coleoptera species such as Ground Beetles and Boatman Beetles with other Hemiptera species such as Water striders. Species of spider were noticed roosting on many *Populus* trunks.

B. Vertebrate:

Reptiles: None seen during the survey, but could be a potential site for reptilian species. Locals report the presence of water and terrestrial snakes in the site,

Amphibians: Green Toads were heard calling in the thickets during sunset.

Mammals: The team has heard the howls of Asiatic Jackals from about 100--120 m within *Tamarix* thickets across the river on the Al Alam side. A considerable number of local farmers indicate the existence of the nocturnal Indian Crested Porcupine (*Hystrix indica*) roaming the hills and clifftops, scavenging on the exposed plants roots and human refuse diffused by night. A herd of Water Buffaloes (*Bubalus bubalus*) consisting of 8 animals has been seen grazing in the area as well.

Flora: Grape orchids mainly, also fig, pear, apricot, pomegranate, date-palm, and other fruits. Wheat and barley are grown on the Al Aalm side, and *Populous*, *Tamarix*, *Eucalyptus*, *Ziziphus*, and *Morus* have been identified in the site.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Coracias garrulus, (CC), *Passer moabiticus*, (CC), *Corvus[corone] cornix*, (CC, END race), *Turdoides altirostris*, (CC), *Pycnonotus leucogenys*, (CC).

Nature Iraq Draft Report

Conservation Issues & Recommendations for the Site: The site contains many cultivated farms and agricultural fields which results have caused some habitat destruction and disturbed habitats. The water pumping stations and electrical generators located on either side of the river provides water and electricity to the neighboring townships of Mahzam and Al Alam, but they produce noise and industrial pollution in the site (oil and fuel spills, air pollution). Gravel mining, which faces few controls in Iraq, is likely also be causing impacts to fish and invertebrates diversity and to overall water quality though disruption of spawning beds and rearing areas, damage to the riparian habitats, introduction of toxins and physical changes to the aquifer.

In addition, a considerable number of local families and individuals use the riverbanks from Tikrit to Mahzam as a vacation spot, which is a quite prevalent activity in the spring and summer but less so in winter. Therefore, there is a great deal of human refuse such as plastic bottles and bags, disposable dishes and other waste carried away by the water current that in turn accumulates on the banks and could become extremely harmful to the local habitat. There is also some amount of illegal fishing activities in area, occasionally electrofishing but mainly poison applications and a complete absence of any environmental legislation or enforcement mechanism to control them. An environmental plan would be highly welcomed at this site in order to preserve its natural state.

The security situation in this region has dramatically improved but some threats still remain. Therefore, informing the local authorities such as the national Iraqi police or the local councils, (Al Sahwat) will be an effective ways to reduce any further danger faced by the surveying team on future visits.

KBA (SD4) - Abu Dalaf and Shari Lake - (IBA 009)



Plate 18: *Left:* Road map to the site highlighted in red. *Right:* The local landscape with marshlands in the distance. © A.F. Omar 2009.

Site Description: The site is located northeast of Baghdad, southeast of Tikrit, the capital of Salah Ad Din province and south of Al Dour township. The site is a mixture of farmlands, marshes, and open, sandy steppes. The survey included a first stop in an area along the Al Resasi River, a narrow branch of the Tigris south of Al Dour township. This area was divided during the survey into two habitats. One consisted of thick reed beds and farmland extending towards Samara along the western bank. The second habitat on the eastern side of the river contained open tracts of arid land with scattered halophytic vegetation mainly consisting of *Populus* and *Tamarix* with occasional farms and vegetable fields. Also in the area is the ancient “Wall of Shnass” belonging to the Abbasid dynasty.

The second stop was near the ancient Abbasid mosque of Abu Dalaf, which is one of the many archaeological traces of ancient civilizations that occurred in the area. Here there are endless steppes dotted with xerophytic plants that dominate the flora of this area, although some date-palm orchards extend eastward near Samara and can be seen from a noticeable distance away.

Nature Iraq Draft Report

In winter, the team was not able to reach the Shari Depression because of security concerns.

Main roads to the site:

From Bagdad: Baghdad – Tarmiya – Balad – Samara – Aldour – Abu Dalaf

From Salah Ad Din: Tikrit - Samara – Al Dour – Abu Dalaf.

Summer Observations were made on 3ed of June 2009:

Birds: 16 species, 55 individuals. The most important species were:

Bubulcus ibis, 2; *Egretta garzetta*, 1; *Ardeola ralloides*, 3; *Falco naumanni*, (CC,VU), 2, Probable breeding; *Columba palumbus*, 17, Probable breeding; *Streptopelia decaocto*, 2, Confirmed breeding; *Columba livia*, 2, Possible breeding; *Coracias garrulus*, (CC), 1, Possible breeding; *Coracias benghalensis*, 1, Possible breeding; *Turdoides caudata*, 1, Possible breeding; *Galerida cristata*, 3; *Passer moabiticus*, (CC), 7, Confirmed breeding; *Pica pica*, 1, Possible breeding; *Corvus[corone] cornix*, (CC, END race), 2, Possible breeding; *Passer domesticus*, 9, Probable breeding, and *Pycnonotus leucogenys*, (CC), 1, Possible breeding.

Other Fauna:

A. Invertebrates: Good site for terrestrial and aquatic insects. Local policemen on guard in the area of the second stop reported that a large population of scorpions occurred in the area

B. Vertebrate:

Reptiles: None were seen, but local reports indicate many venomous snakes inhabit the area and cause numerous casualties among children.

Amphibians: None observed during the survey.

Mammals: No wild animals were seen, but the site provides optimal habitat for many canine species. Herds of Water Buffalo (*Bubalus bubalus*) were observed grazing during the team's first stop.

Flora: The first stop mainly consisted of *Phragmites*, *Typha*, *Tamarix*, *Populus*, and *Eucalyptus*. The second stop was poorly vegetated except for xerophytic plant species such as *Alhagi*, *Astragalus*, and date-palm orchards.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Falco naumanni, (CC, VU), *Coracias garrulus*, (CC), *Passer moabiticus* (CC), *Corvus[corone] cornix*, (CC, END race) and *Pycnonotus leucogenys*, (CC).

Conservation Issues & Recommendations for the Site: Agriculture and cattle grazing combined with changing habitats due to human disturbance were the only environmental obstacles seen in the two main observation points in the site. A detailed survey dealing with birds and other animals is advised to determine the most critical habitats in the area. The site is still quite unsecure and unstable, however, and the extreme eastern and western edges of the site have yet to be surveyed for this reason. The team was advised by the Iraqi national police officers accompanying them to proceed with their work quickly and carefully to avoid any security mishap, as this was one of the more dangerous areas the team visited in Central and Western Iraq. Therefore, it is critical to communicate with officials and local authorities in order to arrange an appropriate escort for future surveys.

III. Sites in Diyala Province

KBA DY1 - Himreen Lake - (Potential KBA Site)

Site Description: Himreen Lake is one of the main lakes of Iraq. It is located on the Diyala River that comes from the Iranian mountains. It lies about 150 km northeast of Baghdad just beyond the Himreen mountain chain and is created by the Himreen dam. The lake is well-known for its high diversity in bird species. During the visit, the wind was high, and there was much dust that hindered vision beyond more than 100 meters. The fieldwork of the team in winter was allowed just around the dam area due to security concerns. The team was not able to go further to the northern or eastern parts of the lake because of the bad security conditions in these areas. Because of the bad weather conditions it was very difficult to birdwatch nevertheless, some groups of waterfowl were found roosting out of the high winds in the southern part of the lake.

The team could not visit during the summer survey for the following reasons:

- The site and specifically the Himreen area was recently involved in one of the largest military actions in the entire Diyala province (called Bashe'er Al Khaer). This prevented the team from visiting the site, as the military had declared it a restricted area.
- On the advice of the head of the Environmental Directorate in Diyala, local police and guides prevented the team from going toward the site as stated above. The team's cameras and digital equipment raised many questions while traveling in the area. Therefore, more official communication with Iraqi authorities in Diyala is strongly recommended for the next scientific survey.

Winter Observations were made on the 10th of February 2009:

Winter Birds: 21 species, 1024 Individuals. The most important species were:

Little Grebe *Tachybaptus ruficollis* 16, Armenian/Yellow-legged Gull *Larus armenicus/michabellis* 62, Common Snipe *Callinago callinago* 3, Eurasian Skylark *Alauda arvensis* 14, Common Starling *Sturnus vulgaris* 29, White Wagtail *Motacilla alba* 22, Eurasian Crag Martin *Ptyonoprogne [Hirundo] rupestris* 16, Eurasian Teal *Anas crecca* 93, Mallard *Anas platyrhynchos* 19, Great White Egret *Ardea [Egretta] alba* 12, Little Egret *Egretta garzetta* 38, Great Cormorant *Phalacrocorax carbo* 80, Common Moorhen *Gallinula chloropus* 16, Eurasian Coot *Fulica atra* 110, Northern Lapwing *Vanellus vanellus* 6, Northern Shoveler *Anas chrypeata* 75, Common Black-headed Gull *Larus ridibundus* 320 and Slender-billed Gull *Larus genei* 31.

Winter Fish: Fishing was not allowed for even for scientific purposes, due to security reasons so the following information comes from interviews with the operators of the electricity plant.

Seven fish species are found in the lake and include: *Aspius vorax*, *Barbus esocinus*, *Barbus xanthopterus*, *Barbus luteus*, *Carassius auratus*, *Cyprinus carpio*, and *Silurus triostegus*.

Conservation Significance:

Winter Birds: The following conservation concern (CC) species were noted at the site: Armenian/Yellow-legged Gull *Larus armenicus/michabellis*, Slender-billed Gull *Larus genei*, and Little Grebe *Tachybaptus ruficollis*.

Winter Fish: The presence of conservation concern *Barbus esocinus* and *Barbus xanthopterus* indicate that this may be an important site.

Conservation Issues & Recommendations for the Site: This lake is an important water reservoir in Central Iraq and it may serve as an habitat for some threatened fish species (as mentioned above). This site was only visited during winter 2009 KBA survey and needs additional surveys to know more about its biodiversity, also to spot the kinds of threats that affect the area. Therefore, it is recommended to visit this site in the future when security improves.

KBA (DY2) - Baquba Wetland - (IBA 011)

This site has been not visited by any scientific research or survey team due to similar security as were outlined for the Himreen Hills DY1–potential KBA, IBA site (Please see Himreen Hills DY1 site review above), especially since the site was listed as one of the main important areas in Iraq and Middle East (Evans, 1994).

KBA (DY3) - Attariya Plains - (IBA 013)



Plate 19: *Left: Road map to the site highlighted in red. Right: The site itself.* © A.F. Omar 2009.

Site Description: The site is a combination of grassy, arid steppes with uncultivated open land dotted with shrubs and seasonal pools bordered by reeds and *Typha* vegetation and with occasional farms and orchards. These mainly consist of citrus and date-palm trees which are irrigated from branches of the Tigris River that pass through the site.

The area is situated east-northeast of Baghdad, southwest of Baquba, the capital city of Diyala province in eastern Iraq near Kana'an and Baladroz. The main habitat of Baladroz includes dense date-palm orchards with other fruits planted below such as citrus. Towards the southern end of the site the landscape changes to open steppes covered in a mixture of the landscapes mentioned above as well as halophytic and xerophytic plants, namely *Acacia* and *Alhagi*

Main roads to the site:

- From Diyala: Baquba – Kana'an - Baladroze – Attariya plains.
- From Bagdad: Baghdad – Sha'b- Jedadat Al Shat – Al Khalis –Baquba – Kana'an -Baladroze – Attariya plains.

Summer Observations were made on 3rd of June 2009:

Birds: 27 species, 84 individuals. The most important species were:

Francoelinus francolinus, 1, Possible breeding; *Nycticorax nycticorax*, 2; *Bubulcus ibis*, 3, Possible breeding; *Plegadis falcinellus*, 2; *Egretta garzetta*, 1; *Ardeola ralloides*, 2; *Ciconia ciconia*, 5, Confirmed breeding; *Falco tinnunculus*, 1, Possible breeding; *Gallinula chloropus*, 1, Possible breeding; *Himantopus ostralegus*, 2, Possible breeding; *Glareola pratincola*, (CC), 2, Probable breeding; *Sternula [Sterna] albifrons*, 1; *Vanellus (Hoplopterus) indicus*, 2, Probable breeding; *Vanellus (Hoplopterus) spinosus*, (CC), 1, Possible breeding; *Chlidonias hybrida*, 2; *Columba palumbus*, 15, Confirmed breeding; *Streptopelia decaocto*, 9, Probable breeding; *Streptopelia senegalensis*, 2, Possible breeding; *Columba livia*, 1; *Merops [superciliosus] persicus*, 3, Possible breeding; *Coracias benghalensis*, 1, Possible breeding; *Ceryle rudis*, 2, Probable breeding; *Halcyon smyrnensis*, 1, Possible breeding; *Hirundo rustica*, 7, Possible breeding; *Galerida cristata*, 2, Possible breeding, and *Passer domesticus*, 12, Confirmed breeding.

Nature Iraq Draft Report

Other Fauna:

A. Invertebrates: Wide diversity of terrestrial seen during the survey, large distribution of Arachnids and Mollusca species.

B. Vertebrates:

Reptiles: Suitable habitat of many reptilian species, but unfortunately the team found none. However, local reports confirmed that many species of snake were active in the area.

Amphibians: Black sub-adult Green Toads (*Bufo viridis*) were seen swimming in narrow irrigation canals with patches of shallow water patches distributed throughout the site.

Mammals: A freshly-killed Asiatic Jackal (*Canus auoens*) was examined by the team along the roadside between Baquba and Baladroze.

Flora: *Phragmites*, *Typha*, *Salix*, *Acacia*, *Albahi*, *Ziziphus*, *Euocaptus* and *Populus*, in addition to commercial species such as date-palm trees, fig, pomegranate, apricot, berry, pear, cape apple, and fields of wheat and barley have been noticed beside the road.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Two birds species were observed in the site *Glareola pratincola*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC)

Conservation Issues & Recommendations for the Site: Agriculture is the greatest environmental impact in the area. Many uncultivated steppes are facing exploitation as local farmers require land for irrigation and grazing for herds of sheep, goats, and cows. Therefore, habitat destruction and human interference in these ecosystems is a negative factor in this area. An environmental management plan to outline what is needed to conserve the local habitat is strongly recommended for both the site itself and the surrounding region.

At Baladroze, the team encountered a branch of the Falconer and Hunter Society. Its members indicated that there was active hunting of Houbaras (*Chlamydotis macqueeni*) by Saker Falcon (*Falco cherrug*) with other falcon species such as the Barbary Falcon (*Falco peregrinoides*) and Peregrine Falcon (*Falco peregrines*). This hunt takes place annually in the area, which is considered to be one of the main winter habitats for these prey species in the surrounding area. To control overhunting, global hunting regulations are recommended to be put into effect here as well as elsewhere in Iraq.

As this site is located in Diyala province and geographically close to Baghdad as Evans suggests in the Important Birds of the Middle East (1994). The site is unsecure and unstable. Thus, strong communication with local officials and authorities in the military is recommended to arrange for the team to conduct further field surveys in the future.

KBA (DY4) - Mandli - Potential KBA Site

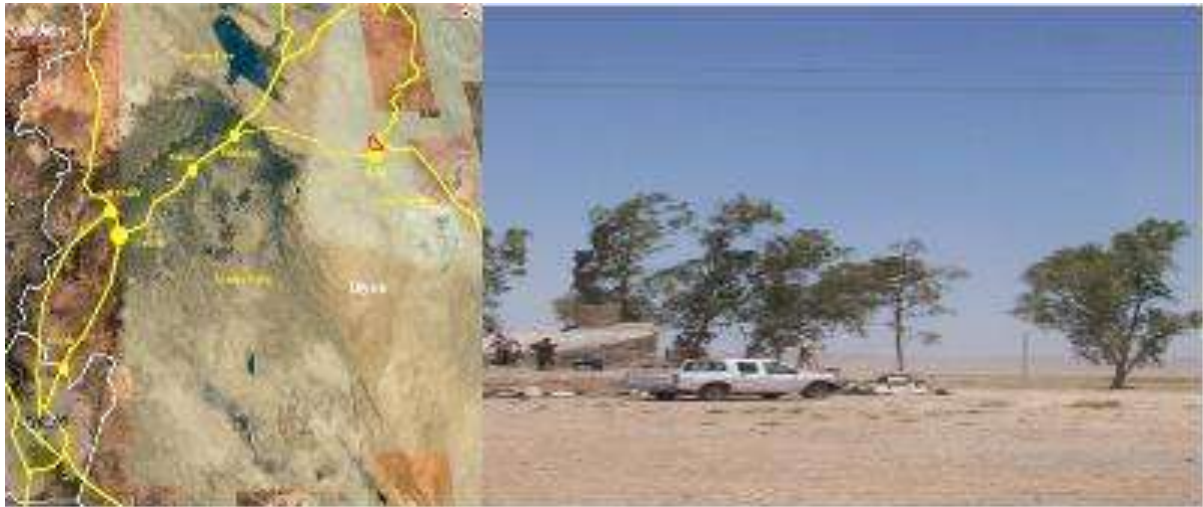


Plate 20: *Left:* Road map to the site highlighted in red. *Right:* The Bride of Mandli statue, the main art feature in the city memorializing the Iraq-Iranian war victims. © A.F. Omar 2009.

Site Description: The site is located on the eastern border of Iraq, about 5 km from the Iraqi-Iranian border. It is considered to be the easternmost township in Iraq. During the Iraqi-Iranian War, the site was heavily bombed and witnessed extensive combat which destroyed much of its natural habitat and dramatically changed the biological profile of this unique environment.

Situated beneath a rocky extension of the Himreen hills on the eastern edge of the site, the hills are considered to be a part of the natural border of Iraq. Below them are open steppes with flat, sandy terrain covered with xerophytic and halophytic vegetation with occasional fresh and salty seasonal pools. The dense date-palm trees are planted alongside fruit orchards and vegetable fields near the old city of Mandalit to the south. A line of sandy cliffs pass through the site and are considered to be prime breeding grounds for resident raptors such as the Saker Falcon (*Falco cherrug*), Barbary Falcon (*Falco pelegrinoides*), Common Kestrel (*Falco tinnunculus*), and probably the Lesser Kestrel (*Falco naumanni*).

Main roads to the site:

From Diyala: Baquba – Kana'an - Baladroze – Mandli.

From Bagdad : Baghdad – Sha'b- Jedadat Al Shat – Al Khalis – Baquba – Kana'an - Baladroze – Mandli

Summer Observations were made on 4th of June 2009:

Birds: 8 species, 26 individuals. The most important species were:

Pterocles alchata, (CC), 5, Possible breeding; *Columba palumbus*, 3, Possible breeding; *Streptopelia decaocto*, 2, Possible breeding; *Merops [superciliosus] persicus*, 5, Possible breeding; *Merops apiaster*, 1; *Coracias garrulus*, (CC), 1, Possible breeding; *Galerida cristata*, 2, Probable breeding, and *Pycnonotus leucogenys*, (CC), 7, Confirmed breeding.

Other Fauna:

A. Invertebrate: Suitable habitat for terrestrial insects, Arachnids and other Arthropods species.

B. Vertebrate

Reptiles: None were seen during the survey.

Amphibians: None were seen.

Mammals: None were seen

Flora: Date-palm orchards with fruit planted beneath such as orange, lemon, fig, apricot, pear, and others. Wild plant species include *Acacia*, *Alhagi*, *Ziziphus* and small amounts of *Phragmites* in some places.

Conservation Significance:

Nature Iraq Draft Report

Birds: The following conservation concern (CC) species were noted at the site: *Pterocles alchata*, (CC), *Coracias garrulus*, (CC), and *Pycnonotus leucogenys*, (CC).

Conservation Issues & Recommendations for the Site: The team was saddened by the huge environmental losses caused by the Iraqi-Iranian War which can still be seen in the area. The war destroyed and changed nearly every habitat present. Large numbers of date-palm trees have been removed or died in the heavy bombings that the site faced during the war or as a result of military construction projects at the site. Recently, the Iranians have blocked and redirected all the river branches that cross the border into Iraqi territory through Mandli, which significantly harmed local farming communities due to the lack of water and caused major environmental damage. A few grazing sheep have been observed at the site as the area has long been used for grazing, lack of water and possible dam building on the Iranian side of the border is the main cause of increased dehydration of the site.

Since the site is located in Diyala province near the Iranian border, it is under a number of special security conditions and is difficult to access by individuals or groups, particularly those carrying large amounts of unfamiliar equipment. Therefore, detailed communication is required with officials and military authorities to arrange for the survey team to return in the future and safely carry out their work.

IV. Sites within the Capital Baghdad

KBA (BG1) - Jadriyah and Umm Al Khanazeer Island (IBA 015)



Plate 21: *Left:* Road map to the site highlighted in red. *Right:* The University of Baghdad is a major feature of the site. © A.F. Omar 2009.

Site Description: The site is located inside Baghdad, the capital of Iraq, southeast of the city center on a tongue-shaped extension of the Rasafsa side of Baghdad facing the Karkh side caused by an oxbow of the Tigris River. This location is familiar to many Iraqis who live or regularly visit the capital, since the site holds the University of Baghdad, an internationally and nationally famous educational facility. In the past, the site was densely covered with date-palm trees as well as citrus and other fruits and vegetables as well as thick brush that made movement very difficult.

The site now consists of two homogenous habitats: one in Rasafa on the east side of the river called Jadriyah, and the other in Karkh on the west side called Umm Al Khanazeer Island, which gained its name from the many wild boars which once lived there. The area's original habitat was date-palm orchards and farmland with dense thickets before the University of Baghdad was constructed in the 1960's. Now, the site is covered with buildings and little of the original habitat remains, though pockets still exist on the south and western edges of the campus as described above. The western part of the Jadriyah site, along the Tigris River has been converted into an artificial pool for tourists with water from the Tigris via water regulators located in front of the pool facing the river pumping a continuous stream of water. These are blocked until the water becomes shallow or evaporates during the summer, exposing the submerged vegetation that serves as a good place to observe migrant waterfowl and waders.

A zone of uncultivated arid land extends to the northeast edge of the site, where there is year-round agriculture and many vegetable fields. The dense date-palm trees are still present, though they are more common near the southern edge of the site across the river in the Doura sector of Baghdad. This, however, is outside of the boundaries of the survey site.

Main roads to the site:

- From Bagdad only: Baghdad areas landmarks and Al Jadriyah, University of Baghdad complex, Al Jadriya bridge towards Saydiya and Bae'a.

Summer Observations on 17th of May 2009:

Birds: 59 species, 445 individuals. The most important species were:

Francoelinus francoelinus, 3, Probable breeding; *Nycticorax nycticorax*, 4, Possible breeding; *Bubulcus ibis*, 13, Possible breeding; *Ardea cinerea*, 1; *Egretta garzetta*, 1; *Ardea purpurea*, 2; *Ardeola ralloides*, 2; *Phalacrocorax pygmaeus*, (CC), 7; *Falco tinnunculus*, 2, Confirmed breeding; *Gallinula chloropus*, 2, Possible breeding;

Nature Iraq Draft Report

Himantopus ostralegus, 3, Possible breeding; *Glareola pratincola*, (CC), 2, Possible breeding; *Tringa nebularia*, 1; *Tringa totanus*, 1; *Sterna hirundo*, 1; *Sternula [Sterna] albifrons*, 2; *Vanellus (Hoplopterus) indicus*, 8, Confirmed breeding; *Larus genei*, (CC), 6; *Vanellus (Hoplopterus) spinosus*, (CC), 1, Possible breeding; *Chlidonias hybrida*, 2; *Columba palumbus*, 17, Confirmed breeding; *Streptopelia decaocto*, 40, Confirmed breeding; *Streptopelia senegalensis*, 32, Confirmed breeding; *Columba livia*, 37, Confirmed breeding; *Psittacula krameri*, 2, Confirmed breeding; *Apus apus*, 3; *Merops [superciliosus] persicus*, 31, Confirmed breeding; *Alcedo atthis*, 1, Possible breeding; *Upupa epops*, 5, Confirmed breeding; *Merops apiaster*, 5; *Coracias benghalensis*, 4, Possible breeding; *Ceryle rudis*, 1, Possible breeding; *Halcyon smyrnensis*, 2, Possible breeding; *Hirundo rustica*, 42, Confirmed breeding; *Oenanthe hispanica*, 1; *Turdoides caudata*, 6, Confirmed breeding; *Sylvia communis*, 1; *Galerida cristata*, 6, Confirmed breeding; *Passer moabiticus*, (CC), 2, Possible breeding; *Iduna [Hippolais] pallida*, 2, Possible breeding; *Pica pica*, 5, Possible breeding; *Prinia gracilis*, 7, Confirmed breeding; *Lanius excubitor*, 1; *Acrocephalus arundinaceus*, 1, Possible breeding; *Corvus [corone] cornix*, (CC, EN race), 8, Possible breeding; *Passer domesticus*, 59, Confirmed breeding; *Turdoides altirostris*, (CC), 12, Probable breeding; *Lanius nubicus*, (CC), 2; *Acrocephalus menanopogon*, 1, Possible breeding; *Cercotrichas [Erythropygia] galactotes*, 4, Confirmed breeding; *Riparia riparia*, 3; *Muscicapa striata*, 2, Possible breeding; *Motacilla flava*, 1; *Pycnonotus leucogenys* (CC), 27, Confirmed breeding; and *Phylloscopus trochilus*, 1.

Other Fauna:

A. Invertebrates: Different types of snails and slugs were found on the site. Also, a great range of insects in different orders and families such as ants, wasps, flies, beetles, butterflies, moths, cicadas, grasshoppers, crickets and others were observed. Other invertebrate species such as spiders and scorpions were also found. It is noteworthy that the second grade and graduate students in the Biology Department conduct a regular search for insect species every year.

B. Vertebrates:

Reptiles: Different lizards and Geckos spp (*Hemidactylus spp*) as well as snakes and vipers were discovered. Also, Caspian Terrapin (*Clemmys caspia*) and Soft-shelled Turtles (*Trionyx euphraticus*) have been seen and reported roaming in the site which will require additional surveys to properly catalog.

Amphibians: Green Toads (*Bufo viridis*) breed in the site and many specimens in different life stages were collected from the site.

Mammals: The following species are confirmed to be living in the site based upon direct observation or analyzing tracks: European Hedgehog (*Erinaceus europaeus*) breed in the site, Indian Grey Mongoose (*Herpestes edwardsi*) breed in the site, Common Red Fox (*Vulpus vulpus*) breed in the site, Asiatic Jackals (*Canis aureus*), as well as a great variety of old world Rats and Mice. Bats species also have been monitored in the site.

Flora: Mainly date-palm trees and *Populus*, *Eucalyptus*, *Albezea*, *Ziziphus*, *Phragmites*, *Typha*, *Morus*, Sedge, and citrus such as lemon, orange, also in addition to grape, fig, pear, grape apple, apricot, and many other plant species.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Phalacrocorax pygmaeus, (CC), *Glareola pratincola*, (CC), *Larus genei*, (CC), *Vanellus (Hoplopterus) spinosus*, (CC), *Passer moabiticus*, (CC), *Corvus [corone] cornix*, (CC, END race), *Turdoides altirostris*, (CC), *Lanius nubicus*, (CC), and *Pycnonotus leucogenys* (CC).

Conservation Issues & Recommendations for the Site: The site is filled with human activity and construction work. It is a crowded area in Baghdad, which lead to continual impacts the environment and animal habitats on the site. There is no environmental management plan to mitigate the effects of the construction and habitat destruction, and as such biodiversity has no doubt suffered as only small undisturbed areas remain. Therefore, it is necessary to quickly craft a proposal and establish a conservation plan for the site as it is an important bird habitat useful for educational programs and tourism and could become a good place to carry out ornithological studies in Iraq given its open land and close proximity to the University. Such action is strongly recommended to halt the decline of this region and conserve or restore what biodiversity yet remains.

Nature Iraq Draft Report

As the site is a highly restricted one, communication with the proper authorities will be necessary to carry out any legislation and further surveying on the University of Baghdad campus, as well as ease the team's entry with their monitoring equipment on subsequent visits.

KBA (BG2) - Abu Habba - (IBA 014)

The site was not surveyed for the following reasons:

- The site is located in a politically unstable area. The team could not visit the site because of the serious danger at the site, therefore the decision was made to delay the survey until it became more secure.
- From local reports the site has changed dramatically since Evans reported on it (1994), and the site GPS locations and logistics information from Evans was not clear, which could result in confusion in the field if approached without sufficient preparation.

V. Sites in At Ta'mim/Kirkuk Province

KBA (KK1) - Huweija Marshes and Beaji - (IBA 005)



Plate 22: *Left:* Road map to the site highlighted in red. *Right:* Himreen Hills with open arid steppes representative of the main habitat at the site. © A.F. Omar 2009.

Site Description: The site is located southwest of Ta'mim/Kirkuk province and extends over into the northeast sector of Salah Ad Din province near Doua Khormato township on a narrow river branch of the Tigris. The site is filled with shallow, marshy pools and dense reed beds in the center and gradually declining to the south as the reeds follow the riverbanks and extend along a stretch of semi-desert steppes with halophytic and xerophytic vegetation. The Himreen Hills extend into the site across the main roadway as the rocky hills flatten into marshland. There is a small amount of irrigated farmland growing wheat and corn near the roadside while a strategic oil pipeline passes directly across the site; a potential environmental hazard for local wildlife.

Main roads to the site:

- From Tikrit: Tikrit – Al Alam – Al Meabdi – Zegatoon – Huweija.
- From Baghdad: Baghdad – Al Khalis – Al Edheam – Al Douz - Zegaton –to the site.

Summer Observations were made 2nd of June 2009:

Birds: 15 species, 35 individuals. The most important species were:

Bubulcus ibis, 1; *Egretta garzetta*, 1; *Buteo b. vulpinus*, 1; *Gallinuylua chloropus*, 1, Possible breeding; *Himantopus ostralegu*, 2; *Columba palumbus*, 13, Possible breeding; *Streptopelia decaocto*, 2; *Columba livia*, 3, Possible breeding; *Coracias garrulus*, (CC), 1, Possible breeding; *Galerida cristata*, 1, Possible breeding; *Pica pica*, 2; *Corvus[corone] cornix*, (CC, END race), 3; *Corvus frugilegus*, 1 and *Pycnonotus leucogenys*, (CC), 2.

Other Fauna:

A. Invertebrates: None were observed.

B. Vertebrates:

Reptiles: Suitable habitat for a wide range of reptilian species exists, but unfortunately the team found none during the survey.

Amphibians: None were seen.

Mammals: One dead Wild Boar (*Sus Scrofs*) was examined by the team in the marshes near the site. It had been killed with a shotgun by the Iraqi Army members based in the area. Also, local reports indicate the

Nature Iraq Draft Report

existence of many canine species that would be suitable for the local habitat such as the Common Red Fox (*Vulpus vulpus*) and Asiatic Jackal (*Canus aureus*).

Flora: *Phragmites* as well as *Albagi*, *Acacia*, *Ziziphus*, *Haloxylon* and *Astragalus* and a few scattered *Eucalyptus* trees.

Conservation Significance:

Birds: The following conservation concern (CC) species were noted at the site:

Coracias garrulus, (CC), *Corvus[corone] cornix*, (CC, END race), and *Pycnonotus leucogenys*, (CC).

Conservation Issues & Recommendations for the Site: The team was unable to enter deep into the site because the local authorities on duty at the site refused to give permission for the team to proceed further. The site is theoretically under the jurisdiction of the Kurdish Militia and not the Iraqi Army, and thus the team had only received permission and escorts from the Iraqi Army.

The team observed a large strategic oil pipeline transporting crude oil from Kirkuk to Jehan Harbor in Turkey. The pipe suffers from many leaks in various places within the site, which produces chronic environmental damage to the wildlife and their habitat. Unfortunately, the team could not investigate this further as they were prevented from proceeding further into the site and the depth of the impact caused by the pipeline is unknown. Therefore, serious dialogue is needed with the military and civilian officials in the area (both Kurdish & Arab) to arrange for the team to successfully complete their survey in the site.

Summary & Conclusions

Introductory remarks

During winter 2009, the KBA fieldworks in Central and Southern Iraq consisted of only Bird and Fish observations. In the center of the country, six sites were included for the first time as part of the Program and five of these were able to be surveyed. The main factor that made the surveys possible in this area (Diyala, Salah Ad Din, & Anbar Provinces) was the improved security situations. In summer, a total of 20 sites were included in the survey plan, (the original six and 14 additional sites) and these including sites in all three provinces listed above as well as Kirkuk/At Ta'min and the capital Baghdad, but in summer the focus was primarily on birds though information on other biota was also collected.

The sites encompassed a wide-range of ecosystems from open plains to grassy steppes, pastures and farms with dense orchards, and even deserts and lakes and included the Iraqi international borders with Syria, Jordan and Saudi Arabia from the west and Iran from the east. Many of the sites were located in remote and forgotten areas in Western and Central Iraq, and each held precious ornithological data concerning the status of many migrant and resident desert species and revealed new bird habitats that had remained unobserved prior to these surveys.

Of the 12 IBAs listed in this area of Iraq by Evans (1994), the team was able to visit and survey five in the winter survey and nine in the summer survey. While the other three sites proved difficult or impossible for the team to gain access to for security reasons, six other sites that were successfully surveyed by the team were selected as potential KBA sites based upon the criteria outlined in Table 1.

The winter team was only prevented from visiting one of the six sites in its work plan but was confined by restrictions on their movements within some sites due to security issues. In summer, in addition to the harsh and unpredictable travel conditions faced during the survey and the difficulty communicating with various authorities, the team experienced deep frustration in Kirkuk and Diyala provinces after authorities prevented them from carrying out their research. Despite the many obstacles that the team was forced to deal with along the way, both the winter and summer 2009 surveys resulted in many new findings with regard to the birds, fish and other animals living in the survey sites such as their migration and distribution patterns, breeding range and confirmation of many species' existence in the Western Iraqi deserts and lakes. Additionally,

Nature Iraq Draft Report

a number of globally threatened species with breeding populations were discovered during the course of the survey.

Important Bird Areas

The table below shows the most important sites for birds after evaluating them based on the IBA criteria of the Middle East (using Evans, 1994). The sites are arranged according to their priority. The reader should take into consideration that this is only based on the observations of one year (two surveys) of observations.

Table 2: KBA sites and their criterion, only according to winter & summer 2009 surveys:

#	Site Name	Site Code	A Category*			
			A1	A2	A3	A4
	Haur Al Habbaniya and Ramadi Marshes*	AN1	x	-	-	x
	Haditha Wetland & Wahat Al Baghdadi**	AN2	x	-	-	-
	Anah and Rawa**	AN3	x	-	-	-
	Al Nekheab district Al Hussaniya Oases**	AN4	-	-	x	-
	Augla (not surveyed)	AN5	?	?	?	?
	Gasr Muhaiwir**	AN6	-	-	x	-
	Al Qadissiya or Haditha Dam*	AN7	x	-	-	x
	Haweijat Albu Alwan and Ramadi Marshes**	AN8	x	-	-	-
	Western Edge of Al Tharthar Lake**	AN9	x	-	-	x
	Samara Dam*	SD1	x	-	-	x
	Al Tharthar Lake and Dheaeie fields*	SD2	x	-	-	x
	Mahzam and Al Alam district**	SD3	x	-	-	-
	Abu Dalaf and Shari Lake**	SD4	x	-	-	x
	Himreen Lake & Hills*	DY1	x	-	-	-
	Baquba Wetland (not surveyed)	DY2	?	?	?	?
	Attariya plains**	DY3	x	-	-	x
	Mandli**	DY4	x	-	-	-
	Al Jadriyah and Umm Al Khanazeer Island (first surveyed in 2008 summer survey)	BG1	x	-	-	-
	Abu Habba (not surveyed)	BG2	?	?	?	?
	Hawija Marshes and Baje**	KK1	x	-	-	-

¹A: Important Bird Areas - Global importance

A1. Globally threatened species

A2. Restricted-range species

A3. Biome-restricted species

A4. Congregations

To know more about the Middle East IBA criteria, please visit:

http://www.birdlife.org/datazone/sites/middle_east_criteria.html

* Sites that were surveyed for the first time during winter 2009.

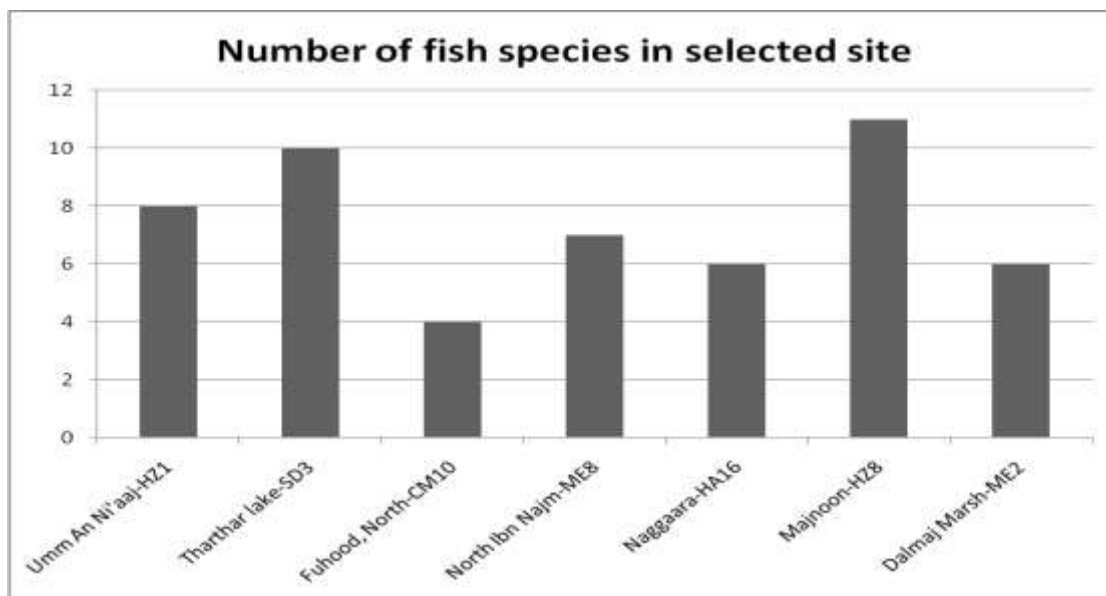
**Sites that were surveyed for the first time during summer 2009.

Important Fish Areas

From the initial fisheries assessment that was only conducted in winter of 2009, Tharthar Lake can be considered as a potentially important fisheries area in Central & Western Iraq. This great lake has a large and diverse fish assemblage (with ten species) and fish achieve greater lengths and weights in the lake when compared to other areas of southern Iraq (see the figures below). There is also an active fishery on the lake (100 fishing boats were seen during the winter survey with an estimated catch of about 30kg/boat/day). In addition, two threateand fish species (*Barbus xanthopterus* and *B. sharpeyi*) exist in the lake showing fish growth that was some of the highest in all previously surveyed KBA sites.

In this site the winter survey team recorded the following: the largest Gattan (*B. xanthopterus*) weighing 4720 gm with a length of 55 cm; the largest Bunni (*B. sharpeyi*) weighing 1620 gm with a length of 51 cm; the largest Shelak (*Aspius vorax*) weighing 635 gm with a length of 50 cm and the largest Samty (*Cyprinus carpio*) weighing 3280 gm with a length of 54 cm.

The figures below show a comparism of fish species richness between Tharthar Lake and different sites in the southern marshlands (sites where fish samples could be obtained directly from fishermen in the winter 2009 survey). This indicates that of these sites both Majnoon (11 species) and Tharthar Lake (10 species) are the richest sites in terms of number of species. It should be noted that 2008/2009 have been drought years in Iraq and this has led to a overall decline in fisheries within the country.



Nature Iraq Draft Report

Figure 3: Number of fish species in selected site

The growth rate of fish differ in the surveyed sites is affected by food availability, water quality and many other stresses. The two figures belows show the average lengths and weights for six commercial fish at different selected surveyed sites (sites where fish samples could be obtained directly from fishermen), which may reflect the overall habitat status of these fish in these specific locations.

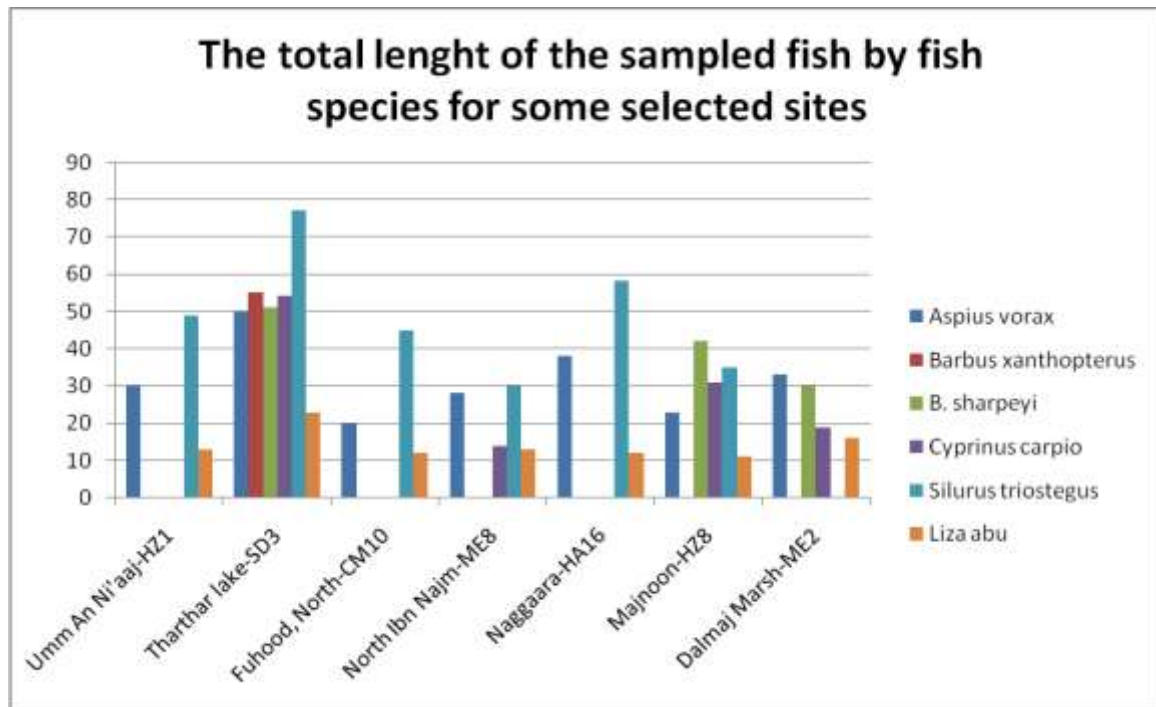


Figure 4: The total length of the sampled fish by fish species for some selected sites.

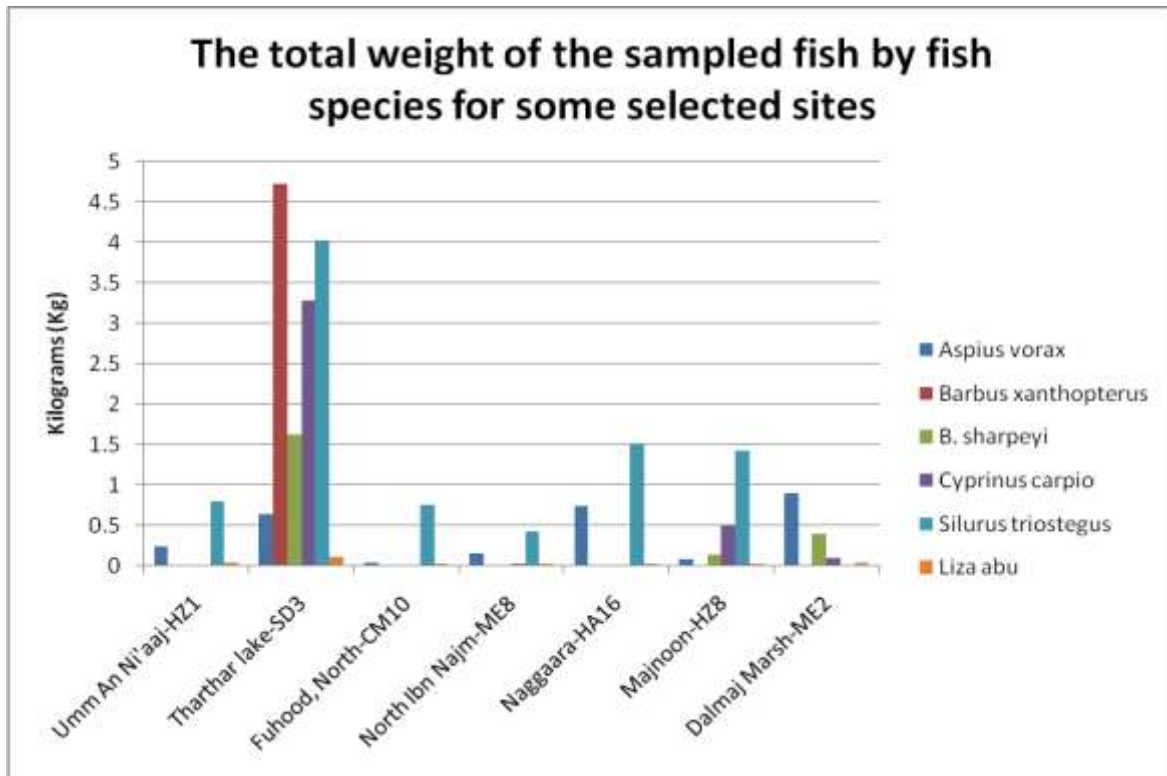


Figure 5: The total weight of the sampled fish by fish species for some selected sites.

These result shows that Tharthar Lake had the best growth rates for commercial fish, while North Ibn Najm had the lowest growth rates possibly due to poor water quality and/or quantity. In addition, during the last recording trip to North Ibn Najm (winter 2009) electro-fishing was prevalent at the site, which could be harming overall fish growth and killing the fishes' prey species at the bottom of the food web. Many of the other sites also are affected by the use of electro-fishing.

Conservation Issues for Sites

The table below shows the various environmental threats that exist at each site with regard to avian and fish populations. The table also includes the positive qualities of each site. These threats were reported based upon the KBA winter and summer 2009 surveys.

Nature Iraq Draft Report

No.	Province and Site	Surveyed (W: Winter 09, S: Summer 09; NS: Not Surveyed)	Threats/Negative Observations														Positive observations					
			Dryness/Lack of water	Pollution (municipal or industrial) and/or garbage	Microbial Pollution	Agricultural	Constructions & Roads	Gravel mining	Human Disturbance	Invasive species, Alien Species	Military actions	Habitat Destruction	Overlap with private territories	Over-fishing	Electro-fishing	Hunting/Trapping	Insufficient or old information	Local Population willing to participating in site conservation	Fishing and/or Hunting Ban	Site infrastructure helps in conservational efforts	Authorities very cooperative	Qualifies as KBA site
3	Attariya plains	S	x	-	-	x	-	-	-	?	x	x	x	-	-	x	x	x	-	-	x	-
4	Mandli	S	x	x	?	x	x	x	-	?	x	x	x	-	-	x	x	x	-	-	-	-
BG	Baghdad																					
1	Jadriyah and Umm Al Khanazeer Island	S	-	x	?	x	x	-	x	?	-	x	x	-	-	-	x	x	-	-	x	-
2	Abu Habba	NS	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?	?
KK	At Ta'mim/Kirkuk																					
1	Huweija Marshes and Baji	S	-	-	-	x	-	-	-	?	x	-	x	-	x	-	x	-	-	-	-	-

(x): existed at the site, (-): Did not exist at the site; (?) unknown

KBA Site Delineation

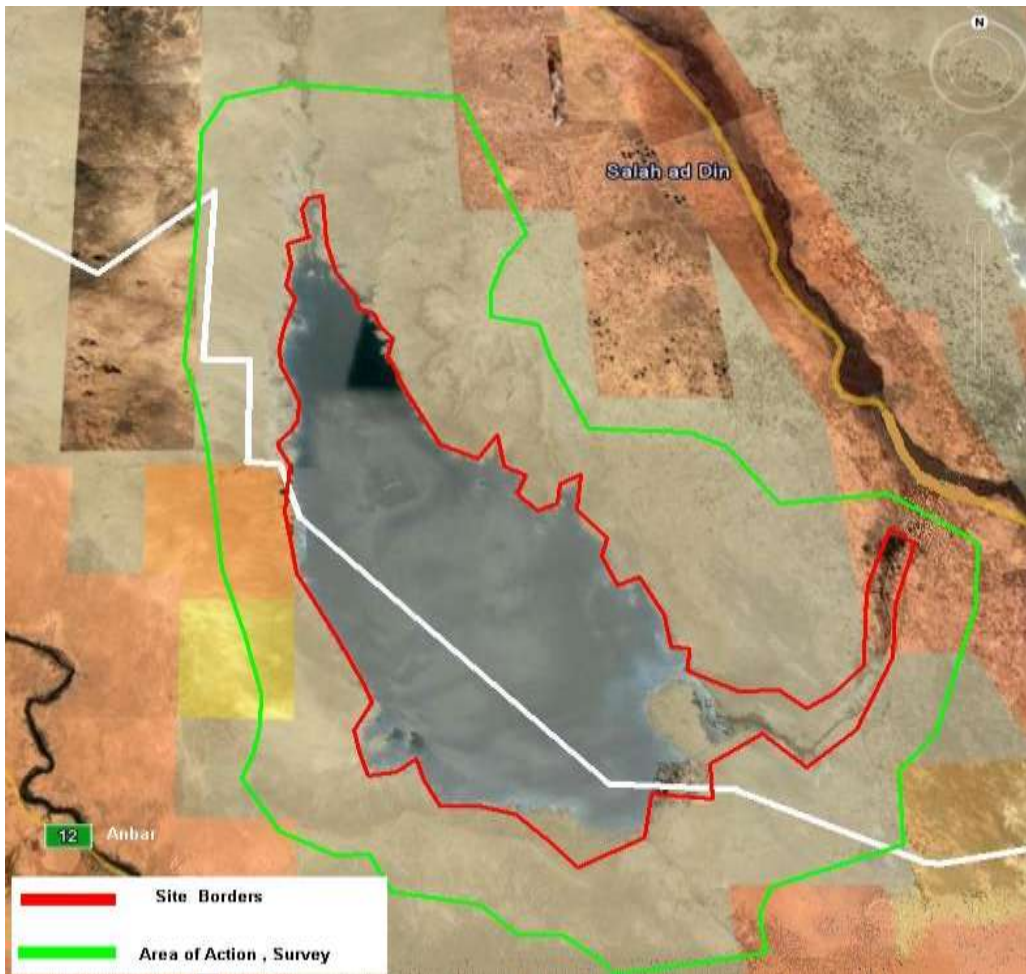
The steppes of Central and Western Iraq contain a continuous and largely recurrent habitat occupying large areas of land which expand into neighboring countries. Occasionally, the steppes overlap with other habitats to produce differing species compositions along these intersecting edges, creating areas with unique conservation needs.

In order to successfully carry out a field survey and biological monitoring within these ecosystems, it is necessary to determine the boundaries of the survey site where potential conservation actions may take place. Consideration must be given to the habitat, range and size of the local plant and animal populations as well as their habitat requirements, in addition to logistical concerns such as the ease of access to the site, the number of entry and exit points, and its physical size. This process is known as site delineation.

Some of the most important aspects of site delineation are as follows:

- Identify the number of roadways near the site, as well as the number of accessible entrances and exits from the site. This can be determined from road maps or reliable site descriptions by locals, as well as through up-to-date aerial imaging.
- Identify clear boundaries for the survey site based upon the local habitat, species population and conservation actions already in progress. This will be based upon specific GPS coordinates taken along habitat boundaries, local roadways and species' territorial range.
- Identify the degree of overlap between neighboring sites or amongst mixed habitats within the same site. This can be achieved through special environmental, biological and geological studies and will help to identify the focal point for each site.
- Reviewing available archived maps and site descriptions, and compare them with updated maps and survey reports in order to gain a more complete understanding of the site's history.
- These delineations should be updated based upon further scientific surveys.

Only one delineation was attempted at the present time on a priority sites within Central & Western Iraq: the Tharthar Lake ecosystem. It includes the site boundaries and a more extended buffer zone of conservation action.



Recommendations

Recommendations identified by the Nature Iraq team were provided in the main text of this report (Please see the *Conservation Issues and Recommendation* section for each site in the site review), but the following is a review of the overall recommendations that are strongly advised for implementation in the visited sites or arranged for the surveying groups in the surveyed areas in the future. They are also applicable within similar or identical habitats in the same districts in Iraq:

- Before proceeding with any further environmental field surveys in Central, Southern and Western Iraq, the team must be in communication with local officials and permission must be arranged for the field groups to enter the survey sites. This begins by giving prior notice from Nature Iraq to the managing authorities and identifying the sites or the districts that are necessary to visit during the field surveys as directed by Nature Iraq's associated partners, institutes and facilities such as the Ministry of Environment, Ministry

Nature Iraq Draft Report

of Higher Education, and any ministries who are listed within the cooperation memorandums on the project. In order to coordinate activities in the field, official communications with enforcement ministries such as the Ministry of Internal Affairs and Ministry of Defense is critical and must be carried out well in advance (40 to 60 days) to ensure easy and successful survey work.

- A complete environmental profile of the priority sites will require additional in-depth surveys. The present survey is considered a rapid assessment, but more information must be obtained by consulting experts in various disciplines (ornithology, mammals, entomology, herpetology, ichthyology, water quality, botany and others). Also, additional threat assessments and socio-economic information is needed to thoroughly characterize these sites.
- It is recommended that presentations and training workshops are held in the governorates and districts visited during the survey. These can show participants the important environmental features and species in their area. By targeting local administrators, security, enforcement agencies, this newfound knowledge may help to solve problems and improve local stewardship of conservation concern species and their habitat. In addition, more should be done in terms of general education and publishing this information in ways that targets the local community, particularly children. Designing special activities that might be implemented by local children and liaising with local education departments to implement such activities with a focus at first on those areas near important KBA sites will be helpful in protecting these areas.
- Certain protected areas have benefited from the establishment of local support or “Friends” associations. They act as local conservation groups around the priority KBA sites and once organized can be the initial focus of the training, advocacy work and conservation effort as well as assist in the research effort of the sites.
- Ornithological presentations and field training need to be arranged for the governmental and provincial training candidates, especially in bird identification and conservation. In addition, more identification books, leaflets, posters, software and other items should be provided. These should be mutually updated by the trainees and Nature Iraq experts in order to ensure that continuous monitoring of bird species is in place which will be effective and widely distributed throughout the birds areas in Iraq.

Nature Iraq Draft Report

- During the field surveys, awareness campaigns concerning birds, fish, mammals and over hunting are strongly recommended and should be presented to the local falconry societies, fishermen, and hunters in addition to the members of the local Iraqi police or army authorities to familiarize them with the main targeted species to be able to apply the laws and regulations governing hunting activities in order to preserve and conserve the existing bird and other fauna populations.
- Propose and start to establish an effective environmental action plan to publicize the ecology of the biggest lakes, reservoirs and water bodies in Iraq and the Middle East and in turn preserve and promote the sustainable use of these unique IBA and KBA areas on a local and national level.

With regard to fish populations, there are some general recommendations that should be considered:

- Water quality and quantity should be managed in such a way as to protect human health and conserve Iraq's aquatic wildlife, most of which, such as commercial fish species are important to local and regional economies. Currently, Iraq is facing major drought and poor water quality issues in nearly all of its rivers, lakes and wetlands, and this requires urgent attention. It is recommended that local and regional governments, with logistical and financial support from the central government and expertise from NGOs and Iraqi universities, begin a program of developing basin-wide management plans for all Iraqi watersheds that thoroughly assess all watersheds within the country and develop action plans for their restoration and recovery.
- Improper and illegal fishing activities, especially high voltage electro-fishing, has been noticed in many sites throughout Iraq. This unsustainable practice is causing major impacts on fisheries and other aquatic organisms that will result in lower fish growth and catch sizes. In addition, the use of small net mesh sizes can result in the elimination of smaller, prey fish species that the larger, economically important fish species rely upon. Electro-fishing must be banned within Iraq and net mesh sizes should be regulated. Nature Iraq recommends the implementation of stronger fishing rules and authorities to regulate and enforce such rules as well as the development of fishermen associations or cooperatives which can help educate fishermen on proper fishing rules and advocate for their industry.

Nature Iraq Draft Report

- Some key fish species such as Kattan and Bunni are the focus of overfishing due to the high price they fetch in on the open market. Thus, they may deserve special protection and quotas may need to be set and enforced to preserve these species.
- Overfishing in generally may be affecting many sites that are known to have good fish stocks, such as Tharthar Lake, but few in-depth fishery assessments have been conducted in Iraq to assess the current overall fishing rates, stock levels and determine the sustainable harvest. Nature Iraq recommends that the Iraqi Ministry of Agriculture and Environment work together with NGOs, local fishermen associations, and Iraqi Universities to conduct a complete program of fishery assessments in the priority areas listed in these and other Nature Iraq KBA documents. Such assessments will be an important component of basin-wide management plans.

In general, for those sites in Western and Central Iraq that have been preliminarily determined to meet KBA criteria, further surveying and monitoring must continue in order to achieve the program goal of identifying areas of global and/or regional significance as sites of key biological diversity. More in-depth surveys will eventually need to be undertaken and the high value sites prioritized and properly delineated. Management plans for basin-wide areas have been previously discussed with regard to water quality and fishery assessments. Protected areas require more targeted research, management plans and legal designation by national or at least regional agencies as well.

References

- Al-Daham, NK (1982) *The Ichthyofauna of Iraq and the Arab Gulf*. Basrah, Iraq: Basrah Natural History Museum, Publication No. 1 (4). (In Arabic).
- Allouse, B. (1953). *Avifauna of Iraq*. Baghdad: Iraq Natural History Museum - Al Rabita Press.
- Allouse, B. (1963). *Birds of Iraq. Vols. 1,2 & 3*. Baghdad: Al Rabita Press (in Arabic).
- Anderson, S. (1999). *Simon & Schuster's Guide to Mammals*. Luigi; Anderson, Sydney; Bartoli, Stefania Boitani , U.S. editor : Sydney Anderson , Department of Mammalogy, The American Museum of Natural History 1990.
- Armesto, M.J.J., Boehm, C. & C. Bowden (compilers). (2006). International Single Species Action Plan for the Conservation of the Northern Bald Ibis, AEWA Technical Series No. 10.
- Baker, K & Baker, J. (1997). *Warblers of Europe, Asia, and North Africa*. Cambridge: Princeton University Press.
- Clark, W.S. (2000). *A Field Guide to the Raptors of Europe, the Middle East, and North Africa*. USA: Oxford University Press, USA; illustrated edition edition (January 13, 2000)
- Evans, M. (1994). *Important Bird Areas In The Middle East*. Norwich, Great Britian: BirdLife International.
- IUCN. (2008). *Red List*. Retrieved November 30, 2008, from <http://www.iucnredlist.org>
- Langhammer, P., Bakarr, M., Bennun, L., Brooks, T., Clay, R., Darwall, W., et al. (2007). *Identification and Gap Analysis of Key Biodiversity Areas*. Gland, Switzerland: IUCN.
- Moore, HJ & Boswell, C. (1956). Field observations on the birds of Iraq. 1956-1957. Baghdad: Iraqi Natural History Museum. No 9-10, 12
- Mullarney, K, Svensson, L, Zetterstrom, D and Grant, PJ (1999) *Collins' Bird Guide*. London, UK: Collins Publishing.
- Mahdi, N (1962) *Fishes of Iraq*. Baghdad, Iraq: Iraq Ministry of Education.
- Mahdi, N. and P. V. George (1969). A Systematic List of the Vertebrates of Iraq. Publication No. 29, Natural History Museum newsletter, 3rd edition, April.
- Nature Iraq. (2009). Conservation of Iraq Mammals. Nature Iraq Position Paper. Publication No. NI-0409-001. Sulaimani Iraq: Nature Iraq.

Nature Iraq Draft Report

- O'Brian, M., Crossley, R. & Karlson, K.(2008). *The Shorebirds Guide*. United States: Houghton Mifflin Harcourt.
- Porter, RF, Christensen, S and Schiermacker-Hansen, P (1996) *Field Guide to the Birds of the Middle East*. Helm Field Guides. London, United Kingdom: A&C Black Publishers Ltd.
- Porter, R.F., Willis, I., Christansen, S., & Nielson, B. P. (2001). *Flight Identification of European Raptors*. 3rd Edition. London: T. & A. D. Poyser; 3 Sub edition.
- Rogers, R. (2008). Al Asad au Natural. Vol 1. Issue 1. Released 3 Aug 2008 from Al Asad Airbase.
- Salim, M., Porter, R., Christensen, S., Schiermaker-Hanson, P., & Jbour, S. (2006). *Birds of Iraq*. Amman: Nature Iraq & BirdLife International.
- Sibley, D.I. (2007). *The Sibley Guide to the Bird Life and Behaviour*. New York: Christopher Helm Publishers Ltd
- Svensson, L. (1975). *Identification Guide to the European Passerines*. Third revised and enlarged edition, Stockholm, Sweden: Naturhistoriska Riksmuseet.
- World Wildlife Fund (2006) WildFinder: Online database of species distributions: Iraq Ecoregions, ver. Jan-06 www.worldwildlife.org/wildfinder Retrieved 14 Sep 2009.

For more information, please see the following websites:

www.natureiraq.org, www.birdlife.org, www.aewa.com, www.redlist.org,
www.birdsofoman.com, www.fatbirder.com, www.briancoad.com.

Nature Iraq Draft Report

Annex A: Bird seen in Central & Western Iraq with Provisional Status

Order	Common Name	Latin Name	Conservation Status	Iraq Status	Breeding Status
GALLIFORMES	Black Francolin	<i>Francolinus francolinus</i>		Resident	Confirmed
ANSERIFORMES	Ruddy Shelduck	<i>Tadorna ferruginea</i>		Resident; Winter visitor & Passage migrant	Confirmed
ANSERIFORMES	Gadwall	<i>Anas strepera</i>		Winter visitor & Passage migrant	
ANSERIFORMES	Eurasian Wigeon	<i>Anas penelope</i>		Winter visitor & Passage migrant	
ANSERIFORMES	Mallard	<i>Anas platyrhynchos</i>		Winter visitor & Passage migrant.	
ANSERIFORMES	Northern Shoveler	<i>Anas clypeata</i>		Winter visitor & Passage migrant; may breed.	Possible
ANSERIFORMES	Northern Pintail	<i>Anas acuta</i>		Winter visitor & Passage migrant	
ANSERIFORMES	Garganey	<i>Anas querquedula</i>		Passage migrant; may breed.	Possible
ANSERIFORMES	Eurasian Teal	<i>Anas crecca</i>		Winter visitor & Passage migrant	
ANSERIFORMES	Marbled Duck	<i>Marmaronetta angustirostris</i>	Globally Threatened (GT), Conservation Concern (CC)	Resident; Winter visitor	Confirmed
ANSERIFORMES	Red-crested Pochard	<i>Netta rufina</i>	Conservation Concern (CC)	Winter visitor & Passage migrant	
ANSERIFORMES	Common Pochard	<i>Aythya ferina</i>		Winter visitor & Passage migrant	
ANSERIFORMES	Ferruginous Duck	<i>Aythya nyroca</i>	Globally Threatened (GT), Conservation Concern (CC)	Resident; Winter visitor & passage migrant	Confirmed
ANSERIFORMES	Tufted Duck	<i>Aythya fuligula</i>		Winter visitor & Passage migrant	
PODICIPEDIFORMES	Little Grebe	<i>Tachybaptus ruficollis</i>	Conservation Concern (CC), Endemic Race	Resident (only endemic race); Winter visitor.	Confirmed
PODICIPEDIFORMES	Great Crested Grebe	<i>Podiceps cristatus</i>		Resident; Winter visitor	Confirmed
CICONIIFORMES	Western White Stork	<i>Ciconia ciconia</i>		Breeding summer visitor; Passage migrant & Winter visitor	Confirmed
CICONIIFORMES	Glossy Ibis	<i>Plegadis falcinellus</i>		Winter visitor & Passage migrant; may breed	Possible
CICONIIFORMES	Little Bittern	<i>Ixobrychus minutus</i>		Breeding summer visitor; Passage migrant; some winter.	Confirmed
CICONIIFORMES	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>		Resident; Breeding summer visitor; Passage Migrant	Confirmed
CICONIIFORMES	Squacco Heron	<i>Ardeola ralloides</i>		Resident; Breeding summer visitor; Passage	Confirmed

Nature Iraq Draft Report

Order	Common Name	Latin Name	Conservation Status	Iraq Status	Breeding Status
				Migrant	
CICONIIFORMES	Western Cattle Egret	<i>Bubulcus ibis</i>		Resident; Breeding summer visitor; Passage Migrant	Confirmed
CICONIIFORMES	Grey Heron	<i>Ardea cinerea</i>		Winter visitor & Passage migrant	
CICONIIFORMES	Purple Heron	<i>Ardea purpurea</i>		Resident; Breeding summer visitor; Passage Migrant	Confirmed
CICONIIFORMES	Western Great Egret	<i>Ardea alba</i>		Winter visitor & Passage migrant	
CICONIIFORMES	Little Egret	<i>Egretta garzetta</i>		Winter visitor & Passage migrant; May breed.	
PELECANIFORMES	Great White Pelican	<i>Pelecanus onocrotalus</i>	Conservation Concern	Winter visitor & Passage migrant	
PELECANIFORMES	Pygmy Cormorant	<i>Phalacrocorax pygmeus</i>	Conservation Concern (CC)	Resident; Winter visitor	Confirmed
PELECANIFORMES	Great Cormorant	<i>Phalacrocorax carbo</i>		Winter visitor & Passage migrant	
FALCONIFORMES	Black Kite	<i>Milvus migrans</i>		Winter visitor & Passage migrant	
FALCONIFORMES	Egyptian Vulture	<i>Neophron percnopterus</i>	Globally Threatened (GT), Conservation Concern (CC)	Resident; Breeding summer visitor; Passage migrant.	Confirmed
FALCONIFORMES	Western Marsh Harrier	<i>Circus aeruginosus</i>		Breeding resident; Winter visitor & Passage migrant;	Confirmed
FALCONIFORMES	Steppe Buzzard	<i>Buteo buteo vulpinus</i>		Resident; Winter visitor & passage migrant	Confirmed
FALCONIFORMES	Long-legged Buzzard	<i>Buteo rufinus</i>		Resident; Winter visitor & passage migrant	Confirmed
FALCONIFORMES	Lesser Kestrel	<i>Falco naumanni</i>	Globally Threatened (GT), Conservation Concern (CC)	Breeding summer visitor; Passage migrant.	Confirmed
FALCONIFORMES	Common Kestrel	<i>Falco tinnunculus</i>		Resident; Winter visitor	Confirmed
GRUIFORMES	Common Moorhen	<i>Gallinula chloropus</i>		Resident; winter visitor & passage migrant	Confirmed
GRUIFORMES	Eurasian Coot	<i>Fulica atra</i>		Resident; Winter visitor & passage migrant	Confirmed
CHARADRIIFORMES	Black-winged Stilt	<i>Himantopus himantopus</i>		Resident; Winter visitor & Passage migrant	Confirmed
CHARADRIIFORMES	Northern Lapwing	<i>Vanellus vanellus</i>		Winter visitor	
CHARADRIIFORMES	Spur-winged Lapwing	<i>Vanellus spinosus</i>	Conservation Concern (CC)	Resident; Passage migrant.	Confirmed
CHARADRIIFORMES	Red-wattled Lapwing	<i>Vanellus indicus</i>		Resident	Confirmed
CHARADRIIFORMES	White-tailed Lapwing	<i>Vanellus leucurus</i>	Conservation Concern (CC)	Resident; probably winter visitor	Confirmed
CHARADRIIFORMES	Common Ringed Plover	<i>Charadrius hiaticula</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Little Ringed Plover	<i>Charadrius dubius</i>		Breeding summer visitor; Passage migrant	Confirmed

Nature Iraq Draft Report

Order	Common Name	Latin Name	Conservation Status	Iraq Status	Breeding Status
CHARADRIIFORMES	Kentish Plover	<i>Charadrius alexandrinus</i>		Resident; Winter visitor & Passage migrant .	Confirmed
CHARADRIIFORMES	Greater Sand Plover	<i>Charadrius leschenaultii</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Common Snipe	<i>Gallinago gallinago</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Common Redshank	<i>Tringa totanus</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Common Greenshank	<i>Tringa nebularia</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Wood Sandpiper	<i>Tringa glareola</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Common Sandpiper	<i>Actitis hypoleucos</i>		Breeding summer visitor; Passage migrant	Confirmed
CHARADRIIFORMES	Ruddy Turnstone	<i>Arenaria interpres</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Little Stint	<i>Calidris minuta</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Curlew Sandpiper	<i>Calidris ferruginea</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Dunlin	<i>Calidris alpina</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Ruff	<i>Philomachus pugnax</i>		Winter visitor & Passage migrant	
CHARADRIIFORMES	Cream-coloured Courser	<i>Cursorius cursor</i>	Conservation Concern (CC)	Resident or migrant breeder	Confirmed
CHARADRIIFORMES	Collared Pratincole	<i>Glareola pratincola</i>	Conservation Concern (CC)	Breeding summer visitor; Passage migrant	Confirmed
CHARADRIIFORMES	Slender-billed Gull	<i>Chroicocephalus genei</i>	Conservation Concern (CC)	Resident; Breeding summer visitor; Winter visitor & passage migrant.	Confirmed
CHARADRIIFORMES	Common Black-headed Gull	<i>Chroicocephalus ridibundus</i>		Resident or breeding summer visitor; Winter visitor	Confirmed
CHARADRIIFORMES	Great Black-headed Gull	<i>Larus ichthyaetus</i>		Winter visitor	
CHARADRIIFORMES	Armenian Gull	<i>Larus armenicus</i>	Conservation Concern (CC)	Winter visitor	
CHARADRIIFORMES	Gull-billed Tern	<i>Gelocbelidon nilotica</i>		Resident/breeding summer visitor; Passage migrant.	Confirmed
CHARADRIIFORMES	Caspian Tern	<i>Hydroprogne caspia</i>	Conservation Concern (CC)	Winter visitor & Passage migrant; may breed	
CHARADRIIFORMES	Little Tern	<i>Sternula albifrons</i>		Breeding summer visitor; Passage migrant	Confirmed
CHARADRIIFORMES	Common Tern	<i>Sterna hirundo</i>		Breeding summer visitor; Passage migrant	Confirmed
CHARADRIIFORMES	Whiskered Tern	<i>Chlidonias hybrida</i>		Resident; Breeding summer visitor; Winter visitor & passage migrant	Confirmed
CHARADRIIFORMES	White-winged Tern	<i>Chlidonias leucopterus</i>		Breeding summer visitor; Passage migrant.	Confirmed
CHARADRIIFORMES	Pin-tailed Sandgrouse	<i>Pterocles alchata</i>	Conservation Concern (CC)	Resident.	Confirmed
COLUMBIFORMES	Rock Dove	<i>Columba livia</i>		Resident	Confirmed

Nature Iraq Draft Report

Order	Common Name	Latin Name	Conservation Status	Iraq Status	Breeding Status
COLUMBIFORMES	Common Woodpigeon	<i>Columba palumbus</i>		Resident: winter visitor	Confirmed
COLUMBIFORMES	European Turtle Dove	<i>Streptopelia turtur</i>	Conservation Concern (CC)	Breeding summer visitor; passage migrant.	Confirmed
COLUMBIFORMES	Eurasian Collared Dove	<i>Streptopelia decaocto</i>		Resident	Confirmed
COLUMBIFORMES	Laughing Dove	<i>Stigmatopelia senegalensis</i>		Resident	Confirmed
PSITTACIFORMES	Rose-ringed Parakeet	<i>Psittacula krameri</i>		Resident (from escaped birds)	Confirmed
CAPRIMULGIFORMES	European Nightjar	<i>Caprimulgus europaeus</i>		Breeding summer visitor; Passage migrant.	Confirmed
APODIFORMES	Common Swift	<i>Apus apus</i>		Breeding summer visitor; Passage migrant.	Confirmed
APODIFORMES	Pallid Swift	<i>Apus pallidus</i>		Breeding summer visitor; Passage migrant	Confirmed
CORACIFORMES	Indian Roller	<i>Coracias benghalensis</i>		Resident	Confirmed
CORACIFORMES	European Roller	<i>Coracias garrulus</i>	Globally Threatened (GT), Conservation Concern (CC)	Breeding summer visitor; Passage migrant	Confirmed
CORACIFORMES	White-throated Kingfisher	<i>Halcyon smyrnenensis</i>		Resident	Confirmed
CORACIFORMES	Common Kingfisher	<i>Alcedo cristata</i>		Resident; Winter visitor & Passage migrant	Confirmed
CORACIFORMES	Pied Kingfisher	<i>Ceryle rudis</i>		Resident	Confirmed
CORACIFORMES	Blue-cheeked Bee-eater	<i>Merops persicus</i>		Breeding summer visitor; Passage migrant.	Confirmed
CORACIFORMES	European Bee-eater	<i>Merops apiaster</i>		Breeding summer visitor; Passage migrant.	Confirmed
CORACIFORMES	Eurasian Hoopoe	<i>Upupa epops</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Red-backed Shrike	<i>Lanius collurio</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Lesser Grey Shrike	<i>Lanius minor</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Steppe Grey Shrike	<i>Lanius pallidirostris</i>		Winter visitor & Passage migrant	
PASSERIFORMES	Masked Shrike	<i>Lanius nubicus</i>	Conservation Concern (CC)	Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Eurasian Magpie	<i>Pica pica</i>		Resident	Confirmed
PASSERIFORMES	Rook	<i>Corvus frugilegus</i>		Winter visitor	
PASSERIFORMES	Hooded Crow	<i>Corvus cornix</i>		Resident	Confirmed
PASSERIFORMES	Brown-necked Raven	<i>Corvus ruficollis</i>		Resident	Confirmed
PASSERIFORMES	Hypocolius	<i>Hypocolius ampelinus</i>	Conservation Concern (CC), Endemic	Breeding summer visitor	Confirmed
PASSERIFORMES	Greater Hoopoe-Lark	<i>Alaemon alaudipes</i>		Resident	Confirmed
PASSERIFORMES	Bar-tailed Lark	<i>Ammomanes cinctura</i>		Resident	Confirmed

Nature Iraq Draft Report

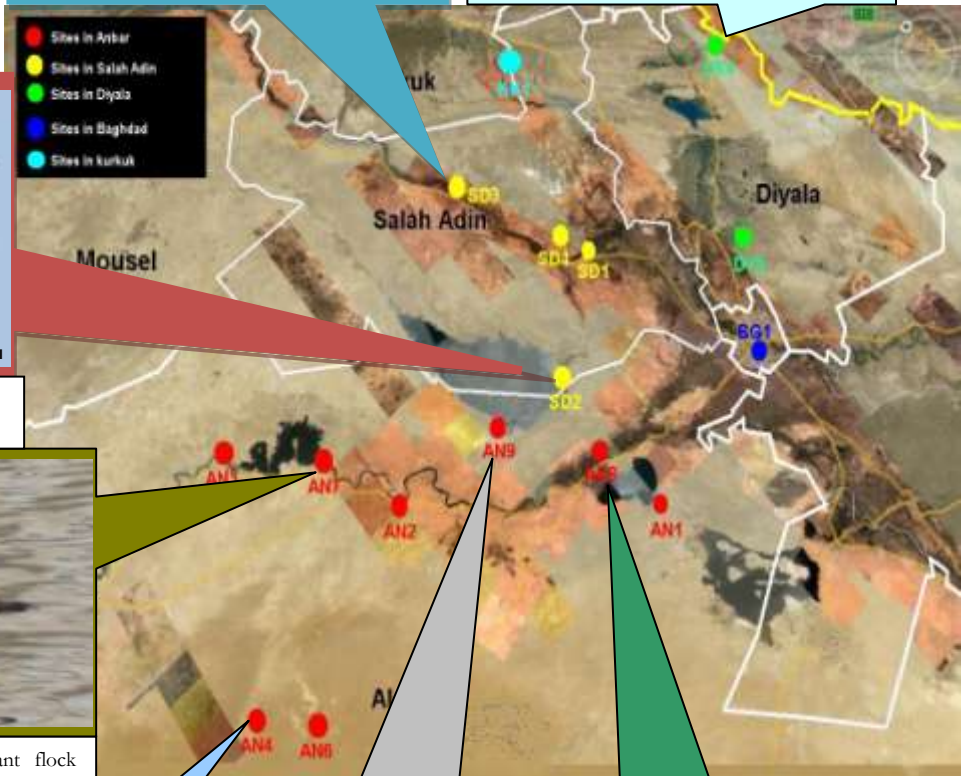
Order	Common Name	Latin Name	Conservation Status	Iraq Status	Breeding Status
PASSERIFORMES	Desert Lark	<i>Ammomanes deserti</i>		Resident	Confirmed
PASSERIFORMES	Crested Lark	<i>Galerida cristata</i>		Resident	Confirmed
PASSERIFORMES	Eurasian Skylark	<i>Alauda arvensis</i>		Winter visitor	Confirmed
PASSERIFORMES	Temminck's Lark	<i>Eremophila bilopha</i>	Conservation Concern (CC)	Resident	Confirmed
PASSERIFORMES	White-eared Bulbul	<i>Pycnonotus leucotis</i>	Conservation Concern (CC)	Resident	Confirmed
PASSERIFORMES	Sand Martin	<i>Riparia riparia</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Barn Swallow	<i>Hirundo rustica</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i>		Breeding summer visitor, but may be resident; Passage migrant.	Confirmed
PASSERIFORMES	Willow Warbler	<i>Phylloscopus trochilus</i>		Passage migrant	
PASSERIFORMES	Common Chiffchaff	<i>Phylloscopus collybita</i>		Winter visitor & Passage migrant; may breed	Possible
PASSERIFORMES	Basra Reed Warbler	<i>Acrocephalus griseldis</i>	Globally Threatened (GT), Conservation Concern (CC), Endemic	Breeding summer visitor	Confirmed
PASSERIFORMES	Great Reed Warbler	<i>Acrocephalus arundinaceus</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Moustached Warbler	<i>Acrocephalus menanopogon</i>		Resident	Confirmed
PASSERIFORMES	Sedge Warbler	<i>Acrocephalus schoenobaenus</i>		Passage migrant	
PASSERIFORMES	Eastern Olivaceous Warbler	<i>Iduna pallida</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Upcher's Warbler	<i>Hippolais languida</i>		Passage migrant; may breed	Possible
PASSERIFORMES	Graceful Prinia	<i>Prinia gracilis</i>		Resident	Confirmed
PASSERIFORMES	Iraq Babbler	<i>Turdoides altirostris</i>	Conservation Concern (CC), Endemic	Resident	Confirmed
PASSERIFORMES	Afgan Babbler	<i>Turdoides buttoni</i>		Resident	Confirmed
PASSERIFORMES	Common Whitethroat	<i>Sylvia communis</i>		Passage migrant; probably breeds.	Probable
PASSERIFORMES	Rose-coloured Starling	<i>Pastor roseus</i>		Passage migrant;	
PASSERIFORMES	Common Starling	<i>Sturnus vulgaris</i>		Winter visitor; may breed	Possible
PASSERIFORMES	Bluethroat	<i>Luscinia svecica</i>		Winter visitor & Passage migrant	
PASSERIFORMES	Rufous-tailed Scrub Robin	<i>Cercotrichas galactotes</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Whinchat	<i>Saxicola rubetra</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	European Stonechat	<i>Saxicola rubicola</i>		Winter visitor; may	Possible

Nature Iraq Draft Report

Order	Common Name	Latin Name	Conservation Status	Iraq Status	Breeding Status
S				breed	
PASSERIFORMES	Northern Wheatear	<i>Oenanthe oenanthe</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Pied Wheatear	<i>Oenanthe pleschanka</i>		Passage migrant	
PASSERIFORMES	Eastern Black-eared Wheatear	<i>Oenanthe melanoleuca</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	Desert Wheatear	<i>Oenanthe deserti</i>		Winter visitor and Passage migrant; may breed.	Possible
PASSERIFORMES	Finsch's Wheatear	<i>Oenanthe finschii</i>	Conservation Concern (CC)	Resident; Winter visitor	Confirmed
PASSERIFORMES	Spotted Flycatcher	<i>Muscicapa striata</i>		Breeding summer visitor; Passage migrant.	Confirmed
PASSERIFORMES	House Sparrow	<i>Passer domesticus</i>		Resident	Confirmed
PASSERIFORMES	Spanish Sparrow	<i>Passer hispaniolensis</i>		Resident	Confirmed
PASSERIFORMES	Dead Sea Sparrow	<i>Passer moabiticus</i>	Conservation Concern (CC)	Resident; Breeding summer visitor.	Confirmed
PASSERIFORMES	Western Yellow Wagtail (includes all races)	<i>Motacilla flava</i>		Passage migrant	
PASSERIFORMES	White Wagtail	<i>Motacilla alba</i>		Resident; Winter visitor	Confirmed
PASSERIFORMES	Tawny Pipit	<i>Anthus campestris</i>		Passage migrant; may breed	Possible
PASSERIFORMES	Red-throated Pipit	<i>Anthus cervinus</i>		Passage migrant	
PASSERIFORMES	Water Pipit	<i>Anthus spinoletta</i>		Winter visitor & Passage migrant	
PASSERIFORMES	Common Chaffinch	<i>Fringilla coelebs</i>		Resident; Winter visitor.	Confirmed

Annex B: Some Key Bird Species seen in the winter & summer surveys of 2009

<p>Armenian Gull – Conservator Concern species seen in winter</p>	<p>European Roller – Many have been found within suitable breeding habitat in summer</p>
 <p>© M. Salim - NI</p>	 <p>© A.F.Omar - NI</p>



Ferrogenous Duck, globally threatened species seen in Winter 09



Pygmy Cormorants - Big migrant flock roosting at Qadissiya Dam in summer



Egyptian Vulture – Possibly breeding pairs in Wadi Horan cliffs.


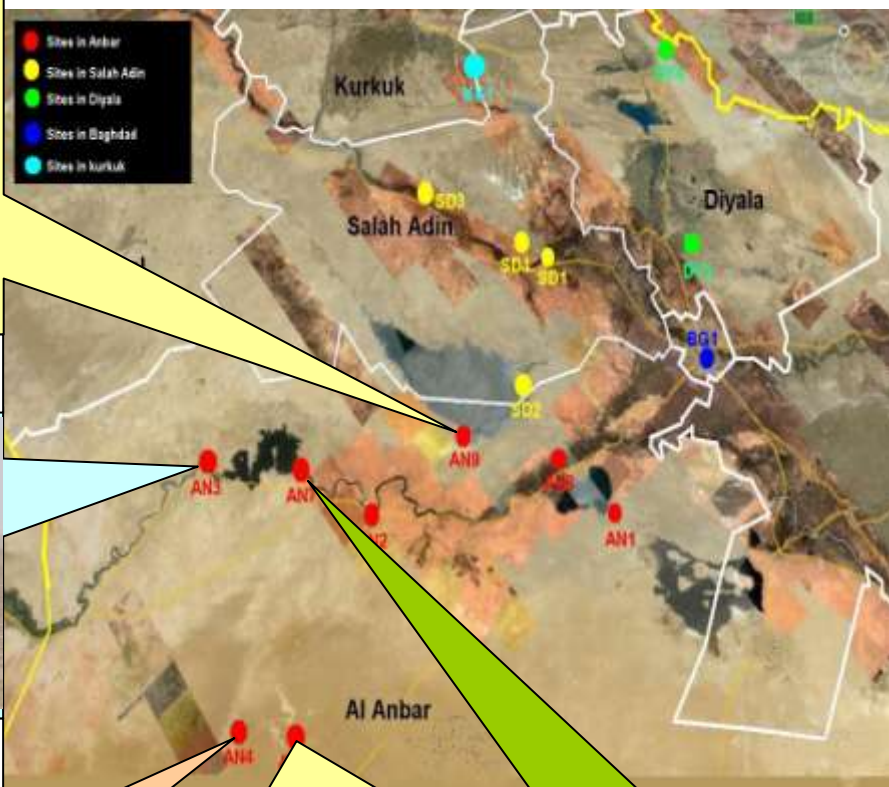






Marbled Teal – Possible breeding pairs have been found.



Basra Reed Warbler - Most exciting find in Western Iraq

Annex C: Some Key Vertebrates Species have been observed during summer surveys in center and west of Iraq 2009.

 <p>© A.F.Omar - HI 09</p>		
<p>European Hare burrow, along the elevated ridges of Al Thathar.</p>		
 <p>© A.F.Omar HI 09</p>		
<p>Sheep grazing, the main livelihood of Bedouin in Central /Western Iraq</p>		
 <p>© A.F.Omar - HI 09</p>	 <p>© A.F.Omar - HI 09</p>	 <p>© A.F.Omar - HI 09</p>
<p>Party of Single Humped Camels- the ship of the western Iraqi desert</p>	<p>Spiny –tailed Lizard – the most common reptile in the western Iraqi desert</p>	<p>Fish breeding/migration at Wadi Al Haqlaniya south of Haditha.</p>

Annex D: Some of archeological and historical features within the sites that have been visited during the field surveys

© A.F.Omar 09

The remains of **Al Na'oor**, ancient irrigational structure.

Qasir Al Ashiq at Samara

Qasir Mahwier, lost camp in the western Iraqi desert

Malweat Abu Dalaf, specific feature of Abu Dalaf site

In the distance the **Holly mosque of Imam Al Askari** ,right and **Malweat Samara** left, photographed from Samara Dam

Annex E: Iraq Fish Species List with Provisional Conservation Status

Fish species	Conservation status	Economic value	Notes
<i>Acanthobrama marmaid</i>	Least concern	Low	Small fish with low value in market.
<i>Acanthopagrus latus</i>	Mid	Mid	Middle market demands, it is a marine fish.
<i>Alburnus mossulensis</i>	Least concern	Low	Small fish with low value in market.
<i>Aspius vorax</i>	Mid	mid	Middle fish size and demands in market.
<i>Barbus kersin</i>	High	High	Market demands are high due to test and size.
<i>Barbus luteus</i>	Low	Low	Small fish with low value in market.
<i>Barbus sharpeyi</i>	High	High	Market demands are high due to test and size.
<i>Barbus xanthopterus</i>	High	High	Market demands are high due to test and size.
<i>Carassius auratus</i>	Mid	Mid	Middle fish size and demand in market, it is an exotic fish.
<i>Chondrostoma regium</i>	Mid	Mid	Mid in size and market demands.
<i>Ctenopharyngodon idella</i>	Low	High	Market demand for this fish is high, but it is an exotic fish.
<i>Cyprinus carpio</i>	Low	High	Market demands are high due to test and size, it is an exotic fish.
<i>Cyprion kais</i>	Low	Low	Small fish with low value in market.
<i>Epinephelus diacanthus</i>	Unknown	High	Market demands are high due to test and size, it is a marine fish.
<i>Heteropneustes fossilis</i>	Low	none	This fish is not eaten in Iraq for religious reasons, it is an exotic fish.
<i>Ilisha elongata</i>	Unknown	High	Market demands are high due to test and size, it is a marine fish.
<i>Johnius belengerii</i>	Unknown	Low	Market demands are low, it is a marine fish.
<i>Liza abu</i>	Low	Low	Low market demands.
<i>Liza cephalus</i>	Mid	Mid	Middle market demands, it is a marine fish.
<i>Liza subviridis</i>	Mid	Mid	Middle market demands, it is marine fish.
<i>Mastacembelus mastacembelus</i>	Low	none	This fish is not eaten in Iraq due to religious reasons.
<i>Otolithes ruber</i>	Unknown	High	Market demands are high due to test and size, it is a marine fish.
<i>Pompus argenteus</i>	High	High	Market demands are high due to test and size, it is a marine fish.
<i>Scomberomorus commerson</i>	Unknown	High	Market demands are high due to test and size, it is a marine fish.
<i>Siliago sibama</i>	Unknown	Low	Market demands are low, it is a marine fish.
<i>Silurus triostegus</i>	Low	Mid	Eaten just in mid and north Iraq due to religious reasons.
<i>Tenualosa ilisha</i>	High	High	Market demands are high due to test and size, it is a marine fish.
<i>Trachinotus mookalee</i>	Unknown	Mid	Market demands are high due to test and size, it is a marine fish.

Annex F: Photos of important fish and fisheries at potential KBA sites in Central & Western Iraq



Barbus xanthopterus (Kattan) in Anbar



Barbus sharpeyi (Bunni)



Liza abu, the dominant fish in number



Silurus triostegus from Samara in Salah Ad Din



Tharthar Lake fish landing



Fish catch in Anbar