



Key Biodiversity Survey of Kurdistan, Northern Iraq

2009 Site Review

By

Korsh Ararat (NI), Nabeel Abdul Hassan (NI) & Saman Abdul Rahman (UofS)

Edited by

Anna Bachmann

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Nature Iraq Office
PO Box 249
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KBA Team

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Birds: Korsh Ararat (NI), Mariwan Qadir (Trainee), and Mohammed Turkey (Trainee).

Vascular plants/ Macrophytes: Saman Abdul Rahman (Uof S) and Nabeel Abd H. Al Ridha (NI).

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Plate 1: KBA Team at Halgurd Mountain

Introduction

This document presents winter and summer observations from the Key Biodiversity Areas (KBA) Survey conducted from 6 January to 29 January 2009 and from 3 May to 7 June 2009 (in addition to the surveys were done with Richard Porter from 12 to 23 April), in the three northern governorates of Iraq: Sulaimani, Erbil and Duhok. This survey is a joint effort of Nature Iraq (NI), the Iraqi Ministry of Environment (MoE,) and other partners including the Kurdish Ministry of Environment (KMoE), the Environmental Police, a division of the Pesh Merga, and the University of Sulaimani (UofS). The winter and summer 2009 surveys represent the fifth and sixth seasonal surveys conducted in Kurdistan, northern Iraq since the start of the project in February 2007. The field effort focused on birds and botany. A separate survey, conducted in Sulaimani Governorate, focused on water quality, physical parameters, phytoplankton, zooplankton and benthic macroinvertebrates. This site review provides the basic findings of the species surveys (birds and botany) at each site, and will assist in the determination of whether the site meets KBA criteria.

KBAs are sites that are large enough, or sufficiently interconnected, to support viable populations of the species to which they are important. The KBA selection process uses four criteria based on the presence of four categories of species for which site-scale conservation is appropriate:

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

Survey Area

The following table includes the site names and site codes with original GPS coordinates of the KBA Kurdistan Survey sites.

Table 1: KBA Kurdistan Survey Areas (Areas surveyed only in summer have an “*”, Areas surveyed in winter only have an “”)**

Governate	Site Name	Old Site Code	New Site Code	GPS Coordinates					
				Latitude (North)			Longitude (East)		
				°	'	''	°	'	''
Sulaimani	Darbandikhan Lake	DL17	S1	35	8	53.6	45	46	45.9
Sulaimani	Kalar**	KA	S3	34	33	48	45	17	7.2
Sulaimani	Maidan Area**	---	S21	34	39	21	45	40	49

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Governate	Site Name	Old Site Code	New Site Code	GPS Coordinates					
				Latitude (North)			Longitude (East)		
				°	'	"	°	'	"
Sulaimani	Ahmed Awa*	HW1	S4A	35	17.0	59.4	46	4.0	40.8
Sulaimani	Dukan Lake		S2	36	08	50.8	45	46	45.9
Sulaimani	Awesar*	HW2	S4B	35	12.0	45.0	46	7.0	55.7
Suaimani	De Lezha*	---	S23	35	27	37	45	11	40
Sulaimani	Kuradawe*	---	S27	35	50	27	45	29	58
Sulaimani	Penjween*	PA	S5	35	45	12	45	56.0	23
Sulaimani	Peramagroon*	PM	S6	35	45.0	35.7	45	14.0	28.2
Sulaimani	Homar Qawm and Shadala Valley*		S24	35	47	06	45	15	09
Sulaimani	Parazan*	---	S26	35	37	37	45	44	19
Sulaimani	Doli Plingian*	---	S28	36	24	21	44	45	07
Sulaimani	Chamchamal**	CA	S9	35	25.0	17.0	44	37.0	6.0
Sulaimani	Chami Razan Area*	CR1	S10	35	48	31.3	45	1	14.4
Sulaimani	Qara Dagh Area*	KD	S11	35	13	14.3	45	24	54.3
Sulaimani	Sangaw**		S14	35	15	45.9	44	57	48.9
Erbil	Taq Taq**	TA	E2	39	9.0	15.5	43	56	24.3
Erbil	Altun Kopri Marsh	AM1	E3	35	42.0	56.8	44	7.0	10.1
Erbil	Halgurd Mountain*	---	E13	36	43	47	44	53	04
Erbil	Sakran*		E14	36	35	26	44	59	10
Erbil	Sari Hassan Bag*	---	E15	36	43	09	44	38	45
Erbil	Doli (Valley) Smaquly*	SV1	E5A	36	21.0	51.2	44	19.0	18.9
Erbil	Bakhma*	BR	E7	36	27	25.8	43	50	54.8
Erbil	Barzan	BA1	E8	36	56.0	37.5	44	11.0	44
Erbil	Bahraka**	BS	E11	36	27	15.9	43	50	27
Dohuk	Gali Zanta*	AQA2	D1A	36	44.0	27.7	43	58.0	20.4
Dohuk	Garbeesh Mountain*	AQA3	D1B	36	48.0	49.6	43	57.0	47.5
Dohuk	Ser Amadia*	AA2	D2A	37	2.0	34.3	43	32.0	3.3
Dohuk	Sulav Resort*	AA1	D2B	37	6.0	29.1	43	28.0	51.2
Dohuk	Garagu*	GA	D5	37	1.0	53.6	43	23.0	51.6
Dohuk	Benavi*	BM	D6	37	14.0	3.9	43	24.0	25.4
Dohuk	Mangeesh Valley*	MA1	D8A	37	1.0	48.0	43	4.0	17.1

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Governate	Site Name	Old Site Code	New Site Code	GPS Coordinates					
				Latitude (North)			Longitude (East)		
				°	'	"	°	'	"
Dohuk	Gali Balinda*	---	D14	37	02	41	43	50	54
Dohuk	Dure*	---	D16	37	13	45	43	28	46
Dohuk	Mosul Lake	ML1	D10	36	44.0	28.2	42	47.0	10.1
Dohuk	Fishkhaboor Area - Turkish Border**	FA2	D11B	37	6.0	42.6	42	22.0	59.8

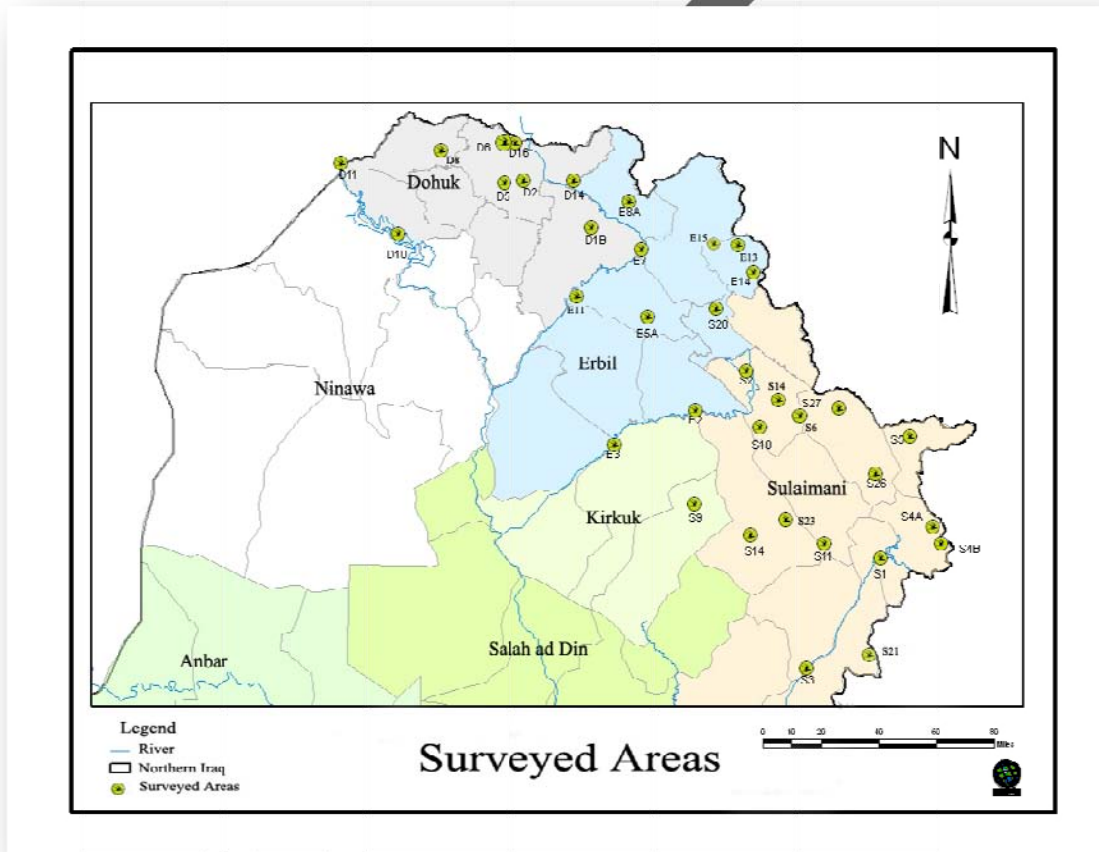


Figure 1: Map of the surveyed areas in 2009

Important Notes on Methods & Procedures

Birds

Bird observations were made using 8x42 Minox binoculars and Kowa 500 mm spotting scopes (TSN-601). At all sites the simple method of 'walking, scanning and counting' was adopted. This form of transect through the key habitats has proven to be the most effective use of limited time and man-power in KBA surveys - and is widespread throughout the world (RFPorter pers comm.). It was backed up, where appropriate, by point or area counts, especially when observing flocks of water birds. The main identification guides were Salim et al. (2006) and Porter et al. (1996). Some sites in Sulaimani were visited in April for a spring training program and then were revisited later in the year. These separate observations are dated and listed with the regular summer observations. During the summer survey, a strong emphasis was placed on determining the breeding status of birds. Breeding evidence was based on British Trust for Ornithology guidelines adapted by Richard Porter. The following table lists the breeding codes used.

Table 2: Breeding codes for Bird Observations

Possible breeder	
H	Species observed in breeding season in suitable nesting Habitat
S	Singing male present in breeding season in suitable breeding habitat
Probable breeding	
P	Pair observed in suitable nesting habitat in breeding season
D	Courtship and Display
A	Agitated behaviour or anxiety calls from adults, suggesting probable presence of nest or young nearby
B	Nest Building
Confirmed breeding	
DD	Distraction-Display or injury feigning
UN	Used Nest or eggshells found
FL	Recently FLedged young (nidicolous species) or downy young (nidifugous species). Careful consideration should be given to the likely provenance of any fledged juvenile capable of significant geographical movement. Evidence of dependency on adults (e.g. feeding) is helpful. Be cautious, even if the record comes from suitable habitat.
ON	Adults entering or leaving nest-site in circumstances indicating Occupied Nest (including high nests or nest holes, the contents of which can not be seen) or adults seen incubating
FF	Adult carrying Faecal sac or Food for young
NE	Nest containing Eggs
NY	Nest with Young seen or heard

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The conservation evaluation for each species is determined by the IUCN and can be found on the IUCN Red List (www.iucn.org). The categories and codes for conservation status are shown in the table below.

Table 3: The following codes are used to highlight each species' conservation status as assessed by the IUCN (2001).

EX	Extinct	No reasonable doubt that the last individual has died.
EW	Extinct in the wild	Known only to survive in captivity or as naturalized populations well outside its previous range.
CR	Critically Endangered	The species is in imminent risk of extinction in the wild.
EN	Endangered	The species is facing an extremely high risk of extinction in the wild.
VU	Vulnerable	The species is facing a high risk of extinction in the wild.
NT	Near Threatened	The species does not meet any of the criteria that would categorise it as risking extinction but it is likely to do so in the future.
LC	Least Concern	There are no current identifiable risks to the species.
DD	Data Deficient	There is inadequate information to make an assessment of the risks to this species.

Some species were assessed using an earlier set of criteria. Species assessed using this system have the following instead of Near Threatened and Least Concern categories:

Table 4: Lower Risk/Least Concern categories

LR/cd	Lower Risk/conservation dependent	Species which were the focus of conservation programmes and may have moved into a higher risk category if that programme was discontinued.
LR/nt	Lower Risk/near threatened	Species which are close to being classified as Vulnerable but are not the subject of conservation programmes.
LR/lc	Lower Risk/least concern	Species for which there are no identifiable risks.

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

In winter and summer, data was entered into a Microsoft Access 2007 database that was developed specifically for KBA assessments. The following two figures show the data entry screens for site information and bird observations.

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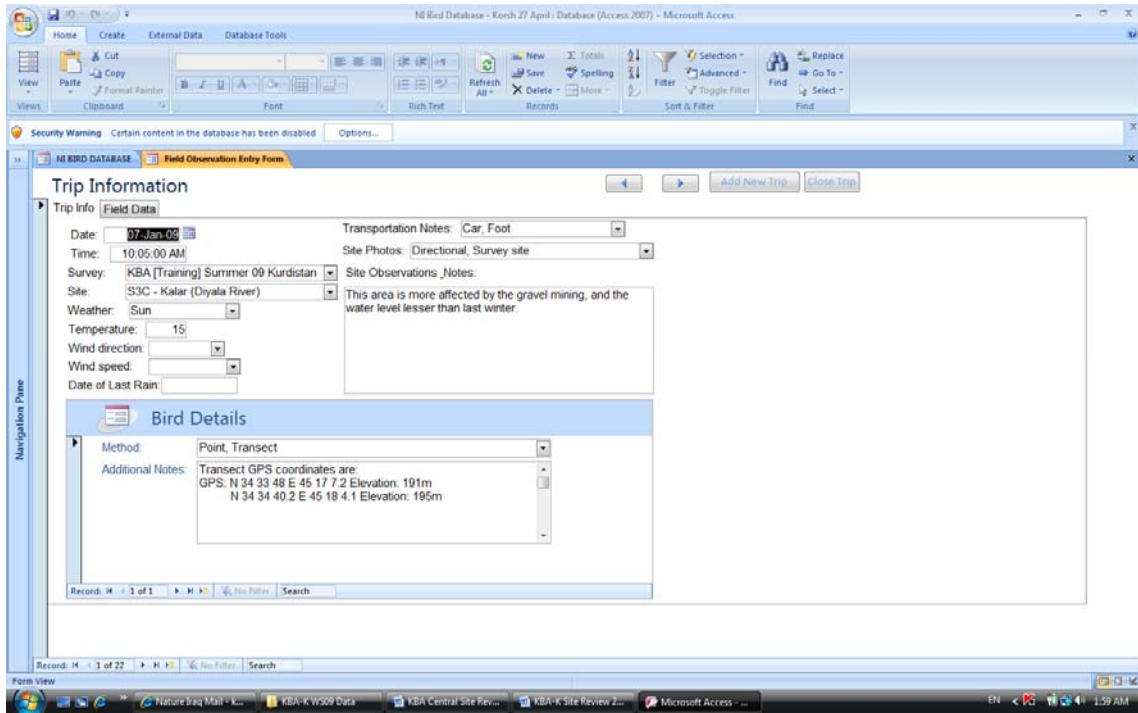


Figure 2: Microsoft Access 2007 Database screen for entering Trip Information for Bird Surveys

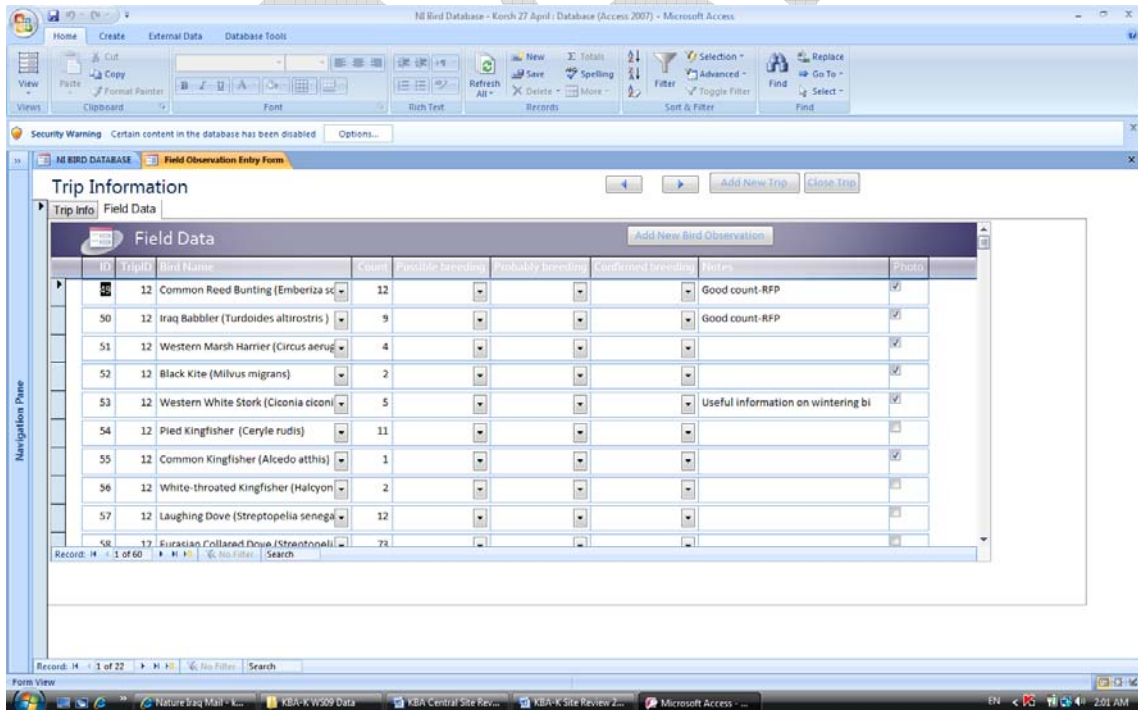


Figure 3: Microsoft Access 2007 Database screen for Field Observations for Bird Surveys

Plants

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The botany survey was only conducted in the summer survey for 2009. Sample identification was done in the field and the plants that could not be identified were collected and then identified in the lab using the following references: (Babashekh, 2006), (Bermani, 1981), (Conservation International, 2008), (Davis, 1978) and (1982), (Guest, 1966), (Hour, A. and Hour, N. M., 2001. V I) and (2001. V II), (Ghahraman, 1983), (1987), (1999), (2001) and (2003), (Maahzide, 2003), (Mashhadani, 1992), (Rawi, 1964), (Raza, T. J. and Dawd, W. H., 1983) and (Sardar, A. S., 2003), (Tohme' G. and Tome', H., 2002) (Townsend, C. C. and Guest, E., 1966), (1968), (1974), (1980a) and (1980b). General information on habitats was based on Guest (1966). Samples were collected in plastic bag (in the field) and then pressed in order to be dried and before being sent to the lab. Pictures of plants were also taken in order to help with their identification and the description of their status. Profile pictures (detailed photos of plant parts to be assembled later into a complete digital profile of the plant) were taken for some plants in order to help in the identification (see the plate below). The plant profiles as well as the method of assigning of herbarium numbers of individual specimens were introduced into the 2009 survey by the Royal Botanic Garden of Edinburgh (RBGE)/Center of Middle Eastern Plants (CMEP). More effort was also made to determine the dominant trees, shrubs, herbs and grasses at the sites. Ideas about the vegetation cover at the site were formed using direct observation (estimating the percentage of vegetated and non-vegetated area). The ecological condition of the site was rated on a scale of 1 to 5 with 1 representing the least disturbed or impacted (best ecological condition and quality) and 5 representing the most disturbed or impacted (poorest ecological condition and quality). Though this methodology is subjective, the goal of the survey was simply to conduct a rapid assessment of the overall plant communities and habitat and their health.

In summer, data was entered into a Microsoft Access 2007 database that was developed specifically for KBA assessments. The following two figures show the data entry screens for site information and waypoint observations for plants.

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Plate 2: Partial Plant profile using Photoshop CS3

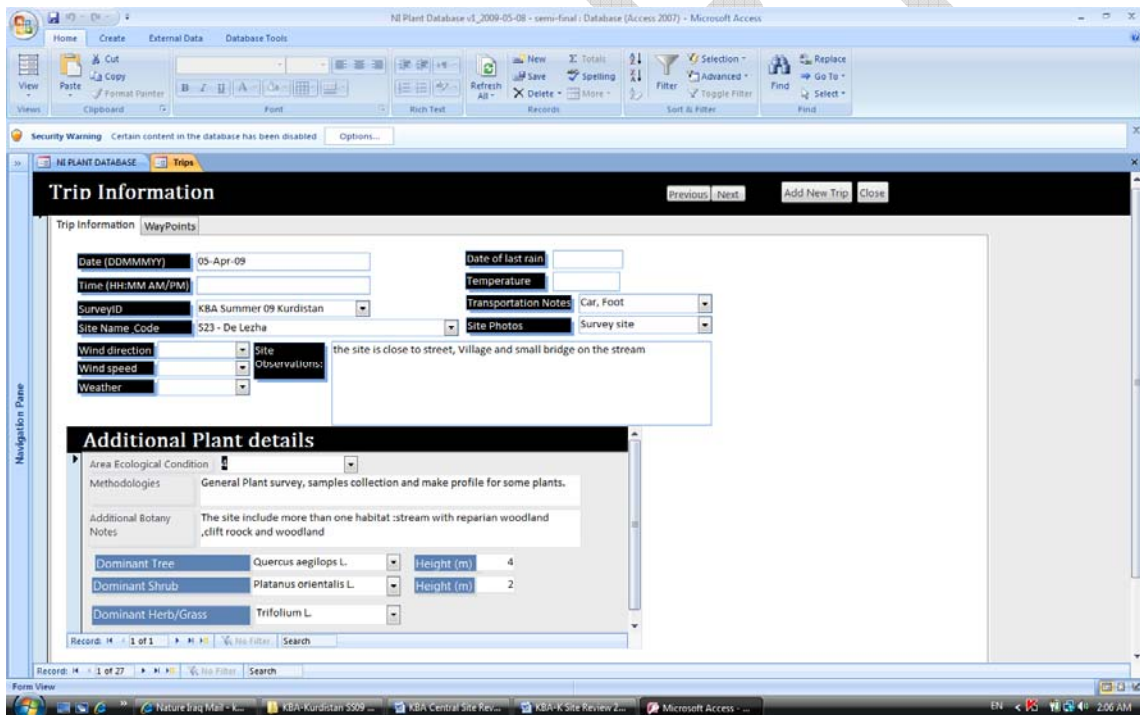


Figure 4: Microsoft Access 2007 Database screen for entering Trip Information for Botany Surveys

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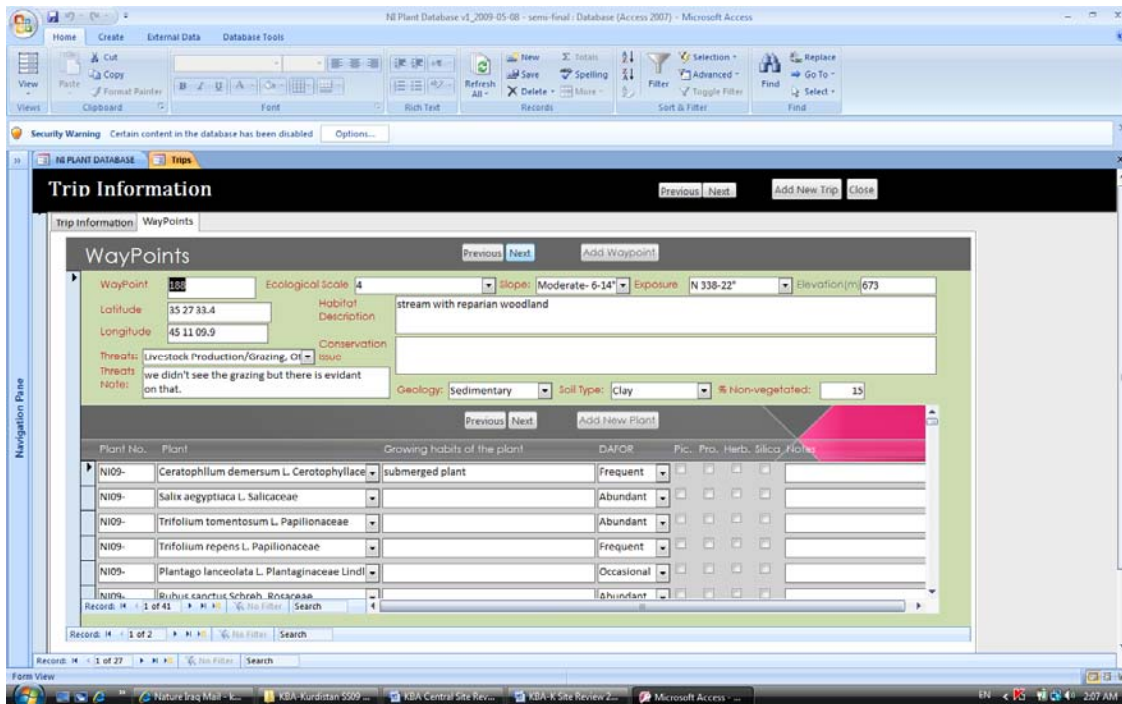


Figure 5: Microsoft Access 2007 Database screen for Waypoint Observations for Botany Surveys

Site Review

This section reports on birds and plant species seen at specific sites and waypoints, with some of these species being of “conservation significance” or “conservation concern.” A complete list of bird and plant species seen in Kurdistan, northern Iraq and their status since the start of the work is presented in Annexes A and B.

1-Kalar (S3) – GPS: N 34 33 48 E 45 17 7.2 Elevation: 191m (Surveyed in winter only)



Plate 3: Kalar (S3) in winter

Site Description: This site is located between two important bird areas, Darbandikhan to the north and Baquba Wetlands to the south. There are surrounding hills, some cultivated areas, and extensive riparian zones along the Diyala River. It is located to the southeast of Sulaimani City. The Diyala River travels south-southwest from the outlet of Darbandikhan and eventually enters the Tigris River south of Baghdad.

Winter Observations were made on 7/Jan/2009:

Birds: Total count: 1158. Species Number: 60. Species observed at the site are listed in the table below.

Table 5: List of birds observed during the winter survey at Kalar (S3) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See- see Partridge	<i>Ammoperdix griseogularis</i>	2	LC
Common Quail	<i>Coturnix coturnix</i>	1	LC
Mallard	<i>Anas platyrhynchos</i>	82	LC
Eurasian Teal	<i>Anas crecca</i>	39	LC
Little Grebe	<i>Tachybaptus ruficollis</i>	6	CC
Western White Stork	<i>Ciconia ciconia</i>	5	LC
Eurasian Bittern	<i>Botaurus stellaris</i>	1	CC
Black Crowned Night Heron	<i>Nycticorax nycticorax</i>	4	LC
Grey Heron	<i>Ardea cinerea</i>	9	LC
Great White Egret	<i>Ardea [Egretta] alba</i>	12	LC
Little Egret	<i>Egretta garzetta</i>	9	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	215	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	LC

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Common Name	Scientific Name	Count	Conservation Status
Black Kite	<i>Milvus migrans</i>	2	LC
Western Marsh Harrier	<i>Circus aeruginosus</i>	4	LC
Hen Harrier	<i>Circus cyaneus</i>	1	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	LC
Common Moorhen	<i>Gallinula chloropus</i>	26	LC
Eurasian Coot	<i>Fulica atra</i>	4	LC
Pied Avocet	<i>Recurvirostra avosetta</i>	2	LC
Northern Lapwing	<i>Vanellus vanellus</i>	24	LC
Red- wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	9	LC
White-tailed Lapwing	<i>Vanellus leucurus</i>	2	CC
Little Ringed Plover	<i>Charadrius dubius</i>	6	LC
Common Snipe	<i>Callinago callinago</i>	2	LC
Common Redshank	<i>Tringa totanus</i>	4	LC
Common Greenshank	<i>Tringa nebularia</i>	2	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	3	LC
Little Stint	<i>Calidris minuta</i>	5	LC
Armenian Gull	<i>Larus armenicus</i>	25	CC
Great Black-headed Gull	<i>Larus ichthyaetus</i>	2	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	36	LC
Whiskered Tern	<i>Chlidonias hybrida</i>	1	LC
Common Woodpigeon	<i>Columba palumbus</i>	3	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	73	LC
Laughing Dove	<i>Streptopelia senegalensis</i>	12	LC
White-throated Kingfisher	<i>Halcyon smyrnensis</i>	2	LC
Common Kingfisher	<i>Alcedo atthis</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	11	LC
Eurasian Magpie	<i>Pica pica</i>	16	LC
Rook	<i>Corvus frugilegus</i>	230	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	8	LC
Northern Raven	<i>Corvus corax</i>	64	LC
Crested Lark	<i>Galerida cristata</i>	28	LC
Eurasian Skylark	<i>Alauda arvensis</i>	19	LC
Graceful Prinia	<i>Prinia gracilis</i>	3	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	3	CC
Iraq Babbler	<i>Turdoides altirostris</i>	9	CC
Winter Wren	<i>Troglodytes troglodytes</i>	1	LC
Common Starling	<i>Sturnus vulgaris</i>	52	LC
European Robin	<i>Eritbacus rubecula</i>	2	LC
Eurasian Stonechat	<i>Saxicola torquatus (S.rubicula)</i>	6	LC
House Sparrow	<i>Passer domesticus</i>	15	LC
Grey Wagtail	<i>Motacilla cinerea</i>	2	LC
White Wagtail	<i>Motacilla alba</i>	6	LC
Water Pipit	<i>Anthus spinoletta</i>	5	LC
Common Chaffinch	<i>Fringilla coelebs</i>	17	LC
European Greenfinch	<i>Carduelis chloris</i>	5	LC

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Common Name	Scientific Name	Count	Conservation Status
European Goldfinch	<i>Carduelis carduelis</i>	6	LC
Common Reed Bunting	<i>Emberiza schoeniclus</i>	12	LC

Conservation Significance: Some birds of conservation concern were observed such as: Iraq Babbler (*Turdoides altirostris*), Armenian Gull (*Larus armenicus*), Eurasian Bittern (*Botaurus stellaris*), White-tailed Lapwing (*Vanellus leucurus*), and White-eared Bulbul (*Pycnonotus leucotis*).

Conservation Issues & Recommendations: The area is highly impacted by gravel mining, and agriculture, also the sewage from Kalar City as well as towns and villages upstream enters the Diyala River untreated. This area needs better environmental management and controls on pollution sources, particularly as the Diyala River is an important water source for local and downstream populations as well as wildlife. Additional monitoring for birds and other wildlife along the river corridor is needed.

2- Sangaw Area (S14), GPS: N 35 17 24.8 E 45 13 8.3, Elevation: 924, (Surveyed in winter only):



Plate 4: Sangaw Areas (S14) in winter

Site Description: This site is a flat area with agricultural lands and a series of mountains to the north. The foothills form a valley near this site which features little water bodies that are made by small springs. Some of these are seasonal waters that just exist in winter and disappear in summer. There are also some villages in the area.

Winter Observations were on 8/Jan/2009:

Birds: Total count: 351. Species Number: 22. Species observed at the site are listed in the table below.

Table 6: List of birds that observed during winter survey at Sangaw Area (S14) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	LC
Grey Heron	<i>Ardea cinerea</i>	1	LC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	LC

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Common Name	Scientific Name	Count	Conservation Status
Hen Harrier	<i>Circus cuaneus</i>	1	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	LC
Northern Lapwing	<i>Vanellus vanellus</i>	7	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	5	LC
Eurasian Magpie	<i>Pica pica</i>	4	LC
Northern Raven	<i>Corvus corax</i>	2	LC
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	8	LC
Crested Lark	<i>Galerida cristata</i>	170	LC
Woodlark	<i>Lullula arborea</i>	28	LC
Eurasian Skylark	<i>Alauda arvensis</i>	65	LC
Winter Wren	<i>Troglodytes troglodytes</i>	1	LC
Western Rock Nuthatch	<i>Sitta neumayer</i>	4	CC
Common Starling	<i>Sturnus vulgaris</i>	11	LC
Black Redstart	<i>Phoenicurus ochruros</i>	3	LC
Isabelline Wheatear	<i>Oenanthe isabellina</i>	2	LC
Mourning Wheatear	<i>Oenanthe lugens</i>	1	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	5	CC
House Sparrow	<i>Passer domesticus</i>	12	LC
Common Chaffinch	<i>Fringilla coelebs</i>	15	LC

Conservation Significance: Birds of conservation concern are: Finsch's Wheatear (*Oenanthe finschii*), and Western Rock Nuthatch (*Sitta neumayer*).

Conservation Issues & Recommendations: This area is agricultural and recently some oil fields were found which may have a negative impact. It is not known if an Environmental Impact Assessment (EIA) has been conducted for these activities.

3- Maidan Area (S21), GPS: N 34 39 20.9 E 45 40 49 Elevation: 508 (Surveyed in winter only):



Plate 5: Maidan Area (S21) in winter

Site Description: This site is located to the southeast of Darbandikhan between the Diyala River and the Iranian border northeast to Kalar City close to Kani Pamu and Razwar Villages. It consists of an open

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area with foothills and agricultural lands and a series of mountains extend from northeast to the northwest of the area.

Winter Observations were on 9/Jan/2009:

Birds: Total count: 108. Species Number: 18. Species observed at the site are listed in the table below.

Table 7: List of birds observed during the winter survey at Maidan Area (S21) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	5	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	LC
Merlin	<i>Falco columbarius</i>	1	LC
Lanner	<i>Falco biarmicus</i>	1	CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	12	LC
Eurasian Magpie	<i>Pica pica</i>	4	LC
Northern Raven	<i>Corvus corax</i>	2	LC
Desert Lark	<i>Ammonanes deserti</i>	2	LC
Crested Lark	<i>Galerida cristata</i>	32	LC
Eurasian Skylark	<i>Alda arvensis</i>	8	LC
Common Starling	<i>Sturnus vulgaris</i>	7	LC
Mourning Wheatear	<i>Oenanthe lugens</i>	5	LC
House Sparrow	<i>Passer domesticus</i>	8	LC
White Wagtail	<i>Motacilla alba</i>	2	LC
Common Chaffinch	<i>Fringilla coelebs</i>	10	LC
European Goldfinch	<i>Carduelis carduelis</i>	3	LC

Other Wildlife Seen: Just north of this area in the fall of 2008, a leopard was killed by a landmine near the village of Mortka, east of Darbandikhan Lake and in winter of 2009 Nature Iraq received a picture of a leopard killed in the Diyala Governorate to the south, so it is likely that this endangered species ranges in the mountains along the Iraq/Iran border in this area. In addition, locals in the area have reported Goitered gazelle (*Gazella subgutturosa*) (see below).

Conservation Significance: A bird of conservation concern, the Lanner Falcon (*Falco biarmicus*) was observed, as was the globally vulnerable Goitered gazelle (*Gazella subgutturosa*) and endangered Leopard (*Panthera* sp.).

Conservation Issues & Recommendations: This area is used by grazing animals and people from the area reported that some gazelles died last year; possibly as a result of the current drought. There are mine fields to the east of the area on the Iraq-Iran border and it is necessary to clear these areas of mines, as they impact both humans and wildlife alike. Additionally, gazelles may be facing strong hunting pressures in the area and this deserves more research to determine hunting limits and protective action through legislation, enforcement and hunter education programs.

4 – Chamchamal (S9), GPS: N 35 25 41.2 E 44 37 5.9 Elevation: 634m (Surveyed in winter only):

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Plate 6: Chamchamal (S9) in winter

Site Description: This area is about 5 km² and includes the foothills located near the town of Chamchamal, approximately 79 km east of Sulaimani City. Passing through this area is a small stream (Khra Azizy) which generally runs southward.

Winter Observations were on 10/Jan/2009:

Birds: Total count: 287. Species Number: 33. Species observed at the site are listed in the table below.

Table 8: List of birds that were observed during the winter survey at Chamchamal (S9) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	5	LC
Grey Heron	<i>Ardea cinerea</i>	1	LC
Little Egret	<i>Egretta garzetta</i>	1	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	LC
Asian Imperial Eagle	<i>Aquila heliaca</i>	2	VU and CC
Northern Lapwing	<i>Vanellus vanellus</i>	5	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	1	LC
Common Woodpigeon	<i>Columba palumbus</i>	9	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	5	LC
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	LC
Common Kingfisher	<i>Alcedo atthis</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	2	LC
Eurasian Magpie	<i>Pica pica</i>	4	LC
Western Jackdaw	<i>Corvus monedula</i>	52	LC
Northern Raven	<i>Corvus corax</i>	2	LC
Desert Lark	<i>Ammomanes deserti</i>	5	LC
Crested Lark	<i>Galerida cristata</i>	26	LC
Eurasian Skylark	<i>Alauda arvensis</i>	5	LC
Common Chaffinch	<i>Phylloscopus collybita</i>	9	LC
Iraq Babbler	<i>Turdoides altirostris</i>	21	CC
Winter Wren	<i>Troglodytes troglodytes</i>	1	LC
Common Starling	<i>Sturnus vulgaris</i>	14	LC

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Common Name	Scientific Name	Count	Conservation Status
European Robin	<i>Erithacus rubecula</i>	3	LC
Black Redstart	<i>Phoenicurus ochruros</i>	3	LC
Eurasian Stonechat	<i>Saxicola torquatus (S. rubicola)</i>	2	LC
House Sparrow	<i>Passer domesticus</i>	12	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	54	LC
White Wagtail	<i>Motacilla alba</i>	3	LC
Common Chaffinch	<i>Fringilla coelebs</i>	15	LC
European Greenfinch	<i>Carduelis chloris</i>	6	LC
European Goldfinch	<i>Carduelis carduelis</i>	11	LC

Conservation Significance: A globally vulnerable Asian Imperial Eagle (*Aquila heliaca*), and a conservation concern Iraq Babbler (*Turdoides altirostris*) were observed during the winter survey.

Conservation Issues & Recommendations: This area is used for agriculture and as a resort/picnic site. Hunting also occurs here and should be regulated and controlled. The site would benefit from signage and local awareness building programs to encourage people not to leave their garbage at the site.

5- Darbandikhan Lake (S1), GPS: N 35 08 53.6 E 45 46 45.9, Elevation: 578m (Surveyed in winter and summer)



Plate 7: Darbandikhan Lake (S1) in summer

Site Description: Darbandikhan is a large, deep, fresh water lake of approximately 7500 ha, located 60 km southeast of Sulaimani City. It is fed by two main rivers, the Tanjero in the north and the Sirwan in the east, and surrounded by mountains (Bashari, Zmnako, and Zawaly) that are covered in oak forests and/or grassland habitats. Before entering Iraq, the Sirwan travels through the Bozin and Marakhil area in Kermanshah Province, Iran, which is 23,554 hectares in size and is listed as an IUCN Category V (Protected Landscape/Seascape) Protected Area. The lake and surrounding mountains support significant numbers of birds. During the 2008 and 2009 surveys, overall water levels were greatly reduced due to severe drought affecting the region and dam building activity in the Sirwan River Basin in Iran.

Observations in winter were on 13/Jan/2009 and in summer were on 17/April/2009 and 10/May/2009:

Winter-Birds: Total count: 2820. Species Number: 62. Species observed at the site in winter are listed in the table below.

Table 9: List of birds that observed during winter survey at Darbandikhan Lake (S1) with their conservation status

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Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	4	LC
Common Shelduck	<i>Tadorna tadorna</i>	8	LC
Mallard	<i>Anas platyrhynchos</i>	825	LC
Northern Shoveler	<i>Anas clypeata</i>	4	LC
Eurasian Teal	<i>Anas crecca</i>	172	LC
Smew	<i>Mergellus albellus</i>	13	LC
Great Crested Grebe	<i>Podiceps cristatus</i>	46	LC
Eurasian Spoonbill	<i>Platalea leucorodia</i>	6	CC
Great White Egret	<i>Ardea [Egretta] alba</i>	5	LC
Little Egret	<i>Egretta garzetta</i>	12	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	730	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	LC
Hen Harrier	<i>Circus cyaneus</i>	1	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	LC
Sttepe Buzzard	<i>Buteo b. vulpinus</i>	2	LC
Long-legged Buzzard	<i>Buteo risinus</i>	1	LC
Steppe Eagle	<i>Aquila nipalensis</i>	1	CC
Asian Imperial Eagle	<i>Aquila heliaca</i>	2	VU and CC
Eurasian Coot	<i>Fulica atra</i>	6	LC
Pied Avocet	<i>Recurvirostra avosetta</i>	12	LC
Northern Lapwing	<i>Vanellus vanellus</i>	3	LC
Little Ringed Plover	<i>Charadrius dubius</i>	2	LC
Common Redshank	<i>Tringa totanus</i>	9	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	LC
Yellow-legged Gull	<i>Larus michabellis</i>	4	LC
Armenian Gull	<i>Larus armenicus</i>	178	CC
Great Black-headed Gull	<i>Larus ichthyaetus</i>	46	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	340	LC
Rock Dove	<i>Columba livia</i>	32	LC
Common Woodpigeon	<i>Columba palumbus</i>	38	LC
Little Owl	<i>Athene noctua</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	3	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	LC
Eurasian Magpie	<i>Pica pica</i>	5	LC
Eurasian Jay	<i>Garrulus glandarius</i>	1	LC
Northern Raven	<i>Corvus corax</i>	18	LC
Sombre Tit	<i>Poecile lugubris</i>	1	CC
Great Tit	<i>Parus major</i>	4	LC
Blue Tit	<i>Cyanistes caeruleus</i>	2	LC
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	13	LC
Crested Lark	<i>Galerida cristata</i>	86	LC
Eurasian Skylark	<i>Alauda arvensis</i>	18	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	4	CC
Common Chiffchaff	<i>Phylloscopus collybita</i>	3	LC
Winter Wren	<i>Troglodytes troglodytes</i>	1	LC

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Common Name	Scientific Name	Count	Conservation Status
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	1	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	1	CC
Common Starling	<i>Sturnus vulgaris</i>	24	LC
Eurasian Blackbird	<i>Turdus merula</i>	4	LC
European Robin	<i>Erithacus rubecula</i>	3	LC
Black Redstart	<i>Phoenicurus ochruros</i>	15	LC
Mourning Wheatear	<i>Oenanthe lugens</i>	3	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	CC
House Sparrow	<i>Passer domesticus</i>	21	LC
Dead Sea Sparrow	<i>Passer moabiticus</i>	10	CC
White Wagtail	<i>Motacilla alba</i>	2	LC
Water Pipit	<i>Anthus spinoletta</i>	12	LC
Common Chaffinch	<i>Fringilla coelebs</i>	13	LC
European Goldfinch	<i>Carduelis carduelis</i>	29	LC
Pine Bunting	<i>Emberiza leucocephalos</i>	1	LC
Rock Bunting	<i>Emberiza cia</i>	2	LC
Common Reed Bunting	<i>Emberiza schoeniclus</i>	9	LC

Summer: Visit on 17/April/ 2009:

Birds: Total count: 1066. Species Number: 23. Species observed at the site in summer are listed in the table below:

Table 10: List of birds that observed during breeding season at Darbandikhan Lake (S1) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Mallard	<i>Anas platyrhynchos</i>	2	—	LC
Grey Heron	<i>Ardea cinerea</i>	8	—	LC
Little Egret	<i>Egretta garzetta</i>	9	—	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Osprey	<i>Pandion haliaetus</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	3	H and P	EN and CC
Short-toed Snake Eagle	<i>Circus gallicus</i>	2	H	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	—	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Common Greenshank	<i>Tringa nebularia</i>	1	—	LC
Armenian Gull	<i>Larus armenicus</i>	50	H	CC
Common Black-headed Gull	<i>Larus ridibundus</i>	32	H	LC
Slender-billed Gull	<i>Larus genei</i>	800	H, P and ON	CC
Common Tern	<i>Sterna hirundo</i>	110	H and P	LC
White-winged Tern	<i>Chlidonias leucopterus</i>	12	H and P	LC
Rock Dove	<i>Columba livia</i>	3	H	LC
Eurasian Magpie	<i>Pica pica</i>	1	H	LC
Northern Raven	<i>Corvus corax</i>	18	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i> [Hirundo]	2	H	LC
Crested Lark	<i>Galerida cristata</i>	3	H	LC
Whinchat	<i>Saxicola rubetra</i>	1	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
White Wagtail	<i>Motacilla alba</i>	2	—	LC

Visit on 10/May/2009:

Birds: Total count: 3758. Species Number: 56. Species observed at the site in summer are listed in the table below.

Table 11: List of birds that observed during breeding season at Darbandikhan Lake (S1) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
See-see Partridge	<i>Ammoperdix griseogularis</i>	7	H and P	LC
Western White Stork	<i>Ciconia ciconia</i>	37	H	LC
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	2	H	LC
Squacco Heron	<i>Ardeola ralloides</i>	8	H	LC
Cattle Egret	<i>Bubulcus ibis</i>	26	H	LC
Grey Heron	<i>Ardea cinerea</i>	2	H	LC
Little Egret	<i>Egretta garzetta</i>	11	H	LC
Lesser Kestrel	<i>Falco naumani</i>	1	H	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Osprey	<i>Pandion haliaetus</i>	1	H	LC
Egyptian Vulture	<i>Neophron perenopterus</i>	3	H	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	4	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	2	H	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	H	LC
Black-winged Stilt	<i>Himantopus ostralegus</i>	6	H	LC
Little Ringed Plover	<i>Charadrius dubius</i>	2	H	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	12	H, P, and ON	LC
Slender-billed Gull	<i>Larus genei</i>	3200	H, P, and ON	CC
Gull-billed Tern	<i>Gelochelidon [Sterna] nilotica</i>	23	H, P, and ON	LC
Common Tern	<i>Sterna hirundo</i>	45	H, P, and ON	LC
Little Tern	<i>Sternula [Sterna] albifrons</i>	13	H	LC
White-winged Tern	<i>Chlidonias leucopterus</i>	110	H, and P	LC
Rock Dove	<i>Columba livia</i>	17	H, and P	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	3	H	LC
European Roller	<i>Coracias garrulus</i>	3	H	NT and CC
Syrian Woodpecker	<i>Dendrocopus syriacus</i>	2	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	4	H	LC
Lesser Grey Shrike	<i>Lanius minor</i>	3	H	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	5	H,S, and P	LC
Eurasian Magpie	<i>Pica pica</i>	5	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC
Northern Raven	<i>Corvus corax</i>	15	H, P, and ON	LC
Sand Martin	<i>Riparia riparia</i>	54	H	LC
Barn Swallow	<i>Hirundo rustica</i>	11	H	LC
Calandra Lark	<i>Melanocorypha calandra</i>	2	H, and S	LC
Crested Lark	<i>Galerida cristata</i>	5	H	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	4	H, and S	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Cetti's Warbler	<i>Cettia cetti</i>	2	H, and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	3	H, and S	LC
Icterine Warbler	<i>Hippolais icterina</i>	1	H	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	1	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	4	H, S, P, NE, and ON	CC
Eurasian Blackbird	<i>Turdus merula</i>	3	H, S, and P	LC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropgygia] galactotes</i>	3	H, and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	2	H	LC
Whinchat	<i>Saxicola rubetra</i>	2	H	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	22	H, and P	LC
Western Yellow Wagtail	<i>Motacilla flava</i>	7	H	LC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
White Wagtail	<i>Motacilla alba</i>	2	H	LC
Red-throated Pipit	<i>Anthus cervinus</i>	18	—	LC
European Goldfinch	<i>Carduelis carduelis</i>	12	H, S, and P	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	9	H, and S	LC
Ortolan Bunting	<i>Emberiza hortulana</i>	4	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	9	H,S, and P	LC

Winter - Other Wildlife Seen: One Common Jackal (*Canis aureus*) (LC) was observed.

Summer -Plants: Two waypoints were visited at Darbandikhan on the final visit to the site in summer. The first was Waypoint 201 (N: 35 06 54.1 E: 45 43 04.5) which was chosen in an open woodland habitat. The second was Waypoint 202 (N: 35 06 17.6 E: 45 42 04.9) which was chosen along the river with riparian woodland habitat.

Waypoint 201: Total species: 60. Ecological scale 3 (moderately disturbed).

This waypoint was at the foothill of the mountain which surrounds the lake from the east. The habitat was Open woodland (oaks) where the altitude of this area was 496m. The dominant tree was *Quercus aegilops*, the dominant shrub was *Rubus sanctus*, the dominant herb was *Sinapis arvensis* and the dominant grasses were *Aegilops crassa* and *Avena sp.* The area was steep (27-45°), the exposure was to the northeast (23-67°), the soil type was clay, the geology was sedimentary, and the percentage of non-vegetated area was only 5%.

Waypoint 202: Total species: 65. Ecological scale 4 (disturbed). This waypoint was at the outlet of the lake (below the dam), so the habitat was river with riparian woodland about 2-3m wide and beyond it were rocky cliffs. There were trees, shrubs, herbs and grasses and their distributions were frequent, such as *Salix acmophylla* (tree), *Rubus sanctus* (shrub), *Alcea kurdica* (herb), and *Avena sativa* (grass). There were abundant Jujube shrubs (*Zizyphus jujuba*). The geology and the soil type at this area were sedimentary and silt respectively. The slope of this area was gentle (0-5°) and the exposure was to the south (158-202°). The elevation was 358m and the percentage of non-vegetated area was 60%.

Conservation significance: About 1% of the global population of the Great Cormorant (*Phalacrocorax carbo*) and two individuals of globally vulnerable Asian Imperial Eagle (*Aquila heliaca*) were wintering, also a considerable number (1600 pairs) of the global population of conservation concern Slender-billed Gull (*Larus genei*) [about a week before this survey many nests of Slender-billed Gull (*Larus genei*), Common Terns (*Sterna hirundo*), and Gull-billed Tern (*Gelochelidon [Sterna] nilotica*) were observed but they were flushed out as a result of a rise in the water level in the lake] were breeding; the globally endangered Egyptian Vulture (*Neophron percnopterus*) possibly breeds here, and one individual of the globally vulnerable Lesser Kestrel (*Falco naumani*) was observed last summer. Three individuals of globally near-threatened European Roller (*Coracias garrulus*) possibly were breeding and some other birds of conservation concern

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were observed during this survey such as the Armenian Gull (*Larus armenicus*), Eurasian Spoonbill (*Platalea leucorodia*), Steppe Eagle (*Aquila nipalensis*), White-eared Bulbul (*Pycnonotus leucotis*), Dead Sea Sparrow (*Passer moabiticus*), Eastern Rock Nuthatch (*Sitta tephronota*), Western Rock Nuthatch (*Sitta neumayer*), and Sombre Tit (*Poecile lugubris*).

Although the site has a disturbed ecological condition, it contains many important plants that increase the necessity of conservation and the protection of this area from threats. This site contains two endemic plants: *Notobasis syriaca*, and *Onosma albo-rosam*. There were many rare species at this site such as *Juncus effusus* (very rare) (Townsend, V8, p318), *Rubus caesius* (Townsend,V2, p120), *Muscari tenuiflorum* (Townsend,V8,p129) and *Alcea sulphurea* (Townsend,V4, p250). Also this site contains two native species of oaks *Quercus aegilops* and *Quercus infectoria* (Townsend, V2, p45).



Plate 8: Rare plants at Derbandikhan Lake, *Alcea sulphurea* (left) and *Muscari tenuiflorum* (right).

Conservation Issues & Recommendations: There are many threats to this site, such as fishing, livestock production/grazing, resort and tourism activities, sewage and water pollution, garbage, and the dam and electric station. A police station has also been constructed close to the site. All these threats are affecting the ecological health of the site, although important plants and birds were observed here. Therefore, it is highly recommended to increase awareness about the significance of this area, and encourage the efforts of protecting this site from these threats, or at least decreasing their impact. One of the most important threats to this lake is from an Iranian government built dam on one of lake's sources (Sirwan River), which now prevents the water from feeding into lake. This has decreased the water level and threatened all the life in and around the lake. Another important threat to the site comes from the Tanjero that now carries the full load of sewage from the city of Sulaimani, and other downstream towns and villages, into the lake. Also, the drought of the past two years has impacted water levels and quality.

6- Dukan Lake (S2), GPS: N 36 08 50.8 Elevation: 485m (Surveyed in winter & summer)

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Plate 9: Dukan Lake (S2) in summer

Site Description: This site is a large lake/reservoir of about 25,000 ha that is fed by the Little Zab River from the northeast, and the Hizop stream from the northwest. It is surrounded by mountains (Mt. Kosrat, Qarasrd, and Sara), hills, and lowland areas that are characterized by oak forests and grassland ecosystems. About 65 km northwest of Sulaimani City, there is a gorge that extends from the Turba Village to Bemusha Village. This gorge separates the larger northern part of the lake from the small southern part of the lake where the dam is located. Dukan town is located on the south side of the lake, below the dam. Villages and towns with agricultural lands, such as Rania, Chwar Qurna, and Qala Dza surround the lake, and there are small mineral ponds near Rania City and the Little Zab input.

Observations in winter were on 15/Jan/2009 and in summer were on 13/May/2009:

Winter -Birds: Total count: 11645. Species Number: 70. Species observed at the site are listed in the table below.

Table 12: List of birds that were observed during the winter survey at Dukan Lake (S2) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	6	LC
Common Shelduck	<i>Tadorna Tadorna</i>	1200	LC
Ruddy Shelduck	<i>Tadorna ferruginea</i>	51	LC
Eurasian Wigeon	<i>Anas Penelope</i>	6	LC
Mallard	<i>Anas platyrhynchos</i>	910	LC
Eurasian Teal	<i>Anas crecca</i>	248	LC
Smew	<i>Mergellus albellus</i>	5	LC
Greylag Goose	<i>Anser anser</i>	195	LC
Greater White-fronted Goose	<i>Anser albifrons</i>	552	LC
Lesser White-fronted Goose	<i>Anser erythropus</i>	410	VU and CC
Great Crested Grebe	<i>Podiceps cristatus</i>	930	LC
Greater Flamingo	<i>Phoenicopterus [ruber] roseus</i>	1	CC
Eurasian Spoonbill	<i>Platalea leucorodia</i>	3	CC
Grey Heron	<i>Ardea cinerea</i>	35	LC
Great White Egret	<i>Ardea [Egretta] alba</i>	11	LC
Little Egret	<i>Egretta garzetta</i>	21	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	2400	LC
Common Kestrel	<i>Falco tinnunculus</i>	2	LC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	7	LC
Hen Harrier	<i>Circus cyaneus</i>	2	LC
Pallid Harrier	<i>Circus macrourus</i>	1	CC

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Common Name	Scientific Name	Count	Conservation Status
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	4	LC
Bonelli's Eagle	<i>Aquila [Hieraaetus] fasciata [fasciatus]</i>	1	LC
Eurasian Coot	<i>Fulica atra</i>	9	LC
Northern Lapwing	<i>Vanellus vanellus</i>	17	LC
Little Ringed Plover	<i>Charadrius dubius</i>	21	LC
Common Redshank	<i>Tringa totanus</i>	9	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	45	LC
Little Stint	<i>Calidris minuta</i>	4	LC
Yellow-legged Gull	<i>Larus michabellis</i>	16	LC
Armenian Gull	<i>Larus armenicus</i>	720	CC
Great Black-headed Gull	<i>Larus ichthyaelus</i>	145	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	2820	LC
Slender-billed Gull	<i>Larus genei</i>	2	CC
Rock Dove	<i>Columba livia</i>	235	LC
Common Woodpigeon	<i>Columba palumbus</i>	34	LC
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	7	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	2	LC
Eurasian Magpie	<i>Pica pica</i>	4	LC
Western Jackdaw	<i>Corvus monedula</i>	2	LC
Northern Raven	<i>Corvus corax</i>	13	LC
Great Tit	<i>Parus major</i>	5	LC
Blue Tit	<i>Cyanistes caeruleus</i>	2	LC
Calandra Lark	<i>Melanocorypha calandra</i>	1	LC
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	8	LC
Crested Lark	<i>Galerida cristata</i>	210	LC
Eurasian Skylark	<i>Alauda arvensis</i>	7	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	4	LC
Winter Wren	<i>Troglodytes troglodytes</i>	2	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	CC
Common Starling	<i>Sturnus vulgaris</i>	33	LC
Eurasian Blackbird	<i>Turdus merula</i>	2	LC
European Robin	<i>Erithacus rubecula</i>	7	LC
Black Redstart	<i>Phoenicurus ocochruros</i>	9	LC
Eurasian Stonechat	<i>Saxicola torquatus (S. rubicola)</i>	12	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	4	CC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	LC
House Sparrow	<i>Passer domesticus</i>	37	LC
Rock Sparrow	<i>Petronia petronia</i>	68	LC
Grey Wagtail	<i>Motacilla cinerea</i>	1	LC
White Wagtail	<i>Motacilla alba</i>	7	LC
Water Pipit	<i>Anthus spinoletta</i>	5	LC
Common Chaffinch	<i>Fringilla coelebs</i>	36	LC
European Greenfinch	<i>Carduelis chloris</i>	17	LC
Eurasian Siskin	<i>Carduelis spinus</i>	1	LC
European Goldfinch	<i>Carduelis carduelis</i>	27	LC

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Common Name	Scientific Name	Count	Conservation Status
Linnet	<i>Carduelis cannabina</i>	11	LC
Rock Bunting	<i>Emberiza cia</i>	9	LC

Summer-Birds: Total count: 5557. Species Number: 71. Species observed at the site are listed in the table below.

Table 13: List of birds that were observed during the breeding season at Dukan Lake (S2) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	H and P	LC
Eurasian Wigeon	<i>Anas penelope</i>	7	H and P	LC
Mallard	<i>Anas platyrhynchos</i>	5	H and P	LC
Northern Shoveler	<i>Anas chrypeata</i>	9	H and P	LC
Garganey	<i>Anas querquedula</i>	10	H and P	LC
Marbled Duck	<i>Marmaronetta angustirostris</i>	2	H and P	VU and CC
Red-crested Pochard	<i>Netta rufina</i>	4	—	CC
Ferruginous Duck	<i>Aythya nyroca</i>	2	H	NT and CC
Great Crested Grebe	<i>Podiceps cristatus</i>	8	H and P	LC
Greater Flamingo	<i>Phoenicopterus [ruber] roseus</i>	1	H	CC
Western White Stork	<i>Ciconia ciconia</i>	2	H	LC
Black Stork	<i>Ciconia nigra</i>	1	H	CC
Eurasian Spoonbill	<i>Platalea leucorodia</i>	54	H and P	CC
Black- crowned Night Heron	<i>Nycticorax nycticorax</i>	7	H	LC
Grey Heron	<i>Ardea cinerea</i>	48	H	LC
Little Egret	<i>Egretta garzetta</i>	8	H	LC
Great White Pelican	<i>Pelecanus onocrotalus</i>	1	H	CC
Lesser Kestrel	<i>Falco naumani</i>	7	H and P	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	3	H and P	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	6	H, D, P, and ON	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	5	H, D, and P	LC
Western Marsh Harrier	<i>Circus aeruginosus</i>	1	H	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	H	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	H, D, and P	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	3	H	LC
Bonelli's Eagle	<i>Aquila [Hieraaetus] fasciata [fasciatus]</i>	1	H	LC
Spur-winged Lapwing	<i>Vanellus (Hoplopterus) spinosus</i>	2	H	CC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	4	H and P	LC
Little Ringed plover	<i>Charadrius dubius</i>	3	H	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	H	LC
Curlew Sandpiper	<i>Calidris ferruginea</i>	7	—	LC
Collared Pratincole	<i>Glareola pratincola</i>	41	H, P, and ON	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Yellow-legged Gull	<i>Larus michabellis</i>	4	H	LC
Armenian Gull	<i>Larus armenicus</i>	67	H	CC
Common Black-headed Gull	<i>Larus ridibundus</i>	15	H, ON, UN	LC
Slender-billed Gull	<i>Larus genei</i>	4800	H, P, NE, ON, and UN	CC
Gull-billed Tern	<i>Gelochelidon [Sterna] nilotica</i>	38	H, P, ON, and UN	LC
Common Tern	<i>Sterna hirundo</i>	93	H, P, ON, and UN	LC
Little Tern	<i>Sternula [Sterna] albifrons</i>	26	H	LC
Whiskered Tern	<i>Chlidonias hybrida</i>	6	H	LC
White-winged Tern	<i>Chlidonias leucopterus</i>	35	H and P	LC
Caspian Tern	<i>Hydroprogne [Sterna] caspia</i>	1	H	CC
Rock Dove	<i>Columba livia</i>	23	H, P, and ON	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H and S	LC
Little Owl	<i>Athene noctua</i>	1	H	LC
Common Swift	<i>Apus apus</i>	5	H	LC
Little Swift	<i>Apus affinis</i>	20	H, ON	LC
European Roller	<i>Coracias garrulus</i>	5	H	NT and CC
Pied Kingfisher	<i>Ceryle rudis</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	32	H and P	LC
Eurasian Hoopoe	<i>Upupa epops</i>	3	H and S	LC
Red-backed Shrike	<i>Lanius collurio</i>	7	H and P	LC
Western Jackdaw	<i>Corvus monedula</i>	6	H, P and ON	LC
Northern Raven	<i>Corvus corax</i>	9	H	LC
Sand Martin	<i>Riparia riparia</i>	4	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	8	H	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	6	H, S, and P	CC
Upcher's Warbler	<i>Hippolais languida</i>	1	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	1	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	H, S, and ON	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	7	H, P, FL, and ON	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	H	CC
House Sparrow	<i>Passer domesticus</i>	13	H and P	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	21	H and P	LC
Pale Rockfinch	<i>Carpospiza brachydactyla</i>	6	H and S	CC
Grey wagtail	<i>Motacilla cinerea</i>	1	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	7	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	15	H, S, and P	LC

Winter - Other Wildlife Seen: One Common Jackal (*Canis aureus*) (LC) was observed.

Summer - Other Wildlife Seen: A globally endangered Euphrates Softshell Turtle (*Rafetus euphraticus*) and Caspian Turtle (*Mauremys caspica*) were observed at Ganaw Lake (a series of mineral ponds) near Bosken Village

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Plants: Two waypoints were visited - Waypoint 206 (N: 35 57 38.4 E: 44 58 27.3) was cliff habitat and Waypoint 208 (N: 35 56 29.6 E: 44 57 34.3) was river/riparian with some trees along the edges.

Waypoint 206: This waypoint was close to the lake (the surrounding cliffs). The total number of plant species was 51. The dominant tree was pine (*Pinus protia*), shrub was thyme (*Thymus syriaca*), herb was wild mustard or charlock (*Sinapis arvensis*) and grasses were goatgrasses (*Aegilops crassa* and *Aegilops umbellulata*) and meadow-grass (*Poa bulbosa*). The habitat was Cliff and the ecological condition was very disturbed according to the ecological scale (4). The slope was gentle (0-5°) and the exposure was to the east (68-112°). The geology and soil types were sedimentary and sand respectively. The elevation of this area was 522m and the non-vegetated percentage was 60%.

Waypoint 208: This waypoint was at inlet of the lake (Al Zab Alzagheer River), close to the dam. The total number of plant species was 48. There were a few willow trees (*Salix acmophylla* and *Salix babylonica*) and poplars (*Populus euphratica*). The habitat of this area was river/riparian with some trees along the edges. The ecological scale was 4. Some of the features of this area were as follows: the slope of was Gentle (0-5°), the exposure was to the south (158-202°), the geology of the area was not sedimentary, the soil type was clay, the non-vegetated percentage was 60% and the elevation was 414m.

Conservation significance: Dukan Lake is one of the most important bird areas at the regional and global level. About 2% of the global (4% of the regional) population of globally vulnerable Lesser White-fronted Geese (*Anser erythropus*) (plate: 2) and over 4% of the Greater White-fronted Geese (*Anser albifrons*) were wintering or ataging at this site. About 2% of regional population of Great Cormorant (*Phalacrocorax carbo*) and over 1% of the regional population of Common Shelduck (*Tadorna tadorna*) and conservation concern Armenian Gull (*Larus armenicus*) were observed during winter survey 930 individuals of Great Crested Grebe (*Podiceps cristatus*). Over 1% of the the global population of conservation concern Slender-billed Gull (*Larus genei*) (plate: 3) were breeding with a good numbers of Terns such us: Common Tern (*Sterna hirundo*), Gull-billed Tern (*Gelochelidon [Sterna] nilotica*) (plate: 4). Also the endangered Egyptian Vulture (*Neophron percnopterus*) was breeding, and the twoglobally vulnerable birds; Lesser Kestrel (*Falco naumani*) and Marbled Duck (*Marmaronetta angustirostris*) probably bred, the globally near threatened European Roller (*Coracias garrulus*) possibly was breeding, also some other birds of conservation concern were seen like: Red-crested Pochard (*Netta rufina*), Greater Flamingo (*Phoenicopterus [ruber] roseus*), Spur-winged Lapwing (*Vanellus (Hoplopterus) spinosus*), Black Stork (*Ciconia nigra*), Eurasian Spoonbill (*Platalea leucorodia*), one individual of Great White Pelican (*Pelecanus onocrotalus*) (which was ringed), White-eared Bulbul (*Pycnonotus leucotis*), Eastern Rock Nuthatch (*Sitta tephronota*), Finsch's Wheatear (*Oenanthe finschii*), and Pale Rockfinch (*Carpospiza brachydactyla*).



Plate 10: Globally Vulnerable Lesser White-fronted Geese (*Anser erythropus*) and Great White-fronted Geese (*Anser albifrons*)



Plate 11: Conservation concern Slender-billed Gulls (*Larus genei*)



Plate 12: Gull-billed Terns (*Gelocheledon [Sterna] nilotica*)

The ecological scale of the whole site was 4 (very disturbed), however there were some rare species like *Zeugandra iranica* (which was found at this lake), *Salix babylonica* (Townsend, V4, p2 and p35) and *Juncus effuses*.



Plate 13: Rare species (*Zeugandra iranica*) at Dukan Lake.

Conservation Issues & Recommendations: Human impacts at this site include animal grazing, agricultural chemical use, garbage and sewage from the town of Chwar Qurna and Rania Town is going to the Dukan Lake, and we observed that some farmers were using poisons to kill the mice found in their fields. There were also several pools that had been constructed with bird hides for attracting water birds (see the plate below). As this is a popular activity in this area, hunters need to be educated so as to prevent them from killing globally threatened bird species.



Plate 14: Hide used for bird hunting and constructed pool to attract birds

7- Qara Dagħ (S11) - Elev. 910 m (Surveyed in summer only):



Photo: Korsh Ararat

Plate 15: Qara Dagħ (S11) in summer

Site Description: This area, located on the south of Sulaimani City, is a mountainous region with many gorges, valleys covered by oak forest, rocky slopes and large amounts of farmland and villages. There are paved road and a tourism area close to the site.

Observations were done only in summer on:

Visit on 15/April/ 2009.

Birds: Total Bird count: 200 birds. Species number: 33. The following birds were observed:

Table 14: List of birds that observed during breedin season at Qaradagħ (S11) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	S	LC
See-see Partridge	<i>Ammoperdix griseogularis</i>	1	H	LC
Black Kite	<i>Milvus migrans</i>	1	—	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	11	H, P and ON	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	16	H, P and ON	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	—	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	5	H and P	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	2	H	LC
Common Swift	<i>Apus apus</i>	25	—	LC
European Bee-eater	<i>Merops apiaster</i>	12	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Northern Raven	<i>Corvus corax</i>	52	H	LC
Great Tit	<i>Parus major</i>	6	H, P and FF	LC
Blue Tit	<i>Cyanistes caeruleus</i>	7	H, D and P	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	5	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne [Hirundo] rupestris</i>	8	H and P	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	3	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	1	H	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	5	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	1	H	CC
Eurasian Blackbird	<i>Turdus merula</i>	3	H and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	LC
Rufous-tailed Wheatear	<i>Oenanthe xanthopyrma</i>	1	H	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	4	H, D and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	4	H	CC
Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	2	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
Tree Pipit	<i>Anthus trivialis</i>	1	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	2	H and S	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	8	H	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	2	H	LC

Visit on 18/April/2009:

Birds: Total Bird count: 280 birds. Species number: 48. The following birds were observed:

Table 15: List of birds that observed during breeding season at Qara Dagh (S11) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	2	H, P, and ON	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Black Kite	<i>Milvus migrans</i>	3	—	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	5	H and P	EN and CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	5	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	2	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	2	H	LC
Rock Dove	<i>Columba livia</i>	3	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	70	H and P	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Woodchat Shrike	<i>Lanius senator</i>	4	H	LC
Eurasian Magpie	<i>Pica pica</i>	2	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	2	H and P	LC
Northern Raven	<i>Corvus corax</i>	27	H	LC
Sombre Tit	<i>Poecile lugubris</i>	9	H, P and FF	CC
Great Tit	<i>Parus major</i>	4	H and ON	LC
Blue Tit	<i>Cyanistes caeruleus</i>	1	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	10	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne [Hirundo] rupestris</i>	4	H	LC
Crested Lark	<i>Galerida cristata</i>	1	H and S	LC
Woodlark	<i>Lullula arborea</i>	6	H, P and ON	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	1	H	LC
Common Whitethroat	<i>Sylvia communis</i>	3	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H, P and ON	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	1	H	LC
Common Starling	<i>Sturnus vulgaris</i>	4	—	LC
Eurasian Blackbird	<i>Turdus merula</i>	5	H and S	LC
Mistle Thrush	<i>Turdus viscivorus</i>	2	H, S and P	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	4	H	LC
Rufous-tailed Wheatear	<i>Oenanthe chrysopygia</i>	3	H and P	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	4	H and P	LC
Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	4	H and P	LC
House Sparrow	<i>Passer domesticus</i>	11	H	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	18	H	LC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
European Goldfinch	<i>Carduelis carduelis</i>	6	H	LC
Linnet	<i>Carduelis cannabina</i>	5	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	10	H and S	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	9	H	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	9	H and S	LC

Visit on 4/May/2009:

Birds: Total Bird count: 468 birds. Species number: 63. The following birds were observed:

Table 16: List of birds that were observed during the breeding season at Qara Dagh (S11) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	3	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	5	H, P, and ON	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	2	H, P, and ON	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	9	H, D, P, and ON	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	5	H, P, and ON	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	3	H, D, and P	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	H	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	4	H, D, and P	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	H and P	LC
Rock Dove	<i>Columba livia</i>	9	H, P, and ON	LC
Common Woodpigeon	<i>Columba palumbus</i>	4	H and P	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	2	H	LC
Common Cuckoo	<i>Cuculus canorus</i>	3	H and S	LC
Common Swift	<i>Apus apus</i>	24	H	LC
European Roller	<i>Coracias garrulus</i>	3	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	33	H and P	LC
Eurasian Hoopoe	<i>Upupa epops</i>	8	H, S, P, and ON	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	16	H and ON	LC
Red-backed Shrike	<i>Lanius collurio</i>	3	H	LC
Woodchat Shrike	<i>Lanius senator</i>	6	H and P	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	17	H and P	LC
Eurasian Jay	<i>Garrulus glandarius</i>	6	H and B	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	38	H, P, and ON	LC
Northern Raven	<i>Corvus corax</i>	43	H, P, and ON	LC
Sombre Tit	<i>Poecile lugubris</i>	7	H and S	CC
Great Tit	<i>Parus major</i>	12	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	4	H and S	LC
Sand Martin	<i>Riparia riparia</i>	11	H	LC
Barn Swallow	<i>Hirundo rustica</i>	7	H and P	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	9	H and B	LC
Eurasian Crag Martin	<i>Phyonoprogne [Hirundo] rupestris</i>	3	H	LC
Crested Lark	<i>Galerida cristata</i>	12	H, S, D, and P	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	2	H, S, and P	CC
Cetti's Warbler	<i>Cettia cetti</i>	1	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	2	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	1	H and S	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	2	H and S	LC
Eastern Orphean Warbler	<i>Sylvia crassirostris</i>	1	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	4	H	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	8	H and P	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	H, S, P, and	CC

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Common Name	Scientific Name	Count	Breeding Code(s) ON	Conservation Status
Western Rock Nuthatch	<i>Sitta neumayer</i>	2	H, S, and ON	CC
Eurasian Blackbird	<i>Turdus merula</i>	7	H and S	LC
White-throated Robin	<i>Irania guttularis</i>	2	H and S	CC
Rufous-tailed Scrub Robin	<i>Cerotrachus [Erythropgia] galactotes</i>	3	H and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	2	H and S	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	8	H, P, and ON	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	H	CC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H and S	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	3	H and S	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	6	H and P	LC
Pale Rockfinch	<i>Carpospiza brachydactyla</i>	1	H and S	CC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
Tree Pipit	<i>Anthus trivialis</i>	2	H and S	LC
Common Chaffinch	<i>Fringilla coelebs</i>	2	H, S, and P	LC
European Goldfinch	<i>Carduelis carduelis</i>	7	H, S, and P	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	16	H and S	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	1	H and S	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	58	H, S, B, and P	LC

Other Wildlife Seen: One vulnerable Spur-Thighed Tortoise (*Testudo graeca*) was seen.

Plants: Two waypoints were chosen here - Waypoint 182 (N: 35 16 35.4 E: 45 20 10.5) was woodland and Waypoint 183 (N: 35 13 11.1 E: 45 24 52.3) was rocky cliff.

Waypoint 182: There were more than 52 plant species at this waypoint, divided between trees, shrubs, herbs and grasses. The dominant tree was the Oak (*Quercus agelops*), the dominant shrub was milk vetch (*Astragalus sp.*), the dominant herb was saw-wort (*Serratula sp.*). The habitat was Coppiced woodland with a ground cover of herbs and the ecological condition was 2 (slightly disturbed). The geology of the area was sedimentary, the soil type was clay, it was somewhat steep (15-26°) and its exposure was toward the east (68-112°). The elevation of this waypoint was 1518m and the percentage of non-vegetated areas was 0%.

Waypoint 183: The total number of the identified plant species was about 40. The dominant tree was the Oak (*Quercus aegilops*) whose average height was 5m. The habitat was rocky cliff and the ecological condition was 3 (moderately disturbed). The geology of the area and the soil type were Sedimentary and clay respectively. The area was steep (27-45°) and the exposure was to the east (68-112°) where the percentage of non-vegetated areas was 15%. The elevation of the area was 1034m.

Conservation significance: Eleven species of birds of prey breeding or probably breeding. The globally endangered Egyptian Vulture (*Neophron percnopterus*), globally vulnerable Lesser Kestrel (*Falco naumani*) (See plate below), and the two conservation concern Eastern Rock Nuthatch (*Sitta tephronota*) and Western Rock Nuthatch (*Sitta neumayer*) were breeding. The two globally near-threatened European Roller (*Coracias garrulus*) and Cinereous Bunting (*Emberiza cineracea*) may possibly have been breeding, and some other birds of conservation concern were seen such as the Levant Sparrowhawk (*Accipiter brevipes*), White-eared Bulbul (*Pycnonotus leucotis*), Finsch's Wheatear (*Oenanthe finschii*), and Pale Rockfinch (*Carpospiza brachydactyla*).



Plate 16: A globally vulnerable male Lesser Kestrel (*Falco naumani*) brought a lizard for a female to feed their chick(s)

This site is one of the most important areas for plant diversity in Sulaimani governorate, where the ecological condition in general was only slightly disturbed. Also, there were two endemic plants *Pisum formosum* (Townsend, V3, p577) and *Onosma albo-roseum* (Davis, 1978, p. 364) in addition to *Bromus brachstachys*, which is a rare species in Iraq. Therefore, it is highly recommended to make this a protected area.



Plate 17: *Pisum formosum* (Endemic plant) at Qara Dagh.

Conservation Issues & Recommendations: This area is impacted by urbanization (road construction mainly) and grazing, but it is still in good condition and there were many indicators for the health of the environment such as the presence of many endemic and rare plants in addition to important birds.

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Therefore, it is highly recommended to make this area a protected area. The area has many times been proposed as a park. If the area is turned into a park, a plan for doing a more comprehensive survey should be put into effect to thoroughly document the biological resources of the area and a management plan should be developed with local stakeholder involvement.

8- De Lezha (S23), GPS: N 35 27 37 E 45 11 40, Elev. 683m (Surveyed in summer only)



Plate 18: De lezha (S23) in summer

Site Description: A hilly area located 40 km to the southwest of Sulaimani; it resides along the road leading to Chamchamal district. The site is located after the main checkpoint near Bazyan Town and turning left (to the south). Mahmoodiya village must be passed in order to reach it. Heavy grass and scattered bushes with a seasonal stream and a bridge can also be found. The stream is densely wooded on both banks and there are some cultivated areas and three small villages (De Lezha, Solai Kabinakan and Solai Shekh Qadir) nearby. There was a line of old willows along one section of the stream, making this a popular picnic site.

Observations were made only in summer and were on 19 and 22/April and 5/May/2008):

Visit on 19/April/2009:

Birds: Total Bird count: 212 birds. Species number: 50. Species seen at the site include the following:

Table 17: List of birds that observed during breeding season at De Lezha (S23) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	H and P	LC
Common Quail	<i>Coturnix coturnix</i>	1	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	1	H	VU and CC
Eurasian Hobby	<i>Falco subbuteo</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	1	H	EN and CC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	—	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	4	—	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	4	H, A, D, and P	LC
Common Woodpigeon	<i>Columba palumbus</i>	11	H	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	2	H, D and P	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H	LC
Eurasian Scops Owl	<i>Otus scops</i>	1	H	LC
Little Owl	<i>Athene noctua</i>	1	H	LC
Common Swift	<i>Apus apus</i>	1	—	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Pied Kingfisher	<i>Ceryle rudis</i>	1	H	LC
European Bee-eater	<i>Merops apiaster</i>	30	H and ON	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H and S	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H and S	LC
Red-backed Shrike	<i>Lanius collurio</i>	4	H and P	LC
Masked Shrike	<i>Lanius nubicus</i>	1	H	CC
Eurasian Magpie	<i>Pica pica</i>	8	H and ON	LC
Northern Raven	<i>Corvus corax</i>	2	H	LC
Great Tit	<i>Parus major</i>	6	H and P	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	3	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	6	H	LC
Crested Lark	<i>Galerida cristata</i>	3	H and P	LC
Cettis Warbler	<i>Cettia cetti</i>	3	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	2	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	5	H and S	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	2	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	2	H	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	4	H, S and P	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	1	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	4	H, FF, NY, and ON	CC
Thrush Nightingale	<i>Luscinia luscinia</i>	1	—	LC
Northern Wheatear	<i>Oenanthe oenanthe</i>	1	H	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	4	H and P	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	3	H and P	NT and CC
House Sparrow	<i>Passer domesticus</i>	10	H	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	25	H	LC
Western Yellow Wagtail	<i>Motacilla flava</i>	1	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	4	H	LC
White Wagtail	<i>Motacilla alba</i>	1	—	LC
European Goldfinch	<i>Carduelis carduelis</i>	6	H and S	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	6	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	1	H	LC

Visit on 22/ April/ 2009:

Birds: Total Bird count: 417 birds. Species number: 31. Species seen at the site include the following:

Table 18: List of birds that observed during breeding season at De Lezha (S23) with their conservation breeding Status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	8	H, D and P	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	H and P	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	6	H, D and P	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	—	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	4	H and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Little Owl	<i>Athene noctua</i>	1	H	LC
European Bee-eater	<i>Merops apiaster</i>	40	H and ON	LC
Red-backed Shrike	<i>Lanius collurio</i>	5	H and P	LC
Eurasian Magpie	<i>Pica pica</i>	3	H	LC
Northern Raven	<i>Corvus corax</i>	2	H	LC
Great Tit	<i>Parus major</i>	3	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	14	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	250	H and B	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	2	H and P	CC
Cetti's Warbler	<i>Cettia cetti</i>	2	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	4	H and S	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	2	H	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	3	H, P and FF	CC
Spotted Flycatcher	<i>Muscicapa striata</i>	7	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	6	H and P	NT and CC
House Sparrow	<i>Passer domesticus</i>	12	H and ON	LC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
Tree Pipit	<i>Anthus trivialis</i>	1	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	4	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	10	H and S	LC

Visit on 5/May/ 2009:

Birds: Total Bird count: 1045 birds. Species number: 60. Species seen at the site include the following:

Table 19: List of birds that were observed during the breeding season at De Lezha (S23) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Lesser Kestrel	<i>Falco naumani</i>	10	H, P, and ON	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	3	H and P	LC
Black Kite	<i>Milvus migrans</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	4	H, D, P, and ON	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	3	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	4	H, D, and P	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	H and P	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	3	H, P, and ON	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	3	H and P	LC
Rock Dove	<i>Columba livia</i>	5	H and P	LC
Common Woodpigeon	<i>Columba palumbus</i>	2	H and P	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	4	H and P	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H and S	LC
Common Swift	<i>Apus apus</i>	11	H	LC
European Roller	<i>Coracias garrulus</i>	2	H	NT and CC
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	H	LC
Common Kingfisher	<i>Alcedo atthis</i>	1	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Pied Kingfisher	<i>Ceryle rudis</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	21	H, P, and ON	LC
Eurasian Hoopoe	<i>Upupa epops</i>	3	H and S	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	2	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	6	H and P	LC
Lesser Grey Shrike	<i>Lanius minor</i>	23	H	LC
Woodcha Shrike	<i>Lanius senator</i>	2	H and P	LC
Masked Shrike	<i>Lanius nubicus</i>	4	H and P	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	1	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	12	H, P, FL, and ON	LC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	7	H, D, and P	LC
Northern Raven	<i>Corvus corax</i>	5	H, P, and ON	LC
Great Tit	<i>Parus major</i>	9	H, S, and P	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	73	H, B, P, and ON	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	640	H, B, P, NE, and ON	LC
Desert Lark	<i>Ammomanes deserti</i>	2	H and S	LC
Crested Lark	<i>Galerida cristata</i>	8	H and S	LC
Cetti's Warbler	<i>Cettia cetti</i>	5	H and S	LC
Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	5	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	4	H and S	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	2	H	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	8	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	2	H, S, and P	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	6	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	9	H and S	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	3	H and S	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	3	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	6	H, S, P, NE, ON, and UN	CC
Eurasian Blackbird	<i>Turdus merula</i>	3	H and S	LC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropygia] galactotes</i>	10	H and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	3	H and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	H	CC
Spotted Flycatcher	<i>Muscicapa striata</i>	10	H, S, B, and P	LC
House Sparrow	<i>Passer domesticus</i>	28	H and P	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	7	H and P	LC
Pale Rockfinch	<i>Carpospiza brachydactyla</i>	3	H and S	CC
Grey Wagtail	<i>Motacilla cinerea</i>	2	H	LC
Tree Pipit	<i>Anthus trivialis</i>	1	H	LC
European Goldfinch	<i>Carduelis carduelis</i>	12	H, S, and P	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	12	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	36	H, S, B, P, and ON	LC

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Other Wildlife Seen: Two globally vulnerable Spur-Thighed Tortoises (*Testudo graeca*), and 15 Caspian Turtles (*Mauremys caspica*) were observed, as was the Beautiful Demoiselle (*Calopteryx virgo*).

Plants: Two waypoints were visited at this site - Waypoint 188 (N: 35 27 33.4 E: 45 11 09.9) was a stream with riparian woodland and Waypoint 189 (N: 35 27 29.0 E: 45 11 30.5) was a foothill of the mountain with woodland.

Waypoint 188: The dominant trees were *Quercus aegilops* and *Salix aegyptiaca*, the dominant shrub was *Gundelia tornefortii*, the dominant herb was *Trifolium* sp. and the dominant grasses were *Avena fatua* and *Aegilops* sp. The total number of plants at this waypoint was 42 species. The geology and soil type were the same as those of waypoints at Qara Qagh site. The slope of the area was Moderate (6-14°) and the exposure was to the north (338-22°). The elevation was 673m and the percentage of non-vegetated area was 15%. The habitat was stream with riparian woodland and the ecological scale was 4 (disturbed).

Waypoint 189: The total number of recorded plants at this waypoint was 51 species; most of them were herbs and grasses. The dominant tree was *Quercus aegilops* where the height average was about 4m. The habitat at this waypoint was open woodland with grasses cover on the ground and the ecological scale was 4. The area was somewhat steep (15-26°), the exposure was towards the north (338-22°) and the elevation was 755m. As with waypoint 188, the geology and the soil type at here were sedimentary and clay respectively, but it is more vegetated than the previous waypoint (188) where the percentage of non-vegetated area was only 5%.

Conservation significance: The globally endangered Egyptian Vulture (*Neophron percnopterus*) and globally vulnerable Lesser Kestrel (*Falco naumani*) (see plate below) were breeding. The globally near threatened European Roller (*Coracias garrulus*) may also have been breeding. The conservation concern Eastern Rock nuthatch (*Sitta tephronota*) was breeding, also other conservation concern such as: Masked Shrike (*Lanius nubicus*) (probably breeding), Finsch's Wheatear (*Oenanthe finschii*) (possibly breeding), and Pale Rockfinch (*Carpospiza brachydactyla*) (possibly breeding) were observed. Note: On a separate on the 19th of April, three individuals of the globally near-threatened Semi-collared Flycatcher (*Ficedula semitorquata*) that possibly were breeding, were observed at this site.



Plate 19: A globally vulnerable Lesser Kestrel (*Falco naumani*) bred at De Lezha (S23)

Although this site is in bad ecological condition, it still contains some plant species of environmental conservation significance, such as *Silybum marianum* (Ghahraman, 1987), *Notobasis syriaca* (Ghahraman, 2001) (endemics), *Bromus brachystachys* (rare) (Townsend, V8, p134) and *Quercus aegilops* (native) (Townsend, V4, p2, p50).

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Plate 20: *Bromus brachystachys* (Rare) at De Lezha site.

Conservation Issues & Recommendations: The threats were livestock production/grazing, agriculture, garbage, water pollution and tourism activities. This area needs more environmental efforts such as education programs for increasing the ecological awareness of people especially those who live in the nearby villages and tourists. Also limiting the tourism to a smaller area, and limiting the areas of grazing. This will help to improve its ecological condition and protect its organisms.

9- Awesar (S4B) – GPS: N 35 12 57 E 46 11 10, Elevation: 1660m (Surveyed in summer only):



Plate 21: Awesar (S4B) in summer

Site Description: It is an area which boasts a valley, highlands and foothills. It is located in the northeast of Sulaimani on the Iraq-Iran border and there is border police station at the site, and is covered by walnut trees and poplars near a stream and is surrounded by foothills and mountain cliffs which are covered by herbs. It is also used as a resort site.

Observations were made in summer only and were on 6/May/2009:

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Birds: Total Bird count: 182 birds. Species number: 38. The following birds were observed in summer.

Table 20: List of birds that were observed during the breeding season at Awesar (S4B) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Lesser Kestrel	<i>Falco naumani</i>	2	H	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	3	H	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H and S	LC
Common Swift	<i>Apus apus</i>	3	H	LC
European Roller	<i>Coracias garrulus</i>	2	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	2	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	4	H and P	LC
Lesser Grey Shrike	<i>Lanius minor</i>	3	H	LC
Woodchat Shrike	<i>Lanius senator</i>	4	H and P	LC
Eurasian Magpie	<i>Pica pica</i>	5	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	5	H and ON	LC
Northern Raven	<i>Corvus corax</i>	2	H	LC
Sombre Tit	<i>Poecile lugubris</i>	4	H and S	CC
Great Tit	<i>Parus major</i>	48	H, S, B, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	8	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	7	H, B, NE, and ON	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	3	H	LC
Long-tailed Tit	<i>Aegithalos caudatus</i>	5	H, P, and ON	LC
Crested Lark	<i>Galerida cristata</i>	2	H and S	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	2	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	2	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	1	H	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	6	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	1	H	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H, S, and P	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	3	H	LC
Finsch's Wheatear	<i>Oenanthe Finschii</i>	1	H	CC
Spotted Flycatcher	<i>Muscicapa striata</i>	3	H and S	LC
House Sparrow	<i>Passer domesticus</i>	14	H, B, D, P, and ON	LC
Grey Wagtail	<i>Motacilla cinerea</i>	2	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	13	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	7	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	3	H and S	LC

Other Wildlife Seen: Five Persian Squirrels (*Sciurus anomalus*), a species of least concern, were seen.

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Plants: Two waypoints were visited at this site - Waypoint 190 (N: 35 12 56.5 E: 46 11 09.60) was the mountain slopes and Waypoint 196 (N: 35 12 58.5 E: 46 11 19.0) was along the stream within riparian woodlands.

Waypoint 190: It is an herbaceous covered slope on a mountain with a high percentage of vegetation cover (the percentage of the non-vegetated area was only 5%). The ecological scale was 3 (moderately disturbed). Some features of this waypoint were as follows: the elevation at this waypoint was 1725m, the area was Steep (27-45°), the exposure was to the east, the geology was sedimentary and the soil type was clay. There were about 45 plant species at this waypoint where the dominant herb was *Ferulago angulata* and the dominant shrub was *Crataegus sp.* There were a few *Quercus aegilops* trees.

Waypoint 196: It is a stream within a riparian forest of walnut (*Juglans regia*) where the height of the trees was more than 20m. There were also many varieties of herb and grass found between the trees. This area was disturbed, placing it at level 4 on the ecological scale. The slope of the ground was gentle (0-5°), the exposure to the south (158-202°) and the elevation was 1679m. The geology and soil type were sedimentary and clay respectively. 25% of the area was non-vegetated. The total number of recorded plant species was 16, and the dominant plants were *Juglans regia* (tree) and *Ferulago angulata* (herb), as well as some other shrubs and grasses.

Conservation significance: The globally vulnerable Lesser Kestrel (*Falco naumani*) and globally near threatened European Roller (*Coracias garrulus*) were possibly breeding, as were other birds of conservation concern like the Sombre Tit (*Poecile lugubris*), Eastern Rock Nuthatch (*Sitta tephronota*), Western Rock Nuthatch (*Sitta neumayer*), and Finsch's Wheatear (*Oenanthe finscii*).

There were two endemic plants at this site which were *Onosma albo-roseum* and *Pisum formosum*, and native species of oak trees (*Quercus aegilops*). Also, there was one rare plant (*Orchis colina*) (Townsend, V8, p302). Despite the existence of these endemic and rare plants, the ecological condition of the site was poor, meaning this site needs more care and protection from the current threats.

Conservation Issues & Recommendations: Road construction and human activities have affected the area, as has livestock production/grazing. The area was disturbed by noisy tourists and was full of refuse. However, the ecological condition is better in the upper area (the surrounding mountain slopes), so more attention, work and regulations to protect riparian habitats is needed. This can be done by increasing the people awareness (both locals and tourists) toward the environment through educational campaigns, also limit or reduce the tourism area, decrease the noise of tourists and limit or control the grazing area.

10-Abmed Awa (S4A) - N 35 17 59 E 46 04 41, Elev. 900m (Surveyed in summer only):



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Plate 22: Ahmed Awa (S4A) in summer

Site Description: This site is one of most popular tourism areas lying 74 km southeast of Sulaimani City near the Iranian border. Zalm and Ahmadawa villages are in the valley. Above Ahmedawa village there is a small bridge over the stream and there are many simple shops and cafes bordering both sides of the stream from here up to the waterfall. It is a mountainous area with rocky slopes and a valley with woodlands, and big stream (Zalm Stream coming from the waterfall above of the site and other streams further up the mountain). Access to the area is from a lower parking and picnicking area below the village, where trucks can take tourists up to the village and the trail to the waterfall, which begins at the bridge. The site can also be reached from a new (or rather somewhat improved) dirt road that travels over the mountain ridges from the south.

Observations were made only in summer on 6/May/2008):

Birds: Total Bird count: 264 birds. Species number: 45. The following birds were observed in summer:

Table 21: List of birds that were observed during the breeding season at Ahmed Awa (S4A) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Lesser Kestrel	<i>Falco naumani</i>	7	H and P	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	2	H and P	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	6	H, D, P, and ON	EN and CC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	1	H	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	H, D, and P	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	H	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	5	H	LC
Common Swift	<i>Apus apus</i>	11	H	LC
European Roller	<i>Coracias garrulous</i>	4	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	9	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	36	H, B, and P	LC
Lesser Grey Shrike	<i>Lanius minor</i>	10	H	LC
Masked Shrike	<i>Lanius nubicus</i>	2	H	CC
Eurasian Magpie	<i>Pica pica</i>	4	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	2	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	11	H, NE, and ON	LC
Northern Raven	<i>Corvus corax</i>	4	H	LC
Sombre Tit	<i>Poecile lugubris</i>	2	H	CC
Great Tit	<i>Parus major</i>	6	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	5	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	9	H	LC
Crested Lark	<i>Galerida cristata</i>	5	H and S	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	1	H	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	4	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	2	H and S	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	2	H and S	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	3	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	9	H, S, P, NE, and ON	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	5	H, S, P, NE,	CC

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Common Name	Scientific Name	Count	Breeding Code(s) and ON	Conservation Status
Eurasian Blackbird	<i>Turdus merula</i>	7	H, S, and P	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	3	H and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	5	H and P	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	10	H and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	H	CC
Spotted Flycatcher	<i>Muscicapa striata</i>	14	H	LC
White-throated Dipper	<i>Cinclus cinclus</i>	2	H and P	LC
House Sparrow	<i>Passer domesticus</i>	6	H, P, and ON	LC
Pale Rockfinch	<i>Carpodacus brachyactyla</i>	1	H and S	CC
Western Yellow Wagtail	<i>Motacilla flava</i>	3	H	LC
Grey Wagtail	<i>Motacilla cinerea</i>	5	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	4	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	9	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	17	H, S, and P	LC



Plate 23: Red-backed Shrike (*Lanius collurio*)

Plants: Only one waypoint was visited - Waypoint 198 (N: 35 19 02.2 E: 46 05 28.3), which was riparian woodland.

Waypoint 198: The total number of recorded species was 50. The dominant tree was *Juglans regia*, the dominant shrub was *Rubus sanctus* and the dominant herb was *Alcea kurdica*. The habitat at this area was riparian walnut woodland with additional woodlands of Pomegranate and Mulberry. The ecological condition was disturbed meaning the ecological scale was 4. The slope of the area was Moderate (6-14°) and the exposure was towards the south (158-202°). The geology was sedimentary and the soil type was clay. The elevation at this way point was 900m and the non-vegetated percentage was 15%.

Conservation significance: The globally endangered Egyptian Vulture (*Neophron percnopterus*) was breeding, and the globally vulnerable Lesser Kestrel (*Falco naumani*) was probably breeding. The globally near threatened European Roller (*Coracias garrulus*) possibly bred, and conservation concern birds like: Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding), Western Rock Nuthatch (*Sitta neumayer*) (was breeding), Masked Shrike (*Lanius nubicus*) (possibly breeding), Sombre Tit (*Poecile lugubris*) (possibly

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breeding), Finsch's Wheatear (*Oenanthe finschii*) (possibly breeding), and Pale Rochfinch (*Carpospiza brachydactyla*) (possibly breeding).

This site used to be a tourism area which caused the ecological condition of this site to deteriorate. Despite this, there were a number of endemic plants such as *Pisum formosum*, *Silybum marianum* and *Notobasis syriaca*.



Plate 24: Endemic plant (*Silybum marianum*) at Ahmed Awa site.

Conservation Issues & Recommendations: This area is impacted by grazing and, though it has had security problems in the past, it now attracts many visitors who picnic in the area, leading to problems related to garbage and sewage. The site above/beyond the waterfall towards northeast suffers fewer disturbances, as it is close to the border and few tourists go there but it is a heavily mined area. It is recommended to regulate tourism to decrease its impact in on the stream and surrounding slopes and institute limitations on the resort area to control its development. The grazing area should also be limited in order to prevent random grazing everywhere.

11- Kuradawe (S27), N 35 50 27 E 45 29 58 Elev. 1152m (Surveyed in summer only)



Plate 25: Kuradawe (S27) in summer

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Site Description: This site located to the northeast of Sulaimani City, near Kuradawe Village in the Sharbazher District. It is a mountainous area of Oak forest. Streams and farmlands are also present.

Observations were made only in summer on 7/May/2009:

Birds: Total Count: 158. Species Number: 36. Species observed at the site are listed in the table below.

Table 22: List of birds that were observed during the breeding season at Kuradawe (S27) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Steppe Buzzard	<i>Buteo b. vulpinus</i>	4	H, D, and P	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	2	H	LC
European Turtle Dove	<i>Streptopelia turtur</i>	2	H and S	CC
Common Cuckoo	<i>Cuculus canorus</i>	1	H and S	LC
Common Swift	<i>Apus apus</i>	7	H	LC
European Bee-eater	<i>Merops apiaster</i>	13	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	2	H and S	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	6	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	24	H and P	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H	LC
Masked Shrike	<i>Lanius nubicus</i>	5	H and P	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Jay	<i>Garrulus glandarius</i>	9	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	4	H and ON	LC
Northern Raven	<i>Corvus corax</i>	3	H	LC
Sombre Tit	<i>Poecile lugubris</i>	1	H and S	CC
Great Tit	<i>Parus major</i>	7	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	3	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	3	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	2	H	LC
Crested Lark	<i>Galerida cristata</i>	6	H and S	LC
Woodlark	<i>Lullua arborea</i>	2	H and S	LC
Cetti's Warbler	<i>Cettia cetti</i>	2	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	1	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	3	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	4	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	3	H, S, and P	LC
Mistle Thrush	<i>Turdus viscivorus</i>	1	H	LC
Whinchat	<i>Saxicola rubetra</i>	2	H	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	13	H and S	LC
House Sparrow	<i>Passer domesticus</i>	8	H and P	LC
Common Chaffinch	<i>Fringilla coelebs</i>	1	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	2	H and S	LC
Ortolan Bunting	<i>Emberiza hortulana</i>	2	H and S	LC

Plants: Only one waypoint was visited here - Waypoint 199 (N: 35 50 26.8 E: 45 29 58.7).

Waypoint 199: There were more than 52 plant species at this waypoint. The dominant trees were walnut (*Juglans regia*) and oak (*Quercus agilops*), the dominant shrub was blackberry (*Rubus sanctus*), the dominant

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herb was poppy (*Papaver somniferum*) and the dominant grass was meadow-grass (*Poa bulbosa*). There were two kinds of habitats at this waypoint: stream with riparian woodland (*Juglans regia*) and open woodland (*Quercus aegilops*) at the foothills of the mountain. The ecological scale was 4. The geology of this waypoint was Igneous: volcanic and serpentin and the soil type was silt. The area was somewhat steep (15-26°) and the exposure was to the south (158-202°). The altitude was 1234m and the percentage of vegetation cover was 85%.

Conservation significance: Some birds of conservation concern were observed, such as the Masked Shrike (*Lanius nubicus*) (probably breeding), European Turtle Dove (*Streptopelia turtur*), Sombre tit (*Poecile lugubris*) (possibly breeding), and Eastern Rock Nuthatch (*Sitta tephronota*) (possibly breeding).

Quercus macranthera, a rare species of oak tree, was growing in this area, (Townsend, V4, p2, p49) as were native species of oak (*Quercus aegilops*). There was also another rare (in Iraq) plant, *Bromus brachystachys*.



Plate 26: Rare plant (*Quercus macranthera*) at Kuradawe site.

Conservation Issues & Recommendations: There was livestock production/grazing, agriculture activities and road construction at this site (especially close to the village), which directly affects its ecological condition. It is necessary to increase the awareness of people and make some rules for agricultural and grazing activities such as limiting the area of these activities, as well as the amounts and kinds of the chemicals that are use in agriculture.

12- Penjween (S5) – N 35 45 20 E 45 56 38, Elev. 1205m (Surveyed in summer only):

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Photo: Korsh Ararat

Plate 27: Penjween (S5) in summer

Site Description: This is an open area located on the northeast of Sulaimani City with some highlands and foothills not far from the town of Penjween and near the Iranian border. A sizable stream passes through many cultivated lands (this stream flows towards and eventually joins other rivers to reach the Little Zab River near Mawat). Previously this site was in good condition during past surveys but in the last year has seen a lot of habitat destruction caused by gravel mining and agriculture activity.

Observations were made only in summer on 9/May/2009:

Birds: Total Count: 230. Species Number: 38. Species observed at the site are listed in the table below.

Table 23: List of birds that were observed during the breeding season at Penjween (S5) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Mallard	<i>Anas platyrhynchos</i>	8	H and P	LC
Western White Stork	<i>Ciconia ciconia</i>	1	H	LC
Squacco Heron	<i>Ardeola ralloides</i>	1	H	LC
Little Egret	<i>Egretta garzetta</i>	1	H	LC
Black Kite	<i>Milvus migrans</i>	2	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	2	H and P	EN and CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	H	LC
Eurasian Coot	<i>Fulica atra</i>	2	H	LC
Little Ringed Plover	<i>Charadrius dubius</i>	4	H	LC
Common Swift	<i>Apus apus</i>	5	H	LC
European Roller	<i>Coracias garrulus</i>	1	H	NT and CC
Common Kingfisher	<i>Alcedo atthis</i>	1	H	LC
Pied Kingfisher	<i>Ceryle rudis</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	17	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	1	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	31	H and P	LC
Lesser Grey Shrike	<i>Lanius minor</i>	2	H	LC
Masked Shrike	<i>Lanius nubicus</i>	4	H and P	CC
Eurasian Magpie	<i>Pica pica</i>	11	H, NE, and ON	LC
Northern Raven	<i>Corvus corax</i>	2	H	LC
Great Tit	<i>Parus major</i>	5	H, S, and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Blue Tit	<i>Cyanistes caeruleus</i>	2	H and S	LC
Sand Martin	<i>Riparia riparia</i>	2	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	12	H	LC
Crested Lark	<i>Galerida cristata</i>	17	H and S	LC
Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	2	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	7	H, S, A, D, and P	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	1	H	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	11	H and S	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	5	H	LC
Thrush Nightingale	<i>Luscinia luscinia</i>	1	H	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	2	H and S	LC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythrpygia] galactotes</i>	16	H and S	LC
House Sparrow	<i>Passer Domesticus</i>	9	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	3	H	LC
European Goldfinch	<i>Carduelis carduelis</i>	13	H, S, and P	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	19	H, S, and P	LC

Plants: There was only one waypoint at this site - Waypoint 200 (N: 35 45 09.4 E: 45 55 45.3) that was stream with riparian woodland.

Waypoint 200: The total number of recorded plant species was 39. The dominant plants were: tree *Salix acmophylla* (willow), shrub *Tamarix sp.* (saltcedar), herb *Ranunculus aucheri* (buttercup) and grass *Poa bulbosa* (meadow-grass). The habitat at this waypoint featured a stream with riparian woodland (willows) and the ecological condition was mostly disturbed (where the ecological scale was 4). The geology of area was sedimentary and the soil type was clay. This area was flat and the elevation was 10m. The non- vegetated percentage was 10%.

Conservation significance: The globally endangered Egyptian Vulture (*Neophron percnopterus*) was probably breeding at this site, the globally near threatened European Roller (*Coracias garrulus*) was possibly breeding, and the conservation concern Masked Shrike (*Lanius nubicus*) was probably breeding.



Plate 28: Western White Stork (*Ciconia ciconia*)

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In the last survey (KBA-Kurdistan Summer survey 2008), we recorded a new plant for the list of Iraq's plants (*Sparganium americanum*). It appears to be very rare in Iraq and has, so far, only been found at this site). Also, there was a species of buttercup (*Ranunculus sphaerospermus*) that was found only at this site, and the rare species of Salt Cedar (*Tamarix brachystachys*). All these important plants make the area potentially important for plant diversity, but the huge conversion in the nature of this site (it is now being used for gravel mining) made it ecologically disturbed, and may also have led to the disappearance of *Sparganium americanum*, as it was not seen during this survey.



Plate 29: Rare species at the Penjween site: *Tamarix brachystachys* (left) and *Ranunculus sphaerospermus* (right).

Conservation Issues & Recommendations: All these important plants make the area potentially important for plant diversity but the extensive changes in the nature of this site (due to gravel mining) have caused significant ecological disturbance. This has possibly led to the disappearance of *Sparganium americanum* from the site. So, it is highly recommended to restore this site and stop the industrial activities at this area.

13- Peramagroon (S6) - Elev 1581m (Surveyed in summer only):



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Plate 30: Peramagroon (S6) in summer

Site Description: This is a high mountain located to the north of the city of Sulaimani. It has snow in winter and is accessed from the road to Dukan. Peramagroon valley (which has the small village of Zewe) lies below the mountain in a wide bowl. There is agriculture on the slopes (primarily grape). An area above the village, from which a seasonal spring issues, is used as a picnicking area and resort that has seen additional renovations in 2009. Above this the slopes are wooded until the higher elevations which contain sub-alpine to alpine habitats. This area has been subject to chemical attacks in the past.

Observations were made only in summer on 20 and 23/April/ 2009 and 11/ May/ 2009:

Visit on 20/ April/ 2009:

Birds: Total Bird count: 108 birds. Species number: 23. The following birds were seen in summer:

Table 24: List of birds that observed during breeding season at Peramagroon (S6) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	2	H	LC
Common Kestrel	<i>Falco tinnunculus</i>	2	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	3	H and P	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	6	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	6	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	39	H	LC
Western Jackdaw	<i>Corvus monedula</i>	2	H	LC
Northern Raven	<i>Corvus corax</i>	3	H	LC
Sombre Tit	<i>Poecile lugubris</i>	1	H	CC
Great Tit	<i>Parus major</i>	4	H and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	2	H	H
Long-tailed Tit	<i>Aegithalos caudatus</i>	2	H, B and P	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	1	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	8	H and P	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	4	H, P, FF and ON	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	H
Black-eared Wheatear	<i>Oenanthe hispanica</i>	4	H, S, P and FF	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	1	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	1	H	NT and CC
House Sparrow	<i>Passer domesticus</i>	10	H	LC

Visit on 23/ April/ 2009:

Birds: Total Bird count: 202 birds. Species number: 29. The following birds were seen in summer:

Table 25: List of birds that observed during breeding season at Peramagroon (S6) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Lesser Kestrel	<i>Falco naumani</i>	75	H (probably most of them are migrant)	VU and CC
Egyptian Vulture	<i>Neophron percnopterus</i>	3	H and P	EN and CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	2	H	LC
Montagu's Harrier	<i>Circus pygargus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Common Swift	<i>Apus apus</i>	18	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	1	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	50	H and ON	LC
Northern Raven	<i>Corvus corax</i>	5	H	LC
Great Tit	<i>Parus major</i>	4	H, P and FF	LC
Blue Tit	<i>Cyanistes caeruleus</i>	2	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	2	H	LC
Long-tailed Tit	<i>Aegithalos caudatus</i>	4	H, P and FF	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	1	—	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	1	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	1	H	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	4	H, P, FF and ON	CC
Eurasian Blackbird	<i>Turdus merula</i>	1	H and S	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	1	H	LC
White-throated Robin	<i>Irania gutturalis</i>	1	H	CC
Black Redstart	<i>Phoenicurus ochruros</i>	2	H and P	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	3	H and FF	LC
Mourning Wheatear	<i>Oenanthe lugens</i>	1	H	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	4	H and S	CC
Blue Rock Thrush	<i>Monticola solitarius</i>	2	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	3	H and P	NT and CC
Rock Sparrow	<i>Petronia petronia</i>	6	H and ON	LC

Visit on 11/May/2009:

Birds: Total Bird count: 340 birds. Species number: 49. The following birds were seen in summer:

Table 26: List of birds that were observed during the breeding season at Peramagroon (S6) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	2	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	16	H and P	VU and CC
Lammergeier	<i>Gypaetus barbatus</i>	1	H	CC
Egyptian Vulture	<i>Neophron percnopterus</i>	4	H, D, and P	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	6	H and P	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	2	H	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	4	H	LC
Common Swift	<i>Apus apus</i>	3	H	LC
European Roller	<i>Coracias garrulus</i>	1	H	NT and CC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	4	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	7	H and P	LC
Masked Shrike	<i>Lanius nubicus</i>	5	H and P	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Eurasian Magpie	<i>Pica pica</i>	2	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	19	H	LC
Western Jackdaw	<i>Corvus monedula</i>	16	H	LC
Northern Raven	<i>Corvus Corax</i>	9	H	LC
Sombre Tit	<i>Poecile lugubris</i>	8	H and S	CC
Great Tit	<i>Parus major</i>	15	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	13	H and S	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	12	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne [Hirundo] rupestris</i>	7	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	3	H	LC
Long-tailed Tit	<i>Aegithalos caudatus</i>	8	H, S, P, FF, and ON	LC
Crested Lark	<i>Galerida cristata</i>	7	H and S	LC
Icterine Warbler	<i>Hippolais icterina</i>	2	—	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	2	H	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	4	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	9	H, S, and P	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	3	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	3	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	5	H, S, P, ON, and UN	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	2	H, S, P, ON, and UN	CC
Eurasian Blackbird	<i>Turdus merula</i>	7	H, S, and P	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	2	H and S	LC
Black Redstart	<i>Phoenicurus ochruros</i>	1	H	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	LC
Rufous-tailed Wheatear	<i>Oenanthe xanthopyryma</i>	1	H	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	11	H, P, FF, and ON	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	4	H, S, and P	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	11	H and S	LC
House Sparrow	<i>Passer domesticus</i>	25	H and P	LC
Pale Rockfinch	<i>Carpodacus brachydactyla</i>	13	H and S	CC
Rock Sparrow	<i>Petronia petronia</i>	29	H, P, ON, and UN	LC
Common Chaffinch	<i>Fringilla coelebs</i>	2	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	8	H, S, and P	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	2	H and S	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	15	H, S, and P	LC

Other Wildlife Seen: Four Persian or Caucasian Squirrels (*Sciurus anomalus*) were seen.

Plants: Two waypoints were visited in this site - Waypoint 203 (N: 35 45 36.8 E: 45 14 22.1) was woodland and Waypoint 204 (N: 35 45 43.2 E: 45 13 57.3) was sub-alpine rocky cliffs.

Waypoint 203: This waypoint was at the foothill of Peramagroon mountain where the habitat was Coppice woodland (*Pistacia eurycarp* & *Quercus aegilops*), but the vegetation, especially the trees) degrades the higher up you go. The ecological condition was moderately disturbed according to the ecological scale (3). The

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dominant plants were *Quercus aegilops* and *Pistacia eurycarpa* (trees), *Prunus microcarpa* (shrub), *Vicia villosa* (herb), and *Hordeum bulbosum* (grass). The ground at this waypoint is somewhat steep (15-26°), the exposure is to the east (68-112°), the elevation is 1627m and the non-vegetated area is 5%. The geology of the area and the soil type were sedimentary and clay respectively. The total number of species at this waypoint was 62.

Waypoint 204: This waypoint was at Peramagroon Mountain (close to the top) where the habitat was Sub-alpine rocky cliffs. The vegetation cover gradually degrades as you go upwards, where the percentage of non-vegetated areas reached to more than 70%. The dominant plants were shrubs such as *Acantholimon sp.* and herbs such as *Poa bulbosa*. The area was very steep (45-69°) and the exposure was to the east. The ground was rocky and there was almost no soil (only rocks). The elevation was 2004m and the ecological scale was 2. The total number of species at this waypoint was 35.

Conservation significance: The endangered Egyptian Vulture (*Neophron percnopterus*) (plate 9) and vulnerable Lesser Kestrel (*Falco nauman*) were probably breeding, and the three globally near threatened Semi-collared Flycatcher (*Ficedula semitorquata*) (which were observed on the 23rd of April (plate 11)), Cinereous Bunting (*Emberiza cineracea*), and European Roller (*Coracias garrulus*) were possibly breeding. Other birds of conservation concern like the Lammergeier (*Gypaetus barbatus*) (possibly breeding) Masked Shrike (*Lanius nubicus*) (probably breeding), Sombre Tit (*Poecile lugubris*) (possibly breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding), Western Rock Nuthatch (*Sitta neumayer*) (was breeding), and Pale Rockfinch (*Carpospiza brachydactyla*) (possibly breeding), were also observed.



Plate 31: Endangered Egyptian Vulture (*Neophron percnopterus*)



Plate 32: Conservation Concern Masked Shrike (*Lanius nubicus*)



Plate 33: Globally near threatened Semi-collared Flycatcher (*Ficedula semitorquata*)

Peramagroon Mountain is one of the important sites for plant diversity in Kurdistan, Iraq. There are many reasons that make this site important for plant diversity. One of them is the existence of many endemic species such as *Pisum formosum*, *Thymus syriacus* (Davis P. H., Flora of Turkey and the East Aegean Islands, 1982, p. 361) and *Campanula mardinensis* (Davis, Flora of Turkey, 1978, p. 38). Another reason is

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the existence of many very rare species that are only found here, such as *Lactuca hispidus*, *Cousinia odontolepis* and *Phelypaea coccinea*, as well as the existence of two native species of oak: *Quercus aegilops* and *Q. infectoria*. The ecological condition of this site is more disturbed at the base of the mountain than higher up because of the tourism, construction, agriculture and grazing activities.



1



2



3



4

Plate 34: Important plants at Peramagroon site; 1- *Cousinia odontolepis* (rare), 2- *Thymus syriacus* (endemic), 3- *Phelypaea coccinea* (rare), and 4- *Lactuca hispidus* (rare).

Conservation Issues & Recommendations: As would be expected, site conditions are more impacted in the areas of high human use. As with other tourism sites in Iraq, there is a lot of garbage generated and left at the site. Most of this is collected and burned onsite (including plastics and other hazardous materials). The use of agricultural chemicals, such as pesticides, has been seen in the fields, many of which are used for grapes. Grazing may also be impacting the mountain. But the environment becomes better closer to the top of Peramagroon Mountain where there is no threat except the people who come to collect an edible plant that grows there (Rhume). It is recommended to increase the interest in this site and make some environmental rules as well as tourism rules such as potential limitation on grazing, agricultural and tourism areas and target people in the surrounding villages as well as the tourists with campaigns for environmental awareness.

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14- Homar Qawm and Shadala Valley (S24), GPS: N 35 47 06 E 45 15 09, Elevation: 1306m (Surveyed in summer only):



Plate 35: Homar Qawm/Shadala valley (S24) in summer

Site Description: This site is located to the northwest of Sulaimani City south of Daban Mountain near the Homar Qawm Village, it is an open area with oak forest (most of the oak trees were burned by Saddam regime or cut by people during the 90s as a fuel) and Shadala Stream in the south of the site and flows through a gorge towards Chemi Rezan (this stream was dry later in summer possibly due to upstream water diversion but also due to drought).

Observations in summer were on:

Visit on 12/April/2009:

Birds: Total Bird count: 106 birds. Species number: 28. The birds seen in summer were

Table 27: List of birds that observed during breeding season at Homar Qawm/Shadala valley (S24) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Kestrel	<i>Falco tinnunculus</i>	3	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	1	—	EN and CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	—	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	2	H and S	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Woodchat Shrike	<i>Lanius senator</i>	5	H	LC
Northern Raven	<i>Corvus corax</i>	4	H	LC
Sombre Tit	<i>Poecile lugubris</i>	5	H and NY	CC
Great Tit	<i>Parus major</i>	3	H and FF	LC
Barn Swallow	<i>Hirundo rustica</i>	3	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	3	H	LC
Crested Lark	<i>Galerida cristata</i>	4	H	LC
Woodlark	<i>Lullua arborea</i>	2	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	3	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	2	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	6	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	4	H and S	LC
White-throated Robin	<i>Irania gutturalis</i>	3	H and S	CC
Common Redstart	<i>Phoenicurus phoenicurus</i>	1	H	LC
Whinchat	<i>Saxicola rubetra</i>	1	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	2	H	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	3	H	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Blue Rock Thrush	<i>Monticola solitarius</i>	3	H	LC
House Sparrow	<i>Passer domesticus</i>	10	H	LC
Rock Sparrow	<i>Petronia petronia</i>	1	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	4	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	23	H and S	LC

Visit on 13/ April/ 2009:

Birds: Total Bird count: 141 birds. Species number: 36. The birds seen in summer were:

Table 28: List of birds that observed during breeding season at Homar Qawm/Shadala valley (S24) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Lesser Kestrel	<i>Falco naumani</i>	1	H	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	4	H, D and P	LC
Barbary Falcon	<i>Falco pelegrinoides</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	2	H and P	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	3	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	4	H	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H	LC
Eurasian Wryneck	<i>Jynx torquilla</i>	1	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H	LC
Northern Raven	<i>Corvus corax</i>	10	H	LC
Sombre Tit	<i>Poecile lugubris</i>	4	H	CC
Great Tit	<i>Parus major</i>	4	H and P	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	18	H and B	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	4	H	LC
Crested Lark	<i>Galerida cristata</i>	8	H and P	LC
Woodlark	<i>Lullua arborea</i>	2	H	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	2	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	2	H	LC
Eastern Orphean Warbler	<i>Sylvia crassirostris</i>	3	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	8	H, D and P	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
White-throated Robin	<i>Irania gutturalis</i>	6	H and S	CC
Common Redstart	<i>Phoenicurus phoenicurus</i>	3	H	LC
Whinchat	<i>Saxicola rubetra</i>	2	H	LC
Northern Wheatear	<i>Oenanthe oenanthe</i>	4	H and P	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	1	H	LC
Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	1	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	3	H and P	NT and CC
Rock Sparrow	<i>Petronia petronia</i>	6	H, D and P	LC
Tree Pipit	<i>Anthus trivialis</i>	2	H	LC
European Goldfinch	<i>Carduelis carduelis</i>	6	H and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Corn Bunting	<i>Emberiza calandra</i> [Miliaria]	12	H	LC
Ortolan Bunting	<i>Emberiza hortulana</i>	3	H	LC

Visit on 14/ April/ 2009:

Birds: Total Bird count: 125 birds. Species number: 40. The birds seen in summer were:

Table 29: List of birds that observed during breeding season at Homar Qawm/Shadala valley (S24) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	4	H	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	3	H	LC
Barbary Falcon	<i>Falco pelegrinoides</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	4	H, D and P	VU and CC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	1	H	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	—	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	6	H and P	LC
Steppe Eagle	<i>Aquila nipalensis</i>	1	—	CC
Asian Imperial Eagle	<i>Aquila heliaca</i>	1	—	VU and CC
Golden Eagle	<i>Aquila chrysaetos</i>	1	—	CC
Rock Dove	<i>Columba livia</i>	6	H	LC
Common Cuckoo	<i>Cuculus canorus</i>	3	H	LC
Common Swift	<i>Apus apus</i>	1	—	LC
Eurasian Wryneck	<i>Jynx torquilla</i>	1	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	1	H	LC
Woodchat Shrike	<i>Lanius senator</i>	5	H and S	LC
Northern Raven	<i>Corvus corax</i>	3	H and FF	LC
Sombre Tit	<i>Poecile lugubris</i>	4	H and P	CC
Great Tit	<i>Parus major</i>	7	H, P and FF	LC
Barn Swallow	<i>Hirundo rustica</i>	2	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	7	H and B	LC
Crested Lark	<i>Galerida cristata</i>	4	H	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	1	H and S	CC
Eastern Orphean Warbler	<i>Sylvia crassirostris</i>	2	H	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	1	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	5	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
White-throated Robin	<i>Irania gutturalis</i>	7	H	CC
Common Redstart	<i>Phoenicurus phoenicurus</i>	2	H	LC
Whinchat	<i>Saxicola rubetra</i>	2	H	LC
Northern Wheatear	<i>Oenanthe oenanthe</i>	4	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	1	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	1	H	NT and CC
House Sparrow	<i>Passer domesticus</i>	6	H	LC
Rock Sparrow	<i>Petronia petronia</i>	7	H	LC
Grey Wagtail	<i>Motacilla cinerea</i>	2	H and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
European Goldfinch	<i>Carduelis carduelis</i>	7	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	5	H and S	LC
Ortolan Bunting	<i>Emberiza hortulana</i>	2	H	LC

Visit on 14/May/2009:

Birds: Total Bird count: 175 birds. Species number: 43. The birds seen in summer were:

Table 30: List of birds that were observed during the breeding season at Homar Qawm (S24) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	2	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	3	H and P	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Barbary Falcon	<i>Falco peregrinoides</i>	2	H, P, and ON	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	4	H	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	6	H and P	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	H	LC
Rock Dove	<i>Columba livia</i>	2	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	3	H	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	3	H	LC
Common Swift	<i>Apus apus</i>	4	H	LC
European Roller	<i>Coracias garrulus</i>	2	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	12	H and P	LC
Eurasian Wryneck	<i>Jynx torquilla</i>	1	H and S	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	9	H	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	5	H and S	LC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	2	H and P	LC
Yellow-billed Chough	<i>Pyrrhocorax graculus</i>	2	H, D, P, and ON	LC
Northern Raven	<i>Corvus corax</i>	5	H	LC
Barn Swallow	<i>Hirundo rustica</i>	7	H and ON	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	5	H	LC
Long-tailed Tit	<i>Aegithalos caudatus</i>	2	H	LC
Crested Lark	<i>Galerida cristata</i>	12	H and S	LC
Woodlark	<i>Lullua arborea</i>	3	H and S	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	1	H	CC
Eastern Orphean Warbler	<i>Sylvia crassirostris</i>	1	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	2	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	5	H, S, P, ON, and UN	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	2	H	CC
Eurasian Blackbird	<i>Turdus merula</i>	4	H, S, and P	LC
White-throated Robin	<i>Irania gutturalis</i>	6	H, S, and P	CC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropygia] galactotes</i>	2	H and S	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Redstart	<i>Phoenicurus phoenicurus</i>	2	H	LC
Whinchat	<i>Saxicola rubetra</i>	2	H and P	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	4	H and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	3	H and P	CC
Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	1	H	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	2	H, S, and P	LC
House Sparrow	<i>Passer Domesticus</i>	17	H, B, P, and ON	LC
Rock Sparrow	<i>Petronia petronia</i>	5	H and P	LC
Yellow-throated Sparrow	<i>Gymnoris [Petronia] xanthocollis</i>	11	H, S, and P	CC

Other Wildlife Seen: One globally vulnerable Spur-Thighed Tortoise (*Testudo graeca*) was observed.

Plants: One waypoint was visited here - Waypoint 209 (N: 35 47 05.7 E: 45 15 08.8), which was woodland.

Waypoint 209: Species number: 55, the ecological condition 4. The dominant tree was *Quercus aegilops*, the dominant shrub *Crataegus azorolus*, the dominant herb *Cerastium inflatum* and the dominant grass *Poa bulbosa*. The habitat was Coppist woodland (oaks). The area was Steep (27-45°), the exposure was to the west (248-292°) and the elevation was 1306m. The geology and soil type at this waypoint were sedimentary and silt respectively.

Conservation significance: The endangered Egyptian Vulture (*Neophron percnopterus*) (probably breeding), vulnerable Lesser Kestrel (*Falco naumani*) (probably breeding), near threatened European Roller (*Coracias garrulus*) (possibly breeding), and conservation concern birds such as the White-eared Bulbul (*Pycnonotus leucotis*) (possibly breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding), Western Rock Nuthatch (*Sitta neumayer*) (possibly breeding), White-throated Robin (*Irania gutturalis*) (probably was breeding), Finsch's Wheatear (*Oenanthe finschii*) (probably was breeding), and Yellow-throated Sparrow (*Gymnoris [Petronia] xanthocollis*) (probably was breeding).



Plate 36: Rufous-tailed Rock Thrush (*Monticola saxatilis*)

This site was disturbed ecologically by extensive agricultural, grazing and deforestation activities. However, there were some important plants such as, *Cousinia inflata* (endemic) (Ghahraman, 2003), *Quercus macranthera* (rare), *Q. aegilops* and *Q. infectoria* (both natives).

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Plate 37: Endemic plant (*Cousinia inflata*) at Homar Qawm & Shadala Valley.

Conservation Issues & Recommendations: Grazing and other human activities such as picnicking, road construction, and sewage pollution from the village of Homer Qawm and other villages upstream are affecting the area. Also, there were many farms and agricultural activities in addition to house building that may affect the site. The stream that flows through the sites was dry by summer, which could be due to the normal summer decline in water, the current drought of 08/09 or could be caused by upstream diversions. All of the above threats are affecting the natural environment of this area and have placed it in a bad environmental condition. Real and practical solutions are needed control grazing, agriculture, tourism and water use in order to decrease the effects of the aforementioned threats. It is advised that the local people in the surrounding villages as well as the tourists be targeted with campaigns for environmental awareness.

15- Chami Rezan (S10), GPS: N 35 48 31.3 E 45 01 14.4, Elev. 647m (Surveyed in summer only):



Plate 38: Chami Rezan (S10) in summer

Site Description: This site is located approximately 30 km to the west of Sulaimani City near Zarzi Village, which is one of the oldest archeological sites in the world. It consists of a long valley with a stream (Tabben Stream) that flows from the northeast through the valley, into a narrow winding gorge, and ultimately entering the Little Zab River. The landscape consists of hills and rocky ridges with sparse oak woodlands. There are some villages near the site and in the area where there is a spring and a

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secondary stream that enters the Tabben, there is a small resort area which is used for picnicking. There are caves nearby as well as ancient ruins. This site was only visited by the bird team in April.

Observations were made only in summer on:

Visit on 16/April/ 2009:

Birds: Total Bird count: 295 birds. Species number: 53. Birds seen in summer were:

Table 31: List of birds that observed during breeding season at Chami Razan (S10) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Kestrel	<i>Falco tinnunculus</i>	2	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	10	H and P	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	8	H and P	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	2	H	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	2	—	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	—	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	8	H, D and P	LC
Steppe Eagle	<i>Aquila nipalensis</i>	2	—	CC
Booted Eagle	<i>Aquila [Hieraetus] pennata [pennatus]</i>	1	H	LC
Common Moorhen	<i>Gallinula chloropus</i>	1	H	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	H	LC
Rock Dove	<i>Columba livia</i>	13	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	4	H	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	2	H and P	LC
Great Spotted Cuckoo	<i>Cuculus canorus</i>	3	H	LC
Little Swift	<i>Apus affinis</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	10	—	LC
Eurasian Hoopoe	<i>Upupa epops</i>	3	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	5	H	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H	LC
Eurasian Magpie	<i>Pica pica</i>	9	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	4	H	LC
Northern Raven	<i>Corvus corax</i>	23	H	LC
Sombre Tit	<i>Poecile lugubris</i>	2	H	CC
Great Tit	<i>Parus major</i>	3	H and P	LC
Barn Swallow	<i>Hirundo rustica</i>	10	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	12	H, B and P	LC
Crested Lark	<i>Galerida cristata</i>	5	H and S	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	2	H	CC
Cetti's Warbler	<i>Cettia cetti</i>	9	H and S	LC
Moustached Warbler	<i>Acrocephalus menanopogon</i>	5	H	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	1	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	1	H	LC
Common Whitethroat	<i>Sylvia communis</i>	3	H and S	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	7	H, S and P	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	5	H, P and ON	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
Thrush Nightingale	<i>Luscinia luscinia</i>	1	S	LC
White-throated Robin	<i>Irania gutturalis</i>	1	H	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Rufous-tailed Scrub Robin	<i>Cercotrichas</i> [<i>Erythropygia</i>] <i>galactotes</i>	3	H and P	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	3	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	1	H	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	4	H, P and FL	CC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	1	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	1	H	NT and CC
House Sparrow	<i>Passer domesticus</i>	37	H	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	33	H	LC
Tree Pipit	<i>Anthus trivialis</i>	10	H	LC
European Goldfinch	<i>Carduelis carduelis</i>	2	H and P	LC
Corn Bunting	<i>Emberiza</i> [Miliaria] <i>calandra</i>	6	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	1	H	LC

Visit on 20/April/2009:

Birds: Total Bird count: 282 birds. Species number: 48. Birds seen in summer were:

Table 32: List of birds that were observed during the breeding season at Chami Razan (S10) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris Chukar</i>	2	H and P	LC
Common Kestrel	<i>Falco tinnunculus</i>	2	H, P, and ON	LC
Black Kite	<i>Milvus migrans</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	6	H and P	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	H and P	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	6	H	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	2	—	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	—	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	4	H and P	LC
Steppe Eagle	<i>Aquila nipalensis</i>	4	—	CC
Booted Eagle	<i>Aquila</i> [Hieraaetus] <i>pennata</i> [pennatus]	2	H	LC
Common Moorhen	<i>Gallinulua chloropus</i>	2	H	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	H	LC
Rock Dove	<i>Columba livia</i>	5	H	LC
Laughing Dove	<i>Streptopelia senegalensis</i>	3	H, S, and P	LC
Common Cuckoo	<i>Cuculus canorus</i>	2	H	LC
European Roller	<i>Coracias garrulus</i>	1	H	NT and CC
Common Kingfisher	<i>Alcedo atthis</i>	2	H and P	LC
European Bee-eater	<i>Merops apiaster</i>	25	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	2	H, S, and FF	LC
Eurasian Wryneck	<i>Jynx torquilla</i>	2	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	4	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	1	H	LC
Masked Shrike	<i>Lanius nubicus</i>	1	H	CC
Eurasian Magpie	<i>Pica pica</i>	1	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Western Jackdaw	<i>Corvus monedula</i>	65	H	LC
Northern Raven	<i>Corvus corax</i>	20	H and ON	LC
Sombre Tit	<i>Poecile lugubris</i>	2	H and FF	CC
Great Tit	<i>Parus major</i>	4	H and P	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	6	H and P	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	5	H, S, and P	CC
Cetti's Warbler	<i>Cettia cetti</i>	8	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	4	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	7	H and S	LC
Menetries' s Warbler	<i>Sylvia mystacea</i>	10	H, P, and FF	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	4	H, S, and P	CC
Eurasian Blackbird	<i>Turdus merula</i>	1	H and S	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	2	H	LC
White-throated Robin	<i>Irania guttularis</i>	3	H	CC
Common Redstart	<i>Phoenicurus phoenicurus</i>	5	H and P	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	2	H	LC
Semi-collared Flycatcher	<i>Ficedula semitorquata</i>	2	H	NT and CC
House Sparrow	<i>Passer domesticus</i>	35	H	LC
Tree pipit	<i>Anthus trivialis</i>	1	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	2	H and S	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	2	H and P	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	2	H and S	LC

Conservation Significance: The endangered Egyptian Vulture (*Neophron percnopterus*) was breeding. The globally near threatened European Roller (*Coracias garrulus*), Semi-collared Flycatcher (*Ficedula semitorquata*), and Cinereous Bunting (*Emberiza cineracea*) were possibly breeding. Other birds of conservation concern were also observed such as the Steppe Eagle (*Aquila nipalensis*) (passage migrant) (plate 13), Masked Shrike (*Lanius nubicus*) (possibly breeding), Sombre Tit (*Poecile lugubris*) (was breeding), White-eared Bulbul (*Pycnonotus leucotis*) (probably was breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (probably was breeding), and White-throated Robin (*Irania guttularis*) (possibly was breeding).



Plate 39: Conservation concern Steppe Eagle (*Aquila nipalensis*)

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Conservation Issues & Recommendations: Constructing new roads, tourism (and accumulation of related trash and sewage) and grazing are affected the area. This site needs to be cleaned of garbage left behind by tourists and due to its popularity as a tourist location, it requires the development and implementation of an effective management plan. More education for locals and visiting tourists would also help to improve and protect the site. In the previous winter, people were observed electrofishing along the stream in the valley and this practice should be stopped.

16- Parazan (S26), GPS: N 35 37 37 E 45 44 19 Elev. 1047m (Surveyed in summer only):



Plate 40: Parazan (S26) in summer

Site Description: The site is located 24km northeast of Sulaimani City; the main habitat of this area is oak forested valley between mountains (Kura Kazhaw to the south) and hills with the density of the trees increasing toward the mountain. There are villages close to the site such as: Parazan, Swera and Mkl.

Observations were made only in summer on 12/May/2008:

Birds: Total Bird count: 165 birds. Species number: 36. Birds seen in summer were:

Table 33: List of birds that were observed during the breeding season at Parazan (S26) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Kestrel	<i>Falco tinnunculus</i>	2	H and P	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	2	H	EN and CC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	3	H, P, and ON	CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	H, D, and P	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Rock Dove	<i>Columba livia</i>	2	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	3	H	LC
Common Swift	<i>Apus apus</i>	6	H	LC
European Bee-eater	<i>Merops apiaster</i>	13	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	4	H and S	LC
Middle Spotted Woodpecker	<i>Dendroscopus medius</i>	18	H and ON	LC
Red-backed Shrike	<i>Lanius collurio</i>	11	H and P	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	1	H and S	LC
Eurasian Jay	<i>Garrulus glandarius</i>	6	H and B	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Hooded Crow	<i>Corvus [corone] sharpii</i>	2	H and P	LC
Northern Raven	<i>Corvus corax</i>	3	H	LC
Sombre Tit	<i>Poecile lugubris</i>	1	H	CC
Great Tit	<i>Parus major</i>	13	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	4	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	5	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	7	H and B	LC
Cetti's Warbler	<i>Cettia cetti</i>	2	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	2	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	2	H	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	1	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	2	H and S	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	1	H and S	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	8	H	LC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
Mistle Thrush	<i>Turdus viscivorus</i>	9	H	LC
Common Nightingale	<i>Luscinia megarhynchos</i>	1	H and S	LC
Common Redstart	<i>Phoenicurus phoenicurus</i>	4	H	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	7	H	LC
Pale Rockfinch	<i>Carpospiza brachydactyla</i>	5	H and S	CC
Yellow-throated Sparrow	<i>Gymnoris [Petronia] xanthocollis</i>	7	H, S, and P	CC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	2	H and S	LC

Plants: Only one waypoint was visited - Waypoint 205 (N: 35 37 33.4 E: 45 44 14.3), which was woodland.

There were more than 41 plant species distributed at this waypoint and divided between trees, shrubs, herbs and grasses. The dominant tree was *Quercus aegilops*, the dominant shrub *Vitex sp.*, the dominant herb *Trifolium repens* and the dominant grasses were *Poa bulbosa* and *Aegilops crassa*. The habitat was woodland (oaks) with herbs and grasses at the ground. The ecological condition was disturbed meaning the ecological scale was 4. The slope of the ground was moderate (6-14°) and the exposure was to the east (68-112°). The geology was sedimentary and the soil type was clay. The elevation was 1116m and the percentage of non-vegetated areas was only 5%.

Conservation significance: The endangered Egyptian Vulture (*Neophron percnopterus*) was possibly breeding, and other birds of conservation concern such as Levant Sparrowhawk (*Accipiter brevipes*) (was breeding), Sombre Tit (*Poecile lugubris*) (possibly breeding), Pale Rockfinch (*Carpospiza brachydactyla*) (possibly was breeding), and Yellow-throated Sparrow (*Gymnoris [Petronia] xanthocollis*) (probably was breeding).



Plate 41: Conservation concern Levant Sparrowhawk (*Accipiter brevipes*)

The ecological condition of this site was very disturbed (4), so there were not many significant plants apart from the native species of oak *Quercus aegilops*. Importantly however, in terms of their numbers, health and size, the Oak trees in this area were in good condition. The worthy plant was *Iris reticulata* which was observed only at this site through the whole survey.

Conservation Issues & Recommendations: The threats were tourism, livestock production/grazing, agriculture and the reconstruction of a new health center and restoration of some older houses in the nearby village. However, the upper area (the surrounding mountains) was in better ecological condition and it is considered one of the best areas for oak forest in Kurdistan-Iraq.

17- Doli Plingian (S28), GPS: N 36 24 21 E 44 45 07, Elev. 931 (Surveyed in summer only)



Plate 42: Doli Plingian (S28) in summer

Site Description: This site, located on the northwest of Sulaimani City, is a mountainous area with deciduous oak forest. There is also a stream near the Diaman Village and surrounding farmland.

Observations were made only in summer were on 16/May/2009:

Birds: Total Bird count: 99 birds. Species number: 31. The following birds were seen in summer:

Table 34: List of birds that were observed during the breeding Season at Doli Plingian (S28) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Kestrel	<i>Falco tinnunculus</i>	2	H	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Common Woodpigeon	<i>Columba palumbus</i>	5	H and P	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H and S	LC
Common Swift	<i>Apus apus</i>	4	H	LC
European Roller	<i>Coracias garrulus</i>	2	H	NT and CC
Blue-cheeked Bee-eater	<i>Merops [superciliosus] persicus</i>	5	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	4	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	4	H and P	LC
Woodchat Shrike	<i>Lanius senator</i>	1	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	3	H	LC
Sombre Tit	<i>Poecile lugubris</i>	3	H and S	CC
Great Tit	<i>Parus major</i>	5	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	2	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	13	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	2	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	1	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	1	H	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	2	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	H, S, ON, and UN	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropygia]</i>	1	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	6	H, P, FF, and ON	LC
Grey Wagtail	<i>Motacilla cinerea</i>	3	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	2	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	8	H, S, and P	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	2	H and S	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	7	H, S, and P	LC

Other Wildlife Seen: One Hardim (*Laudakia stellio*) was seen.

Plants: One waypoint was visited here - Waypoint 211 (N: 36 24 20.9 E: 44 45 07.3), which was a stream within riparian woodland.

Waypoint 211: There were more than 42 plant species at this site (waypoint) divided between trees, shrubs, herbs and grasses. The dominant tree was the oriental plane (*Platanus orientalis*), the dominant shrub was blackberry (*Rubus sanctus*), the dominant herb was hoary cress (*Cardaria draba*) and the dominant grass was barley (*Hordeum spontaneum*). The habitat was a stream within riparian woodland (oriental planes) and the ecological scale was 4. The features of this waypoint were a gentle slope 0-5°, southern exposure 158-202°, and an elevation of 934m. The geology was sedimentary and the soil type was clay. The percentage of non-vegetated areas was 30%.

Conservation significance: The globally near threatened European Roller (*Coracias garrulus*) and Cinereous Bunting (*Emberiza cineracea*) were possibly breeding, and birds of conservation concern were

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observed such as the Levant Sparrowhawk (*Accipiter brevipes*) (possibly was breeding), Sombre Tit (*Poecile lugubris*) (possibly was breeding), and Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding).

There were two endemic species at this site and they were *Notobasis syriaca* and *Thymus syriaca*. There was also a very rare species of Rush (*Juncus effusus*) and the native species of Oak (*Quercus aegilops* and *Q. infectoria*).



Plate 43: Very rare plant *Juncus effusus* at Doli Pngian site.

Conservation Issues & Recommendations: The threats at this site were livestock production/grazing, tourism and agriculture. The environment was not in a good condition. There was a lot of trash especially close to the stream in addition to the noise by tourists. Therefore it needs significantly more interest and awareness in order to be improved.

18- Taq Taq (E2), GPS: N 35 53 59 E 44 37 35.39, Elev. 338m (Surveyed in winter only):



Plate 44: Taq Taq (E2) in summer

Site Description: This area is dominated by the slowly flowing Little Zap River, which has banks made of clay and silt (speed and flow levels fluctuate due to the opening and closing of the Dukan Dam upstream). The area is located in the southeast of Erbil Governorate. The village of Jom Haider is to the north of the survey area. The survey area is reached from the road to Taq Taq.

Observations were made in winter only and were on 22/Jan/2009:

Birds: Total count: 1805. Species Number: 40. Species observed at the site are listed in the table below.

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Table 35: List of birds that were observed during the winter survey at Taq Taq (E2) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
Grey Heron	<i>Ardea cinerea</i>	3	LC
Great White Egret	<i>Ardea [Egretta] alba</i>	1	LC
Little Egret	<i>Egretta garzetta</i>	3	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	45	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	LC
Common Moorhen	<i>Gallinula chloropus</i>	4	LC
Eurasian Coot	<i>Fulica atra</i>	7	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	3	LC
Common Snipe	<i>Callinago callinago</i>	4	LC
Common Redshank	<i>Tringa totanus</i>	1	LC
Armenian Gull	<i>Larus armenicus</i>	1	CC
Great Black-headed Gull	<i>Larus ichthyaetus</i>	2	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	1	LC
Common Woodpigeon	<i>Columba palumbus</i>	920	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	6	LC
Laughing Dove	<i>Streptopelia senegalensis</i>	2	LC
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	3	LC
Eurasian Magpie	<i>Pica pica</i>	8	LC
Western Jackdaw	<i>Corvus monedula</i>	650	LC
Hooded Crow	<i>Corvus [corone] sharpie</i>	4	LC
Northern Raven	<i>Corvus corax</i>	3	LC
Great Tit	<i>Parus major</i>	2	LC
Blue Tit	<i>Cyanistes caeruleus</i>	1	LC
Crested Lark	<i>Galerida cristata</i>	29	LC
Eurasian Skylark	<i>Alauda arvensis</i>	8	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	2	CC
Common Chiffchaff	<i>Phylloscopus collybita</i>	3	LC
Iraq Babbler	<i>Turdoides altirostris</i>	2	CC
Winter Wren	<i>Troglodytes troglodytes</i>	1	LC
Common Starling	<i>Sturnus vulgaris</i>	12	LC
Eurasian Blackbird	<i>Turdus merula</i>	5	LC
European Robin	<i>Eritacus rubecula</i>	3	LC
Black Redstart	<i>Phoenicurus oebrius</i>	4	LC
Eurasian Stonechat	<i>Saxicola torquatus (S. rubicola)</i>	2	LC
White Wagtail	<i>Motacilla alba</i>	6	LC
Water Pipit	<i>Anthus spinoletta</i>	11	LC
Common Chaffinch	<i>Fringilla coelebs</i>	25	LC
European Goldfinch	<i>Carduelis carduelis</i>	15	LC
Common Reed Bunting	<i>Emberiza schoeniclus</i>	1	LC

Conservation Significance: The near endemic species Iraq Babbler (*Turdoides altirostris*), and the conservation concern Armenian Gull (*Larus armenicus*) were observed.

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Conservation Issues & Recommendations: Gravel mining has affected the area and the riparian area along the Little Zab River has been heavily utilized for agriculture resulting in widespread disturbances. Additionally, it is known that there is oil development along the river but little is known at this time about the effects this will have on the environment or the river itself.

19- Barzan Area (E8), GPS: N 36 54 49.4 E 44 12 47.9 - Elev. 305m (Surveyed in winter & summer)



Plate 45: Barzan (E8) in winter

Site Description: This is an area south of the town of Mergasor where there is a large cave that was excavated for early human remains. It is located in a narrow, winding gorge with a seasonal stream at the bottom. The cave area is being developed as a resort for picnickers. It appears to have been fenced off from grazing animals. The site is a protected area from hunting (by a local agreement), but there is overgrazing. At the time of the summer survey the area was covered in locusts. The site contains riparian woodland and surrounded by *Quercus aegilops* woodland on the mountain slopes. There is a bridge at the site. The river eventually flows into the Great Zab River.

Observations in winter were on 23/Jan/2009 and in summer were on 21/May/2009:

Winter- Birds: Total count: 236. Species Number: 33. Species observed at the site are listed in the table below.

Table 36: List of birds that were observed during the winter survey at Barzan Area (E8) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	7	LC
Mallard	<i>Anas platyrhynchos</i>	11	LC
Eurasian Teal	<i>Anas crecca</i>	2	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	VU and CC
Lammergeier	<i>Gypaetus barbatus</i>	1	CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	9	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	LC
Golden Eagle	<i>Aquila chrysaetos</i>	2	CC

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Common Name	Scientific Name	Count	Conservation Status
Rock Dove	<i>Columba livia</i>	5	LC
Pied Kingfisher	<i>Ceryle rudis</i>	1	LC
Lesser Spotted Woodpecker	<i>Dendroscopus minor</i>	3	LC
Eurasian Magpie	<i>Pica pica</i>	4	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	LC
Hooded Crow	<i>Corvus [corone] sharpie</i>	3	LC
Northern Raven	<i>Corvus corax</i>	2	LC
Sombre Tit	<i>Poecile lugubris</i>	2	CC
Great Tit	<i>Parus major</i>	15	LC
Blue Tit	<i>Cyanistes caeruleus</i>	9	LC
Long-tailed Tit	<i>Aegithalos caudatus</i>	13	LC
Crested Lark	<i>Galerida cristata</i>	16	LC
Winter Wren	<i>Troglodytes troglodytes</i>	2	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	1	CC
Eurasian Blackbird	<i>Turdus merula</i>	3	LC
European Robin	<i>Erithacus rubecula</i>	4	LC
Black Redstart	<i>Phoenicurus phoenicurus</i>	1	LC
House Sparrow	<i>Passer domesticus</i>	5	LC
White Wagtail	<i>Motacilla alba</i>	2	LC
Common Chaffinch	<i>Fringilla coelebs</i>	52	LC
European Greenfinch	<i>Carduelis chloris</i>	4	LC
European Goldfinch	<i>Carduelis carduelis</i>	37	LC
Yellowhammer	<i>Emberiza citronella</i>	12	LC

Summer -Birds: Total Bird count: 197 birds. Species number: 41. Birds seen in summer were:

Table 37: List of birds that were observed during the breeding season at Barzan Area (E8) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	2	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	4	H and P	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	2	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	1	H	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	6	H and P	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	H	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	2	H	LC
Golden Eagle	<i>Aquila chrysaetos</i>	2	H, D, and P	CC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Rock Dove	<i>Columba livia</i>	4	H	LC
Common Swift	<i>Apus apus</i>	8	H	LC
Pied Kingfisher	<i>Ceryle rudis</i>	1	H	LC
European Bee-eater	<i>Merops apiaster</i>	12	H and P	LC
Lesser Spotted Woodpecker	<i>Dendroscopus minor</i>	2	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	1	H	LC
Lesser Grey Shrike	<i>Lanius minor</i>	5	H	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Statu
Masked Shrike	<i>Lanius nubicus</i>	4	H and P	CC
Eurasian Magpie	<i>Pica pica</i>	7	H and P	LC
Eurasian Jay	<i>Garrulus glandarius</i>	5	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	12	H and P	LC
Western Jackdaw	<i>Corvus monedula</i>	1	H	LC
Rook	<i>Corvus frugilegus</i>	4	—	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	7	H	LC
Northern Raven	<i>Corvus corax</i>	9	H and P	LC
Sombre Tit	<i>Poecile lugubris</i>	3	H and S	CC
Great Tit	<i>Parus major</i>	8	H and S	LC
Blue Tit	<i>Cyanistes caeruleus</i>	7	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	3	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	13	H	LC
Long-tailed tit	<i>Aegithalos caudatus</i>	2	H	LC
Crested Lark	<i>Galerida cristata</i>	10	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	2	H and S	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	1	H	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	3	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	4	H, S, P, and ON	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	7	H and P	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	6	H	LC
House Sparrow	<i>Passer domesticus</i>	5	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	2	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	15	H, S, and p	LC

Winter- Other Wildlife Seen: Thirty-six vulnerable Wild Goats (*Capra aegagrus*) (NT) were seen and one Persian Squirrel (*Sciurus anomalus*).

Summer- Other Wildlife Seen: 14 Wild Goats (*Capra aegagrus*) (NT) were seen and two Persian Squirrels (*Sciurus anomalus*). A large swarm of locust was seen near the river.

Summer- Plants: Only one waypoint was visited - Way point 214 (N: 36 56 43.3 E: 44 11 46.2), which was river with riparian woodland.

Waypoint 214: Total species number 45. The ecological scale was 4. The dominant tree was oak (*Quercus aegilops*), the dominant shrub was blackberry (*Rubus sanctus*), the dominant grass was barley (*Hordeum glaucum*) and the dominant herb was wild mustard (*Sinapis arvensis*). The habitats were river with riparian woodland and Mountains covered in (mountainous woodland?) woodland. Some of the area features were a Moderate slope (6-14°), western exposure (248-292°), sedimentary geology and the clay soil. The elevation of the area was 547m.

Conservation significance: This site holds a good number of globally vulnerable Wild Goat (*Capra aegagrus*), and vulnerable Lesser Kestrel (*Falco naumani*) (probably was breeding), endangered Egyptian Vulture (*Neophron percnopterus*) possibly was breeding, and other birds of conservation concern like: Golden Eagle (*Aquila chrysaetos*) (probably breeding), Masked Shrike (*Lanius nubicus*) (probably breeding), Sombre Tit (*Poecile lugubris*) (possibly breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding), and Western Rock Nuthatch (*Sitta neumayer*) were observed.



Plate 46: Globally vulnerable Wild Goats (*Capra aegagrus*) - winter 2009

Despite the disturbed ecological condition (due to the high levels grazing and agricultural activities), this site contains many endemics and rare plants such as *Notobasis syriaca*, *Pisum formosum*, *Thymus syriaca* (endemics), *Bromus brachystachys* (rare) and *Quercus aegilops* (native).



Plate 47: Endemic plant *Notobasis syriaca* at Barazan site.

Conservation Issues & Recommendations: The threats at this site were tourism, grazing and agriculture. There was overgrazing and a large numbers of insects (locusts) were seen near the river in summer, which were consuming much of a lot of plant material. The people of this area are interested in turning it into a National Park and have historically protected it by banning hunting. However, other activities related to tourism and agriculture are allowed, and this has caused some garbage to accumulate at the site, as well as car washing in the river, and possible overgrazing to occur. The key recommendation here is to increase the awareness of the local people about how important the native plants and the habitat are in protecting the other local wildlife. It is also necessary to apply the environmental laws for the protected areas and send the environmental police there. If the area is turned into a park, a plan for doing a more comprehensive survey should be put into effect to thoroughly document the biological resources of the area, and a management plan should be developed with local stakeholder involvement.

20- Altun Kopri Marsh (E3), GPS: N 35 42 57 E 44 07 10, Elevation: 256m (Surveyed in winter & summer):



Photo: Korsh Ararat

Plate 48: Altun Kopri Marsh (E3) in summer

Site Description: A rare wetland habitat (with similar characteristics to the southern marshes) in Kurdistan. It is surrounded by foothills and located southwest of Altun Kopri town, 55 km southeast of Erbil City. The site is along and fed by the Little Zab River from the northeast of Altun Kopri (beside the road into Debis town) and the area surrounding the marsh is agricultural.

Observations in winter were on 24/Jan/2009 and in summer were on 19/May/2009:

Winter- Birds: Total count: 19855. Species Number: 43. Species observed at the site are listed in the table below.

Table 38: List of birds that were observed during the winter survey at Altun Kopri Marsh (E3) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	4	LC
Black Francolin	<i>Francolinus francolinus</i>	1	LC
Mallard	<i>Anas platyrhynchos</i>	22	LC
Eurasian Teal	<i>Anas crecca</i>	16	LC
Greater White-fronted Goose	<i>Anser albifrons</i>	13	LC
Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	2	LC
Grey Heron	<i>Ardea cinerea</i>	14	LC
Great White Egret	<i>Ardea [Egretta] alba</i>	19	LC
Little Egret	<i>Egretta garzetta</i>	13	LC
Pygmy Cormorant	<i>Phalacrocorax pygmeus</i>	730	CC
Great Cormorant	<i>Phalacrocorax carbo</i>	125	LC
Western Marsh Harrier	<i>Circus aeruginosus</i>	15	LC
Hen Harrier	<i>Circus cyaneus</i>	4	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	LC
Common Moorhen	<i>Gallinula chloropus</i>	12	LC
Eurasian Coot	<i>Fulica atra</i>	18000	LC
Northern Lapwing	<i>Vanellus vanellus</i>	13	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	17	LC
Common Redshank	<i>Tringa totanus</i>	3	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	LC
Common Woodpigeon	<i>Columba palumbus</i>	192	LC

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Common Name	Scientific Name	Count	Conservation Status
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	5	LC
Eurasian Magpie	<i>Pica pica</i>	2	LC
Western Jackdaw	<i>Corvus monedula</i>	207	LC
Rook	<i>Corvus frugilegus</i>	173	LC
Hooded Crow	<i>Corvus [corone] sharpie</i>	6	LC
Northern Raven	<i>Corvus corax</i>	3	LC
Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	32	LC
Lesser Short-toed Lark	<i>Calandrella rufescens</i>	8	LC
Crested Lark	<i>Galerida cristata</i>	57	LC
Graceful Prinia	<i>Prinia gracilis</i>	4	LC
Cetti's Warbler	<i>Cettia cetti</i>	2	LC
Moustached Warbler	<i>Aerocephalus menanopogon</i>	7	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	19	LC
Iraq Babbler	<i>Turdonides altirostris</i>	13	CC
Common Starling	<i>Sturnus vulgaris</i>	42	LC
Eurasian Stonechat	<i>Saxicola torquatus</i> (S. rubicola)	5	LC
House Sparrow	<i>Passer domesticus</i>	22	LC
White Wagtail	<i>Motacilla alba</i>	2	LC
Common Chaffinch	<i>Fringilla coelebs</i>	20	LC
European Goldfinch	<i>Carduelis carduelis</i>	6	LC

Summer – Birds: Total Bird count: 235 birds. Species number: 43. The following birds were seen in summer:

Table 39: List of birds that were observed during the breeding season at Altun Kopri Marsh (E2) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Mallard	<i>Anas platyrhynchos</i>	2	H	LC
Squacco Heron	<i>Ardeola ralloides</i>	2	H	LC
Cattle Egret	<i>Bubulcus ibis</i>	3	H	LC
Grey Heron	<i>Ardea cinerea</i>	7	H	LC
Purple Heron	<i>Ardea purpurea</i>	12	H	LC
Western Marsh Harrier	<i>Circus aeruginosus</i>	1	H	LC
Purple Swamphen	<i>Prophyrio prophyrio</i>	2	H and P	CC
Common Moorhen	<i>Gallinula chloropus</i>	7	H	LC
Eurasian Coot	<i>Fulica atra</i>	2	—	LC
Black-winged Stilt	<i>Himantopus ostralegus</i>	6	H and P	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	4	H	LC
Armenian Gull	<i>Larus armenicus</i>	3	H	CC
Slender-billed Gull	<i>Larus genei</i>	21	H	CC
Common Tern	<i>Sterna birundo</i>	2	H	LC
Whiskered Tern	<i>Chlidonias hybrida</i>	5	H	LC
White-winged Tern	<i>Chlidonias leucopterus</i>	13	H	LC
Pin-tailed Sandgrouse	<i>Pterocles alchata</i>	9	H and P	CC
Common Woodpigeon	<i>Columba palumbus</i>	17	H	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	7	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Swift	<i>Apus apus</i>	5	H	LC
European Roller	<i>Coracias garrulus</i>	9	H	NT and CC
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	H	LC
Common Kingfisher	<i>Alcedo atthis</i>	1	H	LC
Pied Kingfisher	<i>Ceryle rudis</i>	4	H	LC
Blue-cheeked Bee-eater	<i>Merops [superciliosus] persicus</i>	14	H and P	LC
European Bee-eater	<i>Merops apiaster</i>	6	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	2	H	LC
Eurasian Magpie	<i>Pica pica</i>	9	H and P	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	2	H	LC
Sand Martin	<i>Riparia riparia</i>	2	H	LC
Barn Swallow	<i>Hirundo rustica</i>	8	H	LC
Crested Lark	<i>Galerida cristata</i>	10	H and S	LC
Graceful Prinia	<i>Prinia gracilis</i>	2	H and S	LC
Cetti's Warbler	<i>Cettia cetti</i>	1	H and S	LC
Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	3	H and S	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	2	H	LC
Iraq Babbler	<i>Turdoides altirostris</i>	4	H, S, and P	CC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropgygia] galactotes</i>	1	H and S	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	2	H	LC
Dead Sea Sparrow	<i>Passer moabiticus</i>	14	H and P	CC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	6	H	LC

Summer- Plants: Only one waypoint was visited at this site - Waypoint 212 (N: 35 42 59.3 E: 44 06 41.5), which was in the riparian habitat along the river.

Waypoint 212: The area a river with reed beds at the margins and hills around the river. The ecological condition was moderately disturbed and the ecological scale was 3. The total number of plant species was 40. The dominant tree was *Populus euphratica*, the dominant shrub was *Tamarix* sp., the dominant herbs were *Sinapis arvensis* and *Centaurea* sp. and the dominant grass was *Phragmites australis*. The area was somewhat steep (15-26°) and the exposure was toward the west (248-292°). The geology was sedimentary and the soil type was clay. The elevation was 263m and the percentage of non-vegetated areas was 70%.

Conservation significance: Altun Kopri held a considerable number of waterbirds, especially during winter, with about 18,000 of Eurasian Coot (*Fulica atra*) and about 1% of the regional population of the conservation concern Pygmy Cormorant (*Phalacrocorax pygmeus*). During the summer survey the globally near threatened European Roller (*Coracias garrulus*) (possibly was breeding), also some other birds of conservation concern were observed such as: Purple Swampphen (*Prophyrio prophyrio*) (probably was breeding), Armenian Gull (*Larus armenicus*) (possibly was breeding), Slender-billed Gull (*Larus genei*) (possibly was breeding), Pin-tailed Sandgrouse (*Pterocles alchata*) (probably was breeding), near endemic Iraq Babbler (*Turdoides altirostris*) (probably was breeding), and Dead Sea Sparrow (*Passer moabiticus*) (probably was breeding).

The vegetation in this area was limited and there was only one endemic plant at this site: *Thymus syriaca*. However, wetland habitats of this size are rare in Kurdistan, northern Iraq and generally threatened throughout the county. Thus the Altun Kopri Marsh is considered an important plant area in Iraq.

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Plate 49: Aquatic plant *Phragmites australis* at Altun Kopri site.

Conservation Issues & Recommendations: This site is located south (downstream) of the Altun Kopri Town and is affected by sewage and pollution from the town. It is being impacted by industrial activity such as like tar factories and gravel mining around the area. The team also observed that some people were burning and cutting the reeds. Some bird hunting was also witnessed.

21-Babraka (E1), GPS: N 36 27 15.9 E 43 50 27, Elevation: 297m (Just surveyed in winter):



Plate 50: Bahraka (E1) in summer

Site Description: This survey area is on the Great Zab River, which travels southwest through the site until it reaches the Tigris River. It is surrounded by steppes and highlands, with Mt. Dara Mamz lying to the south. The village of Kharok is northeast of the survey area and the site is located northwest of Erbil City. There is a gravel mine at this site.

Observations were made in winter only on 25/Jan/2009:

Birds: Total count: 374. Species Number: 34. Species observed at the site are listed in the table below.

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Table 40: List of birds that were observed during the winter survey at Bahraka (E1) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	LC
Mallard	<i>Anas platyrhynchos</i>	22	LC
Eurasian Teal	<i>Anas crecca</i>	16	LC
Grey Heron	<i>Ardea cinerea</i>	2	LC
Great White Egret	<i>Ardea [Egretta] alba</i>	2	LC
Little Egret	<i>Egretta garzetta</i>	4	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	130	LC
Common Kestrel	<i>Falco tinnunculus</i>	8	LC
Hen Harrier	<i>Circus cyaneus</i>	1	LC
Eurasian Sparrowhawk	<i>Accipiter nisus</i>	1	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	4	LC
Common Redshank	<i>Tringa totanus</i>	2	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	1	LC
Armenian Gull	<i>Larus armenicus</i>	2	CC
Common Black-headed Gull	<i>Larus ridibundus</i>	3	LC
Rock Dove	<i>Columba livia</i>	5	LC
Common Woodpigeon	<i>Columba palumbus</i>	44	LC
Eurasian collared Dove	<i>Streptopelia decaocto</i>	14	LC
Laughing Dove	<i>Streptopelia senegalensis</i>	2	LC
Pied Kingfisher	<i>Ceryle rudis</i>	7	LC
Northern Raven	<i>Corvus corax</i>	2	LC
Blue Tit	<i>Cyanistes caeruleus</i>	14	LC
Crested Lark	<i>Galerida cristata</i>	21	LC
Eurasian Skylark	<i>Alauda arvensis</i>	3	LC
Graceful Prinia	<i>Prinia gracilis</i>	5	LC
Black Redstart	<i>Phoenicurus ocburos</i>	1	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	LC
House Sparrow	<i>Passer domesticus</i>	11	LC
White Wagtail	<i>Motacilla alba</i>	3	LC
Common Chaffinch	<i>Fringilla coelebs</i>	13	LC
European Goldfinch	<i>Carduelis carduelis</i>	22	LC
Rock Bunting	<i>Emberiza cia</i>	3	LC

Conservation Significance: One bird of conservation concern, Armenian Gull (*Larus armenicus*), was seen at this site.

Conservation Issues & Recommendations: This area is highly impacted by gravel mining and the riparian zone has mostly been converted to agricultural lands. There are villages near this river (Ifraz Miran and Ifraz Kamal) that drain their sewage to the river. The local people and authorities should be educated more about this issue to seek a solution and those remaining natural areas along the river should be protected.

22- Doli Smaquli (E5A), GPS: N 36 21 49 E 44 19 22, Elevation: 1184m (Just surveyed in summer):



Plate 51: Doli Smaquli (E5A) in summer

Site Description: This is a valley with some streams and is surrounded to the west and east by a number of mountains covered by trees such as *Quercus* sp, *Prunus* sp, *Pistatia* sp, and many herbs. This area is used for agriculture, and a new road through the area was under construction in summer.

Observations were made only in summer on 20/May/2009:

Birds: Total Bird count: 661 birds. Species number: 46. The birds seen in summer were:

Table 41: List of birds that were observed during the breeding survey at Doli Smaquli (E5A) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
See-see Partridge	<i>Ammoperdix griseogularis</i>	4	H, S, and P	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	2	H	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	3	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	2	H, P, and ON	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	H	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Common Swift	<i>Apus apus</i>	450	H	LC
European Roller	<i>Coracias garrulus</i>	1	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	7	H	LC
Eurasian Wryneck	<i>Jynx torquilla</i>	1	H and S	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	3	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	5	H and P	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H and P	LC
Masked Shrike	<i>Lanius nubicus</i>	6	H and P	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	7	H, S, and P	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC
Western Jackdaw	<i>Corvus monedula</i>	4	H	LC
Northern Raven	<i>Corvus corax</i>	2	H and ON	LC
Sombre Tit	<i>Poecile lugubris</i>	5	H, FL, and ON	CC
Great Tit	<i>Parus major</i>	3	H, S, and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Blue Tit	<i>Cyanistes caeruleus</i>	1	H	LC
Barn Swallow	<i>Hirundo rustica</i>	6	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	13	H	LC
Crested Lark	<i>Galerida cristata</i>	8	H	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	9	H, S, B, P, and ON	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	1	H and S	LC
Eastern Orphean Warbler	<i>Sylvia crassirostris</i>	1	H and S	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	2	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	21	H, S, P, FF, FL, and ON	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	3	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	4	H, S, and P	LC
White-throated Robin	<i>Irania guttularis</i>	1	H	CC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropygia] galactotes</i>	3	H and S	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	6	H and P	CC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	H	CC
Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	2	H and P	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H and S	LC
House Sparrow	<i>Passer domesticus</i>	23	H, B, P, and ON	LC
Spanish Sparrow	<i>Passer hispaniolensis</i>	14	H and P	LC
Rock Sparrow	<i>Petronia petronia</i>	2	H and P	LC
European Goldfinch	<i>Carduelis carduelis</i>	10	H, S, and P	LC
Desert Finch	<i>Rhodospiza obsoletus</i>	2	H	LC
Corn Bunting	<i>Emberiza [Miliaria] calandra</i>	2	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	7	H, S, and P	LC

Other Wildlife Seen: The European Green Lizard (*Lacerta viridis*) and Anatolian Lizard (*Lacerta cappadocica*) were seen.

Plants: Only one waypoint was visited within this site - Waypoint 213 (N: 36 12 51.5 E: 44 19 20.4), which was open coppiced woodland with grasses and herbs covering the ground (in a mountainous area).

Waypoint 213: There were more than 67 species at this waypoint. The ecological scale was 3 (moderately disturbed). The dominant plants were: *Quercus aegilops* (tree), *Crataegus azorolus* (shrub), *Aegilops spp.* (grass), and *Galium sp.* (herb). The area was somewhat steep (15-26°), the exposure was to the north (338-22°) and the elevation was 1206m. The geology and soil type at this waypoint were sedimentary and clay respectively. The percentage of non-vegetated areas was only 5%.

Conservation significance: The endangered Egyptian Vulture (*Neophron percnopterus*) and near threatened European Roller (*Coracias garrulus*) possibly were breeding, and other birds of conservation concern like: Masked Shrike (*Lanius nubicus*) (probably was breeding), Sombre Tit (*Poecile lugubris*) (was breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding), Western Rock Nuthatch (possibly breeding), White-throated Robin (*Irania guttularis*) (possibly was breeding), and Finsch's Wheatear (possibly was breeding).

It is one of the most important places for plant diversity and density in Kurdistan-Iraq, with vegetation cover standing at about 95%. Furthermore, there were many important plants at this site such as *Onosma albo-rosam*, *Notobasis syriaca* (endemic), *Aristolochia paecilantha* (Townsend,V4,p2,p777), *Allium chryanthberum* (rare)(Townsend,V8,p171), *Outreya carduiiformis* (new record) (Ghahraman, 1983)) and *Quercus aegilops* (native trees).



Plate 52: New recorded plant, *Outreya carduiiformis* at Doli Smaquli site.

Conservation Issues & Recommendations: Although some threats were present, such as changes in nearby land use and livestock production/grazing, the ecological condition of this area was only moderately disturbed with high vegetation cover, and the presence of many important plants (endemics, rares and natives). So, this area can be one of the important plant areas in Kurdistan-Iraq and it is highly recommended to protect this area from the random grazing and agricultural expansion, and raise awareness about the environmental significance of this site.

23- Bakhma (E7), GPS: N 36 42 14 E 44 16 41, Elevation: 421m (Surveyed in summer only)



Plate 53: Bakhma (E7) in summer

Site Description: This is a dam construction site on the Big Zab (not currently active). The Lat and Cork Mountains rise to the south of the site, and to the north and northeast are a number of hills. There is a village to the south as well, and the ridge running SE to NW is the gap where the dam is scheduled to go. Vegetation is sparse as it is a largely oak-steppe habitat with tamarisk visible and the farming of poplar in the village. There is renewed construction around the dam.

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Observations were made only in summer on 21/May/2009:

Birds: Total Count: 71. Species Number: 32. Species observed at the site are listed in the table below.

Table 42: List of birds that were observed during the breeding season at Bakhma (E7) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Egyptian Vulture	<i>Neophron percnopterus</i>	2	H	EN and CC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	4	H and P	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Common Swift	<i>Apus apus</i>	4	H	LC
European Roller	<i>Coracias garrulus</i>	1	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	4	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	2	H and P	LC
Woodchat Shrike	<i>Lanius senator</i>	3	H	LC
Masked Shrike	<i>Lanius nubicus</i>	1	H	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Jay	<i>Garrulus glandarius</i>	1	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	2	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	3	H	LC
Sombre Tit	<i>Poecile lugubris</i>	1	H	CC
Great Tit	<i>Parus major</i>	3	H and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	1	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	2	H	LC
Crested Lark	<i>Galerida cristata</i>	2	H	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	2	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	1	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H and S	CC
White-throated Robin	<i>Irania gutturalis</i>	1	H	CC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythroptygia] galactotes</i>	2	H	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	4	H and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	1	H	CC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H and S	LC
House Sparrow	<i>Passer domesticus</i>	7	H and P	LC
European Goldfinch	<i>Carduelis carduelis</i>	3	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	5	H and P	LC

Plants: Only one waypoint was visited within the site - Waypoint 215 (N: 36 40 57.9 E: 44 18 41.9), which was open woodland.

Waypoint 215: The total number of plant species was 53. The dominant tree was *Quercus aegilops*, the dominant shrub was *Zizyphus jujube*, the dominant herb was *Onopordum sp.*, and the dominant grasses were *Aegilops crassa* and *Poa bulbosa*. The ecological condition was very disturbed (4). The elevation was 833m, it was somewhat steep (15-26°) and the exposure was to the east (68-112°). The geology and the soil type were sedimentary and clay respectively. The percentage of non-vegetated areas was only 5%.

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Conservation significance: The site contained Endangered Egyptian Vulture (*Neophron percnopterus*) and near threatened European Roller (*Coracias garrulus*) which were possibly breeding at this site, also birds of conservation concern like: Masked Shrike (*Lanius nubicus*), Sombre Tit (*Poecile lugubris*), Eastern Rock Nuthatch (*Sitta tephronota*), White-throated Robin (*Irania gutturalis*), and Finsch's Wheatear (*Oenanthe finschii*) were possibly breeding.

Although there was high vegetation cover percentage at this area the only two significant plants were *Notobasis syriaca* (endemic) and *Quercus aegilops* (native).

Conservation Issues & Recommendations: There were some threats at this site including changes in nearby land use, livestock production/grazing and dam construction. All of these threats are significant, but the latter is particularly significant as it threatens the whole habitat and may cause drastic changes to the area in the future.

24- Sakran (E14), GPS: N 36 35 26 E 44 59 10, Elevation: 1872m (Surveyed in summer only)



Photo: Korsh Ararat

Plate 54: Sakran (E14) in summer

Site Description: This area located on the Iran/Iraq border to the northeast of Erbil City and is surrounded by a number of mountains such as Sakran in the south, Halgurd in the west and Gardamn in the north. There are several streams and small rivers throughout the area.

Observations were made only in summer on 22/May/2009:

Birds: Total Count: 168. Species Number: 34. Species observed at the site are listed in the table below.

Table 43: List of birds that were observed during the breeding season at Sakran (E14) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	2	H and P	VU and CC
Golden Eagle	<i>Aquila chrysaetos</i>	1	H	CC
Booted Eagle	<i>Aquila [Hieraaetus] pennata [pennatus]</i>	1	H	LC
Alpine Swift	<i>Tachymarptis [Apus] melba</i>	4	H	LC
Common Swift	<i>Apus apus</i>	7	H	LC
European Roller	<i>Coracias garrulus</i>	5	H	NT and CC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	2	H	LC
Masked Shrike	<i>Lanius nubicus</i>	4	H and P	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	3	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	3	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Hooded Crow	<i>Corvus [corone] sharpii</i>	7	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	19	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne [Hirundo] rupestris</i>	6	H	LC
Crested Lark	<i>Galerida cristata</i>	7	H and S	LC
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	1	H	LC
Upcher's Warbler	<i>Hippolais languida</i>	2	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	2	H and S	LC
Eurasian Blackcap	<i>Sylvia atricapilla</i>	2	H and S	LC
Common Whitethroat	<i>Sylvia communis</i>	2	H and P	LC
Eurasian Nuthatch	<i>Sitta europaea</i>	4	H	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H	CC
Mistle Thrush	<i>Turdus viscivorus</i>	2	H	LC
Siberian Stonechat	<i>Saxicola maura</i>	14	H, S, P, FF, and ON	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	2	H and P	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H	LC
White-throated Dipper	<i>Cinclus cinclus</i>	8	H, D, and P	LC
House Sparrow	<i>Passer domesticus</i>	8	H and P	LC
White Wagtail	<i>Motacilla alba</i>	3	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	1	H and S	LC
Linnet	<i>Carduelis cannabina</i>	22	H, S, D, and P	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	2	H and S	NT and CC
Black-headed Bunting	<i>Emberiza melanocephala</i>	16	H, S, and P	LC

Plants: Only one waypoint was visited at this site - Waypoint 216 (N: 36 35 25.5 E: 44 59 10.3), which was riparian woodland.

Waypoint 216: There were more than 53 plant species at this waypoint. The dominant tree was *Salix sp.*, the dominant shrub was *Prunus sp.*, the dominant herb was *Cardaria draba* and the dominant grass was *Hordeum spontaneum*. The habitat was riparian woodland. This was surrounded by grassy foothills, as well as the woodlands which cover the surrounding mountains. The ecological condition was moderately disturbed (3). The slope was moderate (6-14°), the exposure was to the north (338-22°), the elevation was 1880m, the geology was sedimentary, the soil was serpentine, and the non-vegetated percentage was only 5%.

Conservation significance: Vulnerable Lesser Kestrel (*Falco naumani*) probably was breeding, and the two near threatened European Roller (*Coracias garrulus*), and Cinereous Bunting (*Emberiza cineracea*) possibly were breeding, in addition to some other birds of conservation concern such as: Golden Eagle (*Aquila chrysaetos*), Masked Shrike (*Lanius nubicus*) (probably breeding), and Eastern Rock Nuthatch (*Sitta tephronota*) (possibly was breeding).

One of the endemic plants was *Astragalus belgurdensis* (a rare species) (Townsend,V3, p319). *Aristolochia paecilantha* and *Fibigia suffroticosa* (which is rare in the upper forest zone and occasional in the alpine zone) were also found (Townsend,V4,p2,p953).



Plate 55: Two rare plants at Sakran site: *Aristolochia paecilantha* (left) and *Fibigia suffroticosa* (right).

Conservation Issues & Recommendations: The moderately disturbed ecological condition and the existence of many rare and endemic plants can make this site a potential candidate for protection (there are efforts by local government to make this area a national or regional park). The most important threats to this area are the extensive mine fields, which are yet to be removed and continue to pose danger to human and wildlife in the region. We highly recommend removing the mines from the whole site and designating it a protected area. If the area is turned into a park, a plan for doing a more comprehensive survey should be put into effect to thoroughly document the biological resources of the area, and a management plan should be developed with local stakeholder involvement.

**25- Halgurd Mountain (E13), GPS: N 36 43 47 E 44 53 04, Elevation: 3006m
(Surveyed in summer only)**



Plate 56: Halgurd Mountain (E13) in summer

Site Description: The site was at Halgurd Mountain, one of the tallest peaks in Iraq, which belongs to the Hasarost Range. It is located northwest of Hagi Omram city, close to the Iranian border. The mountain retains some through the summer. There are many places still heavily mined on the mountain.

Observations were only made in summer on 23/May/2009:

Birds Total Count: 173. Species Number: 33. Species observed at the site are listed in the table below.

Table 44: List of birds that were observed during the breeding season at Halgurd Mountain (E13) with their conservation and breeding status

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	4	H and P	LC
Common Kestrel	<i>Falco tinnunculus</i>	3	H and P	LC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	1	H	LC
Golden Eagle	<i>Aquila chrysaetos</i>	1	H	CC
Common Woodpigeon	<i>Columba palumbus</i>	2	H and P	LC
Common Swift	<i>Apus apus</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	6	H and P	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	1	H	LC
Lesser Grey Shrike	<i>Lanius minor</i>	2	H	LC
Masked Shrike	<i>Lanius nubicus</i>	2	H	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	2	H and P	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	4	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	3	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne [Hirundo] rupestris</i>	2	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	4	H	LC
Crested Lark	<i>Galerida cristata</i>	2	H	LC
Woodlark	<i>Lullula arborea</i>	2	H	LC
Horned Lark	<i>Eremophila alpestris</i>	24	H, D, P, and ON	LC
Cetti's Warbler	<i>Cettia cetti</i>	2	H and S	LC
Eurasian Blackbird	<i>Turdus merula</i>	3	H	LC
White-throated Robin	<i>Irania gutturalis</i>	17	H and P	CC
Eurasian Stonechat	<i>Saxicola torquatus (S. rubicola)</i>	5	H	LC
Northern Wheatear	<i>Oenanthe oenanthe</i>	2	H	LC
Rufous-tailed Wheatear	<i>Oenanthe xanthopyrma</i>	5	H and P	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	4	H and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	2	H	CC
Radde's Accentor	<i>Prunella ocularis</i>	4	H, S, and P	CC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
White Wagtail	<i>Motacilla alba</i>	2	H	LC
Linnet	<i>Carduelis cannabina</i>	42	H and P	LC
Ortolan Bunting	<i>Emberiza hortulana</i>	9	H and S	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	6	H, S, and P	LC

Plants: Two waypoints were visited within this site - Waypoint 217 (N: 36 43 35.6 E: 44 53 07.6), which was alpine habitata and Waypoint 226 (N: 36 43 55.3 E: 44 52 23.6), which was also alpine habitat.

Waypoint 217: Total species number 17. The ecological scale 3. It is an alpine thorn cushion area, so there were no trees growing at this waypoint. The dominant shrub was *Astragalus helgurdensis* and the dominant herb was *Ferulago angulata*. The habitat was alpine thorn cushion where the elevation was 2754m. The area was steep (27-45°) and the exposure was toward the east (68-112°). The geology was igneous and sedimentary and the soil type was serpentine. The non-vegetated percentage was 50%.

Waypoint 226: Total species number 13. The ecological scale 2. The dominant shrub and herb were *Astragalus helgurdensis* and *Ferulago angulata* respectively. The habitat was alpine thorn cushion where the elevation was 3007m. The area was very steep (45-69°) and the exposure was to the north (338-22°). The geology was Igneous (volcanic) and the soil was serpentine. The non-vegetated percentage was 60%.

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Conservation significance: Some birds of conservation concern were observed like: Golden Eagle (*Aquila chrysaetos*) (possibly was breeding), Masked Shrike (*Lanius nubicus*) (possibly was breeding), White-throated Robin (*Irania gutturalis*) (probably was breeding), Rufous-tailed Wheatear (*Oenanthe xanthopyrma*) (probably was breeding), Finsch's Wheatear (*Oenanthe finschii*) (possibly was breeding), and Radde's Accentor (*Prunella ocularis*) (probably was breeding).



Plate 57: Horned Lark (*Eremophila alpestris*)

They are *Astragalus belgurdensis* (endemic and rare), *Tulipa kurdica* (endemic and rare)(Townsend.V8,p86), *Cochicum kurdicum* (endemic and rare), *Tulipa bubseana* (rare)(Townsend,P8,p85), *Ranunculus bulbiferus* (very rare)(Townsend,V4,p2,p723), *Hyocyamus reticulate* (rare) and *Sarcopoterium spinosum* (new record).



1



2



3



4

Plate 58: Some of important plants at Halgurd site: 1- *Astragalus belgurdensis* (endemic), 2- *Tulipa bubseana* (rare), 3- *Cochicum kurdicum* (endemic), 4- *Sarcopoterium spinosum* (new recorded).

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Conservation Issues & Recommendations: As with the previous site (Sakran), this site is a very important habitat for plants because it includes many endemic and rare plants (some of these plants are restricted to this area). There are many important plants which give this site special priority to be a protected area in the future (although it is currently dangerous due to the the large number of mines). Therefore, the recommendation is to remove the mines from the whole area and establish a protected area here.

26- Sari Hassan Bag (E15), GPS: N 36 43 09 E 44 38 45, Elevation: 2523m (Surveyed in summer only):



Plate 59: Sari Hassan Bag (E15) in summer

Site Description: This Mountain is located to the northeast of Erbil City, near Diana Town/Soran. There are still minefields on this mountain. The site is a sub alpine area. There are traces of a previous base for the landing of military crafts (helicopters of the former Iraqi army). The foothills of the mountain are grassy and there is overgrazing there.

Observations were made only in summer on 24/May/2008:

Birds: Total Bird count: 82 birds. Species number: 24. Birds seen in summer were:

Table 45: List of birds that were observed during the breeding season at Sari Hassan Bag (E15) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Black Kite	<i>Milvus migrans</i>	1	H	LC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	1	H	LC
Common Swift	<i>Apus apus</i>	2	H	LC
European Roller	<i>Coracias garrulus</i>	1	H	NT and CC
European Bee-eater	<i>Merops apiaster</i>	4	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	1	H	LC
Northern Raven	<i>Corvus corax</i>	11	H, P, and ON	LC
Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i> [Hirundo]	12	H, B, P, ON, and UN	LC
Pale Crag Martin	<i>Ptyonoprogne obsoleta</i>	2	H and B	LC
Crested Lark	<i>Galerida cristata</i>	12	H	LC
Woodlark	<i>Lullua arborea</i>	2	H	LC
Horned Lark	<i>Ermophila alpestris</i>	1	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	H	CC
White-throated Robin	<i>Irania gutturalis</i>	2	H	CC
Rufous-tailed Wheatear	<i>Oenanthe xanthopyrmyna</i>	1	H and P	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	12	H and P	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	4	H	CC
Blue Rock Thrush	<i>Monticola solitarius</i>	2	H and P	LC
House Sparrow	<i>Passer domesticus</i>	2	H	LC
Rock Sparrow	<i>Petronia petronia</i>	3	H	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	2	H and S	NT and CC
Grey-necked Bunting	<i>Emberiza buchanani</i>	2	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	5	H and B	LC

Plants: Only one waypoint was visited at this site - Waypoint 230 (N: 36 43 06.3 E: 44 38 39.2), which was in sub-alpine, thorn cushion habitat.

Waypoint 230: It is a sub alpine area so there was no trees growing here. The dominant plants were shrubs and herbs. The dominant shrub was *Astragalus sp.*, while the dominant herb was *Ferulago angulata*. The ecological scale was 4. The area was very steep (45-69°), the exposure was to the south (158-202°) and the elevation was 2505m. The geology of the area was Igneous (volcanic) and the soil type was serpentine. The percentage of non vegetated areas was 50%. The total number of the identified plant species at this waypoint was 12.

Conservation significance: Two bird species were newly recorded and added to the Iraq bird list. They are the Grey-necked Bunting (*Emberiza buchanani*) (see plate below) (possibly bred) and Pale Crag Martin (*Ptyonoprogne obsolete*) (see plate below) (was breeding). The globally near-threatened European Roller (*Coracias garrulus*) and Cinereous bunting (*Emberiza cineracea*) were possibly breeding, and other birds of conservation concern such as the Eastern Rock Nuthatch (*Sitta tephronota*) (possibly was breeding). Also White-throated Robin (*Irania gutturalis*) (possibly was breeding), Rufous-tailed Wheatear (*Oenanthe xanthopyrmyna*) (probably was breeding), and Finsch's Wheatear (*Oenanthe finschii*) (possibly was breeding) were observed.



Plate 60: : New record for the Iraq bird list Grey-necked Bunting (*Emberiza buchanani*)



Plate 61: Another new record for Iraq bird list Pale Crag Martin (*Ptyonoprogne obsolete*)

Despite the disturbed ecological condition of the site (due to the mines and other threats), there are some important plants such as *Astragalus helgurdensis* (endemic and rare species), *Tulipa kurdica* (endemic and rare species) and *Hyocyamus reticulate* (rare species).



Plate 62: Rare plant *Hyocyamus reticulate* (left) and endemic plant *Tulipa kurdica* (right) at Sari Hassan Bag site.

Conservation Issues & Recommendations: Road construction, grazing and human activities specifically picnickers and their garbage have been affecting the area. There is a serious threat from the mines which cover the area and make it a real challenge to conduct any conservation activities or ecological studies.

27- Dure (D16), GPS: N 37 13 45 E 43 28 46, Elevation (Surveyed in summer only):



Plate 63: Dure (D16) in summer

Site Description: This site located at the northeast of Dohuk City near the Iraqi-Turkish border, near the village Dure and this site was mentioned before as Dori Serguza in Evan (1994). It is an open area and there is a chain of mountain near the site (Sari Darishk, Sari Zer, and Shirani Mountains).

Observations were only made in summer on 26/May/2009:

Birds: Total Bird count: 86 birds: Species number: 35. The summer birds were:

Table 46: List of birds that were observed during the breeding season at Dure (D16) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	3	H and P	VU and CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Greater Spotted Eagle	<i>Aquila clanga</i>	1	—	LC
Common Woodpigeon	<i>Columba palumbus</i>	2	H and P	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	1	H	LC
Common Swift	<i>Apus apus</i>	2	H	LC
European Bee-eater	<i>Merops apiaster</i>	3	H	LC
European Green Woodpecker	<i>Picus viridis</i>	1	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	3	H	LC
Lesser Grey Shrike	<i>Lanius minor</i>	2	H	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	3	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	1	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC
Northern Raven	<i>Corvus corax</i>	2	H	LC
Sombre Tit	<i>Poecile lugubris</i>	1	H	CC
Great Tit	<i>Parus major</i>	6	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	4	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	7	H, B, ON, and UN	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	6	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	3	H	LC
Crested Lark	<i>Galerida cristata</i>	2	H	LC
Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	1	H	LC
Willow Warbler	<i>Phylloscopus trochilus</i>	1	H	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	1	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	3	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	1	H and S	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	2	H	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	2	H	LC
House Sparrow	<i>Passer domesticus</i>	9	H	LC
European Goldfinch	<i>Carduelis carduelis</i>	2	H	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	4	H and S	LC

Other Wildlife Seen: One semi-endemic reptile, the Zagrosian Lizard (*Timon princeps kurdistanicus*), was observed.

Plants: One waypoint was visited in the site - Waypoint 231 (N: 37 14 08.9 E: 43 30 40.2), which was an open woodland interspersed with grasses and herbs.

Waypoint 231: There were more than 48 plant species spread at this waypoint. The dominant tree was *Quercus aegilops*, the dominant shrub was *Crataegus azorolus*, the dominant grass was *Hordeum bulbosum* and the dominant herbs were from the compositae family. The elevation was 1557m. The non-vegetated percentage was 5% only.

Some features of this waypoint were: a moderate slope (6-14°), southern exposure (158-202°), Sedimentary geology, and clay soil. The ecological status was moderately disturbed (3).

Conservation significance: The globally vulnerable Greater Spotted Eagle (*Aquila clanga*) and Lesser Kestrel (*Falco naumani*) (probably breeding) were observed, and other birds of conservation concern such

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as: the Levant Sparrowhawk (*Accipiter brevipes*) (possibly was breeding), Sombre Tit (*Poecile lugubris*) (possibly breeding), and Eastern Rock Nuthatch (*Sitta tephronota*) (possibly breeding).

There are many important plants at this site. Some of them, like *Pisum formosum* is endemic, while others are rare species, such as *Quercus macranthera* and *Dianthus asperula* (very rare in Iraq, only found at this site). The significant observation in this site, is the new recorded plant (the first time seen in Iraq) *Orchis laxiflora* where it is mentioned in Flora of Turkey (Davis P. H., Flora of Turkey and the East Aegean Islands), but it is not mentioned in Flora of Iraq or other references as plant which is growing in Iraq. There are also native species of oak trees (*Quercus aegilops* and *Quercus infectoria*).



Plate 64: The rare plant *Dianthus asperula* (left) and the new recorded plant *Orchis laxiflora* (right) at Dure site.

Conservation Issues & Recommendations: The ecological condition at this site was moderately disturbed and the vegetation cover was very high (95%). This makes this area vital for plants as it represents an important habitat for many endemic and rare species. It is recommended that this site be designated a protected area or increase the interest about it and make some rules to control the threats and activities there such as limit the areas of grazing, agriculture and picnic areas and target people (locals and tourists) with campaigns to increase awareness of the environment.

28- Benavi (D6), GPS: N 37 14 4 E 43 24 25, Elevation: 1375m (Surveyed in summer only):

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Plate 65: Benavi (D6) in summer

Site Description: It is about 46 km northeast of Dohuk City in Barwary Bala district and is about 8 square kilometers in size. It is a mountainous area with a valley including *Quercus*, farmland with walnuts and other trees, and a spring passing through the valley.

Observations were made only in summer on 26/May/2009:

Birds: Total Bird count: 55 birds. Species number: 28. The summer birds seen were:

Table 47: List of birds that were observed during the breeding season at Benavi (D6) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	H	LC
Rock Dove	<i>Columba livia</i>	4	H and P	LC
Common Cuckoo	<i>Cuculus canorus</i>	1	H and S	LC
Common Swift	<i>Apus apus</i>	6	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	1	H	LC
Woodchat Shrike	<i>Lanius senator</i>	2	H	LC
Masked Shrike	<i>Lanius nubicus</i>	1	H	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	3	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	1	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	2	H	LC
Northern Raven	<i>Corvus corax</i>	1	H	LC
Great Tit	<i>Parus major</i>	1	H	LC
Blue Tit	<i>Cyanistes caeruleus</i>	2	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	2	H	LC
Crested Lark	<i>Galerida cristata</i>	1	H	LC
Eastren Rock Nuthatch	<i>Sitta tephronota</i>	4	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	3	H	LC
Finsch's Wheatear	<i>Oenanthe finschii</i>	1	H	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Spotted Flycatcher	<i>Muscicapa striata</i>	1	H	LC
House Sparrow	<i>Passer domesticus</i>	5	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	1	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	2	H and S	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	2	H and S	NT and CC

Conservation Significance: Birds of conservation concern are: Masked Shrike (*Lanius nubicus*), Sombre Tit (*Parus lugubris*), Lesser Kestrel (*Falco naumani*), Eastern Rock Nuthatch (*Sitta tephronota*), and Hooded Crow (*Corvus corone coronix*).

Conservation Issues & Recommendations: This is an area with pastures and agricultural lands and is affected by grazing but the team could not get information on agricultural chemicals used at the site. The area is also affected by road construction and the building of new houses. Locals told us that there were minefields near the area, which still need to be cleared. Overall the site would benefit from more environmental awareness building programs and should be visited for future assessment.

29- Garagu (D5), GPS: N 37 01 51 E 43 23 34, Elevation: 1028m (Surveyed in summer only):



Plate 66: Garagu (D5) in summer

Site Description: This site is about 36 km northeast of Duhok City and is represented by a gorge (where a resort is located) with a stream passing through it. It is characterized by rocky slopes and oak forest covered mountain with a few *Platanus* near the stream. The focus of the survey was in the riparian woodlands near the stream. The site is east of Sersink City and is close to Gara Mountain, which is also covered by similar woodlands.

Observations were made in summer only on 27/May/2009:

Birds: Total Bird count: 108 birds. Species number: 37.

Table 48: List of birds that were observed during the breeding season at Garagu (D5) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	2	H and S	LC
Lesser Kestrel	<i>Falco naumani</i>	2	H	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	2	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	1	H	EN and CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	3	H, D, and P	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Bonelli's Eagle	<i>Aquila [Hieraaetus] fasciata [fasciatus]</i>	1	H	LC
Rock Dove	<i>Columba livia</i>	3	H and P	LC
Common Swift	<i>Apus apus</i>	5	H	LC
Eurasian Hoopoe	<i>Upupa epops</i>	1	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	2	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	2	H	LC
Woodchat Shrike	<i>Lanius Senator</i>	1	H	LC
Masked Shrike	<i>Lanius nubicus</i>	1	H	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	4	H	LC
Northern Raven	<i>Corvus corax</i>	4	H and P	LC
Sombre Tit	<i>Poecile lugubris</i>	2	H	CC
Great Tit	<i>Parus major</i>	6	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	3	H and S	LC
Barn Swallow	<i>Hirundo rustica</i>	3	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	4	H	LC
Long-tailed Tit	<i>Aegithalos caudatus</i>	2	H	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	1	H and S	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	2	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H and S	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	7	H, S, P, and FL	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
White-throated Robin	<i>Irania gutturalis</i>	2	H	CC
Spotted Flycatcher	<i>Muscicapa striata</i>	3	H	LC
Red-breasted Flycatcher	<i>Ficedula parva</i>	2	H and P	LC
White-throated Dipper	<i>Cinclus cinclus</i>	4	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	7	H	LC
Common Chaffinch	<i>Fringilla coelebs</i>	3	H and S	LC
European Goldfinch	<i>Carduelis carduelis</i>	8	H, S, and P	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	5	H and S	LC

Plants: Two waypoints were visited within this location - Waypoint 237 (N: 37 01 52.8 E: 43 23 30.6), which was open, coppiced woodland and Waypoint 236 (N: 37 01 52.9 E: 43 23 41.2), which was riparian woodland.

Waypoint 237: The total number of plants species was 54. The dominant trees were *Quercus infectoria* and *Quercus aegilops* the dominant shrub was *Prunus microcarpa*, the dominant herbs were from the Papilionaceae family, and the dominant grass was *Bromus danthoniae*. The ecological scale was 4. The elevation was 1053m. The area was steep (27-45°), the exposure was to the east, the geology was sedimentary, and the soil was clay. The non-vegetated area was about 15%.

Waypoint 236: The total number of plants species was 75. The ecological scale was 4. In this riparian woodland the dominant trees were oriental plane (*Platanus orientalis*). There were many herbs and grasses, as well as shrubs. The dominant herbs were *Parietaria sp.* and *Cardaria draba*, and the dominant grass was *aegilops crassa*. The elevation was 1015m. The slope of ground was Moderate (6-14°) and the exposure was to the north. The geology was sedimentary and the soil was clay. The non-vegetated percentage was 30%.

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Conservation significance: Endangered Egyptian Vulture (*Neophron percnopterus*) and vulnerable Lesser Kestrel (*Falco naumani*) were possibly breeding, and other birds of conservation concern like: Levant Sparrowhawk (*Accipiter brevipes*) (possibly breeding), Masked Shrike (*Lanius nubicus*) (possibly breeding), Sombre Tit (*Poecile lugubris*) (possibly breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (possibly breeding), Western Rock Nuthatch (*Sitta neumayer*) (was breeding), and White-throated Robin (*Irania gutturalis*) (possibly breeding).



Plate 67: White-throated Dipper (*Cinclus cinclus*)

The ecological condition for the whole site was very disturbed (due to the agricultural and grazing activities in addition to the other threats) nevertheless there are a lot of important plants at this site. Many of them are endemic plants such as *Pisum formosum*, *Thymus syriacus*, and *Astragalus spinosus* or rare plants like *Linum velutinum* (Townsend, V4, p1, p281), *Briza minor* (Townsend, V9, p56), *Quercus macranthera*, *Asyneuma amplexicaule* spp. *Amplexicaule*. The native species of oak tree (*Quercus aegilops*), was also present.



Plate 68: Two rare plants at Garago site: *Linum velutinum* (left) and *Asyneuma amplexicaule* (right).

Conservation Issues & Recommendations: Human activities have the largest impact on the area. Its proximity to Duhuk allows many people to use the area for picnicking resulting in the accumulation of refuse and potential sewage problems. Also, the agricultural and grazing activities are significant threats and real threats to the natural habitat. Therefore, it is recommended to increase environmental interest in the area and make new rules for agriculture and grazing such as limit the area of these activities and target the locals as well as the tourists with some educational campaigns about the environment and its importance.

30- Mangeesh (D8), GPS: 37 01 48 E 43 4 17, Elevation: 914m (Surveyed in summer only):



Plate 69: Mangeesh (D8) in summer

Site Description: This area is about 20 km northeast of Dohuk City and represents an area with foothills, mountains, and a valley, which is mostly covered by oak trees. There are also many cultivated lands. Previously this area was surveyed as two separate points (D8A & D8B). The observations for these sites are integrated here. The site is close to Mangeesh city.

Observations were made in summer only on 28/May/2009:

Birds: Total Bird count: 111 birds. Species number: 28. The birds seen in summer were:

Table 49: List of birds that were observed during the breeding season at Mangeesh (D8) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Common Kestrel	<i>Falco tinnunculus</i>	1	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	1	H	EN and CC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	1	H	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	H	LC
Rock Dove	<i>Columba livia</i>	3	H, P, and ON	LC
Common Swift	<i>Apus apus</i>	18	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	1	H	LC
Woodchat Shrike	<i>Lanius senator</i>	4	H	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	6	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC
Northern Raven	<i>Corvus corax</i>	5	H, P, FL, ON, and UN	LC
Barn Swallow	<i>Hirundo rustica</i>	6	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	4	H	LC
Crested Lark	<i>Galerida cristata</i>	4	H	LC
White-eared Bulbul	<i>Pycnonotus leucotis</i>	2	H and S	CC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	3	H, S, D, and P	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	4	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	2	H and S	CC
Eurasian Blackbird	<i>Turdus merula</i>	3	H and S	LC
White-throated Robin	<i>Irania gutturalis</i>	3	H, S, and P	CC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropgyia] galactotes</i>	4	H and S	LC
Spotted Flycatcher	<i>Muscicapa striata</i>	3	H	LC
House Sparrow	<i>Passer domesticus</i>	12	H and P	LC
Yellow-throated Sparrow	<i>Gymnoris [Petronia] xanthocollis</i>	4	H, S, and P	CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
European Goldfinch	<i>Carduelis carduelis</i>	3	H, P, ON, and UN	LC
Black-headed Bunting	<i>Emberiza melanocephala</i>	7	H, S, and P	LC

Plants: Only one waypoint was visited in this location - Waypoint 238 (N: 37 01 26.7 E: 43 05 05.4), which was open, coppiced woodland.

Waypoint 238: There were more than 58 plants species at this waypoint. The dominant tree was *Quercus aegilops*, the dominant shrub was *Prunus microcarpa*, the dominant herb was *Scapiosa sp.* and the dominant grass was *Triticum sp.* The ecological scale was 4. The elevation was 1005m, it was steep (27-45°) and the exposure was to the north (338-22°). The geology and soil type were sedimentary and clay respectively. The percentage of non-vegetated areas was 10% only.

Conservation significance: Endangered Egyptian Vulture (*Neophron percnopterus*) possibly was breeding, and birds of conservation concern like: White-eared Bulbul (*Pycnonotus leucotis*) (possibly breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (possibly breeding), White-throated Robin (*Irania gutturalis*) (probably breeding), and Yellow-throated Sparrow (*Gymnoris [Petronia] xanthocollis*) (probably breeding).

There are two endemic plants at this site and they are *Astragalus spinosus* and *Delphinium kurdicum*. There are also three native species of oak trees: *Quercus aegilops*, *Q. infectoria* and *Q. lipani* (Townsend.V4, p2,p53).



Plate 70: The endemic plant *Astragalus spinosus* at mangeesh site.

Conservation Issues & Recommendations: Human activity from agriculture, grazing, building of houses and road construction are impacting the site. It is recommended to make some rules to regulate agriculture and grazing in the area. These rules could include setting limitations on agriculture and grazing in the surrounding areas and limit the use of agrochemicals. Also it is necessary to make some environmental rules for the selection of areas for roads, make environmental impact assessments (EIA) a requirement before building roads and develop standards that guide construction to mitigate erosion and other environmental damage caused by road building. An overall ecological education campaign that targets locals would increase people’s awareness about the environment.

31- Mosul Lake (D10), GPS: N - Elev 31m (Surveyed in winter & summer)

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Plate 71: Mosul Lake (D10) in summer

Site Description: This is a large freshwater lake or reservoir approximately 50 km in length created by the Mosul Dam on the Tigris River. The survey area is southwest of Dohuk City and due to security considerations, only those areas close to Dohuk can be surveyed. There is generally a low level of human activity on the lake though some net fishing is conducted. This site is located near the water station which distributes water from the lake to Dohuk City.

Observations in winter were on 26/Jan/2009 and observations in summer were on 29/May/2009:

Winter - Birds: Total count: 7655. Species Number: 36. Species observed at the site in winter are listed in the table below.

Table 50: List of birds that were observed during the winter survey at Mosul Lake (D10) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	LC
Ruddy Shelduck	<i>Tadorna ferruginea</i>	1200	LC
Mallard	<i>Anas platyrhynchos</i>	112	LC
Eurasian Teal	<i>Anas crecca</i>	93	LC
Great Crested Grebe	<i>Podiceps cristatus</i>	6	LC
Grey Heron	<i>Ardea cinerea</i>	12	LC
Great White Egret	<i>Ardea [Egretta] alba</i>	6	LC
Little Egret	<i>Egretta garzetta</i>	9	LC
Great Cormorant	<i>Phalacrocorax carbo</i>	520	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	LC
Eurasian Coot	<i>Fulica atra</i>	830	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	3	LC
Little Ringed Plover	<i>Charadrius dubius</i>	4	LC
Common Redshank	<i>Tringa totanus</i>	5	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	LC
Yellow-legged Gull	<i>Larus michahellis</i>	1	LC
Armenian Gull	<i>Larus armenicus</i>	2100	CC
Great Black-headed Gull	<i>Larus ichthyæetus</i>	12	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	2500	LC
Slender-billed Gull	<i>Larus geni</i>	140	CC
Rock Dove	<i>Columba livia</i>	6	LC
Common Woodpigeon	<i>Columba palumbus</i>	2	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	5	LC
Pied Kingfisher	<i>Ceryle rudis</i>	3	LC

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Common Name	Scientific Name	Count	Conservation Status
Eurasian Magpie	<i>Pica pica</i>	2	LC
Western Jackdaw	<i>Corvus monedula</i>	3	LC
Northern Raven	<i>Corvus corax</i>	6	LC
Crested Lark	<i>Galerida cristata</i>	14	LC
Graceful Prinia	<i>Prinia gracilis</i>	1	LC
Common Starling	<i>Sturnus vulgaris</i>	24	LC
European Robin	<i>Eritbacus rubecula</i>	2	LC
Eurasian Stonechat	<i>Saxicola torquatus (S. rubicola)</i>	1	LC
House Sparrow	<i>Passer domesticus</i>	12	LC
White Wagtail	<i>Motacilla alba</i>	5	LC
Common Chaffinch	<i>Fringilla coelebs</i>	9	LC
Linnet	<i>Carduelis cannabina</i>	2	LC

Summer- Birds: Total count: 1426. Species Number: 28. Species observed at the site in summer are listed in the table below.

Table 51: List of birds that were observed during the breeding season at Mosul Lake (D10) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	H and P	LC
Cattle Egret	<i>Bubulcus ibis</i>	2	H and P	LC
Grey Heron	<i>Ardea cinerea</i>	7	H	LC
Purple Heron	<i>Ardea purpurea</i>	1	_____	LC
Little Egret	<i>Egretta garzetta</i>	5	H	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	15	H and P	EN and CC
Western Marsh Harrier	<i>Circus aeruginosus</i>	1	H	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	9	H	LC
Little Ringed Plover	<i>Charadrius dubius</i>	4	H and P	LC
Collared Pratincole	<i>Glareola pratincola</i>	1200	H, P, and DD	CC
Yellow-legged Gull	<i>Larus michabellis</i>	3	H	LC
Armenian Gull	<i>Larus armenicus</i>	34	H and P	CC
Slender-billed Gull	<i>Larus genei</i>	21	H,P, FL, NY, ON and UN	CC
Gull-billed Tern	<i>Sternula [Sterna] nilotica</i>	6	H	LC
Little Tern	<i>Sternula [Sterna] albifrons</i>	9	H	LC
Rock Dove	<i>Columba livia</i>	18	H and P	LC
Eurasian Collared Dove	<i>Streptopelia decaocto</i>	10	H	LC
Common Swift	<i>Apus apus</i>	7	H	LC
European Roller	<i>Coracias garrulus</i>	2	H	NT and CC
Pied Kingfisher	<i>Ceryle rudis</i>	9	H and P	LC
European Bee-eater	<i>Merops apiaster</i>	3	H	LC
Northern Raven	<i>Corvus corax</i>	3	H	LC
Barn Swallow	<i>Hirundo rustica</i>	37	H	LC
Crested Lark	<i>Galerida cristata</i>	2	H	LC
Graceful Prinia	<i>Prinia gracilis</i>	2	H and S	LC
Rufous-tailed Scrub Robin	<i>Cercotrichas [Erythropygia] galactotes</i>	1	H	LC
House Sparrow	<i>Passer domesticus</i>	11	H and P	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Grey Wagtail	<i>Motacilla cinerea</i>	2	H	LC

Summer -Plants: One waypoint was visited at this site - Waypoint 239 (N: 36 46 00.1 E: 42 45 05.3), which was in the steppe area on the east (Dohuk) side of the lake where agricultural fields are also present.

Waypoint 239: The dominant plants were *Prosopis farcta* (shrub), *Sinapis arvensis*, *Carthamus oxyacantha* (herbs) and *taeniatherum asperum* (grass). The total number of species was 33.

Some of the waypoint's features were a gentle slope, eastern exposure, sedimentary ground and clay soil. The ecological scale was 4. The elevation was 327m and the percentage of non-vegetated areas was 50%.

Conservation significance: 2% of the regional population of the Ruddy Shelduck (*Tadorna ferruginea*) (plate 20) and 3% of the regional population of the conservation concern Armenian Gull (*Larus armenicus*) were observed during winter survey, and during summer survey 15 endangered Egyptian Vulture (*Neophron percnopterus*) (probably was breeding), near threatened European Roller (*Coracias garrulus*) (possibly was breeding), and birds of conservation concern like: 1% of the regional population of Collared Pratincole (*Glareola pratincola*) (plate 21) were breeding, and Slender-billed Gull (*Larus genei*) (was breeding).



Plate 72: Ruddy Shelduck (*Tadorna ferruginea*)



Plate 73: Conservation concern Collared Pratincole (*Glareola pratincola*) was distracting and displaying

This site doesn't have much conservation significance for plants, except for two endemic species; *Notobasis syriaca* and *silybum marianum*.

Conservation Issues & Recommendations: The threats at this site were fishing, livestock production/grazing, mining, water pollution and agricultural activities. The above threats as well as the other human disturbances such as the movement of cars and tractors) made the vegetation cover poor at this site. It is necessary to make some rules to regulate agriculture and grazing in the area surrounding the lake, as well as rules that organize fishing and boating on the lake. These rules might include the determination of the fishing season and setting of quotas as well as enforcement of fishing moratoriums to protect the sustainability of the fisheries. Also these rules could include setting limitations on agriculture and grazing in the surrounding areas and limit the use of agrochemicals. An overall ecological education campaign that targets lake users would increase people's awareness about the environment.

32- Fishkhaboor-Turkish Border (D11B) - Elev. 348m (Surveyed in winter only)

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Plate 74: Fishkhaboor – Turkish Border (D11B) in winter

Site Description: The site is located on the Fishkhaboor River (prior to its junction with the Tigris River entering from Turkey) on the Iraq-Turkey border approximately 10 km upstream from a former site, D11A (Fishkhaboor-Syrian Border), which is actually on the Tigris and was not visited in 2009 due to extensive impacts at the site involving bridge construction and extensive gravel-mining. This area is north of the town of Zakho. The area nearest the river is somewhat flat, but surrounded with foothills and distant high mountains. There is moderate plant coverage and some cultivated lands and gravel mines at various points along the river.

Observations in winter were on 27/Jan/2009:

Birds: Total count: 4622. Species Number: 33. Species observed at the site are listed in the table below.

Table 52: List of birds that observed during winter survey at Fishkhaboor (D11B) with their conservation status

Common Name	Scientific Name	Count	Conservation Status
See-see Partridge	<i>Ammoperdix griseogularis</i>	2	LC
Mallard	<i>Anas platyrhynchos</i>	81	LC
Eurasian Teal	<i>Anas crecca</i>	64	LC
Great Crested Grebe	<i>Podiceps cristatus</i>	2	LC
Grey Heron	<i>Ardea cinerea</i>	4	LC
Little Egret	<i>Egretta garzetta</i>	3	LC
Common Kestrel	<i>Falco tinnunculus</i>	1	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	LC
Eurasian Coot	<i>Fulica atra</i>	5	LC
Red-wattled Lapwing	<i>Vanellus (Hoplopterus) indicus</i>	4	LC
Common Sandpiper	<i>Actitis hypoleucos</i>	2	LC
Armenian Gull	<i>Larus armenicus</i>	3	CC
Great Black-headed Gull	<i>Larus ichthyaetus</i>	2	LC
Common Black-headed Gull	<i>Larus ridibundus</i>	5	LC
Whiskered Tern	<i>Chlidonias hybrida</i>	1	LC
Common Woodpigeon	<i>Columba palumbus</i>	645	LC
White-throated Kingfisher	<i>Halcyon smymensis</i>	1	LC
Pied Kingfisher	<i>Ceryle rudis</i>	4	LC
Eurasian Magpie	<i>Pica pica</i>	2	LC
Western Jackdaw	<i>Corvus monedula</i>	2800	LC
Rook	<i>Corvus frugilegus</i>	930	LC
Northern Raven	<i>Corvus corax</i>	2	LC
Crested Lark	<i>Galerida cristata</i>	7	LC
Eurasian Skylark	<i>Alauda arvensis</i>	3	LC
Common Chiffchaff	<i>Phylloscopus collybita</i>	2	LC

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Common Name	Scientific Name	Count	Conservation Status
Common Starling	<i>Sturnus vulgaris</i>	13	LC
Eurasian Blackbird	<i>Turdus merula</i>	1	LC
European Robin	<i>Erithacus rubecula</i>	3	LC
Eurasian Stonechat	<i>Saxicola torquatus (S. rubicola)</i>	2	LC
House Sparrow	<i>Passer domesticus</i>	6	LC
White Wagtail	<i>Motacilla alba</i>	2	LC
Common Chaffinch	<i>Fringilla coelebs</i>	14	LC
European Goldfinch	<i>Carduelis carduelis</i>	5	LC

Conservation Significance: The conservation concern Armenian Gull (*Larus armenicus*), and a considerable number of Western Jackdaws (*Corvus monedula*) and Rooks (*Corvus frugilegus*) were observed.

Conservation Issue and Recommendation: The area was highly impacted by gravel mining, conversion of the riparian zone to agricultural lands, and sewages inputs from the city of Zakho to the Fishkhaboor River upstream. There is a need to raise awareness about these issues.

33- IBA 003 - Ser Amadia & Sulav (D2A & D2B) - Elev. 1123m (Surveyed in summer only):



Plate 75: Ser Amadia in summer

Site Description: Ser Amadia is an east-west mountain ridge rising to 2,000 m, just north-west of the town of Amadia 20 km south of the Turkish border. The section of the Amadia valley to the south lies at 1,450-1,550 m, 3 km west of Amadiya. The site includes rocky cliffs at Sulaf and gorges to the south, e.g. Sulaf, Geli-e-Mazurka. The treeline is at 1,650 m, and the ridge has a grassy saddle at 1,850 m. The area to the north descends through thin scrub and shrubs to scrub *Quercus* and *Juniperus* forest that has a rocky, grassy floor with numerous streams and springs.

Observations were made only in summer on 30/May/2009:

Birds: Total count: 561. Species Number: 32. Species observed at the site are listed in the table below.

Table 53: List of birds that were observed at Ser Amadia and Sulav (D2A and D2B) with their conservation and breeding status in summer.

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Lesser Kestrel	<i>Falco naumani</i>	56	H, P, ON, and UN	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	2	H	LC
Eurasian Hobby	<i>Falco subbuteo</i>	2	H, P, and ON	LC
Egyptian Vulture	<i>Neophron percnopterus</i>	1	H	EN and CC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	2	H	LC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	1	H	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	2	H	LC
Alpine Swift	<i>Tachymartus melba</i> [Apus]	10	H	LC
Common Swift	<i>Apus apus</i>	9	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	2	H	LC
European Green Woodpecker	<i>Picus viridis</i>	6	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	3	H	LC
Masked Shrike	<i>Lanius nubicus</i>	4	H and P	CC
Eurasian Jay	<i>Garrulus glandarius</i>	3	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	4	H, P, and ON	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	6	H, FF, FL, ON, and UN	LC
Sombre Tit	<i>Poecile lugubris</i>	4	H and S	CC
Great Tit	<i>Parus major</i>	9	H, S, and P	LC
Blue Tit	<i>Cyanistes caeruleus</i>	6	H and S	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	14	H	LC
Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i> [Hirundo]	5	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	340	H, B, P, NE, ON, and UN	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	9	H, S, D, and P	LC
Common Whitethroat	<i>Sylvia communis</i>	2	H	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	2	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	24	H, S, P, ON, and UN	CC
Spotted Flycatcher	<i>Muscicapa striata</i>	5	H and ON	LC
House Sparrow	<i>Passer domesticus</i>	8	H and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	11	H and FL	LC
European Goldfinch	<i>Carduelis carduelis</i>	7	H, S, and P	LC

Plants: Two waypoints were visited in this location - Waypoint 240 (N: 37 06 35.9 E: 43 28 40.70), which was located in Ser Amadia (D2A) and Waypoint 241 (N: 37 00 49.1 E: 43 32 05.1), which was located in Sulav (D2B).

Waypoint 240: Total species number 40. The ecological condition 3 (moderately disturbed). The dominant tree was *Quercus aegilops* (oak), the dominant shrub was *Crataegus azorolus* (hawthorn), the dominant herb was from the Apiaceae family (Umbelliferae). The elevation was 1229 m and the habitat was cliffs with scattered trees and herbs covering the ground. The area was Steep (27-45°), the exposure was to the south (158-202°), the geology was sedimentary and the soil was clay. The non-vegetated percentage was 20%.

Waypoint 241: The total number of plant species at this waypoint was 30. The dominant trees were *Pistacia eurycarpa* and *Quercus aegilops*, the dominant shrub was *Prunus microcarpa*, the dominant herb was *Sameraria sp.*, and the dominant grass was *Briza humilis*. The habitat was cliffs with woodlands and herbs at ground level. The area was Steep (27-45°) and the exposure was to the east (68-112°). The geology was sedimentary and the soil was clay. The elevation was 1224m and the non-vegetated percentage was 5%. The ecological condition was slightly disturbed (ecological scale was 2).

Conservation significance: 56 globally vulnerable Lesser Kestrel (*Falco naumani*) were breeding, endangered Egyptian Vulture (*Neophron percnopterus*) possibly bred at this site, and other birds of

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conservation concern like: Levant Sparrowhawk (*Accipiter brevipes*) (possibly breeding), Masked Shrike (*Lanius nubicus*) (probably breeding), Sombre Tit (*Poecile lugubris*) (possibly breeding), and Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding).

Conservation significance (for Ser Amadia-D2A): In addition to the good ecological condition (slightly disturbed), the presence of many important plants at this site can play a key roll in proving that this site is important and should become a protected area. Some of these important plants are endemic, such as *Pisum formosum* and *Thymus syriacus* or rare, such as *Linum velutinum* and *Michauxia tchibatchevii* (this plant had never previously been recorded in Iraq). Also, there were native species of oak (*Quercus aegilops* and *Q. libani*).

Overall, despite high levels of tourism and reconstruction at the foothill of the mountain, the ecological condition at the mountain itself (where the waypoint is located) was moderately disturbed, and there is a strong indication that the site is important for plant diversity. Such indicators were the endemic plant species (*Branoychia kurdica*, *Campanula maridensis*, *Onosma albo-rosam* and *Notobasis syriaca*) and the rare plant species (*Aristolochia paecilantha* and *Quercus macranthera*), as well as the native species of oak tree (*Quercus aegilops* and *Q. infectoria*).



Plate 76: Two endemic plants at Ser Amadia & sulav: *Campanula maridensis* (left) and *Branoychia kurdica* (right).

Conservation Issues & Recommendations: The threats at this site were livestock production/grazing, tourism, water pollution, road construction and agricultural activities. There were many important plants (endemics, rare or natives) which exist in this area and give it special importance as a potential protected area (especially Ser Amadia). It is recommended to target people (locals and tourists) with some environmental education campaigns in order to increase their awareness for the environment of the area. It is also important to apply some regulation to control the development and extent of tourism agriculture and grazing activities at this site.

34- Gali Balinda (D14) – N 37 02 42 E 43 50 54, Elev. 619m (Surveyed in summer)

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Plate 77: Gali Balnda (D14) in summer

Site Description: This site is located to the northeast of Dohuk City near the Turkish border. The main habitat is mountainous with a river (Deraluk River) passing through the area. There is a road and a bridge with a checkpoint near the survey area.

Observations were made only in summer on 31/May/2009:

Birds: Total count: 105. Species Number: 34. Species observed at the site are listed in the table below.

Table 54: List of birds that were observed during the breeding season at Gali Balinda (D14) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Chukar Partridge	<i>Alectoris chukar</i>	1	H	LC
Lesser Kestrel	<i>Falco naumani</i>	1	H	VU and CC
Common Kestrel	<i>Falco tinnunculus</i>	3	H and P	LC
Eurasian Griffon Vulture	<i>Gyps fulvus</i>	16	H, D, P, ON, and UN	LC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	1	H	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Bonelli's Eagle	<i>Aquila [Hieraaetus] fasciata [fasciatus]</i>	1	H	LC
Rock Dove	<i>Columba livia</i>	4	H, P, and ON	LC
Alpine Swift	<i>Tachymarptis [Apus] melba</i>	12	H	LC
Common Swift	<i>Apus apus</i>	3	H	LC
European Roller	<i>Coracias garrulus</i>	2	H	NT and CC
Pied Kingfisher	<i>Ceryle rudis</i>	1	H	LC
European Bee-eater	<i>Merops apiaster</i>	5	H	LC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	2	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	1	H	LC
Eurasian Jay	<i>Garrulus glandarius</i>	2	H	LC
Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	2	H and P	LC
Western Jackdaw	<i>Corvus monedula</i>	4	H	LC
Northern Raven	<i>Corvus corax</i>	2	H	LC
Sombre Tit	<i>Poecile lugubris</i>	1	H	CC
Great Tit	<i>Parus major</i>	1	H	LC
Common House Martin	<i>Delichon urbicum [urbica]</i>	7	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Crested Lark	<i>Galerida cristata</i>	4	H	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	2	H and S	LC
Menetries's Warbler	<i>Sylvia mystacea</i>	1	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	1	H	CC
Western Rock Nuthatch	<i>Sitta neumayer</i>	4	H, P, and ON	CC
Eurasian Blackbird	<i>Turdus merula</i>	1	H	LC
White-throated Robin	<i>Irania gutturalis</i>	1	H	CC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	2	H	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	1	H	LC
House Sparrow	<i>Passer domesticus</i>	5	H and P	LC
European Goldfinch	<i>Carduelis carduelis</i>	6	H and P	LC
Black-headed bunting	<i>Emberiza melanocephala</i>	4	H, S, and P	LC

Plants: There were different habitats in the area such as woodland on the mountain, a stream with riparian woodland, in addition to agricultural fields in the foothills of the mountain. But only one waypoint was visited here - Waypoint 242 (N: 37 02 41.1 E: 43 50 53.7), which was the woodland.

Waypoint 242: The waypoint was in the woodland on the mountain slope. The ecological condition was disturbed (4). The elevation was 619m, the area was somewhat steep (15-26°) and the exposure was to the east (68-112°). The geology was sedimentary and the soil type was clay. The non-vegetated percentage was 25%.

Total species number 28. The dominant tree was *Quercus aegilops*, the dominant shrub was *Anagyris foetida*, the dominant herb was *Trifolium purpureum*, and the dominant grass was *Bromus danthoniae*.

Conservation significance: Vulnerable Lesser Kestrel (*Falco naumani*) and near-threatened European Roller (*Coracias garrulus*) possibly were breeding at the site, also some other birds of conservation concern were observed like: Sombre Tit (*Poecile lugubris*) (possibly breeding), Eastern Rock Nuthatch (*Sitta tephronota*) (was breeding), Western Rock Nuthatch (*Sitta neumayer*) (possibly was breeding), and White-throated Robin (*Irania gutturalis*) (possibly was breeding).

There were two rare plants, *Aristolochia paecilantha* and *Michauxia tchibatchewii* (this is the first time that this plant was recorded in Iraq), were also found.



Plate 78: The new recorded plant *Michauxia tchibatchewii* at Gali Balinda site.

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Conservation Issues & Recommendations: This site is being highly impacted by gravel mining and improper use of sewage water for agricultural irrigation. Other important threats are livestock production/grazing and agriculture, which are directly affecting the presence and distribution of many plants. Therefore, it is necessary to increase awareness of environmental issues and limit the agricultural and grazing activities by applying environmental laws in order to protect the area.

35- Gali Zanta & Garbeesh (D1A & D1B) - N 36 48 50 E 43 32 03, Elev. 374m (Surveyed in summer only):



Plate 79: Garbeesh in summer

Site Description: This is a mountainous area 85 km east of the Duhok City, with several springs. Garbeesh area is a stream with riparian woodland on both sides, in addition to farms covering the foothills of the mountains, but the mountains top is covered by scattered woodlands. Gali Zanta is a valley surrounded by mountains which are covered by scattered trees and shrubs.

Observations were made only in summer on 1/June/2009:

Birds: Total Bird count: 74 birds. Species number: 26. Summer birds seen were:

Table 55: List of birds that were observed during the breeding season at Garbeesh Mountain (D1B) with their conservation and breeding status

Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Egyptian Vulture	<i>Neophron percnopterus</i>	1	H	EN and CC
Short-toed Snake Eagle	<i>Circaetus gallicus</i>	1	H	LC
Levant Sparrowhawk	<i>Accipiter brevipes</i>	1	H	CC
Steppe Buzzard	<i>Buteo b. vulpinus</i>	3	H and P	LC
Long-legged Buzzard	<i>Buteo rufinus</i>	1	H	LC
Common Swift	<i>Apus apus</i>	2	H	LC
Syrian Woodpecker	<i>Dendroscopus syriacus</i>	2	H	LC
Red-backed Shrike	<i>Lanius collurio</i>	1	H	LC
Woodchat Shrike	<i>Lanius Senator</i>	2	H	LC
Masked Shrike	<i>Lanius nubicus</i>	4	H and P	CC
Eurasian Golden Oriole	<i>Oriolus oriolus</i>	3	H and S	LC
Eurasian Magpie	<i>Pica pica</i>	3	H	LC
Hooded Crow	<i>Corvus [corone] sharpii</i>	2	H	LC
Northern Raven	<i>Corvus corax</i>	1	H	LC

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Common Name	Scientific Name	Count	Breeding Code(s)	Conservation Status
Great Tit	<i>Parus major</i>	2	H	LC
Blue Tit	<i>Cyanistes caeruleus</i>	1	H	LC
Barn Swallow	<i>Hirundo rustica</i>	4	H	LC
Red-rumped Swallow	<i>Cecropis daurica</i>	6	H	LC
Eastern Olivaceous Warbler	<i>Iduna [Hippolais] pallida</i>	3	H and S	LC
Lesser Whitethroat	<i>Sylvia curruca</i>	1	H and S	LC
Eastern Rock Nuthatch	<i>Sitta tephronota</i>	5	H	CC
Eurasian Blackbird	<i>Turdus merula</i>	2	H and S	LC
Black-eared Wheatear	<i>Oenanthe hispanica</i>	9	H, P, FL, and ON	LC
Blue Rock Thrush	<i>Monticola solitarius</i>	5	H, S, and P	LC
Grey Wagtail	<i>Motacilla cinerea</i>	3	H	LC
Cinereous Bunting	<i>Emberiza cineracea</i>	6	H and S	NT and CC

Other Fauna: A large number of locusts were seen in the Garbeesh area (D1B)

Plants: The area of focus was a stream within riparian woodland, but there are agricultural fields on either side of the stream, and woodlands in the surrounding mountains. Two waypoints were visited in this area Waypoint 243 (N: 36 48 50.1 E: 43 57 47.3), which was on Garbeesh Mountain (D1B) and Waypoint 244 (N: 36 44 27.7 E: 43 58 19.9), which was at Gali Zanta (D1A).

Waypoint 243: Total species number 21. The waypoint was in the riparian woodland. The ecological condition was mostly disturbed (5). The elevation was 826m, the slope was gentle (0-5°) and the exposure to the south (158-202°). The non-vegetated percentage was 50%. The geology and soil types were sedimentary and clay respectively.

The dominant tree was *Jugland regia*, the dominant shrub was *Rubus sanctus*, the dominant herb was *Hirschfeldia incana*, and the dominant grass was *Hordeum glaucum*.

Waypoint 244: This waypoint was near a stream with riparian woodland that also featured cliffs from the surrounding mountains. The waypoint was in the riparian woodland. The number of plant species was 12 and the ecological condition was moderately disturbed (3). The dominant plants were *Pistacia eurycarpa* (tree), *Nerium oleander* (shrub), *Adiantum capillus-veneris* (fern), and *Salvia trichoclada* (herb).

The observed features at this waypoint were an elevation of 482m, a moderate slope 6-14°, an easterly exposure 68-112°, sedimentary geology, and no soil. Most of ground was rocky, and the non-vegetated percentage was 50%.

Conservation significance: Endangered Egyptian Vulture (*Neophron percnopterus*) and near threatened Cinereous Bunting (*Emberiza cineracea*) possibly were breeding, and other birds of conservation concern like: Levant Sparrowhawk (*Accipiter brevipes*) (possibly breeding), Masked Shrike (*Lanius nubicus*) (probably was breeding), and Eastern Rock Nuthatch (*Sitta tephronota*) (possibly was breeding).

At Waypoint 243, the site is the most disturbed sites, however there were two rare plants at this site which are *Bromus brachystachys* and *Anogramma leptophylla* (Townsend, V2, p67).



Plate 80: The rare plant *Anogramma leptophylla* at Gali Zanta site.

At Waypoint 244, there were no important plants at this site except the endemic plant *Campanula mardinensis*.

Conservation Issues & Recommendations: Urbanization (road construction) has been affecting the areas, as has grazing and agriculture. In summer there were a large number of locusts that may have threatened the vegetation in the Garbeesh area (D1B). Water pollution by car washing is one of the threats to this area especially at Garbeesh (D1B).

Summary & Conclusions

During the KBA Kurdistan 2009 survey, 35 sites were visited with over 71215 individual birds recorded (50909 during winter survey and 20355 during summer survey). A full list of the birds seen both the winter and summer 2009 survey is provided in Annex A. More than 210 bird species that belonged to 52 families were seen, and two new bird to Iraq, Pale Crag-Martin (*Ptyonoprogne obsoleta*) and Grey-necked Bunting (*Emberiza buchanani*), were recorded. More than 42 birds that are important from a conservation and ecological point of view were seen. About 2% of the global (4% of the regional) population of globally vulnerable Lesser White-fronted Geese (*Anser erythropus*) and over 4% of the Greater White-fronted Geese (*Anser albifrons*) were wintering or staging at this site. About 3% of the regional population of Great Cormorant (*Phalacrocorax carbo*) and over 2% of the regional population of Common Shelduck (*Tadorna tadorna*) and conservation concern Armenian Gull (*Larus armenicus*) were observed during winter survey. Nine hundred thirty (9300 individuals of Great Crested Grebe (*Podiceps cristatus*) and over 2% of the global population of conservation concern Slender-billed Gull (*Larus genei*) were observed. In addition, more than 17 birds of prey species were breeding or probably breeding. The Endangered Egyptian Vulture (*Neophron percnopterus*) was found at 20 sites, with over 70 individuals being spotted in total. Meanwhile, the vulnerable Lesser Kestrel (*Falco naumanni*) was observed at 14 sites, with over 110 birds recorded. Several breeding evidence were recorded for the first time in Iraq such as; Levant Sparrowhawk (*Accipiter brevipes*), Horned Lark (*Eremophila alpestris*), Siberian Stonechat (*Saxicola Maura*), and Radde's Accentor (*Prunella ocularis*). There were 395 plant species (16 endemic or semi-endemic species and 30 rare or locally rare species) identified during the summer survey, which is good evidence that Kurdistan, northern Iraq is a botanically rich and diverse areas of the country and is valuable at both the regional and global level. A list of the plants seen in the summer survey is provided in Annex B.

Sites Important to Birds

The surveyed area has many types of water bodies including reservoirs, rivers, streams, springs, and a few marshlands. These diverse habitat types provide suitable conditions for many kinds of birds.

The three big wetlands are Dukan Reservoir (the Dukan Dam was completed in 1959), Mosul Reservoir (Mosul Dam was completed in 1983), and Darbandikhan Reservoir (the Darbandikhan Dam was completed in 1961). The construction of these dams has been one of the key

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anthropological affects that has changed and impacted the diversity and migration routes and times of migration for birds in the region.

Table 56: Lists of the sites were visited in 2009 and KBA criteria they meet

Site Name	Site Code	A Category*			
		A1	A2	A3	A4
Kalar	S3	-	X	X	-
Sangaw Area	S14	-	-	X	-
Maidan Area	S21	X	-	X	-
Chamchamal	S9	X	X	X	-
Darbandikhan Lake	S1	X	X	X	X
Dukan Lake	S2	X	X	X	X
Qara Dagħ	S11	X	X	X	-
De Lezha	S23	X	-	X	-
Awesar	S4B	-	-	X	-
Ahmed Awa	S4A	X	-	X	-
Kuradawe	S27	-	-	X	-
Penjween	S5	-	-	X	-
Peramagroom	S6	X	-	X	-
Homar Qawm and Shadala Valley	S24	X	X	X	-
Chami Razan	S10	X	-	X	-
Parazan	S26	X	-	X	-
Doli Plingian	S28	-	-	X	-
Taq Taq	E2	-	X	-	-
Barzan Area	E8	-	-	X	-
Altun Kopri Marsh	E3	-	X	-	-
Bahraka	E1	-	-	X	-
Doli Smaquli	E5A	X	-	X	-
Bakhma	E7	X	-	X	-
Sakran	E14	X	-	X	-
Halgurd Mountain	E13	X	-	-	-
Sari Hassan Bag	E15	-	-	X	-
Dure	D16	X	-	X	-
Benavi	D6	X	X	X	-
Garagu	D5	-	-	X	-
Mangeesh	D8	-	X	X	-
Mosul Lake	D10	X	-	X	X
Fishkhaboor	D11B	-	-	X	-
Ser Amadia and Sulav	D2A and D2B	X	-	X	-
Gali Balinda	D14	X	-	X	-
Gali Zanta and Garbeesh Mountain	D1A and D1B	X	-	X	-

*A: Important Bird Areas - Global importance

A1. Globally threatened species

A2. Restricted-range species

A3. Biome-restricted species

A4. Congregations

Sites Important to Plants

Plantlife International, an organization involved in international plant conservation measures, has developed criteria for the designation of Important Plant Areas (IPAs) throughout the globe.

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According to the Plantlife International's website, the the criteria for the IPA project have been developed over a period of ten years by a process of consultation involving specialists from many countries (Plantlife, 2008).

Plantlife states that the identification of IPAs is based on three broad criteria listed below. A site qualifies as an IPA if it fulfills one or more of these criteria.

Threatened species (sites that hold significant populations of species of global or regional concern)

Botanical richness (sites with exceptionally rich flora in a regional context in relation to its biogeographic zone)

Threatened habitats (sites that are outstanding examples of a habitat type of global or regional importance)

Evaluation of sites based on their richness and habitat types is still an on-going process within the Nature Iraq KBA Project. This discussion presents only preliminary findings from the last survey. A list of sites that match these criteria is not complete yet but there are some sites that might match one or two of these criteria. Sites such as Qara Dagh Area (S11), Awesar (S4B), Ahmed Awa (S4A), Kuradawe (S27), Darbandikhan Lake (S1), Peramagroon (S6), Doli (Valley) Smaquly (E5A), Sakran (E14), Halgurd Mountain (E13), Garagu (D5), and Mangeesh (D8) are rich in plants. There were some sites which can be considered as threatened habitats due to the rarity of their habitat types and/or the disturbance and changes in their features. Such sites were Penjween (S5), Altun Kopri Marsh (E3), and Mosul Lake (D10). There was one plant species (*Rumex ribes*) has always been collected by people as food and is gathered at a rate that may threaten this species at many sites where it has historically been found.

The oak trees (*Quercus* sp.) were the most dominant plants at the majority of sites and they are considered the representative tree of Kurdistan, northern Iraq. Some plant families such as Poaceae, Fabaceae, Juganaceae, Caryophyllaceae, Lamiaceae, Asteraceae, Fagaceae, Liliaceae, Boraginaceae, Ranunculaceae, Brassicaceae, Apiaceae, and Scrophullaraceae were present at most sites. However, other families, such as Ephedraceae, Thymelaceae, Zygophyllaceae, Tamaricaceae, Valerianaceae and Viscaceae, were only occasionally found at some sites. There were new records for many plants that had not been previously recorded in Iraq. These new recorded plants were *Sparganium americanum*, *Outreya carduiiformis*, *Umbillicus intermedius*, *Cousinia rhabhiostegia* (this first record was in the 2008 KBA survey), *Sarcopoterium spinosum* and *Michauxia tchibatchewii*.

A complete list of threatened, rare and/or endemic plants is not yet available for Iraq, but an initial list was done by the Royal Botanical Gardens Edinburgh. This list requires more work and surveys to finalize, so the findings in this document concerning rare and endemic species are preliminary. There were many endemic or rare (or both) plants at each site and they are very

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important as they indicate the high conservation value of the sites. Some of these plants were very rare or restricted to only one site. See the table below.

Table 57: Rare and Endemic species and their locations during the summer survey 2009.

Scientific Name	Conservation status	Sites Codes
<i>Symphytum kurdicum</i>	Endemic	S11, D5
<i>Pisum formosum</i>	Endemic	S11, S4B, S4A, S6, E8, D16, D5, D2A
<i>Onosma albo-roseum</i>	Endemic	S11, S4B, S1, E5A, D2B
<i>Bromus brachstachys</i>	Rare	S11, S23, S27, E8 D1B
<i>Silybum marianum</i>	Endemic	S23, S4A, D10
<i>Notobasis syriaca</i>	Endemic	S23, S4A, S1, S28, E5A, E8 E7, D10, D2B
<i>Hymenocrater longifrons</i>	Endemic	S4B
<i>Orchis colina</i>	Rare	S4B
<i>Quercus macranthera</i>	Rare	S27, S24, D16, D5, D2B
<i>Sparganium americanum (new record)</i>	Very Rare	S5
<i>Ranunculus sphaerospermus</i>	Rare	S5
<i>Tamarix brachystachys</i>	Rare	S5
<i>Cephalaria syriaca</i>	Endemic	S1
<i>Paronychia kurdica</i>	Endemic	S1, S2, D2B
<i>Juncus effusus</i>	Very Rare	S1, S2, S28
<i>Rubus caesius</i>	Rare	S1
<i>Muscari tenuiflorum</i>	Rare	S1
<i>Alcea sulphorum</i>	Rare	S1
<i>Thymus syriacus</i>	Endemic	S6, S28, E3, E8, D5, D2A
<i>Campanula mardinensis</i>	Endemic	S6, D2B, D1A
<i>Lactuca hispida</i>	Very Rare	S6
<i>Cousinia odontolepis</i>	Very Rare	S6
<i>Phelypaea coccinea</i>	Very Rare	S6
<i>Zeugandera iranica</i>	Very Rare	S2
<i>Salix babylonica</i>	Rare	S2
<i>Cousinia inflata</i>	Endemic	S24
<i>Aristolochia paecilantha</i>	Rare	E5A, E14, D2B, D14
<i>Allium chrysantherum</i>	Rare	E5A
<i>Astragalus belgurdensis</i>	Endemic & Rare	E14, E13, E15
<i>Fibigia suffruticosa</i>	Rare	E14
<i>Tulipa kurdica</i>	Endemic & Rare	E13, E15
<i>Cochicum kurdicum</i>	Endemic & Rare	E13
<i>Ranunculus bulbiferus</i>	Very Rare	E13
<i>Hyocyamus reticulata</i>	Rare	E13, E15
<i>Dianthus asperula</i>	Very Rare	D16
<i>Astragalus spinosus</i>	Endemic	D5, D8
<i>Linum velutinum</i>	Rare	D5, D2A
<i>Bellis perennis</i>	Rare	D5
<i>Briza minor</i>	Rare	D5
<i>Asyneuma amplexicaule</i> spp. <i>Amplexicaule</i>	Rare	D5
<i>Delphinium kurdicum</i>	Endemic	D8
<i>Michauxia tchibatchevii</i>	Rare	D2A, D14
<i>Anogramma leptophylla</i>	Rare	D1B

The ecological condition of most sites (summer survey) was 50% to 75% disturbed. Sites with better ecological condition (only 25% disturbed or less) included the following: Peramagroon S6 (WP 204), Qara Dagh S11 (WP 183), Halgurd Mountain E13 (WP 226), Sakran E14 (WP 216) and Ser Amadia D2A (WP 241).

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The following table summarizes the above criteria in an attempt to provide some guidance on the priority sites for protection. Sites meeting two or more “criteria” are highlighted in black, but this is a provisional listing.

Table 58: Comparing all criteria for plants (based on IPA Criteria 1, 2 & 3 above)

Site Name	Site Code	1. Rare and/or Endemic Species*	2. Botanically Rich	3. Threatened Habitat	Ecological Condition of 2 or lower
Darbandikhan Lake	S1	X	X		
Qara Dagħ	S11	X	X		X
Awesar	S4B	X	X		
Ahmed Awa	S4A	X	X		
Kuradawe	S27	X	X		
Peramagroon	S6	X	X		X
Doli Smaquli	E5A	X	X		
Sakran	E14	X	X		
Garagu	D5	X	X		
Mangeesh	D8	X	X		
Penjween	S5	X		X	
Altun Kopri Marsh	E3	X		X	
Halgurd Mountain	E13	X	X		X
Mosul Lake	D10	X		X	
Dukan Lake	S2	X			
De Lezha	S23	X			
Doli Plingian	S28	X			
Barzan Area	E8	X			
Bakhma	E7	X			
Sari Hassan Bag	E15	X			
Dure	D16	X			
Ser Amadia and Sulav	D2A and D2B	X			X
Gali Balinda	D14	X			
Gali Zanta and Garbeesh Mountain	D1A and D1B	X			
Kalar	S3				
Sangaw Area	S14				
Maidan Area	S21				
Chamchamal	S9				
Homar Qawm and Shadala Valley	S24				
Chami Razan	S10				
Parazan	S26				
Taq Taq	E2				
Bahraka	E1				
Benavi	D6				
Fishkhaboor	D11B				

*Rare and/or endemic is not identical to threatened species in the IPA Criteria but rare and endemic species may be an indicator for the presence of such species. Note also that the endemic and rare species identified in the survey are merely preliminary.

Areas of Concern for Other Species

Although the 2009 KBA survey primarily focused on bird and botanical diversity, sightings of other fauna were noted and locals, when available, were interviewed about the other wildlife present in their areas. It is likely that there are several important carnivores present in the Kurdistan region, including wolves, brown bear, wildcats, and leopards. In 2008, Nature Iraq reported on the October 2008 killing of a Leopard (*Panthera pardus*) by a land mine near the village of Mortka, on the east side of Darbandikhan Lake near the border with Iran (Ararat et al, 2008). In the winter of 2009, Nature Iraq was informed of another Leopard killed by a hunter in Diyala Governorate. This was also probably in the mountains of this border area. Other wildlife observations and reports from the 2009 survey are included in the table below:

Table 59: Wildlife observations for the 2009 survey

Site Name (Site Code)	Species	Conservation Status	Reports or Observed
Maidan Area (S21)	Goitered gazelle (<i>Gazella subgutturosa</i>)	VU	Reported
Dukan (S2)	Euphrates Softshell Turtle (<i>Rafetus euphraticus</i>)	EN	Observed
Qara Dagh (S11)	Spur-Thighed Tortoise (<i>Testudo graeca</i>)	VU	Observed
De Lezha (S23)	Spur-Thighed Tortoise (<i>Testudo graeca</i>)	VU	Observed
Homar Qawm (S24)	Spur-Thighed Tortoise (<i>Testudo graeca</i>)	VU	Observed
Barzan Area (E8)	Wild Goats (<i>Capra aegagrus</i>)	VU	Observed
Dure (D16)	Zagrosian Lizard (<i>Timon princeps kurdistanicus</i>)	Semi-endemic	Observed

Overall Conservation Concerns & Recommendations:

There are many threats that pose a real danger for species, sites or individual habitats. These threats include livestock production/grazing, agriculture (clearing of fields, unsustainable water use, runoff of agricultural chemicals, pesticide use), hunting practices, sewage and garbage from human settlements, and activities and disturbances related to tourism, roads and other constructions, gravel mining, dams, industrial ground and water pollution, oil development, and land mines. The majority of sites were threatened by one or more of the problems listed above.

Addressing threats and the need to find real and practical solutions, especially to the long-standing problem of mine fields threatening border areas, will require long-term planning, funding and a cessation of hostilities between Iraq and its neighbors (even in 2008/2009, there were reports of Turkey laying new mines in the border region). Other areas can produce local solutions by enacting certain restrictions, such as fishing moratoriums (practiced at Darbandikhan (S1) and Dukan (S2)), limitations on hunting (practiced at Barzan (E8) and to a lesser extent in other areas), rules against car-washing and the fencing off of small areas to protect from over-grazing. However, the regional and local governments need to provide much more rigorous

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support for enforcement. There are some minor anti-littering campaigns, mostly done by non-governmental organizations or municipalities, but public compliance is very low and most sites that attract the public for recreation purposes are full of garbage and are not provided with appropriate resources for long-term maintenance. Most sites require more signage and facilities for garbage and sewage management. An overall education campaign is needed to change public attitudes and behavior in this regard. Such a campaign should start in the local schools but then extend to the general public. In addition, most of Kurdistan's most beautiful and easily accessed areas require urgent restoration and remediation. Industrial development such as oil drilling, cement and asphalt factories and gravel mining, must all be subject to environmental impact assessments and be governed by a set of strong environmental regulations that control and limit pollution to the local environment, as well as the destruction of habitats surrounding local rivers and streams.

Many of Kurdistan's most lovely sights have attracted unsightly development. In the case of places such as Bekhal Falls (surveyed in 2007) and Ahmed Awa (S4A), the development of shops and restaurants and the diversion of water in, around and sometimes over the falls, have overwhelmed the site. Pollution from sewage also plagues many of these sites. Often, as a result, the other species (birds, fish, animals, reptiles, plants, etc) that have historically utilized these places have been crowded out or adversely impacted. All of these areas require proper management plans with stakeholder involvement to either restore the sites, or at least manage their sustainable development. The following table provides a list of the sites, an assessment of the threats and, in some cases, the positive activities taking place there.

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Table 60: Threats and Positive Qualities seen at KBA sites

#	Site Name	Site Code	Threat							Positive qualities			
			Dryness/lack of water/drainage	Oil or other Pollution	Agriculture	Removing of plant cover/Grazing	Constructions & Roads	Garbage and/or Sewage	Hunting	Over fishing and/or electrofishing	The site of infrastructure that helps conservation efforts	Locals/officials willing to help in conservation efforts	Hunting/Fishing ban
	Kalar	S3			X	X				X			
	Sangaw Area	S14											
	Maidan Area	S21											
	Chamchamal	S9								X			
	Darbandikhan Lake	S1				X				X	X		X
	Dukan Lake	S2				X				X	X		X
	Qara Dagh	S11		X		X	X					X	
	De Lezha	S23			X	X							
	Awesar	S4B			X	X	X						
	Ahmed Awa	S4A				X							
	Kuradawe	S27			X	X	X						
	Penjween	S5				X							
	Peramagroon	S6			X								
	Homar Qawm and Shadala Valley	S24				X							
	Chami Razan	S10			X	X							
	Parazan	S26				X							

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#	Site Name	Site Code	Threat							Positive qualities			
			Dryness/lack of water/drainage	Oil or other Pollution	Agriculture	Removing of plant cover/Grazing	Constructions & Roads	Garbage and/or Sewage	Hunting	Over fishing and/or electrofishing	The site of infrastructure that helps conservation efforts	Locals/officials willing to help in conservation efforts	Hunting/Fishing ban
	Doli Plingian	S28				X							
	Taq Taq	E2			X				X			X	X
	Barzan Area	E8				X							X
	Altun Kopri Marsh	E3				X		X	X				
	Bahraka	E1						X					
	Doli Smaquli	E5A			X	X							
	Bakhma	E7				X	X						
	Sakran	E14			X								
	Halgurd Mountain	E13			X	X							
	Sari Hassan Bag	E15				X							
	Dure	D16			X								
	Benavi	D6			X	X							
	Garagu	D5			X								
	Mangeesh	D8			X	X							
	Mosul Lake	D10				X				X			X
	Fishkhaboor	D11B			X			X					
	Ser Amadia and Sulav	D2A and D2B				X							
	Gali Balinda	D14				X	X						

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#	Site Name	Site Code	Threat							Positive qualities			
			Dryness/lack of water/drainage	Oil or other Pollution	Agriculture	Removing of plant cover/Grazing	Constructions & Roads	Garbage and/or Sewage	Hunting	Over fishing and/or electrofishing	The site of infrastructure that helps conservation efforts	Locals/officials willing to help in conservation efforts	Hunting/Fishing ban
	Gali Zanta and Garbeesh Mountain	D1A and D1B			X	X							

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Unlike other areas of Iraq, the Kurdistan environmental and forestry police force(s) have the potential to provide greater protection to sites and control abuses, but they require more training and dedicated resources. Several areas in Kurdistan have been proposed as official protected areas or parks. Qara Dagh (S11) is one such site in Sulaimani, Sakran (E14) & Barzan (E8) are areas suggested in Erbil. It should be noted that there is a difference between a recreational park and a protected area. If the area is developed strictly for recreation purposes with a disregard for the efforts made to conserve its integrity, as well as the health of the species that utilize it, then the potential for the area to become degraded is high. Protected areas, such as national or regional parks, or wilderness areas, often offer a range of protective restrictions to the use of the site in order to ensure that it is not degraded and is maintained for future generation.

Should efforts to develop parks and/or protected areas proceed further, proper management plans will need to be written, implemented and resources allocated for the development and protection of the sites. It is hoped that this document can provide some background information on sites and issues of concern in the development of these areas.

Delineation and Prioritization of Proposed KBA Protected Areas within Kurdistan, Northern Iraq

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.

There are already a few protected areas within Kurdistan, northern Iraq. The Barzan area represents an area that has been under long-term tribal protection from hunting, and many important species can be found there. However, the delineation of the site has been informal. There are other areas in good ecological condition, which are botanically rich such as Qara Dagh (S11) & Peramagroon (S6) in Sulaimania governorate, and Sakran (E14) and Helgurd Mountain (E13) in Erbil governorate. It is highly recommended to provide more protection for these three important sites protected areas within Kurdistan-Iraq. In addition to the informally protected area of Barzan (E8), the following are a list of preliminary priority sites that have been assessed based on their importance for birds, plants and other species, as well as general threats at the

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site. A more comprehensive assessment of priority sites based on established prioritization assessment methodology is pending:

- Dukan Lake (S2).
- Darbandikhan Lake (S1).
- Qara Dagh Area (S11).
- Chami Razan (S10).
- Peramagroon (S6).
- Barzan Area (E8).
- Sakran Area (E14).
- Halgurd Mountain (E13).
- Mosul Lake (D10).
- Ser Amadia (D2).
- Dure (D16)

The KBA team as attempted a preliminary delineation of these and other sites within the Kurdistan, Northern Iraq KBA program and these are shown in the map below.

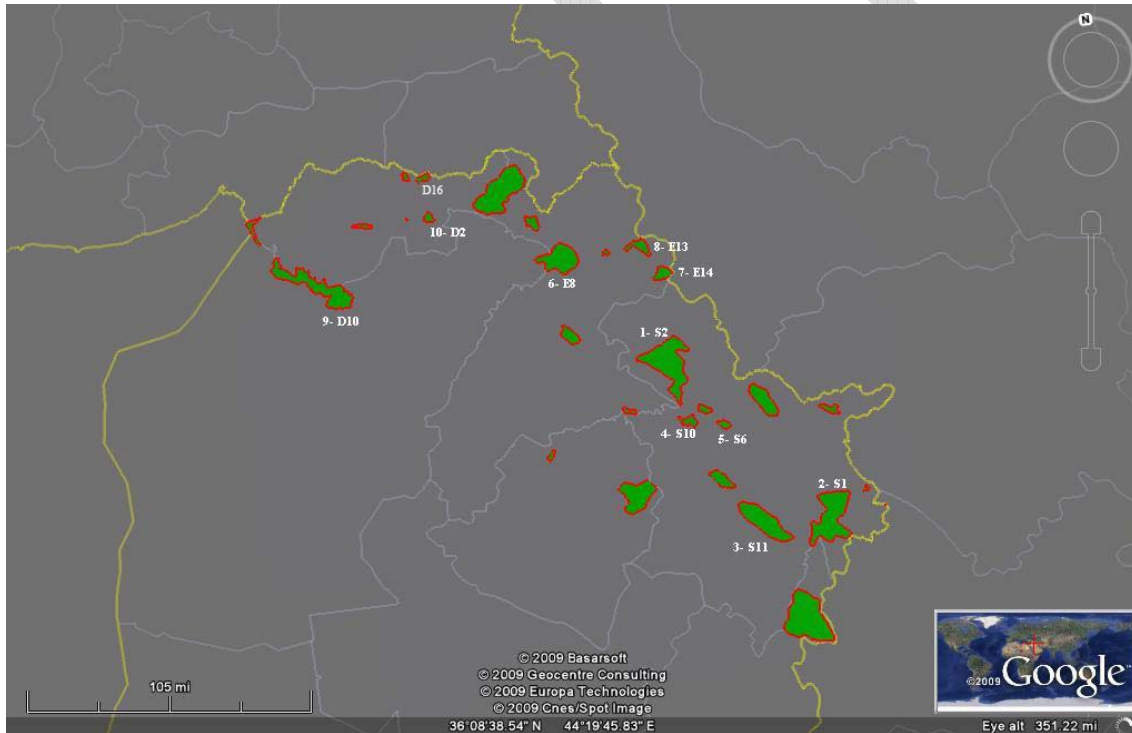


Plate 81: Preliminary Delineation of KBAs in Kurdistan with potential priority sites identified

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Annex A: List of birds seen on the KBA Surveys for Kurdistan, Northern Iraq in 2009

Order	Common Name	Latin Name	Conservation Status
GALLIFORMES	Chukar Partridge	<i>Alectoris chukar</i>	
GALLIFORMES	See-see Partridge	<i>Ammoperdix griseogularis</i>	
GALLIFORMES	Black Francolin	<i>Francolinus francolinus</i>	
GALLIFORMES	Common Quail	<i>Coturnix coturnix</i>	
ANSERIFORMES	Eastern Greylag Goose	<i>Anser anser rubrirostris</i>	
ANSERIFORMES	Greater White-fronted Goose	<i>Anser albifrons</i>	
ANSERIFORMES	Lesser White-fronted Goose	<i>Anser erythropus</i>	Globally Threatened (GT), Conservation Concern (CC)
ANSERIFORMES	Common Shelduck	<i>Tadorna tadorna</i>	
ANSERIFORMES	Ruddy Shelduck	<i>Tadorna ferruginea</i>	
ANSERIFORMES	Eurasian Wigeon	<i>Anas penelope</i>	
ANSERIFORMES	Mallard	<i>Anas platyrhynchos</i>	
ANSERIFORMES	Northern Shoveler	<i>Anas clypeata</i>	
ANSERIFORMES	Northern Shoveler	<i>Anas clypeata</i>	
ANSERIFORMES	Garganey	<i>Anas querquedula</i>	
ANSERIFORMES	Eurasian Teal	<i>Anas crecca</i>	
ANSERIFORMES	Marbled Duck	<i>Marmaronetta angustirostris</i>	Conservation Concern (CC)
ANSERIFORMES	Red-crested Pochard	<i>Netta rufina</i>	Conservation Concern (CC)
ANSERIFORMES	Ferruginous Duck	<i>Aythya nyroca</i>	Globally Threatened (GT), Conservation Concern (CC)
ANSERIFORMES	Smew	<i>Mergellus albellus</i>	
PODICIPEDIFORMES	Little Grebe	<i>Tachybaptus ruficollis</i>	Conservation Concern (CC), Endemic Race
PODICIPEDIFORMES	Great Crested Grebe	<i>Podiceps cristatus</i>	
PHOENOCOPTERIFORMES	Greater Flamingo	<i>Phoenicopterus roseus</i>	Conservation Concern (CC)
CICONIIFORMES	Black Stork	<i>Ciconia nigra</i>	Conservation Concern (CC)
CICONIIFORMES	Western White Stork	<i>Ciconia ciconia</i>	
CICONIIFORMES	Eurasian Spoonbill	<i>Platalea leucorodia</i>	Conservation Concern (CC)
CICONIIFORMES	Eurasian Bittern	<i>Botaurus stellaris</i>	Conservation Concern (CC)
CICONIIFORMES	Black-crowned Night Heron	<i>Nycticorax nycticorax</i>	
CICONIIFORMES	Squacco Heron	<i>Ardeola ralloides</i>	
CICONIIFORMES	Western Cattle Egret	<i>Bubulcus ibis</i>	
CICONIIFORMES	Grey Heron	<i>Ardea cinerea</i>	
CICONIIFORMES	Purple Heron	<i>Ardea purpurea</i>	
CICONIIFORMES	Western Great Egret	<i>Ardea alba</i>	
CICONIIFORMES	Little Egret	<i>Egretta garzetta</i>	
PELECANIFORMES	Great White Pelican	<i>Pelecanus onocrotalus</i>	Conservation Concern
PELECANIFORMES	Pygmy Cormorant	<i>Phalacrocorax pygmaeus</i>	Conservation Concern (CC)
PELECANIFORMES	Great Cormorant	<i>Phalacrocorax carbo</i>	
FALCONIFORMES	Western Osprey	<i>Pandion haliaetus</i>	
FALCONIFORMES	Black Kite	<i>Milvus migrans</i>	
FALCONIFORMES	Lammergeier	<i>Gypaetus barbatus</i>	Conservation Concern (CC)
FALCONIFORMES	Egyptian Vulture	<i>Neophron percnopterus</i>	Globally Threatened (GT), Conservation Concern (CC)
FALCONIFORMES	Eurasian Griffon Vulture	<i>Gyps fulvus</i>	
FALCONIFORMES	Short-toed Snake Eagle	<i>Circus gallicus</i>	
FALCONIFORMES	Western Marsh Harrier	<i>Circus aeruginosus</i>	
FALCONIFORMES	Hen Harrier	<i>Circus cyaneus</i>	
FALCONIFORMES	Pallid Harrier	<i>Circus macrourus</i>	Globally Threatened (GT), Conservation Concern (CC)

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Order	Common Name	Latin Name	Conservation Status
FALCONIFORMES	Levant Sparrowhawk	<i>Accipiter brevipes</i>	Conservation Concern (CC)
FALCONIFORMES	Eurasian Sparrowhawk	<i>Accipiter nisus</i>	
FALCONIFORMES	Steppe Buzzard	<i>Buteo buteo vulpinus</i>	
FALCONIFORMES	Long-legged Buzzard	<i>Buteo rufinus</i>	
FALCONIFORMES	Greater Spotted Eagle	<i>Aquila clanga</i>	Globally Threatened (GT), Conservation Concern (CC)
FALCONIFORMES	Steppe Eagle	<i>Aquila nipalensis</i>	Conservation Concern (CC)
FALCONIFORMES	Eastern Imperial Eagle	<i>Aquila heliaca</i>	Globally Threatened (GT), Conservation Concern (CC)
FALCONIFORMES	Golden Eagle	<i>Aquila chrysaetos</i>	Conservation Concern (CC)
FALCONIFORMES	Booted Eagle	<i>Aquila pennata</i>	
FALCONIFORMES	Bonelli's Eagle	<i>Aquila fasciatus</i>	
FALCONIFORMES	Lesser Kestrel	<i>Falco naumanni</i>	Globally Threatened (GT), Conservation Concern (CC)
FALCONIFORMES	Common Kestrel	<i>Falco tinnunculus</i>	
FALCONIFORMES	Merlin	<i>Falco columbarius</i>	
FALCONIFORMES	Eurasian Hobby	<i>Falco subbuteo</i>	
FALCONIFORMES	Lanner Falcon	<i>Falco biarmicus</i>	Conservation Concern (CC)
FALCONIFORMES	Barbary Falcon	<i>Falco pelegrinoides</i>	
GRUIFORMES	Purple Swamphen	<i>Porphyrio porphyrio</i>	Conservation Concern (CC)
GRUIFORMES	Common Moorhen	<i>Gallinula chloropus</i>	
GRUIFORMES	Eurasian Coot	<i>Fulica atra</i>	
CHARADRIIFORMES	Black-winged Stilt	<i>Himantopus himantopus</i>	
CHARADRIIFORMES	Pied Avocet	<i>Recurvirostra avosetta</i>	
CHARADRIIFORMES	Northern Lapwing	<i>Vanellus vanellus</i>	
CHARADRIIFORMES	Spur-winged Lapwing	<i>Vanellus spinosus</i>	Conservation Concern (CC)
CHARADRIIFORMES	Red-wattled Lapwing	<i>Vanellus indicus</i>	
CHARADRIIFORMES	White-tailed Lapwing	<i>Vanellus leucurus</i>	Conservation Concern (CC)
CHARADRIIFORMES	Little Ringed Plover	<i>Charadrius dubius</i>	
CHARADRIIFORMES	Common Snipe	<i>Gallinago gallinago</i>	
CHARADRIIFORMES	Common Redshank	<i>Tringa totanus</i>	
CHARADRIIFORMES	Common Greenshank	<i>Tringa nebularia</i>	
CHARADRIIFORMES	Common Sandpiper	<i>Actitis hypoleucos</i>	
CHARADRIIFORMES	Little Stint	<i>Calidris minuta</i>	
CHARADRIIFORMES	Curlew Sandpiper	<i>Calidris ferruginea</i>	
CHARADRIIFORMES	Collared Pratincole	<i>Glareola pratincola</i>	Conservation Concern (CC)
CHARADRIIFORMES	Slender-billed Gull	<i>Chroicocephalus genei</i>	Conservation Concern (CC)
CHARADRIIFORMES	Common Black-headed Gull	<i>Chroicocephalus ridibundus</i>	
CHARADRIIFORMES	Great Black-headed Gull	<i>Larus ichthyæetus</i>	
CHARADRIIFORMES	Yellow-legged Gull	<i>Larus michæbellis</i>	
CHARADRIIFORMES	Armenian Gull	<i>Larus armenicus</i>	Conservation Concern (CC)
CHARADRIIFORMES	Gull-billed Tern	<i>Gelochelidon nilotica</i>	
CHARADRIIFORMES	Caspian Tern	<i>Hydroprogne caspia</i>	Conservation Concern (CC)
CHARADRIIFORMES	Little Tern	<i>Sternula albifrons</i>	
CHARADRIIFORMES	Common Tern	<i>Sterna hirundo</i>	
CHARADRIIFORMES	Whiskered Tern	<i>Chlidonias hybrida</i>	
CHARADRIIFORMES	White-winged Tern	<i>Chlidonias leucopterus</i>	
CHARADRIIFORMES	Pin-tailed Sandgrouse	<i>Pterocles alchata</i>	Conservation Concern (CC)
COLUMBIFORMES	Rock Dove	<i>Columba livia</i>	
COLUMBIFORMES	Common Woodpigeon	<i>Columba palumbus</i>	
COLUMBIFORMES	European Turtle Dove	<i>Streptopelia turtur</i>	Conservation Concern (CC)
COLUMBIFORMES	Eurasian Collared Dove	<i>Streptopelia decaocto</i>	
COLUMBIFORMES	Laughing Dove	<i>Stigmatopelia senegalensis</i>	
CUCULIFORMES	Common Cuckoo	<i>Cuculus canorus</i>	
STRIGIFORMES	Little Owl	<i>Athene noctua</i>	
APODIFORMES	Alpine Swift	<i>Tachymarptis melba</i>	
APODIFORMES	Common Swift	<i>Apus apus</i>	

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APODIFORMES	Little Swift	<i>Apus affinis</i>	
CORACIFORMES	European Roller	<i>Coracias garrulus</i>	Globally Threatened (GT), Conservation Concern (CC)
CORACIFORMES	White-throated Kingfisher	<i>Halcyon smyrnensis</i>	
CORACIFORMES	Common Kingfisher	<i>Alcedo cristata</i>	
CORACIFORMES	Pied Kingfisher	<i>Ceryle rudis</i>	
CORACIFORMES	Blue-cheeked Bee-eater	<i>Merops persicus</i>	
CORACIFORMES	European Bee-eater	<i>Merops apiaster</i>	
CORACIFORMES	Eurasian Hoopoe	<i>Upupa epops</i>	
PICIFORMES	Eurasian Wryneck	<i>Jynx torquilla</i>	
PICIFORMES	Lesser Spotted Woodpecker	<i>Dendrocopos minor</i>	
PICIFORMES	Middle Spotted Woodpecker	<i>Dendrocopos medius</i>	
PICIFORMES	Syrian Woodpecker	<i>Dendrocopos syriacus</i>	
PICIFORMES	European Green Woodpecker	<i>Picus viridis</i>	
PASSERIFORMES	Red-backed Shrike	<i>Lanius collurio</i>	
PASSERIFORMES	Lesser Grey Shrike	<i>Lanius minor</i>	
PASSERIFORMES	Woodchat Shrike	<i>Lanius senator</i>	
PASSERIFORMES	Masked Shrike	<i>Lanius nubicus</i>	Conservation Concern (CC)
PASSERIFORMES	Eurasian Golden Oriole	<i>Oriolus oriolus</i>	
PASSERIFORMES	Eurasian Jay	<i>Garrulus glandarius</i>	
PASSERIFORMES	Eurasian Magpie	<i>Pica pica</i>	
PASSERIFORMES	Red-billed Chough	<i>Pyrrhocorax pyrrhocorax</i>	
PASSERIFORMES	Yellow-billed Chough	<i>Pyrrhocorax graculus</i>	
PASSERIFORMES	Western Jackdaw	<i>Corvus monedula</i>	
PASSERIFORMES	Rook	<i>Corvus frugilegus</i>	
PASSERIFORMES	Hooded Crow	<i>Corvus cornix</i>	
PASSERIFORMES	Northern Raven	<i>Corvus corax</i>	
PASSERIFORMES	Sombre Tit	<i>Poecile lugubris</i>	Conservation Concern (CC)
PASSERIFORMES	Great Tit	<i>Parus major</i>	
PASSERIFORMES	Eurasian Blue Tit	<i>Cyanistes caeruleus</i>	
PASSERIFORMES	Calandra Lark	<i>Melanocorypha calandra</i>	
PASSERIFORMES	Desert Lark	<i>Ammomanes deserti</i>	
PASSERIFORMES	Greater Short-toed Lark	<i>Calandrella brachydactyla</i>	
PASSERIFORMES	Lesser Short-toed Lark	<i>Calandrella rufescens</i>	
PASSERIFORMES	Crested Lark	<i>Galerida cristata</i>	
PASSERIFORMES	Woodlark	<i>Lullula arborea</i>	
PASSERIFORMES	Eurasian Skylark	<i>Alauda arvensis</i>	
PASSERIFORMES	Horned Lark	<i>Eremophila alpestris</i>	
PASSERIFORMES	White-eared Bulbul	<i>Pycnonotus leucotis</i>	Conservation Concern (CC)
PASSERIFORMES	Sand Martin	<i>Riparia riparia</i>	
PASSERIFORMES	Barn Swallow	<i>Hirundo rustica</i>	
PASSERIFORMES	Red-rumped Swallow	<i>Cecropis daurica</i>	
PASSERIFORMES	Eurasian Crag Martin	<i>Ptyonoprogne rupestris</i>	
PASSERIFORMES	Pale Crag-martin	<i>Ptyonoprogne obsoleta</i>	
PASSERIFORMES	Common House Martin	<i>Delichon urbicum</i>	
PASSERIFORMES	Cetti's Warbler	<i>Cettia cetti</i>	
PASSERIFORMES	Long-tailed Tit	<i>Aegithalos caudatus</i>	
PASSERIFORMES	Willow Warbler	<i>Phylloscopus trochilus</i>	
PASSERIFORMES	Common Chiffchaff	<i>Phylloscopus collybita</i>	
PASSERIFORMES	Great Reed Warbler	<i>Acrocephalus arundinaceus</i>	
PASSERIFORMES	Moustached Warbler	<i>Acrocephalus menanopogon</i>	
PASSERIFORMES	Sedge Warbler	<i>Acrocephalus schoenobaenus</i>	
PASSERIFORMES	Eastern Olivaceous	<i>Iduna pallida</i>	

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Order	Common Name	Latin Name	Conservation Status
	Warbler		
PASSERIFORMES	Upcher's Warbler	<i>Hippolais languida</i>	
PASSERIFORMES	Icterine Warbler	<i>Hippolais icterina</i>	
PASSERIFORMES	Graceful Prinia	<i>Prinia gracilis</i>	
PASSERIFORMES	Iraq Babbler	<i>Turdoides altirostris</i>	Conservation Concern (CC), Endemic
PASSERIFORMES	Eurasian Blackcap	<i>Sylvia atricapilla</i>	
PASSERIFORMES	Lesser Whitethroat	<i>Sylvia curruca</i>	
PASSERIFORMES	Eastern Orphean Warbler	<i>Sylvia crassirostris</i>	
PASSERIFORMES	Common Whitethroat	<i>Sylvia communis</i>	
PASSERIFORMES	Menetries's Warbler	<i>Sylvia mystacea</i>	
PASSERIFORMES	Winter Wren	<i>Troglodytes troglodytes</i>	
PASSERIFORMES	Eurasian Nuthatch	<i>Sitta europaea</i>	
PASSERIFORMES	Western Rock Nuthatch	<i>Sitta neumayer</i>	Conservation Concern (CC)
PASSERIFORMES	Eastern Rock Nuthatch	<i>Sitta tephronota</i>	Conservation Concern (CC)
PASSERIFORMES	Common Starling	<i>Sturnus vulgaris</i>	
PASSERIFORMES	Eurasian Blackbird	<i>Turdus merula</i>	
PASSERIFORMES	Mistle Thrush	<i>Turdus viscivorus</i>	
PASSERIFORMES	European Robin	<i>Erithacus rubecula</i>	
PASSERIFORMES	Thrush Nightingale	<i>Luscinia luscinia</i>	
PASSERIFORMES	Common Nightingale	<i>Luscinia megarhynchos</i>	
PASSERIFORMES	White-throated Robin	<i>Irania gutturalis</i>	Conservation Concern (CC)
PASSERIFORMES	Rufous-tailed Scrub Robin	<i>Cercotrichas galactotes</i>	
PASSERIFORMES	Western Black Redstart	<i>Phoenicurus ochruros</i>	
PASSERIFORMES	Common Redstart	<i>Phoenicurus phoenicurus</i>	
PASSERIFORMES	Whinchat	<i>Saxicola rubetra</i>	
PASSERIFORMES	European Stonechat	<i>Saxicola rubicola</i>	
PASSERIFORMES	Isabelline Wheatear	<i>Oenanthe isabellina</i>	
PASSERIFORMES	Northern Wheatear	<i>Oenanthe oenanthe</i>	
PASSERIFORMES	Kuridstan Wheatear	<i>Oenanthe xanthopyrma</i>	
PASSERIFORMES	Eastern Black-eared Wheatear	<i>Oenanthe melanoleuca</i>	
PASSERIFORMES	Eastern Mourning Wheatear	<i>Oenanthe lugens</i>	
PASSERIFORMES	Finsch's Wheatear	<i>Oenanthe finschii</i>	Conservation Concern (CC)
PASSERIFORMES	Rufous-tailed Rock Thrush	<i>Monticola saxatilis</i>	
PASSERIFORMES	Blue Rock Thrush	<i>Monticola solitarius</i>	
PASSERIFORMES	Spotted Flycatcher	<i>Muscicapa striata</i>	
PASSERIFORMES	Red-breasted Flycatcher	<i>Ficedula parva</i>	
PASSERIFORMES	White-throated Dipper	<i>Cinclus cinclus</i>	
PASSERIFORMES	House Sparrow	<i>Passer domesticus</i>	
PASSERIFORMES	Spanish Sparrow	<i>Passer hispaniolensis</i>	
PASSERIFORMES	Dead Sea Sparrow	<i>Passer moabiticus</i>	Conservation Concern (CC)
PASSERIFORMES	Pale Rockfinch	<i>Carpospiza brachydactyla</i>	Conservation Concern (CC)
PASSERIFORMES	Rock Sparrow	<i>Petronia petronia</i>	
PASSERIFORMES	Yellow-throated Sparrow	<i>Gymnoris xanthocollis</i>	Conservation Concern (CC)
PASSERIFORMES	Radde's Accentor	<i>Prunella ocularis</i>	Conservation Concern (CC)
PASSERIFORMES	Western Yellow Wagtail (includes all races)	<i>Motacilla flava</i>	
PASSERIFORMES	Grey Wagtail	<i>Motacilla cinerea</i>	
PASSERIFORMES	White Wagtail	<i>Motacilla alba</i>	
PASSERIFORMES	Tree pipit	<i>Anthus trivialis</i>	
PASSERIFORMES	Red-throated Pipit	<i>Anthus cervinus</i>	
PASSERIFORMES	Water Pipit	<i>Anthus spinoletta</i>	

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Order	Common Name	Latin Name	Conservation Status
PASSERIFORMES	Common Chaffinch	<i>Fringilla coelebs</i>	
PASSERIFORMES	European Greenfinch	<i>Carduelis chloris</i>	
PASSERIFORMES	Eurasian Siskin	<i>Carduelis spinus</i>	
PASSERIFORMES	European Goldfinch	<i>Carduelis carduelis</i>	
PASSERIFORMES	Common Linnet	<i>Carduelis cannabina</i>	
PASSERIFORMES	Desert Finch	<i>Rhodospiza obsoletus</i>	
PASSERIFORMES	Corn Bunting	<i>Emberiza calandra</i>	
PASSERIFORMES	Yellowhammer	<i>Emberiza citrinella</i>	
PASSERIFORMES	Pine Bunting	<i>Emberiza leucocephalos</i>	
PASSERIFORMES	Rock Bunting	<i>Emberiza cia</i>	
PASSERIFORMES	Grey-necked Bunting	<i>Emberiza buchanani</i>	
PASSERIFORMES	Smyrna Bunting	<i>Emberiza semenovi</i>	Globally Threatened (GT), Conservation Concern (CC)
PASSERIFORMES	Ortolan Bunting	<i>Emberiza hortulana</i>	
PASSERIFORMES	Black-headed Bunting	<i>Emberiza melanocephala</i>	
PASSERIFORMES	Common Reed Bunting	<i>Emberiza schoeniclus</i>	

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Annex B: List of plants seen on the KBA Surveys for Kurdistan, Northern Iraq in 2009

Scientific Name	Common Name	Family-Scientific	Family-Common
<i>Acantholimon sp.</i>		Plumbaginaceae	
<i>Acanthus dioscoridis</i>	Smooth-leaved Acanthus	Acanthaceae	Acanthus
<i>Acer monosperulatum</i>	Gray Maple	Aceraceae	Maple
<i>Achillea eriophora</i>		Asteraceae	Aster
<i>Adiantum capillus-veneris</i>	Maidenhair Fern	Pteridaceae	Fern
<i>Adonis annua</i>		Ranunculaceae	Buttercup
<i>Adonis sp.</i>		Ranunculaceae	Buttercup
<i>Aegilops columnaris</i>		Poaceae	Grass
<i>Aegilops crassa</i>	Goatgrass	Poaceae	Grass
<i>Aegilops umbellulata</i>		Poaceae	Grass
<i>Aethionema carneum</i>		Brassicaceae	Mustard
<i>Aethionema fimbriatum</i>		Brassicaceae	Mustard
<i>Aethionema froedinii</i>		Brassicaceae	Mustard
<i>Aethionema froedinii</i>		Brassicaceae	Mustard
<i>Agropyron panormitanum</i>		Poaceae	Grass
<i>Alcea kurdica</i>		Malvaceae	Mallow
<i>Alhagi maurorum</i>	Camelthorn	Fabaceae	Pea
<i>Alkanna kotschyana</i>		Boraginaceae	Borage
<i>Alliaria petiolata</i>		Brassicaceae	Mustard
<i>Allium chrysantherum</i>		Liliaceae	Lily
<i>Allium stamineum</i>		Liliaceae	Lily
<i>Alyssum stapfi</i>		Brassicaceae	Mustard
<i>Alyssum strictum</i>		Brassicaceae	Mustard
<i>Ammi majus</i>		Apiaceae	Parsley
<i>Ammi sp.</i>		Apiaceae	Parsley
<i>Anagalis arvensis</i>		Primulaceae	Primrose
<i>Anagyris foetida</i>	Stinking Bean	Fabaceae	Pea
<i>Anchusa italica</i>	Italian Bugloss	Boraginaceae	Borage
<i>Anchusa strigosa</i>		Boraginaceae	Borage
<i>Anogramma leptophylla</i>		Adiantaceae	Fern
<i>Antbemis alliissima</i>		Asteraceae	Aster
<i>Antbemis odontostephana</i>		Asteraceae	Aster
<i>Anthriscus sp.</i>		Apiaceae	Parsley
<i>Arenaria sp.</i>	Sandwort	Caryophyllaceae	Pink
<i>Aristolochia mororum</i>		Aristolochiaceae	
<i>Aristolochia paucilantha</i>		Aristolochiaceae	
<i>Artemisia squamata</i>		Apiaceae	Parsley
<i>Arundo donax</i>		Poaceae	Grass
<i>Asperugo procumbens</i>		Boraginaceae	Borage
<i>Asperula L.</i>		Rosaceae	
<i>Aster sp.</i>		Asteraceae	Aster
<i>Astragalus belgurdensis</i>		Fabaceae	Pea
<i>Astragalus sp.</i>		Fabaceae	Pea
<i>Astragalus spinosus</i>	Spiny Milkvetch	Fabaceae	Pea
<i>Atractylis cancellata</i>		Asteraceae	Aster
<i>Aubretia parviflora</i>		Brassicaceae	Mustard
<i>Avena fatua</i>	Wild Oat	Poaceae	Grass
<i>Avena sativa</i>		Poaceae	Grass
<i>Avena sp.</i>		Poaceae	Grass
<i>Bellavalia sp.</i>		Liliaceae	Lily
<i>Biebersteinia multifida</i>		Gentianaceae	
<i>Biscutella didyma</i>		Brassicaceae	Mustard
<i>Boglossoides sp.</i>		Boraginaceae	Borage
<i>Brassica nigra</i>		Brassicaceae	Mustard
<i>Brassica sp.</i>		Brassicaceae	Mustard

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Scientific Name	Common Name	Family-Scientific	Family-Common
<i>Briza humilis</i>		Poaceae	Grass
<i>Briza minor</i>		Poaceae	Grass
<i>Bromus brachystachys</i>		Poaceae	Grass
<i>Bromus danthoniae</i>		Poaceae	Grass
<i>Bromus diandrus</i>		Poaceae	Grass
<i>Bromus sp.</i>		Poaceae	Grass
<i>Bryonia multiflora</i>		Brassicaceae	Mustard
<i>Callipeltis cucullaris</i>		Rubiaceae	
<i>Campanula mardinensis</i>		Campanulaceae	Harebell
<i>Campanula propinqua</i>		Campanulaceae	Harebell
<i>Campanula retrorsa</i>		Campanulaceae	Harebell
<i>Capparis spinosa</i>	Caper Bush	Capparidaceae	Caper
<i>Capsella bursa-pastoris</i>		Brassicaceae	Mustard
<i>Cardaria draba</i>		Brassicaceae	Mustard
<i>Carex sp.</i>		Poaceae	Grass
<i>Carthamus oxyacanthus</i>	Wild Safflower	Asteraceae	Aster
<i>Celsia sp.</i>		Scrophulariaceae	
<i>Centaurea bruguierana</i>		Asteraceae	Aster
<i>Centaurea calcitrapa</i>		Asteraceae	Aster
<i>Centaurea longipedunculata</i>		Asteraceae	Aster
<i>Centaurea solstitialis</i>	Yellow Star Thistle	Asteraceae	Aster
<i>Centaurea sp</i>		Asteraceae	Aster
<i>Centaurea virgata</i>		Asteraceae	Aster
<i>Cephalaria dichaeophora</i>		Dipsacaceae	Teasel
<i>Cephalaria microcephala</i>		Dipsacaceae	Teasel
<i>Cephalaria syriaca</i>	Syrian Cephalaria	Dipsacaceae	Teasel
<i>Cerastium grandiflorum</i>		Caryophyllaceae	Pink
<i>Cerastium dichotomum</i>		Caryophyllaceae	Pink
<i>Cerastium dichotomum</i>		Ceratophyllaceae	Pink
<i>Cerastium inflatum</i>		Caryophyllaceae	Pink
<i>Cerastium sp.</i>		Caryophyllaceae	Pink
<i>Ceratophyllum demersum.</i>	Hornwort	Ceratophyllaceae	Hornwort
<i>Cheilanthes fragrans</i>	Resurrection Fern	Adiantaceae	Fern
<i>Cirsium alatum</i>		Asteraceae	Aster
<i>Cirsium sp.</i>		Asteraceae	Aster
<i>Chyeola aspera</i>		Brassicaceae	Mustard
<i>Chyeola lappacea</i>		Brassicaceae	Mustard
<i>Cnicus benedictus</i>		Asteraceae	Aster
<i>Colchicum kotschyi</i>		Liliaceae	Lily
<i>Colchicum kurdicum</i>		Liliaceae	Lily
<i>Convolvulus arvensis</i>	Field Bindweed	Convolvulaceae	Morning Glory
<i>Coronilla scorpioides</i>		Fabaceae	Pea
<i>Cousinia inflata</i>		Asteraceae	Aster
<i>Cousinia mobayenii</i>		Asteraceae	Aster
<i>Cousinia odontolepis</i>		Asteraceae	Aster
<i>Cousinia rhabdiostegia</i>		Asteraceae	Aster
<i>Cousinia sp.</i>		Asteraceae	Aster
<i>Crataegus azorolus</i>		Rosaceae	Rose
<i>Crepis alpina</i>		Asteraceae	Aster
<i>Crepis capillaris</i>		Asteraceae	Aster
<i>Crepis sp.</i>		Asteraceae	Aster
<i>Crupina crupinastrum</i>		Asteraceae	Aster
<i>Cuscuta approximata</i>		Convolvulaceae	
<i>Cuscuta sp</i>	Dodder	Convolvulaceae	Morning Glory
<i>Cymbopogon olivieri</i>		Poaceae	Grass
<i>Cynodon dactylon</i>	Bermuda Grass	Poaceae	Grass
<i>Cynoglossum creticum</i>		Boraginaceae	Borage
<i>Cyperus sp.</i>		Cyperaceae	Sedge

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<i>Daphne mucronata</i>		Thymelaeaceae	
<i>Daucus sp.</i>		Apiaceae	Parsley
<i>Delphinium kurdicum</i>		Helleboraceae	
<i>Dianthus pendulus</i>	Pendulus Dianthus	Caryophyllaceae	Pink
<i>Dianthus strictus</i>	Strict Dianthus	Caryophyllaceae	Pink
<i>Dionysia odora</i>		Primulaceae	
<i>Echinops cyanocephalus</i>		Asteraceae	Aster
<i>Echinops sp.</i>	Globe Thistle	Asteraceae	Aster
<i>Echinops viscosus</i>		Asteraceae	
<i>Echium italicum</i>		Boraginaceae	Borage
<i>Echium sp.</i>		Boraginaceae	Borage
<i>Ephedra foliat</i>		Ephedraceae	
<i>Equisetum ramosissimum</i>		Equisetaceae	
<i>Erantibis hyemalis</i>		Helleboraceae	
<i>Eremostachys laciniata</i>		Lamiaceae	Mint
<i>Eremurus spectabilis</i>		Liliaceae	Lily
<i>Erodium sp.</i>		Geraniaceae	
<i>Eruca sativa</i>		Brassicaceae	Mustard
<i>Eryngium sp.</i>		Apiaceae	
<i>Erysimum sp.</i>		Brassicaceae	Mustard
<i>Eucalyptus torquata</i>		Myrtaceae	
<i>Euphorbia condylocarpa</i>		Euporbiaceae	
<i>Euphorbia sp.</i>		Euporbiaceae	
<i>Ferulago angulata</i>		Apiaceae	Parsley
<i>Fibigia chypeata</i>		Brassicaceae	Mustard
<i>Fibigia macrocarps</i>		Brassicaceae	Mustard
<i>Ficus carica</i>	Common Fig	Moraceae	Fig
<i>Ficus carica L. var. carica</i>		Moraceae	Fig
<i>Ficus carica var. rupestris</i>		Moraceae	Fig
<i>Fumaria cilicica</i>		Fumaraceae	Fumitory
<i>Fumaria densiflora</i>		Fumaraceae	Fumitory
<i>Fumaria parviflora</i>		Fumaraceae	Fumitory
<i>Gagea sp.</i>		Liliaceae	Lily
<i>Galium setaceum</i>		Rubiaceae	
<i>Galium sp.</i>	Bedstraw	Rubiaceae	Madder
<i>Galium verum</i>		Rubiaceae	
<i>Gentiana olivieri</i>		Gentianaceae	
<i>Geranium lucidum</i>		Geraniaceae	
<i>Geranium tuberosum</i>		Geraniaceae	
<i>Geranium sp.</i>		Geraniaceae	
<i>Geum urbanum</i>		Rosaceae	Rose
<i>Gladiolus italicus</i>		Iridaceae	Iris
<i>Glycyrrhiza glabra</i>	Licorice Root	Apiaceae	Parsley
<i>Gundelia tournefortii</i>		Asteraceae	Aster
<i>Gypsophila sp.</i>	Baby's Breath	Caryophyllaceae	Pink
<i>Hedera helix</i>		Araliaceae	
<i>Hedysarum sp.</i>		Fabaceae	Pea
<i>Helianthemum salicifolium</i>		Cistaceae	
<i>Helianthemum sp.</i>		Cistaceae	
<i>Helicbrysum sp.</i>		Asteraceae	Aster
<i>Heliotropium sp.</i>		Boraginaceae	
<i>Heterantheum piliferum</i>		Poaceae	
<i>Hippocrepis unisiliquosa subsp. bisiliqua</i>		Fabaceae	Pea
<i>Hirschfeldia incana</i>		Brassicaceae	
<i>Holosteum umbellatum</i>		Caryophyllaceae	Pink
<i>Hordeum bulbosum</i>		Poaceae	Grass
<i>Hordeum glaucum</i>		Poaceae	Grass
<i>Hordeum spontaneum</i>		Poaceae	Grass

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<i>Hyoscyamus reticulatus</i>		Solanaceae	
<i>Hypericum triquetrifolium</i>		Hypericaceae	
<i>Hypericum vermiculare</i>		Hypericaceae	
<i>Iris reticulata</i>		Iridaceae	Iris
<i>Isatis cappadocica</i>		Brassicaceae	Mustard
<i>Isatis cochlearis</i>		Brassicaceae	Mustard
<i>Isatis lusitanica</i>		Brassicaceae	Mustard
<i>Isilirion tataricum</i>		Liliaceae	Lily
<i>Juglans regia</i>	Persian Walnut	Juglandaceae	Walnut
<i>Juncus acutus</i>		Juncaceae	Rush
<i>Juncus bufonius</i>		Juncaceae	Rush
<i>Juncus effusus</i>	Common Rush	Juncaceae	Rush
<i>Juniperus oxycedrus</i>	Prickly Juniper	Cupressaceae	Juniper
<i>Lactuca serriola</i>		Asteraceae	Aster
<i>Lamium amplexicaule</i>		Lemnaceae	Mint
<i>Lamium sp.</i>	Deadnettle	Lamiaceae	Mint
<i>Lamium striatum</i>		Lamiaceae	Mint
<i>Lathyrus boissieri</i>		Fabaceae	Pea
<i>Lathyrus sativus</i>		Fabaceae	Pea
<i>Launaea mucronata</i>		Asteraceae	Aster
<i>Legousia falcata</i>		Campanulaceae	Harebell
<i>Legousia sp.</i>		Campanulaceae	
<i>Lens orientalis</i>		Fabaceae	
<i>Leontice leontopetalum</i>		Leonticaceae	
<i>Ligustrum sp.</i>		Oleaceae	
<i>Linum bienne</i>		Linaceae	
<i>Linum mucronatum</i>		Linaceae	
<i>Linum nodiflorum</i>		Linaceae	
<i>Linum strictum</i>		Linaceae	
<i>Linum sulphureum</i>		Linaceae	
<i>Linum velutinum</i>		Linaceae	
<i>Lolium rigidum</i>		Poaceae	Grass
<i>Lolium sp.</i>		Poaceae	Grass
<i>Lolium temulentum</i>	Darnel Ryegrass	Poaceae	Grass
<i>Lotus sp.</i>		Fabaceae	Pea
<i>Lythrum sp.</i>		Lathyraceae	
<i>Malva aegyptica</i>		Malvaceae	
<i>Marrubium sp.</i>		Lamiaceae	
<i>Matricaria chamomilla</i>		Asteraceae	Aster
<i>Medicago constricta</i>		Fabaceae	Pea
<i>Medicago coronata</i>		Fabaceae	Pea
<i>Medicago orbicularis</i>		Fabaceae	Pea
<i>Mentha longifolia</i>	Wild Mint	Labiataeae	Mint
<i>Michauxia laevigata</i>		Campanulaceae	Harebell
<i>Microthlaspi perfoliaetum</i>		Brassicaceae	Mustard
<i>Morus alba</i>	White Mulberry	Moraceae	Fig
<i>Muscari comosum</i>		Liliaceae	Lily
<i>Nasturtium officinale</i>		Brassicaceae	Mustard
<i>Nerium oleander</i>	Oleander	Apocynaceae	Oleander
<i>Nigella oxypetala</i>		Helleboraceae	
<i>Nonnea caspica</i>		Boraginaceae	Borage
<i>Notobasis syriaca</i>		Asteraceae	Aster
<i>Onopordum sp.</i>		Asteraceae	Aster
<i>Onosma albo-roseum</i>		Boraginaceae	Borage
<i>Onosma auriculatum</i>		Boraginaceae	Borage
<i>Onosma sp.</i>	Onosma	Boraginaceae	Borage
<i>Ophrys bornmuelleri</i>		Orchidaceae	Orchid
<i>Orchis collina</i>		Orchidaceae	Orchid

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<i>Orchis coriophora</i>		Orchidaceae	Orchid
<i>Orchis tridentata</i>		Orchidaceae	Orchid
<i>Ornithogalum brachysachyus</i>		Liliaceae	Lily
<i>Ornithogalum lusbani</i>		Liliaceae	Lily
<i>Ornithogalum persicum</i>		Liliaceae	Lily
<i>Ornithogalum sp.</i>		Liliaceae	Lily
<i>Orobanche ramosa</i>		Orobanchaceae	Broomrape
<i>Orobanche sp.</i>	Broomrape	Orobanchaceae	Broomrape
<i>Outreya carduiiformis</i>		Asteraceae	Aster
<i>Papaver bornmuelleri</i>		Papaveraceae	Poppy
<i>Papaver dubium</i>		Papaveraceae	Poppy
<i>Papaver fugax</i>		Papaveraceae	Poppy
<i>Papaver macrostomum</i>		Papaveraceae	Poppy
<i>Papaver rhoeas</i>		Papaveraceae	Poppy
<i>Papaver somniferum</i>		Papaveraceae	Poppy
<i>Parietaria sp.</i>		Urticaceae	Nettle
<i>Paronychia kurdica</i>		Caryophyllaceae	Pink
<i>Pedicularis caucasica</i>		Scrophulariaceae	
<i>Peganum harmala</i>		Zygophyllaceae	
<i>Pennisetum orientale</i>		Poaceae	Grass
<i>Phalaris sp.</i>		Poaceae	Grass
<i>Phelypaea coccinea</i>		Orobanchaceae	Broomrape
<i>Phleum exaratum</i>		Poaceae	Grass
<i>Phlomis olivieri</i>		Lamiaceae	Mint
<i>Phlomis sp.</i>		Lamiaceae	Mint
<i>Phragmites australis</i>		Poaceae	Grass
<i>Picnoman acarna</i>		Asteraceae	Aster
<i>Pinus protia</i>	Calabrian Pine	Pinaceae	Pine
<i>Pistacia eurycarpa</i>	Pistacia	Anacardiaceae	Sumac
<i>Pisum formosum</i>		Fabaceae	Pea
<i>Pisum sp.</i>		Fabaceae	Pea
<i>Plantago lanceolata</i>	Narrowleaf Plantain	Plantaginaceae	Plantago
<i>Plantago maior</i>		Plantaginaceae	Plantago
<i>Platanus orientalis</i>		Platanaceae	
<i>Poa bulbosa</i>	Bulbous bluegrass	Poaceae	Grass
<i>Polygonum persicaria</i>	Spotted Ladysthumb	Polygonaceae	Buckwheat
<i>Populus alba</i>	White Poplar	Salicaceae	Willow
<i>Populus euphratica</i>	Euphrates Poplar	Salicaceae	Willow
<i>Potentilla hirta</i>		Rosaceae	Rose
<i>Prangos acaulis</i>		Apiaceae	Parsley
<i>Prosopis farcta</i>	Syrian mesquite	Fabaceae	Pea
<i>Prunella vulgaris</i>		Lamiaceae	Mint
<i>Prunus amygdalus</i>	Almond	Rosaceae	Rose
<i>Prunus arabica</i>		Rosaceae	Rose
<i>Prunus microcarpa</i>	Small-seed Plum	Rosaceae	Rose
<i>Prunus orientalis</i>		Rosaceae	Rose
<i>Pterocephalus plumulosus</i>		Asteraceae	Aster
<i>Pteropyrum olivieri</i>		Polygonaceae	
<i>Punica granatum</i>	Pomegranate	Puniaceae	Pomegranate
<i>Puschkinia scilloides</i>		Liliaceae	Lily
<i>Pyrus syriaca</i>	Syrian Pear	Rosaceae	Rose
<i>Quercus aegilops</i>	Valonia Oak	Fagaceae	Beech
<i>Quercus infectoria</i>	Aleppo Oak	Fagaceae	Beech
<i>Quercus libani</i>	Lebanon Oak	Fagaceae	Beech
<i>Quercus macranthera</i>		Fagaceae	Beech
<i>Ranunculus aucheri</i>		Ranunculaceae	Buttercup
<i>Ranunculus bulbiferus</i>		Ranunculaceae	Buttercup
<i>Ranunculus cornutus</i>		Ranunculaceae	Buttercup

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<i>Ranunculus kochii</i>		Ranunculaceae	Buttercup
<i>Ranunculus sphaerosperm</i>		Ranunculaceae	Buttercup
<i>Rindera lanata</i>		Boraginaceae	Borage
<i>Rosa gallica</i>	French Rose	Rosaceae	Rose
<i>Rosa sp.</i>		Rosaceae	Rose
<i>Rosularia libanotica</i>		Crassulaceae	
<i>Rubus sanctus</i>	Blackberry Bramble	Rosaceae	Rose
<i>Rumex albusensis</i>		Polygonaceae	Polygonum
<i>Rumex crispus</i>		Polygonaceae	Polygonum
<i>Rumex ribes</i>		Polygonaceae	
<i>Rumex scutatus</i>	French Sorrel	Polygonaceae	Buckwheat
<i>Salix acmophylla</i>	Willow	Salicaceae	Willow
<i>Salix aegyptiaca</i>	Mediterranean Willow	Salicaceae	Willow
<i>Salix babylonica</i>		Salicaceae	
<i>Salvia indica</i>		Lamiaceae	Mint
<i>Salvia macrosiphon</i>		Lamiaceae	Mint
<i>Salvia multicaulis</i>		Lamiaceae	Mint
<i>Salvia multicaulis</i>		Lamiaceae	Mint
<i>Salvia palaestina</i>		Lamiaceae	Mint
<i>salvia sclaria</i>		Lamiaceae	Mint
<i>Salvia sp.</i>		Lamiaceae	Mint
<i>Salvia trichoclada</i>		Lamiaceae	Mint
<i>Sameraria sp.</i>		Brassicaceae	Mustard
<i>Sanguisorba minor</i>		Rosaceae	Rose
<i>Sarcopoterium spinosum</i>		Rosaceae	Rose
<i>Scabiosa palaestina</i>	Pincushion Flower	Dipsacaceae	Teasel
<i>Scabiosa persica</i>		Dipsacaceae	Teasel
<i>Scandix pecten-veneris</i>		Apiaceae	Parsley
<i>Scirpoides holoschoenus</i>		Cyperaceae	Sedge
<i>Scorpiurus sp.</i>		Fabaceae	Pea
<i>Scorzonera sp.</i>		Asteraceae	Aster
<i>Scrophularia deserti</i>		Scrophulariaceae	Figwort
<i>Sedum sp.</i>		Crassulaceae	
<i>Senecio vulgaris</i>		Asteraceae	Aster
<i>Sephalorrhynchus (Lactuca) hispidus</i>		Asteraceae	Aster
<i>Serratula cerinthifolia</i>		Asteraceae	Aster
<i>Serratula sp.</i>		Asteraceae	Aster
<i>Sherardia arvensis</i>		Rubiaceae	
<i>Silene aegyptiaca</i>		Caryophyllaceae	Pink
<i>Silene aucheriana</i>		Caryophyllaceae	Pink
<i>Silene coniflora</i>		Caryophyllaceae	Pink
<i>Silene odontopetala</i>		Caryophyllaceae	Pink
<i>Silene sp.</i>		Caryophyllaceae	Pink
<i>Silybum marianum</i>	Blessed Milkthistle	Asteraceae	Aster
<i>Sinapis arvensis</i>		Brassicaceae	Mustard
<i>Sinapis aucheri</i>		Brassicaceae	Mustard
<i>Symbrium orientalis</i>		Poaceae	Grass
<i>Smyrniium cordifolium</i>		Apiaceae	Parsley
<i>Solenanthus sp.</i>		Boraginaceae	Borage
<i>Sonchus sp.</i>		Asteraceae	Aster
<i>Sorghum bicolor</i>	Broomcorn	Poaceae	Grass
<i>Spergularia sp.</i>		Caryophyllaceae	Pink
<i>Stachys byzantina</i>		Lamiaceae	Mint
<i>Stellaria media</i>		Caryophyllaceae	Pink
<i>Stipagrostis plumosa</i>		Poaceae	Grass
<i>Taeniatherum asperum</i>		Poaceae	Grass
<i>Taeniatherum crinitum</i>		Poaceae	Grass
<i>Tamarix brachystachys</i>		Tamariaceae	

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<i>Tamus communis</i>		Datisceae	
<i>Taraxacum sp.</i>		Asteraceae	Aster
<i>Teucrium polium</i>		Lamiaceae	
<i>Thalictrum sultanabadense</i>		Ranunculaceae	Buttercup
<i>Thlaspi perfoliatum</i>		Brassicaceae	Mustard
<i>Thlaspi sp.</i>		Brassicaceae	Mustard
<i>Thymbra spicata</i>		Lamiaceae	Mint
<i>Thymus syriacus</i>		Lamiaceae	Mint
<i>Torilis nodosa</i>		Apiaceae	
<i>Tragopogon longirostris</i>		Asteraceae	Aster
<i>Tribulus terrestris</i>	Puncturevine	Zygophyllaceae	Caltrop
<i>Trifolium purpureum</i>		Poaceae	Grass
<i>Trifolium sp.</i>		Fabaceae	Pea
<i>Trifolium tomentosum</i>		Poaceae	Grass
<i>Trifolium repens</i>	White Clover	Fabaceae	Pea
<i>Trigonella hamosa</i>		Poaceae	Grass
<i>Triticum aestivum</i>	Wheat	Poaceae	Grass
<i>Triticum sp.</i>		Poaceae	Grass
<i>Tulipa bubseana</i>		Liliaceae	Lily
<i>Tulipa kurdica</i>		Liliaceae	Lily
<i>Tulipa systola</i>		Liliaceae	Lily
<i>Umbilicus intermedius</i>		Saxifragaceae	Saxifrage
<i>Urtica pilulifera</i>		Urticaceae	
<i>Urtica urens</i>		Urticaceae	
<i>Vaccaria grandiflora</i>		Caryophyllaceae	Pink
<i>Valerianella sp.</i>		Valerianaceae	
<i>Velezia rigida</i>		Caryophyllaceae	Pink
<i>Verbascum agrimonifolium</i>		Scrophulariaceae	Figwort
<i>Verbascum macrocaropum</i>		Scrophulariaceae	Figwort
<i>Verbascum sp.</i>	Verbascum	Scrophulariaceae	Figwort
<i>Verbena officinalis</i>		Verbenaceae	Verbena
<i>Veronica beccabunga</i>		Scrophulariaceae	Figwort
<i>Veronica persica</i>		Scrophulariaceae	Figwort
<i>Veronica sp.</i>		Scrophulariaceae	Figwort
<i>Vicia hybrida</i>		Fabaceae	Pea
<i>Vicia sativa</i>		Fabaceae	Pea
<i>Vicia tenuifolia</i>		Fabaceae	Pea
<i>Vicia villosa</i>		Fabaceae	Pea
<i>Viola modesta</i>		Violaceae	Violet
<i>Viola sp.</i>	Violet	Violaceae	Violet
<i>Viscum cruciatum</i>		Viscaceae	
<i>Vitex sp.</i>		Verbenaceae	Verbena
<i>Vitis vinifera</i>	Grape	Vitaceae	Grape
<i>Xeranthemum cylindraceum</i>		Asteraceae	Aster
<i>Xeranthemum longepaposum</i>		Asteraceae	Aster
<i>Zeugandra iranica</i>		Campanulaceae	
<i>Ziziphora capitata</i>		Lamiaceae	Mint
<i>Ziziphus spina-christi</i>	Crown of Thorns	Rhamnaceae	Buckthorn
<i>Ziziphus jujuba</i>		Rhamnaceae	Buckthorn
<i>Zoogea leptaura subsp. mesopotamica</i>		Asteraceae	Aster