

Interim Report to the MAVA board on the Identification and Conservation of New “Important Bird Areas” in Lebanon Project

**January 2006
(Amended November 2006)**

A joint project by A Rocha Lebanon and the Society for the Protection of Nature in Lebanon, the national BirdLife partner.

1 Introduction

This document is the interim report for the MAVA board on the first year of the *Identification and Conservation of New “Important Bird Areas” in Lebanon Project*, which is funded by MAVA and carried out jointly by A Rocha Lebanon and the Society for the Protection of Nature in Lebanon (SPNL), the latter being the Lebanese partner organisation for BirdLife International. The report covers the Period March 2005 to February 2006.

1.1 What is an IBA?

The designation Important Bird Area (IBA), is one which is given by BirdLife International to sites which meet certain criteria. These criteria can be summarised in the following way - “IBAs are key sites for conservation – small enough to be conserved in their entirety and often already part of a protected-area network – that do one of three things. They either have significant numbers of one or more globally threatened species, or are one of a set of sites that together hold a suite of restricted-range species or biome-restricted species, or they have exceptionally large numbers of migratory or congregatory species.” (BirdLife International Website, www.birdlife.org/action/science/sites/mideast_ibas/index.html). However, the exact criteria vary depending on the region of the world into which a site falls. Lebanon is part of the Middle East region, the criteria for which are set by the BirdLife Middle East office, based in Amman, Jordan, and which are given in full in Section 3.1.6 below.

The designation of a site as an IBA does not automatically give it any protection. It is simply a statement of its importance in terms of bird conservation. However, it is a very good point to start when trying to persuade local communities and governments that it should be conserved.

The sites which are being surveyed as part of this project are all ones which have been visited by birdwatchers in the past and where anecdotal evidence suggests significant numbers of birds might be found. These sites are scattered over the whole country and don't have a bias towards one zone or another. However, at most of the sites systematic surveys have not been carried out at all times of the year, but rather they have been visited informally, often for very short periods. Moreover, none of them had been designated as IBAs prior to the start of this project. This method of visiting sites already suspected to hold good numbers of birds, rather than choosing sites at random, was seen as a good way of maximising the value of the project and reducing the amount of time wasted visiting unsuitable sites.

1.2 The scope of this Report

The *Identification and Conservation of New “Important Bird Areas” in Lebanon Project* has two objectives for each of which there are six outputs which the project aims at achieving.

These are:

Objective 1: Identify new IBAs

Output 1.1 - Produce a unified bird checklist for Lebanon

Output 1.2 – Create the IBA database and input current data

Output 1.3 – Organise launching seminar, inviting all interested parties to participate in the IBA programme

Output 1.4 – Organise two 2-week intensive research surveys with visiting ornithologists per year to coincide with peak migration

Output 1.5 – Survey each site for birds at least six times throughout each year

Output 1.6 – Match data to BirdLife IBA criteria and declare IBAs

Objective 2: Conservation (Protection) of IBAs

Output 2.1 – Survey each site for its habitats, land uses, non-avian biodiversity and threats

Output 2.2 – Draw up a site management statement for each site

Output 2.3 – Identify small teams (up to ten individuals) to form the site support group for each new IBA

Output 2.4 – Train key members (two per site) of site support group in basic bird identification skills, bird monitoring, site management and conservation advocacy

Output 2.5 – Work with the site support group and local council to form a management committee for the management of the site.

Output 2.6 – With each site support group design and implement monitoring schemes to identify new threats and determine the success of conservation measures

For this project the sites are divided into three groups, with a different group being surveyed each year. After each year's fieldwork has been carried out, the data is sent to the BirdLife Middle East office, in Amman, with recommendations about which sites A Rocha Lebanon and SPNL think should be designated as IBAs, based on the results of the fieldwork and supported by any other recent data available. Once BirdLife has made its decision, the second phase of the project can commence for the successful sites. Thus, objective 2, the conservation of the IBAs, can't start until at least the second year of the project, and so is not within the main scope of this report. Practically it was found to be more time-efficient to carry out Output 2.1 ("Survey each site for its habitats, land uses, non-avian biodiversity and threats") at the same time as the fieldwork for the first phase of the project. Likewise, it was decided for practical reasons to start work on Outputs 2.2 and 2.3 in the first year of the project.

Therefore, Outputs 1.1-2.3 will be reported on here, while Outputs 2.4-2.6 will not be included in this interim report but will be reported on in the next interim report.

2 Overview of the year

2005 was a year of extraordinary events in Lebanon. The murder of former prime minister Rafiq Hariri ushered in a year with 14 bombings, numerous assassinations, major people-power rallies, changes of government and the redeployment of the Syrian army after 30 years in the country. Despite such a cataclysmic year the project progressed smoothly producing some highly significant results for conservation of biodiversity in Lebanon. The direct effect of the political uncertainty on the project was to:

- i) reduce the number of foreign bird watchers willing to help with the census.
- ii) slightly adjust the choice of sites for the first year, as sites in the Anti-Lebanon Mountains, close to retreating Syrian army positions were left for another year!
- iii) disrupt the launching event for the project.

Despite these minor problems the first phase of the project has generated some highly significant outcomes, summarised here:

i) **Five** sites have met BirdLife International's criteria For IBAs in the Middles East, and have now been declared as Important Bird Areas.

ii) Across the country **12** sites have been thoroughly surveyed for avian biodiversity importance (minimum six visits per site during the year running from March 2005-February 2006). This has generated a huge amount of data of great importance to the conservation efforts at the sites and to the building up a national repository of base-line data for further studies.

iii) The project has generated great national interest and the beginnings of local support for the emerging IBAs.

iv) A wealth of background data and local contacts has been gathered for the 5 newly declared IBAs and several other sites that, while not meeting the IBA criteria, are nevertheless deemed important for national conservation initiatives. Although it is beyond the requirements of the MAVA funded project, the data for these additional sites has been included, in summary, in this report (under the headings of the relevant sites) and will be used in future projects aimed at the conservation of those sites.

v) One example of the direct relevance of the work was afforded recently when the Ministry of Environment requested coordinates of all sites under study to insure that they were excluded from zoning for quarry activity in a current ministerial study.

vi) At a local level the IBA work has already proved an impetus to conservation initiatives as seen at Kfar Zabad / Aanjar. See Site 1.

3 Fulfilment of Objectives and Outputs

3.1 Objective 1: Identify new IBAs

In the original project proposal this objective is stated thus:

“To identify new IBAs by visiting prospective sites and surveying them for their avifauna, working according to BirdLife International protocols. This is ongoing and to date has concentrated on the Bekaa Valley where the A Rocha project is based. There are 35 potential sites so far identified in Lebanon.

Ornithological survey to follow this timescale:

2005 the 10 agreed priority sites for the whole country

2006 other potential sites in the anti Lebanon and Bekaa valley

2007 other potential sites in the Mount Lebanon range and coastal strip”

In the first year of the project a total of 12 sites were surveyed, exceeding the original objective for the year by two.

Subsections 3.1-3.6, below detail how the six outputs of Objective 1 were met in the year from March 2005.

3.1.1 Output 1.1 - Produce a unified bird checklist for Lebanon

The complete checklist for the birds of Lebanon was prepared in consultation with local experts and BirdLife International. By a review of the literature together with recent research by A Rocha Lebanon and SPNL a list of 376 species has been included. Grouped by families, species are identified by Latin name with English, French and Arabic common names where appropriate. The list has already proved its usefulness as a base line of an agreed set of names and as a training tool with local community groups.

Prior to the preparation of this checklist, the most recent published document listing all the birds of Lebanon was produced in 1997 and published in *Sandgrouse*, the journal of the Ornithological Society of the Middle East (Ramadan-Jarardi 1997). However, that was more than just a checklist as it contained an analysis of each species' occurrence in Lebanon, historically and at the time of writing. Since that time several species have been added to the list and others have been removed when it has become apparent that their previous inclusion was based on erroneous information or refer to birds of captive origin.

The new checklist was not intended to be a repetition of Ramadan-Jarardi's 1997 article, but rather an up-to-date list of all the species whose occurrence in Lebanon, at least once in the past, is thought to be beyond doubt given the present extent of our knowledge. It is not our current intention to publish the checklist, for example in *Sandgrouse* (the journal of the Ornithological Society of the Middle East), as it is not within the scope of this project. However, it has been sent to BirdLife International and is available for other individuals and organisations who express an interest.

The new checklist is given in Appendix 1.

3.1.2 Output 1.2 - Create the IBA database and input current data

All data collected are shown in the Microsoft Excel spreadsheets which can be found in Appendix 2. The intention is that all data will eventually be stored in BirdLife International's World Birds Database. This is an internal tool owned by BirdLife International which is intended for use by BirdLife and its partner organisations rather than for general use. However, there are still some technical problems with the database which BirdLife International and SPNL are attempting to correct.

3.1.3 Output 1.3 - Organise launching seminar, inviting all interested parties to participate in the IBA programme

Launching the IBA Research project was planned for early 2005, but the devastating assassination of former Prime Minister Hariri and the consequent events in the country severely delayed its implementation. This was replaced by launching the project at two different occasions, each addressing different society groups:

i) At the AEWA festival organized at Kfar Zabad wetland in the Bekaa Valley 9th April 2005.

Kfar Zabad wetland is a small marshland on the level plain of the Bekaa Valley (part of the Syrian-African Great Rift Valley), which is on the main migration route for African-Eurasian birds through the Near East. This celebration was organized under the patronage of the Ministry of Environment, and with the support of the Ministry of Tourism, Ministry of Education, EC-Life and Euro-Nature, a German NGO.

Thirteen public schools from the Bekaa Mohafazah were invited to participate in the activities of the AEWA celebration, where more than 500 students aged between 8-12 years old attended during the day. The celebration covered several activities addressing the school students such as drawing competitions, giant puzzles, bird nests, balloon, film projection on open air screen, kites... in addition to bird watching, hikes, and tour in the marshlands in a moving bird hide. This was supported by the awareness display pictures explaining the threats to the site (on moving boards), the distribution of posters and awareness material.

The new IBA research programme was presented by way of opening speeches and through the activities of the day.

The AEWA celebration was attended by a large number of local people, parliament members from the region, environmental NGOs, nature reserves in the country, as well as ecotourism companies.

ii) Official launching of the project, 26th July 2005 at the Ministry of Environment, Beirut.

This event addressed the scientific community and was attended by representatives of ministries, state officials, NGOs, academics, and the media. The event covered the history of the global IBA programme to date, the progress of the IBA programme in Lebanon, and the presentation of the research project. The parties present were also invited to contribute records and advice to the project. This was supplemented by case studies of IBA site actions, and a presentation on the benefits of satellite mapping technology to IBA research and conservation.

3.1.4 Output 1.4 - Organise two 2-week intensive research surveys with visiting ornithologists per year to coincide with peak migration

i) Spring In April 2005, A Rocha researchers were joined by visiting ornithologists from Holland and the UK, they assisted in visits to 7 potential IBA sites between the 4th and 15th of the month. Working in two teams of three, a total of 13 visits were made, six locations were visited twice and Tannourine Cedars Reserve jointly surveyed once.

Total man days = 42

Highlights for each site in the spring fortnight were:

Aanjar/Kfar Zabad - Confirmation of Syrian Serin breeding at three locations, plus Lebanon's second only record of Bearded Tit.

Tannayel - 10 species of warbler recorded, plus breeding Syrian Woodpecker and migrating Wryneck.

Rachaya/ Aiha - Migrating Cyprus Pied Wheatear and Rufous-tailed Rock Thrush seen, plus singing Bimaculated Lark and Spectacled Warbler.

Ain Hoursche - Breeding Cretzchmar's Bunting, plus movements of 2,000 Common Swift and 200 plus Lesser Spotted Eagle

Lake Qaraaoun - Migration in full flow, with uncommon species such as Egyptian Vulture, Ruppell's Warbler and Raven observed.

Riim/ Sannine - Black Storks and White Storks migrating, plus 19 species of raptor, including c600 Lesser Spotted Eagles, Osprey, Great Spotted Eagle, also Griffon and Egyptian Vultures.

Tannourine Cedars - Rare breeding species for Lebanon recorded, (Chiffchaff and Blue Tit), plus over 200 Steppe Buzzards migrating with smaller numbers of other raptors.

ii) Autumn Because of continued political unrest in the country, no visiting ornithologists came to help with the fieldwork during the Autumn period, which was carried out by A Rocha staff with the occasional help of Lebanese residents. The visits were therefore spread over a longer period than originally planned.

Total man days = 29

Interesting sightings in the period:

Aanjar/Kfar Zabad - Confirmed breeding of Penduline Tit (only the second site to be discovered in Lebanon), migrating Levant Sparrowhawks observed.

Tannayel - Migrating Night Herons and Nightjar found, plus Levant Sparrowhawk and Honey Buzzard.

Rachaya/ Aiha - Bee-eater and Black Kite migrating south.

Ain Hoursche - 10 species of raptor seen on one day, including 4 falcon species (Hobby, Peregrine, Kestrel and Red-footed Falcon).

Lake Qaraaoun - As well as 37 White Pelicans, impressive gatherings of other migrants on the lake shore such as maximum counts of 357 Little Egrets, 227 Grey Herons, 46 Great White Egrets, 227 Black Kite and 12 Whiskered Terns.

Riim/ Sannine – There were high levels of disturbance from hunting on the ridge. The highlights included 14 Common Crane and a Rufous-tailed Rock Thrush.

Tannourine Cedars - 11 species of raptor seen on 6 October, c900 White Pelicans on 14 November.

3.1.5 Output 1.5 - Survey each site for birds at least six times throughout the year

As more than 30 sites have been chosen for inclusion in this project, it was decided to split them into three groups, with each group of sites being surveyed for one year only, rather than all the sites being surveyed over the whole three year period.

Initially the planned division of these sites was as follows:

2005 the 10 agreed priority sites for the whole country

2006 other potential sites in the anti Lebanon and Bekaa valley

2007 other potential sites in the Mount Lebanon range and coastal strip

There has been some variation from the formal above, e.g. in 2005 12 sites were surveyed instead of 10, while sites in the Anti-Lebanon were not surveyed in 2006 because of security issues arising from border disputes with a neighbouring country.

During the year that it is being surveyed, each site is visited at least six times. Some sites have been visited more frequently, as time allowed. The exact timing and duration of each visit, as well as the methodology used, varied between sites depending on the habitat, the expected 'target' birds, and the time of year. For example, some sites had very little vegetation cover and the main interest in terms of birds was soaring bird migration, so a visit during the peak spring migration time would mostly be spent watching the sky overhead to spot any migrating storks, eagles, buzzards and other large soaring birds which might pass over. Later in the season, after the main migration is finished, more time might be spent searching for breeding birds. As far as possible, visits were spread out over the whole year, so as to cover all the different seasons, although at some sites, such as Riim/ Sannine which was surveyed in 2005, access is difficult during the winter because of thick snow cover.

As the aim of the first phase of this project is to identify sites that should be designated as IBAs, it is not important for the survey methodology to be consistent and repeatable between different sites and at different times of the year. The aim rather is to see as many birds as possible to bring the sites up to the threshold level for IBAs – e.g. 5000 soaring birds passing overhead during the spring or autumn migration.

The raw data from all of the surveys is given in Appendix 2 and summarised in the sections on the individual sites in Appendix 3.

3.1.6 Output 1.6 - Match data to BirdLife IBA criteria and declare IBAs

The final decision on whether sites in Lebanon become IBAs or not rests with BirdLife International's Middle East office in Amman. They need to be satisfied, based on the data which are generated by A Rocha Lebanon and SPNL during this joint project, that a particular site does indeed match the criteria which have been decided for IBAs in the Middle East. However, when the data is submitted to BirdLife, sites that appear to us to meet the criteria, are recommended for designation as IBAs, and details given about which criteria they meet. In some cases this might be based on an extrapolation of the actual data. This is particularly relevant for sites where the main interest is soaring

birds on migration. Where many species migrate over a period of several weeks, but visits are only made on a relatively small number of days during that period.

The BirdLife IBA criteria which apply to sites in the Middle East are given below:

A: Important Bird Areas - Global importance

A1. Species of global conservation concern

The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.

A2. Restricted-range species

The site is known or thought to hold a significant component of the restricted-range species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).

A3. Biome-restricted species

The site is known or thought to hold a significant assemblage of the species whose breeding distributions are largely or wholly confined to one biome.

A4. Congregations

- i. The site is known or thought to hold, on a regular basis, = 1% of a biogeographic population of a congregatory waterbird species.
- ii. The site is known or thought to hold, on a regular basis, = 1% of the global population of a congregatory seabird or terrestrial species.
- iii. The site is known or thought to hold, on a regular basis, = 20,000 waterbirds or = 10,000 pairs of seabird of one or more species.
- iv. The site is known or thought to be a 'bottleneck' site where at least 20,000 storks (Ciconiidae), raptors (Accipitriformes and Falconiformes) or cranes (Gruidae) regularly pass during spring or autumn migration.

B: Important Bird Areas - Middle Eastern importance

B1: Regionally important congregations

The site may qualify on any one of the three criteria listed below:

- i. The site is known or thought to hold = 1% of a flyway or other distinct population of a waterbird species.
- ii. The site is known or thought to hold = 1% of a distinct population of a seabird species.
- iv. The site is a 'bottleneck' site where over 5,000 storks, or over 3,000 raptors or cranes regularly pass on spring or autumn migration.

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

The site is one of the five most important sites in the country/territory for a species with an unfavourable conservation status in the Middle East (threatened or declining throughout all or part of their range in the region) and for which the site-protection approach is thought to be appropriate.

B3: Species with a favourable conservation status but concentrated in the Middle East

The site is one of the five most important sites in the country/territory for a species with a favourable conservation status in the Middle East but with its global range concentrated in the Middle East, and for which the site-protection approach is thought to be appropriate.

3.2 Objective 2: Conservation (Protection) of IBAs

3.2.1 Output 2.1 - Survey each site for its habitats, land uses, non-avian biodiversity and threats

The habitat and land-use classes used were those recommended by BirdLife International.

The following table reports on Output 1.5, 1.6, and 2.1. It shows which sites were surveyed, how many visits were made and which of the two organisations (of A Rocha Lebanon and SPNL) was primarily responsible for surveying the sites. It also groups the sites summarising recommendations which will be forwarded to BirdLife international for declaration of IBA status. The sites are put into three groups:

- i) Sites that meet the criteria for IBA status (and which have now been declared as IBAs by BirdLife Middle East.
- ii) Sites where the research to date does not provide sufficient data for recommendation of IBA status but does indicate conservation importance. We feel these sites should be revisited in the future as part of a further study as with more data collection they may qualify for IBA status.
- iii) Sites that do not meet the IBA criteria.

i) Sites meeting IBA criteria

Site number and name	IBA criteria met	Number of times visited during 2005	Organisation responsible
1. Aanjar / Kfar Zabad	A.1.	11	A Rocha
2. Lake Qaraaoun	A.4.iv	16	A Rocha
3. Riim / Sannine	A.3 and A.4.iv	8	A Rocha
4. Tannourine Cedars	A.1 and A.4.iv	9	A Rocha
5. Ebel es-Saqi	A.4.iv	11	SPNL

ii) Sites not meeting IBA criteria but needing more study

Site number and name	Number of times visited during 2005	Organisation responsible
6. Ain Hoursche	7	A Rocha
7. Beirut River	8	SPNL
8. Ras Chekaa	8	SPNL
9. Cheikh Zennad	9	SPNL

iii) Sites not meeting IBA criteria

Site number and name	Number of times visited during 2005	Organisation responsible
10. Nahr el Kabir	7	SPNL
11. Rachaya / Aiha	7	A Rocha
12. Taanayel pond	6	A Rocha

3.2.2 Output 2.2 - Draw up a site management statement for each site

For each site a detailed report has been written. These can be found in Appendix 3

For every site the report includes:

- i) General description
- ii) Dates of visits
- ii) All bird records see Appendix 1

In addition for sites recommended for IBA status:

- iv) Supporting notes for recommendation of IBA status
- v) Site Management Statement
- vi) Map of the proposed IBA

A Site Management Statement is a short (c. 2 sides of A4) document containing a brief description of the site, some of the bird species to be found there, with particular reference to those of conservation concern. It gives some basic conservation objectives, (with the ultimate objective being the protection of the site and the enhancement of its value for wildlife), and details the management issues relevant to the attainment of those objectives. Included in this are existing and potential threats to the site.

A Site Management Statement is not a management plan. It is intended rather to be the starting point from which a management plan can be developed. It is hoped that management plans will be developed for all of the newly declared IBAs, in the fullness of time when suitable structures, and sufficient funding and support, are in place to carry them out.

3.2.3 Output 2.3 – Identify small teams (up to ten individuals) to form the site support group for each new IBA

The nucleus of each group has been formed with the following key people having agreed to act as the coordinators and facilitators.

Site Support Groups (SSGs) and initial Contacts for Proposed IBAs in 2005

A – Hima Ebel es-Saqi

- 1- Riyad Abu-Samra (Mayor)
- 2- Monah Saadeh (SPNL – Local Chapter)

B – Aanjar – Kfar Zabad

- 1- Kassem Shukr (Mayor)
- 2- Ibrahim Abu-Rjeili (Hima Kfarzabad Wetland Society)

C – Qaraaoun Lake

- 1- Rabiah Ferzli (President – Environment Committee Qaraaoun Municipality)
- 2- George Rassi (Vice President - Aitanieh Town)

D – Qaa El Riim / Sannine

- 1- Murshed (President – Al-Riim Bottle Company, and owner of Al-Riim Private Reserve.
- 2- George Abu-Jawdeh (Vice President – Lebanese Environment Forum)

E – Tannourine

- 1- Nabil Nemer (Secretary Tannourine Cedar Society, Professor of Entomology American University of Beirut)
- 2- George Malek (Guardian of Tannourine Cedar reserve)

3.2.4 Output 2.4 – 2.6

As was clarified at the beginning of this report these three outputs were not addressed during the first year of the project and so will not be reported on here. We believe we have the foundation in place to continue with community conservation outputs 2.4 to 2.6 for the new IBA sites declared as a result of the first phase of the project in the months November 2006 to February 2007 (postponed from August 2006 due to the recent war). The questions of the MAVA Board regarding these outputs will be addressed in future reports.

4 Conclusion

In the year between March 2005 and February 2006, twelve sites in various parts of Lebanon were surveyed for birds, in all the seasons of the year. Of the 12 sites surveyed, recommendations were made, to BirdLife International, that 5 be designated as Important Bird Areas. This status has now been granted, more than doubling the number of IBAs in the country.

The work was carried out jointly by the Society for the Protection of Nature in Lebanon, Lebanon's BirdLife International partner organisation, and A Rocha Lebanon, and environmental NGO. This was the first year of a three year project funded by the MAVA board.

This report describes in detail the work carried out, under the headings of the two Objectives and 12 Outputs given in the project proposal.

5 References

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Appendix 1

Checklist of the birds of Lebanon

Latin name	English name	Arabic name	French name
Grebes, Podicipedidae,		??? ا ???	
<i>Tachybaptus ruficollis</i>	Little Grebe	u?ZU u ruZ	Grebe castagneux
<i>Podiceps cristatus</i>	Great Crested Grebe	u??S?S?u ruZ	Grebe huppe
<i>Podiceps grisegena</i>	Red-necked Grebe	rr?UR? R ruZ	Grebe jougris
<i>Podiceps auritus</i>	Slavonian Grebe	f??? Uu ruZ	Grebe esclavon
<i>Podiceps nigricollis</i>	Black-necked Grebe	rr?URUR ruZ	Grebe a cou noir
Petrels & Shearwaters, Procellariidea		?????	
<i>Calonectris diomedea</i>	Cory's Shearwater	fu??r??S	Puffin cendre
<i>Puffinus gravis</i>	Great Shearwater	u??r??S	Puffin majeur
<i>Puffinus griseus</i>	Sooty Shearwater	?i ?r??S	Puffin fuligineux
<i>Puffinus yelkouan</i>	Mediterranean Shearwater	uUS?R ??Et rS	Puffin yelkouan
Storm Petrels, Hydrobatidae		??????	
<i>Hydrobates pelagicus</i>	European Storm-petrel	??u?R?uœi	Petrel tempete
<i>Oceanodroma leucorhoa</i>	Leach's Storm-petrel	u S???uœi	Petrel culblanc
Gannets, Sulidae		??????	
<i>Sula bassanus</i>	Gannet	S ?Z?œi	Fou de bassan
Cormorantes, Phalacrocoracidae		??????	
<i>Phalacrocorax carbo</i>	Cormorant	utrRRRZ	Grand Cormoran
<i>Phalacrocorax pygmeus</i>	Pygmy Cormorant	?U??R?RZ	Cormoran pygme
Pelicans, Pelecanidae		??????	
<i>Pelecanus onocrotalus</i>	White Pelican	u ?r?SrR	Pelican blanc
<i>Pelecanus crispus</i>	Dalmatian Pelican	r?U?? Yr	Pelican frise
<i>Pelecanus rufescens</i>	Pink-backed Pelican	ftr?uR rR	Pelican gris
Herons, Ardeidae		???? ???	
<i>Botaurus stellaris</i>	Bittern	Ø?U?R	Butor etoile
<i>Ixobrychus minutus</i>	Little Bittern	u?ZU R?U?R	Blongois nain
<i>Nycticorax nycticorax</i>	Night Heron	¿ ?R?U?	Heron bihoreau
<i>Ardeola ralloides</i>	Squacco Heron	u?ZU u ?BR	Heron crabier
<i>Bubulcus ibis</i>	Cattle Egret	r?U?R?U?R	Heron garde-boeufs
<i>Egretta garzetta</i>	Little Egret	u?ZU u ?R?U?	Aigrette garzette

<i>Egretta Alba</i>	Great White Egret	u??u ?R?U?	Grande Aigrette
<i>Ardea cinerea</i>	Grey Heron	ftr?u ?U?	Heron cendre
<i>Ardea purpurea</i>	Purple Heron	?RSUR?U?	Heron pourpre
Storks, Ciconiidae		???????	
<i>Ciconia nigra</i>	Black Stork	t?URb??	Cigogne noire
<i>Ciconia ciconia</i>	White Stork	u ?R??	Cigogne blanche
Ibises, Threskiornithidae		???? ???	
<i>Plegadis falcinellus</i>	Glossy Ibis	Y??R;S??R	Ibis falcinelle
<i>Platalea leucorodia</i>	Spoonbill		Spatule blanche
Flamingos, Phoenicopteridae		???????	
<i>Phoenicopterus ruber</i>	Greater Flamingo	u??R? ?R	Flamant rose
Wildfowl, Anatidae		?? ??	
<i>Cygnus olor</i>	Mute Swan	S ?U ?R	Cygne tubercule muet
<i>Anser fabalis</i>	Bean Goose	i ?Z?R?	Oie des moissons
<i>Anser albifrons</i>	White-fronted Goose	?RzR??R	Oie rieuse
<i>Anser anser</i>	Greylag Goose	r?r?u?R? R	Oie cendree
<i>Tadorna ferruginea</i>	Ruddy Shelduck	u? ? R?r?u?UR	Tadorne casarca
<i>Tadorna tadorna</i>	Shelduck	??R?UR	Tadorne de Belon
<i>Anas Penelope</i>	Wigeon	RU R	Canard siffleur
<i>Anas strepera</i>	Gadwall	fur?Uur	Canard chipeau
<i>Anas crecca</i>	Teal	f?dJZ U	Sarcelle d'hiver
<i>Anas platyrhynchos</i>	Mallard	furUTR	Canard colvert
<i>Anas acuta</i>	Pintail	R?R	Canard pilet
<i>Anas querquedula</i>	Garganey	??U Z U	Sarcelle d'ete
<i>Anas clypeata</i>	Shoveler	Z uS?RrR	Canard souchet
<i>Marmaronetta angustirostris</i>	Marbled Teal	uuT? Z U	Sarcelle mabree
<i>Netta rufina</i>	Red-crested Pochard	S?S?R?R? R	Nette rousse
<i>Aythya ferina</i>	Pochard	f?R?	Fuligule miluoin
<i>Aythya nyroca</i>	Ferruginous Duck	u? ? ?UR	Fuligule nyroca
<i>Aythya fuligula</i>	Tufted Duck	t?U?UR	Fuligule morillon
<i>Melanitta fusca</i>	Velvet Scoter	????u?u?UR	Macreuse brune
<i>Bucephala clangula</i>	Common Goldeneye	??R?UR	Garrot a oeil dor
<i>Mergus serrator</i>	Red-breasted Merganser	r U?R	Harle huppe
Birds of Prey, Accipitridae		???????	
<i>Pernis apivorus</i>	Honey Buzzard	i ?R?	Bondree apivore
<i>Pernis ptilorhynchus</i>	Crested Honey Buzzard		Bondree orientale

<i>Falco subbuteo</i>	Hobby	ð ????U	Faucon hobereau
<i>Falco eleonora</i>	Eleonora's Falcon	R?????R?U	Faucon d'Eleonore
<i>Falco biarmicus</i>	Lanner Falcon	ut R?U R	Faucon lanier
<i>Falco cherrug</i>	Saker Falcon	u?U	Faucon sacre
<i>Falco peregrinus</i>	Peregrine Falcon	ð ??UR	Faucon pelerin
<i>Falco pelegrinoides</i>	Barbary Falcon	?ruz?ð ??rU	Faucon de barbarie
Gamebirds, Phasianidae		?????I?	
<i>Alectoris chukar</i>	Chukar	¿SR	Pedrix chukar
<i>Alectoris graece</i>	Rock Partridge	uTU RSt	Perdrix bartavelle
<i>Ammoperdix heyi</i>	Sand Partridge	??u RSt R	Perdrix de Hey
<i>Francolinus francolinus</i>	Black Francolin	t?URSt	Francolin noir
<i>Coturnix coturnix</i>	Quail	f u?R	Caille des bles
<i>Phasianus colchicus</i>	Pheasant	S ?U??R	Faisan de chasse
Rails, Rallidae		?????I?	
<i>Rallus aquaticus</i>	Water Rail	???Ryu?	Rale d'eau
<i>Porzana porzana</i>	Spotted Crake	ru ???Ryu?R	Marouette ponctuee
<i>Porzana parva</i>	Little Crake	R?ZU Ryu?R	Marouette poussin
<i>Porzana pusilla</i>	Baillon's Crake	ð ???ryu?	Marouette de Baillon
<i>Crex crex</i>	Corncrake	?UR	Rale de genets

<i>Callinula chloropus</i>	Moorhen	???RSSt	Poule d'eau
<i>Porphyrio porphyrio</i>	Purple Gallinule	r ?R?SuRizR	Porphyriion bleu
<i>Fulica atra</i>	Coot	RizR	Foulque macroule
Cranes, Gruidae		??????	
<i>Grus grus</i>	Common Crane	ftr?uR?u?R	Grue cendree
<i>Anthropoides virgo</i>	Demoiselle Crane	??uR	Grue demoiselle
Bustards, Otididae		??????	
<i>Tetrax tetrax</i>	Little Bustard	R?ZU Rurt R	Outarde canepetiere
<i>Chlamydotis undulata</i>	Houbara Bustard	?urrtR	Outarde houbara
Oystercatcher, Haematopodidae		???????	
<i>Haematopus ostralegus</i>	Oystercatcher	urt?R??	Huitrier pie
Avocet & stilt, Recurvirostridae		???????	
<i>Himantopus himantopus</i>	Black-winged Stilt	¿ Uz??R?R	Echasse blanche

<i>Recurvirostra avosetta</i>	Avocet	SU?R	Avocette a manteau noir
Crab Plover, Dromadidae		? ?????	
<i>Dromas ardeola</i>	Crab Plover	u??? R	Drome ardeole
Stone Curlew, Burhinidae		???????	
<i>Birhinus oediconemus</i>	Stone Curlew	RU??R	Oediconeme criard
Praticoles, Glareolidae		????µ ? ?	
<i>Cursorius cursor</i>	Cream-coloured Courser	? ?y Ð Ru?	Courvite isabelle
<i>Glareola pratincola</i>	Collared Pratincole	b?u?RU?R	Glareole a collier
<i>Glareola nordmanni</i>	Black-winged Pratincole	šr?S?RU?R	Glareole a ailes noires
Plovers, Charadriidae		??s ? ?	
<i>Charadrius dubius</i>	Little Ringed Plover	u?U b ?u?bR?U	Petit Gravelot
<i>Charadrius hiaticula</i>	Ringed Plover	b?u?bR?U	Grand Gravelot
<i>Charadrius alexandrinus</i>	Kentish Plover	fut?UBR?U	Gravelot a collier interrompu
<i>Charadrius leschenaulti</i>	Greater Sand Plover	u?R?u?BR?U	Gravelot de leschenault
<i>Charadrius asiaticus</i>	Caspian Plover	? ?U?bR?U	Gravelot asiatique
<i>Charadrius morinellus</i>	Dotterel	urZBR?U	Pluvier guignard
<i>Pluvialis fulva</i>	Pacific Golden Plover	????Ur?r?bR?U	Pluvier fauve
<i>Pluvialis apronaria</i>	European Golden Plover	?r?u?R?bR?U	Pluvier dore
<i>Pluvialis squatarola</i>	Grey Plover	ftr?u bR?U	Pluvier argente
<i>Hoplopterus spinosus</i>	Spur-winged Plover	šr?S?R??U?bR?U	Vanneau eperonne
<i>Chettusia gregaria</i>	Sociable Plover	?yr?sSBR?U	Vanneau sociable
<i>Vanellus banellus</i>	Lapwing	ur?u	Vanneau huppe
Waders, Scolopacidae		???? ?	
<i>Calidris canutus</i>	Knot	u?RS?ut	Becasseau maubeche
<i>Calidris alba</i>	Sanderling	Ð R?ut?R	Becasseau sanderling
<i>Calidris minuta</i>	Little Stint	R?zU rS?ut	Becasseau minute
<i>Calidris temminckii</i>	Temminck's Stint	? ?s?S?ut	Becasseau de Temminck
<i>Calidris ferruginea</i>	Curlew Sandpiper	ur???? ?f?u?u	Becasseau cocorli
<i>Calidris alpina</i>	Dunlin	rS?uR	Becasseau variable

<i>Limicola falcinellus</i>	Broad-billed Sandpiper	ur????R ?uy f ?u?u	Becasseau falcinelle
<i>Philomachus pugnax</i>	Ruff	r RSt	Combattant varie
<i>Lymnocyptes minimus</i>	Jack Snipe	u?zU R?UR	Becassine sourde
<i>Gallinago gallinago</i>	Common Snipe	R?UR	Becassine des marais

<i>Gallinago media</i>	Great Snipe	u ???R?UR	Becassine double
<i>Scolopax rusticola</i>	Woodcock	u ul fSrSt	Becasee des bois
<i>Limosa limosa</i>	Black-tailed Godwit	¿ ?URR?Ur ????	Barge a queue noire
<i>Limosa lapponica</i>	Bar-tailed Godwit	¿ ?URu T?r ????	Barge rousse
<i>Numenius phaeopus</i>	Whimbrel	u?zU R?RRu?	Courlis corlieu
<i>Numenius arquata</i>	Curlew	??RRu?	Courlis cendre
<i>Tringa erythropus</i>	Spotted Redshank	u ?URUR? R?u?u	Chevalier arlequin
<i>Tringa tetanus</i>	Redshank	brU?R? R?u?u	Chevalier gambette
<i>Tringa Stagnatilis</i>	Marsh sandpiper	TœrR?u?u	Chevalier stagnatile
<i>Tringa nebularia</i>	Greenshank	brURU TR?u?u	Chevalier aboyeur
<i>Tringa ochropus</i>	Green Sandpiper	uUT?R?u?u R	Chevalier cul-blanc
<i>Tringa glareola</i>	Wood Sandpiper	u f?zR?u?u	Chevalier sylvain
<i>Xenus cinereus</i>	Terek Sandpiper	urz?f?u?u	Bargette de terek
<i>Actitis hypoleucos</i>	Common Sandpiper	ftr ?yR?u?u	Chevalier guignette
<i>Arenaria interpres</i>	Turnstone	??Rir??	Tournepiere a collier
<i>Phalaropus lobatus</i>	Red-necked phalarope	rr?u R? R?u?	Phalarope a bec etroit
Skuas, Stercorariidae		??????	
<i>Stercorarius pomarinus</i>	Pomarine Skua	??u?? R?U	Labbe pomarin
<i>Stercorarius parasiticus</i>	Arctic Skua	?ruR?U	Labbe parasite
Gulls, Laridae		??????	
<i>Larus hemprichii</i>	Sooty Gull	? r u u??	Goeland d'Hemprich
<i>Larus ichthyaetus</i>	Great Blacked-headed Gull	u? ?u R?R?UR u??	Goeland ichtyaete
<i>Larus melanocephalus</i>	Mediterranean Gull	u U?S?R ??R rR u??	Mouette melanocephale
<i>Larus minutus</i>	Little Gull	u?zU u u??	Mouette pigne

<i>Larus ridibundus</i>	Black-headed Gull	u R?R?UR u??	Mouette rieuse
<i>Larus genei</i>	Slender-billed Gull	ur???R?tsJ?u u??	Goeland railleur
<i>Larus audouini</i>	Audouin's Gull	ð ?tR u??	Goeland d'Audouin
<i>Larus canus</i>	Common Gull	ftr?yR u??	Goeland cendre
<i>Larus fuscus</i>	Lesser Black-backed Gull	u?ZU u?WR?UR u??	Goeland brun
<i>Larus cachinnans</i>	Yellow-legged Gull	brUR?U R u??	Goeland argente
<i>Larus armenicus</i>	Armenian Gull	r???UR u??	Goeland d'Armenie
<i>Larus marinus</i>	Great Black-backed Gull	u?u?u?WR?UR u??	Goeland marin
<i>Rissa Tridactyla</i>	Kittiwake	????S??u u??	Mouette tridactyle
<i>Gelochelidon nilotica</i>	Gull-billed Tern	??ut r Ž ruT	Sterne hansel
<i>Sterna bengalensis</i>	Lesser Crested Tern	u?zU S?s?ut r Ž ruT	Sterne voyageuse
<i>Sterna sandvicensis</i>	Sandwich Tern	u s?r?Uutr r Ž ruT	Sterne caugek
<i>Sterna hirundo</i>	Common Tern	ftr?yR r Ž ruT	Sterne pierregarin
<i>Sterna albifrons</i>	Little Tern	u?zUutr r Ž ruT	Sterne naine
<i>Chlidonias hybridus</i>	Whiskered Tern	? t s?ut r Ž ruT	Guifette moustac
<i>Chlidonias niger</i>	Black Tern	t?UR r Ž ruT	Guifette noire
<i>Chlidonias leucopterus</i>	White-winged Black Tern	?R?UR r Ž ruT šr ŠR	Guifette leucoptere
Sandgrouse, Pteroclididae		???t ???	
<i>Pterocles orientalis</i>	Black-bellied Sandgrouse	ður R?URru?	Ganga unibande
<i>Pterocles alchata</i>	Pin-tailed Sandgrouse	? R?y ru?	Ganga cata
Pigeons, Columbidae		????????	
<i>Columba livia</i>	Rock Dove	?t RU ? ?S ?r? u t ?JU??R	Pigeon biset
<i>Columba oenas</i>	Stock Dove	fur ?r?	Pigeon columbin
<i>Columba palumbus</i>	Woodpigeon	??R	Pigeon ramier
<i>Streptopelia decaocto</i>	Collared Dove	b?u? ???	Tourterelle turque
<i>Streptopelia turtur</i>	Turtle Dove	iZus	Tourterelle des bois
<i>Streptopelia senegalensis</i>	Laughing Dove	???	Tourterelle maillee
Parrots, Psittacidae		????????	
<i>Psittacula krameri</i>	Ring-necked Parakeet	r ??u?r ??? Rit	Perruche a collier
Cuckoos, Cuculidae		????????	
<i>Clamator glandarius</i>	Great Spotted Cuckoo	u ??u?u?bR??	Coucou-geai
<i>Cuculus canorus</i>	Common Cuckoo	ftr?yR R??	Coucou gris

Barn Owls, Tytonidae		???? ? ?	
<i>Tyto alba</i>	Barn Owl	r ???R	Chouette effraie
Owls, Strigidae		??????	
<i>Otus scops</i>	European Scops owl	?r?u??R r??Ur??r	Hibou petit-duc
<i>Bubo bubo</i>	Eagle Owl	?uU? ??r	Hibou grand-duc
<i>Ketupa zeylonensis</i>	Brown Fish Owl	r ???R ?UR??r	Ketupa brun
<i>Athene noctua</i>	Little Owl	R??U r??r	Cheveche d'Athene
<i>Strix aluco</i>	Tawny Owl	?R?U?R?R	Chouette hulotte
<i>Asio otus</i>	Long-eared Owl	??u ?R?R?R?R	Hibou moyen-duc
<i>Asio flammeus</i>	Short-eared Owl	u?U ?R?R?R?R	Hibou des marais
Nightjars, Caprimulgidae		????d ?	
<i>Caprimulgus europaeus</i>	European Nightjar	?r?u?R?y ?rO	Engoulevent d'Europe
Swifts, Apodidae		????d ?	
<i>Apus apus</i>	Common Swift	ftry Ž uT	Martinet noir
<i>Apus pallidus</i>	Pallid Swift	S?rr Ž uT	Martinet pale
<i>Apus melba</i>	Alpine Swift	u?U?R	Martinet alpin
<i>Apus affinis</i>	Little Swift	u?U Ž uT	Martinet des maisons
Kingfishes, Alcedinidae		??????	
<i>Halcyon smyrnensis</i>	White-breasted Kingfisher	utU ?R ?R?UR?U	Martin-pecheur de smyrne
<i>Alcedo atthis</i>	Common Kingfisher	??R?U	Martin-pecheur d'Europe
<i>Ceryle rudis</i>	Pied Kingfisher	Y??R?UR?U	Alcyon pie
Bee-eaters, Meropidae		????????	
<i>Merops persicus</i>	Blue-cheeked Bee-eater	tT ?uU?R?u?	Guepier de Perse
<i>Merops apiaster</i>	European Bee-eater	?r?u?BR?u?	Guepier d'Europe
Rollers, Coraciidae		????? ?	
<i>Coracias garrulus</i>	European Roller	?r?u?BR?U	Rollier d'Europe
Hoopoe, Upupidae		????????	
<i>Upupa epops</i>	Hoopoe	t?t?R	Huppe fasciee
Woodpeckers, Picidae		????????	
<i>Jynx torquilla</i>	Wryneck	?R?R	Torcol fourmilier
<i>Dendrocopus syriacus</i>	Syrian Woodpecker	fu?UR?UR?R?	Pic syriaque
Larks, Alaudidae		??????	
<i>Eremalauda dunni</i>	Dunn's Lark	Ø R Rir?	Ammomane de Dunn

<i>Ammomanes deserti</i>	Desert Lark	??tU ?Rr?	Ammomane du desert
<i>Ammomanes cincturus</i>	Bar-tailed Lark		Ammomane elegante
<i>Alaemon alaudipes</i>	Hoopoe Lark	r ?t? Rr?	Sirli du desert
<i>Melanocorypha calandra</i>	Calandra Lark	Rt?? Rr?	Alouette calandra
<i>Melanocorypha bimaculata</i>	Bimaculated Lark	ru ?? Rr?	Alouette monticole
<i>Melanocorypha yeltoniensis</i>	Black Lark	?R?U Rr?	Alouette negre
<i>Calandrella brachydactyla</i>	Short-toed Lark	YrrU ?RR?U ?Rr?	Alouette calandrelle
<i>Calandrella rufescens</i>	Lesser Short-toed Lark	R?zU YrrU ?RR?U ?Rr?	Alouette pispolette
<i>Galerida cristata</i>	Crested Lark	rS?s? Rr?	Cochevis huppe
<i>Lullula arborea</i>	Woodlark	RrzRr?	Alouette lulu
<i>Alauda arvensis</i>	Skylark	ur?	Alouette des champs
<i>Eremophila alpestris</i>	Shore Lark	u RU?Rr?	Alouette hausse-col
<i>Eremophila bilopha</i>	Temminck's Horned Lark	??sRr?	Alouette bilophe
Swallows, Hirundinidae		????d ?	
<i>Riparia riparia</i>	Sand Martin	CU RU?R ruT	Hirondelle de rivage
<i>Ptyonoprogne rupestris</i>	Crag Martin	b?RU?RZ ruT	Hirondelle des rochers
<i>Hirundo rustica</i>	Barn Swallow	????U	Hirondelle rustique
<i>Hirundo daurica</i>	Red-rumped Swallow	USY?R? R??U	Hirondelle rousseline
<i>Delichon urbica</i>	House Martin	?t RU ? ruT	Hirondelle de fenetre
Pipits, Motacillidae		??????	
<i>Anthus richardi</i>	Richard's Pipit	turUs?ur?US	Pipit de Richard
<i>Anthus campestris</i>	Tawny Pipit	RtU ?RUS	Pipit rousseline
<i>Anthus similis</i>	Long-billed Pipit	ur??R??u r?US	Pipit a long bec
<i>Anthus trivialis</i>	Tree Pipit	uSRUS	Pipit des arbres
<i>Anthus pratensis</i>	Meadow Pipit	?RUS	Pipit des pres
<i>Anthus servinus</i>	Red-throated Pipit	b? ?R? r?US	Pipit a gorge rousse
<i>Anthus spinoletta</i>	Water Pipit	??RUS	Pipit spioncelle
<i>Motacilla flava</i>	Yellow Wagtail	?R?U Y?Y?U?O	Bergeronnette printaniere
<i>Motacilla citreola</i>	Citrine Wagtail	R?R?U Y? Y?U?O	Bergeronnette citrine
<i>Motacilla cinerea</i>	Grey Wagtail	?r?u Y?Y?U?O	Bergeronnette des ruisseaux

<i>Sylvia cantillans</i>	Subalpine Warbler	t?uU?RSU?	Fauvette passerinette
<i>Sylvia mystacea</i>	Menetries's Warbler	f s??rSU?	Fauvette de Menetries
<i>Sylvia melanocephala</i>	Sardinian Warbler	f??uUrSU?	Fauvette melanocephale
<i>Sylvia melanothorax</i>	Cyprus Warbler	u ur?rSU?	Fauvette de Chypre
<i>Sylvia rueppelli</i>	Ruppell's Warbler	jr?u rSU?	Fauvette masquee
<i>Sylvia hortensis</i>	Orphean Warbler	bOrt ?SU?	Fauvette orphee
<i>Sylvia nisoria</i>	Barred Warbler	rtU??rSU?	Fauvette eperviere
<i>Sylvia curruca</i>	Lesser Whitethroat	?uz ?RU?RU ?r?T	Fauvette babillarde
<i>Sylvia communis</i>	Whitethroat	u?URU ?r?T	Fauvette grisette
<i>Sylvia borin</i>	Garden Warbler	D ?SU?rSU?	Fauvette des jardins
<i>Sylvia atricapilla</i>	Blackcap	RU????rR	Fauvette a tete noire
<i>Phylloscopus(trochiloides) nitidus</i>	Green Warbler	?RUUT r SU?	Pouillot verdatre
<i>Phylloscopus bonelli</i>	Bonelli's Warbler	????rSU?	Pouillot de Bonelli
<i>Phylloscopus sibilatrix</i>	Wood Warbler	Rr?SU?	Pouillot siffleur
<i>Phylloscopus neglectus</i>	Plain Leaf Warbler	bu?rSU?	Pouillot modeste
<i>Phylloscopus collybita</i>	Chiffchaff	lUs??Us	Pouillot Veloce
<i>Polluscopus trochilus</i>	Willow Warbler	Z rU ?U ?SU?	Pouillot fitis
<i>Regulus regulus</i>	Goldcrest	Ss?Rr?U	Roitelet huppe
<i>Regulus ignicapillus</i>	Firecrest	Ss?Rur?	Roitelet a triple bandeau
Flycatchers, Muscicapidae		? ?????? ?	
<i>Muscicapa striata</i>	Spotted Flycatcher	u ?u?RrUR urT	Gobemouche gris
<i>Ficedula semitorquata</i>	Semi-collared Flycatcher	b?u??RURrUR urT	Gobemouche a demi-collier
<i>Ficedula albicollis</i>	Collared Flycatcher	b?u?RrUR urT	Gobemouche a collier
<i>Ficedula hypoleuca</i>	Pied Flycatcher	Y??RrUR urT	Gobemouche noir
Tits, Paridae		??????	
<i>Panurus biarmicus</i>	Bearded Tit	? t s?U?u	Mesange a moustaches
<i>Parus lugubris</i>	Sombre Tit	D ?U ? ?UR	Mesange lugubre

<i>Parus ater</i>	Coal Tit	??t?? u??R	Mesange noir
<i>Parus caeruleus</i>	Blue Tit	buU??R u??R	Mesange bleue
<i>Parus major</i>	Great Tit	u??R u??R	Mesange charbonniere
Nuthatches, Sittidae		????G? ??	
<i>Sitta europea</i>	Nuthatch	bt??R ??	Sitelle torchepot
<i>Sitta neumayer</i>	Western Rock Nuthatch	?ruz?RuTU Bt??R ??	Sittelle des rochers
Wallcreepers, Tichodromadidae			
<i>Tichodroma muraria</i>	Wallcreeper	Þ ru? BUs?	Tichodrome echelette
Penduline Tit, Remizidae		???????	
<i>Remiz pendulinus</i>	Penduline Tit	Þ ??? ?Z u?	Mesange remiz
Sunbirds, Nectariniidae		???S??	
<i>Nectarinia Osea</i>	Palestine Sunbird	? ??uU??R??U??U y	Soui-manga de palastine
Orioles, Oriolidae		????µ ?	
<i>Oriolus oriolus</i>	Golden Oriole	S?sB?U y ?rWZU	Loriot d'Europe
Shrikes, Laniidae		???????	
<i>Lanius isabellinus</i>	Isabelline Shrike	R??R? ?R?uU	Pie-grieche isabelle
<i>Lanius collurio</i>	Red-backed Shrike	u?V??R? ?R?uU	Pie-grieche ecorceur
<i>Lanius minor</i>	Lesser Grey Shrike	u?ZU f tr?u R?uU	Pie-grieche a poitrine rose
<i>Lanius meridionalis</i>	Southern Grey Shrike	u??f tr?u R?uU	Pie-grieche grise
<i>Lanius senator</i>	Woodchat Shrike	r??R? ?R?uU	Pie-grieche a tete rousse
<i>Lanius nubicus</i>	Masked Shrike	Y??R?uU	Pie-grieche masquee
Crows, Corvidae		???????	
<i>Garrulus glandarius</i>	Jay	b?uU?R	Geai des chenes
<i>Pica pica</i>	Magpie	bY??R	Pie bavarde
<i>Pyrrhocorax graculus</i>	Alpine Chough	ur??R?U RuU RRZ	Chocard des Alpes
<i>Pyrrhocorax pyrrhocorax</i>	Chough	u??? B? RuU RRZ	Crave a bec rouge
<i>Corvus monedula</i>	Jackdaw	wuU?RRZ	Choucas des tours
<i>Corvus frugilegus</i>	Rook	u??RRZ	Corbeau freux
<i>Corvis corone orientalis</i>	Carrion Crow		Corneille noire
<i>Corvis corone cornix</i>	Hooded Crow	Y?RRZ	Corneille
<i>Corvix corax</i>	Raven	RZR	Grand corbeau

Starlings, Sturnidae		????????	
<i>Sturnus vulgaris</i>	Starling	u?Uu?	Etourneau sansonnet
<i>Sturnus roseus</i>	Rose-coloured Starling	ftu? u?Uu	Etourneau roselin
<i>Acridotheres tristis</i>	Common Mynah		Martin triste
Sparrows, Passeridae		??????	
<i>Passer domesticus</i>	House Sparrow	fu? u?U y	Moineau domestique
<i>Passer hispaniolensis</i>	Spanish Sparrow	? ?rURfu?	Moineau espagnol
<i>Passer montanus</i>	Tree Sparrow	uSU?Rfu?t	Moineu friquet
<i>Carpospiza brachydactyla</i>	Pale Rock Sparrow	r?r?RTU R?u?t	Moineau pale
<i>Petronia xanthocollis</i>	Yellow-throated Sparrow	rr?URU R fu?t	Moineau a gorge jaune
<i>Petronia petronia</i>	Rock Sparrow	uTU Rfu?t	Moineau soulcie
Finches, Fringillidae		????d? ?	
<i>Fringilla coelebs</i>	Chaffinch	s?U R	Pinson des arbres
<i>Fringilla montifringilla</i>	Brambling	? ?S? ?U	Pinson du Nord
<i>Serinus pusillus</i>	Red-fronted Serin	r ?S?R? ?Y?	Serin a front rouge
<i>Serinus serinus</i>	European Serin	?r?u?R?Y?	Serin sini
<i>Serinus syriacus</i>	Syrian Serin	fu?UurY?	Serin syrien
<i>Carduelis chloris</i>	Greenfinch	uUR?U	Verdier d'Europe
<i>Carduelis carduelis</i>	Goldfinch	?t R	Chardonneret elegant
<i>Carduelis spinus</i>	Siskin	??UR?U	Tarin des aulnes
<i>Carduelis cannabina</i>	Linnet	?tr ?S? ?U	Linotte melodieus e
<i>Rhydopechys sanguinea</i>	Crimson-winged Finch	šr ?S? Uu? ?U	Roselin a aile roses
<i>Rhodospiza obsoleta</i>	Desert Finch	?RtU R?U	Roselin de lichtenstein
<i>Bucanetes githagineus</i>	Trumpeter Finch	ftu? u?U	Roselin githagine
<i>Coccothraustes coccothraustes</i>	Hawfinch	? ????	Gros-bec cassenoyaux
Buntings, Emberizidae		????????	
<i>Emberiza leucocephalus</i>	Pine Bunting		Bruant a calotte blanche
<i>Emberiza citronella</i>	Yellowhammer	?R?U R?u??Rut R	Bruant jaune
<i>Emberiza cia</i>	Rock Bunting	u?TU RUt	Bruant fou

<i>Emberiza cineracea</i>	Cinereous Bunting	r ?r?u rUut	Bruant cendre
<i>Emberiza hortulana</i>	Ortolan Bunting	ðsu?RUut	Bruant ortolan
<i>Emberiza caesia</i>	Cretzschmar's Bunting	ur?SUsu?rUut	Bruant cendrillard
<i>Emberiza rustica</i>	Rustic Bunting	Z ?uRUut	Bruant rustique
<i>Emberiza pusilla</i>	Little Bunting	R?zU rUut	Bruant nain
<i>Emberiza schoeniclus</i>	Reed Bunting	R U ?RUut	Bruant des roseaux
<i>Emberiza melanocephala</i>	Black-headed Bunting	u R ?R?UrUut	Bruant melanocephale
<i>Miliaria calandra</i>	Corn Bunting	T???RUut	Bruant proyer

Appendix 3 - Site Descriptions and Site Management

Site 1. Aanjar / Kfar Zabad:

1.1 General Description:

Site is located on the east side of the Bekaa Valley within Aanjar and Kfar Zabad villages. It is on the foot of mountain range on the edge of an agricultural flat plain. The land in Kfar Zabad is owned by the municipality, some parts are privately owned, plus cemetery woodland and woodland at the important archaeological site belong to other organizations.

Brief description of the site : (1) wetland with ecotone, heavily fragmented reed bed (2) river habitat and springs with reeds, willows, popular and pine woods (3) separate pine wood habitat nearby. Regularly seen during visits wild cat, amphibian & reptiles.

The land is used on a primary level as aquaculture/fisheries, & water supply, and on a secondary level as fisheries/aquaculture, hunting, urban/industry/utility, tourism & wildlife conservation/research.

Economic, cultural, social values of the site: tourism, water for agriculture

Conservation measures taken Kfar Zabad is a no-hunting area with guards.

In Aanjar river side there are restaurants encouraging nature conservation (posters have been distributed)

Geographical Coordinates: 33 73 N, 35 95 E with an altitude of 850 m

Total area: 326.069 ha

Habitat coverage: 50% non-marine wetlands, 30% agriculture/cultivation, 20% woodland/forest

Threats: C (Critical), M (Major), L (local)

Critical **C level** threats there are excessive or irresponsible hunting, deliberate persecution of birds and excessive disturbance of birds.

Major **M Level**, diversion of water/canalization, irrigation, and agriculture intensification.

L level there is overgrazing/over browsing, tourism and solid waste pollution such as debris/garbage pollution., use of pesticides and herbicides.

1.2 Supporting notes for Aanjar/Kfar Zabad as a potential IBA

The Kfar Zabad and Aanjar area is a mixture of marshland, constant springs, riverside woodland and three pine woods. The presence of at least 15 pairs of breeding **Syrian Serins** in spring 2005 (see tabulated sightings below) justifies the site's proposal as an **IBA under category A1 criterion**. The absence of this Middle Eastern endemic from two of its supposed breeding strongholds (Tannourine Cedars and Ehden forest) in spring and summer 2005 only further emphasizes the importance of this lower lying area. The Kfar Zabad marshes at the north end of the proposed IBA have in 2005 been put under protection by the local municipality that owns the land and hunting has been banned. Local people have received training in bird identification and some are

employed as guards at the site, where a reception area has been established. An ancient system of sustainable land management (Hima) is being revived and the local community is becoming involved in other ways (bed and breakfast, selling of local produce at the site etc).

Although the 3 sites where breeding Syrian Serins were detected in 2005 lie outside this protected marshland section of the proposed IBA, they are respectively:

1. An Armenian cemetery, undisturbed (naturally!)
2. Riverside trees, trout farms and restaurants (the people have a vested interest in continued good water quality, shade and tranquility, all to the benefit of wildlife, eg., Otter is regular at the site, where incidentally in 2005 only the second breeding site for Penduline Tit in Lebanon was discovered.
3. The archaeological site of Aanjar ruins, where access is by paying an entrance fee thus protecting it from hunting etc.

All three sub-sites are therefore “managed” in ways that benefit wildlife and the “managers” are sympathetic to the IBA idea.

Although the marshes have been badly degraded in previous years, IBA status would add further impetus to the process already underway in habitat restoration and protection.

Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	23/03/2005 12:00	6	At the springs
Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	05/04/2005 11:45	32	15 pairs seen at 3 different points
Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	16/04/2005 06:40	23	At least 9 singing males
Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	02/05/2005	9	Pair collecting nest material and flying to cypress tree
Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	03/05/2005	10	3 at cemetery, 5 around springs, 2 in village gardens and orchards
Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	25/05/2005 08:00	7	At cemetery, springs and ruins
Syrian Serin (Serinus syriacus)	Aanjar Marshes (Bekaa Valley)	14/07/2005 16:00	2	At the ruins

Sightings of Syrian Serin (Serinus syriacus) at Aanjar/Kfar Zabad potential IBA in 2005

Number of species observed: 69

Number of visits: 11

Dates : 24th February, 23rd March, 5th April, 16th April, 20th April, 2nd May, 3rd May, 25th May, 14th July, 16th July, 27th September

1.3 Site Management Statement – Aanjar/ Kfar Zabad

Introduction

This document provides a summary description of the Aanjar / Kfar Zabad potential-IBA site and some of the bird species to be found there (particular reference to those of conservation concern). It also describes current and future threats to the site and the intention to protect it and manage it to enhance its value for to wildlife.

Site Description

The Kfar Zabad/Aanjar area is a mixture of marshland, constant springs, riparian woodland and three pine woods. The marshland includes *Phragmites* reed-bed, wet meadows, sedge-beds and open water. The ownership of the area is shared between two municipalities as well as numerous private land-owners and a government ministry, which owns the archeological site of Aanjar Ruins. See map 1.4.

Importance of site for birdlife and biodiversity

As well as common reed-bed birds such as Reed, Great-reed, Moustached and Savi's Warblers and Little Bitterns, the wetland also holds one of only two known breeding locations of Penduline Tit in Lebanon.

The woods surrounding the wetland hold good numbers of breeding **Syrian Serins**,(a Vulnerable species. **In 2005 at least 15 pairs bred here, hence the proposal of the site as an IBA under category A1.**

In addition, Otters (*Lutra lutra*) are reportedly regular visitors to the fish farms at the southern end of the area.

Conservation Objectives

1. Syrian Serins

That the numbers of breeding pairs of Syrian Serin will not fall below 15 pairs.

2. Wetland Birds

That the numbers of wetland birds, breeding and on passage, will increase, both in terms of numbers of species and of individuals. In particular, the habitat should be managed to make the site suitable for internationally threatened wetland species, such as Great Snipe and Corncrake, which are known to pass through Lebanon in significant numbers.

3. Migrating Soaring Birds

The wetland habitats at Aanjar/ Kfar Zabad are used by small numbers of soaring birds for roosting during their migrations. There should be no net reduction in the numbers of these birds as a result of passing through the site

Key Management Issues

Hunting

This has been a major problem, particularly in the part of the site which is owned by the municipality of Kfar Zabad. However, from 2005, the municipality has banned hunting and installed guards to prevent hunters from entering the site illegally. The rest of the site, in the municipality of Aanjar, is nearly all in areas which are inaccessible for hunters. These efforts to eliminate hunting should be encouraged and their efficacy assessed.

Grazing

Grazing is a useful management tool in wetlands but excessive grazing can be deleterious. A grazing regime should be devised which would ensure that maximum benefit for the wetland is achieved.

Disturbance

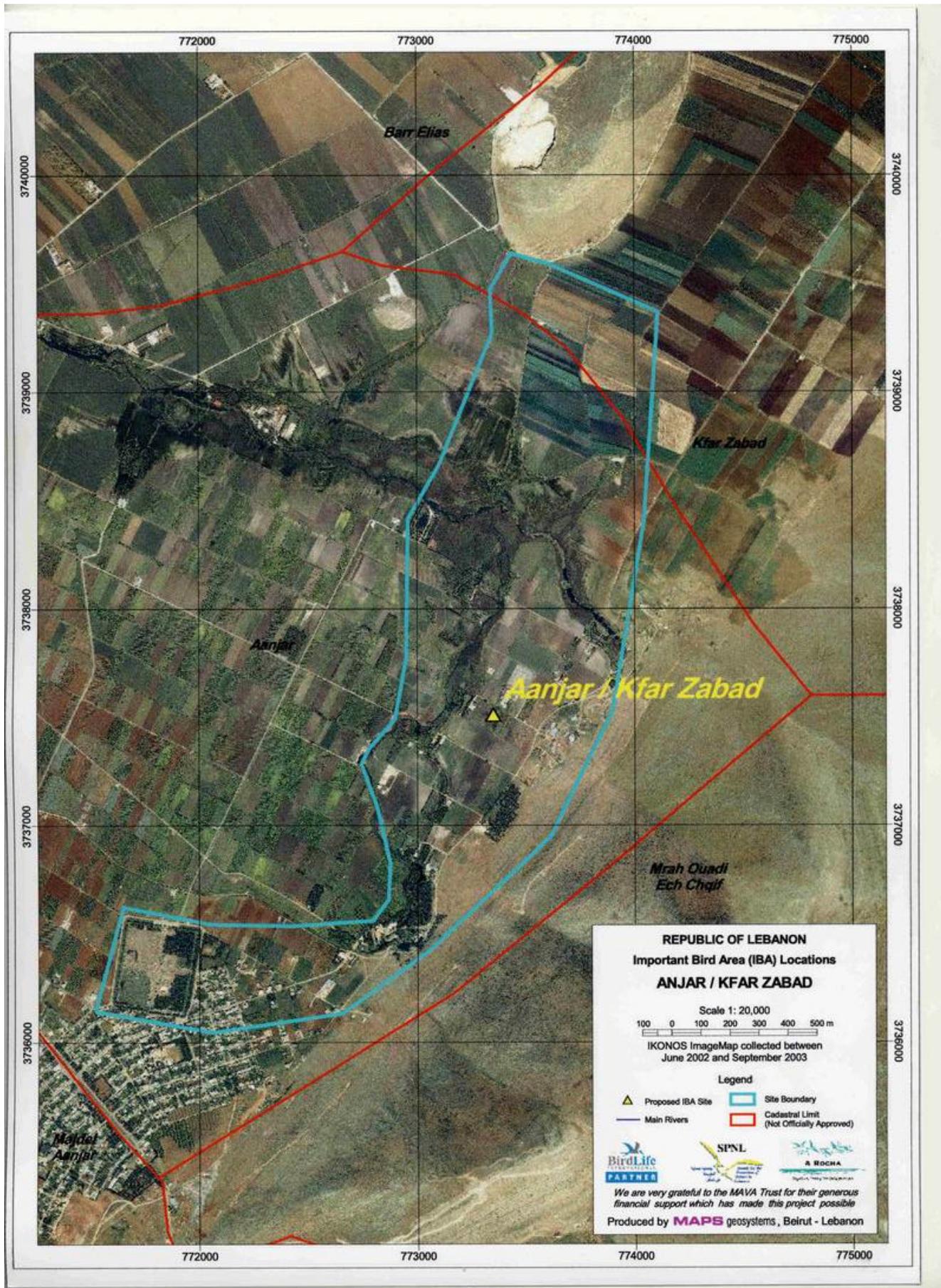
Access to the wetland core of the area should be controlled and channeled along certain routes, so as to reduce disturbance to breeding birds and other wildlife. Discussions should be opened with the owners of the restaurants at Aanjar, and the management of the Aanjar Ruins to consider ways of minimizing the impact of visitors on the breeding birds.

Pollution

There is evidence of pollution of the site, particularly at the Kfar Zabad end, by agricultural run-off. The extent of the problem should be assessed, and if necessary, discussions opened with the land-owners and tenant farmers to look at ways in which it can be reduced.

Loss of Habitat and Development

While the municipality of Kfar Zabad has committed itself to protecting their part of the site, the southern half is owned by several different land-owners and there are currently no measures in place to prevent any one of them from developing their land in ways which would be deleterious to wildlife. All of the local stakeholders should be included in discussions about the importance of the area for wildlife, and how to protect and manage it best.



1.4 Map of Kfar Zabad / Anjar

Site 2 Lake Qaraaoun:

2.1 General Description:

Site is located south of the town of Joub Jannine in the Bekaa Valley. The lake is bounded by mountain ranges on the east and the west sides, formed by the damming of the river flowing south. Limestone outcrops.

Land is used on a primary level as agriculture/ cultivation land, and on a secondary level as, rangeland, hunting area, tourism, and recreation.

Conservation measures taken: none recorded.

Geographical Coordinates: 33 57 N, 35 68 E

Total area: 1190.556 ha

Habitat coverage: 40% agriculture/cultivation, 35% scrub/bush land, 10% woodland, 10% artificial, 5% non-marine wetlands, this habitat description does not include the open water lake itself .

Some low oak trees, rocky scrub, fruit and olive orchards and arable crops, around the lake shore, northern end of the a river gorge, same below at the southern end,

Threats: C (Critical), M (Major), L (local)

Critical **C level** threats there are excessive or irresponsible hunting, and deliberate persecution of birds.

M level there is toxic pollution, debris/ garbage, as well as excessive disturbance to birds (ducks are sometimes chased by hunters by boats).

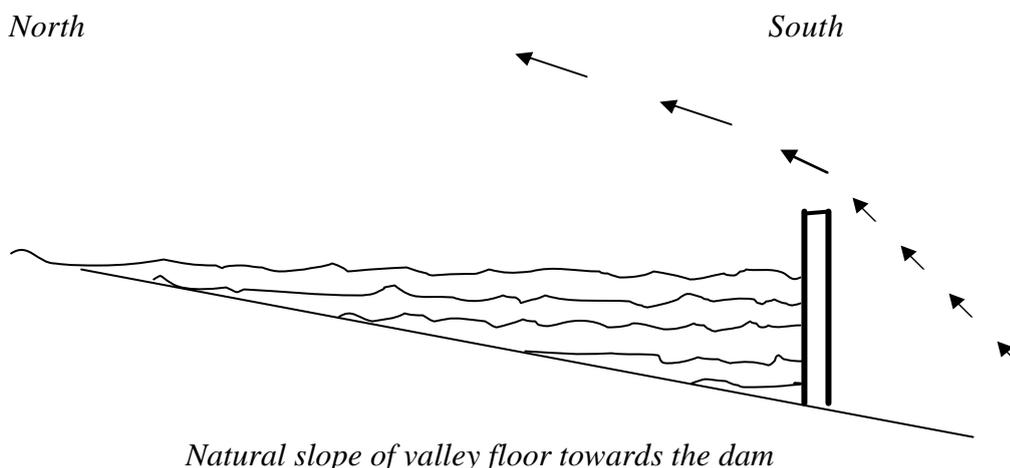
L level there is overgrazing/over browsing, irrigation, development and construction
Tourism a ski resort is proposed at that site.

2.2 Supporting notes for Lake Qaraaoun as a potential IBA

Lake Qaraaoun is the largest freshwater body by far in Lebanon, lying at the Southern end of the Bekaa valley, which is a continuation of the Rift valley itself, a well – documented flyway for raptors and other soaring birds. Our observations from 13 visits in 2005, though not producing the numbers of soaring birds that meet the required thresholds for **Category A4iv IBA status** in this year, nevertheless show the value of the site. Out of 107 species of birds seen, a total of 14 different species of raptor were observed, both Stork species and some White Pelicans. Indeed, the lake is the only inland location in Lebanon that can accommodate Pelicans and flocks of several hundreds are seen each year, despite the prevalence of hunting. In winter the lake supports Shoveler, Teal and Coot at times in congregations of over 1,000 each, plus smaller numbers of diving duck and grebes. In summer and autumn the exposed area of lakebed and edges attract waders and heron species, and in October 2004 three Sociable Lapwing were seen (listed as a “Vulnerable” species, see table 2 below for status of this, and other important species at the site). In 2001 between 8 and 23 March a total of 12315 White Storks and 355 Common Cranes were logged in just 3 visits (prior to the peak migration period for the former species!) it is therefore clear that constant effort monitoring in spring and autumn would produce **more than the 20,000**

threshold of birds sufficient for the site to qualify as an IBA. (See separate appendix below)

A dam at the southern end of the lake results in a steep descent of the valley floor, soaring birds are therefore particularly vulnerable to hunters as they fly low over this area (see diagram). The main municipality around the lake shore has already expressed interest in becoming a “stakeholder” in improving the lake environment and protecting the wildlife.



Lake Qaraaoun – Northbound soaring birds indicated by arrows, pass low over southern end of the lake.

Diagram 1, showing track of migratory soaring birds in spring at vulnerably low level over southern end of the site.

Table 1 Soaring migratory birds at Lake Qaraaoun

Shirihai et al “Raptor migration in Israel and the Middle East”(2000) give peak period dates for migrating raptors in the Middle East, which have been used in the tables below, dates for non-raptor species coming from A Rocha Lebanon’s fieldwork since 1997. Given the chance nature of surveying a site on the “right” day when dealing with biological systems, extrapolation based on known migration phenology has been made. This still gives conservative estimates of likely annual totals if the ACTUAL days of survey were quieter for migration than might be expected on those dates, hence the annual total estimated for 2005 of 14701. Conversely, days of greater migration movements such as were witnessed in March 2001 will give the reverse result. The calculations are made as follows: total of birds seen divided by number of survey visits in the migration period, gives a ”daily” figure, this is then multiplied by the number of days in the 2 peak migration periods to produce an “annual” figure per species for a site. This method of extrapolation has been used before, regionally by C.M.Beale and G.Ramadan-Jaradi in their paper on raptors and other soaring birds published in 2001 in *Sandgrouse* 23 (124-129).

2005 soaring birds observed at Lake Qaraoun in passage periods 4 to 23 April and 22 Aug to 18 October

Species	Total seen	visits/days	Daily total	Days of peak passage	Annual total
White Stork*	408	3	136	31	
Black Stork	140	7	20	78	1560
Black Kite	333	7	48	28	1332
C.Buzzard	10	7	1	47	67
M.Harrier	3	7	0	76	33
E.Sparrowhawk	6	7	1	30	26
Less Sp.Eagle	123	7	18	47	826
Lev Sparrowhawk	5	7	1	24	17
Steppe Eagle	1	7	0	74	11
White Pelican#	471	7	67	97	6527
Long legged Buzzard	8	7	1	62	71
S T Eagle	2	7	0	57	16
					14701

* For White Stork only spring peak passage days (31) used in table as species rarely migrates through Bekaa in autumn

400 Pelicans added to 2005 data (a flock seen 5kms north of the lake at Khirbet on 24 April must have come over the site)

Spring 2001 Soaring birds at Lake Qaraaoun

Species	Total seen	visits/days	Daily total	Days of peak passage	Annual total
White Stork	12195	3	4065	31	126015
Black Stork	122	3	41	61	2481
Black Kite	110	3	37	14	513
M.Harrier	5	3	2	51	85
Comm. Crane	331	3	110	22	2427
					131521

Table 2 Status of key species

SPECIES	International status	Status at site
Imperial Eagle	Vulnerable	Passage migrant
Great Spotted Eagle	Vulnerable	Passage migrant
Pallid Harrier	Near threatened	Passage migrant
Sociable Plover	Vulnerable	Vagrant
Ferruginous Duck	Near threatened	Winter visitor

Number of species observed: 110

Number of visits in 2005: 16

Dates: 5th February, 20th February, 9th March, 4th April, 7th April, 23rd April, 15th July, 4th August, 7th August, 13th August, 22nd August, 29th September, 13th October, 18th October, 23rd October, 30th November.

2.3 Site Management Statement – Lake Qaraaoun

Introduction

This document provides a summary description of Lake Qaraaoun and some of the bird species to be found there (particular reference to those of conservation concern). It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife.

Site description

Lake Qaraaoun is the largest freshwater body by far in Lebanon, lying at the Southern end of the Bekaa valley, which is a continuation of the Rift valley itself, a well – documented flyway for raptors and other soaring birds.

The attached maps show the extent of the site, its boundaries and under which municipalities' responsibility the shoreline falls

The land around the lake down to the highest winter water level is primarily agricultural, on the eastern side it is a mixture of arable crops and olive orchards, with some grazing of sheep and goats, on the western side the more steeply sloping land consists of fruit orchards and rough pasture with grazing. The western shore also has a number of restaurants and hotels, much patronized in late spring and summer, there are at these times three large boats which take people out onto the lake. There are a handful of fishing boats (approx 6). Hunting of birds is popular, in winter the hunters have been known to go out in boats to shoot wildfowl, otherwise the hunters drive on the dried up lake shore in summer and autumn to hunt primarily storks, heron/egrets and lark species.

Also in these latter periods flocks of goats and sheep come onto the former lake bed to graze on vegetation that develops in the damp soil. The level of water drops to such an extent that the lake more than halves in size, leaving a steppe –like habitat of low vegetation and rocks/shingle which attracts large flocks of larks and lapwings.

Importance of site for birdlife and biodiversity

A dam at the southern end of the lake creates a sudden falling away of the valley (see Diagram 1), this has the effect of concentrating soaring migratory species (Storks, raptors, pelicans and cranes) in large numbers at low altitudes during spring and autumn, **hence the proposal for IBA status to be granted under Category A4iv**. For example, in 2001 between 8 and 23 March a total of 12315 White Storks and 355 Common Cranes were logged in just 3 visits. Internationally vulnerable species such as **Imperial Eagle, Greater Spotted Eagle, Sociable Lapwing, Ferruginous Duck and Pallid Harrier** (Table 1) have all been recorded in recent years at the lake; all are currently liable to be hunted, given the unprotected nature of the site. In addition, Qaraaoun is the only inland location in Lebanon that can accommodate **Pelicans** and flocks of several hundreds are seen each year.

Non avian species of note include Spur-thighed (Greek) Tortoise (Vulnerable as per IUCN Red List) and Chameleon.

Conservation objectives

Although the bird species highlighted above are migrants that use the lake and its surrounds, rather than breeding birds and as such are only temporary visitors

(Ferruginous Duck being the exception in that it can winter at the site as well), the main conservation objective is to assist in arresting the decline in population of these species. To this end, the specific objectives are to:

- a) To maintain the over wintering populations of wildfowl and ensure that there is no reduction in numbers of migratory soaring bird as they pass through the site.
- b) To maintain undisturbed feeding and roosting opportunities for wader and passerine flocks.
- c) To increase fringe habitat to better protect and shelter birds and other wildlife in appropriate locations.

Key management issues

Hunting

Without implementation of some degree of control/regulation of hunting activity, the lake will continue to be a high – risk location for birds, rather than a haven or safe point on the migration routes of soaring migratory species.

The involvement of the local municipalities is essential in achieving this and already communication has begun with the local administrative body of the largest of these.

Pollution

Reducing the amount of refuse and industrial/agricultural/domestic effluent that comes into the lake (mostly via the Litani River) is also a key issue. As with the hunting question, the local municipalities, it is planned, will have an involvement, but the river authority will need to be “partners” in the implementation of a cleaner water policy. Encouragingly, a project for improving water quality in the Litani has recently been launched thanks to a grant of \$10Million from USAID.

Access

Reduce disturbance to the exposed lake bed in autumn and early winter.

Habitat creation

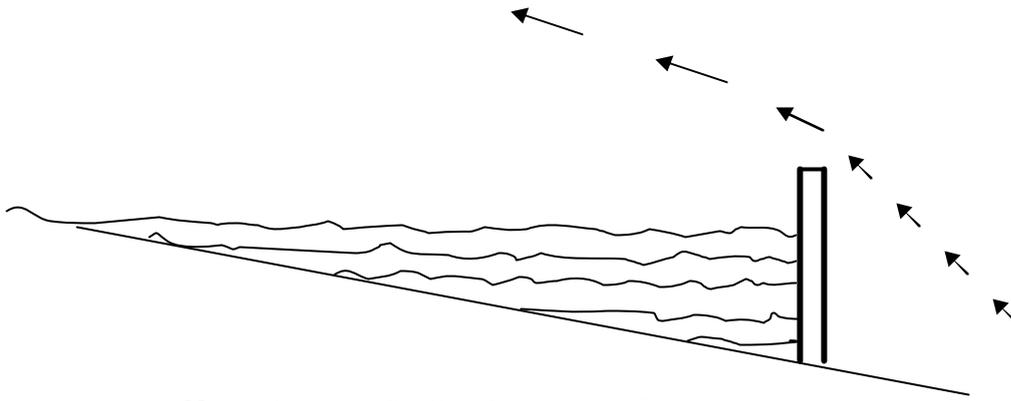
Locate areas around the lake shore and instigate planting of appropriate fringe vegetation.

Table 1 Status of key species

SPECIES	International status	Status at site
Imperial Eagle	Vulnerable	Passage migrant
Great Spotted Eagle	Vulnerable	Passage migrant
Pallid Harrier	Near threatened	Passage migrant
Sociable Plover	Vulnerable	Vagrant
Ferruginous Duck	Near threatened	Winter visitor

North

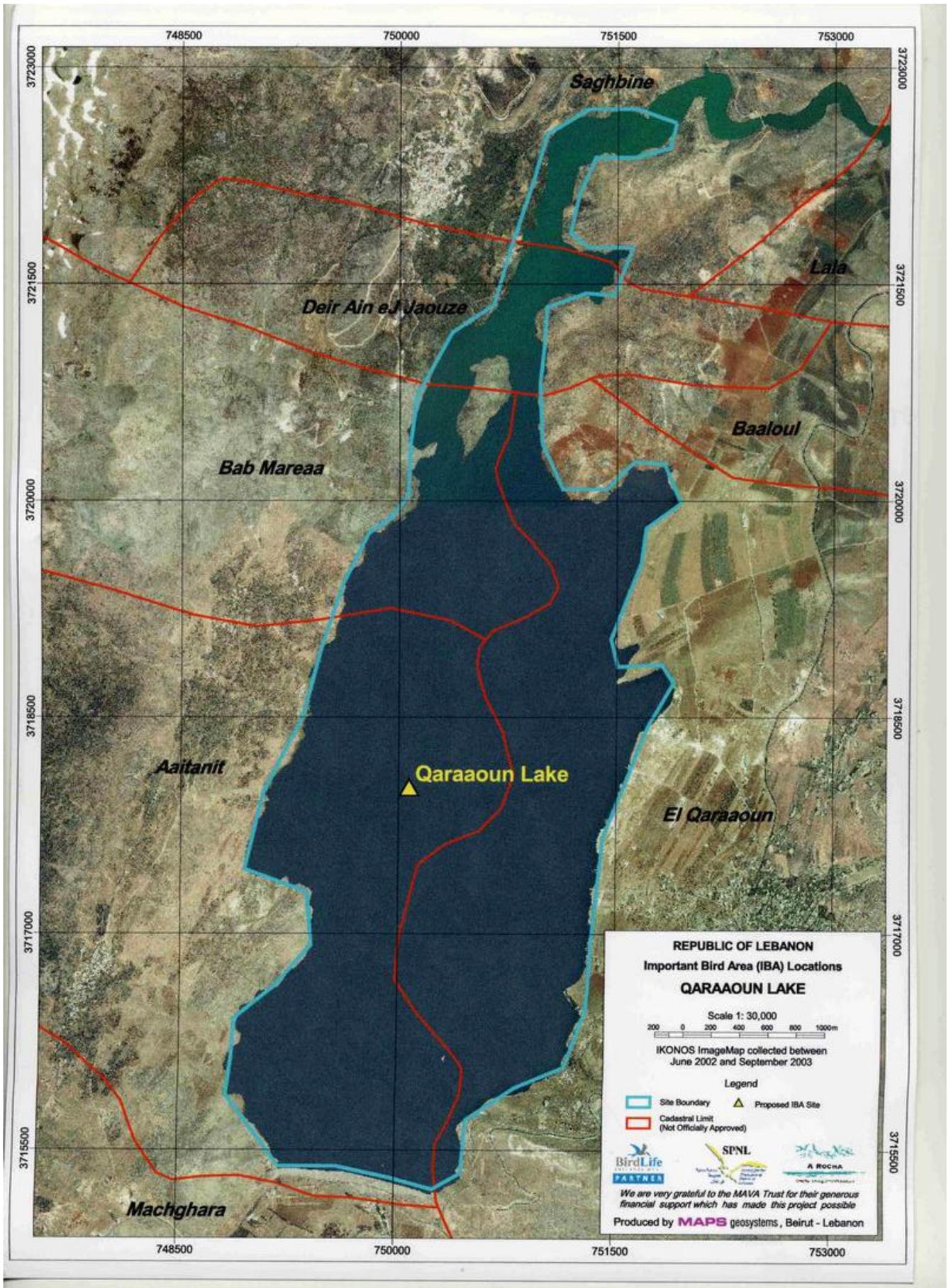
South



Natural slope of valley floor towards the dam

Lake Qaraaoun – Northbound soaring birds indicated by arrows, pass low over southern end of the lake.

Diagram 1, showing track of migratory soaring birds in spring at vulnerably low level over southern end of the site.



2.4 Map of Lake Qaraaoun

Site 3 Riim / Sannine:

3.1 General Description:

Site is located north-west of Zahle. It has mountain slopes and rocky valleys, snow lays from middle mountains and upwards until May, dry from May till October.

A large part of the land is owned by the Riim Water Company. The social values of the site shows an increase since the company is promoting activities for visitors (cycling, walking)

The land is used on a secondary level as rangeland, tourism, and recreation.

Conservation measures taken: much of the mountain is protected from hunting and grazing, some trees have been planted. This is due to initiative of the Riim water company that owns most of the site.

Proposed conservation measures discussions that are still at an early stage with the Riim estate management to make access for illegal hunting more difficult.

Geographical Coordinates: 33 87 N, 35 85 E

Total area: 244.312 ha

Threats: C (Critical), **M** (Major), **L** (local)

Critical C level threats there is excessive or irresponsible hunting, from the spent cartridges on the ground, it is clear that there is considerable hunting activity during migration season, since soaring birds fly low between valleys across part of this area making them easy targets. Spring migrants are mostly unaffected, as snow renders access difficult.

L level there is overgrazing/over browsing, and extraction industry
Tourism, a ski resort is proposed at that site.

3.2 Supporting notes for Riim/Sannine as a potential IBA

The Riim/Sannine potential IBA is an east-facing slope up to the ridge of the Sannine mountain above the town of Zahle. Our observations in 2004 and 2005 indicate that it is of significant importance to large soaring birds, in spring, raptors, storks and cranes approach the area along the west edge of the Bekaa valley or up valleys from Beirut and the coast. Birds are funneled towards the ridge of Riim/Sannine and thermal low overhead before continuing their passage north. They are therefore vulnerable to hunters and the shooting of these large birds is a problem up on the ridge, particularly in autumn when the minor road is free of snow.

No less than 5 Mediterranean biome-restricted species breed on site, **Black-eared Wheatear, Sardinian Warbler, Spectacled Warbler, Cretzchmar's Bunting** and **Black-headed Bunting**, plus the Irano-Turanian highlands restricted **Western Rock Nuthatch** justifying the proposal for **IBA status under category A3**.

Virtually the whole potential IBA belongs to a mineral water company who are very sympathetic towards nature conservation – they have stopped hunting and grazing of the mountainside and are considering preventing access from the public road running along the ridge onto tracks, which should restrict the hunters' ability to shoot over the upper area.

As well as the sightings data input to the BirdLife IBA database it is worth mentioning:

- a) one 4 hour observation on 1 April 2004 when 799 raptors(including **Pallid Harrier** and **Greater Spotted Eagle**) and 435 stork sp were seen.
- b) A total of 2,200 **Honey Buzzards** seen approaching the town of Qab Elias from the Sannine ridge on 26 and 28 August 2005. The table below includes these 2005 Honey Buzzard sightings, it suggests a probable annual figure of over 30,000 soaring migratory birds at the site, justifying the proposal for **IBA status under category A4iv** to be awarded.

Number of species observed: 64

Number of visits in 2005: 8

Dates: 19th March, 11th April, 12th April, 6th May, 18th May, 18th June, 26th September, 8th October.

3.3 Site Management Statement – Riim/Sannine

Introduction

This document provides a summary description of Riim/Sannine and some of the bird species to be found there (particular reference to those of conservation concern). It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife.

Site description

The Riim/Sannine potential IBA is an east-facing slope up to a ridge of the Sannine mountain above the town of Zahle. The slopes are a mixture of rocky outcrops, thin soil and low spiny bushes, the higher areas being of tragocanth habitat. Some tree planting has been carried out on the slopes in the last three years, reversing the effects of decades of over-grazing. However the ridge area is severely degraded by excessive grazing and damage from 4WD vehicles.

The attached maps show the extent of the site, its boundaries and under which municipalities' responsibility the site falls. However virtually the whole potential IBA belongs to a mineral water company.

Importance of site for birdlife and biodiversity

In Spring, raptors, storks and cranes approach the area along the west edge of the Bekaa valley or up valleys from Beirut and the coast. Birds are funnelled towards the ridge of Riim/Sannine and can thermal very low overhead before continuing their passage north. Lesser Spotted Eagles and Honey Buzzards are particularly numerous at peak migration times, and **Greater Spotted Eagle** (Vulnerable species) and **Pallid Harrier** (Near threatened) were observed on visits in 2004 and 2005. At dusk in spring and autumn raptors use the low trees and bushes for overnight roosting. Using known migration phenology through the region, extrapolation of daily totals of soaring migratory birds seen over, and descending from the site, to coast along the Barouk ridge suggests probable numbers exceeding an annual 20,000, hence the **proposal for IBA status to be granted under category A4iv**. In addition, five Mediterranean biome-restricted species breed at the site, hence the **recommendation for IBA status to be granted under category A3**.

Conservation objectives

1. Migratory soaring birds

Although the species are migrants that use the mountain and its surrounds temporarily, the first conservation objective is to ensure that there is no net reduction in numbers of these birds as they pass through the site.

2. Breeding birds

The maintenance of the populations of the breeding biome –restricted species, **Black-eared Wheatear, Sardinian Warbler, Spectacled Warbler, Cretzchmar’s Bunting** and **Black-headed Bunting** is the second objective

Key management issues

Hunting

Without implementation of some degree of control/regulation of hunting activity, the mountain will continue to be a high – risk location for birds, rather than a haven or safe point on the migration routes of soaring migratory species.

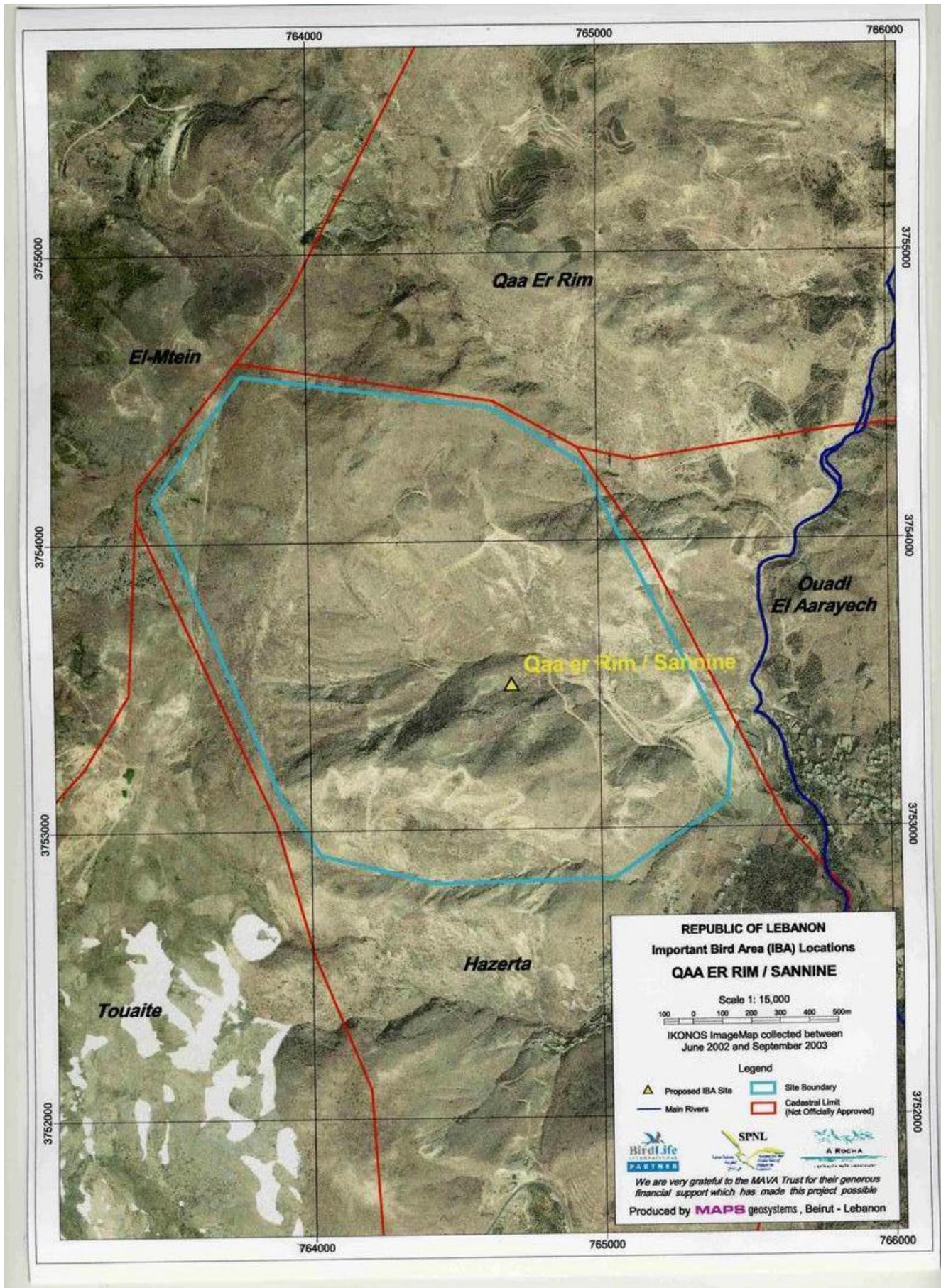
The involvement of the local municipalities/land owners is essential in achieving this and preliminary discussions have begun with the water company, who in fact already maintain the majority of the site as a “protected area”.

Action: Establish a no hunting zone with appropriate signage and a guarding system with trained staff.

Habitat degradation

Although the water company restrict access to the lower slopes and allow no grazing or picnicking (picnickers are notorious producers of refuse locally) the fragile habitat higher up has numerous tracks, onto which heavy 4WD vehicles drive, causing increased erosion and disturbance.

Action: Prevent access for all vehicles to the site apart from the one road, introduce a planned grazing regime.



3.4 Map of Riim Sannine

Site 4 Tannourine Cedars:

4.1 General Description:

Site is located in the north, on a mountainside cedar forest and surrounding gorges and valleys. The criterion for the selection was the presence of globally threatened species and site is a migratory “bottle neck”.

Economic, cultural, and social values of site, local shops and hotels will surely benefit from visiting tourists.

Conservation measures taken: Site is used as a natural reserve under the auspices of the ministry of environment, the area is protected by 2 guards, and no there is no hunting, fires or camping.

Geographical Coordinates: 34 20 N, 35 93 E with an altitude of 1835 m

Habitat coverage: 75% woodland/forest, 25% scrub/ bush land

Threats: C (Critical), M (Major), L (local)

None indicated in the IBA sheets.

4.2 Supporting notes for Tannourine Cedars as an IBA

Tannourine Cedars is already a Lebanese Nature Reserve, forming part of the largest remaining cedar forest in the country. A previous study into Syrian Serin breeding populations in Lebanon (Ramadan-Jaradi & Ramadan-Jaradi 2002) concluded that the forest had a higher density of breeding Syrian Serins than any other of the sites studied with 124 pairs estimated in 2001/2. Although the species did not breed at Tannourine in 2005 the site presumably should **qualify from this data alone under category A1**. Our observation of two flocks of White Pelicans, totaling 900 birds, low over the site on 14 November 2005 emphasizes the importance of the Reserve for congregations of migratory soaring birds, also supported by our sightings of raptors upon other visits in 2005 (see list below) supporting the proposal for **IBA status under category A4iv**. Although not a threatened species, the regionally scarce Blue Tit breeds here in small numbers as well, one of only 3 or 4 confirmed breeding sites in Lebanon, and in May 2005 White-throated Robin was found to be breeding on the edge of the reserve, only the second breeding site to be discovered in Lebanon.

As a guarded, no hunting or grazing site, it also lends itself to IBA status.

Migratory soaring birds seen at Tannourine, 2005

Black Kite (*Milvus migrans*)
Booted Eagle (*Hieraetus pennatus*)
Common Buzzard (*Buteo buteo*)
Common Kestrel (*Falco tinnunculus*)
Eurasian Griffon-vulture (*Gyps fulvus*)
Eurasian Hobby (*Falco subbuteo*)
Eurasian Sparrowhawk (*Accipiter nisus*)
Hen Harrier (*Circus cyaneus*)
Lesser Spotted Eagle (*Aquila pomarina*)
Levant Sparrowhawk (*Accipiter brevipes*)
Long-legged Buzzard (*Buteo rufinus*)
Short-toed Eagle (*Circaetus gallicus*)
Steppe Eagle (*Aquila nipalensis*)
White Pelican (*Pelecanus onocrotalus*)
White Stork (*Ciconia ciconia*)

Number of species observed: 71

Number of visits in 2005: 9

Dates: 28th March, 13th April, 10th May, 2nd June, 30th June, 14th August, 6th October, 3rd November, 14th November

4.3 Site Management Statement – Tannourine Cedars

Introduction

This document provides a summary description of Tannourine Cedars and some of the bird species to be found there (particular reference to those of conservation concern). It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife. As an already declared Nature Reserve, it naturally has its own management plan already in place. However, this document focuses on the birdlife which up to 2005 had not been thoroughly studied.

Site description

The Tannourine Cedars potential IBA is part of the largest remaining cedar forest in the country. At an altitude of 1700m the trees are slow-growing, but thanks to the comparative inaccessibility of the site, have been spared from destruction, the forest containing some fine mature specimens. There are steep –sided cliffs on the northern and western edges of the reserve descending to river valleys. Limestone outcrops punctuate the forest, which also contains some oak and other deciduous trees. The southern and eastern boundaries are hill slopes of a less steep nature, with very little tree or shrub growth, some orchards are located here and irrigation ponds.

The attached maps show the extent of the site, its boundaries and under which municipalities' responsibility the site falls. However the whole potential IBA is already designated a Lebanese Nature Reserve.

Importance of site for birdlife and biodiversity

The forest was discovered to be home to the highest density of breeding **Syrian Serin** in Lebanon in a study carried out in 2001/2, 124 pairs were estimated hence the IBA recommendation **under category A1**

Using known migration phenology through the region, extrapolation of daily totals of soaring migratory birds seen in 2005 suggests probable numbers exceeding an annual 20,000, hence the proposal for IBA status to be also granted **under category A4iv**.

Other wildlife The site supports a wide range of the mammals of Lebanon, such as Persian Squirrel, Wild Boar, Badger and the rarer Wolf.

Conservation objectives

3. Migratory soaring birds

Although the species are migrants that use the forest and its surrounds temporarily, the first conservation objective is to ensure that there is no net reduction in numbers of these birds as they pass through the site.

4. Breeding birds

An increase in the population of the breeding restricted range species **Syrian Serin**, is the second objective.

Key management issues

Hunting

The continued wardening of the site is essential to maintain it as a low – risk location for birds, a haven or safe point on the migration routes of soaring migratory species.

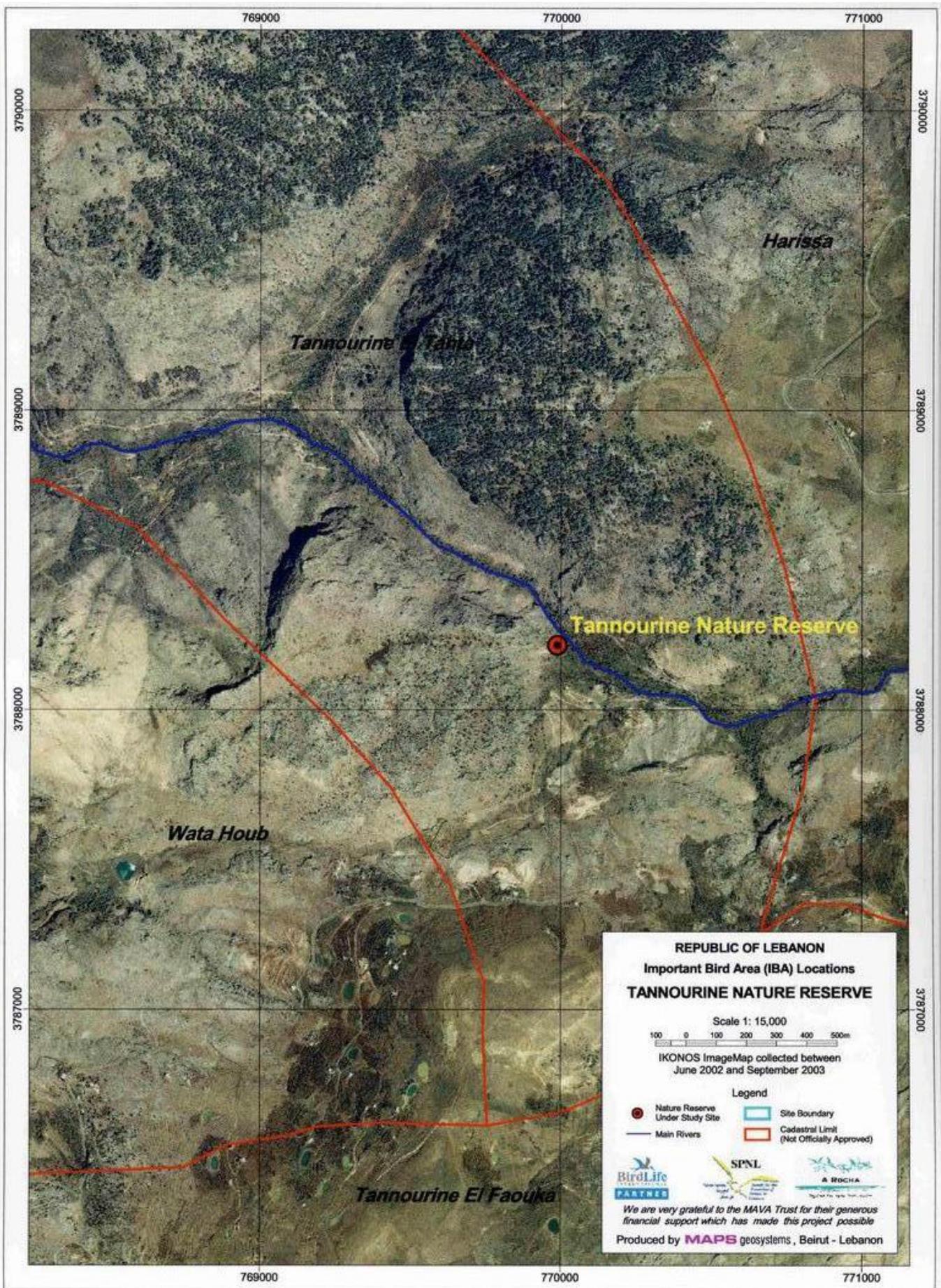
At present, three guards patrol and maintain the site as a “protected area”.

Action: Ensure appropriate signage and a guarding system with trained staff is maintained

Habitat improvement for Syrian Serin

Despite the suitable trees for nesting and weedy slopes nearby for feeding, there is no water, flowing or still, in the reserve from late spring onwards. Indeed, even in early spring the streams down in the valley floor are the only water source, these are probably too distant to support breeding Syrian Serin, which is known to be particularly water-dependant.

Action: Create a pond actually in the forest and ensure it contains water permanently



4.4 Map of Tannourine Cedars

Site 5 Ebel es-Saqi

5.1 General description:

The site is in Marjayoun Caza between Marjayoun and Hasbaya. The criteria for selecting this site was the presence of **globally threatened species**, A1, A3, A4 2v. Land is owned by the Ministry of Agriculture then transferred to the Municipality for 10 years renewable contract.

Conservation measures taken, the land was declared as Hima by municipal council decision and hunting was banned in it, also restriction of grazing to the border line of the forest area.

Geographical Coordinates: 33 22 N, 35 38 E, altitude 764 m

Total area: 219.40 hectares

Habitat coverage: 34% shrub/bush land, 13.4% woodland/forest, 6.6% agriculture/cultivation, 38.3% olive groves, 7.7% Hasbani River Corridor.

Threats: C (Critical), M (Major), L (local)

Hunting, is a critical C threat there since there is excessive or irresponsible hunting. On critical level threats there is agricultural intensification/ practices, over-grazing/over browsing as well as uncontrolled recreational activities.

M level, development/construction

L level Introduction of non-indigenous fauna/flora, fires, quarries, and solid waste pollution such as debris/garbage pollution.

5.2 Site Management Statement – Ebel es-Saqi

Introduction

This document provides a summary description of Ebel es-Saqi and some of the bird species to be found there (particular reference to those of conservation concern). It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife.

Site description

Ebel es-Saqi village, 4,500 inhabitants, is located at Latitude 33° N, Longitude 35° E, in South Lebanon, under Nabatiyyieh Muhafazah, Marjayoun Caza. The Marjayoun Caza has a strategic geographic location from Palestine, Syria, and Jordan that gives it a special role from economic and cultural points of view. Ebel es-Saqi village lies on the continuation of the Rift valley itself, a well – documented migratory flyway for raptors and other soaring birds.

A publicly owned unnatural Pine woodland, with an area of 38 hectares, was established northwest of the village by the Ministry of Agriculture in the 1960s-70s through the “Green Plan” reforestation efforts. The presence of UNIFIL in the village as their headquarters has helped in its protection, and further proposing to the ESCWA protecting the pine woodland of Ebel-es-Saqi and utilizing it for recreational purposes.

Thorough ecological research on the site by the SPNL expert team, subcontracted by Mercy Corps Association, dictated the extension of the site to the Hasbani river and division of this site to six land use zones based on the level of cultivation, the activities related to them, and the bird species inhabiting them (Annex I), as presented in the attached Map. These are:

1. The Pine Forest; a coniferous wooded area, covering 38.2 hectares approximately, mainly used for uncontrolled recreational purposes, with limited wood collection or economic benefits (pine seed collection).
2. Scrubland; a rocky scrub land, spreading over an approximate area of 97.0 hectares, mainly used for intensive grazing, as clearly indicated by the lack of any signs of tree regeneration, and a profusion of goat tracks.
3. Hasbani River Ecotone; a narrow strip of land adjacent to the river, over grown with trees, and undergrowth, barely utilized, except for limited recreational activities, or water source for the grazing animals.
4. Hasbani River; extending around 3.7 km through the study area, mainly used for irrigation.
5. Crop fields; an area of approximately 18.8 hectares, used predominately to grow grain.
6. Olive Groves; the major zone, covering around 109.3 hectares, historically used exclusively to grow olive trees, as the name indicates.

The most important threats adversely affecting the site are mainly the uncontrolled recreational activities, intensive grazing, agricultural practices, and hunting. Ebel es-Saqi is considered one of the hotspot destinations for hunters. This is intensified by intensive uncontrolled grazing by locals, and the miss-use over-use of pesticides in the surrounding agricultural lands.

Importance of site for birdlife and biodiversity

Ebel es-Saqi site which combines the pine forest, the scrubland and rocky slopes, the Hasbani River ecotone, the Hasbani River, crop fields and olive groves ecosystems is proposed to meet IBA criteria for the categories of globally threatened species, biome restricted species and congregation (A1, A3, and A4 iv). The presence of a number of globally and regionally threatened soaring bird species in Lebanon such as Dalmatian Pelican (VU), Greater Spotted Eagle (VU), Egyptian Vulture (LC), Pallid Harrier (NT), Imperial Eagle (VU), Lesser Kestrel (VU) and the Corncrake stresses the importance of this area on an international scale¹.

The Key soaring birds encountered in Ebel es-Saqi are White Pelican (1327; Sept/Dec. 04), White Stork (1819, Sept/Dec. 04), Black Stork (53, Sept/Dec. 04), Honey Buzzard (7384, Sept/Dec. 04), Black Kite (74, Sept/Dec. 04), Short-toed Eagle (18, Sept/Dec. 04), Marsh Harrier (22, Sept/Dec. 04), Sparrowhawk (*Accipiter nisus*) (24, Sept/Dec. 04), Lesser Spotted Eagle (49, Sept/Dec. 04), Steppe Eagle (40, Sept/Dec. 04), Booted Eagle (12, Sept/Dec. 04), Levant Sparrowhawk (329, Sept/Dec. 04), Common Steppe Buzzard (39, Sept/Dec. 04), Long-legged Buzzard (50, May/Aug 04), Lesser Kestrel (13, Sept/Dec. 04), Kestrel (12, Sept/Dec. 04), Common Crane (**60 000, spring 05**).

The passage of this large number of Common Crane on one day in February 2004 supports the suggestion of granting the site an IBA status under the category A4 iv.

Other non-avian fauna of interest are two species of bats, hyrax, wild cat, fox, jackal, river otter (anecdotal evidence), wild boar, two species of freshwater fish, terrestrial turtles, chameleon and lizards, three species of amphibians, (recognised by sound), and scorpions.

¹ According to the International Union for Conservation of Nature- IUCN red list. VU=Vulnerable, NT=Near Threatened, LC=Least concern.

Conservation objectives

Although the bird species highlighted above are migrants that use Ebel es-Saqi site and its surrounding, rather than breeding birds and as such are only temporary visitors, the main conservation objective is to assist in arresting the decline in population of these species. To this end, the specific objectives are to:

- d) To ensure that there is no reduction in the numbers of migratory soaring bird as they pass through the site.
- e) To maintain undisturbed feeding and roosting opportunities for migratory soaring birds.
- f) To increase fringe habitat to better protect and shelter birds and other wildlife in appropriate locations.

Key management issues

SPNL has already developed a site management plan in cooperation with the local stakeholders. A Site Support Group was initiated from the locals, and provided with basic training. Furthermore, the municipality, and SPNL initiated a Site Local Committee and an SPNL chapter for conservation and awareness issues.

Hunting

Without implementation of some degree of control/regulation of hunting activity, the site will continue to be a high – risk location for birds, rather than a haven or safe point on the migration routes of soaring migratory species.

The involvement of the local municipality is essential in achieving this and SPNL already convinced the municipal council to declare the site as Hima – Community conserved area- and to ban hunting in it through municipal decisions.

Pollution

Reducing the amount of pesticides used in the surrounding agricultural land and changing the current agricultural practices is also a key issue. As with the hunting problem, the local municipalities, it is planned, will have an involvement, but the crucial impact would be through the partnership with the agricultural cooperatives (Olive and oil cooperatives, and the women cooperative), and the development NGOs promoting organic farming as a base for healthy rural products. Here, the link between poverty alleviation, and job creation with nature conservation would be crucial for success.

Access

Reduce uncontrolled disturbance to the site through restriction of recreational activities by zones and number of visitors.

Grazing

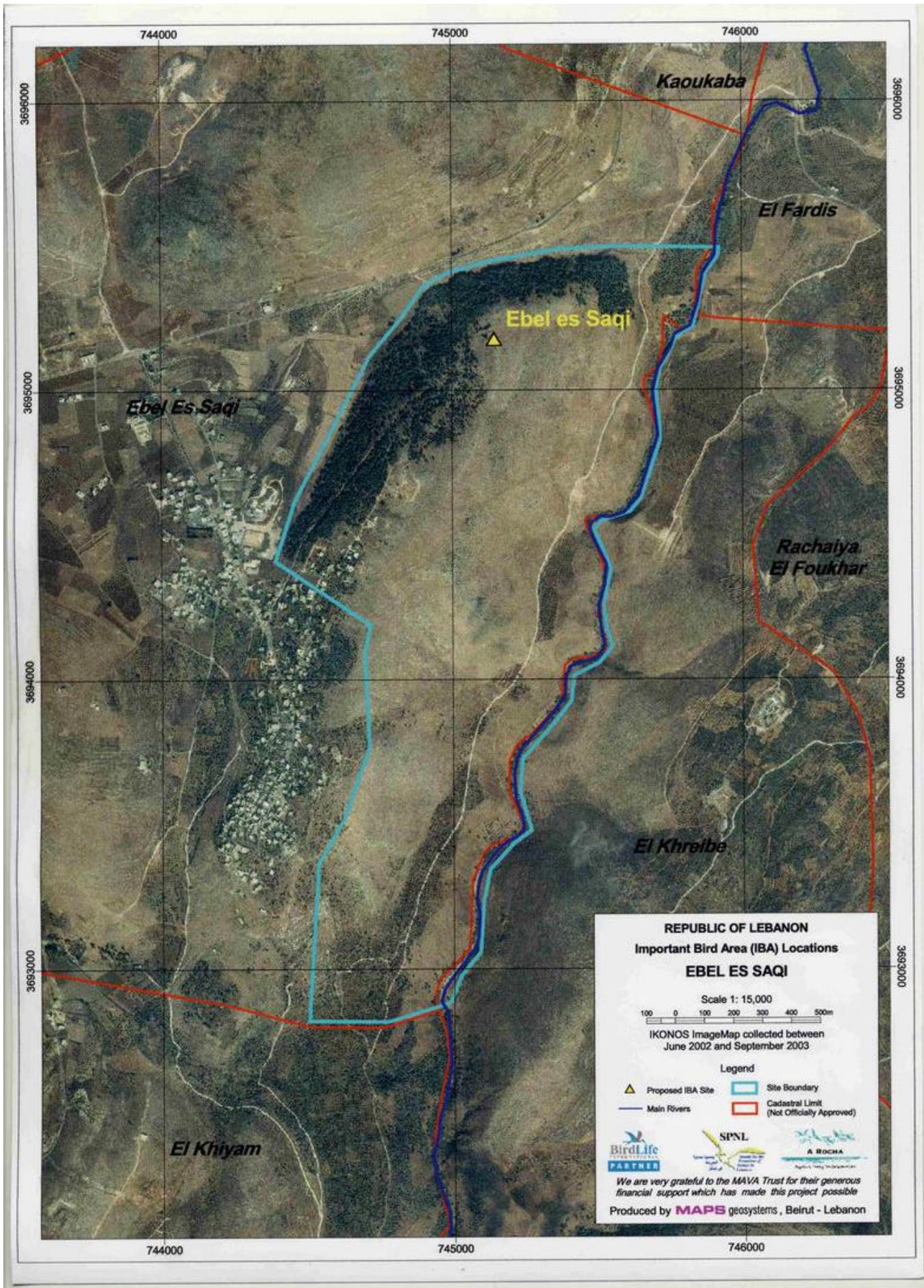
SPNL initiated communication with the local herders, and convinced them to restrict their grazing to the borders of the forest, thus helping in decreasing the threat of forest fires also.

Table I: Examples of bird species associated with the zones designated for Hima Ebel es-Saqi

Zone I	Zone II	Zone III	Zone IV	Zone V	Zone VI
Pine forest	Scrub land and rocky	Hasbani river ecotone valley	Hasbani river	Crop Fields	Olive groves
Levant Sparrow hawk Barn Owl Tawny Owl Little Owl Woodcock Turtle Dove Collared Dove Wood lark Redstart Blackbird Great Tit Masked Shrike Chaffinch Greenfinch Goldfinch	White Storks Short-toed Eagle Lesser Kestrel Swift Skylark Swallow Hoopoe Wheatear <i>spp.</i> Woodchat shrike Rock Sparrow Rock Bunting Cinereous Bunting Cretzschmar's Bunting	Night Heron Grey Heron Sparrow hawk Corncrake Water Pipit Wren Blue Throat Blackbird Sedge Warbler Sardinian Warbler	Grey Heron Purple Heron Mallard Teal Water Rail Little crane Moorhen Coot Kingfisher White-breasted Kingfisher	White Stork Crane Black Kite Montagu's Harrier Crested Lark Short-toed Lark Bee-eater Tawny Pipit Linnet Black-headed Bunting	Song Thrush Bulbul Graceful Warbler Olivaceous Warbler Upcher's Warbler Olive Tree Warbler Orpheat Warbler

Table II: Status of key species

SPECIES	International status	Status at site
Dalmatian Pelican	Vulnerable	Common passage migrant
Egyptian Vulture	Regionally threatened	Passage migrant
Pallid Harrier	Near threatened	Passage migrant
Greater Spotted Eagle	Vulnerable	Passage migrant
Imperial Eagle	Vulnerable	Passage migrant
Lesser Kestrel	Vulnerable	Possible breeder
Corncrake	Near threatened	Passage migrant



5.3 Map of Ebel es-Saqi

Site 6. Ain Hoursche, Ain Aata

6.1 General Description:

Site is located north east of village and valley, south of village of Ain Hoursche, near a temple on hilltop.

The land is used on a primary level as rangeland, and at a secondary level as hunting, tourism and agriculture/cultivation.

Habitat description: Rocky slopes and peaks, valley floor partly wooded and cultivated. Thin soil on limestone rock slopes supporting grass and wild flowers. Valley floor cultivated with fruit trees.

Conservation measures taken: none observed

Geographical Coordinates: 33 27 N, 35 47 E

Total area: 282.091 ha

Habitat coverage: 70% rocky hills and grass, 15% scrub/bush land, 10% agriculture/cultivation, 5% woodland/forest.

Threats: C (Critical), M (Major), L (local)

Major M Level, excessive or irresponsible hunting, deliberate persecution of birds, and overgrazing/over- browsing.

L level there is excessive disturbance of birds and development and construction.

Disturbance levels may increase due to new track from village to temple site.

6.2 Comments on 2005 observations at Ain Hoursche

The area around the archaeological site of a ruined temple at Ain Hoursche appears (from evidence of hunting found in 2005) to be an area where migratory soaring birds congregate, indeed the corpses of 11 raptors (Buteo and Harrier sp.) were found scattered around the approaches in October.

However, our observation days did not coincide with significant movements so it is hard to gauge just how crucial a site this might be. Biome-restricted species such as **Masked Shrike, Black-eared Wheatear, Sardinian Warbler, Western Rock Nuthatch, Cretzchmar's and Black-headed Bunting** breed in the area and **Finsch's Wheatear** winters, but more research is needed here in future, surveying the area from Ain Hoursche to the slopes of Mount Hermon may well provide some significant data .

Number of species observed: 56

Number of visits in 2005: 7

Dates: 3rd March, 7th March, 7th April, 8th April, 27th May, 29th September, 13th December

Site 7. Nahr Beirut / Beirut River Valley

7.1 General Description

Land is used on a primary level as hunting area, water supply, agriculture / cultivation, recreation, and on a secondary level as military use.

Area in Hectares: 8096

Habitat coverage:

20% river, , 20% scrub/bush land, 40% Woodland / forest, 20% agriculture/cultivation

Threats: C (Critical), M (Major), L (local)

C level of irresponsible hunting & development and construction

There is an M level of disturbance to birds

On the L local level, there is introduction of non-indigenous fauna/ flora, debris /garbage pollution , and conversion to agriculture

7.2 Site Management Statement – Beirut River Valley

Introduction

This document provides a summary description of Beirut River Valley and some of the bird species to be found there, with particular reference to conservation concerns. It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife.

Site Description

The area surveyed comprises the point of vehicular access from the small bridge on the Hazmiyeh side of the valley to the pumping station, 3 Km, upstream. It is mostly privately owned and falls within the jurisdiction of 2 small municipalities, Louaize and Ed Daichounieh. The river follows a fault line and rocky cliffs line the top on the southern side. Both sides of the valley are mostly steep and covered either with dry open scrub, pine forest, smaller trees or terraces of fruit trees and one part where springs rise on the hillside a large stand of bamboo. The valley bottom has a variety of riverside vegetation, deciduous shrubs and large trees and bamboo and there seems to be water all year round though much less in summer. Local farmers live in shacks and grow bananas oranges, roses and vegetables on what appears to be a small scale mostly at the valley bottom; some also have small flocks of sheep, goats and chickens. There is a gate at the beginning of the route but this was only found locked once. A track runs the length of the valley allowing vehicular access to local farmers, hunters, picnickers and the army who have a base on the hillside overlooking part of the route. There is one other point where vehicles can reach this track from the other side of the valley and it is here that hunters' cars are most frequently found.

Hunters have been present on every visit ranging from well off to poor. At migration time in spring and autumn decoy machines are used and blackcaps are targeted, however anything is shot at any time of year creating a considerable amount of disturbance as some hunters keep to the track but others climb the hillsides. It's a popular picnic spot at the weekend, which leaves a lot of rubbish.

New apartment blocks are encroaching on both sides further all along the valley and sewage appears to go straight into the river from some residential areas.

Importance of site for birdlife and biodiversity

Migrating and soaring birds use the thermals created by the fault line further inland, as the temperature drops with the progression of the day, these birds would glide down the valley to roost in the pine forest. Large numbers have been recorded rising from the valley on different days, for example, the morning of October the 2nd when kettles of soaring raptors were observed for 35 minutes. This site is considered of great importance to southerly migrating soaring birds, since it represents the last low land forested stand for 15Km thus expanding the roost selection time window.

There is a large variety of habitats in a small area providing good feeding and resting for many migrating birds such as swifts, swallows, house martins, warblers, as well as summer visitors or resident breeding species such as kestrels, bulbuls, wrens, black birds, tits, shrikes and finches.

Non-avian species of note include three species of bats, badgers, porcupines, squirrels, rock hyrax, fox, jackal and wild boar in the more densely forested, less disturbed rocky slopes. There are many frogs and fish present in some parts of the river.

Conservation objectives

The main conservation objective is to assist in arresting the decline in population of the diverse bird species that use this site and it's surrounding, breeding birds and as well temporary visitors. To this end, the specific objectives are to:

- a) To ensure that there is no reduction in the numbers of migratory soaring bird as they pass through the site.
- b) To maintain undisturbed feeding and roosting opportunities for resident as well as migratory birds.
- c) To protect fringe habitats from additional construction invading the valley.

Key Management Issues

Hunting

With the level of hunting here, the area is a high-risk location for birds. Finch trappers are also active but less evident than hunters with guns. The army could perhaps be involved in controlling access to the area and the hunting as their base overlooks the site and they use the area for activities.

Pollution

Some rubbish dumping occurs by trucks driving through the main gate and dumping loads by the road. The smell of sewage leaking from the drains from residential development is always bad at the beginning of the route.

There might be a certain amount of agricultural pollution from the small farms but this would need to be verified. There is a lot of the picnic rubbish until the river washes it away periodically.

Access

As there are only 2 points of vehicular access it may be possible to reduce ease of access to hunters whilst allowing access to farmers and pumping station workers.

Leisure

The site is one of the nearest natural areas to Beirut and has interesting archaeological remains a little further downstream from the entrance. Residents from the apartment blocks exercise along the route daily. The problems caused by the extra influx of visitors at weekends could be minimised if hunting was controlled and rubbish collection facilities provided. It could also be developed into an excellent and convenient environmental education facility for use by city schools.

Status of key species

Data collected show that this section of the Beirut River Valley does not seem to hold any particular key species, but the diversity of bird species inhabiting it and its proximity to major cities, stresses the need to conserve this site.

Site 8 Ras Chekaa

8.1 General description:

The site is 6.5 km North of Batroun, 4 km South of Chekaa. Land topography is sea cliff, forested plateau, with Mediterranean climate.

Land is used for olive growth, artisanal handicrafts, & pilgrimages.

Land ownership 70% zelifinus , 30% private small holdings.

Land is used on a primary level as Agriculture/cultivation, and secondary level as fisheries/aquaculture.

Conservation measures taken are limited.

Geographical Coordinates: 34 18 N, 35 41 E

Total area: 361.271 hectares

Habitat coverage: 10% marine Environment, 25% Scrub / Bush land, 30% Woodland/ forest, 35% Agriculture.

Threats: C (Critical), M (major), L (local)

Hunting the is a **M** level disturbance of birds, a **C** level excessive disturbance, and direct persecutions of birds.

Agricultural intensification as **L** level

Toxic Air pollution as a **C** level,

Human disturbance such as debris and garbage pollution as **L** level

8.2 Site Management Statement

Introduction

The promontory of Ras Chekaa is the first section of scenically attractive coastline one meets on a journey north of Beirut. It contains a mosaic of woodland and olive groves, with an undisturbed maquis on the escarpments. Woodland and scrubland as a whole forms just 6% of the land area in Lebanon, and 6-10% of the Batroun district (UNEP, 1996), indicating the rarity value of each landscapes.

The flora, avifauna and other fauna of the wooded habitats here have been little studied, although the marine environment is better known. There is good potential for developing a programme of study to more understanding of this special area.

Regional Context

The narrow coastal plain between Beirut and Tripoli is highly developed. From the capital to almost Batroun a conurbation extends from the shoreline into the foothills of the Lebanon Mountain. Some agriculture and market gardening is practiced, notably banana plantations, citrus and vegetable greenhouse operations, with *Arundo donax* cane along the streams. Any semi-natural vegetation of significance is confined to the steep slopes inland of the plain where *Pinus halepensis* maquis dominates. Around Batroun, evergreen shrubland is more common on the plain as the density of building decreases. Interspersed

with olive orchards are abandoned terraces with low garrigue vegetation. The coastline itself is rocky, and largely modified with sea defences.

In the coastal zone around Chekaa, agricultural production is restricted to the olive groves on the narrow strip of black hydromorphic soils mixed with transported material from the white rendzina upslope. To the east the land rises abruptly, and the soils are poor rendzinas formed on marl. The climax oak maquis is replaced by a degraded garrigue. The land is not productive and the agroecosystem centers around meager stands of vines and olives. The plains of Amioun and Koura to the east of Ras Chekaa, with their deep alluvial soils, were once a major olive production zone. They have been seriously disturbed by red clay quarrying operations of the Chekaa cement factories. At Koura the olive groves have been devastated, with the loss of 6,000 trees, some of which were 1000 years old. The clays are scraped to a depth of 10 m, leaving holes over an area of 3 Km² where rainfall accumulates. A new Quarrying Law (6 September 1994), which covers guidelines for environmental impact assessments of new quarries and rehabilitation of disturbed sites. (World Bank 1995).

Site Description

Location and geomorphology

Ras Chekaa is a limestone promontory 7 Km north of Batroun. Its steep slopes rise to a height of 208 m and contains a plateau of approximate area 7 Km², on which are sited the villages of Ouajh el Hajar and Hamat, and the convent of Deir el Nouriyeh, whose property includes the proposed IBA. The original monastery is sited halfway down the cliff, with rooms dug out of the rock as well as small buildings on a ledge. The new and larger monastery building sits above it at the top of the cliff. Three narrow valleys with seasonal streams dissect the plateau and drain it from the ESE to WNW.

The geology of the area is a sequence of massive pale Miocene limestones capping a thick sequence of Late Cretaceous and early Tertiary pale chalks. The chalks are a soft, easily eroded unit and the whole headland is thus unstable and liable to slide even under normal conditions. The headland bears evidence of a number of major landslide scars and some of these may have been triggered by earthquakes. It is widely recorded that famous earthquake of 551AD precipitated an enormous slide creating a natural harbour for Batroun. The steepest screes and cliffs are to be found on the north and west facing sides of Ras Chekaa. A relatively flat wedge of land is to be found on the western edge of the promontory.

The coastal roads have taken a number of courses around Ras Chekaa. The original Ottoman road survives as a ledge of less than a kilometer where the French-built road which superseded it cuts through a tunnel. The ledge makes an attractive walk with views down to the sea below and across the bay to the north. There also exist here two short tunnels. Traffic on the French road is minimal, now that the main highway runs round the headland along a valley to the east rather than following the coastline to the west. The disused railway line hugs the coast at a lower level to any of the roads, and at one place has a section of tunnel.

The shoreline of Ras Chekaa is rocky and devoid of sand. A horizontal platform (c. 10 m wide at Hannouch) separates the supralittoral and infralittoral zone.

Vegetation/Habitats

1. Cliff Maquis

The cliff maquis is best developed at Deir el Nouriyeh on the north side of the promontory. The vegetation is dense on all but the least stable slopes, a few paths attached to the convent, and the ledge of the Ottoman road described above. This latter area provides an open habitat for a number of herbaceous species that may otherwise have much more restricted occurrence in the area. These include *Cyclamen* and *Narissus* species. The shrubland is dominated by the evergreen oak with an average height of approximately 3 m, but reaching 4 or 5 m in places. Other abundant shrubby species are the lentisc *Pistacia lentiscus*, spiny broom *Calycotome villosa*, Spanish broom *Spartium junceum* and *Poterium spinosum*. The carob *Ceratonia siliqua* is present but more scattered. At the lower levels the bushes are shaped by the prevailing winds and salt spray, with a streamlined and leafless seaward profile.

This is the thermophilous *Quercus calliprinos* vegetation community, a Thermo-Mediterranean forest type described by Abi-Selah *et al* (1976, 1982, 1988). The second type of this series is the Carob-Lentiscus series dominated by the lentisc. This is also represented in the region, forming a narrow coastal strip north of Batroun.

2. Woodland

Both on the top of Ras Chekaa and in the narrow valley running down from the village of Hamat are extensive areas of evergreen oak woodland. Belonging to the same vegetation formation described above, they differ in having a proper *Quercus calliprinos* tree canopy reaching heights of 6-10 m. Those woodlands were the most remarkable vestiges of the original climax vegetation type of the coastal plains discovered in the survey of Chouchiani *et al* (1974). The understorey is open, with *Laurus nobilis* and *Ruscus aculeatus* amongst the shrubs present. There are ferns growing in the rocks, and an interesting fungi flora in the autumn. The reason for the oaks attaining maturity as trees and shrubs is not certain, but may be the result of a combination of relative shelter from prevailing winds and a lack of goat grazing, which tends to create bushes rather than trees out of this species.

3. Olive Orchard

Olive growing is the main agricultural activity of Ras Chekaa, and the terraced groves have trees of some age and hold interest as low-intensity farming habitats. The ground is stony and tilled in most areas, in others with a better *terra rossa* soil which may be cultivated in places.

Existing Land Uses

The main agricultural use of the cape is the cultivation of olives. Some arable cultivation is practiced on the property of the monastery. A few small industries are present on the narrow coastal wedge to the west of the headland; the salt pans there were abandoned, however. Some cattle were seen on the pasture of the abandoned terraces.

Importance of Site to Birds and Biodiversity

Terrestrial Fauna

The avifauna of Ras Chekaa has not been systematically recorded until this study we conducted in 2005, when 85 species were recorded in eight visits. Like Ras Beirut to the

south, it would be a perfect location for setting up a seawatch station during winter, spring and autumn following marine birds movements. For example large numbers of egrets, herons and shearwaters can be seen off the Lebanese coast in the right season (Macfarlane, 1978). The strategic coastal position and abundance of woody cover also make the area important for migrating passerines, and again there is an opportunity to gather a lot of information through regular study and observation.

The following bird records were made at Ras Chekaa on 12 April 1996:

White pelican *Pelecanus onocrotalus* (a flock of 25 flying north along the coast)
 Red-rumped Swallow *Hirundo daurica*
 House Martin *Delichon urbica*
 Wren *Troglodytes troglodytes*
 Blackbird *Turdus merula*
 Sardinian Warbler *Sylvia melanocephala*
 Ruppell's Warbler *Sylvia rueppelli*
 Lesser Whitethroat *Sylvia carruca*
 Willow Warbler *Phylloscopus trochilus*

Macfarlane (1978) also makes note of Alpine swift *Apus melba* and sightings of purple Heron and Sparrowhawk have been made.

The following bird species, rare to Lebanon were recorded during the 2005 study:

Shag (*Phalacrocorax aristotelis*)
 Dalmatian Pelican (*Pelecanus crispus*)
 Great White Egret (*Egretta alba*)
 Kestrel (*Falco tinnunculus*) 2 breeding pairs
 Red Footed Falcon (*Falco vespertinus*)
 Merlin (*Falco columbarius*)
 Hobby (*Falco subbuteo*)
 Eleonora's Falcon (*Falco eleonora*)
 Saker Falcon (*Falco cherrug*)
 Mediterranean Gull (*Larus melanocephalus*)
 Slender-billed Gull (*Larus genei*)
 Upcher's Warbler (*Hippolais languida*)
 Olive-tree Warbler (*Hippolais olivetorum*)
 Icterine Warbler (*Hippolais icterina*)
 Blue Tit (*Parus caeruleus*)

Status of Key Species

Species	Statement Status	Status at Site
Shag	Least Concern	First record to Lebanon
Dalmatian Pelican	Vulnerable Globally	Rare passage migrant
Great White Egret	Least Concern	Extremely rare migrant
Eleonora's Falcon	Regionally Threatened	Passage migrant
Saker Falcon	Regionally Threatened	Rare passage migrant
Slender-billed Gull	Regionally Threatened	Rare passage migrant
Upcher's Warbler	Least Concern	Uncommon breeder

Icterine Warbler	Least Concern	Rare passage migrant
Blue Tit	Least Concern	Uncommon resident

There are no known published records of other terrestrial animal groups at Ras Chekaa, however, a weasel (road kill) and a fox were seen during our 2005 study.

Terrestrial Flora

Like the fauna of Ras Chekaa, the flora is poorly studied. A brief survey on 15 November 1996 of the cliff below and to the east of the convent, revealed the presence of 24 species, though the true diversity will be considerably more. The plants are listed below:

Tree and Shrubs:

Quercus calliprinos

Pistacia lentiscus

Ceratonia siliqua

Spartium junceum

Calycotome villosa

Asparagus acutifolius

Phillyrea media

Poterium spinosum

Hypericum thymifolium

Larus nobilis

Myrtus communis

Dittichia viscosa

Ruta (graveolens)

Climbers:

Smilax aspera

Clematis cirrhosa

Rubia peregrina

Herbs:

Cyclamen sp

Urginea maritima

Ranunculus sp

Hyparrhenia hirta

Bellis perennis

Crithmum maritimum

Narcissus sp

Taraxacum sp

Two quadrats of *Quercus calliprinos* woodland were studied at nearby Selaat and Hama by Chouhiani *et al* (1974). Shrubs present were *Pistacia lentiscus*, *Calycotome villosa*, *Poterium spinosum*, *Hypericum thymifolium*, *Custys creticus*, *Stachys distans*, with *Hyparrhenia hirta* and *Andropogon distachyas* in the herb layer. Other species recorded in the quadrats were: *Pistacia palaestina*, *Rhamnus punctata*, *Brtomus syriacus*, *Styrax officinalis*, *Cercis siliquastrum*, *Dryopteris libanotica*, *Phillyria media*, *Smilax aspera*, *Rubia peregrina*, *Asplenium adiantum*, *Asparagus acutifolius*, *Clematis cirrhosa*, *Hypericum serpyllifolium*, *Helichrysum sanguineum*, *Fumana thymifolia*, *Dactylis glomerata* and *Lotus corniculatus*.

Marine Fauna and Flora

A study of the benthic marine life at Hannouche, Ras Chekaa, has been made by Bitar & Bitar-Kouli (1995). They described the assemblages of the supra-, medio- and infra-littoral zones, and noted the presence of one alga indicative of clean waters. The records make an important reference work for marine studies related to pollution impacts at other sites along the Lebanese coast.

The presence of submarine freshwater springs off the coast at Ras Chekaa is likely to enhance the biotic diversity of the waters here. The springs have been studied by Kareh (1967, 1968).

The new National Centre for Marine Sciences is sited at Batroun and so the capability exists for the area to be studied further as part of a protected marine reserve.

Threats

1. Building

Piecemeal destruction of important habitat by urbanization or other forms of development/land "improvement" is a possibility. One large building project beside the road out of Hamat towards Deir el Nouriyeh was seen. However, the inherent geological instability of the area should act as a disincentive to building projects, and church ownership of the land may afford better protection than would otherwise be the case.

2. Fire

There is a risk of areas of the woodland, maquis and orchard habitats being destroyed by fire. Evidence of fires in similar habitats was observed along the coastline between Beirut and Chekaa. These will mostly be of accidental origin. Small campfires had been lit along, the path of the old Ottoman road, and there is a chance, albeit small, that a fire could catch the maquis vegetation of this area.

3. Pollution

Two Portland cement plants are located in Chekaa, and in 1993 had a combine output of 2,372,000 tones (World Bank, 1995). Hot water effluents are discharged into the sea from these plants, but with a southerly current the impact will be to the north of the town and not around the cape. Another pollution hazard is from particulate emissions associated with the handling of raw materials and the final product, as well as combustion emissions. Dust emissions can cause damage to plants and crops, but the effect is unlikely to be serious beyond several hundred meters of the plant, and again, with prevailing south-westerly winds, the worst impact is downwind of Ras Chekaa. Also, the Société des Ciments Libanais, SAL at Chekaa has received loan finance for rehabilitation, a condition of which is the installation of particulate controls.

Fertilizers are manufactured at a factory in Selatta, between El Batroun and Ras Chekaa. Some 400 tonnes/day of triple-super-phosphate are produced (World Bank, 1995). Phosphates and sulphates are discharged into the sea, but evidence of pollution and eutrophication along the coastline of Ras Chekaa has not been observed. Air pollution is likely to be caused by the production of hydrogen fluoride (HF) gas as a by-product. This is potentially harmful to human, plant and wildlife. There are also emissions of dust from the crushing of the phosphate rock. Winds from the south and west predominate in this region, so any air pollution from this factory is likely to pass over the Ras Chekaa headland.

Litter and dumping were evident beside roads and in picnicking spots. Along the Ottoman road there were plastic, paper and metal wastes.

4. Hunting

Illegal hunting is prevalent, depending on the season, mostly with the aid of birdcalls recorded devices. Generally anything moving is shot at, thrushes, woodcock and finches in

winter; turtle doves, quail, corncrakes, bee eaters, swallows, swifts, warblers, shrikes and finches in spring as they hit landfall after crossing the Mediterranean. Autumn is a repeat of spring with the additional aspect of raptors. Other passerine birds, and marine birds are also shot.

Conservation Strategy

In comparison to Aammiq, the habitats of Ras Chekaa are not under tremendous threat. The cliffs of Deir el Nouriyeh are obviously not prime land for economic use, although some of the other wooded areas and the coastal flats of Ras Chekaa could be lost to development.

A conservation strategy, therefore, can focus on realizing the potential of Ras Chekaa as a site of natural beauty, biodiversity importance and historical interest, rather than on conservation management issues.

In terms of natural beauty, the wooded landscapes need preserving in their current state. They are increasingly rare in the coastal zone, and the oak woodland is one of the best examples in the country.

In terms of biodiversity importance, the area is significant because of its position as a coastal headland on a significant Middle East migratory route, and the habitats it provides for migrating birds. It would be an excellent place to start a bird ringing programme. Also, the flora and fauna of the maquis and woodland is yet to be documented, and the opportunity should be taken to do so, and thereby to contribute to understanding of Mediterranean shrubland habitats.

And in terms of the historical interest, the convent of Deir el Nouriyeh is a significant site that merits more attention and public interest than it presently has.

It is suggested that a development plan for the protected area should encompass the headland of Ras Chekaa as a whole, integrating the aims of landscape/habitat preservation, amenity creation and the support of biodiversity research.

The proximity of the National Centre for Marine Sciences at Batroun is significant, as the programme of marine studies along this stretch of coastline would be greatly complemented by work on the cape, gaining a better, integrated understanding of the whole coastal zone across the artificial division of the marine and terrestrial science disciplines.

Site 9 Cheikh Zennad:

9.1 General Description:

Site is located 24 km from North Tripoli, 5 km South of Lebanese Syrian North Borders. The land is **privately** owned, and has two major land uses (1) extracting salt from the marine salt pans, (2) Agricultural arable land type cultivation, leading to threats such as intense agriculture use, disturbance to birds & excessive hunting.

Total area: 482.136 hectares

Habitat coverage: 70% agriculture/ forest, 30% Marine environment

Threats: **C** (Critical), **M** (Major), **L** (local)

Intense agriculture use on the **L** level, conversion to agriculture, agriculture intensification

Solid waste pollution such as debris/garbage pollution, also toxic pollution as **L** level of threats.

Hunting, is a critical **C** threat there since there is excessive or irresponsible hunting, deliberate persecution of birds and excessive disturbance of birds.

9.2 Site Management Statement – Cheikh Zennad

Introduction

This document provides a summary description of the site at Cheikh Zennad and some of the bird species to be found there (particular reference to those of special interest to the Lebanese avifauna). It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife.

Site description

The Cheikh Zennad site is situated in the extreme northwest of Lebanon, on the Mediterranean coast, south of Cheikh Zennad village (34°36'N, 35°59'E). It consists of privately owned man-made gravity fed saline ponds, which produce salt by seawater evaporation. Other salt works on the Lebanese coast, mostly defunct now, were of concrete construction, thus uninteresting for birds. At Cheikh Zennad, next to the small, concrete salt-gathering basins, there are large, muddy ponds in which salinity is progressively increased. Water depth varies from 0-30 cm, but the ponds are seldom totally dry. The mud contains significant food resources for birds. North of the mud ponds, the river Nahr el Ostouane runs into the Mediterranean Sea while the surrounding land is cultivated. The actual site covers an area just in excess of 480 ha. and is comprised of the salt pans, cultivated fields, including fruit tree groves, conifer and poplar hedges, and the section of the seashore bounded by the river outflow into the sea and the southerly limits of the municipality.

Due to the nature of activities on this site, human disturbance is prevalent. Once farmers had reaped their crops, cattle are allowed to graze in the fields, tree groves are sprayed, and hunting abounds in the surrounding fields, yet the salt pans are not left unharmed. Of

interest, though, discussions with locals and hunters showed willingness for cooperation, hampered by a distinct lack of awareness.

Importance of site for birdlife and biodiversity

This saline wetland site is unique in Lebanon, however, it has been poorly recognised until lately, and, therefore, little knowledge is available. Other Lebanese wetlands of significance are mostly freshwater bodies, apart from the Palm Islands, which as the name denotes, are marine. The Syrian wetland and IBA of Buhayrat al-Laha lies close to the border, but Bara (1998) states that a visit in April 1997 revealed that it was almost entirely drained, and few birds were present

The complex mosaic of habitats constituting this site provides a rich source of food for a large variety of birds, ranging from wildfowl and waders on the mud flats to farm birds, larks, and buntings in the fields and warblers, tits and finches in the groves, migrating raptors have been observed regularly. 106 species of birds were logged during only eight field visits in 2005. Following is a list of new and rare species to Lebanon that have been recorded by very few ornithologists,

Species new to Lebanon

Pacific Golden Plover *Pluvialis fulva*,
Curlew Sandpiper *Calidris ferruginea*,
Curlew *Numenius arquata*,
Bar-tailed Godwit *Limosa lapponica*,
Terek Sandpiper *Xerus cinereus*,
Gull-billed Tern *Gelochelidon nilotica*
Black-bellied Sandgrouse *Pterocles orientalis*,
Citrine Wagtail *Motacilla citreola*.

Species rarely seen in Lebanon

Great White Egret *Egretta alba*
Velvet Scoter (*Melanitta fusca*)
Glossy Ibis *Plegadis falcinellus*
Oystercatcher *Haematopus ostralegus*
Stone-curlew (*Burhinus oedicephalus*)
Cream-coloured Courser *Cursorius cursor*
Greater Sand Plover *Charadrius leschenaultii*
Sanderling *Calidris alba*
Temminck's Stint *Calidris temminckii*
Broad-billed Sandpiper *Limicola falcinellus*
Black-tailed Godwit *Limosa limosa*
Whimbrel *Numenius phaeopus*
Spotted Redshank *Tringa erythropus*
Great Black-headed Gull *Larus ichthyaeus*
Slender-billed Gull *Larus genei*
Audouin's Gull *Larus audouini*
Armenian Gull *Larus armenicus*
Black Tern *Chlidonias niger*
Pied Kingfisher *Ceryle rudis*

Water Pipit *Anthus spinoletta*

However, given the unprotected nature of this site all are currently liable to be hunted.

Conservation objectives

Although this is a complex site with a variety of habitats providing a good source of food for a broad range of transient birds that use it and its surrounds, breeding have proven to be limited. So, the main conservation objective is to assist in increasing the nesting opportunities and arresting the decline in species utilizing this site. To this end, the specific objectives are to:

- a) To maintain undisturbed feeding and roosting opportunities for wader and passerine flocks.
- b) To enhance fringe habitats to better protect and shelter birds.
- c) To reduce disturbance level to visiting birds and ensure a longer duration of stay-over as they utilize this site.

Key management issues

Hunting

Without the implementation of some degree of control of hunting at the ponds, and its regulation in the arable land this site will continue to be a high risk location for birds, rather than a haven or safe point for migratory or dispersive species.

Awareness campaigns and the involvement of the local municipalities are essential in achieving this aim. A resident has been located to help us in opening communication channels with local bodies.

Pollution

Reducing the amount of pesticides used in the surrounding agricultural land and changing the current agricultural practices is also a key issue. Most of the planting lots are smallholdings, thus the most effective impact would be through the partnership with agricultural cooperatives and the development of NGOs promoting organic farming as a base for healthy rural products. Here, the link between poverty alleviation, and job creation with nature conservation would be crucial for success.

Access

Access could be the major threat to this site. A road linking the inland villages and farm tracks to the main coastal highway cuts across the basins and fields areas and causes uncontrolled disturbance to the site, being utilized by mechanized and pedestrian traffic. This also provides hunters with an unimpeded avenue into the different habitats, depending on the season. The involvement of the local municipality/community is essential in alleviating this threat through restriction of recreational traffic and the placement/planting of roadside barriers.

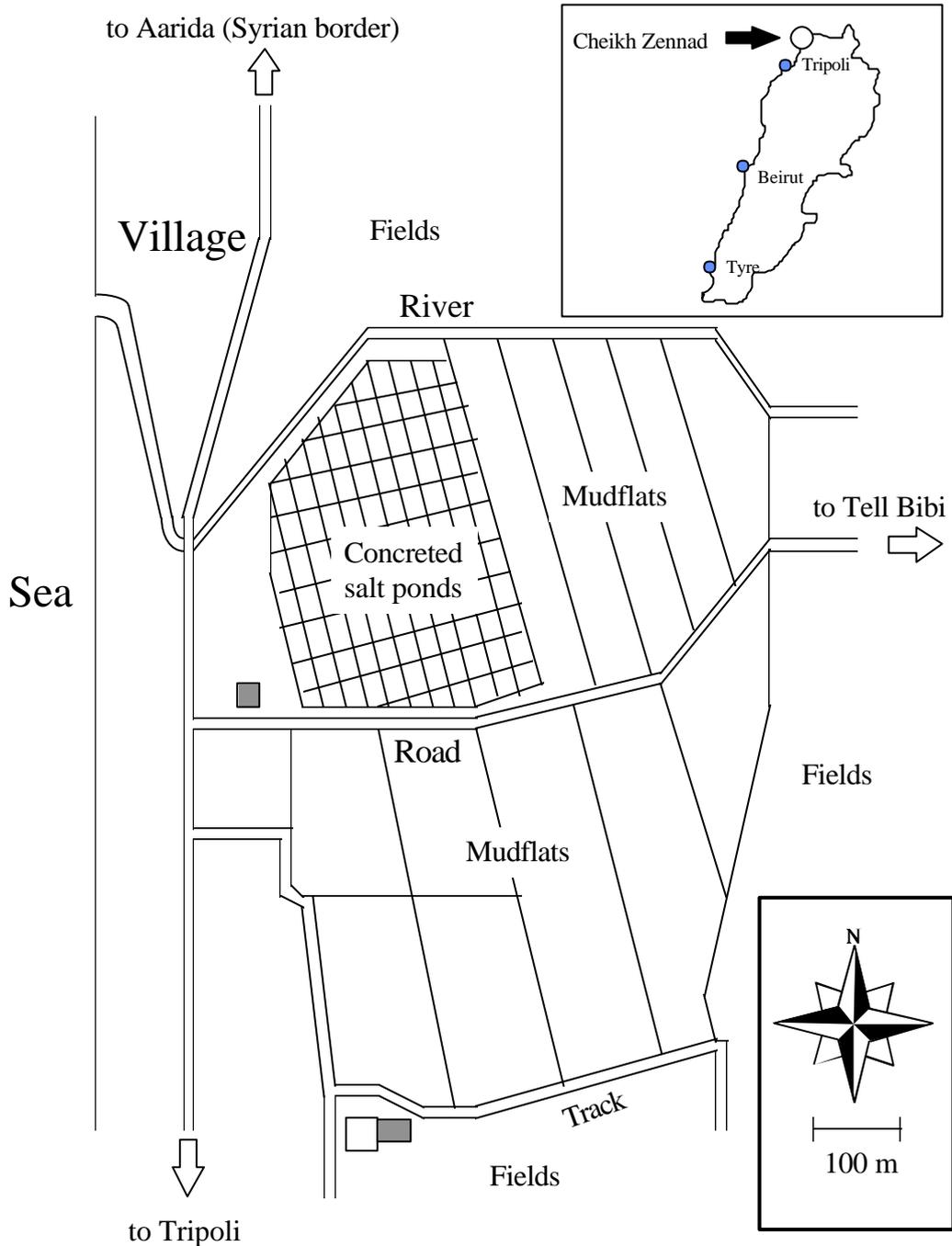
Other threats

Other threats such as diversion of water/canalization, over-extraction of ground-water, irrigation and debris/garbage pollution do exist, but could be controlled through awareness campaigns.

Status of key species

Data collected show that this site does not seem to hold any particular key species, but the diversity of bird species utilizing it, its regional significance as the only feeding ground available to migrant/dispersive birds and its importance to the Lebanese avifauna, stresses the need to conserve this site. (Bara, T. (1998). Selected records from Cheikh Zennad, a coastal wetland in north-west Lebanon. Sandgrouse 20:40-45.)

: map (From Bara, 1998)



Site 10 Nahr el Kabir

10.1 General description:

The site is 1km east of the Lebanese Northern Border Check point. The land is mainly used as mixed agricultural land (maize, wheat), divided among privately owned small-holdings. A secondary use of the site is as a rangeland for livestock. Aquatic and riparian flora is also present along the river channel. The non-bird fauna includes pond-terrapins, frogs, lizards, dragonflies and butterflies.

Geographical Coordinates: 34 38 N, 35 55 E

Total area: 191 hectares

Habitat coverage: 20% Grasslands, 4% shrub/bush land, 1% woodland/forest, 75% agriculture/cultivation.

Threats: **C** (Critical), **M** (Major), **L** (local)

Agriculture related pollution that such as drainage, irrigation, both considered as **M** level threats.

Human disturbance threats such as over- extraction of ground water, building of development /construction, abandonment of traditional management, & introduction of non-indigenous fauna/flora all these under **L** level threats.

Solid waste pollution such as debris/garbage pollution, also probably toxic as **M** level of threats.

Hunting, is a critical **C** threat there since there is excessive or irresponsible hunting, deliberate persecution of birds and excessive disturbance of birds.

10.2 Site Management Statement –Nahr el Kabir

Introduction

This document provides a summary description of the site at the Nahr el Kabir and some of the bird species to be found there (particular reference to those of special interest to the site and the Lebanese avifauna). It also describes current and future threats to the site and the intention to protect and manage it to enhance its value to wildlife.

Site description

The Nahr el Kabir site is situated in the extreme northwest of Lebanon, on the Mediterranean coastal plains, at the Lebanese Syrian border (34°38' 31.2N, 35°58' 48.0E), within the el Arida municipality, covering an area of 190 ha. It is bounded by the Nahr el Kabir, dividing the two countries, and the Mediterranean Sea in the north and west, respectively, the main road inland constitute its southerly border, while the eastern limit is defined by a dirt track, just west off the village of es Sammaqiye. This site consists mainly of cultivated smallholdings dissected by a creek and irrigation channels, which dry up by the latter part of summer. Large cypress, eucalyptus and poplar trees dominate the eastern corner, while the rest is just open fields, with comparatively large reed beds..

Due to the nature of activities on this site, human disturbance is prevalent. Once farmers had reaped their crops, cattle are allowed to graze in the fields and the irrigation ditches.

Hunting, although practiced, did not appear to be as detrimental as in other sites we studied, this could be due to the proximity to the international borders, or poverty induced.

Importance of site for birdlife and biodiversity

The Nahr el Kabir is an ecologically simple site, but still quite variable and interesting. The fields support storks, variety of raptors, lapwings, larks, wagtails, bush robins, wheatears, shrikes, sparrows and buntings. Although the creek and irrigation trenches network do dry up by late summer, they provide an excellent habitat for migrating bitterns, egrets, heron, rails and crakes, sandpipers, kingfishers and a sundry of breeding reed warblers. Two species of doves, bulbuls and a variety of finches and Hippolais, Sylvia and leaf warblers were logged in the treed sector, while large numbers of swifts and swallows were counted feeding over this site.

This site could well be viewed as an important staging post for migrating birds; still it is colonized by a number of note worthy breeders, some of which fall within BirdLife IBA Criteria A3, Biome Restricted Species, such as Upcher's Warbler, Sardinian Warbler, Masked Shrike, and Black-headed Bunting. Other species such as Collard Dove, Crested Lark, Yellow-vented Bulbul, Rufous Bush Robins and finches, are known to nest.

Collard Doves were considered extinct from Lebanon (Tohme & Neuschwander, 1974), a former breeder by Cramp (1985) and confirmed in Beirut only in 1999 (Ramadan-Jaradi & Ramadan-Jaradi, 1999). While there is unconfirmed evidence of Skylarks nesting, considered as formerly bred by Tohme & Neuschwander (1974) and Ramadan-Jaradi & Ramadan-Jaradi, (1999).

Other non-avian fauna of interest are fresh water turtles and snakes, and amphibia.

Conservation objectives

With most of the bird species highlighted above being migrants, and human disturbance considered as the major threat, the main conservation objective is to assist in increasing the nesting opportunities and arresting the decline in species utilizing this site, therefore. To this end, the specific objectives are:

- a) To maintain undisturbed feeding and roosting opportunities for migrating, resident and visiting birds.
- b) To introduce an ecological complexity component to the habitats to better protect and shelter birds.
- c) To reduce disturbance level to visiting birds and ensure a longer duration of stay-over as they utilize this site.

Key management issues

Hunting

Although hunting is not considered to reach the critical levels seen in other sites studied around Lebanon, still it is a significant threat; the water rail and corncrake recorded were handed to us, shot by a teenager. So, without the implementation of some degree of control of hunting this site will continue to be a high-risk location for birds. Awareness campaigns and the involvement of the local municipalities are essential in achieving this aim.

Pollution

Reducing the amount of pesticides used in the surrounding agricultural land and changing the current agricultural practices is also a key issue. Most of the planting lots are smallholdings, thus the most effective impact would be through the partnership with agricultural cooperatives and the development of NGOs promoting organic farming as a base for healthy rural products. Here, the link between poverty alleviation, and job creation with nature conservation would be crucial for success.

Other threats

Other threats such as diversion of water/canalization, over-extraction of ground-water, irrigation and debris/garbage pollution do exist, but could be controlled through the awareness campaigns

Table 1 Status of key species

SPECIES	International status	Status at site
Pallid Harrier	Near threatened	Passage migrant
Corncrake	Near threatened	Passage migrant

Site 11 Rachaya/ Aiha

11.1 General Description:

Site is located on the lower slopes of Mount Hermon south east of the Anti Lebanon Mountain range in Lebanon.

Economic, cultural and social values of the site appear to be only agriculture value, no apparent tourism or recreational values save for hunting.

Limestone outcrops, dry valleys. No precipitation May- October, snow lies until April on higher sections.

Conservation measures taken: hunting ban recommendation

Geographical Coordinates: 33 30 N, 35 53 E with an altitude of 1205 m

Total area: 175.819 ha

Habitat coverage: 90% scrub/ bush land, 10% agriculture/cultivation. Shrubby bushes, some low Mediterranean oak trees, floor grass.

Threats: C (Critical), M (Major), L (local)

M level threats there are excessive or irresponsible hunting, and deliberate persecution of birds. Autumn hunting of low-flying soaring birds

L level there is overgrazing/over browsing.

11.2 Comments on 2005 observations at Rachaya/Aiha

Due to military activity early in 2005 a viewpoint near Aiha was chosen rather than one in Rachaya municipality, 5 kms away. The montane habitat supports **Horned Lark** during the winter, and breeding biome-restricted species such as **Black-eared Wheatear**, **Spectacled Warbler** and **Black-headed Bunting** were present and breeding in 2005. However, like Ain Hoursche, the importance of the site as a bottleneck location for soaring birds could not be verified from our visits, further study would be worthwhile, as shotgun cartridges near the observation point suggest that birds do fly vulnerably low over the area on days of peak passage.

Number of species observed: 38

Number of visits in 2005: 7

Dates: 3 March, 8 April, 9 April, 6 May, 27 May, 4 October, 13 December

Site 12. Tannayel Pond:

12.1 General Description:

The site is located 2 km east of Chtaura, and privately owned by a monastery. Land is used on a primary level as a rangeland, agriculture/cultivation, and as a secondary level forestry, tourism, and recreation.

Geographical Coordinates: 33 79 N, 35 87 E

Total area: 224.096 ha

Habitat coverage: 60% woodland/forest, 35% agriculture/cultivation, 5% artificial Brief description orchards, mixed woodland, and grazing pasture.

Threats: C (Critical), M (Major), L (local)

L level there is deliberate persecution of birds

12.2 Comments on 2005 observations at Tannayel Pond

Tannayel Pond lies in an area of deciduous woodland and orchards owned by the Couvent de Tannayel. The pond and its surrounds are an important feeding and resting place for migrants passing through the Bekaa valley each spring and autumn, and a winter home for finches and thrushes. Situated on the valley floor between areas of intensive farming and urban and industrial development it does not attract congregations of migratory soaring birds, nor does it hold important populations of biome – restricted or vulnerable/threatened species.

It is a safe haven for birds in that the site is guarded, although in winter some hunters occasionally encroach into it. It is one of the few breeding sites in Lebanon for **Syrian Woodpecker**. A displaying male **European Serin** was observed on 12 April and adult and 2 juveniles on 27 September, follow up visits in spring 2006 are needed to establish the status of this species at the site (currently it is not known to not breed in Lebanon)

Although not meeting any of the criteria needed to qualify for IBA status, Tannayel does lend itself to protected status (e.g. Nature Reserve); the secondary school on site could prove a future source of volunteers/wardens/guides if this idea were followed up.

Number of species observed: 58

Number of visits in 2005: 6

Dates: 23rd March, 5th April, 12th April, 3rd May, 21st June, 27th September