State of
LEBANON'S
BIRDS and IBAs

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Table of Content

Foreword

A salute to conservation in Lebanon

This book is a conservation gem. It is an important resource to read for all who care about the wildlife heritage of a remarkable country. It is essential reading for all politicians and decision-makers who must act to ensure this heritage is protected – not only for Lebanon, but for the world.

We all share and have a responsibility for our planet, no matter where we live or what our religion is. Conserving Planet Earth unites us all.

Although I have been actively involved in ornithology and conservation in the Middle East for nearly 50 years, it was in 2007 when I first stepped on the sacred turf of Lebanon. I was thrilled to be there. Together with SPNL staff, it was a privilege to take part in the first coastal HIMA training course for villagers, farmers and fisherman near the ancient city of Tyre. I then explored the snow-covered Shouf mountains with their famous 'Cedars of Lebanon', explored the wetland delights of Aammiq, drank the wines of the Bekaa Valley, and finally helped in launching the Arabic edition of Birds of the Middle East – a great SPNL achievement which has spawned country Arabic bird guides in Iraq, Syria, Kuwait and shortly Qatar.

My second visit to Lebanon was in autumn 2011. My companions were Lebanese conservationists, teachers, ministry officials and hunters, all wanting to learn about the wonders of bird migration, the threats on the birds' hazardous journeys, and the challenges faced by those charged with their conservation.

This last visit to Lebanon brought back happy memories. I spent a week in the mountains of the Upper Akkar on the route of migrating eagles, buzzards and storks that had departed their breeding grounds in Europe and Asia, and were heading south on their long journey to Africa where they will spend the winter. In that week, we witnessed the spectacle of over 10,000 migratory soaring birds – circling high in the thermals or passing just a few meters from us on our mountain look-out. Lebanon, you delivered a real treat and one day I know I will return to enjoy.

So with that happy thought, I commend to you State of Lebanon's birds and IBAs.

All players in the journey of protecting birds in Lebanon must be truly proud of this achievement and BirdLife International can be equally proud to have such loyal partners on the level of the Lebanese Ministry of Environment, GEF, UNDP and SPNL.

Many Happy Returns, dear friends. Good fortune and every success in your conservation endeavours.

Richard Porter
Ornithologist, BirdLife's Middle East Advisor
England, January 2014

Acknowledgment

This book "State of Lebanon's birds & IBAs" is a jewel and achievement for birds and biodiversity in Lebanon. It is the first book that collates all relevant data on birds, Important Bird Areas, bird habitats, and conservation efforts in one document.

For this achievement, many thanks are extended to Mr. Edgard Chehab, Ms. Jihan Seoud, Mrs. Joelle Salameh, and Mrs. Yendi Ghossein from the Energy and Environment Programme – UNDP for their support and cooperation. Special appreciation is directed to Dr. Saleem Hamadeh – MSB project manager in Lebanon and his team for the support they provided to the Society for the Protection of Nature in Lebanon-SPNL and their cooperation towards the production of this book.

Further thanks goes to Ms. Lara Samaha – Head of the Ecosystem Department at the Ministry of Environment for her follow-up, cooperation and support.

Sincere gratitude is directed to the Global Environment Facility that provided the opportunity and funds for the Development and production of this important resource for Lebanon, through the Project - Mainstreaming Conservation of Migratory Soaring Birds into Key Production Sectors along the Rift Valley/Red Sea Flyway.

It is also important to acknowledge the technical support provided from BirdLife International whenever needed. Special gratitude is extended to the MAVA Foundation and their support that made the national survey for the identification of IBAs a reality in Lebanon. Further acknowledgment is directed to the Aage V. Jensen Charity Foundation for their contribution in covering the research on birds and habitat status.

Finally, appreciation and special thanks to the co-authors and artists for their contributions towards the production of the "State of Lebanon's Birds & IBAs" book.

Thank you all for your cooperation and support that made the production of this important scientific resource a reality for Lebanon!

Bassima Chafic Khatib

SPNL Assistant
Director General

Assad Adel Serhal

SPNL Director General
Global Councillor - BirdLife International

Executive Summary

This book "State of Lebanon's Birds & IBAs" is the first of its kind for Lebanon. It summarizes the scientific work done on birds and their habitats for more than 30 years. Its foreword by Richard Porter, the well-known ornithologist and BirdLife's Middle East Advisor, justifies its valuable importance for the biodiversity in Lebanon!

The book is divided into 4 main chapters, according to the strategy adopted by BirdLife International, as follows:
Section One: Important Bird Area Programme (Sites)
Section Two: Status of Birds in Lebanon (Species)
Section Three: Birds habitats in Lebanon (Habitats)
Section Four: Conservation & Management of IBAs & Birds (People)

Section ONE introduces the Important Bird Areas programme-IBA adopted by BirdLife International & the achievements on international basis; then concentrates on Lebanon, its importance for birds and migration, and the developments in the identification of IBAs. The national scientific survey implemented by SPNL and A Rocha Lebanon resulted in the declaration of 15 IBAs distributed over the country territory where details on their ecological value for birds are explained.

Section TWO concentrates on describing the richness of birds in Lebanon as compared to its size, and describes in detail the status of birds in Lebanon. It divides the species according to their presence in Lebanon, then dwells in detail about the status of each. It covers a specific section for soaring and non-soaring birds in Lebanon with their status, period and peaks of each. Another section is dedicated for game birds also detailing their current status. The chapter ends with a suggested action plan for selected migratory soaring birds.

Section THREE sheds the light on the relation between birds and habitats, then describes the main habitats in Lebanon. Each habitat is defined with examples from Lebanon in addition to a list of the most common birds that depend on this specific habitat and the threats affecting its status.

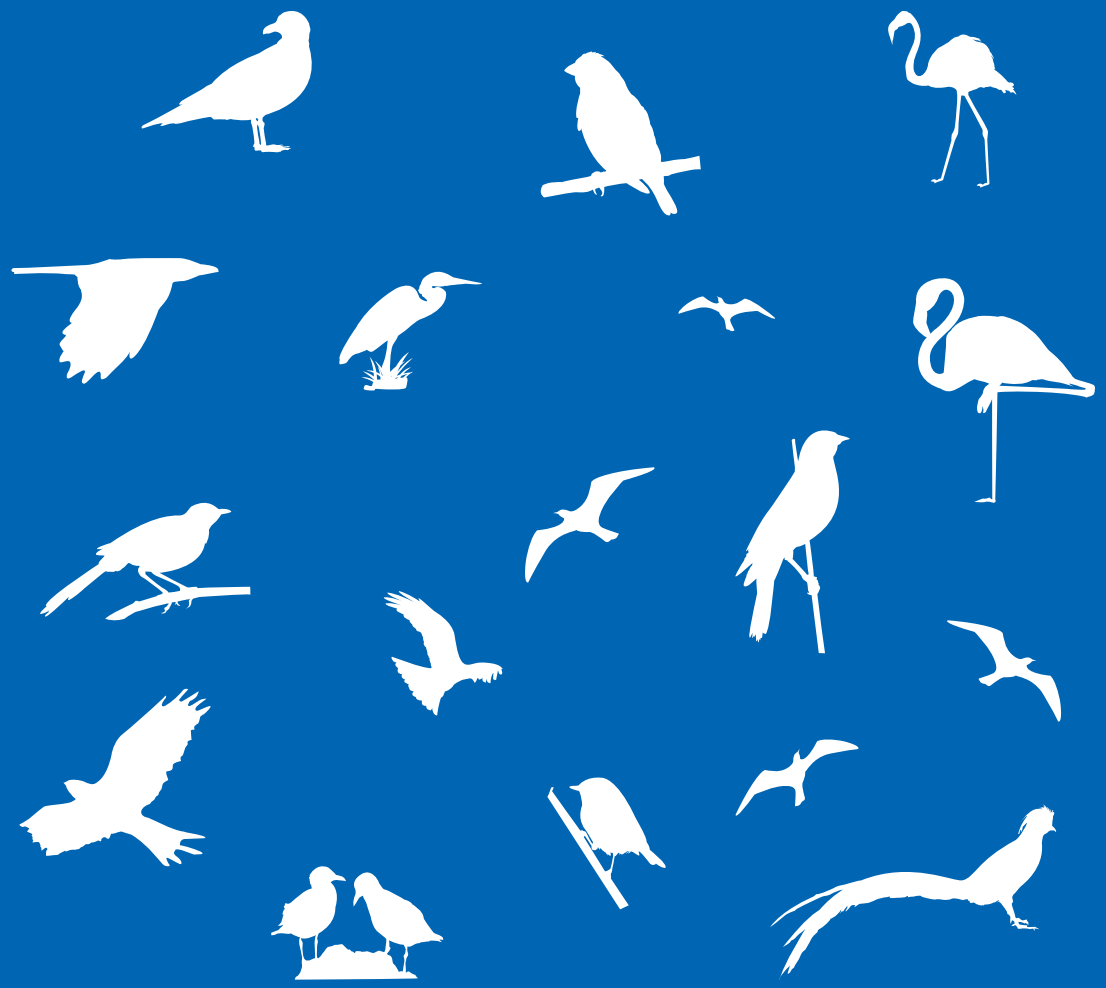
Section FOUR clarifies the important role of people in bird conservation efforts. The main examples of it are the revival of the Hima community based approach for conservation of birds and biodiversity and promoting the sustainable use of natural resources in addition to raising the level of livelihood for the local community. The second example is the achievements in the advocacy efforts for the adoption of the Hima approach on national, regional, and international basis. The third example is the development of species action plans for globally threatened species in Lebanon through a scientific approach in parallel with community involvement and participation.

The book "State of Lebanon's Birds & IBAs" is an important scientific resource collating all available data on birds, sites, habitats, and conservation efforts for birds and biodiversity in Lebanon.

List of Abbreviations

Association for Forest, Development and Conservation	AFDC
Convention on Biological Diversity	CBD
Council for Development and Reconstruction	CDR
Convention on International Trade of Endangered Species	CITES
Convention on Migratory Species	CMS
Environmental Impact Assessment	EIA
Economic and Social Commission for West Asia	ESCWA
Global Environment Facility	GEF
Gulf Cooperation Council	GCC
Globally Threatened Bird	GTB
German Development Cooperation	GTZ
Hunting Higher Council	HHC
Important Bird Areas	IBAs
International Union for Conservation of Nature	IUCN
Key Biodiversity Areas	KBAs
Ministry of Agriculture	MoA
Ministry of Environment	MoE
Memorandum of Understanding	MOU
Migratory Soaring Bird	MSB
Non-Governmental Organizations	NGOs
Ornithological society for Middle East	OSME
Public Hunting Area	PHA
Royal Society for Protection of Birds	RSPB
Strategic Environmental Assessment	SEA
Shouf Biosphere Reserve	SBR
Society for the Protection of Nature in Lebanon	SPNL
United Arab Emirates	UAE
United Kingdom	UK
United States	US
United Nations Development Program	UNDP
United Nations Educational, Scientific and Cultural Organization	UNESCO
United Nations Interim Forces in Lebanon	UNIFIL
Four Wheel Drive	4WD

Section One:
Important Bird Area Programme (Sites)



Assad Adel Serhal, Bassima Chafic Khatib, Nabil Khairallah from SPNL
Chris Naylor, Colin Conroy, Rich Prior from A Rocha Lebanon

Credit for:
Illustrations by : **Husein Ali Zorkot**
Site pictures by : **Fares Jammal**
Pictures & maps by : **SPNL, A Rocha Lebanon, & IBA management teams**

1.1 Definition of Important Bird Area's Programme

Important Bird Areas (IBAs) are among the world's key sites for the conservation of biodiversity. They are identified nationally using data gathered locally, following globally accepted criteria.

The IBA program builds on national consensus for conservation priorities, and engages local support for sites. It recognizes that sites can be conserved in many different ways, ranging from strict protection to community based management. Local conservation groups are now active at numerous IBAs around the world. These groups take many forms and involve many different stakeholders. More and more, they are finding innovative ways of using biodiversity to support sustainable livelihoods.

1.2 How are IBAs selected?

Important Bird Areas (www.birdlife.org), or IBAs, are small enough to be conserved in their entirety and often already part of a protected area network. They do one (or more) of three things:

- Hold significant numbers of one or more globally threatened species.
- Are one of a set of sites that together hold a suite of restricted-range species or biome-restricted species.
- Have exceptionally large numbers of migratory or congregatory species."

In the Middle East there are two levels of IBAs, which distinguish between sites of Global Importance (A-level sites) and those that don't meet the criteria for Global Importance but which nonetheless are of Middle Eastern Importance (B-level sites). The criteria for both levels of IBA are shown below. A site is declared as an IBA if it satisfies one or more of the following criteria:

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[1].

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.

1- IBA Criteria for sites in the Middle-East (taken from: http://www.birdlife.org/datazone/sites/middle_east_criteria.html)

1.3 What are Important Bird Areas?

- They are areas with global international significance for birds
- They constitute a practical tool for identifying and conserving sites
- They are selected through standardized criteria applied consistently throughout the world
- They are distinct areas, amenable to practical conservation
- They should form part of a wider, integrated approach to conservation and sustainable use that embraces species, sites, habitats, and people

1.4 What is the significance of IBAs?

- IBAs are priority sites for biodiversity conservation action.
- IBA information provides the means of managing, analyzing, and reporting on the status of sites of global significance for biodiversity
- The IBA process provides decision-makers with high-quality biodiversity information for sustainable resource use.
- BirdLife's IBA program helps in the development of national and local technical capacities for biodiversity conservation

2

2- Birdlife International(2013), state of the world's birds: indicators for our changing world. Cambridge,UK : Birdlife International.

Section One: Important Bird Area Programme (Sites)

Different types of ecosystem services provided by IBAs

Supporting

- Maintenance of genetic diversity

Provisioning

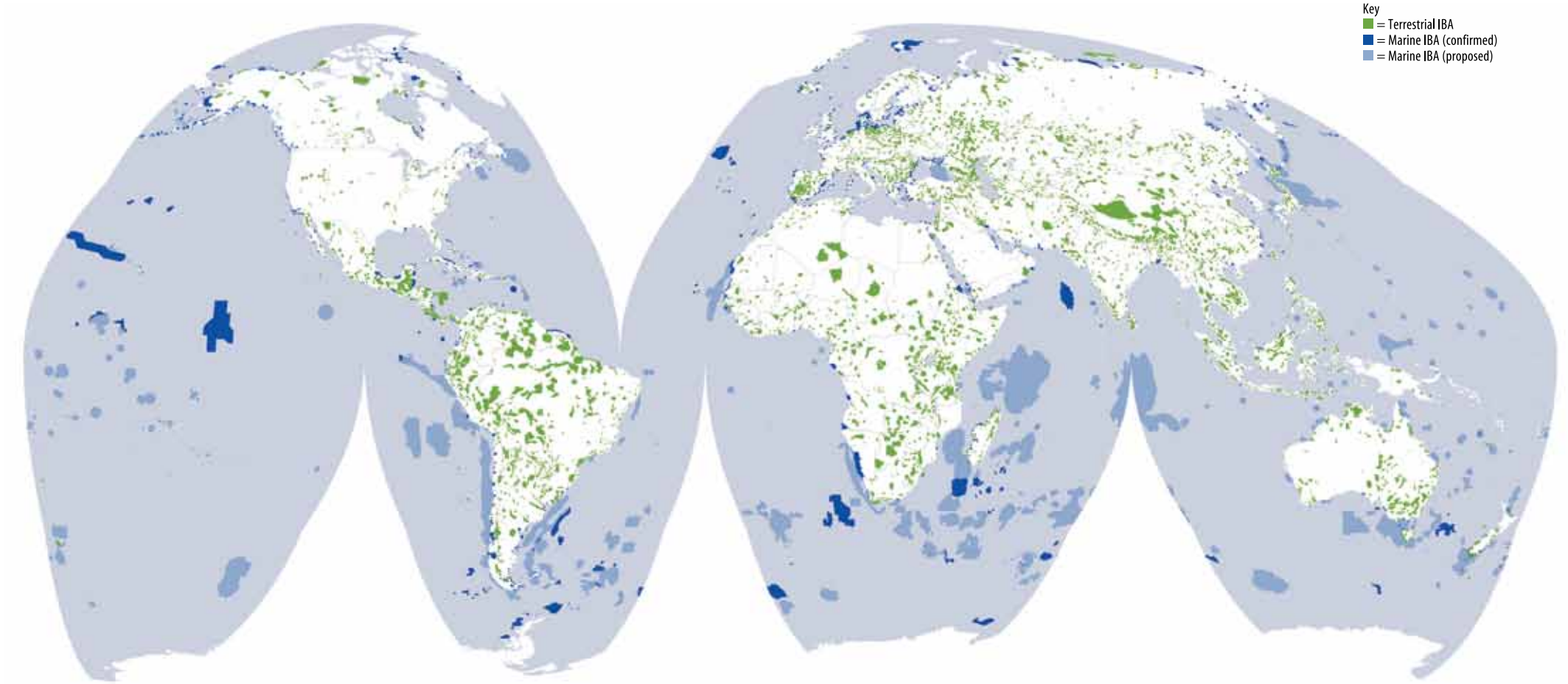
- Cultivated food
- Harvested wild food
- Raw materials
- Natural medicines
- Water flows

Regulating

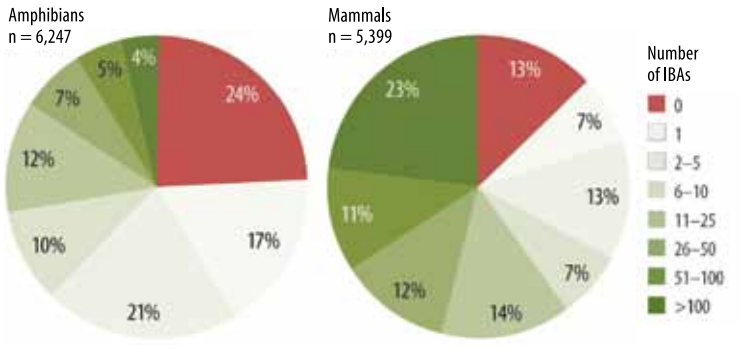
- Local climate and air quality regulation
- Global climate regulation
- Water purification and waste treatment
- Erosion control
- Reducing the impact of weather events
- Biological control

Cultural

- Nature-based recreation/ tourism
- Aesthetic benefits / inspiration / mental health
- Spiritual / religious experience



Proportion of amphibian and mammal species overlapping with IBAs



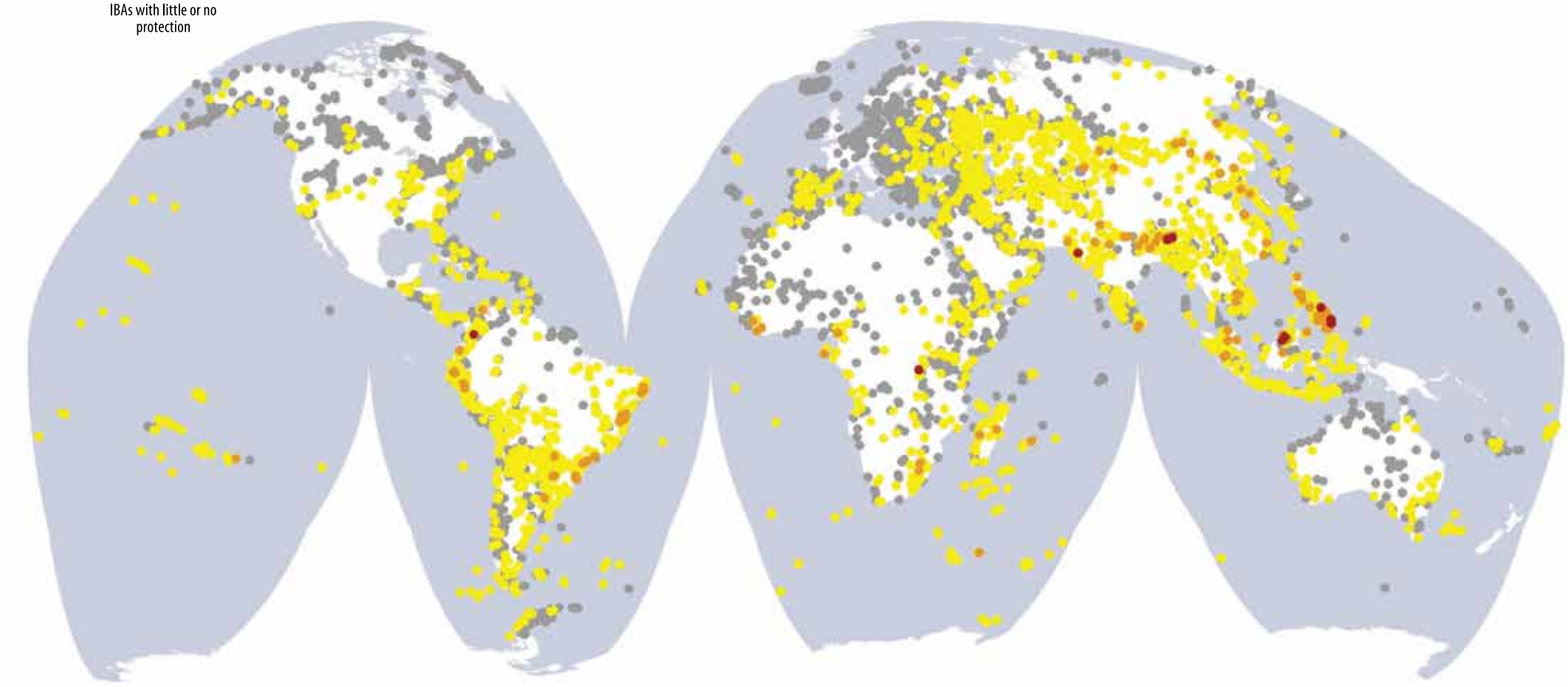
SOURCE Analysis of BirdLife data (2013).

More than 12,000 Important Bird and Biodiversity Areas have been identified on land and at sea

Using standardised criteria, the BirdLife Partnership has since the 1980s identified more than 12,000 areas important for birds around the world, most recently in the marine realm ***tinyurl.com/casestudy82***. These areas—referred to as IBAs—are also important for other aspects of biodiversity. The global IBA network overlaps, for example, with the distribution of 76% of all amphibian and 87% of all mammal species ***tinyurl.com/casestudy541***.[3]

3- Birdlife International(2013), state of the world's birds: indicators for our changing world. Cambridge,UK : Birdlife International.

Section One: Important Bird Area Programme (Sites)

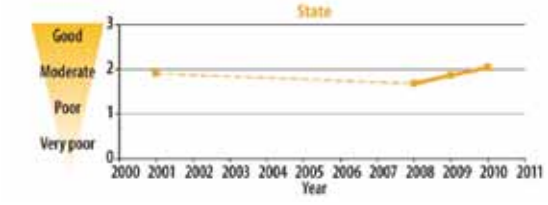


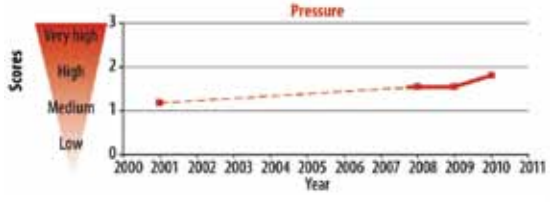
Numbers of globally threatened bird species 0 1–5 6–10 11–15

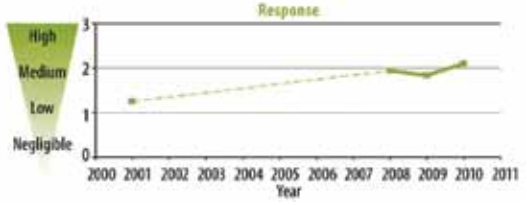
SOURCE Butchart *et al.* (2012) *PLosONE* 7(3): e32529 and analysis of BirdLife data (2013).

A high proportion of IBAs have no legal recognition or protection

Nearly half of all IBAs lack legal protection. Some 2,400 IBAs with little or no protection have significant populations of one or more globally threatened bird species, and 10 are key sites for an exceptional 11 or more such species. These sites are therefore priorities for appropriate forms of statutory recognition and protection.







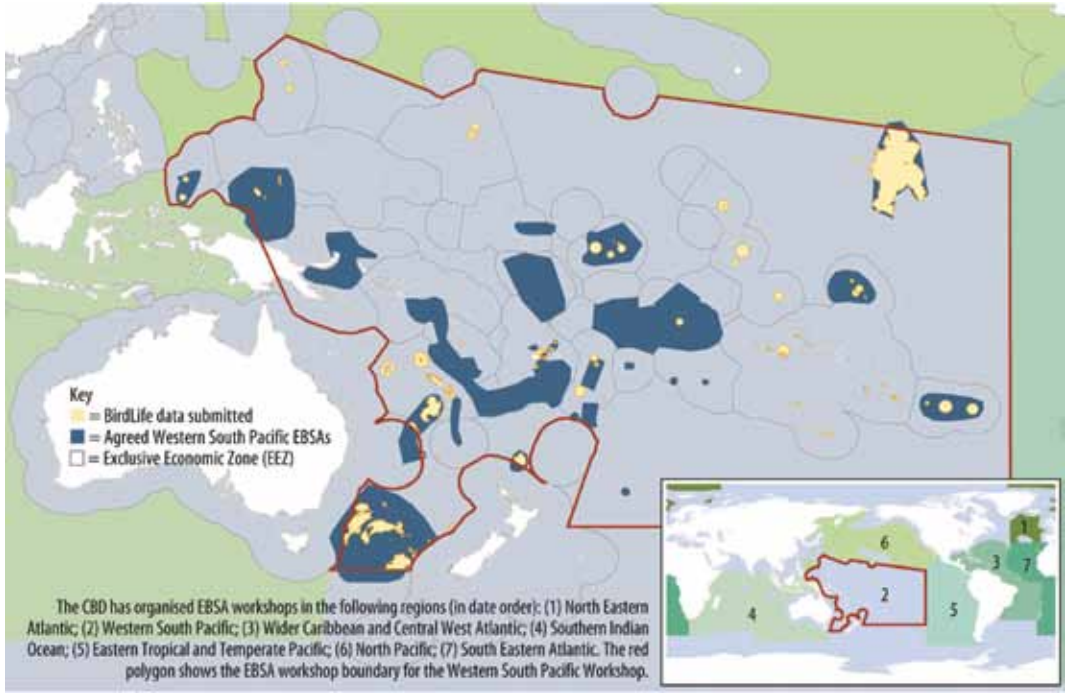
Data from IBA networks in Botswana, Burkina Faso, Burundi, Kenya, Tunisia, Uganda, Zambia and Zimbabwe. Trends need to be interpreted with caution because the number and subset of IBAs assessed varies between years (2001 = 186, 2008 = 186, 2009 = 178, 2010 = 147).

Graphic source(s) [4]

4-Birdlife International(2013), state of the world's birds: indicators for our changing world. Cambridge,UK : Birdlife International .

Using IBAs in planning the protection of the oceans

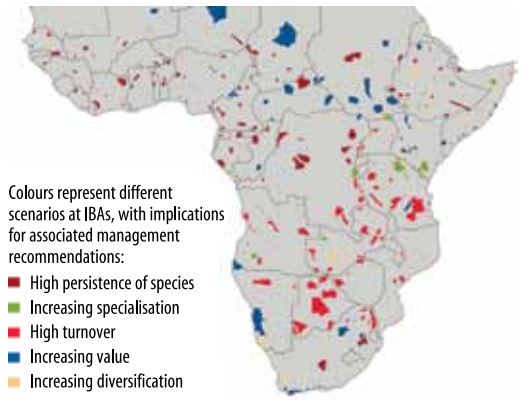
The Convention on Biological Diversity has convened a series of expert workshops to describe Ecologically or Biologically Significant marine Areas (EBSAs) in need of protection. Sites have been identified using the EBSA criteria, applied to data on many different taxa and habitats. Over 500 IBAs for seabirds have contributed to the identification of and been included within EBSAs to date.



The CBD has organised EBSA workshops in the following regions (in date order): (1) North Eastern Atlantic; (2) Western South Pacific; (3) Wider Caribbean and Central West Atlantic; (4) Southern Indian Ocean; (5) Eastern Tropical and Temperate Pacific; (6) North Pacific; (7) South Eastern Atlantic. The red polygon shows the EBSA workshop boundary for the Western South Pacific Workshop.

Adapting management of IBAs to cope with climate change

While the avifauna of many individual African IBAs is likely to change as a result of climate change, it is projected that around 90% of priority bird species will be able to survive in one or more IBAs where they currently occur. Hence, safeguarding the existing network of IBAs, in conjunction with adaptation measures that take account of likely changes in species composition, will play a key role in mitigating the worst impacts of climate change on birds in the region.

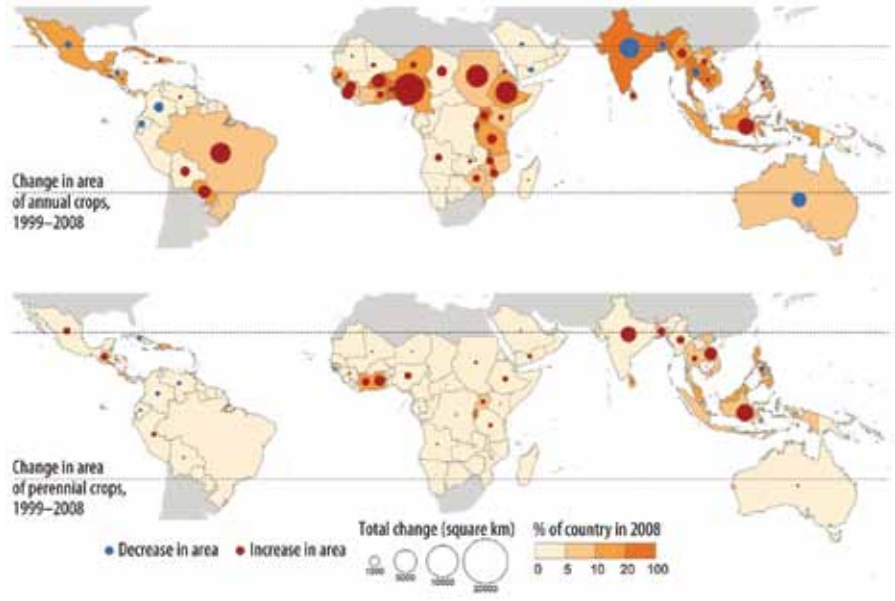


SOURCE Hole *et al.* (2011) *Conservation Biology* 25: 305–315.[5]

5. Birdlife International (2013), State of the World's birds : indicators for our changing world.Cambridge, UK: Birdlife International.

Crop expansion is a major threat to biodiversity in tropical countries

The area under agriculture has increased dramatically in the past century, with almost 40% of the world's ice-free land now devoted to farming of one kind or another (roughly 12% is crops and 26% is permanent pasture). In recent decades, increases in cropland have been particularly marked in the tropics and places that were once thought to be relatively safe from conversion are now increasingly at risk. Agricultural expansion thus poses a grave threat to a wide range of bird species and other biodiversity. Understanding the nature of such expansion is critical to understanding the threats it poses to biodiversity and to developing appropriate conservation responses.

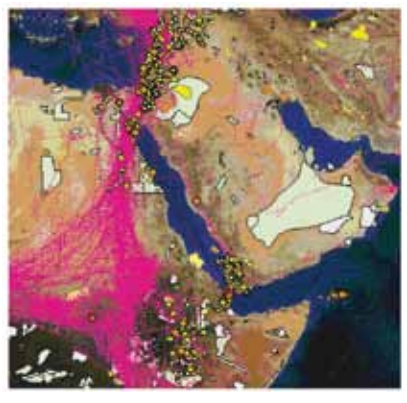


Circles show relative increment over the period 1999–2008. Shading indicates percentage of each country occupied by crops in 2008. Countries not defined as tropical are shaded grey.

SOURCE Phalan *et al.* (2013) *PLoS ONE* 8(1): e51759. 6

Mainstreaming conservation of soaring birds along the Red Sea and Rift Valley

Through a UNDP/GEF-funded project, BirdLife is working to conserve soaring birds during their migration along the Red Sea / Rift Valley flyway. The project's aim is to mainstream conservation within key sectors that can have an impact on these species, namely agriculture, energy, hunting, tourism and waste management. To support decision-making in the wind energy sector, BirdLife has developed guidance materials for renewable energy and a web-based mapping tool to show the distribution of soaring birds that are likely to be sensitive to wind energy development within the region.[7]



SOURCE Migratory Soaring Birds Sensitivity Map: Wind Energy www.migratorysoaringbirds.undp.birdlife.org

6-Birdlife International(2013), state of the world's birds: indicators for our changing world. Cambridge,UK : Birdlife International.
7-Birdlife International(2013), state of the world's birds: indicators for our changing world. Cambridge,UK : Birdlife International.

1.5 Importance of Lebanon for Birds and their Migration

Lebanon is a small country of 10,452 km2, divided into 6 administrative geographic sections – Mohafazat, which are further divided into smaller geographic districts-Qazas. These Mohafazat are arranged according to their largest area size: Bekaa largest, North Lebanon, Mount Lebanon, Nabatieh, South Lebanon, and Beirut the capital as the smallest (Map bellow).

Lebanon has a temperate Mediterranean climate, with topography dominated by two mountain ranges and a rift valley in between, running parallel to a 225 km narrow sandy and rocky coastline. The mountain range (3090m highest peak) is divided by numerous valleys, and thus resulting in extreme variability in climatic conditions, soils, vegetation cover and socio-economic status.

At least 399 species of birds have been recorded in Lebanon. These belong to 64 families and 19 orders. So far, 140 of these species have been recorded to be breeding in Lebanon. Only 130 breed regularly, the rest being either occasional or former breeders. Of the 130 regular breeders, 62 are exclusively residents (i.e. their populations remain within Lebanon)[8 9].

Further, the presence of a number of globally threatened soaring bird species in Lebanon such as Dalmatian Pelican, Greater Spotted Eagle, White-tailed Eagle, Egyptian Vulture, Pallid Harrier, Imperial Eagle, and the Lesser Kestrel stresses the importance of this country on an international scale[10].

8- Common Birds of Lebanon, C.D. , SPNL, 2004.
9- Updated by Dr. Ghassan Ramadan Jaradi, March 2012.
10- IBAs in Lebanon, Key Sites for Biodiversity Conservation, Booklet and C.D., SPNL, 2004.

LEBANON'S GEOGRAPHICAL LOCATION AND ITS VALUE FOR BIRD'S MIGRATION

Lebanon is considered to lie on one of the high diversity zones in the world, and Evans (1994) considered Lebanon as a huge "bottle-neck" for migratory birds. Further, available knowledge, and information gleaned from neighboring countries stress the importance of this country in the soaring bird's migration systems. Although major routes have been defined, a detailed analysis of bottle-necks and areas of high vulnerability have not yet been documented.

Lebanon is considered as a major flyway route for birds twice per year, where migration takes place from Europe and Asia to Africa in autumn and backwards to their breeding places in the spring season. Birds depend on resting hotspots during their migration in order to secure food, water and habitat.

The birds migrating over Lebanon depend on essential habitats for food or breeding. Thus, Lebanon is considered an important flyway and hotspot for thousands of birds migrating between Europe and Africa. This is the reason for protecting these important habitats and conserving them.

OVERVIEW ON SOARING BIRD's MIGRATION

The large Soaring birds depend on hot air currents for transport and migration, in order to decrease the energy needed for flying. Since hot air current are developed mainly in valleys and coastal areas, and are not available over water bodies; thus soaring birds are forced into specific flyway routes over land, twice per year between Europe and Africa. These areas are considered "bottleneck" where soaring birds pass in large numbers through the same place at the same time.

Although soaring birds may seem in large numbers passing along bottlenecks, these might be the ONLY flock of these birds worldwide!

Although soaring birds (including Pelicans, Cranes, Storks and many birds of prey) can be found on migration almost anywhere in Lebanon, during the spring and fall seasons, research has shown that certain routes are preferred over others. However, these routes are not exactly the same for all species, or in the two seasons as is shown on the two maps. The solid red lines show routes that have been established through research. The routes indicated by the dotted lines have been extrapolated and needs further research to be confirmed.

Spring

In spring, the major route used by soaring birds migrating north through Lebanon is along the Eastern flanks of the Mount Lebanon Range and the western half of the Bekaa. This includes Cranes, Pelicans, birds of prey such as Common Buzzard and Lesser Spotted Eagle, and many thousands of White Storks.

Smaller numbers of birds, dominated by White Pelicans and White Storks pass up the western side of the country where they can sometimes be seen in large flocks at sites such as Bhamdoun in the Beirut River Valley.

Fall

In the fall, when birds are returning south to spend the winter in Africa, most soaring birds pass down the eastern flanks of the Lebanon Mountains while some travel higher up on both sides of the ridge. These streams converge about halfway down the mountain chain, with most of the birds, particularly the large birds of prey passing together over the upper portion of the Beirut River Valley.

Unlike in the spring, White Storks are seen in much lower numbers in most autumns, with the majority passing further east over Syria and Jordan[11].

11- IBA MAVA funded project "Identification and Conservation of New "Important Bird Areas" in Lebanon", final publication.

1.6 Declared IBAs in Lebanon

With generous funding from the MAVA trust, A Rocha Lebanon and the Society for the Protection of Nature in Lebanon (the Birdlife National partner) have implemented a 3 year, science and community conservation project aimed at identifying and conserving new Important Bird Areas in Lebanon.

Prior to the project, four sites were internationally designated as Important Bird areas by SPNL and Birdlife International in 1994. These sites were; Ehden Forest Nature Reserve, Palm Islands Nature Reserve, Aammiq Wetland, and the Shouf Cedar Nature Reserve. From March 2005 to February 2008, 31 sites were surveyed throughout the country, through a complete yearly cycle, with repeated visits during the main migration period. A total of 320 site visits were conducted by teams of researchers, totaling over 3000 hours of observations. The result of these national surveys was the identification of 11 new IBA sites and declaration by BirdLife International.

Now, Lebanon has an inventory of 15 IBAs in total! These IBA sites are namely: Ehden Forest Nature Reserve, Palm Islands Nature Reserve, Aammiq Wetland, Shouf Cedar Nature Reserve, Hima Aanjar / Kfar Zabad, Lake Qaraaoun, Riim / Sannine Mountain, Tannourine Cedars Nature Reserve, Hima Ebel es-Saqi, Semi Deserts of Ras Baalbek, Beirut River Valley, Upper Mountains of Akkar-Donnieh, Jabal Moussa Mountain, Bentael Forest Nature Reserve, and Ramlieh Valley.

Of the 15 sites declared, 5 are government declared nature reserves, 2 are conserved by SPNL in collaboration with local communities through the Hima approach, 4 have active conservation NGOs and 4 have no current protection[12].

12- IBA MAVA funded project "Identification and Conservation of New "Important Bird Areas" in Lebanon", final report.

1.6.1 Palm Islands Nature Reserve
1.6.1.1 General Description

Sooty Shearwater

Audouin's Gull

This site consists of three flat, rocky islands of eroded limestone rising to 12 m above sea level, about 5.5 km offshore and north-west of Tripoli, together with their surrounding seas, Palm Island (Jazirat al-Nakhl) is the largest at 20 ha area, and has a sandy beach on its north and east sides, and a central earthen depression where rainwater accumulates in winter. Parts of the islands are flooded with seawater during storms. There is some very stunted shrub-type vegetation in clefts in the limestone but the islands are otherwise relatively bare, except in spring when carpeted in wildflowers. On Palm Island there are also some small ponds, boggy areas and stands of reed *Phragmites*. There is also a freshwater well, some half-built concrete salinas and some ruins from antiquity. There is a historic but renovated lighthouse on Ramkin Island (3.5 ha). The third island is called Sanani (4.5 ha). They are publicly owned.

The land is used on a primary level for picnickers, tourists and school parties, and on an occasional level by illegal fishermen.

Economic, cultural, social values of the site: mainland local businesses benefit from the visitors to the islands. Historically, the islands hosted important settlements dating to the late Roman and medieval periods. Excavations of Palm Island revealed the foundations of a church, well and freshwater moat dating back to the Crusades.

Conservation measures taken: Ban on hunting and fishing and controlled access policy are in place.

Geographical Coordinates: 34º 29.40'N, 35º 46.25'E with an altitude of 0-12m.

Total area: 412 ha

Habitat coverage: 93% marine, 7% islands.

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

Critical **C level** are tourism/recreation, solid waste pollution such as debris and garbage.

Major **M level** pollution, most serious of which are oil; in addition to over fishing.

Local **L level** introduction of non-indigenous fauna/flora, and although the site is legally protected some degree of illegal fishing still occurs.

1.6.1.2 IBA Criteria met: A1

Explanation: Audouin's Gull (*Larus audouinii)*, a globally threatened species, is known to have bred on these islands in the past and now has been recorded as a non-breeding visitor justifying the **A1** classification.

Supporting notes for Palm Islands Nature Reserve as an IBA

These islands were formerly an important seabird breeding site, known as the 'Bird Islands' in the last century. Audouin's Gull (*Larus audouinii)*, Caspian Gull (*Larus cachinnans)*, Lesser Crested Tern (*Sterna bengalensis)*, Common Tern (*Sterna hirundo)* and Little Tern (*Sterna albifrons)* were all breeding on Palm Island at the end of the 19th century at least, but currently no species breed, apart from *L. cachinnans* possibly, due to high levels of disturbance. The site would make an excellent observatory for monitoring the large, visible migration of waterbirds along the coast such as egrets, ducks, waders and gulls, and for observation and ringing of passerine migrants; over 300 species of migrants had been recorded by 1974, including vagrants such as White-tailed Eagle (*Haliaeetus albicilla)* and Sociable Lapwing (*Vanellus gregarious)*, examples such as Eleonora's Falcon (*Falco eleonorae)* and Peregrine Falcon (*Falco peregrinus)* are also known to occur here. Furthermore, the remoteness from urban developments renders this site as an ideal haven for wintering seabirds such as Grey Heron (*Ardea cinerea*), Great Cormorant (*Phalacrocorax carbo*), waders and gulls.

1.6.1.3 Site Management Statement – Palm Islands Nature Reserve

Introduction

This document provides a summary description of the Palm Islands Nature Reserve 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 in order to enhance its value for wildlife.

Site Description

The site represents the only island habitat of significance off the Lebanese coast, it consists of a group of three flat, rocky islands of eroded limestone pavement, northwest of Tripoli in the north of the country, together with their surrounding sea constitute the **Palm Islands Nature Reserve** and an overall area of 4.12 sq. km.

Importance of site for birdlife and biodiversity

The importance of this site lies mainly in its potential contribution to the biodiversity of the country, being the only island habitat in Lebanon. Its shores are undeveloped and could be free from any disturbance or harassment to the wildlife if properly managed. As mentioned earlier a number of bird species have bred here, but still now there are nine species recorded nesting here such as the Hoopoe (*Upupa epops*), Graceful Warbler (*Prinia gracilis*), Tawny Pipit (*Anthus campestris*) and White Wagtail (*Motacilla alba)*. Its importance for wintering and migratory birds should not be underrated, though, particularly since many of which continue their route to the Lebanese mainland.

Old records of sea mammals include Mediterranean Monk Seal *Monachus monachus*, perhaps up until the 1960s and then sporadically in 1997 and 2012. Palm Island is also known as Rabbits Island (Jazeerat al-Araneb). The name 'Araneb' means rabbits and comes from the great numbers of rabbits that were grown on the island during the time of the French mandate early in the 20th century, now extinct but replaced in 1984 by domestic rabbits that proliferate to form a feral population. Also, its sandy shores are considered one of the few remaining areas in the country where marine turtles such as the Loggerhead Turtle *(Caretta caretta*) regularly nest (The Green Turtle is a wintering species within the reserve's waters). As for its flora, it contains medicinal plants and other rare and endemic wildflower species some are nationally endangered or extinct along the mainland coast, or otherwise unusual.

The site was declared a national Marine Reserve on 9 March 1992 (Law 121) and is listed as a wetland of international importance by Carp (1980). It has been identified as an Important Bird Area (IBA) in 1994 and was designated as a Mediterranean Specially Protected Area (SPA) under the Barcelona Convention in 1995, Ramsar Site in 2001, and Specially Protected Area of Mediterranian Importance (SPAMI) in 2012.

Conservation Objectives

1. Globally Threatened Species

That the Audouin's Gull numbers increase and breeding reestablished.

2. Breeding Birds

That the numbers of breeding birds will increase, both qualitatively and quantitatively. In particular, the habitat should be managed to make the site suitable for globally threatened species which are known to pass through the country.

3. Wintering and Migrating Birds

The remoteness of this site from the populated areas and heavily developed coast render it as a heaven for wintering and migrating birds as resting, feeding or roosting posts during their flight. Thus, the aim would be to conserve and manage this habitat to support an increase in the species and numbers of these birds as they utilize this site.

Key Management Issues

Tourism/recreation

The islands are closed all the year except for July, August and September. The birds end their breeding season in early June and they are not affected by visitors. Visitors are limited to a visitation zone to avoid disturbance to turtle breeding zone. Plants are also protected by zonation and by being tubers or seeds in the ground in summer time.
Although access to these islands is controlled; yet some disturbance from visitors do occur. Thus, more control measures should be exerted by the management team of the islands.

Solid waste and pollution

Debris/garbage is an eye soar, particularly on the shore; also there is evidence of pollution of the site by sewage run-off and maritime based oil.
Following negotiation with municipalities, the rubbish dump was separated in 2003 from the sea through wall construction. Sewage run-off has never reached the islands due to sea currents that intercept it and wash it away from the islands.
The eye soar debris/garbage is expelled on islands by South West sea water currents in summer (from North African shores) and North East European and North West Asian sea shores in winter). This problem is beyond the capabilities of Lebanon.

Fishing

This has been a major problem for decades, particularly by the use and frequency of dynamite fishing offshore in the last decade. This is an illegal practice and legislations should be firmly enforced.

Introduction of non-indigenous fauna/flora

Introduction of foreign species into these isles could have a devastating effect on the local wildlife, as witnessed in islands all over the globe. Since entrance is controlled, visitors should be advised against bringing any pets or vegetation onto the islands with them.

Hunting

Illegal hunting, deliberate persecution of birds, and over-collection of eggs and young of nesting seabirds in the past have been a critical problem, but now the islands are legally protected and well controlled.

Current conservation measures & future plans:

Palm Islands is declared by law as a nature reserve under the auspices of the Ministry of Environment. It has a management team assigned for its management. Further, a management plan, monitoring plan, and zonation plan are developed based on scientific research. Strict enforcement measures should be implemented during the months when visitors are allowed.

1.6.2 Aammiq Wetland

1.6.2.1 General Description:

Ferruginous Duck

Marbled Teal

Great Snipe

Site is located in the western side of the Bekaa Valley, about 7 km south of the city of Qab Elias at the foot of the eastern slopes of the Mount Lebanon mountain range, on the edge of an agricultural flat plain and stretching across to the Litani River. The land is privately owned.

Brief description of the site: The largest natural freshwater wetland in Lebanon consisting of (1) wetland, with extensive reed beds (2) creek and irrigation ditches with reeds, few willows and poplar trees (3) agricultural lands and (4) seasonally flooded open fields of rough grazing grounds. Recorded mammals include the European Otter, Swamp Cat, Jackal and Wild Boar with abundant amphibians and reptiles.

The land is used on a primary level as water resource for people locally, and on a secondary level for cultivation and grazing, other land-uses are tourism/recreation and wildlife conservation/research.

Economic, cultural, social values of the site: water source for agriculture, ecotourism.

Conservation measures taken: A hunting ban and controlled access policy are in place reinforced by guards.

Geographical Coordinates: 33 46 N, 35 46 E with an altitude of 865 m
Total area: 280 ha

Habitat coverage: 50% non-marine wetlands, 50% agriculture/cultivation.

Threats: **C** (Critical), **M** (Major), **L** (local)
Critical **C level** are water extraction, canalization, and agriculture intensification.
Major **M level** are tourism/recreation, solid waste pollution such as debris/garbage, and pesticides and herbicides over use.
Local **L level** is overgrazing/over browsing and hunting, although the site is legally protected, some degree of shooting still occurs.

1.6.2.2 IBA Criteria met: A1, A4i, A4iv

Explanation: A1 the wetland is an important stop-over site for a number of globally threatened bird species including Ferruginous Duck (*Aythya nyroca*), Pallid Harrier (*Circus macrourus*), Greater Spotted Eagle (*Aquila clanga*), Eastern Imperial Eagle (*Aquila heliaca*), Lesser Kestrel (*Falco naumanni*) and Great Snipe (*Gallinago media*). **A4i** more than 5,000 White Stork have been recorded over the site during spring/autumn migration seasons. **A4iv** In excess of 20,000 soaring birds pass over the marsh both in spring and autumn, including White Stork, White Pelican, Common Crane, and at least 31 species of raptors. Also, over 45 species of bird associated with wetlands use the site. **Number of species recorded: 256**

Supporting notes for Aammiq as an IBA

The swamp lies on one of the most important bird migration routes in the Levant, and over 256 species of birds have been recorded in this area. The 6 globally threatened species recorded justifies the site's proposal as an IBA under category A1 criterion, while the

numbers of migrants registered validates its designation under the congregation criterion A4. In addition to the migrants, this area holds large numbers of over wintering and breeding avifauna. More than 17 species nest here such as the Little Grebe, Little Bittern, and Night Heron. Wintering species utilizing the ponds include Coot, Eurasian Wigeon, Mallard, Garganey and Shoveler while the grazing fields which are flooded in late winter attract a wide variety of waterfowl. The numbers of Lapwing can exceed a thousand and as the Lapwing is a species in significant global decline, this is worth noting.

1.6.2.3 Site Management Statement – Aammiq Wetland

Introduction

This document provides a summary description of the Aammiq Wetland 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 wildlife.

Site Description

The largest remaining freshwater wetland in Lebanon, fed by the El Rhabe stream from springs high up in the Lebanon Mountains. The main area floods markedly beyond 280 ha in winter, but dries out between August and November each year. The extensive *Phragmites* beds are interspersed with open fields, and there are trees along the Litani and Riachi rivers mostly the introduced *Populus* and *Cupressus*. It is privately owned mostly by one family.

Importance of site for birdlife and biodiversity

As well as the breeding avifauna mentioned above and the common reed warblers such as Cetti's, Reed, Great-reed, Moustached and Savi's Warblers, the wetland additionally holds one of only two known breeding locations of Penduline Tit in the country. A number of farmland birds nest here also; examples of which are Marsh Harrier, Lesser Short-toed Lark and Black-headed Bunting.
Historically, this site is well known as the hot spot for wintering birds for the country; not only for the marshes, but also the grazing fields which are flooded in late winter do attract many waterfowl. The site is listed as a wetland of international importance by Carp (1980), is included in the Directory of Wetlands in the Middle East (IUCN, 1995), was declared Ramsar Convention site number 978 in 1999, and in 2005 was designated with the Chouf reserve as a "Biosphere Reserve" by UNESCO.
This site is also of significance for other biota as mentioned above.

Conservation Objectives

1. **Globally Threatened Species**

That the numbers of visiting or breeding endangered species increase or remain the same.

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 the Ferruginous Duck and Great Snipe, which is known to pass through Lebanon in limited numbers.

3. **Migrating Birds**
The diversity of habitats at Aammiq Wetland are a heaven for migrating birds as resting, feeding or roosting posts during their flight. Enhancing these locales to support a qualitative and quantitative increase in the numbers of these birds as they pass through the site is highly important.

Key Management Issues

Water extraction, canalization, and agriculture intensification.
Over use of water resources and agricultural practices should be tackled through special program targeting surrounding farmers with extension services, awareness program on good agricultural practices-GAP, and providing alternative irrigation support such as drip irrigation coupled with a monitoring program.

Tourism/recreation
Although access to the wetland core is controlled yet breaches are still occurring, however, these are not significant disturbance to breeding birds and other wildlife. However, the major threat is from neighboring properties where hunting and recreational activities go unwarranted, so discussions should be opened with the owners of adjoining lands to consider ways of minimizing the impact of visitors/revelers on the breeding birds.

Solid waste and pesticides and herbicides pollution
Debris/garbage is an eye soar, particularly beside the main road and farm tracks, also there is evidence of pollution of the site, 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. As suggested above, special program should be developed targeting surrounding farmers promoting Good agriculture practices-GAP; thus saving the wetlands resources (quality and quantity).

Overgrazing/over browsing
Grazing is a useful management tool in wetlands, such as the utilization of the water buffalo in reeds spread control, but excessive grazing as practiced in the adjoining fields can be deleterious. A grazing regime should be maintained which would ensure that maximum benefit for this site is achieved.

Hunting
This has been a major problem for decades, particularly in the wetland section of the site, but now it is legally protected although some degree of shooting still occurs, yet not to any noteworthy level. These efforts to eliminate hunting should be encouraged and their efficacy assessed.

Current conservation measures & future plans:
A Rocha Lebanon together with the landowners implement a management plan for approximately 2/3 of the site. This includes a hunting ban and controlled grazing. An eco-tourism project is planned.

1.6.3 Shouf Cedar Nature Reserve
1.6.3.1 General Description

Egyptian Vulture

The site is located south east of Beirut in the Shouf Mountains overlooking the Mediterranean Sea to the West, and the length of the Bekaa valley to the east. It stretches from Dahr Al Baidar in the North to Niha Mountain in the South. The site is a mix of public and private ownership.

Brief description of the site: The best remaining stand of cedar *Cedrus libani* forest in Lebanon, in a mountainous, rocky area; the highest peak is at 1,980m; it is covered in snow between December and March. The forest is relatively open, with much scrub, and some cultivation. The reserve contains the cedar forests of Barouk, Maaser el Shouf, Ain Zhalta and Bmohrai. The trend from north to south is for the eastern slopes to change from very steep to less steep and for the western slopes to become increasingly steep. The top of the Barouk range becomes increasingly narrow towards the south.

The land is used on a primary level for wildlife conservation, nature education, tourism and recreation, secondarily for grazing and various local artisan activities.

Economic, cultural, and social values of site: local businesses and hotels benefit from visiting tourists. The cedar forests in Lebanon are considered as the oldest documented forests in history and it is central to many cultures, religions, and historical events, all of which have left an imprint which makes the area's cultural heritage.

Conservation measures taken: Site is declared as a nature reserve under the auspices of the ministry of environment, the area is gated and protected by guards, where hunting and camping is banned, and with action plans for both fire prevention and grazing management. It is also declared as UNESCO-MAB Man and Biosphere covering both Chouf reserve and Ammiq wetlands.

Geographical Coordinates: 33º 42 North, 35º 41 East with a maximum altitude of 1980m
Total area: **20,000 ha**.
Habitat coverage: 75% woodland/forest, 25% scrub/ bush land

Threats: **C** (Critical), **M** (Major), **L** (local)
There are not any direct threats; however tourism and recreational activities pressure is increasing. Sustainable grazing is practiced but some illegal hunting does take place in the buffer zone.

1.6.3.2 IBA Criteria met: A1, A2

Explanation: Please refer to Table 1.

Table 1. Populations of IBA trigger species

Species	Season	IBA Criteria	IUCN Category
Greater Spotted Eagle ***(****Aquila clanga****)***	Migrant	A1	Vulnerable
Eastern Imperial Eagle (*Aquila heliaca****)***	Migrant	A1	Vulnerable
Saker Falcon (*Falco cherrug****)***	Migrants	A1	Endangered
Egyptian Vulture (*Neophron percnopterus)*	Migrant	A1	Endangered
Lesser Kestrel (*Falco naumanni*)	Migrant	A1	Vulnerable
Masked Shrike (*Lanius nubicus*)	breeding	A3	Least Concern
Sombre Tit (*Parus lugubris*)	resident	A3	Least Concern
Upcher's Warbler (*Hippolais languida*)	breeding	A3	Least Concern
Olive-tree Warbler (*Hippolais olivetorum*)	breeding	A3	Least Concern
Sardinian Warbler (*Sylvia melanocephala*)	breeding	A3	Least Concern
Menetries's Warbler (*Sylvia mystacea*)	breeding	A3	Least Concern
Spectacled Warbler (*Sylvia conspicillata*)	breeding	A3	Least Concern
Western Rock-nuthatch (*Sitta neumayer*)	resident	A3	Least Concern
Finsch's Wheatear (*Oenanthe finschii*)	breeding	A3	Least Concern
Black-eared Wheatear (*Oenanthe hispanica*)	breeding	A3	Least Concern
Syrian Serin (*Serinus syriacus*)	breeding	A1, A2, A3	Vulnerable
Cretzschmar's Bunting (*Emberiza caesia*)	breeding	A3	Least Concern
Black-headed Bunting (*Emberiza melanocephala*)	breeding	A3	Least Concern

Supporting notes for Shouf Cedars Nature Reserve as an IBA

The reserve hosts 290 species of birds, 32 species of wild mammals and 532 species of plants. 19 out of the 290 bird species are considered rare at the national level and more than 22 species have been confirmed to be resident, the rest are migratory or rare visitors, which designate it as a significant staging, resting or feeding post for migrating birds. The 6 globally threatened species recorded justifies the site's proposal as an IBA under category A1. The restricted range Syrian Serin validates the A2 criterion, while the 13 biome-restricted species could propose the A3 designation (Table 1).

The mammals inhabiting the reserve include examples such as the Wild boar (*Sus scrofa*), Gray wolf (*Canis lupus*), Beech marten (*Martes foina*), European badger (*Meles meles*), Cape hare (*Lepus capensis*), Caucasian Squirrel (*Sciurus anomalus*), Palestine Mole Rat (*Nannospalax ehrenbergi*) Indian porcupine (*Hystrix indica*), Striped hyena (*Hyaena hyaena*), Wild cat (*Felis silvestris*), Cape hyrax (*Procavia capensis*).

There are 532 identified species of flora distributed over 61 families including 25 internationally and nationally threatened species, 48 endemic to the Levant, and 14 rare species, whilst 214 species are restricted to the Eastern Mediterranean area.

Also the Shouf cedar reserve is home to a rich variety of reptiles, 26 species were documented with two species endemic to Lebanon and the Shouf area in particular. Also four species of amphibians are known to inhabit the reserve.

1.6.3.3 Site Management Statement – Shouf Cedar Nature Reserve

Introduction

This document provides a summary description of the Shouf Cedar Nature Reserve 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 in order to enhance its value for wildlife.

Site Description

The best remaining stand of cedar *Cedrus libani* forest in Lebanon, in a mountainous, rocky area at 1,750 m, covered in snow between December and March. The forest is relatively open, with much scrub, and about 10% of the area is under cultivation. Currently the area is primarily used for conservation and environmental educations, secondarily for tourism and recreation with limited grazing.

Importance of site for birdlife and biodiversity

Many species have been recorded breeding here, some are high elevation specialists such as the Chukar Partridge (*Alectoris chukar),* Eurasian Jay (*Pyrrhocorax glandarius)*, Coal Tit (*Periparus ater*), Horned Lark (*Eremophila alpestris)* and Rock Bunting *(Emberiza cia).* Other birds nesting could include Great Tit (*Parus major*), Woodlark (*Lullula arborea),* Eastern Orphean Warbler (*Sylvia crassirostris)* and Eurasian Blackbird (*Turdus merula*).

It is declared by government legislation, Law No. 532 of 24 July 1996 and its amendment as a national nature reserve, and in 2005 was designated a "Man and Biosphere Reserve" by UNESCO including Ammiq wetlands.

Biosphere Reserve Zoning

Biosphere reserves should contain one or more core zones, buffer zones, and a evelopment zone to accommodate their multiple functions

- Core zone of the SBR is about 161 sq km. The main conservation objectives of the core zone are the protection and rehabilitation of the SBR natural and cultural values.
- Buffer zone of the SBR is about 54 sq km. It surrounds the core zone(s) where only activities compatible with the conservation objectives can take place.
- Transition zone (development zone) of the SBR is about 233 sq km. It includes all the villages surrounding the SBR where sustainable resource management practices are promoted.

Conservation Objectives

1. **Globally Threatened Species**

That the numbers of visiting or breeding endangered species increase or remain the same.

2. **Resident Birds**

That the numbers of resident birds will increase both qualitatively and quantitatively, but in particular, the habitat should be managed to make the site suitable for the biome and range restricted species which are known to occur in the Reserve.

3. **Migrating Birds**

The diversity of habitats both zonal and successional are a heaven for migrating birds as resting, feeding or roosting posts during their flight. Enhancing the locales to support increasing numbers of these birds as they pass through the site.

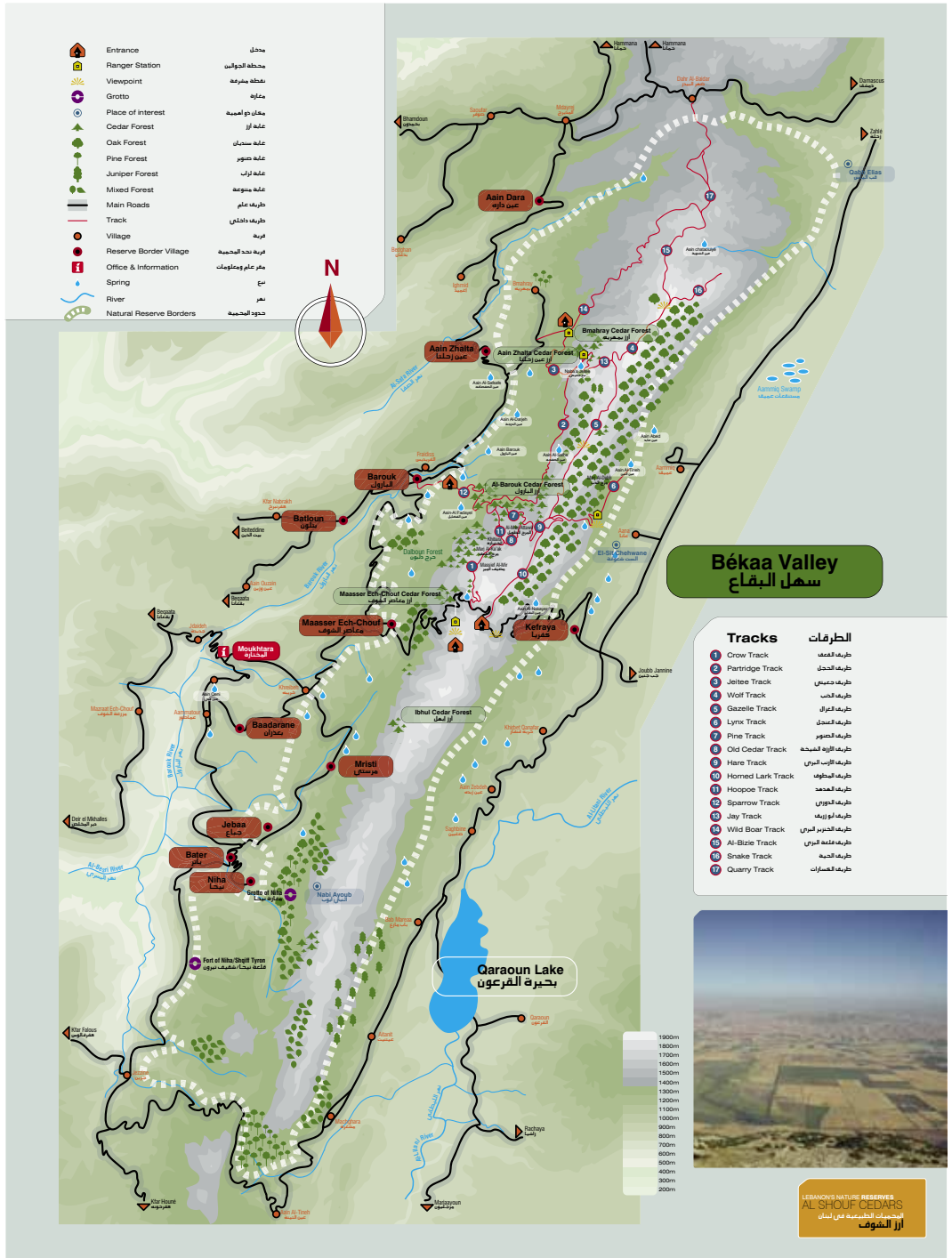
Key Management Issues

Tourism/recreation

Although access to the reserve domain is controlled; yet tourism and recreational activities are placing an increasing disturbance pressure which could result in the segmentation of the site causing significant threat to breeding birds and other wildlife. Therefore, the zoning plan should be well enforced demarking land access and use temporal and spatial; thus minimizing the impact of visitors on the fauna and flora.

Grazing/browsing

Grazing is a useful tool in forest management, mainly in fire spread control, but excessive grazing, as was practiced in the past, is devastating to the regeneration of flora. A grazing regime was instigated in the buffer and development zones of the reserve ensuring a healthy revival of the vegetation as witnessed in the plants diversity.



Hunting
The hunting ban put in place is well enforced, yet some degree of shooting still occurs in the buffer zone as attested by the odd spent cartridge found, nevertheless not to any noteworthy level.

Current conservation measures & future plans:
The local conservation group working to support conservation at this IBA is the Al-Shouf Cedar Society-ACS established in 1994; through a management team of 20 employees. The reserve is well managed through the implementation of a management plan, zonation plan, grazing plan and an integrated monitoring plan. Collaboration with the local community is supported by the local development project providing income generation opportunities linked to the reserve such as traditional mouneh products, bed and breakfast facilities, and eco-tourism.

1.6.4 Ehden Forest Nature Reserve

1.6.4.1 General Description

Site is located in north of Lebanon at high elevations on the north western slopes on the Mount Lebanon Range, about 30km south east of Tripoli and 3km north east of Ehden. The land is publicly owned.

Brief description of the site: A forest of cedars *Cedrus libani*, firs *Abies* and oak *Quercus*, in a rocky, mountainous area starting at 1,200m altitude and stretching to the practically barren sub-alpine community at and above 2000m. It is usually covered in snow during December-April. Recorded mammals include the wolf, wild cat, hyena and Caucasian squirrel.

The land is used on a primary level for wildlife conservation/education, and on a secondary level tourism and recreation, while grazing is still practiced at higher elevations in the buffer zone.
Economic, cultural, social values of the site: ecotourism.

Conservation measures taken: A hunting ban and controlled access policy are in place enforced by guards.

Geographical Coordinates: 34º 19 N, 35º 59 E with an altitude of 1600m

Total area: 140 ha (while the nature reserve is 1000 ha)

Habitat coverage: 65% scrub/ bush land, 35% woodland/forest.

Threats: **C** (Critical), **M** (Major), **L** (local)
There are not any direct threats however tourism and recreational activities pressure is increasing. Localized grazing is practiced and some illegal hunting does take place in the buffer zone of the reserve.

1.6.4.2 IBA Criteria met: A1, A2

Explanation: Please refer to Table 2.

Table 2. Populations of IBA trigger species

Species	Season	IBA Criterion	IUCN Category
Greater Spotted Eagle ***(Aquila clanga)***	Migrant	A1	Vulnerable
Eastern Imperial Eagle (***Aquila heliaca)***	Migrant	A1	Vulnerable
Saker Falcon (***Falco cherrug)***	Migrants	A1	Endangered
Lesser Kestrel (*Falco naumanni*)	Migrant	A1	Vulnerable
Masked Shrike (*Lanius nubicus*)	breeding	A3	Least Concern
Sombre Tit (*Parus lugubris*)	resident	A3	Least Concern
Upcher's Warbler (*Hippolais languida*)	breeding	A3	Least Concern
Western Rock-nuthatch (*Sitta neumayer*)	resident	A3	Least Concern
Finsch's Wheatear (*Oenanthe finschii*)	breeding	A3	Least Concern
Black-eared Wheatear (*Oenanthe hispanica*)	breeding	A3	Least Concern
Syrian Serin (*Serinus syriacus*)	breeding	A1,A2,A3	Vulnerable
Cretzschmar's Bunting (*Emberiza caesia*)	breeding	A3	Least Concern
Black-headed Bunting (*Emberiza melanocephala*)	breeding	A3	Least Concern

Supporting notes for Horsh Ehden Nature Reserve as an IBA

The reserve hosts 168 species of birds, 26 species of wild mammals, 28 reptilian and amphibian species and 1030 species of plants and 39 species of trees. 5 out of the 168 bird species are considered Globally Threatened and 57 species as rare at the national level, the majority of the rest are migratory or rare visitors, which designate it as a significant staging, resting or feeding post for migrating birds. The 5 globally threatened species recorded justifies the site's proposal as an IBA under category A1. The restricted range Syrian Serin validates the A2 criterion for this site, while the 9 biome-restricted species could propose the A3 designation. The mammals inhabiting the reserve include examples such as the Gray wolf (*Canis lupus*), Cape hare (*Lepus capensis*), Caucasian Squirrel (*Sciurus anomalus*), Porcupine (*Hystrix indica*), Striped hyena (*Hyaena hyaena*) and Wild cat (*Felis silvestris*).

Of the 28 reptile species recorded in Horsh Ehden, 1 is globally threatened and 1 subspecies is unique to Lebanon.

The 1030 identified species of flora include 212 rare species, 126 internationally threatened species**,** 115 endemic to the Lebanon, and 10 endemic to the reserve. Horsh Ehden is the only protected area in Lebanon containing the last remaining forest community of the endemic wild apple of Lebanon.

1.6.4.3 Site Management Statement – Horsh Ehden Nature Reserve

Introduction

This document provides a summary description of the Horsh Ehden Nature Reserve 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 wildlife.

Site Description

Horsh Ehden Nature Reserve is a mountainous ecosystem on the Northern Mount Lebanon chain. It ranges from 1200m to 1950m in altitude and contains a particularly diverse forest of a mixture of trees with more than 39 different species notably conifers, such as the Cedars and the High Juniper, and broadleaves such as the maple and the endemic wild apple, making the reserve a very important part of the country's natural heritage.
The forest is relatively dense, with limited understory growth, however outside the wooded area scrub and barren land abound, attesting to the years of excessive grazing. Currently, the area is primarily used for conservation/nature education, secondarily for tourism and recreation and localized grazing in the buffer zone of the reserve.

Importance of site for birdlife and biodiversity

Horsh Ehden Nature Reserve is rich in bird life due its natural diversity giving rise to a broad variety of habitats where a wide assortment of the avifauna can utilize. The only confirmed nesting of the Blue Tit (*Parus caeruleus)* in the country was recorded here; also Bonelli's Eagle (*Hieraaetus fasciatus*) is known to have bred on its cliffs. Example of the range of species recorded include the Black Stork (*Ciconia Nigra*), Western White Stork (*Ciconia Ciconia*), Great White pelican (*Pelecanus Onocratalus*), Egyptian vulture (*Neophron Perenopetrus*), Levant Sparrowhawk (*Accipiter Brevips*), Eastern Imperial Eagle (*Aquila heliaca*), Saker falcon (*falco cherrug*), Corncrake (*Crex crex*), Eurasian Woodcock (*Scolopax rusticola*), Common Wood-Pigeon (*Columba Polumbus*), Great Spotted Cuckoo (*Clamator Glandarius*), Barn owl (*Tyto Alba*), European Bee-eater (*Merops Apiaster*), Syrian woodpecker (*Dendrocopos syriacus*) and the Sand martin (*Riparia Riparia*.

This site is also of significance for other biota as mentioned above.

It is declared by government legislation, Law No. 121 of 9 March 1992 as a nature reserve.

Conservation Objectives

1. **Globally Threatened Species**
That the numbers of visiting or breeding endangered species increase or remain the same.

2. **Resident/Breeding Birds**
That the numbers of resident birds will increase both qualitatively and quantitatively, but in particular, the habitat should be managed to make the site suitable for the biome and range restricted species which are known to occur in the Reserve.

3. **Migrating Birds**
Enhance the diverse habitats to support increasing numbers of migrating birds as they pass through the reserve and afford them appropriate shelter, resting, feeding or roosting sites.

Key Management Issues

Tourism/recreation

The access to the reserve is well organized and enforced, however there are signs of increased crowd pressure on the wooded area. A well-defined trail system was established and hikers do adhere to, yet the overall area of the forested sector of the nature reserve being only 500 hectares, is too restricted for the numbers of visitors exploring the site.
Also the higher scrub land in the buffer zone is afflicted by grazing goats and off roaders'

ATVs which would require strict enforcement of the management plan , thus minimizing the impact of such activities on the fauna and rare flora which colonize this type of habitat.

Grazing/browsing outside the reserve, in the buffer zone

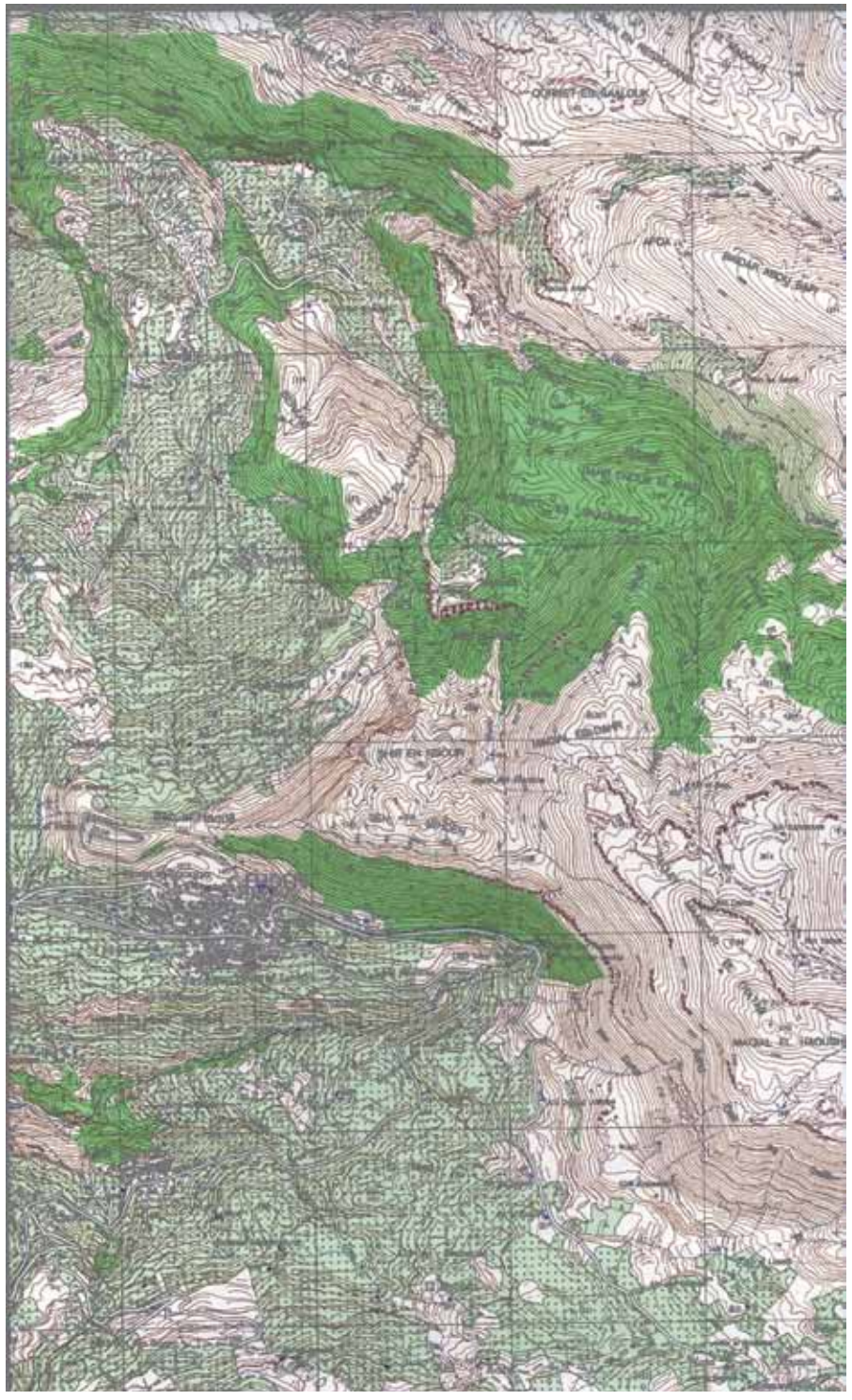
Grazing is still practiced within the sub-alpine zone; although not excessive it still could be of adverse effect to the regeneration of flora of that zone. A grazing regime should be instigated ensuring a healthy revival of the vegetation.

Hunting

This has been a major problem for decades but now it is legally protected, yet some degree of shooting still occurs in the buffer zone, but not to any noteworthy level. These efforts to eliminate hunting should be encouraged and their efficacy assessed.

Current conservation measures & future plans:

Horsh Ehden has been declared by law as a nature reserve on 9 March 1992. It has a management team in place, and it has a management plan that has been updated recently. A new integrated monitoring program for Horsh Ehden Nature Reserve has been developed, in addition to Ecotourism strategy for the reserve, a fire fighting strategy for the reserve and MOU with universities for research.



1.6.5 Hima Aanjar / Kfar Zabad
1.6.5.1 General Description

Corncrake

Cinereous Bunting

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 there)

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.

1.6.5.2 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 cemetry,5 around springs,2 in village gardens and orchards**
Syrian Serin (Serinus syriacus)	**Aanjar Marshes (Bekaa Valley)**	**25/05/2005 08:00**	**7**	**At cemetry, 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

1.6.5.3 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.

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 and the buffer zone of Anjar side. 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

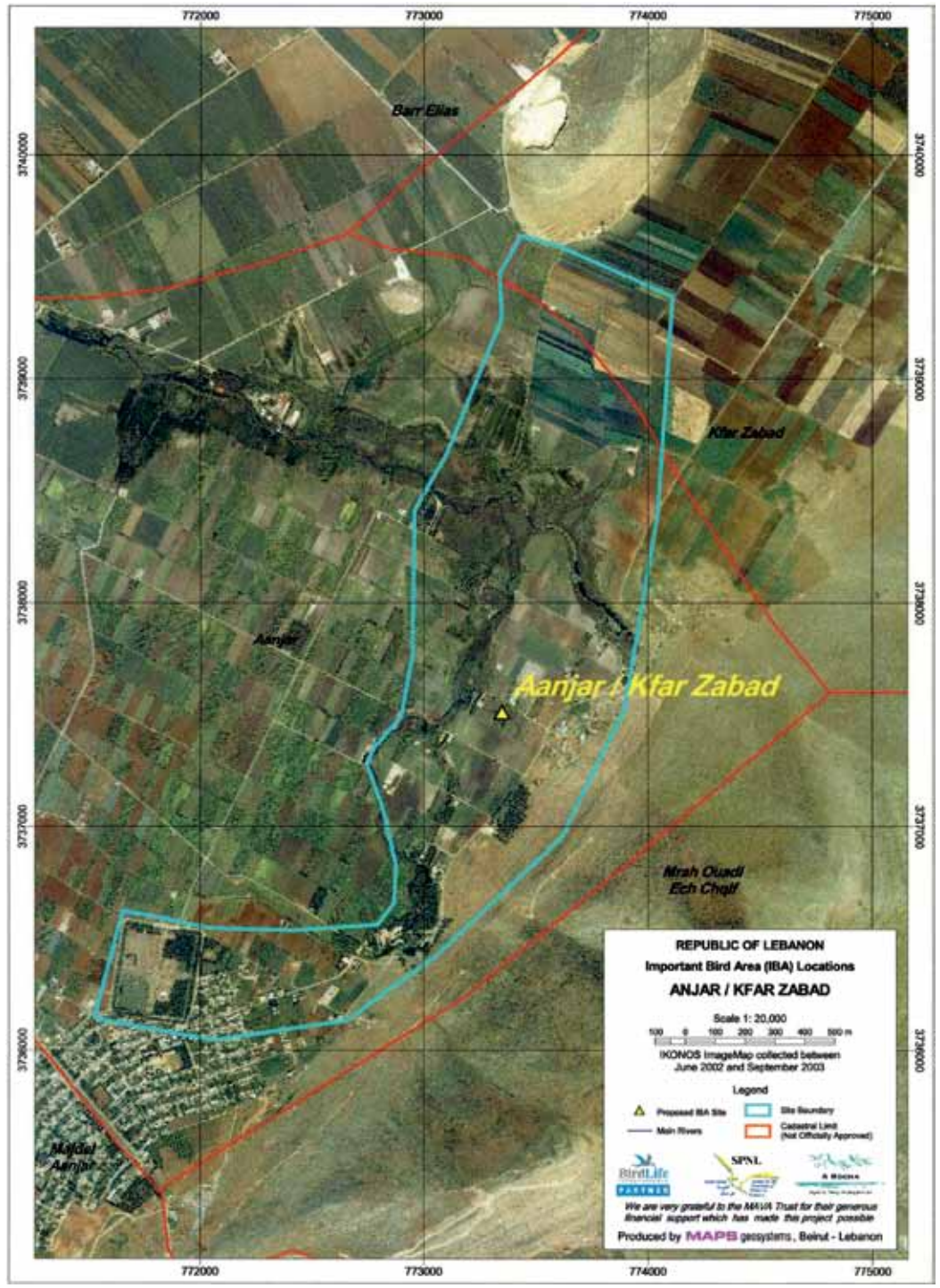
Access to the wetland core of the area should be controlled and channeled along certain routes, so as to reduce disturbance to breeding birds and other wildlife. Discussions should be opened with the owners of the restaurants at Aanjar, and the management of the Aanjar Ruins to consider ways of minimizing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



Map of Kfar Zabad / Aanjar

1.6.6 Lake Qaraaoun
1.6.6.1 General Description

Pygmy Cormorant

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.
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,

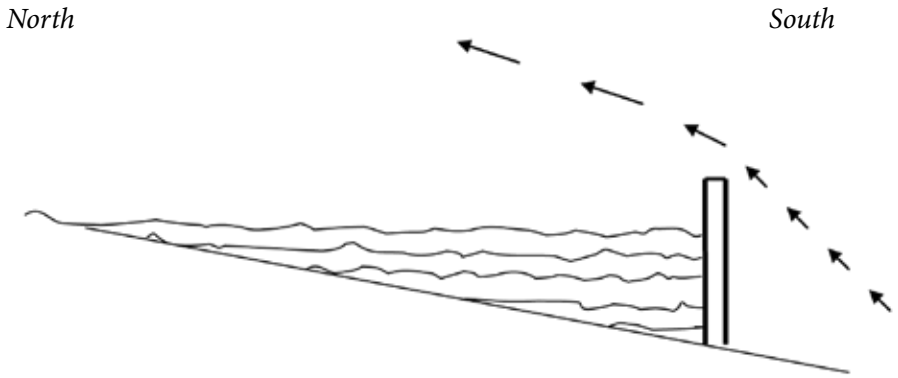
Threats: **C** (Critical), **M** (Major), **L** (local)

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.

1.6.6.2 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 4 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 1). The main municipality around the lake shore has already expressed interest in becoming a "stakeholder" in improving the lake environment and protecting the wildlife.



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.

Table 3 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 to18 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 4 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.

1.6.6.3 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, 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 4) 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:

1. 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.
2. To maintain undisturbed feeding and roosting opportunities for wader and passerine flocks.
3. 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.

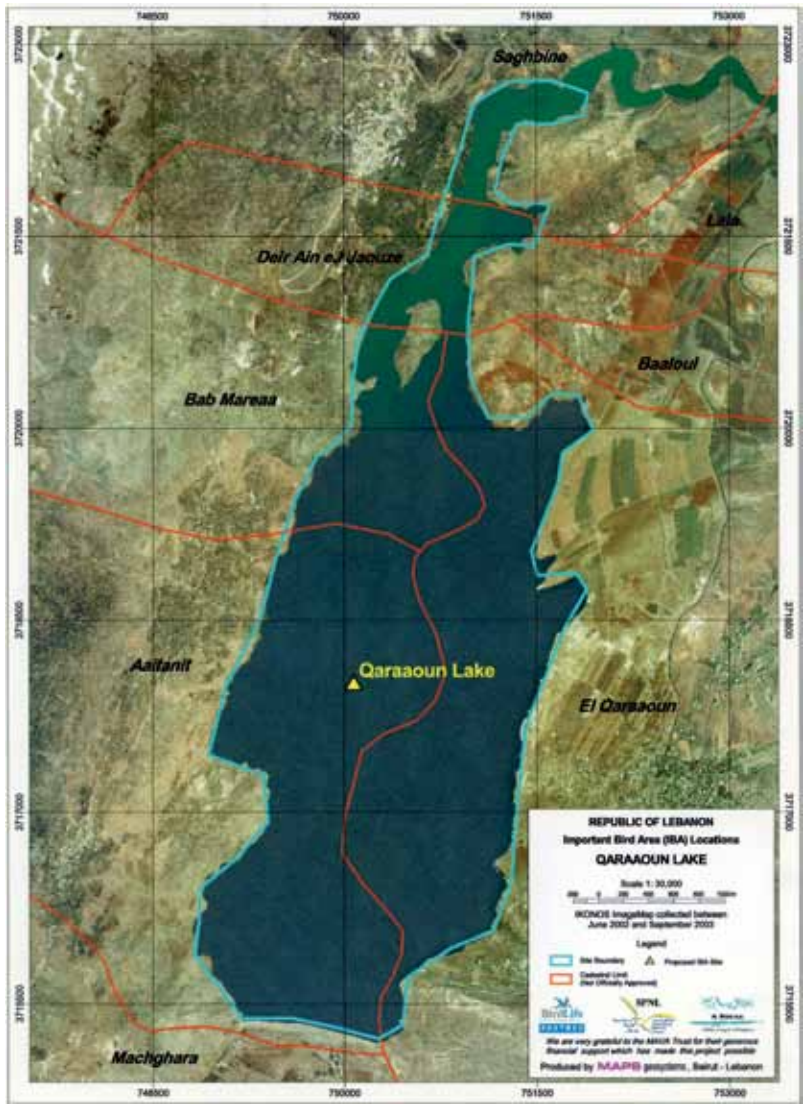
Pollution

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.



Map of Lake Qaraaoun

1.6.7 Riim / Sannine Mountain

1.6.7.1 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 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.

1.6.7.2 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 storks 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.

1.6.7.3 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 in order 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

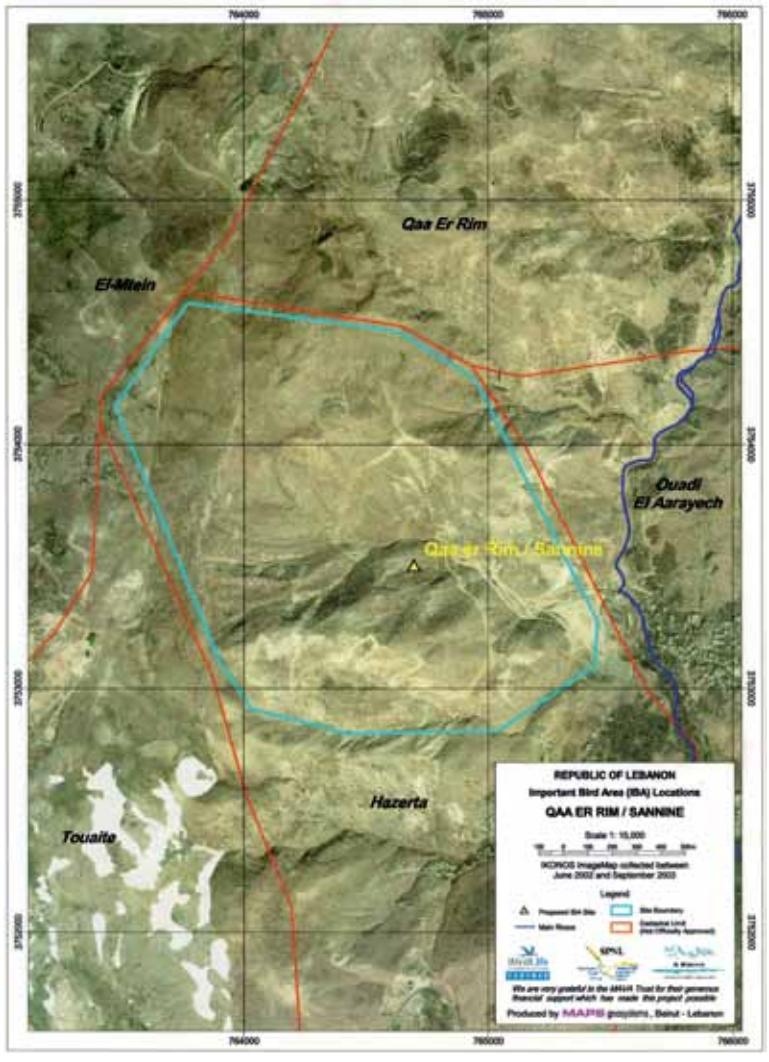
Key management issues

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, and introduce a planned grazing regime.



Map of Riim Sannine

1.6.8 Tannourine Cedars Nature Reserve
1.6.8.1 General Description

Blue Tit

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 nature reserve under the auspices of the ministry of environment, the area is protected by 2 guards, and 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.

1.6.8.2 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 (Hieraaetus 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

1.6.8.3 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 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

1. **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.

2. **Breeding birds**

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

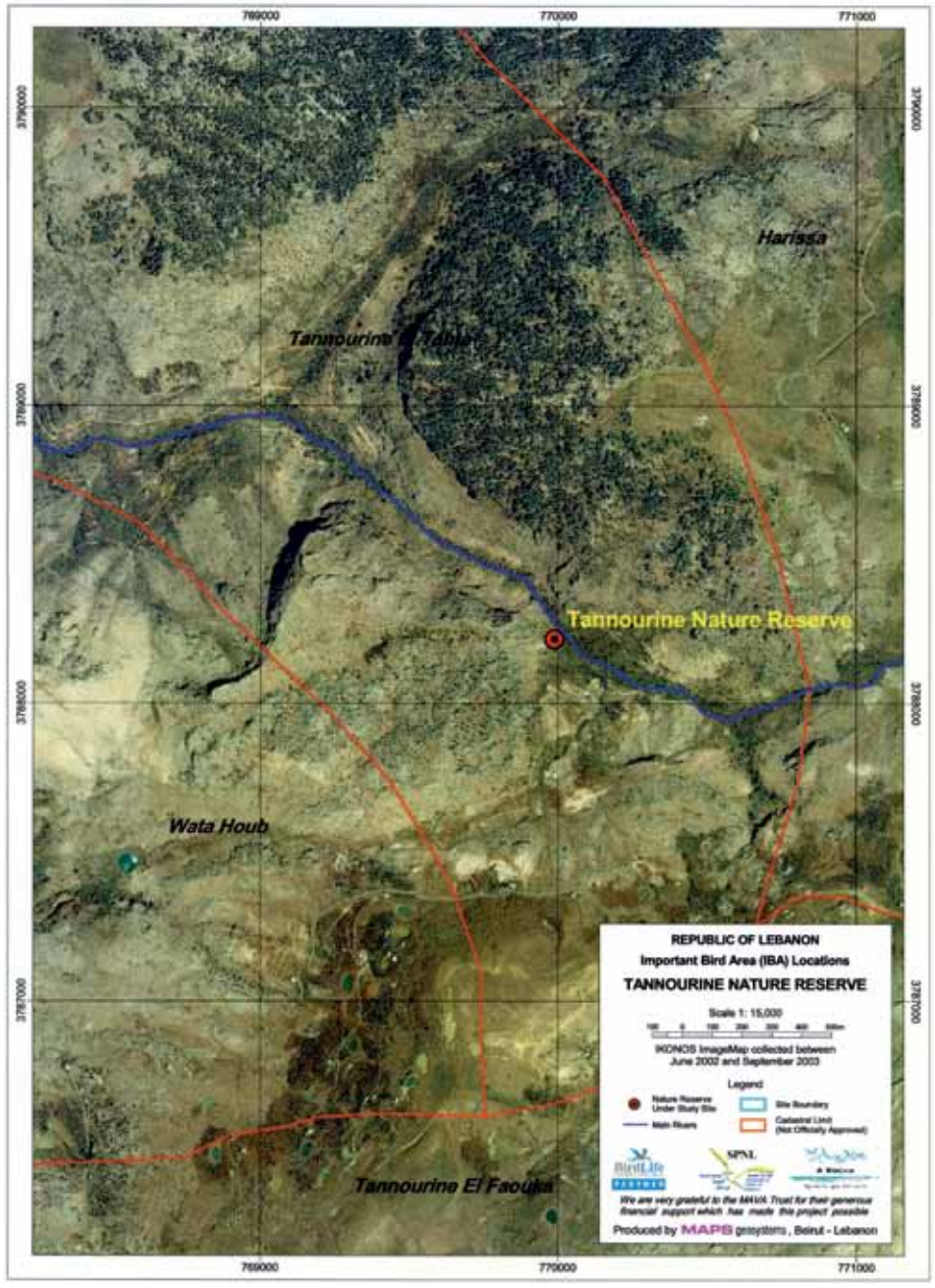
Key management issues

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.

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 in the forest and ensure it contains water permanently.



Map of Tannourine Cedars

1.6.9 Hima Ebel es-Saqi
1.6.9.1 General description

Pallid Harrier

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 iv.
Land is owned by the Ministry of Agriculture then transferred to the Municipality for 10 years renewable contract for its management.
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 was done.

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.

1.6.9.2 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. 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 scale[13].

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**).

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

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.

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:

1. To ensure that there is no reduction in the numbers of migratory soaring bird as they pass through the site.
2. To maintain undisturbed feeding and roosting opportunities for migratory soaring birds.
3. 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

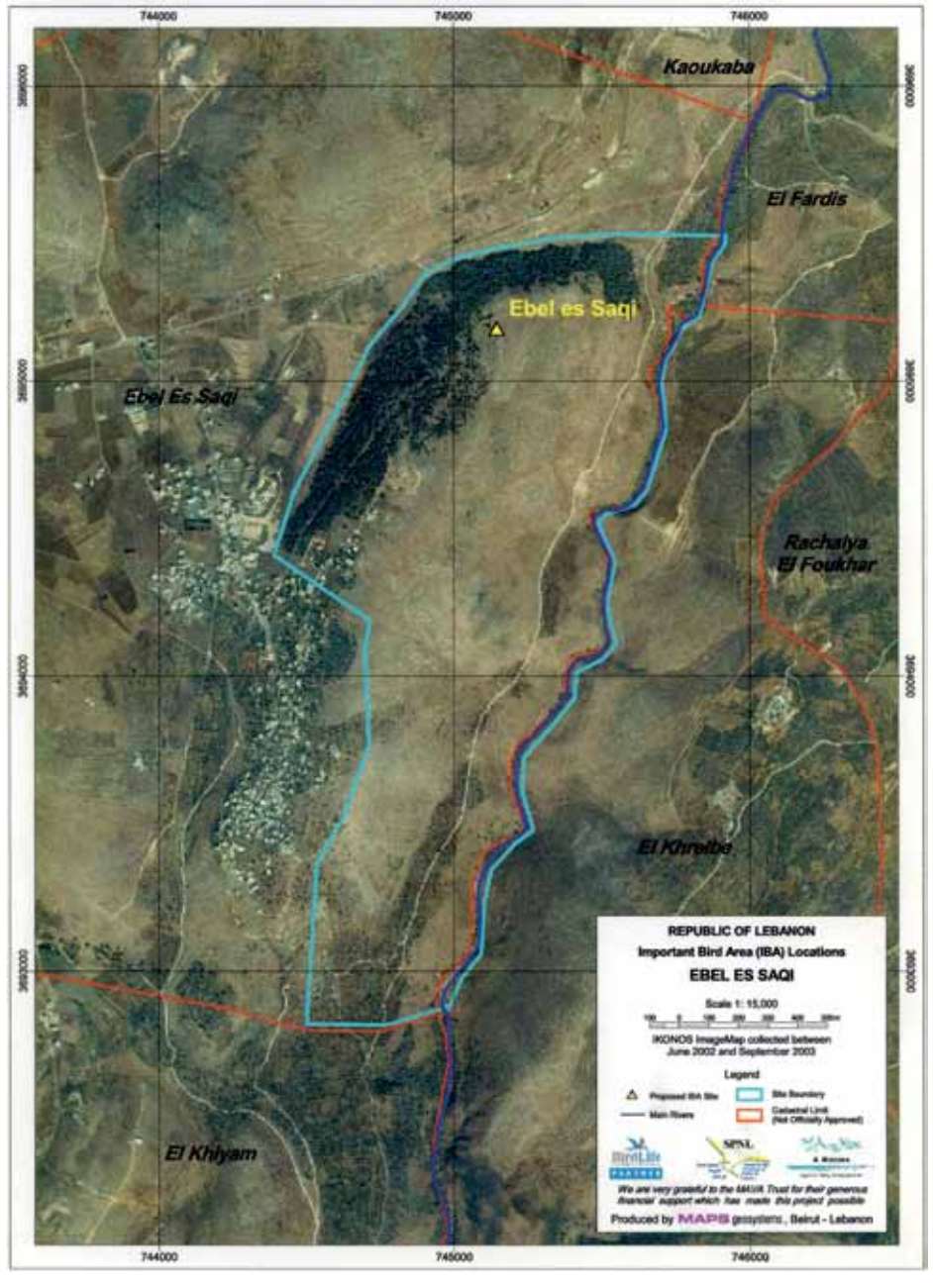
SPNL initiated communication with the local herders, and convinced them to restrict their grazing to the borders of the forest, thus helping in decreasing the threat of forest fires also.

Table 5: 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 *spp*. 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 crake 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 Orphean Warbler

Table 6: 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



Map of Ebel es-Saqi

1.6.10 Semi Deserts of Ras Baalbek
1.6.10.1 General Description

Saker Falcon

Sociable Lapwing

Cream-Colored Courser

The Ras Baalbek potential IBA is found at the extreme north end of the Bekaa Valley, in north-east Lebanon, extending up into the foothills of the Anti-Lebanon mountain range, in between the towns of Ras Baalbek and El Qaa.

Habitat Description

The site comprises two main sections:

- gently undulating stony desert on both sides of the Ras Baalbek-Hermel road, just west of the junction with the Baalbek-Qaa highway,
- the rising ground to the east of the highway just north of the Hermel road junction, up to and including a wadi cutting into the Anti-Lebanon range.

Throughout the whole area the habitat is primarily desert or semi-desert. There is some water irrigating fields near the main highway, but away from this moisture there is little vegetation apart from spiny scrub. The wadi itself is wide at its mouth (c750metres) and has a shingle base in contrast to its rocky, sparsely vegetated upper slopes, overlooked by high crags.

The land is used primarily as rangeland for several large flocks of sheep and goats owned by the transhumant Bedouin people, who spend the winter and spring months here before moving to other pastures for the summer. There is also a low level of arable agriculture, both open fields and plastic 'poly-tunnels', irrigated with water pumped from boreholes. This is increasing every year.

Conservation measures taken: None

Geographical Coordinates: 34°15'36.00N, 36°24'54.00E
Total area: 7,814ha
Habitat coverage: 90% stony desert, 10% agriculture/cultivation

Threats: **C** (Critical), **M** (Major), **L** (local)
C level : excessive or irresponsible hunting.
M level: conversion to agriculture
L level: overgrazing/over browsing is a potential problem intensified over the years.

1.6.10.2 Supporting notes for Ras Baalbek area as a potential IBA

Prior to the start of the MAVA funded IBA research project, several visits had been made to this site by staff and volunteers of A Rocha Lebanon and by other birdwatchers from within Lebanon and abroad. However, the area covered during the project included several places apparently not visited by ornithologists before and visits were more intensive and wide-ranging than previous ones, which were often more casual bird-watching. All the previous data, along with our observations in 2005 and 2006 have shown this overall area to be the only area of Lebanon (to date) hosting a suite of Sahara-Sindian biome-restricted species. It is probable that much of the North-east Bekaa valley and Anti-Lebanon lower slopes will have similar avifauna, but in the years of study there have been considerable security issues and border disputes preventing further exploration. The discovery by A Rocha workers of Lebanon's first breeding Desert Larks, Bar-tailed Larks and Streaked Scrub Warblers in 2005/6 serve to reinforce the point that when the greater area to the east of this site is surveyed, significant numbers of this particular biome's species will no doubt be found (as is the case in the Syrian Anti-Lebanon area).

No less than 7 Sahara-Sindian biome-restricted species breed on site, **Cream-coloured Courser, Bar-tailed Lark, Desert Lark, Temminck's Lark, Mourning Wheatear, Streaked Scrub Warbler and Trumpeter Finch** plus an eighth which has been seen in autumn and winter, **Desert Wheatear**. In addition the Irano-Turanian highlands restricted species, **Western Rock Nuthatch** and **Pale Rock Sparrow**, plus the Mediterranean biome restricted species, **Spectacled Warbler,** also breed. **Finsch's Wheatear,** a biome-restricted species of the Irano-Turanian Highlands, spends the winter here. Because of all of these restricted species, we feel justified in proposing the site for **IBA status under category A3.**

Other breeding species that, while not being biome restricted, are rare elsewhere in Lebanon include Little Owl, Lesser Short-toed Lark (which was extremely abundant here during 2005-6), and Long-billed Pipit.

Despite the bare slopes of the Anti-Lebanon mountains, which should provide ideal conditions for the development of thermals, the site does not seem to be important for soaring bird migration, with very low numbers of storks and raptors being seen on passage.

Number of species observed: 50
Number of visits 2005/2006: 8
Dates: 2005: 9 June, 8 July, 3 December,
2006: 4 March, 27 March, 5 April, 14 April, 28 May

1.6.10.3 Site Management Statement – Ras Baalbek

Introduction

This document provides a summary description of the Ras Baalbek potential-IBA site and some of the bird species to be found there (particular reference to Biome-restricted species). It also describes current and future threats to the site and the intention to protect it and manage it to enhance its value for wildlife.

Site Description

Situated in the north-east of the Bekaa Valley, the Ras Baalbek area is a mixture of undulating stony desert at around 800m altitude, interspersed with low gullies, and wadis climbing up into the Anti-Lebanon mountain range to the east. In the wide wadis, the vegetation consists of spiny bushes and a little grass, in the lower broader valley floor the ground at first glance seems devoid of vegetation, but in fact has low cover of desert plants and flowers. From October to April the whole area is extensively grazed by goats and sheep belonging to Bedouin groups who move to the site from summer grazing grounds on the slopes of Sannine mountain on the west side of the Bekaa. Some irrigation allows cultivation of wheat and vegetables and in 2005/6 some tree planting took place alongside the main highway which runs from Baalbek to the Syrian border (possibly a Ministry of Environment initiative

as MoE signs are in evidence). Around 80% of the proposed IBA appears to be common land but this needs verification.

Importance of site for birdlife and biodiversity

The site hosts a range of Biome – restricted species, mostly from the Sahara-Sindian biome plus significant densities of other commoner species such as Little Owl, Isabelline Wheatear and Greater Short-toed Lark. Breeding Sahara-Sindian biome species are **Cream-coloured Courser, Bar-tailed Lark, Desert Lark, Temminck's Lark, Mourning Wheatear, Streaked Scrub Warbler and Trumpeter Finch** and **Desert Wheatear** occasionally winters, as does the Irano-Turanian biome-restricted **Finsch's Wheatear**. Two species from the Irano-Turanian highlands biome also breed (**Rock Nuthatch** and **Pale Rock Sparrow**) as does the Mediterranean biome-restricted **Spectacled Warbler.** The suite of species above explains **the proposal of the site as an IBA under category A3.**

In addition, Jackals breed and reptiles uncommon in the rest of Lebanon can be found.

Conservation Objectives

1**. Biome-restricted species**

That the numbers of biome-restricted birds, breeding, on passage and in winter, will increase, both in terms of numbers of species and of individuals. In particular, the habitat should be managed to maintain the site suitable for these species, many of which are only found in Lebanon at this location.

2. **Migratory species**

That all bird species passing through this area on their spring or autumn migrations, be protected from harassment and indiscriminate killing.

Key Management Issues

Hunting

Particularly in Autumn there is a high level of hunting, with cars full of hunters driving all over the area, shooting whatever they can, the main target being large flocks of Skylarks and other migrant species that arrive at that time of year. At other times of year hunters were not much in evidence. In such a large area it will always be hard to control the hunting but if the municipalities under which the site falls are persuaded of the importance of reducing hunting, then it may be possible to improve the situation.

Grazing

Grazing is apparently at a high level but it is currently unknown how this affects the breeding birds of the area. Rather than making any sudden changes to the grazing regime across the whole site, it would probably be best to maintain the existing regime and then experiment,

over the course of several years with different levels of grazing in different places in order to assess the effects on different bird species. This could be done using fences but it would be absolutely essential to involve the Bedouin shepherds and the local settled population.

Disturbance

During the breeding season for the desert bird species found here, the main disturbance is from the shepherds and their flocks and so, at that time of year at least, the issue is best dealt with in conjunction with the grazing issue. During other times of year the biggest source of disturbance is likely to be from hunters and so if hunting is reduced or eliminated, disturbance would also be reduced, especially in autumn.

Loss of Habitat and Development

This is a potential problem and one which needs to be assessed. The initial approach should be to talk to the local municipalities to find out what, if any plans there are for development in the area. It would also be useful to find out who the land is owned by. All landowners both private and municipal/ governmental, should be approached and efforts made to encourage them to conserve the wildlife value of the areas under their control.

Aerial photograph of North Lebanon showing position of Ras Baalbek Potential IBA

Aerial photograph showing approximate boundary of Ras Baalbek Potential IBA

1.6.11 Beirut River Valley
1.6.11.1 General Description

Lesser Kestrel

The site consists mainly of the Beirut River water shed, extending 20km west from the township of Falougha, where the river rises, to the outskirts of the city of Hazmeih, just east of the Beirut metropolis.
The land use on a primary level is woodland, residential, hunting and fallow, and at a secondary level cultivation, recreation and tourism.

Habitat description: Mostly there are developments built along the ridges of the boundary valleys, giving way to pine woodland on the north slopes, while the southern gradient is predominantly scrub and cultivated land with a number of scattered villages. A cliff dominates the eastern half of the top quarter of these valleys. Large deciduous trees line the river running at the bottom of these valleys.

Conservation measures taken: none
Geographical Coordinates: 33 50 02.40 N, 35 40 12.00E
Total area: 8097 ha
Habitat coverage: 60% woodland, 25% scrubland, 10% cultivation, 5% residential.

Threats: C (Critical), **M** (Major), **L** (Local)
C Level, Excessive/irresponsible hunting, deliberate persecution of birds, fire, built development, excessive soil erosion.
M Level, excessive disturbance of birds, deforestation, liquid waste pollution, air pollution.
L Level, over-extraction of ground water, over-grazing and browsing, garbage pollution.

Comments on the 2006 observations
This site is known to be of great significance to the southerly migrating soaring birds. The whole valley was surveyed during the spring with poor results, mainly due to hunting and disturbance. Hunters abound at migration time with decoy machines targeting warblers, swallows, shrikes and finches in spring, and in autumn raptors, bee-eaters, swallows and chaffinches, yet anything is shot at any time of the year. 22 species were recorded in spring, those of noteworthy numbers were; White Stork, Common Buzzard, Common Swift, European Bee-eater and Barn Swallow.
The autumn study focused on soaring bird migration, stationed at a location 1000m in elevation on the southerly ridge. This orientation was selected since migrating birds approach from the north comparatively low, having lost altitude through their glide over the valley, and would tend to soar to regain height, affording time to assess the kettles. 34 species, out of a possible 39, were recorded, including 6 globally or regionally threatened raptors out of the 7 locally occurring accipitres and falcons, however, 5 species accounted for 96% of the 71910 total passage.

Number of species observed: 41
Number of visits in 2006: 49
Date: Mar-May: 7, Aug-Nov: 42

1.6.11.2 Supporting notes for Beirut River Valley as an IBA
Most species of raptors utilize thermals to varying degrees during migration. Thermals are columns of rising air caused by the warming of the earth; a bird will soar on flat wings and gain altitude in a thermal to a level where the rising air mass will stop lifting it, then glide to the next thermal, using little energy.

Although, the cliffs just below the selected observation post were ideal for creating these thermals, as proven by the noted numbers of migrating birds, the flight path was seen to shift towards higher or lower grounds depending on the inter/intra daily temperature variations; temperature and altitude being directly proportional. This phenomenon, so crucial to the survival of these migrants, precipitated the decision to nominate the whole valley for an IBA status, since the birds are most susceptible to hunters at dawn and dusk; at the roost.
Six species were recorded with an unfavourable conservation status**;** Red Kite, *Pallid Harrier, Greater Spotted Eagle, Imperial Eagle, Lesser Kestrel* and Red Footed Falcon**.** Those in italics are considered globally threatened while the other two are regionally threatened. The total number of soaring birds seen in the autumn (71,910)**,** far exceeds the 5,000 needed to satisfy Category A4iv.

1.6.11.4 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

This site consists of the Beirut River watershed, running east west, extending 20km west from the town of Falougha (elev.1385m), where the river rises, to the outskirts of the city Hazmieh (elev.95), the upper reaches are encircled by a horse shoe shaped cliff. The slopes bounding the river are mostly pine woodland in the northern gradients and scrub land and cultivated plots in the southern one, while built up developments cover the ridges, this is transformed into high density sectors in the lower western parts. The river path is lined with large deciduous trees. Signs of erosion are perceptible in many localities; mostly due to fire or over grazing, and garbage dumping is also a localized problem. However, there is still a wide variety of habitats and inaccessible areas, affording feeding, nesting and resting niches for the birds, if not harassed by hunters.
The site falls under the responsibility of a comparatively large number of municipalities, as delineated in the accompanying map.
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 soaring birds use the thermals created by the cliffs on most occasions, however, at lower temperatures, such as early morning, late afternoon or in inclement weather, they would glide down the length of the valley in search of more favourable conditions. Quite frequently this could be either from or to a roost, making this site of considerable importance to southerly migrating soaring birds, since it represents the last low land forested stand for the coming 15Km south, thus expanding the roost selection time window. Large numbers were often seen rising from the lower reaches of the valley on different mornings, some kettles of soaring raptors were observed for more than 35 minutes. The sheer numbers of soaring birds counted, in excess of 71,900 of 33 species, satisfy the requirement for IBA designation under category A4iv**.**
There is a large variety of habitats in this site providing good feeding and resting for many migrants, other than soaring birds, such as swifts, swallows, house-martins, warblers, as well as summer visitors and resident breeding species such as Kestrel, White-Spectacled Bulbul, Wren, Blackbird and various 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.

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 its surrounding, breeding birds and as well temporary visitors. To this end, the specific objectives are to:

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

Key Management Issues

Hunting

With the level of hunting and disturbance here, the area is a high-risk location for birds.

Finch trappers are also active but less evident than hunters with guns.
Action: Attempt involving the army in controlling access to the areas under its jurisdiction. Discussions have also been initiated with some of the diverse municipalities regarding possible hunting control measures.

Habitat Degradation
Threats under this heading include fire, over-extraction of ground-water and grazing/ browsing; with the resulting deforestation and excessive soil erosion.
Action: Carry out awareness campaigns and workshops within the local communities focusing on the dangers and disadvantages of the techniques currently used.

Pollution
The Valley is under pressure from three main forms of pollution.

- Solid waste - some of the smaller townships use their boundary limits as domestic waste disposal sites. This is compounded by rubbish dumping on the roadside. And litter from picnickers.
- Liquid pollution - primarily raw sewage discharged directly into the river from the surrounding towns and developments. There might be a certain amount of agricultural pollution from the small farms but this would need to be verified.
- Air pollution - this is a major, and insidious threat inherent to the topography of the area. Prevailing south-westerly winds carry the toxic fumes north-east from the over-developed, densely populated Greater Beirut Area, to be blocked up and concentrated by the mountains, creating a perceptible thick layer of smog. The effects on human health and on trees such as conifers of this form of pollution, is well documented.

Action: This is a problem of national proportion, thus, unless solutions are brought about on that level, little can be done, apart from awareness-raising and discussions with the municipalities on the enforcement of controls on dumping.

Development, Tourism and Leisure
The proximity of this site to very densely populated areas, and its location on the main international thoroughfare, are likely to result in environmental pressures caused by economic expansion.
Action: The economic impetus behind such activities is too strong to contest, but discussions with relevant municipalities could lead to the introduction of zoning and controls on development and expansion. Also, with availability of funding some sections of this site could be developed into an excellent environmental education facility for use by city schools.

Aerial photograph of Central Lebanon showing position of Beirut River Valley Potential IBA

Aerial photograph showing approximate boundary of Beirut River Valley Potential IBA

1.6.12 Upper Mountains of Akkar-Donnieh
Site 1. Fnaideq Forest

Imperial Eagle

General Description:
The study was focused mainly on a deciduous oak (*Quercus cerris*) forest and its boundaries, located east of the town of Fnaideq.
This habitat is used on a primary level for grazing and woodcutting, and at a secondary level for agriculture/cultivation, residential and hunting.

Habitat description: This oak grove, distinctive to Lebanon, is very well defined and discrete of its surroundings, the latter being mainly fruit tree farms or conifers; cedar, fir or junipers. Small houses are erected on the north western boundary, but construction is encroaching into the wooded area at an increasing rate. Only mature trees and shrubs occur here, the prevailing intense grazing pressure negating any chance of floral regeneration, as attested in areas where grazing is prohibited due to other land use where a few tree saplings are able to thrive.

Conservation measures taken: none
Geographical Coordinates: 34° 28.353' N, 36° 12.247' E
Total area: 98 ha
Habitat coverage: 85% wooded land, 10% agriculture/cultivation, 5% scrub/bush land.
Threats: **C** (Critical), **M** (Major), **L** (Local)
C level – Built development, excessive or irresponsible hunting, deliberate persecution of birds, excessive disturbance to birds, over-grazing/browsing
M level – Over-exploitation of birds/eggs, Solid waste pollution, i.e. debris/garbage, Tree cutting.
L level – Agriculture intensification.

Comments on 2007 observations
This woodland housed a limited number of resident and migrating species, yet the variability observed during the different visits indicated that this site is still of some value to birds on passage. Wryneck, Golden Oriole, and a few warblers were recorded on migration, as well as migrating raptors and other aerial feeding species. A few biome-restricted species such as the **Sardinian Warbler, Masked Shrike and Black-headed Bunting** breed here and the occurrence of the Near Threatened **Syrian Serin** population is of significance to this site.
Other wildlife spotted includes the Persian Squirrel, which was not shy or secretive. As the site forms part of a larger system including the following three sites, which, when viewed as a whole fulfils the criteria for designation as an IBA, the supporting notes for IBA status will be given after the site descriptions for all four sites.

Number of species observed: 53
Number of visits in 2007: 10
Dates: 30th March, 24th April, 5th & 15th May, 20th June, 16th &28th August, 21st September, 3rd &26th October.

Site 2. Mechmech

General Description:
This site, in the foothills of Mount Qammouaa consists mainly of cultivated land interspersed with mixed conifers, oak and other low trees and shrubs, east of the municipality of Mechmech.
The land is used on a primary level for agriculture and cultivation, and at a secondary level grazing, woodcutting and hunting.

Habitat description: Rich terraced mixed farmland, fruit trees and annual crops, with numerous small agricultural pools and ponds; a few creeks and springs do abound. Mature conifers and other woodland trees and bushes, remnants of the forests of old, grow in scattered heavily grazed sectors dividing the cultivated lands. The prevailing intense grazing pressure negates any chance of tree regeneration.

Conservation measures taken: none

Geographical Coordinates: 34° 26.412' N, 36° 11.592' E
Total area: 3774 ha
Habitat coverage: 60% agriculture/cultivation, 25% wooded land, 10% scrub/bush land 5% rocky hills.

Threats: **C** (**C**ritical), **M** (**M**ajor), **L** (**L**ocal)
C level: Excessive or irresponsible hunting, excessive disturbance of birds, tree cutting, over-grazing/over-browsing, toxic pollution.
M level: Deliberate persecution of birds, over-exploitation of birds/eggs,
L level: Conversion to agriculture, solid waste pollution, i.e. debris/garbage.

Comments on 2007 observations
This cultivated land and mixed woodland has a broad base of resident species and has proved to be a haven for autumn migrants and of significance to breeding summer visitors. Typical farmland avifauna abounds in this site complemented by a variety of woodland species. 5 species of shrikes were recorded here, of which 2 breed here; the finches were well represented highlighted by the nesting of the Near Threatened **Syrian Serin** population, where emphasis and effort should be exerted in its protection and conservation.
Most abundant of the nesting visitors were the shrikes, buntings, **Spanish Sparrow** and **Syrian Serin**. Also of interest here was the confirmed breeding records of the **Mistle Thrush**, which was not previously known to nest in Lebanon . Breeding biome-restricted species include **White-throated Robin**, **Upcher's Warbler**, **Sardinian Warbler**, **Sombre Tit**, **Western Rock Nuthatch**, **Masked Shrike**, **Black-headed Bunting** and **Syrian Serin**. However, this site is plagued by excessive and irresponsible hunting, compounded by extensive human disturbance, although thinly spread at times was very prevalent throughout the farming season.

Number of species observed: 76
Number of visits in 2007: 11
Dates: 30th March, 26th April, 4th & 16th May, 22nd June, 17th &29th August, 21st September, 3rd &26th October, 6th November.

Site 3. Qammouaa
General Description:
This is a mountainous site east to north east of the municipality of Fnaideq and consists mainly of varied wooded land, with some cultivation in one flat grass sections.
The land is used on a primary level for grazing, woodcutting and hunting, and at a secondary level for agriculture/cultivation and recreation.

Habitat description: A varied site, consisting of sub-alpine rocky gradients descending to scattered coniferous slopes, those being divided by flat grassy agricultural/recreational lands from a mixed trees undulating zone. Cedar, fir and junipers are the predominant conifers. Several water springs and some agricultural ponds abound, mostly used as watering holes.

Mature trees prevail in all sectors of this area, largely due the widespread extreme grazing pressure.

Conservation measures taken: none
Geographical Coordinates: 34° 29.579' N, 36° 14.031' E
Total area: 1023 ha
Habitat coverage: 65% wooded land, 20% scrub/bush land, 10% recreational, agriculture/ cultivation, 5% rocky hills.

Threats: **C** (**C**ritical), **M** (**M**ajor), **L** (**L**ocal)
C level: Over-exploitation of birds/eggs, excessive or irresponsible hunting, deliberate persecution of birds, excessive disturbance of birds, over-grazing/ browsing, tree-cutting.
M level: Excessive soil erosion/degradation, solid waste pollution, i.e. debris/garbage.
L level: Built development.

Comments on 2007 observations
The variety of habitats in this site proved conducive to a rich and varied avifauna. Diverse migrants, breeding visitors and high altitude specialists complement the limited resident population typical of such high elevation habitats. Most interesting of the height adapted species were the **Horned Lark**, **Pale Rock Sparrow**, and **Crimson-winged Finch**. Confirmed nesting of the **Hoopoe** and the Near Threatened **Syrian Serin** here are worthwhile addition to the country's ornithological data banks. Of note is the number of Biome-restricted species breeding here such as **Tawny Owl**, **Black-eared Wheatear**, **Finsch's Wheatear**, **Upcher's Warbler**, **Sombre Tit**, **Western Rock Nuthatch**, **Masked Shrike**, **Pale Rock Sparrow** and **Black-headed Bunting**. The soaring birds migration, although limited in quantity included 26 species. The **Goldcrest** record is significant for Lebanon as this species is not recorded very regularly here.
However, the extent of grazing/browsing, hunting and woodcutting, being so abundant and extensive yet irreversible calls for the implementation of some enforceable control measures.

Number of species observed: 112
Number of visits in 2007: 12
Dates: 30thMarch, 10th&25thApril, 5th&16thMay, 20thJune, 15th&26thAugust, 19thSeptember, 3rd&26thOctober, 6thNovember.

Site 4. Wadi Jouhanam
General Description:
The site is the valley of the Abou Moussa river; found in the Sir ed Danniye area of the Akkar

region in the north of the country. It is located north west of Quemmamine, south east of Qabaait and south of Hrar villages, with the nearest town being Mechmech to the east.
The land use is very limited, due to the steep, heavily wooded slopes of the valley, however, grazing and woodcutting could be considered as a primary use level, and at a secondary level agriculture/cultivation.

Habitat description: Deep river valley, typical Mediterranean maquis community predominates on the steep slopes, and the thickly vegetated valley floor is cultivated in places with fruit trees or other annual crops.

Conservation measures taken: none
Geographical Coordinates: 34° 26.174'N, 36° 07.971'E
Total area: 375 ha
Habitat coverage: 70% woodland/forest, 15% rocky hills and grass, 10% scrub/bush land, 5% agriculture/cultivation.

Threats: **C** (**C**ritical), **M** (**M**ajor), **L** (**L**ocal)
C level: Over-grazing/over-browsing, wood cutting
M level: Excessive disturbance of birds, solid waste pollution, i.e. debris/garbage.
L level: Over-exploitation of birds/eggs, Excessive or irresponsible hunting, Deliberate persecution of birds.

Comments on 2007 observations
This river valley habitat had healthy resident bird populations. It also proved to be an important staging post for the migrating aerial feeders such as swifts and hirundines, and to two species of soaring birds (**White Pelicans** and **Common Cranes**). Of particular interest here is the resident **Dipper** population, the subspecies occurring in Lebanon, *Cinclus cinclus rufiventris*, being endemic to the country. Biome-restricted species such as **Tawny Owl, Black-eared Wheatear, Sardinian Warbler, Western Rock Nuthatch and Masked Shrike** breed in this area and the Near Threatened **Syrian Serin** does occur.

Various parts of the valley were surveyed during the different visits to ensure thorough coverage of the diverse habitats in this site, also the observed threats, although of some significance, were localised and not thought to be detrimental. However, while the high variability and floral diversity of the whole gorge is potentially attractive to bird populations providing food, shelter and nesting niches, this was not reflected by bird species observed or numbers recorded . These findings were backed by anecdotal information so it is felt that this area merits further research in the future.

Number of species observed: 50
Number of visits in 2007 10
Dates: 30th March, 9th &25th April, 6th May, 19th June, 15th August, 18th September, 2nd &25th October, 5th November.

1.6.12.2 Supporting notes for Upper Mountains of Akkar-Donnieh as an IBA

The proposed site consists of four locations Wadi Jouhanam, Mechmech, Fnaideq and Qammouaa, each of which qualifies for an IBA designation on its own; presence of globally threatened species being the main reason, and the occurrence of endemic and biome restricted species and soaring birds as secondary reasons. However, these sites are closely related, being congruous culturally and geobiologically, also plagued by similar threats. There might appear individual differences particular to each site, yet, they all do share a very wide buffer zone of similar nature.
In total there were 13,189 birds counted belonging to 134 species. Of these there were 45 species occurring in 3 or more locations. Although this number might represent only one third of the overall species recorded; it would gain significance upon considering the totals recorded for some of these sites such as Wadi Jouhanam 50, Fnaideq 53, and Mechmech 78. Also, nearly half of all species logged were represented by 10 individuals or less, too small a number to be dispersed over the 4 sites. The regional endemic species, **Syrian Serin** (*Serinus syriacus*), which is also classed as Near-Threatened by BirdLife International, is found in all four sites, with at least 28 pairs confirmed as breeding in the whole area, although this figure could be much higher. 13 different biome-restricted species, mostly (7 species) from the Irano-Turanian Biome, were recorded as breeding in the whole site in 2007. Several species of conservation concern (globally or in Europe), including **Pallid Harrier**, **Red-footed**

Falcon and **European Roller** have been recorded passing through the area on migration. Also, the proposed IBA is located in North Lebanon and falls in the heart of a projected 220 km² National Park acknowledged for its rich biodiversity and the old vegetation varieties it harbours. This area is listed at the top of priority sites designated for protection in the global framework of the Lebanese National Master Plan for Land Use Management (2004)[14], the National Biodiversity Country Study in Lebanon (UNDP and MoA, 1996)[15], the National Biodiversity Strategy and Action Plan (1998)[16] and the National Action Plan to combat desertification (2003)[17]. The organisation MADA– a Lebanese conservation NGO – is already carrying out a major project entitled "Setting the path towards the establishment of a national Park in North Lebanon and the promotion and support of ecotourism" working towards the realization of the national park and the conservation of the site with the local community.

Upon reviewing and evaluating the above noted facts, it was felt prudent to consider the 4 sites investigated as parts of one ecosystem and to be recommended as one major IBA under categories A1, A2, A3 and A4iv. This would allow it to be handled efficiently under one management body by unifying decision making, reducing duplication and overlap of authorities.

Globally Near-Threatened Species: Syrian Serin (at least 28 pairs)
Restricted-range Species: Syrian Serin
Biome-restricted Species: Tawny Owl (European Temperate Forest Biome), White-throated Robin (Irano-Turanian Biome (IT)), Black-eared Wheatear (Mediterranean Biome (Med)), Finsch's Wheatear (IT), Upcher's Warbler (IT), Sardinian Warbler (Med), Sombre Tit (IT), Western Rock Nuthatch (IT), Masked Shrike (Med), Pale Rock Sparrow (IT), Crimson-winged Finch (Eurasian High Montane Biome), Syrian Serin (IT) and Black-headed Bunting (Med)

Congregations: White Pelicans, Cranes, Levant Sparrowhawks, White Stork
The occurrence of nearly 1500 Levant Sparrowhawks over Qammouaa on the 19th of September, more than 2300 White Pelicans over three dates including 2000 low over Wadi Jouhanam

14- CDR in collaboration with IAURIF/Dar El Handasah, **The Lebanese National Master Plan for Land use management,** December 2004.
15- The Ministry of Agriculture in cooperation with UNDP funded by GEF, **the National Biodiversity Country Study in Lebanon**, 1996.
16- The Ministry of Environment and UNDP with funding from GEF, the **National Biodiversity Strategy and Action Plan,** 1998.
17- The Ministry of Agriculture in cooperation with UNDP funded by GTZ, **the National Action Plan to combat desertification,** June 2003.

on the 2nd of October, 400 Cranes there on the 5th of November, and 375 White Storks over Qammouaa in early October show the importance of this area for congregations of migratory soaring birds. Although these numbers are below the set thresholds, it is our view that as the field days represent only a small proportion of the migration season for these species, and also taking into account the large size of the area (meaning that on days when large numbers were passing through many might have gone through unobserved), it seems likely that in the whole Autumn season more than 20,000 soaring birds will have passed over the area.

A hillside in Mechmech, in the proposed Akkar-Donnieh IBA, showing the contrast between uneroded areas, where some trees still remain, and heavily eroded ones which have resulted from unmanaged wood-cutting and overgrazing

1.6.12.3 Site Management Statement – Upper Mountains Akkar-Donnieh

Introduction

This document provides a summary description of the Upper Mountains of Akkar-Donnieh proposed-IBA, and some of the bird species to be found there (with 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

This site is part of the northern mountainous area of Lebanon, hosting the country's largest continuous vegetation assemblages, including diverse forest varieties. It ascends in a north-easterly direction along the western face of this mountain range, from Wadi Jouhanam (Hell Valley) in the west to the Qammouaa ridges in the north east. The steep slopes of the river valley are heavily forested, harbouring a variety of tree species typical of to the Supra-Mediterranean life zones. Calabrian Pine (*Pinus brutia*) is the dominant tree here complimented by significant patches of mixed trees comprising Oak (*Quercus* sp), Pistachio (*Pistacia* sp), Storax (*Styrax officinale*) and Maple (*Acer* sp) with a rich, thick understorey. Higher up to the north-east, are the terraced fields of Mechmech interspersed by stands of predominantly mature Cedar of Lebanon (*Cedrus libani*), fir (*Abies* sp) and junipers (*Juniperus oxycedrus* and *Juniperus excelsa*). There is a scattering of other trees and shrubs, with Storax and Maple being the most common. All fallow land here, is very heavily grazed, negating any chance of floral regeneration. Further north east is the Qammouaa region, which hosts four different habitats;

1. Calabrian Pine at the lowest altitudes,
2. The remnants of one of the largest Turkey Oak, *Quercus cerris*, stands found in Lebanon with clusters of mixed shrubs varieties and scattered junipers in the lower intermediate altitude.
3. Mixed Fir, Cedar of Lebanon and Junipers with Fir and Cedar alternating as the dominant species, in the higher intermediate elevations.
4. Predominantly Juniper sub-alpine zone, with stunted shrub varieties located at the highest altitude.

Importance of site for birdlife and biodiversity

The proposed IBA is located in a zone of high biodiversity; with over 500 floral species identified to date, it is of great importance to resident, Autumn migrating, summer breeding and over-wintering bird species. The avifauna includes a large population of **Syrian Serin** (*Serinus syriacus*) which is of global conservation concern (being classed as Near Threatened by BirdLife International) and is also a Restricted-range species being endemic to the Middle-East and a Biome-restricted Species of the Irano-Turanian Biome. Lebanon holds the majority of the breeding population of this species and so its presence here at relatively high density, is enough on its own to make this site worthy of protection. Many Biome-restricted Species, such as **Tawny Owl, White-throated Robin, Black-eared Wheatear, Finsch's Wheatear, Upcher's Warbler, Sardinian Warbler, Sombre Tit, Western Rock Nuthatch, Masked Shrike Pale Rock Sparrow, Crimson-winged Finch and Black-headed Bunting** breed here**.** Of these**, White-throated Robin** and **Finsch's Wheatear** are very rare or unknown as breeders elsewhere in Lebanon. Observations made in 2007 show that this site is also important for soaring bird migration, particularly in the Autumn, when large numbers of **Levant Sparrowhawks**, **White Pelicans, Common Cranes** and **White Storks** were recorded passing through.

Conservation objectives

The birds found in this site include, residents, migrants (both soaring and non-soaring), winter visitors, and summer breeding visitors, however the main conservation objectives for the different groups are all the same. To this end, the specific objectives are:

1. To assist in arresting any decline in the populations of these species and to ensure that there is not a net reduction in numbers of these birds as they occur throughout the site.
2. To better protect and shelter birds and other wildlife in appropriate locations, by halting habitat loss and degradation and by restoring, where possible, habitat that has already been lost, thus facilitating the increase in their numbers.

Key management issues

Hunting

Without implementation of some degree of control/regulation of hunting activity, this site

will continue to be a high-risk location for birds, rather than a haven. The involvement of the local municipalities/land owners is essential in achieving this and preliminary discussions have begun with the local communities.

Action: Establish and enforce a hunting management plan, allowing the birds some safe resting and feeding time, and to allow soaring birds to pass safely over the area.

Disturbance to birds

The disturbance to birds by humans comes from diverse sources includes farming, grazing, hunting and wood cutting.

Action: An extensive awareness campaign is needed in the local communities detailing the fundamentals of sustainable utilization of resources. This needs to be done sensitively and taking account of the fact that many of the activities which cause disturbance have deep cultural roots.

Habitat degradation

This is mainly caused by over-grazing by sheep and goats, and by unplanned and unsustainable wood-cutting, which, by removing trees and scrub and stopping its regeneration, result in erosion of the soil from the steep slopes of the hills and the loss of scrub and woodland which are important as habitat for wildlife.

These damaging activities are caused by well meaning people who are only trying to make a living in a difficult place and time, and so this makes it essential that any regulation or control is done sensitively and in partnership with the local communities.

Action: Awareness campaigns have been put in place and are already in progress with selected members from each local community.

Built developments

Large family size and increased affluence within certain sectors of the local communities is leading to encroachment by houses on many pristine habitats in the area, and there is a high risk that this site could also be affected unless something is done to halt the advance of built development.

Action: Discussions with the local municipalities have been instigated with the aim of setting organizational controls.

Aerial photograph showing the boundary of the proposed IBA at Akkar-Donnieh.

Aerial photograph showing the boundary of the location of the IBA at Akkar-Donnieh.

1.6.13 Bentael Forest Nature Reserve
1.6.13.1 General description

The site is located in the northern half of Lebanon, in the hills to the east of the town of Jbail, north of Beirut. It is a steep sided valley, mostly covered with dense woodland, with a low level of agriculture and some grazing.

Habitat description: The main habitats are Mediterranean oak woodland, dominated by the evergreen oak species *Quercus calliprinos*, with a scattering of deciduous oak *Quercus infectoria*) and other tree species including Strawberry Tree (*Arbutus* sp.), and pine woodland, dominated by Stone Pine (*Pinus pinea*). It varies in structure from dense, but young, woodland to more open woodland with some scrubby vegetation. There are several vertical cliffs of bare rock with many small caves and crevices. There is one small hamlet just outside the reserve, with some agriculture (terraces and 'poly-tunnels') surrounding it.

Conservation measures taken: Designated as a 'reserved area'. Where the main road borders the reserve, there is a high fence and signs indicating that hunting and dumping of rubbish are forbidden. Entry to the site is not controlled.

Geographical Coordinates: 34°07.926N, 35°41.204E
Total area: 150 ha (NB this is the total area of the nature reserve and doesn't include the adjacent unprotected forest)
Habitat coverage: 85% woodland, c13% scrubland, c2% bare rock, ,<1% agriculture/ cultivation, <1% artificial**.**

Threats: C (Critical**), M (**Major**), L (**Local**)**
L Level –Deliberate persecution of birds (low-levels of hunting, both from road and within the reserve). Debris/garbage pollution (Evidence of rubbish dumping from road, which may have been stopped by erection of fence). Loss of Habitat/ development (potential problem

in the areas of forest which fall outside the reserve).

Comments on observations at Bentael during 3rd year of the project
Two visits were carried out in Autumn 2007 and one more in late February 2008. This was because the Summer War of 2006 interrupted the Autumn fieldwork in 2006.
Although the Spring visits in 2006 had shown very little in the way of soaring bird migration, one of the two Autumn visits yielded more than 1200 soaring birds on passage, including 912 **European Honey-buzzards**, 103 **White Pelicans**, and 191 **Levant Sparrowhawks**, plus small numbers of other species. This indicates clearly that the site does hold some importance as a bottle-neck site for soaring birds at least in Autumn.
Evidence of Wild Boar (*Sus scrofa*) was seen during a winter visit but it was not possible to estimate the population size of this species.

1.6.13.2 Supporting Notes for Bentael as a Potential *Middle Eastern IBA*

Although this site does not satisfy the criteria to qualify as a full Important Bird Area, the size of the soaring bird passage on a single day in September indicate that there is a very high likelihood that the passage over the whole Autumn season will exceed the 3000 raptors needed for the site to qualify as a Middle-Eastern IBA (Criterion B1iv "The site is a 'bottleneck' site where over 5,000 storks, or over 3,000 raptors or 2,000 cranes regularly pass on spring or autumn migration").
Bentael also has other factors which will work in its favour in any decision about whether to grant it IBA status or not. It is a small, self-contained area, which is already officially a Protected Area and as such has a Management Committee.
Therefore we recommend that Bentael be designated as a Middle Eastern IBA on the grounds that it is a migration bottle-neck site with over 3000 raptors passing through in Autumn.

Number of species observed: 41
Number of visits in 2nd year of project: 4
Dates: 31st March, 7th April, 1st June, 25th January 2007.
Number of species observed in 3rd year: 44
Number of visits in 3nd year of project: 3
Dates: 14th September, 2nd October 2007 & 2nd February 2008.
Number of species observed over both years: 62

1.6.13.3 Site Management Statement – Bentael

Introduction
This document provides a summary description of the Bentael potential-*Middle-Eastern IBA* site and some of the bird species to be found there. It also describes current and future threats

to the site and the intention to protect it and manage it to enhance its value for wildlife.

Site Description

Situated in the hills north of Beirut, to the east of the town of Jbail, Bentael Reserved Area is a deep valley with steep, heavily wooded sides. The nature reserve, which was created in 1981, only covers the northern side of the valley, although the habitat on the southern side is continuous with that in the reserve, with the trees all being approximately the same age. The woodland is divided into two main parts. In most of the area it is typical Mediterranean oak woodland dominated by the evergreen oak species *Quercus calliprinos* but with the deciduous species *Quercus infectoria* scattered throughout the forest. Other tree species include the Greek Strawberry Tree (*Arbutus andrachne*). There is also an area of pine woodland, dominated by Stone Pine (*Pinus pinea*), covering about one third of the area of the nature reserve, in the north-western part of the valley. The woodland cover is mostly fairly dense with small areas of more open scrubby habitat. However, the trees all appear to be quite young and possibly only date from the creation of the reserve. On the northern side of the valley, there are several large areas of bare rocky crags with numerous caves of various sizes. At the eastern end of the site there are some terraces containing arable agriculture, orchards and plastic 'poly-tunnels' used for growing vegetables such as tomatoes.
The river which runs along the southern boundary of the Nature Reserve is dry for much of the year.

Importance of site for birdlife and biodiversity

Although this site is scenically very beautiful and a good example of Mediterranean oak and pine woodlands, its main value for birds is as a bottleneck site for soaring birds on migration. The data indicates that the passage is bigger in Autumn than in Spring, although this may be down to chance, with the visits in Autumn happening to coincide with large groups of migrating birds while those in Spring didn't. Only longer term studies, with birdwatchers present during a greater proportion of both seasons over several years will show whether this difference between Spring and Autumn is real or artificial. On one day in September, 15 species of soaring birds were seen of which 14 were birds of prey. This count included 912 **European Honey-buzzards**, 191 **Levant Sparrowhawks** and 103 **White Pelicans.** The figure for **European Honey-buzzards** is particularly interesting as this date is after the main peak passage period for this species and so it seems likely that the actual number passing over the site throughout the season is much higher.
Although the Spring passage was generally much smaller, groups of 120 **White Pelicans** and 80 **Common Cranes**, as well as smaller numbers of 6 other soaring bird species, indicate that the site does have some significance for soaring birds in this season also.
Although there is only one biome-restricted species (**Sardinian Warbler**) confirmed as breeding here, given the habitat and the relatively undisturbed nature of the site it is likely

that several others, including **Masked Shrike**, **Black-eared Wheatear** and **Western Rock Nuthatch** also breed here, although maybe in small numbers. Several of the other breeding species, while not being biome-restricted or designated as endangered, are nonetheless interesting and indicative of the general health of the ecosystem. These include **Long-legged Buzzard**, **Common Kestrel**, **Chukar**, **Blue Rock Thrush**, **Common Blackbird**, **Lesser Whitethroat**, **Orphean Warbler**, **Spotted Flycatcher**, **Great Tit**, **Eurasian Jay**, **Common Chaffinch**, **European Greenfinch** and **European Goldfinch**.
No wild mammals were observed during visits but evidence of Wild Boar and Persian Squirrel was seen, while websites concerning the nature reserve mention that Porcupine and Red Fox are also found there. Striped Hyaena is also possible, as it is found in similar densely wooded, steeply sloping areas in nearby parts of Lebanon.
The numbers of soaring birds seen during the project do not warrant the recommendation of this site as a full Important Bird Area. However, even a very conservative extrapolation of the results from the Autumn indicate that birds of prey on passage in that season are likely to exceed 3,000 individuals, and so we recommend that Bentael Reserved Area be designated as a Middle-Eastern Important Bird Area on the basis of criterion B1iv.

Conservation Objectives

1. **Migratory species**

That all bird species passing through this area on their spring or autumn migrations, be protected from harassment and indiscriminate killing.

2. **Conservation of the forest**

That the entire forest habitat be protected from excessive disturbance and in particular that damaging activities such as tree-cutting and hunting be prevented within the reserve. The areas of the valley outside the reserve are nevertheless part of the same ecosystem and so efforts should be made to persuade the landowners to protect the forest on their land and to prevent hunting, wood-cutting and charcoal- burning.

Key Management Issues

Hunting

Some evidence of hunting (discarded shot-gun cartridges) was seen on the southern side of the valley, outside the boundaries of the nature reserve. As the main ornithological interest of the site is for migrating soaring birds, it is important that hunting is controlled in the area immediately surrounding the reserve, as birds do not recognize boundaries.
Action: In consultation and partnership with the Reserve Committee, local communities, local municipalities and the police, establish and enforce a hunting management plan to allow soaring birds to pass safely over the area and to allow all birds to be free from persecution.

Loss of Habitat due to Built Development
This is a potential problem, particularly in the immediate surroundings of the reserve, and one which needs to be assessed.
Action Develop relationships between the Nature Reserve Committee, and representatives of local municipalities and landowners to ensure that the areas of forest outside the reserve are recognized as being part of the whole ecosystem and that the landowners are encouraged to protect them.

Dumping of garbage
This problem appears to have been stopped by the erection of a high fence where the reserve boundary goes along the road, but it is likely to remain a potential problem and so requires ongoing monitoring.
Action Monitor the problem and if it becomes an issue again, design and implement an appropriate plan of action.

Aerial photograph showing Bentael Nature Reserve and the adjacent area of forest


Map of Lebanon showing location of Bentael

1.6.14 Ramlieh Valley
1.6.14.1 General description:


White-tailed Eagle

The site is situated in the Shouf region of the Mount Lebanon range south of the towns of Bhamdoun and Saoufar, and about 17km south-east of Beirut. It is a wide valley, with fairly gently sloping sides, but with some vertical cliffs at the higher elevations on both sides of the valley. The River Safa runs through the valley and flows in a roughly east-north-east to west-south-west direction.

Habitat description: The main habitat on the valley floor is coniferous woodland, dominated by Pine (*Pinus* sp.), which is replaced by terraced orchards towards the head of the valley. The sides of the valley are dominated by short scrubby vegetation, with signs of heavy grazing, and bare rock. There are a few small quarries on the edges of the site.
Conservation measures taken: None
Geographical Coordinates: 33°44.820N, 35°39.000'E
Total area: 928 ha
Habitat coverage: 40% Scrubland, 35% woodland, 10% bare rock, 10% agriculture/ cultivation, 5% artificial(buildings and quarries)**.**

Threats: C (Critical**), M (**Major**), L (**Local**)**
M Level – Over-grazing/over-browsing
L Level – Deliberate persecution of birds (hunting), Extraction industry (quarries), Loss of habitat/ development.

Comments on observations at Ramlieh during 3rd year of the project
As at Ramlieh, no visits were possible to this site in Autumn 2006 because of the aftermath of the Summer War that year. Instead 7 visits were carried out Autumn 2007. Due to the nature of the site, there was some initial difficulty finding a suitable point from which to

observe the southward passage of soaring birds, and so the observations on those 7 visits were made from several different places.

Although, as at the previous site, Bentael, raptor passage in Spring had been somewhat disappointing, over the seven visits in Autumn 2007 at total of 2488 birds of prey were seen passing through the area. In addition, staff of the environmental NGO, AFDC, who are based in Ramlieh, reported that on several occasions in our absence there were large flocks of soaring birds, including Pelicans, passing over, but they had no accurate estimates of numbers.

1.6.14.3 Supporting Notes for Ramlieh as a Potential *Middle Eastern IBA*

Ramlieh, as the previous site, Bentael, clearly does not at present qualify as a full IBA. However, given that the raw data from 2007 only just fall short of the criteria for a Middle Eastern IBA, and taking into account the fact that the dates of visits only represent a small proportion of the whole season, plus the fact that no visits were carried out during the peak passage season for **European Honey-buzzards** (during the last 2 weeks of August), plus the anecdotal evidence of large passages of soaring birds made by local people, we recommend that Ramlieh be designated as a Middle-Easten Important Bird Area under Criterion B1iv.

Number of species observed: 30
Number of visits in 2nd year of project: 5

Dates: 3rd April, 4th April, 27th April, 12th May, 9th February 2007.
Number of species observed in 3rd year: 35
Number of visits in 3nd year of project: 7
Dates: 4th September, 5th September, 20th September, 27th September, 18th October, 23rd October, 6th November 2007.
Number of species observed over both years: 47

1.6.14.3 Site Management Statement - Ramlieh

Introduction

This document provides a summary description of the Ramlieh potential-*Middle-Eastern IBA* site and some of the bird species to be found there. It also describes current and future threats to the site and the intention to protect it and manage it to enhance its value for wildlife.

Site Description

Situated in the Shouf region of the Mount Lebanon range, to the south of the towns of Saoufar and Bhamdoun, and about 17km south-east of Beirut, the Ramlieh site is a wide valley with gently sloping sides but with some vertical cliffs on both sides of the valley at the higher elevations. The River Safa (which becomes the Damour River in its lower reaches) flows through the site in a roughly east-north-east to west-south-west direction.

The habitat on the valley floor is dominated by coniferous woodland, with pines (*Pinus* sp) being the main tree species. This is replaced by terraced orchards towards the head of the valley. The sides of the valley are dominated by short scrubby vegetation with signs of heavy grazing. There are also small areas of Pine woodland on the sides of the valley in various places. The small village of Ramlieh occupies part of the valley floor at the western end of the site.

The site currently has no protection, although an environmental NGO, the Association for Forest Development and Conservation (AFDC), has its headquarters in the valley, above the village of Ramlieh and they have been involved with various community based projects aimed at the conservation and restoration of the natural habitats in the area, and are also encouraging the development of eco-tourism in the area.

Importance of site for birdlife and biodiversity

The main value of the site is as a bottle-neck site for soaring bird migration, although the woodlands and orchards hold good breeding populations of many of the expected species of these habitats.

As has been the case for many of the sites surveyed during this project, the relatively small number of visits has meant that the best days for soaring bird migration have not always

coincided with the days when visits were being carried out. Consequently, the numbers of soaring birds seen during two migration seasons (Spring 2006 and Autumn 2007) were not enough to warrant the site's recommendation for full Important Bird Area status. However, based on the numbers of raptors seen in Autumn, we recommend that Ramlieh be designated as a Middle Eastern IBA on criterion Biv. This requires there to be at least 5000 storks, 3000 raptors or 2000 cranes during either the Spring or Autumn season. During the Autumn season 2479 raptors were seen, including 1595 Levant Sparrowhawks on one day. In addition, during our visits in Autumn 2007, local people and staff of the environmental group AFDC reported seeing large numbers, possibly thousands, of soaring birds, including **White Pelicans**, passing over on the days when we weren't there. It seems very likely therefore, that numbers of soaring birds will easily satisfy the requirements for Middle-eastern IBA status, and future fieldwork may eventually warrant the site being upgraded to full IBA.

Although not enough to warrant the site being granted IBA status on the grounds of criterion A3 ("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") there are nevertheless four biome-restricted species for which breeding is suspected or confirmed at Ramlieh. These are **Black-eared Wheatear**, **Sardinian Warbler** and **Masked Shrike**, from the Mediterranean Biome, and **Western Rock Nuthatch**, from the Irano-Turanian Biome.

Also of interest among the breeding species is **Long-legged Buzzard**, whose presence throughout the year is one sign of a healthy ecosystem.

Other wildlife which occurs here includes Red Fox and many species of butterfly such as Common, Southern and Scarce Swallowtail and Southern White Admiral.

Conservation Objectives

1. **Migratory species**

That all bird species passing through this area on their spring or autumn migrations, be protected from harassment and indiscriminate killing.

2. **Breeding bird species**

That all the habitats within the area be managed appropriately for all wildlife, including birds, and that birds breeding within the area be afforded protection from disturbance during the breeding season.

Key Management Issues

Grazing

Overgrazing appears to be a problem, particularly in the more open habitats. This leads to loss and degradation of scrub and prevents regeneration of shrubs and trees.

Action Work with local communities and NGOs to establish a more controlled grazing regime as part of an integrated management plan for the whole site. As the area is under multiple ownership, this will take some time to establish, but the creation of a Site Support Group and a Management Committee will be important first steps.

Hunting

Some evidence of hunting was seen and heard during visits although the exact extent of the problem is unclear at the present time.

Action Community based education work and awareness raising will be useful in both assessing the scale of the hunting here and reducing it. The Association for Forest Development and Conservation (AFDC) is well placed to be the lead partner in such work and have already been involved in running environmental education programmes at their centre in Ramlieh.

Loss of Habitat due to Development, and Quarrying

These are potential problems, particularly on the outskirts of the two main villages within the site, Ramlieh and El Mecherfe and in the case of quarrying, at the edges of the site.

Action The involvement of the local authorities in the management planning process will be essential to ensure that any development is carried out in a sensitive way and with minimum disturbance to wildlife[18].

Arial photograph showing the Ramlieh Valley and the surrounding area

18- IBA MAVA funded project "Identification and Conservation of New "Important Bird Areas" in Lebanon", final report.

1.6.15 Jabal Moussa Mountain
1.6.15.1 General Description

Great Spotted Eagle

The site is a mountain which extends westwards from the main Mount Lebanon chain along the edge of the Nahr Ibrahim, just to the west of Jabal Aalmat on the opposite side of the river.

Conservation measures taken: Much of the mountain is now protected by a local NGO (The Association for the Protection of Jabal Moussa) which rents some of the land from the church and local municipalities, with other portions being owned by local landowners who are close to the association. Hunting, tree felling and quarrying are banned on the protected areas.

Geographical Coordinates: 34 degrees 03.099 minutes North, 35 degrees 45.914 minutes East
Total area: 3787ha
Habitat coverage: 40 % Woodland, 40% scrubland, 10% agriculture, less than 1% artificial (quarry and buildings)

Threats: **C** (Critical), **M** (Major), **L** (local)
L level there is evidence of overgrazing/over browsing, deliberate persecution of birds, hunting, extraction industry (quarrying) tree felling and occasional wood cutting for charcoal production mostly outside the protected area.

1.6.15.2 Supporting notes for Jabal Moussa as a potential IBA

Soaring Bird Migration
Further to discussions with BirdLife International on how best to extrapolate the soaring bird migration data, as only a section of the total number of birds would have been seen, BirdLife stated that the best way would be to multiply the total for each species by 2 or 3.

Extrapolating numbers recorded during 2008 gives the following results:

Family	Total Spring 2008	Extrapolated no. Spring 2008 (x2 - x3)	Total Autumn 2008	Extrapolated no. Autumn 2008 (x2 – x3)
Pelicans	525	1,050 – 1,575	0	0
Storks	1,365	2,730 – 4,095	711	1,418 – 2,127
Cranes	172	344 – 516	30	60 - 90
Birds of Prey	457	914 – 1,371	**13,982**	**27,964 – 41,946**

With extrapolation of total numbers in the autumn, even just doubling them more than meets the criteria for an Important Bird Area of Global importance:

'A4 iv *The site is known or thought to be a 'bottleneck' site where at least 20,000 storks (Ciconiidae) or raptors (Accipitriformes and Falconiformes) or cranes (Gruidae) regularly pass during spring or autumn migration.'*

Therefore under these criteria, the Jabal Moussa area is recommended for designation as an Important Bird Area.

The soaring migratory bird conclusions are the most important in this site, not least because their conservation in Lebanon directly affects many other countries where they migrate to and from, and pass through, every year.

There are however also other interesting conclusions to be drawn from the study at Jabal Moussa which further enhances its importance for birds, over different times of the year:

Passage Migration of Other Species
Several species that are known for their scarcity on migration through Lebanon have been noted from Jabal Moussa, including Bonelli's Warbler, Wood Warbler and Garden Warbler. These species indicate the potential importance of Jabal Moussa as a stopover site for migrating passerines. There were also a number of other passage migrants, which although not necessarily scarce in Lebanon, again indicate the importance of this site for bird migration. Species such as Quail, Great Spotted Cuckoo, Wryneck, Swifts, Bee-eaters and hirundines, Water and Tree Pipits, Thrush Nightingale, Common Redstart, Whinchat, Rock Thrush and warblers such as Lesser Whitethroat (which also breeds here), Garden, Willow and Wood Warblers, Spotted Flycatcher, Red-backed Shrike, Golden Oriole and Ortolan Bunting all migrate through Jabal Moussa and use it as a

stopover site. Corncrake is a scarce and declining migrant and was also seen near to Jabal Moussa in the autumn.

Breeding Birds at Jabal Moussa

In addition to those species which are passage migrants through Jabal Moussa, a number of birds are summer visitors and breed here, such as Common Cuckoo, Nightingale, and a number of warblers such as Blackcap, Eastern Orphean Warbler, Lesser Whitethroat, Whitethroat, Eastern Olivaceous Warbler, Eastern Bonelli's Warbler (possible breeder) and Chiff-chaff. Eastern Bonelli's Warbler is considered to be a scarce migrant breeder, so records from Jabal Moussa for this species are of particular interest, and Chiff-chaff is only confirmed from a couple of places in Lebanon (see species accounts) and therefore evidence of breeding is also noteworthy. Of the resident birds of Lebanon, those that breed at Jabal Moussa include Blue tit, for which there are very few previous records of breeding. An estimated 10 territories from both bird survey routes combined were counted. Other breeding resident birds include Chukar, Wren, Yellow-vented Bulbul, Black Redstart, Black-eared Wheatear, Blackbird, Great and Coal Tits, Western Rock Nuthatch, Chaffinch, Greenfinch and Rock Bunting.

Winter Visitors

Several species are present at Jabal Moussa only over the winter period and these include Woodcock, Woodpigeon, Dunnock, Robin and Song Thrush. In addition flocks of finches were observed in the winter such as Goldfinches, Chaffinches and Greenfinches.

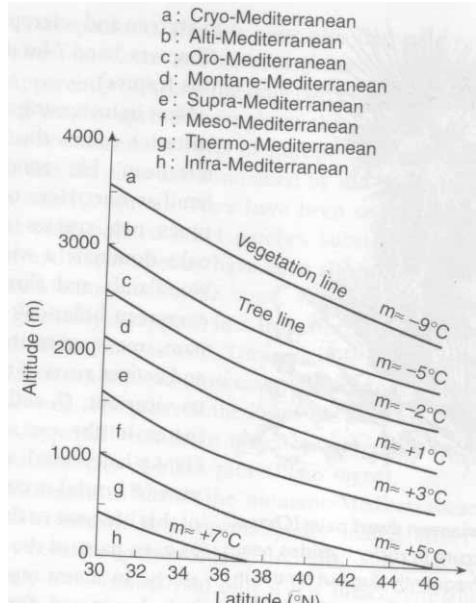
1.6.15.3 Site Management Statement –Jabal Moussa

Introduction

This document provides a summary description of the Jabal Moussa 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 wildlife.

Site Description

The Jabal Moussa represents the meso (500-1000 m. altitude) and supra (1000-1500 m. altitude) Mediterranean levels described in Corine classification. See **Fig below.**



Altitudinal / latitudinal gradients showing zonation of life zones.[19]

The Jabal Moussa represents a mosaic of Mediterranean habitats and niches (Chaparral). The area is shelter to "evergreen sclerophylic shrublands and forests". The high peaks ,formed from rocky calcareous outcrops, host mainly deciduous trees that are rare elsewhere such as the Turkey oak (*Quercus cerris) covering the* northern part and Cyprus oak *(Quercus infectoria) expanding on the* southern part of the summits. Those are mixed with wild fruit trees such as almond, apple, pear, Palestine pistachio and storax.

The slopes in the mountain are populated by 1) dense forests of oak *Quercus calliprinos* and pine trees (*Pinus brutia)*, 2) dense forests of oak *Quercus calliprinos*, 3) dense forests of storax *(Styrax officinalis)* and hop-hornbeam (*Ostrya carpinifolia)*, 4) open forests of oak *(Quercus calliprinos* and *Quercus infectoria)*, 5) guarrigues with Spanish broom *(Spartium junceum)* and hairy thorny broom *(Calycotome villosa)*, 6) grasslands with *Medicago, Lathyrus, Trifolium, Apropyron, Hordeum, Bromus,* etc.,. The foothills in Jabal Moussa end with mature riparian zones populated by *Platanus orientalis*. The area embraces cultivated lands, abandoned agricultural fields and terraces, and more or less barren sandy and rocky areas.

19- Blondel, J. and Aronson, J.(1995) Biodiversity and Ecosystem function in the Mediterranean basin; human and non human determinants In Mediterranean type ecosystems. The function of biodiversity (ed G.W. Davis and D.M. Richardson).

1.3.3 Importance of site for birdlife and biodiversity

As well as the site's importance for migrating and resident birds already described, the region is home to more than 215 plant species among which 20 tree species and 11 endemics. The mountainous area, dominating two rivers [Nahr Eh Dahab and Nahr Ibrahim], reflects a typical Mediterranean landscape sheltering mosaics of plant communities. These communities nest mixed and pure patches of *Ostrya carpinifolia* Scop., *Fraxinus ornus* L. and *Styrax officinalis* L. populations and *Quercus cerris* L. and *Q. callipinos* Oliv. and *Pinus brutia* Ten. These tree species, well preserved in JM, have been subject to wood cutting for fire wood in most of other Lebanese forests. The *O. carpinifolia* stands are recognized for their biogeographic value, being the southernmost limit of the species in Eastern Mediterranean. Thus the site can be acknowledged for its special value as a repository for old growth tree specimens of storax, pistachio, alder and hop horn-beam besides being home for 14 large and medium mammal species. Eight species of mammal are in decline while six subspecies are limited in their distribution to Eastern Mediterranean. Moreover, the site is a home of one species, the rock hyrax (*Procavia capensis*), that has limited distribution in Lebanon due to its special habitat requirement.

1.6.15.4 Conservation Objectives

1. Migrating Soaring Birds

There should be no net reduction in the numbers of these birds as a result of passing through the site.

2.Forest Cover

To protect vegetation communities and pristine ecosystems in order to conserve roosting sites for migratory birds forest cover should remain at current levels.

3.Breeding Birds

Numbers of breeding pairs of Blue tits (an indicator species of habitat change and representing an important breeding population nationally) should remain stable.

Key Management Issues

Hunting

As over the whole national territory, this remains a major problem to be tackled. Although officially against the law (at the time of writing) the law is unenforced and largely disregarded.

Grazing

There is some evidence of overgrazing by local herds of goats. A grazing plan needs to

be established and enforced with certain areas off limits for the forest to recover. Natural restoration activities and succession stages will be reinforced through the development of conservation and sustainable and adaptive management plan for the area. In addition, sustainable grazing program will be considered in the management plan.

Disturbance

As part of the socio economic plans for the conservation of the area, ecotourism activities are planned. Tourist access should be controlled and a carrying capacity worked out for the site. Certain areas should remain off limits to tourist groups who should be constrained to certain paths.

A flora and fauna monitoring plan will be developed to understand the interspecific interactions taking place and to define the carrying capacity of the site in terms of sustainable management activities and eco-tourism.

Tree felling and quarrying

These activities are currently banned on site; vigilance is needed to prevent further loss of habitat particularly through production of charcoal and the loss of trees for fire wood[20].

Map showing boundary of site and Routes of Breeding Bird Surveys, A Rocha 2008

20- "A study into the importance of Jabal Mousa for birds in Lebanon", A Rocha Lebanon , Dec.08.

Section Two:
Status of Birds in Lebanon (Species)

Ghassan Ramadan Jaradi and Assad Adel Serhal

Credit for pictures by : Ghassan Ramadan Jaradi & SPNL

2.1 Summary

The results of ornithological observations covering the Lebanese territory, during 1995 – 1997, were presented with information from the literature in annotated checklist form. The list treated 369 species with indications to major changes in occurrence and breeding, status, distribution within Lebanon, abundance and, where available, breeding data were all presented.

Since then many significant changes in the status and distribution of birds have been recorded and documented in a checklist covering the period 1999-2008. Checklists are never permanent, but the one published in 2008 relates more closely to a more standardized taxonomic approach being adopted for the OSME Region, through the development of OSME Regional List of bird taxa. This checklist constitutes a subject for the Lebanon Birds Rarities Committee to discuss and debate. The new checklist raised the number of taxa in Lebanon from 369 to 397 species. Of them, 65% are passage migrants or winter visitors (or both), 2% are purely wintering species, 18% are vagrants, 18% summer breeders and 14% breeding residents. The remaining birds are of uncertain status (Leach's Storm Petrel *Oceanodroma leucorhoa* and Namaqua Dove *Oena capensis*), have originated from escapes (Red Turtle Dove *Streptopelia tranquebarica* and Indian Silverbill *Lonchura malabarica*) or formerly bred, but no longer appear in Lebanon (Lesser Crested Tern *Sterna bengalensis* and Blue-cheeked Bee-eater *Merops persicus*).

2.2 Introduction

In recent decades, ornithological studies in Lebanon have been limited by the civil war of 1975–1991, and altered by turmoil and political tensions between 2005 and 2012. Presently, there are many unsecure areas (Cheikh Zennad and parts of southern Lebanon) due either to their location near the unstable border of the country or to their location within mined fields. Despite all, our studies enabled us to summarize the status and distribution of birds in Lebanon, highlighting the most significant changes since the publication of Benson (1970), Macfarlane (1978) Tohmé & Tohmé (1986), Ramadan-Jaradi & Ramadan-Jaradi (1997, 1999, 2001, 2002, 2004, 2005) and Ramadan-Jaradi *et al.* (2008), and to establish Lebanon's ornithological importance by examining the country's most important geographical features and bird habitats, and presents, in checklist form, the status and distribution of all species occurring in Lebanon.

We present the results of our intensive surveys of birds in Lebanon, with additional information that has been taken from the relevant literature.

2.3 The country

Situated at the east end of the Mediterranean, Lebanon comprises 10,452 km^2 of mountainous territory. It is densely populated; the total population is c. 4.5 million.

Geologically, Lebanon consists almost exclusively of limestones. Most are of Cretaceous origin, with Jurassic limestones in some areas, principally in the south. Only in a few places, especially in the north at Akkar, do basaltic rocks appear.

The topography consists of a narrow coastal plain and two imposing mountain ranges (Lebanon and Anti-Lebanon) separated by the Beqaa Valley (at 800–1000 metres), part of the African Rift complex, which is composed of eroded material from the mountains. The Lebanon range mostly rises from the sea, reaching 3150 metres and gradually decreases in altitude to the south. The southernmost point of the Anti-Lebanon is the highest part of the range, at almost 3000 metres on the Hermon. Further north, the Anti-Lebanon Mountains gradually decrease in altitude.

The climate is subject to considerable variation according to altitude and locality. Generally it can be described as Mediterranean, with a few particularities. Predominantly westerly winds bring abundant rain—principally in winter—while the summers are mainly dry. Coastal areas receive over 800 mm of rain p.a., and most montane areas over 1000 mm. Most rain falls on the western slopes of the Lebanon range, with the summits receiving less than lower areas. The Beqaa valley and Anti-Lebanon generally receive less than 700 mm and the Hermel semi-desert in the northern Beqaa less than 250 mm.

In coastal areas, the mean temperature during the year is c. 20°C while above 1800 metres it is c. 10°C. Most high mountains in both ranges are snow-covered until July or August and on the peaks, isolated pockets of permanent snow occur in shaded places.

On the western slopes of the Lebanon range, the main phytogeographical zones are easy to define. They range from the lower Mediterranean zone (0–500 metres) to the alpine zone (above 2500 metres) successively through the middle Mediterranean zone (500–1000 metres), upper Mediterranean zone (1000–1500 metres), cedar zone (1500–2000 metres) and subalpine zone (2000–2500 metres). On the east slope of the Lebanon, the Beqaa valley and the Anti-Lebanon there is a gradual change to continental Mediterranean and sub desert conditions. Most will not be readily apparent to an ornithologist, but the emphasis on these broad vegetation communities is certainly relevant.

2.4 Study area

The study area encompassed the entire country. It contains the following habitats:

Islands: three protected islets (Ramkine, Sanani and Palm) at 5.5 km off Tripoli, in the north. They occupy 4.2 km² and consist of rocky shores and sand beaches, with scattered low bushes, scrubs, annual herbs and bushy palm trees.

Coasts: the continental shore extends for c. 220 km, and we also include river mouths and coastal mudflats in this habitat type. Cliffs and sandy or shingle beaches are frequent on all coasts. Apparently, the heavy demographic pressure has resulted in the disappearance of most breeding seabirds.

Urban areas: we include parks and private gardens within this habitat type. One of the chief characteristics of urban habitat is the large number of exotic plants such as *Casuarina*, *Opuntia ficus-indica*, *exotic* palms, agaves and many species of *Acacia*.

Coastal plain: usually narrow, but non-existent in places where the mountains rise directly from the sea. Only the Akkar plain, north of Tripoli, and Tyre plain in the south possess the characteristics of a wild plain, ie. little grazed grassland. In most areas there is cultivation, eucalyptus woodland, fruit orchards and pine plantations.

Maquis: the climax vegetation of the Lower Mediterranean zone is maquis with *Quercus*, *Poterium*, *Terebinthus*, *Ceratonia*, *Laurus* and other low trees, with stands of *Clematis*, *Smilax*, *Lonicera* and *Asparagus*. It is still found locally, principally in inaccessible areas e.g. ravines.

Garrigue: excepting the coastal plain, much of the Lower Mediterranean zone is semi-open to open garrigue woodland.

Olive groves: usually on terraced slopes in the Lower Mediterranean and lower parts of the Middle Mediterranean zones.

Pine forests: forest blocks—principally of *Pinus brutia* and *Pinus pinea*—extend throughout the Lower, Middle and Upper Mediterranean zones.

Oak forests: these comprise *Quercus calliprinos* in the Lower Mediterranean zone; *Q. calliprinus* and *Q. infectoria* in the Middle Mediterranean zone; *Q. calliprinus*, *Q. infectoria* and *Q. cerris* in the Upper Mediterranean zone; and some *Q. cedorum* and *Q. brantii* in the Cedar zone.

Cedar forests: this habitat—consisting of *Cedrus libani* trees—is now known from just 12 limited stands from north Lebanon to Arz Maasser Al Chouf, and totals about 1700 ha.

Fir forests: *Abies cilicica* also occurs in the Cedar zone in north Lebanon, from Qammouha to its southern limit at Ehden.

Tragacanth: represented by stony and rocky hills in the Subalpine and Alpine zones with scattered low, rounded or flat spiny semi-shrubs such as *Vicia*, *Erodium*, *Astragalus*, *Onobrychis and Acantholimon*, interspersed at lower levels with stands of *Berberis* and *Phlomis*. Scattered stands of *Juniperus excelsa* still occur in Subalpine areas.

Anti-Lebanon hills: relatively arid uplands which receive considerably less rainfall than corresponding altitudes in west Lebanon.

River valleys: the Lebanon range, particularly on its west side, and the Beqaa are bisected by rivers and streams with their own peculiar vegetation: *Nerium oleander*, *Platanus orientalis*, *Rhododendron ponticum* and *Drosera rotundifolia* among others. The softness of the limestone has allowed even small rivers to create impressive valleys, in some places with near-vertical sides.

Orchards: found throughout the country; on the coast bananas, loquat *Eriobotrya japonica* and *Citrus* are the most frequent; below 800 metres, the hills have extensive olive groves

(treated separately), mid-altitudes have peaches and apricots, and higher areas cherry, apple and pear plantations.

Cultivation: cereals are farmed in Akkar and Tyre plains, and vegetable cultivation is practiced throughout the country, particularly in the Beqaa valley and its fringes.

Semi-desert: limited to a small area of the Hermel, north Beqaa, where rainfall—partially inhibited by the high mountains—is just 250 mm p.a. It is a direct extension of the Syrian desert via the Homs depression. Among the typical plants are *Artemisia*, *Haloxylon*, *Salsola*, *Achillea*, *Scorzonera and Gymnarrhenea*.

Aammiq wetland: Ammiq wetland (280 ha), seven km south-west of Qabb Elias in the Beqaa valley, at c. 860 metres, lies on one of the most important bird migration routes in the Middle East. Most of the area is inundated in winter, but in dry summers only two small areas of open water remain. The wettest area is composed of a mosaic of *Juncus* and *Phragmites–Typha* reedbeds. The area is traversed by Riachi stream, which on its raised banks, supports an avenue of *Fraxinus ornus*.

Inland waters: with the exception of Ammiq (see above), the following are included within this habitat type: Qaraoun lake, Tanayel and Yammouneh ponds, Cheikh Zennad flat salt pans, Bichmezzine depression, Anjar channels, and springs, streams, rivers and fishponds, which are usually fringed with riverine or marshy vegetation.

2.5 Methods

To census birds, we used the 20-minute point-count method, whereby all species noted during this time period are recorded at different places and different times of year in the most characteristic habitats of a given area (Blondel 1975, Blondel *et al.* 1981). This method is semi-quantitative and changes in abundance of a species are estimated by changes in the frequency of this species over a series of point counts.

On days of heaviest raptor or stork movement, it was necessary on occasion to estimate the number of birds passing. At other times, birds were individually counted. In addition, some birds were identified through capture in single-shelf mist-nets, during several diurnal and nocturnal surveys, particularly of Ammiq swamp.

With this methodology our records have provided sufficient data to warrant an update for the checklist of birds recorded in Lebanon.

2.6 Ornithological history

In May–August 1824, W. F. Hemprich and C. G. Ehrenberg collected birds and other wildlife in Lebanon. Eight years later, in 1832, a few bird skins were collected by P. E. Botta, and from 1858–1881, H. B. Tristram visited the country several times and made many observations on Lebanese birds. The earliest museum specimens from Lebanon are the 100s of bird skins taken in the Beirut area by W. T. Van Dyck in 1873–1878 and 1881–82. Many of these are

now in the American University in Beirut Museum. During the same period (1878–79), G. Schrader collected eggs and many birds from Beirut (and probably elsewhere in Lebanon). E. Festa collected some birds in Lebanon, on behalf of the Zoological Museum of Torino, in 1893. During stays of the Mediterranean Fleet at Tripoli, J. H. Stenhouse visited Nakl (Palm) island and observed birds on two occasions: 1893 and 1895. Subsequently, A. E. Day became interested in the Lebanese flora and fauna, and collected birds, other animals and plants. In the 1920s and 1930s, J Aharoni and R. Meinertzhagen made orithological observations in Lebanon, and Chavigny collected eggs, skins and nests in 1933–1939. During the Second World War, E. M. Cawkell, D. R. Mackintosh, J. G. Williams and A. Leavesley, among others, in the Allied Forces visited Lebanon and made notes on the birds they saw.

Tornielli (1957), Bourne (1959), Flach (1959) and Hollom (1959) all made valuable contributions to Lebanese ornithology, but it was Kumerloeve who recapitulated all previous ornithological data on Lebanon in list form (Kumerloeve 1962). This was followed by a number of papers and books on birds of Lebanon: Benson (1970), Tohmé & Neuschwander (1974, 1978), Macfarlane (1978), Wallace (1984), Tohmé & Tohmé (1986), Khairallah (1991), Evans (1994), Ramadan-Jaradi (1996a, 1996b), Ramadan-Jaradi & Ramadan-Jaradi (1997), Walley (1998), Busuttil & Flumm (1998a,b), Bara (1998, 2002, 2003), Ramadan-Jaradi & Ramadan-Jaradi (1999, 2001, 2002), Beale (2000), Beale & Ramadan-Jaradi (2001), Knight and Beale (2004), Ramadan-Jaradi et al. (2004, 2005, 2008), Bayle & Prior (2006), Prior & Bayle (2006), Prior (2007), Haraldsson (2008), Ramadan-Jaradi & Bara (2008), Prior & Conroy (2009), Ramadan-Jaradi (2011) and Ramadan-Jaradi (2012).

2.7 Results

The revised checklist (Ramadan-Jaradi et al., 2008) that is based on the updated checklist of the birds of Lebanon (Ramadan-Jaradi & Ramadan-Jaradi 1999) and on the additional information available in literature up to September 2012, including the results of our intensive surveys that are conducted on continual basis in the country till the date of this paper, highlighted the most recent significant changes in the status, distribution and occurrence of all species observed in Lebanon. In fact, ornithological observations between 1999 and 2012 have led to an increase in numbers of Lebanon's bird species or recognizable subspecies from 371 to 397, six of them originating from two parent taxa already present: Common Buzzard *Buteo buteo* and Yellow Wagtail *Motacilla flava*. Three more species will be added to the list following a process of verification.

The revised checklist allowed us to update the information of at least 64% (234) of the species that were listed in Ramadan-Jaradi & Ramadan-Jaradi (1999). However, the most significant changes are those related to the status of 83 species; where 16 of them proved to breed for the first time in the country (*eg* Cream-coloured Courser *Cursorius cursor*, White-throated Robin *Irania gutturalis*, Blue Tit *Cyanistes caeruleus*, Penduline Tit *Remiz pendulinus*), 21

vagrant species proved to be winterers, on passage, or both (*eg* Rough-legged Buzzard *Buteo lagopus,* Audouin's Gull *Larus audouinii,* Semi-collared Flycatcher *Ficedula semitorquata*), and four vagrants have been proved to breed for the first time in Lebanon (Eurasian Eagle Owl *Bubo bubo*, Desert Lark *Ammomanes deserti*, Temminck's Lark *Eremophila bilopha* and Mourning Wheatear *Oenanthe lugens*). We note in passing that illegal hunting remains a very serious threat to all raptors, especially falcons. Of the remaining vagrants, 23 species have not been sighted since at least 1982 (*eg* Common Goldeneye *Bucephala clangula,* Brown Fish Owl *Ketupa zeylonensis,* Black Lark *Melanocorypha yeltoniensis*). Moreover, 18 species were new to Lebanon, three (Bartailed Lark *Ammomanes cinctura*, Scrub Warbler *Scotocerca inquieta*, Common Myna *Acridotheres tristis*) being confirmed breeders, the others being either vagrants (12 species) or possibly escapes. Only one species, Goosander *Mergus merganser*, has been removed from the previous checklist on the advice of the observer (see Bara 2002).

Finally, for each non-widespread species, we list the principal localities in which it has been seen to help guide future assessment, to fill gaps, and provide a basis for follow up and monitoring. For all species we provide references for their first occurrence or their first breeding record in Lebanon.

2.7.1 The Various Categories of species

2.7.1.1. The Sedentary Species

The Sedentary (resident) species are represented in the Table (7) where out of 65 species 5 are of uncertain sedentary status and 5 are at the same time sedentary/resident (R or r) and summer breeding (SB or sb) species. Subsequently **the total number of the sedentary (resident) species is 65.** It is probably worth noting that 71.7% of the resident species are common, 20% uncommon, 3.3% scarce, 3.3% rare and 1.7% very rare.

Note: [shaded species English names are illustrated with photographs copyrighted to Ghassan Ramadan Jaradi & SPNL].

Keys

Abbreviations are used to indicate the species status, a question mark indicating uncertain status. Lower case abbreviations (eg. r, sb, s, wv, pm) indicate that the species is uncommon or rare at the relevant season

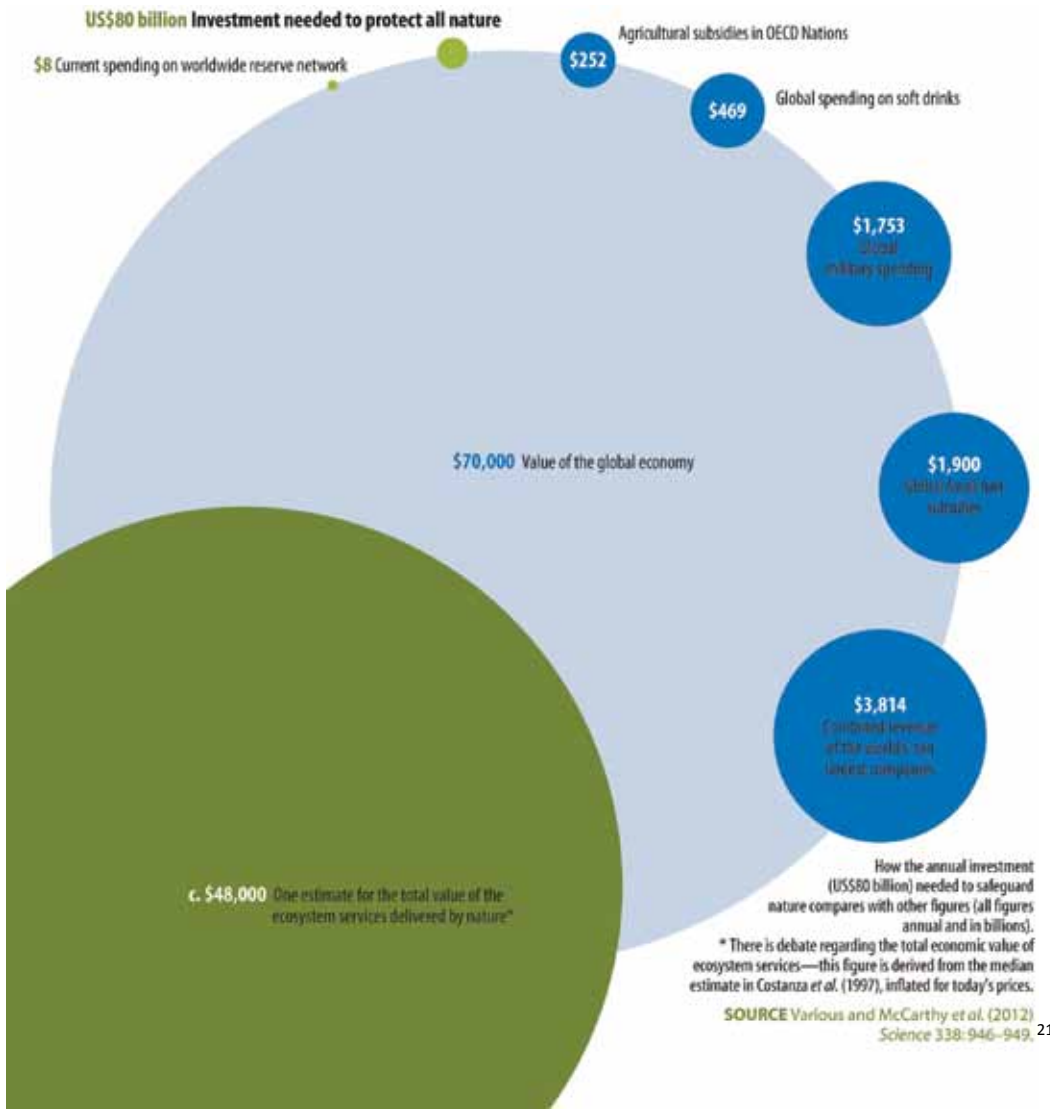
R= Resident with definite breeding record
SB= Breeding summer visitor
S= Non breeding summer visitor
WV= Winter visitor
PM= passage migrant, S in spring and A in autumn.
FB= Formerly bred: no breeding records since 1987
CR= Critically Endangered as per BirdLife International 2012
V= Vagrant
e= Extinct in Lebanon
I= Introduced
EN= Endangered as per BirdLife International 2012
VU= Vulnerable as per BirdLife International 2012
NT= Near Threatened as per BirdLife International 2012
LC= Least concern as per Birdlife International 2012

Under breeding, migrating and wintering: Bold numbers indicate common species at the relevant season

Under Degree of occurrence: Bold numbers indicate common species at the year level

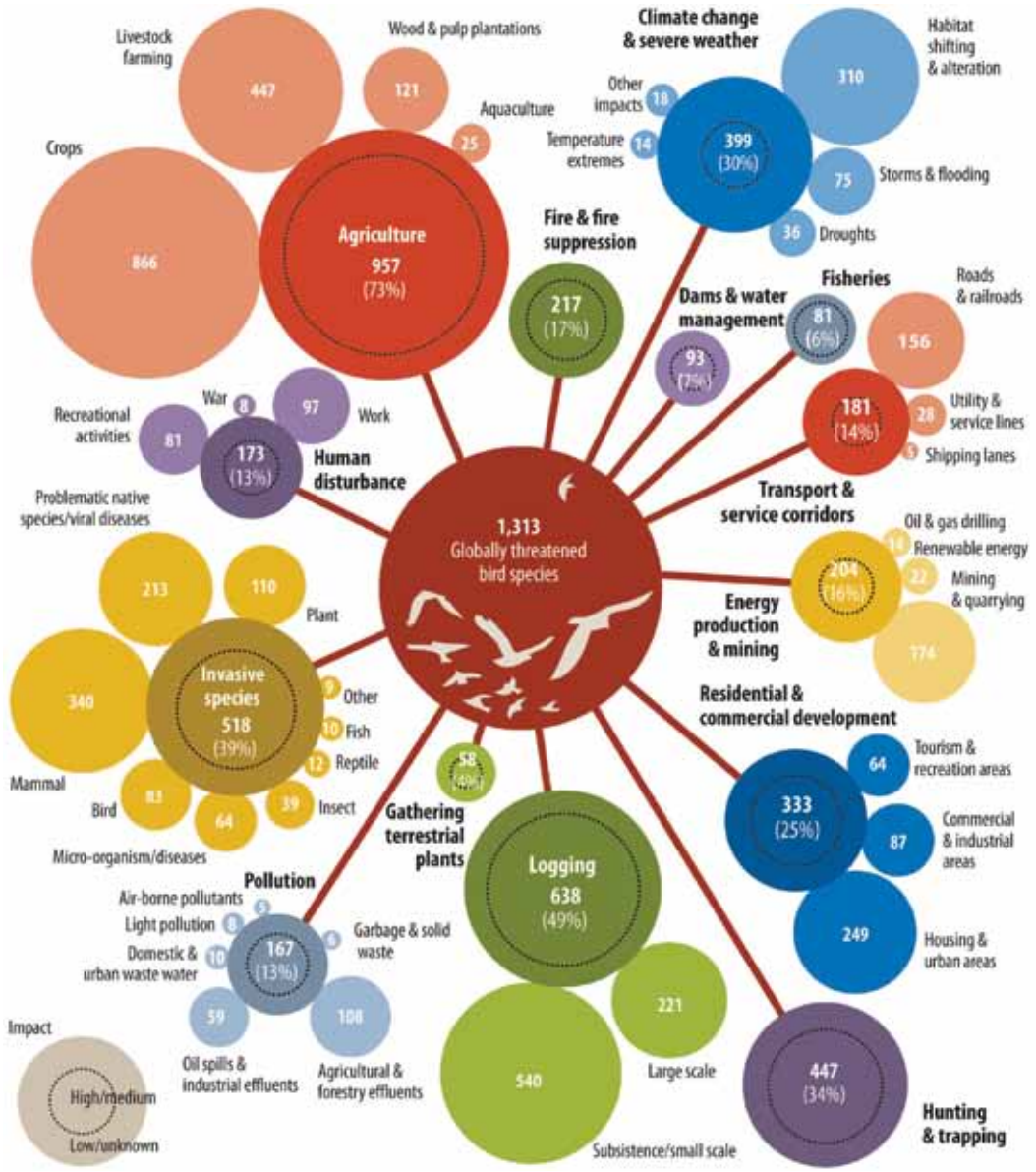
Global nature protection requires US$80 billion annually

An annual investment of US$4 billion, used wisely, could improve the status of all known threatened species and virtually halt human-driven extinctions. A further US$76 billion could effectively protect and manage all known sites of global conservation significance. These sums are insignificant in comparison with both the size of the global economy (roughly US$70 trillion per year) and an estimate of the total value of ecosystem services delivered by nature each year (US$22–US$74 trillion).



21. Birdlife International (2013), State of the World's birds : indicators for our changing world.Cambridge, UK: Birdlife International.

A range of threats is driving declines in globally threatened birds



BirdLife is responsible for collating, maintaining and evaluating the threats faced by the world's threatened bird species, as part of its work on assessing their extinction risk for the IUCN Red List. The figure shows the number of globally threatened birds affected by different threats—many species are affected by more than one threat. High impact threats affect the majority of the population and cause rapid declines, while low impact ones affect the minority and cause slower, albeit still significant, declines.

SOURCE Analysis of BirdLife data (2013).[22]

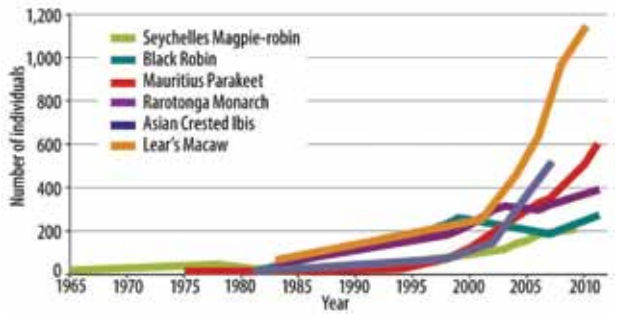
22- Birdlife International(2013), state of the world's birds: indicators for our changing world. Cambridge,UK : Birdlife International.

BirdLife's Preventing Extinctions Programme identifies Guardians and Champions for threatened birds

BirdLife Partners are working to save some of the world's most threatened species through the Preventing Extinctions Programme. Key to this is the development of BirdLife Species Guardians—organisations or experts who take the lead in conserving threatened species in their country—and BirdLife Species Champions—organisations or individuals who raise awareness of and fund the vital conservation that is so urgently required.

Species can be saved from extinction

Six species success stories provide evidence for how concerted conservation efforts can save species from extinction.



SOURCE Various, see BirdLife Species Fact Sheets at www.birdlife.org/datazone.[23]

23. Birdlife International (2013), State of the World's birds : indicators for our changing world.Cambridge, UK: Birdlife International.

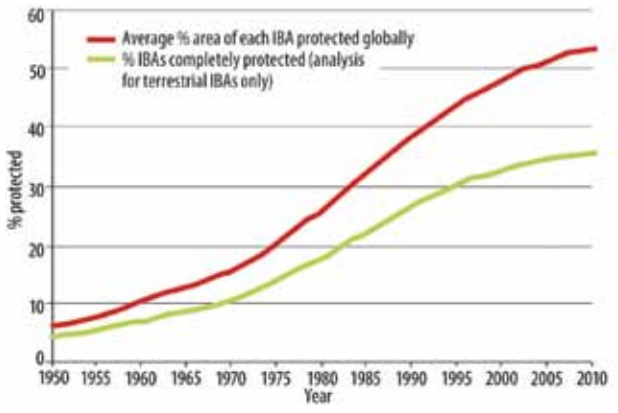
SOURCE CBD strategic goals and Aichi Targets: Convention on Biological Diversity. Indicators using bird data: BirdLife International (2012) *Developing and implementing National Biodiversity Strategies and Action Plans: How to set, meet and track the Aichi Biodiversity Targets*. Cambridge, UK: BirdLife International.

Birds can help set, meet and track the Aichi Biodiversity Targets

As part of the Strategic Plan for Biodiversity 2011–2020, in 2010 the member states of the Convention on Biological Diversity agreed 20 headline 'Aichi Biodiversity Targets'. Governments are translating these to the national level through their National Biodiversity Strategies and Action Plans (NBSAPs). Data on birds can help to set targets, focus actions, and monitor success for the conservation of biodiversity.

The IBA Protection Index tracks trends in the protection of key areas for biodiversity

National and global trends in the degree to which IBAs are covered by protected areas can provide a measure of progress towards Aichi Target 11. This is one example of many indicators using bird data which will continue to play a vital role in monitoring progress towards conserving biodiversity in the years to come.



SOURCE Butchart *et al*. (2012) *PLoS ONE* 7(3): e32529.[24]

24. Birdlife International (2013), State of the World's birds : indicators for our changing world.Cambridge, UK: Birdlife International.

Section Two: Status of Birds in Lebanon (Species)

TABLE (7): Sedentary/ resident species (R or r)

English Name	Scientific Name	STATUS	BREEDING		MIGRATING AND WINTERING				DEGREE OF OCCURRENCE				
			R	FB	PM S	PM A	WV	SV	Common	Un- common	Scarce	Rare	Very rare
Chukar Partridge	*Alectoris chukar*	R	**1**						1				
Little Grebe	*Tachybaptus ruficollis*	R, SB, pm, wv	1		1	1	1		**1**				
Common Kestrel	*Falco tinnunculus*	R, PM, WV	**1**		**1**	**1**	**1**		**1**				
Eurasian Griffon Vulture	*Gyps fulvus*	pm, ?wv, ?r, ?b	0	1	1	1	0				1		
Long-legged Buzzard	*Buteo rufinus*	R, PM, wv	**1**		**1**	1	1		1				
Golden Eagle	*Aquila chrysaetos*	pm, ?r	0	0	1	1						1	
Bonelli's Eagle	*Aquila fasciatus*	R, pm, wv	**1**		1	1					1		
Common Moorhen	*Gallinula chloropus*	R, PM, wv	**1**			**1**	**1**		**1**				
Eurasian Coot	*Fulica atra*	R, PM, WV	**1**		**1**	**1**	**1**		**1**				
Yellow-legged Gull	*Larus michahellis*	R, PM, WV, S	**1**		**1**	**1**	**1**	1	**1**				
Rock Dove	*Columba livia*	R	1										
Eurasian Collared Dove	*Streptopelia decaocto*	R	**1**						1				
Laughing Dove	*Streptopelia senegalensis*	R	**1**						1				
Rose-ringed Parakeet	*Psittacula krameri*	r	1							1			
Barn Owl	*Tyto alba*	R	1						1				
Eurasian Eagle Owl	*Bubo bubo*	r	1							1			
Tawny Owl	*Strix aluco*	R	1						1				
Little Owl	*Athene noctua*	R	1						1				
Long-eared Owl	*Asio otus*	r, pm, wv	1		1	1	1			1		1	
Eurasian Hoopoe	*Upupa epops*	R, sb, PM, wv	**1**		**1**	**1**	1		1				
Syrian Woodpecker	*Dendrocopos syriacus*	R	1						1				
Eurasian Jay	*Garrulus glandarius*	R	**1**						**1**				
Red-billed Chough	*Pyrrhocorax pyrrhocorax*	R	1						1				
Yellow-billed Chough	*Pyrrhocorax graculus*	R	1						1				
Hooded Crow	*Corvus cornix*	R	**1**						**1**				
Northern Raven	*Corvus corax*	?r	0								1		
Sombre Tit	*Poecile lugubris*	R							1				
Coal Tit	*Periparus ater*	R							1				
Great Tit	*Parus major*	R							**1**				
Blue Tit	*Cyanistes caeruleus*	r, pm, wv	1		1	1	1			1			
Eurasian Crag Martin	*Ptyonoprogne rupestris*	sb, PM, wv, ?r	0		**1**	**1**	1		1				

Section Two: Status of Birds in Lebanon (Species)

Calandra Lark	*Melanocorypha calandra*	R, PM, wv	**1**			**1**	**1**	1		**1**				
Desert Lark	*Ammomanes deserti*	r or sb	1											1
Crested Lark	*Galerida cristata*	R	**1**							1				
Woodlark	*Lullula arborea*	R	1							1				
Horned Lark	*Eremophila alpestris*	R	**1**							**1**				
Temminck's Lark	*Eremophila bilopha*	r or sb	1								1			
Zitting Cisticola	*Cisticola juncidis*	r	1								1			
Scrub Warbler	*Scotocerca inquieta*	r	1										1	
Graceful Prinia	*Prinia gracilis*	R	**1**							**1**				
White-spectacled Bulbul	*Pycnonotus xanthopygos*	R	**1**							**1**				
Cetti's Warbler	*Cettia cetti*	R	**1**							**1**				
Spectacled Warbler	*Sylvia conspicillata*	R, ?pm	1			0	0				1			
Sardinian Warbler	*Sylvia melanocephala*	R, PM, WV	**1**			**1**	**1**			**1**				
Winter Wren	*Troglodytes troglodytes*	R	**1**							**1**				
Western Rock Nuthatch	*Sitta neumayer*	R	**1**							**1**				
Wallcreeper	*Tichodroma muraria*	wv, ?r	0					1						1
Common Myna	*Acridotheres tristis*	R	1							1				
Eurasian Blackbird	*Turdus merula*	R, pm, wv	**1**			1	1	1		1				
Western Black Redstart	*Phoenicurus ochruros semirufa*	R, sb	1							**1**				
Mourning Wheatear	*Oenanthe lugens*	r	1								1			
Blue Rock Thrush	*Monticola solitarius*	R, pm, wv	**1**			1	1	1			1			
White-throated Dipper	*Cinclus cinclus rufiventris*	R	1							1				
Palestine Sunbird	*Cinnyris osea*	R, wv	**1**					1			1			
House Sparrow	*Passer domesticus*	R	**1**							**1**				
Rock Sparrow	*Petronia petronia*	R	**1**							**1**				
Long-billed Pipit	*Anthus similis*	r	1								1			
Common Chaffinch	*Fringilla coelebs*	R, PM, WV	**1**			**1**	**1**	**1**		**1**				
European Greenfinch	*Carduelis chloris*	R, WV, pm	**1**			1	1	**1**		**1**				
European Goldfinch	*Carduelis carduelis*	R, WV, pm	**1**			1	1	**1**		**1**				
Common Linnet	*Carduelis cannabina*	R, WV, PM	**1**			**1**	**1**	**1**		**1**				
Crimson-winged Finch	*Rhodopechys sanguineus*	r	1								1			
Trumpeter Finch	*Bucanetes githagineus*	r	1									1		
Corn Bunting	*Emberiza calandra*	R, PM, WV	**1**			**1**	**1**	**1**		**1**				
Rock Bunting	*Emberiza cia*	R	**1**							**1**				
Totals	**65**	**60**	**60**	**1**		**22**	**23**	**20**	**1**	**44**	**12**	**4**	**3**	**2**

Common Kestrel

Yellow-legged Gull

Laughing Dove

Eurasian Hoopoe

Graceful Prinia

White-spectacled Bulbul

Cetti's Warbler

Sardinian Warbler

Common Myna

House Sparrow

European Goldfinch

Rock Bunting

Coal Tit

Rock Sparrow

2.7.1.2 Summer Breeding Species

In the Table (8) below, to which the same Keys of the Table (7) apply, we note the presence of 83 species. Of them 10 are of uncertain summer breeding status whereas 5 are simultaneously sedentary and summer breeder species. Accordingly, **the total number of summer breeding birds is 73 species.** It is worth mentioning that 55% of the summer breeding species are common, 24.5% uncommon, 16% scarce, 3% rare and 1.5% very rare.

Section Two: Status of Birds in Lebanon (Species)

English Name	Scientific Name	TABLE (8): Summer breeding species (SB or sb)												
		STATUS			MIGRATING AND WINTERING				DEGREE OF OCCURRENCE				
			SB	FB	PM S	PM A	WV	SV	Common	Un-common	Scarce	Rare	Very rare
Common Quail	*Coturnix coturnix*	sb, PM, wv	1		**1**	**1**	1		**1**				
Mallard	*Anas platyrhynchos*	PM, WV, sv, sb	1		**1**	**1**	**1**			1			
Garganey	*Anas querquedula*	PM, sb	1		**1**	1			1				
Little Grebe	*Tachybaptus ruficollis*	R, SB, pm, wv	**1**		1	1	1		**1**				
Little Bittern	*Ixobrychus minutus*	SB, pm, wv	**1**		**1**	1	1		1				
Black-crowned Night Heron	*Nycticorax nycticorax*	SB, PM, S	**1**		**1**	**1**		**1**	**1**				
Lesser Kestrel	*Falco naumanni*	sb, pm, s	1		1	1			1				
Eurasian Hobby	*Falco subbuteo*	SB, PM, wv, s	**1**		**1**	**1**	1	1		1			
Eurasian Griffon Vulture	*Gyps fulvus*	pm, ?wv, ?r, ?b	0	1	1	1	0				1		
Short-toed Snake Eagle	*Circaetus gallicus*	SB, PM	**1**		**1**	**1**			1				
Western Marsh Harrier	*Circus aeruginosus*	sb, PM, wv	1		**1**	**1**	1		1				
Booted Eagle	*Aquila pennata*	sb, pm, wv	1		1	1	0			1			
Water Rail	*Rallus aquaticus*	sb, PM, WV	1		**1**	**1**	**1**	1	**1**				
Little Crake	*Porzana parva*	pm, ?sb	0		1	1					1		
Eurasian Stone-curlew	*Burhinus oedicnemus*	pm,?sb	0		1	1						1	
Spur-winged Lapwing	*Vanellus spinosus*	pm, sb	1		1	1					1		
Cream-coloured Courser	*Cursorius cursor*	sb, pm	1		1	1					1		
Whiskered Tern	*Chlidonias hybrida*	sb, pm	1		1	1					1		
European Turtle Dove	*Streptopelia turtur*	sb, PM	1		1	**1**			1				
Common Cuckoo	*Cuculus canorus*	sb, PM	1		1	**1**				1			
Eurasian Scops Owl	*Otus scops*	SB, pm, wv	**1**		1	1	1				1		
European Nightjar	*Caprimulgus europaeus*	PM, ?sb	0	1	1	1			1				
Alpine Swift	*Tachymarptis melba*	sb, pm	1		1	1				1			
Common Swift	*Apus apus*	SB, PM	**1**		**1**	**1**			**1**				
Pallid Swift	*Apus pallidus*	sb, pm	1		1	1				1			
Little Swift	*Apus affinis*	pm, ?sb	0	1	1	1					1		

Section Two: Status of Birds in Lebanon (Species)

European Roller	*Coracias garrulus*	PM, ?sb	0	0		1	**1**			1				
Eurasian Hoopoe	*Upupa epops*	R, sb, PM, wv	1			**1**	**1**	1		1				
Red-backed Shrike	*Lanius collurio*	SB, PM	1			**1**	1			1				
Southern Grey Shrike	*Lanius meridionalis aucheri*	pm, ?sb	0	1		1	1						1	
Woodchat Shrike	*Lanius senator*	sb, PM	1			1	1				1			
Masked Shrike	*Lanius nubicus*	SB, PM	**1**			**1**	**1**			**1**				
Eurasian Golden Oriole	*Oriolus oriolus*	sb, PM	1			1	1			1				
Eurasian Penduline Tit	*Remiz pendulinus*	sb, pm, wv	1			1	1	1				1		
Sand Martin	*Riparia riparia*	PM, ?wv, ?s, ?sb	0			1	1	0	1	1				
Barn Swallow	*Hirundo rustica*	SB, PM, wv	**1**			**1**	**1**	1		**1**				
Eurasian Crag Martin	*Ptyonoprogne rupestris*	sb, PM, wv, ?r	1			**1**	**1**	1		1				
Common House Martin	*Delichon urbicum*	SB, PM	**1**			**1**	**1**			**1**				
Red-rumped Swallow	*Cecropis daurica*	sb, pm	1			1	1				1			
Bimaculated Lark	*Melanocorypha bimaculata*	sb, PM, wv	1			1	**1**	1		1				
Bar-tailed Lark	*Ammomanes cinctura*	sb	1										1	
Desert Lark	*Ammomanes deserti*	r or sb	1											1
Greater Short-toed Lark	*Calandrella brachydactyla*	sb, PM, wv	1			**1**	**1**	1		1				
Lesser Short-toed Lark	*Calandrella rufescens*	sb, pm, wv	1			1	1	1			1			
Temminck's Lark	*Eremophila bilopha*	r or sb	1								1			
Savi's Warbler	*Locustella luscinioides*	sb, pm	1			1	1				1			
Great Reed Warbler	*Acrocephalus arundinaceus*	SB, PM	**1**			**1**	1			**1**				
Moustached Warbler	*Acrocephalus melanopogon*	SB, pm, wv	1			1	1	1				1		
Eurasian Reed Warbler	*Acrocephalus scirpaceus*	SB, PM, wv	1			**1**	**1**	1		1				
Eastern Olivaceous Warbler	*Iduna pallida*	SB, PM	**1**			**1**	**1**			**1**				
Upcher's Warbler	*Hippolais languida*	SB, pm	**1**			1	1				1			
Olive-tree Warbler	*Hippolais olivetorum*	sb, pm	1			1	1					1		
Common Chiffchaff	*Phylloscopus collybita*	SB, PM, WV	**1**			**1**	**1**	**1**		**1**				
Eastern Bonelli's Warbler	*Phylloscopus orientalis*	sb, pm	1			1	1					1		
Eurasian Blackcap	*Sylvia atricapilla*	SB, PM, WV	**1**			**1**	**1**	1		**1**				
Lesser Whitethroat	*Sylvia curruca*	SB, PM, ?wv	**1**			**1**	1	0		1				

Section Two: Status of Birds in Lebanon (Species)

Eastern Orphean Warbler	*Sylvia crassirostris*	SB, PM	1			**1**	**1**			1				
Common Whitethroat	*Sylvia communis*	SB, PM	**1**			**1**	**1**			**1**				
Ménétries's Warbler	*Sylvia mystacea*	sb, pm	1			1	1						1	
Rüppell's Warbler	*Sylvia rueppelli*	?sb, pm	0			1	1							1
Rose-coloured Starling	*Sturnus roseus*	pm, ?sb	0	0		1	1					1		
Mistle Thrush	*Turdus viscivorus*	sb, pm, WV	1			1	1	**1**		1				
Nightingale	*Luscinia megarhynchos*	SB, pm	**1**			1	1				1			
White-throated Robin	*Irania gutturalis*	sb, pm	1			1	1					1		
Rufous-tailed Scrub Robin	*Cercotrichas galactotes*	SB, PM	1			**1**	1			1				
Western Black Redstart	*Phoenicurus ochruros semirufa*	R, sb	1							**1**				
Common Redstart	*Phoenicurus phoenicurus*	sb, PM	1			**1**	**1**				1			
Isabelline Wheatear	*Oenanthe isabellina*	SB, PM, wv	**1**			**1**	**1**	1		1				
Northern Wheatear	*Oenanthe oenanthe*	SB, PM, wv	**1**			1	**1**	1		1				
Black-eared Wheatear	*Oenanthe hispanica*	SB, PM	**1**			**1**	**1**			**1**				
Finsch's Wheatear	*Oenanthe finschii*	sb, pm, wv	1			1	1	1				1		
Rufous-tailed Rock Thrush	*Monticola saxatilis*	SB, pm	**1**			1	1							
Spotted Flycatcher	*Muscicapa striata*	SB, PM	**1**			**1**	1							
Spanish Sparrow	*Passer hispaniolensis*	sb, pm, wv	1			1	1	1			1			
Pale Rock Finch	*Carpospiza brachydactyla*	SB, pm	**1**			1	1				1			
'Black-headed Wagtail'	*Motacilla flava feldegg*	SB, PM	**1**			**1**	**1**			**1**				
Grey Wagtail	*Motacilla cinerea*	sb, pm, wv	1			1	1	1				1		
White Wagtail	*Motacilla alba*	sb, PM, WV	1			**1**	**1**	**1**		1				
Tawny Pipit	*Anthus campestris*	sb, PM, wv	1			**1**	**1**	1		1				
Syrian Serin	*Serinus syriacus*	SB, pm, wv	**1**			1	1	1			1			
Ortolan Bunting	*Emberiza hortulana*	sb, PM	1			**1**	**1**			1				
Cretzschmar's Bunting	*Emberiza caesia*	sb, PM	1			**1**	**1**				1			
Black-headed Bunting	*Emberiza melanocephala*	SB, PM	**1**			**1**	**1**			**1**				
Totals	**83**	**83**	**73**	**4**		**79**	**79**	**28**	**4**	**42**	**18**	**15**	**4**	**2**

Mallard

Short-toed Snake Eagle

Red-backed Shrike

Masked Shrike

Great Reed Warbler

Common Chiffchaff

Eurasian Blackcap

Lesser Whitethroat

Common Whitethreoat

Nightingale

White wagtail

Common Black-headed Gull

Western Black Redstart

2.7.1.3 **Vagrant Species**

In the Table (9) below, we note the presence of 70 vagrant (occasional) species in Lebanon and 3 other species with uncertainty about their vagrancy status.

Key

V= Vagrant

? = Status uncertain.

English Name	Scientific Name	TABLE (9): Vagrant species (V) in Lebanon		
		STATUS		
		Vagrant	Nb of Vagrants	Nb of Vagrant's records
Sand Partridge	*Ammoperdix heyi*	V	1	?
Black Francolin	*Francolinus francolinus*	V	1	1
Bean Goose	*Anser fabalis*	V	1	1
Greylag Goose	*Anser anser*	V	1	1
Mute Swan	*Cygnus olor*	V	1	3
Ruddy Shelduck	*Tadorna ferruginea*	V	1	3
Marbled Duck	*Marmaronetta angustirostris*	V	1	3
Red-crested Pochard	*Netta rufina*	V	1	1
Velvet Scoter	*Melanitta fusca*	V	1	2
Common Goldeneye	*Bucephala clangula*	V	1	1
Red-breasted Merganser	*Mergus serrator*	V	1	1
Sooty Shearwater	*Puffinus griseus*	V	1	1
Great Shearwater	*Puffinus gravis*	V	1	3
European Storm Petrel	*Hydrobates pelagicus*	V	1	3
Red-necked Grebe	*Podiceps grisegena*	V	1	2
Horned Grebe	*Podiceps auritus*	V	1	2
Pink-backed Pelican	*Pelecanus rufescens*	V	1	2
Barbary Falcon	*Falco pelegrinoides*	V	1	3
Crested Honey Buzzard	*Pernis ptilorhynchus*	V	1	2
Black-winged Kite	*Elanus caeruleus*	V	1	2
White-tailed Eagle	*Haliaeetus albicilla*	V	1	4
Lammergeier	Gypaetus barbatus	V	1	1
Verreaux's Eagle	*Aquila verreauxii*	V	1	4
Great Bustard	*Otis tarda*	V	1	1
Macqueen's Bustard	*Chlamydotis macqueenii*	V	1	1
Little Bustard	*Tetrax tetrax*	V	1	1
Purple Swamphen	*Porphyrio porphyrio*	V	1	2
Sociable Lapwing	*Vanellus gregarius*	V	1	2
Pacific Golden Plover	*Pluvialis fulva*	V	1	1
Caspian Plover	*Charadrius asiaticus*	V	1	4
Bar-tailed Godwit	*Limosa lapponica*	V	1	4
Eurasian Curlew	*Numenius arquata*	?pm, V	1	5
Red Knot	*Calidris canutus*	V	1	1
Sooty Gull	*Larus hemprichii*	V	1	1
Armenian Gull	*Larus armenicus*	V	1	4
Heuglin's Gull	*Larus heuglini*	V	1	2
Black-legged Kittiwake	*Rissa tridactyla*	V	1	4
Pin-tailed Sandgrouse	*Pterocles alchata*	V	1	2
Black-bellied Sandgrouse	*Pterocles orientalis*	V	1	1
Namaqua Dove	*Oena capensis*	escape, ?v	0	0
Brown Fish Owl	*Ketupa zeylonensis*	?V	1	1
Steppe Grey Shrike	*Lanius meridionalis pallidirostris*	V	1	2
Eurasian Magpie	*Pica pica*	V	1	4
Rook	*Corvus frugilegus*	V	1	5
Oriental Crow	*Corvus (corone) orientalis*	V	1	1
Greater Hoopoe Lark	*Alaemon alaudipes*	V	1	1
Black Lark	*Melanocorypha yeltoniensis*	V	1	1
Dunn's Lark	*Eremalauda dunni*	V	1	1
Common Grasshopper Warbler	*Locustella naevia*	V	1	1
River Warbler	*Locustella fluviatilis*	V	1	2
Clamorous Reed Warbler	*Acrocephalus stentoreus*	V	1	2
Booted Warbler	*Iduna caligata*	V	1	2

Plain Leaf Warbler	*Phylloscopus neglectus*	V	1	1
Green Warbler	*Phylloscopus trochiloides nitidus*	V	1	2
Greenish Warbler	*Phylloscopus trochiloides viridanus*	V	1	1
Bearded Reedling	*Panurus biarmicus*	V	1	2
Firecrest	*Regulus ignicapilla*	V	1	1
Eurasian Nuthatch	*Sitta europaea*	?V	0	0
Dark-throated Thrush	*Turdus atrogularis*	V	1	2
Red-flanked Bluetail	*Tarsiger cyanurus*	V	1	1
Cyprus Wheatear	*Oenanthe cypriaca*	V, ?pm	1	4
Variable Wheatear	*Oenanthe picata*	V	1	1
Eurasian Tree Sparrow	*Passer montanus*	V	1	1
Chestnut-shouldered Petronia	*Gymnoris xanthocollis*	V	1	2
White-winged Snow Finch	*Montifringilla nivalis*	?	0	0
Siberian Accentor	*Prunella montanella*	V	1	1
Radde's Accentor	*Prunella ocularis*	V	1	1
'Ashy-headed Wagtail'	*Motacilla flava cinereocapilla*	V	1	1
'Yellow-headed Wagtail'	*Motacilla flava lutea*	V	1	1
Richard's Pipit	*Anthus richardi*	V	1	1
Buff-bellied Pipit	*Anthus rubescens japonicus*	V	1	1
Little Bunting	*Emberiza pusilla*	V	1	3
Rustic Bunting	*Emberiza rustica*	V	1	3
Totals	**73**	**73**	**70**	

Macqueen's Bustard

Chestnut-shouldred Petronia

2.7.1.4 Passage migrants, Winter Visitors and Summer Visitors

The Table (10) shows that 273 species pass through transit and/ or winter in Lebanon. Of them 259 pass during both spring and autumn migrations and two (Cyprus Warbler and subalpine Warbler) were recorded in spring season only. Among the 259 species, 139 do also winter and 25 species do summer in the country. In addition, 11 other species do nothing than wintering and 3 species are with uncertainty about their passage. The Table (10) also shows that the migrant species include a resident population of 21 species, summer breeding population of 68 species, and formerly bred population of 17 species. Of the 273 species of the Table (10), 40% are common, 20% uncommon, 23% scarce, 11% rare and 6% are very rare species.

Section Two: Status of Birds in Lebanon (Species)

English Name	Scientific Name	TABLE (10): Passage migrants (PM), winter visitors (WV) and summer visitor species (SV) in Lebanon													
		STATUS	BREEDING				MIGRATING, WINTERING & SUMMERING				DEGREE OF OCCURRENCE				
			R	SB	FB		PM S	PM A	WV	SV	Common	Un-common	Scarce	Rare	Very rare
Common Quail	*Coturnix coturnix*	sb, PM, wv		1			**1**	**1**	1		**1**				
Greater White-fronted Goose	*Anser albifrons*	wv, pm					1	1	1			1			
Common Shelduck	*Tadorna tadorna*	pm, wv					1	1	1				1		
Gadwall	*Anas strepera*	wv							1					1	
Eurasian Wigeon	*Anas penelope*	PM, wv					**1**	**1**	1			1			
Mallard	*Anas platyrhynchos*	PM, WV, sv, sb		1			**1**	**1**	**1**			1			
Northern Shoveler	*Anas clypeata*	PM, WV					**1**	**1**	**1**			1			
Northern Pintail PM, WV, s	*Anas acuta*	PM, WV, s					**1**	**1**	1	1	1				
Garganey	*Anas querquedula*	PM, sb		1			**1**	1			1				
Eurasian Teal	*Anas crecca*	PM, WV			1		**1**	**1**	**1**		**1**				
Common Pochard	*Aythya ferina*	pm, wv					1	1	1				1		
Ferruginous Duck	*Aythya nyroca*	pm, wv, s					1	1		1			1		
Tufted Duck	*Aythya fuligula*	pm, wv					1	1	1			1			
Scopoli's Shearwater	*Calonectris d. diomedea*	PM, wv					1	**1**	1			1			
Yelkouan Shearwater	*Puffinus yelkouan*	PM, wv					1	**1**	1			1			
Leach's Storm Petrel	*Oceanodroma leucorhoa*	?wv							1						1
Little Grebe	*Tachybaptus ruficollis*	R, SB, pm, wv	1	**1**			1	1	1		**1**				
Great Crested Grebe	*Podiceps cristatus*	pm, wv, s					1	1	1	1			1		
Black-necked Grebe	*Podiceps nigricollis*	pm, wv					1	1	1				1		
Greater Flamingo	*Phoenicopterus roseus*	pm, ?wv					1	1	1					1	
Black Stork	*Ciconia nigra*	PM					**1**	**1**			1				
Western White Stork	*Ciconia ciconia*	PM					**1**	**1**			**1**				
Glossy Ibis	*Plegadis falcinellus*	pm, s					1	1					1		
Eurasian Spoonbill	*Platalea leucorodia*	pm					1	1						1	
Eurasian Bittern	*Botaurus stellaris*	wv, pm					1	1	1				1		

Section Two: Status of Birds in Lebanon (Species)

Little Bittern	*Ixobrychus minutus*	SB, pm, wv		**1**			**1**	1	1		1					
Black-crowned Night Heron	*Nycticorax nycticorax*	SB, PM, S		**1**			**1**	**1**		**1**	**1**					
Squacco Heron	*Ardeola ralloides*	PM, wv					1	1				1				
Cattle Egret	*Bubulcus ibis*	pm, wv					1	1	1			1				
Grey Heron	*Ardea cinerea*	PM, WV					1	**1**	**1**		**1**					
Purple Heron	*Ardea purpurea*	pm					1	1					1			
Great Egret	*Ardea alba*	pm, wv, s					1	1		1			1			
Little Egret	*Egretta garzetta*	PM, wv, S					**1**	**1**	1	**1**	**1**					
Great White Pelican	*Pelecanus onocrotalus*	PM					**1**	**1**			**1**					
Dalmatian Pelican	*Pelecanus crispus*	pm					1	1					1			
Northern Gannet	*Morus bassanus*	wv							1				1			
Pygmy Cormorant	*Phalacrocorax pygmeus*	wv, pm, s					1	1	1	1			1			
Great Cormorant	*Phalacrocorax carbo*	WV, PM, s					**1**	**1**	**1**	1	**1**					
Lesser Kestrel	*Falco naumanni*	sb, pm, s		1			1	1			1					
Common Kestrel	*Falco tinnunculus*	R, PM, WV	**1**				**1**	**1**	**1**		**1**					
Red-footed Falcon	*Falco vespertinus*	pm					1	1					1			
Eleonora's Falcon	*Falco eleonorae*	pm			1											1
Merlin	*Falco columbarius*	pm, wv					1	1	1				1			
Eurasian Hobby	*Falco subbuteo*	SB, PM, wv, s		**1**			**1**	**1**	1	1		1				
Lanner Falcon	*Falco biarmicus*	pm, wv, s, ?sb		0			1	1	1	1			1			
Saker Falcon	*Falco cherrug*	pm, wv					1	1	1				1			
Peregrine Falcon	*Falco peregrinus*	pm, wv			0		1	1	1				1			
Osprey	*Pandion haliaetus*	pm					1	1				1				
European Honey Buzzard	*Pernis apivorus*	PM					**1**	**1**			**1**					
Red Kite	*Milvus milvus*	pm			1		1	1								1
Black Kite	*Milvus migrans*	PM, WV					**1**	**1**			**1**					
Egyptian Vulture	*Neophron percnopterus*	PM			1		1	1								
Eurasian Griffon Vulture	*Gyps fulvus*	pm, ?wv, ?r, ?b	0	0	1		1	1	0				1			
Cinereous Vulture	*Aegypius monachus*	pm					1	1								1

Section Two: Status of Birds in Lebanon (Species)

Short-toed Snake Eagle	*Circaetus gallicus*	SB, PM		**1**			**1**	**1**			1				
Western Marsh Harrier	*Circus aeruginosus*	sb, PM, wv		1			**1**	**1**	1		1				
Hen Harrier	*Circus cyaneus*	pm, wv					1	1	1			1			
Pallid Harrier	*Circus macrourus*	pm, wv					1	1	1			1			
Montagu's Harrier	*Circus pygargus*	pm					1	1						1	
Levant Sparrowhawk	*Accipiter brevipes*	PM			1		**1**	**1**			**1**				
Eurasian Sparrowhawk	*Accipiter nisus*	PM, wv			0		**1**	**1**	1		1				
Northern Goshawk	*Accipiter gentilis*	pm, wv					1	1	1				1		
Common Buzzard	*Buteo b. buteo*	PM, WV					**1**	**1**	**1**		**1**				
Steppe Buzzard	*Buteo b. vulpinus*	PM, WV					**1**	**1**	**1**		**1**				
Long-legged Buzzard	*Buteo rufinus*	R, PM, wv	**1**				**1**	1	1		1				
Rough-legged Buzzard	*Buteo lagopus*	pm					1	1							1
Lesser Spotted Eagle	*Aquila pomarina*	PM, wv, s					**1**	**1**	1	1	**1**				
Greater Spotted Eagle	*Aquila clanga*	pm, ?wv					1	1	0				1		
Steppe Eagle	*Aqui la nipalensis*	PM					1	**1**	0			1			
Eastern Imperial Eagle	*Aquila heliaca*	pm, ?wv			0		١	١						1	
Golden Eagle	*Aquila chrysaetos*	pm, ?r	0		0		1	1						1	
Booted Eagle	*Aquila pennata*	sb, pm, wv		1			1	1	0			1			
Bonelli's Eagle	*Aquila fasciatus*	R, pm, wv	**1**				1	1					1		
Water Rail	*Rallus aquaticus*	sb, PM, WV		1			**1**	**1**	**1**	1	**1**				
Corncrake	*Crex crex*	pm					1	1				1			
Little Crake	*Porzana parva*	pm, ?sb		0			1	1					1		
Baillon's Crake	*Porzana pusilla*	pm					1	1						1	
Spotted Crake	*Porzana porzana*	PM, wv					**1**	1	1				1		
Common Moorhen	*Gallinula chloropus*	R, PM, wv	**1**				١	**1**	**1**		**1**				
Eurasian Coot	*Fulica atra*	R, PM, WV	**1**				**1**	**1**	**1**		**1**				
Demoiselle Crane	*Anthropoides virgo*	pm					1	1					1		
Common Crane	*Grus grus*	PM, wv					**1**	**1**	1		**1**				
Eurasian Stone-curlew	*Burhinus oedicnemus*	pm,?sb		0			1	1						1	

Section Two: Status of Birds in Lebanon (Species)

Eurasian Oystercatcher	*Haematopus ostralegus*	pm					1	1					1		
Black-winged Stilt	*Himantopus himantopus*	PM					**1**	**1**			**1**				
Pied Avocet	*Recurvirostra avosetta*	pm, wv					1	1	1				1		
Northern Lapwing	*Vanellus vanellus*	PM, WV					**1**	**1**	**1**		**1**				
Spur-winged Lapwing	*Vanellus spinosus*	pm, sb		1			1	1					1		
Eurasian Golden Plover	*Pluvialis apricaria*	pm, wv					1	1	1				1		
Grey Plover	*Pluvialis squatarola*	pm, wv					1	1	1				1		
Common Ringed Plover	*Charadrius hiaticula*	PM, wv, s					**1**	**1**	1	1	1				
Little Ringed Plover	*Charadrius dubius*	PM, s					1	1		1	1				
Kentish Plover	*Charadrius alexandrinus*	pm, s					1	1		1		1			
Greater Sand Plover	*Charadrius leschenaultii*	pm					1	1						1	
Eurasian Dotterel	*Charadrius morinellus*	pm, wv					1	1	1					1	
Eurasian Woodcock	*Scolopax rusticola*	PM, WV					1	1	1		1				
Jack Snipe	*Lymnocryptes minimus*	pm, wv					1	1	1				1		
Great Snipe	*Gallinago media*	pm					1	1						1	
Common Snipe	*Gallinago gallinago*	pm, wv					1	1				1			
Black-tailed Godwit	*Limosa limosa*	pm					1	1					1		
Whimbrel	*Numenius phaeopus*	pm					1	1						1	
Eurasian Curlew	*Numenius arquata*	?pm, V					0	0							
Spotted Redshank	*Tringa erythropus*	pm					1	1					1		
Common Redshank	*Tringa totanus*	pm, wv					1	1	1			1			
Marsh Sandpiper	*Tringa stagnatilis*	pm, ?wv					1	1				1			
Common Greenshank	*Tringa nebularia*	PM, wv					**1**	**1**	1		1				
Green Sandpiper	*Tringa ochropus*	PM, wv					**1**	**1**	1		1				
Wood Sandpiper	*Tringa glareola*	PM					**1**	**1**							
Terek Sandpiper	*Xenus cinerea*	pm					1	1							1
Common Sandpiper	*Actitis hypoleucos*	PM, wv, s					**1**	**1**	1	1	1				
Ruddy Turnstone	*Arenaria interpres*	pm					1	1					1		
Sanderling	*Calidris alba*	pm					1	1							1

Section Two: Status of Birds in Lebanon (Species)

Little Stint	*Calidris minuta*	PM					**1**	**1**			**1**				
Temminck's Stint	*Calidris temminckii*	pm					1	1					1		
Curlew Sandpiper	*Calidris ferruginea*	pm, s					1	1		1			1		
Dunlin	*Calidris alpina*	PM, WV					1	**1**	**1**		1				
Broad-billed Sandpiper	*Limicola falcinellus*	pm					1	1					1		
Ruff	*Philomachus pugnax*	PM, wv, s					**1**	**1**	1	1	1				
Red-necked Phalarope	*Phalaropus lobatus*	pm					1	1						1	
Cream-coloured Courser	*Cursorius cursor*	sb, pm		1			1	1					1		
Collared Pratincole	*Glareola pratincola*	pm					1	1				1			
Black-winged Pratincole	*Glareola nordmanni*	pm					1	1					1		
Common Gull	*Larus canus*	WV, pm, s					1	1	**1**	1		1			
Audouin's Gull	*Larus audouinii*	pm			1		1	1					1		
Great Black-backed Gull	*Larus marinus*	pm, wv					1	1	1						1
Yellow-legged Gull	*Larus michahellis*	R, PM, WV, S	**1**				**1**	**1**	**1**	1	**1**				
Caspian Gull	*Larus cachinnans*	wv, ?pm							1						1
Lesser Black-backed Gull	*Larus fuscus*	PM, WV, s					**1**	**1**	**1**	1	**1**				
Great Black-headed Gull	*Larus ichthyaetus*	pm, wv					1	1	1				1		
Common Black-headed Gull	*Larus ridibundus*	PM, WV					**1**	**1**	**1**		**1**				
Slender-billed Gull	*Larus genei*	pm, wv					1	1	1				1		
Mediterranean Gull	*Larus melanocephalus*	pm, wv					1	1	1				1		
Little Gull	*Larus minutus*	pm, WV					1	1	**1**			1			
Gull-billed Tern	*Gelochelidon nilotica*	pm					1	1						1	
Sandwich Tern	*Sterna sandvicensis*	pm, wv					1	1							1
Common Tern	*Sterna hirundo*	PM			1		1	1			1				
Little Tern	*Sternula albifrons*	pm			1									1	
Whiskered Tern	*Chlidonias hybrida*	sb, pm		1			1	1					1		
White-winged Tern	*Chlidonias leucopterus*	PM					1	1			1				
Black Tern	*Chlidonias niger*	pm					1	1						1	
Pomarine Skua	*Stercorarius pomarinus*	pm, wv					1	1	1				1		

Section Two: Status of Birds in Lebanon (Species)

Arctic Skua	*Stercorarius parasiticus*	pm, wv					1	1	1					1	
Stock Dove	*Columba oenas*	pm, wv					1	1	1			1			
Common Woodpigeon	*Columba palumbus*	PM, WV			0		1	1	**1**		1				
European Turtle Dove	*Streptopelia turtur*	sb, PM		1			1	**1**			1				
Great Spotted Cuckoo	*Clamator glandarius*	pm, wv			1		1	1	1			1			
Common Cuckoo	*Cuculus canorus*	sb, PM		1			1	**1**				1			
Eurasian Scops Owl	*Otus scops*	SB, pm, wv		**1**			1	1	1				1		
Long-eared Owl	*Asio otus*	r, pm, wv	1				1	1	1			1		1	
Short-eared Owl	*Asio flammeus*	wv, ?pm					0	0	1						1
European Nightjar	*Caprimulgus europaeus*	PM, ?sb		0	1		1	1			1				
Alpine Swift	*Tachymarptis melba*	sb, pm		1			1	1				1			
Common Swift	*Apus apus*	SB, PM		**1**			**1**	**1**			**1**				
Pallid Swift	*Apus pallidus*	sb, pm		1			1	1				1			
Little Swift	*Apus affinis*	pm, ?sb		0	1		1	1					1		
European Roller	*Coracias garrulus*	PM, ?sb		0	0		1	**1**			1				
White-throated Kingfisher	*Halcyon smyrnensis*	pm, wv			0		1	1	1				1		
Common Kingfisher	*Alcedo atthis*	PM, WV,s	0	0			1	1	1		1				
Pied Kingfisher	*Ceryle rudis*	wv, pm			1		1	1	1					1	
European Bee-eater	*Merops apiaster*	PM		0	0		**1**	**1**			**1**				
Eurasian Hoopoe	*Upupa epops*	R, sb, PM, wv	**1**	1			**1**	**1**	1		1				
Eurasian Wryneck	*Jynx torquilla*	pm					1	1						1	
Red-backed Shrike	*Lanius collurio*	SB, PM		1			**1**	1			1				
Turkestan Shrike	*Lanius isabellinus phoenicuroides*	pm, wv					1	1	1					1	
Lesser Grey Shrike	*Lanius minor*	PM, s					1	**1**		1	1				
Southern Grey Shrike	*Lanius meridionalis aucheri*	pm, ?sb		0	1		1	1						1	
Woodchat Shrike	*Lanius senator*	sb, PM		1			1	1				1			
Masked Shrike	*Lanius nubicus*	SB, PM		**1**			**1**	**1**			**1**				
Eurasian Golden Oriole	*Oriolus oriolus*	sb, PM		1			1	1			1				
Western Jackdaw	*Corvus monedula*	WV							1		1				

Section Two: Status of Birds in Lebanon (Species)

Blue Tit	*Cyanistes caeruleus*	r, pm, wv	1				1	1	1			1			
Eurasian Penduline Tit	*Remiz pendulinus*	sb, pm, wv		1			1	1	1				1		
Sand Martin	*Riparia riparia*	PM, ?wv, ?s, ?sb		0			1	1	0	1	1				
Barn Swallow	*Hirundo rustica*	SB, PM, wv		**1**			**1**	**1**	1		**1**				
Eurasian Crag Martin	*Ptyonoprogne rupestris*	sb, PM, wv, ?r	0	1			**1**	**1**	1		1				
Common House Martin	*Delichon urbicum*	SB, PM		**1**			**1**	**1**			**1**				
Red-rumped Swallow	*Cecropis daurica*	sb, pm		1			1	1				1			
Calandra Lark	*Melanocorypha calandra*	R, PM, wv	**1**				**1**	**1**	1		**1**				
Bimaculated Lark	*Melanocorypha bimaculata*	sb, PM, wv		1			1	**1**	1		1				
Greater Short-toed Lark	*Calandrella brachydactyla*	sb, PM, wv		1			**1**	**1**	1		1				
Lesser Short-toed Lark	*Calandrella rufescens*	sb, pm, wv		1			1	1	1			1			
Eurasian Skylark	*Alauda arvensis*	PM, WV, s			1		**1**	**1**	1	1	1				
Savi's Warbler	*Locustella luscinioides*	sb, pm		1			1	1				1			
Great Reed Warbler	*Acrocephalus arundinaceus*	SB, PM		**1**			**1**	1			**1**				
Moustached Warbler	*Acrocephalus melanopogon*	SB, pm, wv		1			1	1	1				1		
Sedge Warbler	*Acrocephalus schoenobaenus*	PM, wv					**1**	1	1					1	
Eurasian Reed Warbler	*Acrocephalus scirpaceus*	SB, PM, wv		1			**1**	**1**	1		1				
Marsh Warbler	*Acrocephalus palustris*	PM					1	**1**			1				
Eastern Olivaceous Warbler	*Iduna pallida*	SB, PM		**1**			**1**	**1**			**1**				
Upcher's Warbler	*Hippolais languida*	SB, pm		**1**			1	1				1			
Olive-tree Warbler	*Hippolais olivetorum*	sb, pm		1			1	1					1		
Icterine Warbler	*Hippolais icterina*	pm					1	1						1	
Willow Warbler	*Phylloscopus trochilus*	PM					1	**1**			1				
Common Chiffchaff	*Phylloscopus collybita*	SB, PM, WV		**1**			**1**	**1**	**1**		**1**				
Eastern Bonelli's Warbler	*Phylloscopus orientalis*	sb, pm		1			1	1					1		
Wood Warbler	*Phylloscopus sibilatrix*	pm			1		1	1				1			
Eurasian Blackcap	*Sylvia atricapilla*	SB, PM, WV		**1**			**1**	**1**	1		**1**				
Garden Warbler	*Sylvia borin*	pm					1	1				1			
Barred Warbler	*Sylvia nisoria*	pm					1	1				1			

Section Two: Status of Birds in Lebanon (Species)

Lesser Whitethroat	*Sylvia curruca*	SB, PM, ?wv		**1**			**1**	1	0		1				
Eastern Orphean Warbler	*Sylvia crassirostris*	SB, PM		1			**1**	**1**			1				
Common Whitethroat	*Sylvia communis*	SB, PM		**1**			**1**	**1**			**1**				
Spectacled Warbler	*Sylvia conspicillata*	R, ?pm	1				0	0				1			
Subalpine Warbler	*Sylvia cantillans*	pm					1							1	
Sardinian Warbler	*Sylvia melanocephala*	R, PM, WV	**1**				**1**	**1**			**1**				
Ménétries's Warbler	*Sylvia mystacea*	sb, pm					1	1						1	
Rüppell's Warbler	*Sylvia rueppelli*	?sb, pm		0			1	1							1
Cyprus Warbler	*Sylvia melanothorax*	pm, wv					1		1						1
Goldcrest	*Regulus regulus*	wv							1						1
Wallcreeper	*Tichodroma muraria*	wv, ?r	0						1						1
Rose-coloured Starling	*Sturnus roseus*	pm, ?sb		0	0		1	1					1		
Common Starling	*Sturnus vulgaris*	PM, WV					1	**1**	**1**		1				
Ring Ouzel	*Turdus torquatus*	pm, wv					1	1	1				1		
Eurasian Blackbird	*Turdus merula*	R, pm, wv	**1**				1	1	1		1				
Fieldfare	*Turdus pilaris*	pm, wv					1	1	1			1			
Redwing	*Turdus iliacus*	pm, WV					1	1	**1**			1			
Song Thrush	*Turdus philomelos*	PM, wv					**1**	**1**	1		1				
Mistle Thrush	*Turdus viscivorus*	sb, pm, WV		1			1	1	**1**		1				
European Robin	*Erithacus rubecula*	pm, WV					1	1	**1**		**1**				
Bluethroat	*Luscinia svecica*	PM, WV					**1**	**1**	**1**		**1**				
Thrush Nightingale	*Luscinia luscinia*	pm					1	1					1		
Nightingale	*Luscinia megarhynchos*	SB, pm		**1**			1	1				1			
White-throated Robin	*Irania gutturalis*	sb, pm		1			1	1					1		
Rufous-tailed Scrub Robin	*Cercotrichas galactotes*	SB, PM		1			**1**	1			1				
Western Black Redstart	*Phoenicurus ochruros gibraltariensis*	PM, wv					**1**	**1**	1		1				
Common Redstart	*Phoenicurus phoenicurus*	sb, PM		1			**1**	**1**				1			
Whinchat	*Saxicola rubetra*	PM					**1**	**1**			**1**				
Eurasian Stonechat	*Saxicola torquatus*	PM, WV					**1**	**1**	**1**		**1**				

Section Two: Status of Birds in Lebanon (Species)

Isabelline Wheatear	*Oenanthe isabellina*	SB, PM, wv		**1**			**1**	**1**	1		1				
Northern Wheatear	*Oenanthe oenanthe*	SB, PM, wv		**1**			1	**1**	1		1				
Pied Wheatear	*Oenanthe pleschanka*	pm			1		1	1				1			
Black-eared Wheatear	*Oenanthe hispanica*	SB, PM		**1**			**1**	**1**			**1**				
Desert Wheatear	*Oenanthe deserti*	pm					1	1					1		
Finsch's Wheatear	*Oenanthe finschii*	sb, pm, wv		1			1	1	1				1		
Rufous-tailed Rock Thrush	*Monticola saxatilis*	SB, pm		**1**			1	1							
Blue Rock Thrush	*Monticola solitarius*	R, pm, wv	**1**				1	1	1			1			
Spotted Flycatcher	*Muscicapa striata*	SB, PM		**1**			**1**	1							
Eurasian Pied Flycatcher	*Ficedula hypoleuca*	PM					**1**	1				1			
Collared Flycatcher	*Ficedula albicollis*	PM					**1**	1			1				
Semi-collared Flycatcher	*Ficedula semitorquata*	pm					1	1						1	
Red-breasted Flycatcher	*Ficedula parva*	pm					1	1							1
Palestine Sunbird	*Cinnyris osea*	R, wv	**1**						1			1			
Spanish Sparrow	*Passer hispaniolensis*	sb, pm, wv		1			1	1	1			1			
Pale Rock Finch	*Carpospiza brachydactyla*	SB, pm		**1**			1	1				1			
Alpine Accentor	*Prunella collaris*	pm					1	1						1	
Dunnock	*Prunella modularis*	PM, WV					1	**1**	**1**		**1**				
Western Yellow Wagtail	*Motacilla flava*	PM					**1**	**1**			**1**				
'Sykes's Wagtail'	*Motacilla flava beema*	PM					**1**	**1**			**1**				
'Grey-headed Wagtail'	*Motacilla flava thunbergi*	PM					**1**	**1**			**1**				
'Black-headed Wagtail'	*Motacilla flava feldegg*	SB, PM		**1**			**1**	**1**			**1**				
Citrine Wagtail	*Motacilla citreola*	pm					1	1					1		
Grey Wagtail	*Motacilla cinerea*	sb, pm, wv		1			1	1	1				1		
White Wagtail	*Motacilla alba*	sb, PM, WV		1			**1**	**1**	**1**		1				
Tawny Pipit	*Anthus campestris*	sb, PM, wv		1			**1**	**1**	1		1				
Meadow Pipit	*Anthus pratensis*	PM, WV					1	1	**1**		1				
Tree Pipit	*Anthus trivialis*	PM, ?wv					1	**1**	0		1				
Red-throated Pipit	*Anthus cervinus*	PM, ?wv					**1**	1	0		1				

Section Two: Status of Birds in Lebanon (Species)

Water Pipit	*Anthus spinoletta*	PM, wv					**1**	**1**	1		1				
Common Chaffinch	*Fringilla coelebs*	R, PM, WV	**1**				**1**	**1**	**1**		**1**				
Brambling	*Fringilla montifringilla*	pm, wv					1	1	1			1			
Red-fronted Serin	*Serinus pusillus*	pm, wv					1	1	1				1		
European Serin	*Serinus serinus*	WV, pm					1	1	**1**			1			
Syrian Serin	*Serinus syriacus*	SB, pm, wv		**1**			1	1	1			1			
European Greenfinch	*Carduelis chloris*	R, WV, pm	**1**				1	1	**1**		**1**				
Eurasian Siskin	*Carduelis spinus*	pm, WV, s					1	1	**1**	1		1			
European Goldfinch	*Carduelis carduelis*	R, WV, pm	**1**				1	1	**1**		**1**				
Common Linnet	*Carduelis cannabina*	R, WV, PM	**1**				**1**	**1**	**1**		**1**				
Desert Finch	*Rhodospiza obsoletus*	wv											1		
Hawfinch	*Coccothraustes coccothraustes*	pm, wv					1	1	1					1	
Corn Bunting	*Emberiza calandra*	R, PM, WV	**1**				**1**	**1**	**1**		**1**				
Yellowhammer	*Emberiza citrinella*	wv											1		
Pine Bunting	*Emberiza leucocephalos*	wv													1
Cinereous Bunting	*Emberiza cineracea*	pm					1	1						1	
Ortolan Bunting	*Emberiza hortulana*	sb, PM		1			**1**	**1**			1				
Cretzschmar’s Bunting	*Emberiza caesia*	sb, PM		1			**1**	**1**				1			
Black-headed Bunting	*Emberiza melanocephala*	SB, PM		**1**			**1**	**1**			**1**				
Common Reed Bunting	*Emberiza schoeniclus*	pm, wv					1	1	1			1			
Totals	**277**		**21**	**68**	**17**		**261**	**259**	**139**	**25**	**109**	**55**	**62**	**30**	**17**

Garganey

Western White Stork

Grey Heron

Great White Pelican

Black Kite

Eurasian Griffon Vulture

Common Buzzard

Steppe Buzzard

Lesser Spotted Eagle

Steppe Eagle

Common Moorhen

Black-winged Stilt

Lesser Black-backed Gull

Common Black-headed Gull

Common Woodpigeon

Common Kingfisher

Barred Warbler

Common Starling

Eurasian Blackbird

Common Redstart

Squacco Heron

Palestine Sunbird

2.7.1.5 Threatened Species

The checklist of the birds of Lebanon encompasses the following 10 threatened species: (the degree of threat is given in accordance with BirdLife International, 2012).

Nb	Arabic name	English name	Scientific name	Degree of threat
1	شرشير مخطط	Marbled Teal	*Marmaronetta angustirostris*	VU
2	عقاب أسفع (أرقط) كبير	Greater Spotted Eagle	*clanga*	VU
3	ملك العقبان	Eastern Imperial Eagle	*heliaca*	VU
4	قطقاط اجتماعي	Sociable Lapwing	*Vanellus gregarius*	CR
5	بجع دلماشيا (أشعث)	Dalmatian Pelican	*Pelecanus crispus*	VU
6	نعار سوري	Syrian Serin	*Serinus syriacus*	VU
7	الرخمة المصرية	Egyptian Vulture	*Neophron percnopterus*	EN
8	صقر الغزال	Saker Falcon	*Falco cherrug*	EN
9	الحبارى الكبرى	Great Bustard	Otis tarda	VU
10	حبارى ماكويني	Macqueen's Bustard	Chlamydotis macqueenii	VU

and the following 15 Near-threatened species.

Nb	Arabic name	English name	Scientific name	Degree of threat
1	حجل الصخر - ككلج - حجل رومي - شنار - قبج - دراج الصخور	Rock Partridge	Alectoris graeca	NT
2	بط حمراوي أبيض العجز - بط حمراوي أبيض العين	Ferruginous Duck	*Aythya nyroca*	NT
3	جلم ماء فاحم	Sooty Shearwater	*Puffinus griseus*	NT
4	صقر أحمر القدم - لزيق	Red-footed Falcon	*Falco vespertinus*	NT
5	حدأة حمراء	Red Kite	*Milvus milvus*	NT
6	نسر أسود	Cinereous Vulture	*Aegypius monachus*	NT
7	مرزة بغثاء باهتة - أبو شردة باهت - مشاطة الحرثان الباهتة	Pallid Harrier	*Circus macrourus*	NT
8	حبارى صغيرة	Little Bustard	*Tetrax tetrax*	NT
9	شكب (شنقب - جهلول) كبير	Great Snipe	*Gallinago media*	NT
10	بقويقة سوداء الذيل	Black-tailed Godwit	*Limosa limosa*	NT
11	أبو اليسر أسود الجناح	Black-winged Pratincole	*Glareola nordmanni*	NT
12	نورس أودويني	Audouin's Gull	*Larus audouinii*	NT
13	شقرق (شقراق - أخيل) أوروبي	European Roller	*Coracias garrulus*	NT
14	آكل الذباب (خاطف الذباب - أبو شبقونة) نصف المطوق	Semi-collared Flycatcher	*Ficedula semitorquata*	NT
15	درسة رمادية	Cinereous Bunting	*Emberiza cineracea*	NT

It is not of our intention to provide the detailed status of all the Lebanese bird species. Instead, we will be limited to 1) migratory soaring and semi-soaring species that are exposed to decline when they enter the flyway bottlenecks of Lebanon, and 2) game bird species that are also subject to declines where the hunting Law is not respected or adequately enforced:

2.8 Detailed status of the migratory soaring and semi-soaring birds in Lebanon

Not all soaring birds are raptors and not all raptors are soaring species. However, some raptor and non raptor species are semi-soarers such as pelicans, cranes, and falcons; and some others are fully soarers such as vultures, eagles and storks.
The soaring and semi-soaring birds of Lebanon are:

1. *Ciconia nigra* Black Stork PM

Brief description: Slightly smaller than the White Stork, the Black Stork is a large bird, 95 to 100 cm in length with a 145–155 cm wingspan, and weighing around 3 kilograms. Like all storks, it has long legs, a long neck, and a long, straight, pointed beak. The plumage is all black with a purplish green sheen (absent in juveniles), except for the white lower breast, belly, axillaries and under-tail coverts. The bare skin around its eyes is red, as are its red bill and legs (greyish in juveniles). The sexes are identical in appearance, except that males are larger than females on average.

Tips for identification: Like all storks, it flies with its neck outstretched. Entirely black except for the white lower breast, belly, axillaries and under-tail coverts.

Status and national distribution: Relatively common passage migrant near coasts, over mountains and in the Beqaa Valley, including Aammiq. Over 300 at Aana on 13 March 2005 (Richard Prior pers comm) and Cheikh Zennad with *c*600 on 15 October 2000 (Marc Almecija pers comm), often with flocks of Western White Stork *C. ciconia*, principally mid-February–mid-June and mid-August–early November. One seen at Aammiq regularly through February 2006, and up to two seen there during February 2007 (Colin Conroy pers comm) Sighted at Aammiq, Aiechyeh, Aana, Anjar, Azour, Beirut, Bejje, Bikfaya, Bishmezzine, Cheikh Zennad, Dalhoun, Ehmej, Enfeh, Jamhour and Qaraoun. First recorded in 1957 (Nevins 1960).

Population size: The global population is estimated to number c.24.000 – 44.000 individuals (Wetlands International, 2006), while migrants in Lebanon include c.1300 individuals/year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

2. *Ciconia ciconia* Western White Stork PM, s

Brief description: Slightly larger than the Black Stork, the White Stork is a large bird, 100 to 115 cm in length with a 155–215 cm wingspan, and weighing around 2.3 – 4.4 kilograms. Like all storks, it has long legs, a long neck, and a long, straight, pointed beak. The plumage is all white with black flight feathers and wing. The skin around its eyes is black. The bill and legs are red (dark brown or orange in juveniles. The sexes are identical in appearance, except that males are larger than females on average.

Tips for identification: Within its range the White Stork is distinctive when seen on the ground but, when seen at a distance in flight; it can be confused with several other species with similar underwing patterns, such as the Great White Pelican, and Egyptian Vulture. The Great White Pelican has short legs which do not extend beyond its tail, and it flies with its neck retracted, keeping its head near to its stocky body, giving it a different flight profile. Pelicans also behave differently, soaring in orderly, synchronised flocks rather than in disorganised groups of individuals as the White Stork does. The black of the wings in pelicans doesn't reach the flanks. The Egyptian Vulture is much smaller, with a long wedge-shaped tail, shorter legs and a small yellow-tinged head on a short neck. The Common Crane, which can also look black and white in strong light, shows longer legs and a longer neck in flight; and shows narrower black on flight feathers.

Status and national distribution: Abundant and regular on both passages, but generally commoner in spring over the whole country, but occurs principally over coastal plains (*eg* in early March–late June, a maximum of 10000 recorded on 9 April 2000 over Dalhoun) and over Beqaa Valley, where in autumn occurs early August–late October (Mona Ramadan-Jaradi). Largest flocks usually appear following periods of hot easterly winds. Very few oversummer June-July. First recorded in 1948 (West 1954).

Population size: The global population is estimated to c.230.000 pairs (http://lifecanaldecastilla.org/ciguenaingles/index.php?page=1-3-distribucion-y-evolucion), while migrants in Lebanon include c.14300 individuals/year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

3. Pelecanus onocrotalus Great White Pelican PM

Brief description: The Great White Pelican is a huge bird with a wingspan from 226 to 360 cm. The total length of the Great White Pelican ranges from 140 to 180 cm, with the enormous bill comprising about 47 cm of that length. Adult males, weigh from 9 to 15 kg. The plumage is all white with black flight feathers and wing. Males are larger than females, and have a long beak that grows in a downwards arc, as opposed to the shorter, straighter beak of the female. Juveniles are grey with darker flight feathers.

Tips for identification: The Great White Pelican is distinctive when seen on the ground but, when seen at a distance in flight, it can be confused with several other species with similar underwing patterns, such as the White Stork, and Egyptian Vulture. The White Stork has long legs which extend beyond its tail, and it flies with its neck outstreched, giving it a different flight profile. White Storks also behave differently, soaring in disorganized groups of individuals. The Egyptian Vulture is much smaller, with a long wedge-shaped tail, shorter legs and a small yellow-tinged head on a short neck. The Common Crane, which can also look black and white in strong light, shows longer legs and an outstreched long neck in flight.

Status and national distribution: Common regular passage migrant at both seasons with flocks of up to 1000 birds near coasts, at Aammiq and Qaraoun, and over mountains up to 1800m asl. Occurs mid-February–early June and early September–late November, principally on Palm Islands. First recorded by Tristram (1882).

Population size: The global population is estimated to c.94.000 pairs, while migrants in Lebanon include c.2366 individuals/year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

4. Pelecanus rufescens Pink-backed Pelican v

Brief description: This is a relatively small pelican with brownish-grey plumage, with a light pink to off-grey bill (yellow on top with grayish pouch from inside.

Tips for identification: Its **plumage** is white, grey and pink in color with dark grey wing tips. The top of the **beak** is yellow and the inside of the pouch pink.

Status and national distribution: Two records: one at Beirut on 25 March 1876 (Van

Dyck *in* Kumerloeve 1962, Benson 1970) and one dead bird [possibly taken in Batroun, in March 2003 (see Ramadan-Jaradi *et al* 2004); given that this mainly African species is traded extensively, the Lebanon Bird Rarity Committee - LBRC may care to debate the latter's origin].

Population size: The global population is estimated to 50.000 – 100.000 individuals (http://www.waza.org/en/zoo/pick-a-picture/pelecanus-rufescens).

Current IUCN Red List category: LC

5. Pelecanus crispus Dalmatian Pelican pm

Brief description: The Great White Pelican is a huge bird with a wingspan from 226 to 360 cm. The total length of the Great White Pelican ranges from 140 to 180 cm, with the enormous bill comprising about 47 cm of that length. Adult males, weigh from 9 to 15 kg. The plumage is all white with black flight feathers and wing. Males are larger than females, and have a long beak that grows in a downwards arc, as opposed to the shorter, straighter beak of the female. Juveniles are grey with darker flight feathers.

Tips for identification: The Great White Pelican is distinctive when seen on the ground but, when seen at a distance in flight, it can be confused with several other species with similar underwing patterns, such as the White Stork, and Egyptian Vulture. The White Stork has long legs which extend beyond its tail, and it flies with its neck outstreched, giving it a different flight profile. White Storks also behave differently, soaring in disorganized groups of individuals. The Egyptian Vulture is much smaller, with a long wedge-shaped tail, shorter legs and a small yellow-tinged head on a short neck. The Common Crane, which can also look black and white in strong light, shows longer legs and an outstreched long neck in flight.

Status and national distribution: Scarce: small flocks principally in March–April and November, in the Beqaa Valley, off Tyre, Tripoli and on Palm Islands (Ramadan-Jaradi & Ramadan-Jaradi 2001). Largest flock encountered *c*45 on 3 April 1975 (Macfarlane 1978). Observed in Aammiq, Chtaura, Palm Islands, Qaraoun, Tripoli and Tyre. First recorded by Tristram (1882).

Population size: The global population is estimated to c.10000-1900 individuals (BirdLife International, 2012).

Current IUCN Red List category: VU

6. Falco naumanni Lesser Kestrel sb, pm, s

Brief description: It is a small falcon, 27–33 cm in length with a 63–72 cm wingspan and 150-190 grams weight. It looks very much like the larger Common Kestrel but has proportionally shorter wings and tail. It shares a brown back and barred grey under-parts with the larger species. Males have a non dark spotted chestnut back and a blue-grey crown, neck, rump, and tail. They have grey patches in the wings. Their belly is a creamy pink with small brown streaks. The undersides of the wings are white with a black tip. Females have a brown back and head with a pale belly. Both the back and belly are streaked with brown. The wings are also light with dark barring and black tips. Juvenile lesser kestrels look similar to the females.

Tips for identification: Absence of dark spots on the chestnut back and presence of blue grey patches on the wings of males**.** The call of the Lesser Kestrel is a diagnostic harsh *chay-chay-chay*, unlike the Common Kestrel's *kee-kee-kee*. Both sexes do not have dark talons as usual in falcons; those of this species are a peculiar whitish-horn color. This, however, is only conspicuous when seen birds at very close range, e.g. in captivity.

Status and national distribution: Formerly bred (Schrader 1892, Meinertzhagen 1935, Hardy 1946, Kumerloeve 1962, Benson 1970). Reconfirmed breeding at Tyre ruins in 2001 was first for over 40 years (Ramadan-Jaradi & Ramadan-Jaradi 2002). Uncommon passage migrant over most of the country in late March–late April and early September–late October. Probably more common than records suggest due to possible confusion of females with female Common Kestrel *F. tinnunculus*. Some non-breeding individuals regular over summer in May–mid-August. Sighted at Aichyeh, Aammiq, Azour, Baalbek, Beirut, Bustan, Jourd Nahleh, Dalhoun, Deir el Qamar, Doueir, Khirbet Qanafar, Kousba, Nabatyeh, Niha, Palm Islands and Tyre. First recorded and first breeding confirmed near Beirut by Schrader (1892).

Population size: The global population is estimated to c. c.50.000 – 60.000 individuals (Pilard 2005), while national estimates include c.50 – 75 individuals on migration/year and 6 breeding pairs, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

7. Falco tinnunculus Common Kestrel R, PM, WV

Brief description: Common Kestrels measure 32–39 cm long, with a wingspan of 65–82 cm. The adult weighs 136-314 g. The plumage is mainly light chestnut brown with blackish spots on the upper side and buff with narrow blackish streaks on the underside; the remiges are also blackish. The male has fewer black spots and streaks, as well as a blue-grey cap and tail. The tail is brown with black bars in females, and has a black tip with a narrow white rim in both sexes. The toenails are dark. Juveniles look like adult females, but the underside streaks are wider; the yellow of their bare parts is paler.

Tips for identification: Male with dark spots on chestnut back, without grey on wings and with well seen moustache. Female has P10 shorter than P8.

Status and national distribution: The most common and widespread resident raptor breeding in Lebanon (Ramadan-Jaradi & Ramadan-Jaradi 1997). Found in a wide variety of habitats from sea-level, including Palm Islands, to 2600 m asl. Also a common passage migrant in early March–mid-May and late August–early November and widespread in winter from November–late February. First recorded and first breeding confirmed near Beirut by Schrader (1892).

Population size: The global population is estimated to c.5.000.000 individuals (BirdLife International, 2012), while national estimates include c.250 individuals on migration and wintering, and 2100 breeding pairs/ year based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

8. Falco vespertinus Red-footed Falcon pm

Brief description: The Red-footed Falcon is 28-34 cm in length with a wingspan of 65-75 cm. It is a medium-small, long-winged species. The adult male is all blue-grey, except for his red under-tail and legs; its underwings are uniformly grey. The female has a grey back and wings, orange head and under-parts, and a white face with black eye stripe and moustaches. Young birds are brown above and buff below with dark streaks, and a face pattern like the female.

Tips for identification: Male is grey with red under tail and legs. Female grey above with rufous head and under-parts. Juvenile like female but with brown back and wings.

Status and national distribution: Uncommon passage migrant in September–October and rare in April–May. Outside the range of its passage dates, one immature was seen at Aammiq on 7 November 2005 (Colin Conroy pers comm). Recorded at Aammiq, Aley, Arz el Shouf, Azour, Beirut, Bejje, Bikfaya, Bustan, Jourd Nahleh, Dalhoun, Hermel, Kneisseh, Palm Islands, Qaa, Qbeiyat, Qleiaat, Ras Chekka and Yanta. First recorded by Schrader (1892).

Population size: The global population is estimated to c. c.300.000 – 800.000 individuals (Ferguson-Lees *et al*. 2001), but recent evidence suggests that it is undergoing large declines in parts of its range (BirdLife International, 2012); while national estimates include c.1470 individuals on migration/year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: NT

9. Falco eleonorae Eleonora's Falcon FB, pm

Brief description: Eleonora's Falcon is 36–42 cm long with an 87–104 cm wingspan. It is shaped like a large Eurasian Hobby or a small slender Peregrine Falcon. There are two color morphs: The adult dark morph is all sooty brown, with black underwing coverts. The light morph is more like a juvenile Eurasian Hobby, but has buff underparts, and also shows the contrast between the black underwing coverts and paler base to the flight feathers. Young birds are also like a large juvenile Hobby, but the pale underparts contrast with darker wingtips and wing coverts.

Tips for identification: Distinguished from pale morph Hobby by darker underparts, dark unmarked underwing coverts, contrasting with pale unbarred flight feathers.

Status and national distribution: Formerly bred (Tristram 1865-68). Extremely rare passage migrant (Ramadan-Jaradi & Ramadan-Jaradi 1999) late March-late May and early September-late October. Sighted at Aammiq, Ainab, Azour, Barouk, Beirut, Bjiro, Dalhoun, Damour, Deir el Qamar, Deir Mimas, Doueir, Fraidies, Hasrout, Kfarhim, Laqlouq, Nabatyeh, Niha, Qbeiyat, Ras el Chekaa, Tanayel, Tel el Akhdar and Wadi el Zeina. First recorded by Tristram (1865-68).

Population size: The global population is estimated to 17,700-18,600 individuals (BirdLife

International, 2012), while nationally c.22 individuals on migration are recorded per year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

10. Falco columbarius Merlin pm, wv

Brief description: The Merlin is 24–33 cm long with a 50–73 cm wingspan. Males average at about 165 g and females are typically about 230 g. The male Merlin has a blue-grey back, ranging from almost black to silver-grey in different subspecies. Its underparts are buff- to orange-tinted and more or less heavily streaked with black to reddish brown. The female and immature are brownish-grey to dark brown above, and whitish buff spotted with brown below. Besides a weak whitish supercilium and the faint dark malar stripe—which are barely recognizable in both the palest and the darkest birds—the face of the Merlin is less strongly patterned than in most other falcons.
The remiges are blackish, and the tail usually has some 3–4 wide blackish bands, too. Very light males only have faint and narrow medium-grey bands, while in the darkest birds the bands are very wide, so that the tail appears to have narrow lighter bands instead. In all of them, however, the tail tip is black with a narrow white band at the very end, a pattern possibly plesiomorphic for all falcons. The eye and beak are dark, the latter with a yellow cere. The feet are also yellow, with black claws.

Tips for identification: Male grey above and buff below with brownish streaks; and with a black and grey barred tail. Female with choclate and white barred tail, brown above and dark brown streaked below.

Status and national distribution: Small numbers on passage in March–late April and October–November over most of the country. Scarce winter visitor from November–February, principally to the Beqaa Valley and recently to Aammiq (Ghassan Ramadan-Jaradi). Observed at Aammiq, Arz el Shouf, Beirut, Beqaa Valley, Bustan, Jourd Nahleh, Damour and Hermel. First recorded in 1877 by Van Dyck (Kumerloeve 1962).

Population size: The global population is estimated to number > c.1,300,000 individuals (Rich *et al*. 2004 *in* BirdLife International, 2012), while in Lebanon the number has been estimated at 14 individuals on migration and wintering, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

11. Falco subbuteo Eurasian Hobby SB, PM, wv, s

Brief description: Adults are slate-grey above with a dark crown and 2 short black moustachial stripes. The throat is unstreaked white, thighs and undertail coverts are unstreaked rufous and rest of the underparts are whitish with black streaks. Close views enable the red "trousers" and vent to be seen. Sexes are similar. Juveniles are generally much browner, with scaled upper parts and streaked buffy thighs and undertail coverts.

Tips for identification: Brief description: Adults are slate-grey above with a dark crown and 2 short black moustachial stripes. The throat is unstreaked white, thighs and undertail coverts are unstreaked rufous and rest of the underparts are whitish with black streaks. Close views enable the red "trousers" and vent to be seen. Sexes are similar. Juveniles are generally much browner, with scaled upper parts and streaked buffy thighs and undertail coverts.

Tips for identification: Sexes alike, thighs and undertail coverts unstreaked chestnut in adults and unstreaked buffy in juveniles.

Status and national distribution: Fairly common passage migrant over most areas of the country, but principally to the Beqaa Valley, from early September–early November and April–mid-May. Many breed in high montane areas (Ghassan Ramadan-Jaradi & Mona Ramadan-Jaradi). Very scarce winter visitor and one oversummered on Palm Islands 30 June-12 July 2000 (Ramadan-Jaradi & Ramadan-Jaradi 2002). First recorded by Schrader (1892) and first breeding confirmed at Hadath el Jibbeh cedars by West (1954).

Population size: The global population is estimated to c.400.000 individuals (Ferguson-Lees *et al.* 2001 *in* BirdLife International, 2012), while national counts point to c.137 individuals on migration and 6 breeding pairs based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

12. Falco biarmicus Lanner Falcon pm, wv, s, ?sb

Brief description: It is a large falcon, at 43–50 cm length with a wingspan of 95–105 cm. Lanner Falcons have slate grey or brown-grey upperparts. The breast is streaked in northern birds, resembling greyish Saker Falcons, but the Lanner has a reddish back to the head. Sexes are similar, but the browner young birds resemble Saker Falcons even more. However, Sakers have a lighter top of the head and less clear head-side patterns.

Tips for identification: Chestnut extending to neck and mantle, and underparts barred. Female larger and often darker than male. Juvenile brown above, underparts heavily streaked with dark grey, facial skin pale blue , not yellow. To the N races have underparts finely spotted with black, whereas almost unmarked in S populations. Races also differ in size and intensity of coloration.

Status and national distribution: Formerly considered a possible breeder (Meinertzhagen 1935, Benson 1970), but no evidence. Uncommon or scarce passage migrant and winter visitor late August–early May in the Beqaa, over mountains, coasts, and islands. One female on Palm Islands between 8-12 July 2000 (Ramadan-Jaradi 2003). Reported from Ainata North, Beqaa Valley, Bhamdoun, Bikfaya, Cheikh Zennad, Dalhoun, Deir Mimas, Hasrout, Hermon, Kfarhim, Messaloun, Niha and Palm Islands. First recorded by Tristram (1865-68).

Population size: It has a large global population estimated to be 100,000-1,000,000 individuals (Ferguson-Lees et al. 2001 *in* BirdLife International, 2012), while national estimates include c.12 individuals on migration and 4 wintering individuals, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

13. *Falco cherrug* Saker Falcon pm, wv

Brief description: The Saker Falcon is a large falcon, larger than the Lanner Falcon at 47–55 cm length with a wingspan of 105–129 cm. Its broad blunt wings give it a shadow similar to Gyrfalcon, but its plumage is more similar to a Lanner Falcon's. Saker Falcons have brown upper bellies and contrasting grey flight feathers. The head and underparts are paler brown, with streaking from the breast down. Males and females are similar, as are young birds, although these tend to be a duller brown.

Tips for identification: Adults can be distinguished from the similar Lanner Falcon since the Lanner is blue-grey above with a reddish back to the head. However, juveniles of the two species can be very similar although the Saker Falcon always has a uniformly buff top of the head with dark streaks, and a less clear pattern on the sides of the head.

Status and national distribution: Scarce passage migrant along main raptor migration routes in September–October and even rarer in March–April. Very scarce winter visitor in November–February, with most in the northern Beqaa at Baalbek, Hermel and Qaa (Ramadan-Jaradi & Ramadan-Jaradi 1999). Reported from Aammiq, Arz el Shouf, Baalbek,

Dahr el Baidar, Deir el Qamar, Hermel, Qaa, Qana, Qleiaat and Tibnine. First recorded by Hardy (1945).

Population size: It has a large global population estimated to be 12,800-30.800 individuals (BirdLife International, 2012), while national observations include c.11 individuals on migration and 3 wintering individuals, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: EN

14. Falco peregrinus Peregrine Falcon ?FB, pm, wv

Brief description: The Peregrine Falcon has a body length of 34 to 58 cm. and a wingspan from 74 to 120 cm. The male and female have similar markings and plumage, but as in many birds of prey the Peregrine Falcon displays marked reverse sexual dimorphism in size, with the female measuring up to 30% larger than the male. Males weigh 424 to 750 grams and the noticeably larger females weigh 910 to 1,500 grams.
The back and the long pointed wings of the adult are usually bluish black to slate grey with indistinct darker barring; the wingtips are black. The white to rusty underparts are barred with thin clean bands of dark brown or black. The tail, colored like the back but with thin clean bars, is long, narrow, and rounded at the end with a black tip and a white band at the very end. The top of the head and a "moustache" along the cheeks are black, contrasting sharply with the pale sides of the neck and white throat. The upper beak is notched near the tip, an adaptation which enables falcons to kill prey by severing the spinal column at the neck. The immature bird is much browner with streaked, rather than barred, underparts.

Tips for identification: Large falcon with barred underparts in adults and with black cap and thick moustache contrasting with white throat and cheeks.

Status and national distribution: Perhaps formerly bred (Schrader 1892, Benson 1970) but no evidence (Kumerloeve 1968, Tohmé & Neuschwander 1974) and no recent evidence of oversummering (Ramadan-Jaradi & Ramadan-Jaradi 1999). [One was reported from Ras Chekka on 4 June 2007 - Balmer & Betton (2007b)]. Scarce passage migrant in late March–late April and late August–late October over many areas including Beirut. Very scarce winter visitor from late November–late February to the Beqaa Valley, low mountains and the coastal strip, including Beirut (Ramadan-Jaradi *et al* 2005). First recorded by Tristram (1865-68).

Population size: It has a large global population estimated to be 1.200.000 individuals (BirdLife International, 2012), while national observations include c.55 individuals on migration and 18 wintering individuals/ year, of them 2 in Beirut, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

15. *Falco pelegrinoides* Barbary Falcon v

Brief description: The Barbary Falcon is similar to the Peregrine Falcon, but smaller at 33–39 cm length with a wingspan of 76–98 cm. The female is larger than the male. It resembles its relative in general structure. Adults have paler grey-blue upperparts than the Peregrine, and often have a buff wash to the barred underparts, whereas the larger species has a white background color. The nape is rufous, but this is difficult to see. Sexes are similar, apart from size, but the young birds have brown upperparts and streaked underparts. The streaking is lighter than in the juvenile Peregrine. The Barbary Falcon also bears some resemblance to the Lanner Falcon, but can be distinguished from that species at rest by the head-pattern, and in flight, by the proportions, flight action and underwing pattern.

Tips for identification: Reddish nape, narrow moustache, large white cheek-patch nearly reaching eyes.

Status and national distribution: Three records: one at Palm Islands without data (Evans 1994), single at the Fatima Gates area, on 28 May 2000, and at Kousba, on 21 October 2000 (Marc Almecija pers comm).

Population size: [Birdlife 2010] estimates the world population at about 5000 mature individuals.

Current IUCN Red List category: LC

16. Pandion haliaetus Osprey pm

Brief description: It is a large raptor reaching more than 60 cm in length and 180 cm across the wings. It is brown on the upperparts and predominantly greyish on the head and underparts, with a black eye patch and wings.

Tips for identification: White undersurface with black carpals and band through center of

underwing, white crown and dark eye-mask.

Status and national distribution: Uncommon passage migrant throughout the country from late March–late April and early September–early November. Sighted at Aammiq, Beirut, Cheikh Zennad, Dalhoun, Faqra, Hermel, Palm Islands, Qaa, Qbeiyat, Qleiaat and Tanayel. First recorded by Tristram (1865-68).

Population size: The Osprey has a global population estimated at 500.000 mature individuals (BirdLife International, 2012).

Current IUCN Red List category: LC

17. Pernis apivorus European Honey Buzzard PM

Brief description: The Honey Buzzard is 50-60 cm long, with a 135–150-centimetre wingspan, when compared to the smaller Common Buzzard *Buteo buteo*. It appears longer necked with a small head, and soars on flat wings. It has a longer tail, which has fewer bars than the *Buteo* buzzard, usually with two narrow dark bars and a broad dark sub-terminal bar. The male has a blue-grey head, while the female's head is brown. The female is slightly larger and darker than the male.

Tips for identification: The soaring jizz is quite diagnostic; the wings are held straight with the wing tips horizontal or sometimes slightly pointed down. The head protrudes forwards with a slight kink downwards and sometimes a very angular chest can be seen, similar to a Sparrowhawk, although this may not be diagnostic. The angular chest is most pronounced when seen in direct flight with tail narrowed.

Status and national distribution: Widespread and common passage migrant over the whole country, early August–late October (most first half of September) with maximum daily count of *c*6000 late August and *c*7500 early September 2007 (T.Bara, Mona Ramadan-Jaradi). Spring passage is also considerable from early April–early June, peaking in the first half of May. First recorded by Tristram (1864).

Population size: The global population is estimated to be 350,000-1,000,000 individuals (BirdLife International, 2012), while national observations include 4685 individuals on migration, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

18. Pernis ptilorhynchus Crested Honey Buzzard v

Brief description: Appears long-necked with a small head (resembling that of a pigeon), and soars on flat wings. The head lacks a strong supraciliary ridge giving it a very un-raptor-like facial appearance. It has a long tail and a short head crest. It is brown above, but not as dark as Honey Buzzard, and paler below. There is a dark throat stripe. Unusually for a large bird of prey, the sexes can be distinguished. The male has a blue-grey head, while the female's head is brown. She is slightly larger and darker than the male. The male has a black tail with a white band, whilst the female resembles female Honey Buzzard.

Tips for identification: Adult with dark gorget across throat. Absence of contrasting black carpel, 6 fingers and unequally distant three tail bars. Male has dark red eye that is black in juvenile. Black band through flight feathers reaching the body.

Status and national distribution: Only two records: one at Arnoun (Beaufort Castle) on 7 October 2003 (Ramadan-Jaradi *et al* 2004) and [ten reported past Bhamdoun between 27 August and 1 October 2006 (Balmer & Betton 2007a)].

Population size: The world population is estimated at 100,000 to 1,000,000 (http://eol.org/pages/914559/details)

Current IUCN Red List category: LC

19. Elanus caeruleus Black-winged Kite v

Brief description: This long-winged raptor is predominantly grey or white with black shoulder patches, wing tips and eye stripe. The long falcon-like wings extend beyond the tail when the bird is perched. In flight, the short and square tail is visible and it is not forked as in the typical kites of the genus *Milvus*. When perched, often on roadside wires, it often adjusts its wings and jerks its tail up and down as if to balance itself. The sexes are alike in plumage. Their large forward-facing eyes and velvety plumage are characters that are shared with owls and the genus itself has been considered as a basal group within the Accipitridae.

Tips for identification: Grey bird with long wings, red eyes surrounded by black patches, black primaries and black patch on the upper edge of the wing.

Status and national distribution: Two records: singles at Tyre on 4 December 1863 (Tristram 1882), and at Cedars on 21 September 1954 (Kumerloeve 1972).

Population size: The global population is believed to be between 1 and 10 million individuals (BirdLife International, 2008).

Current IUCN Red List category: LC

20. Milvus milvus (NT) Red Kite FB, pm

Brief description: The Red Kite is 60–66 cm long with a 175–179 cm wingspan; males have a weight of 800–1,200 g, and females 1,000–1,300 g. It is an elegant bird, soaring with long wings held at a dihedral, and long forked tail twisting as it changes direction. The body, upper tail and wing coverts are rufous. The white primary flight feathers contrast with the black wing tips and dark secondaries. Apart from the weight difference, the sexes are similar, but juveniles have a buff breast and belly.

Tips for identification: Deeply forked rusty tail with white primaries starting from under dark carpals and terminating with black fingers.

Status and national distribution: Extremely rare passage migrant, early April and mid-September–late November, principally over the Beqaa Valley with other migrant raptors. Most recently, four records: four at Aammiq on 29 November 1999, three at Qaa on 14 September 2000, one at Dalhoun on 18 October 2002 (Ghassan Ramadan-Jaradi), and [three reported past Bhamdoun between 27 August and 1 October 2006 (Balmer & Betton (2007a)]. Formerly considered breeding in the ravines of Lebanon (Tristram 1864). The Lebanon Bird Rarity Committee -LBRC doubtless will wish to assess the likely occurrence of the similarly red-tailed Yellow-billed Kite *M. aegyptiacus* (formerly a *ssp* of Black Kite *M. migrans*) and consider the identification criteria separating it from *M. milvus*.

Population size: It is believed to be between 21000 and 25000 pairs (BirdLife International, 2012). In Lebanon, see status and national distribution.

Current IUCN Red List category: NT

21. *Milvus migrans* Black Kite PM, WV

Brief description: Black Kites can be distinguished from Red Kites by the less forked tail (visible in flight), and generally dark plumage without any rufous. The sexes are alike. The upper plumage is brown but the head and neck tend to be paler. The patch behind the eye appears darker. The outer flight feathers are black and the feathers have dark cross bars

and are mottled at the base. The lower parts of the body are pale brown, becoming lighter towards the chin. The body feathers have dark shafts giving it a streaked appearance.

Tips for identification: Less forked tail than Red Kite with dark plumage without any rufous. Juvenile is distinguished from juvenile Red Kite by its tail that looks square when stretched.

Status and national distribution: Not uncommon spring passage and winter visitor throughout the country, early September–late April, with the largest number of 141 seen on 2 December 2005 (Richard Prior pers comm). First recorded in 1877 by Van Dyck (Kumerloeve 1962).

Population size: The Black Kite's global population is estimated at 1.000.000 to 6.000.000 individuals (BirdLife International, 2012), while the national observations showed about 222 individuals on migration based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

22. Haliaeetus albicilla White-tailed Eagle v

Brief description: The White-tailed Eagle is a large bird. It measures 66–94 cm in length with a 1.78–2.45 m wingspan that is the largest of any eagle.. The wingspan, with a midpoint of 2.18 m (7.2 ft), is on average the largest of any eagle. Females, typically weighing 4–6.9 kg, are slightly larger than males, which weigh 3.1–5.4 kg. The White-tailed Eagle is sometimes considered the fourth largest eagle in the world and is on average the fourth heaviest eagle in the world.
This species has broad "barn door" wings, a large head and a large thick beak. The adult is mainly grayish-brown except for the slightly paler head and neck, blackish flight feathers, and distinctive white tail. In juvenile birds, the tail is white with a dark terminal band in sub-adults.

Tips for identification: The combination of mousy-brown coloration, broad, evenly-held wings, white tail, strong yellow bill and overall large size render the White-tailed Eagle essentially unmistakable in its native range.

Status and national distribution: Four records: singles at Rachaya Lake in Anti-Lebanon on 2 and 8 January 1955 (Kumerloeve 1972), an immature at Bikfaya on 15 September 1974

(Macfarlane 1978), and an adult on Palm Islands off Tripoli on 11 October 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1999). First reported by Van Dyck in 1873-1878 (Kumerloeve 1960a, 1962).

Population size: The global population size is 20,300 – 39,600 individual (BirdLife International, 2012), while nationally the species is not recorded for over one decade.

Current IUCN Red List category: LC

23. Gypaetus barbatus Lammergeier v

Brief description: This bird is 94–125 cm long with a wingspan of 2.31–2.83 m . It weighs 4.5–7.8 kg. Females are slightly larger than males. It is essentially unmistakable with other vultures or indeed other birds in flight due to its long narrow wings and long wedge-shaped tail.

Tips for identification: The adult is mostly dark gray, rusty and whitish in color. It is gray-blue to gray-black above. The creamy-colored forehead contrasts against a black band across the eyes and lores and bristles under the chin, which form a black beard that give the species its English name. Bearded Vultures are variably orange or rust on their head, breast and leg feathers but this is actually cosmetic. This coloration may come from dust-bathing, rubbing mud on its body or from drinking in mineral-rich waters. The tail feathers and wings are gray. The juvenile bird is dark black-brown over most of the body, with a buff-brown breast and takes five years to reach full maturity.

Status and national distribution: Listed as an accidental in Lebanon (Cramp & Simmons 1980). No recent records, probably due to lack of surveys of suitable areas in the south of the country (Ramadan-Jaradi & Ramadan-Jaradi 1999).

Population size: Ferguson-Lees et al. (2001) estimated the population to number 1,000-10,000 individuals (IUCN, 2012).

Current IUCN Red List category: LC

24. Neophron percnopterus Egyptian Vulture FB, PM

Brief description: The adult is white, with black flight feathers in the wings. The bill is slender and long, and the tip of the upper mandible is hooked. The nostril is an elongated horizontal slit. The wings are pointed, with the third primary being the longest; the tail is

wedge shaped. The legs are pink in adults and grey in juveniles. The facial skin is yellow and unfeathered down to the throat. The sexes are indistinguishable in plumage but breeding males have a deeper orange facial skin color than females. Females are about 10-15% heavier than males. Young birds are blackish or chocolate brown with black and white patches. The adult plumage is attained only after about five years.

Tips for identification: Similar to a White Stork in flight but with short neck and legs.

Status and national distribution: Formerly bred (Kumerloeve 1962, Benson 1970) but no recent proof (Tohmé & Neuschwander 1973, Ramadan-Jaradi & Ramadan-Jaradi 1999). This common passage migrant showed an obvious decline of numbers in recent years (Ghassan Ramadan-Jaradi). Occurs during March–early June (most mid-March–mid-April) and late August–late October, principally over the Beqaa Valley and Lebanon mountain range. Reported at Aammiq, Arz el Shouf, Azour, Beirut, Bikfaya, Bustan, Dalhoun, Deir el Ahmar, Deir el Qamar, Fraidies, Jamhour, Niha, Palm Islands, Qaa, Qleiaat and Ryaq. First recorded in 1878 by Van Dyck (Kumerloeve 1962).

Population size: Global population is about 20,000-61,000 individuals (BirdLife International, 2012).

Current IUCN Red List category: EN

25. Gyps fulvus Eurasian Griffon Vulture FB, pm, ?w, ?r, ?b

Brief description: The Griffon Vulture is 93–122 cm long with a 2.3–2.8 m wingspan. The males weigh 6.2 to 10.5 kg and females typically weigh 6.5 to 11.3 kg. It is a typical Old World vulture in appearance, with a very white head, very broad wings and short tail feathers. It has a white neck ruff and yellow bill. The buff body and wing coverts contrast with the dark flight feathers.

Tips for identification: Covers of upper and under wing are creamy and lighter than the blackish primaries, secondaries and tail. The latter is unwedged.

Status and national distribution: Formerly bred in south Lebanon (Tristram 1864, 1882) and formerly recorded in winter at the Beqaa near Aammiq on 3 January 1959 (Kumerloeve 1962). Modern-day status uncertain; probably a rare and local resident near the Israeli border and perhaps elsewhere, given that Marc Almecija (pers comm) observed one on 16 April 2000 at Deir Jannine, Ramadan-Jaradi (2003) recorded one at Arz el Shouf on 25

July 2000, and Richard Prior (pers comm) saw one at Tannourine on 10 May 2005; and a scarce passage migrant in mid-March–mid-May (over mountains and the Beqaa) and extremely rare in autumn from mid-September–early October (over Jabal Sannine, Barouk and Toumat Niha). First recorded in 1824 (Hemprich & Ehrenberg 1833).

Population size: The global population is not quantified yet but the European population is about 20.000 pairs; while in Lebanon, the species is represented by 7 individuals on migration/ year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

26. Aegypius monachus (NT) Cinereous Vulture pm

Brief description: The Cinereous Vulture is believed to be the largest true bird of prey in the world. This huge bird measures 98–120 cm long with a 2.5–3.1 m wingspan. The body mass in this species can range from 7 to 14 kg. It is distinctly dark, with the whole body being dark brown excepting the pale head in adults, which is covered in fine down. The juveniles are blackish in coloration and, from a distance, flying birds can easily appear all black.

Tips for identification: The combination of huge size and dark coloration renders the Cinereous Vulture relatively distinct, especially against smaller raptors such as eagles or hawks.

Status and national distribution: Extremely rare passage migrant over Beqaa and montane areas where singles recorded, usually with other raptors, in March–April and October. An adult captured at Faraya on 6 May 1993 (Ramadan-Jaradi & Ramadan-Jaradi 1999). Sighted at Aammiq, Damour, Dbayyeh, Faraya, Litani Valley and Nahr el Laban. First recorded in 1957 (Nevins 1960).

Population size: The global population is estimated to number 21,000-30,000 individuals. In Lebanon it was not recorded during the last decade.

Current IUCN Red List category: NT

27. Circaetus gallicus Short-toed Snake Eagle sb, PM

Brief description: Adults are 62–67 cm long with a 170–185 cm wingspan and weigh 1.2–2.3 kg. They can be recognized in the field by their predominantly white underside, the upper parts being greyish brown. The chin, throat and upper breast are either white or brown. The tail has usually 3 bars. Additional indications are an owl-like rounded head, brightly yellow eyes and lightly barred under wing.

Tips for identification: The white underparts with the brown chin, throat and upper breast point directly to the species. If the underparts are white, the species can be distinguished from flying similar birds (Steppe Buzzard, Honey Buzzard, Osprey) by the absence of dark carpals.

Status and national distribution: Summer visitor, breeding in small numbers in montane areas, especially at Charquieh (Ramadan-Jaradi & Ramadan-Jaradi 1999), hills above Aammiq, Dalhoun and Arz el Shouf (Ramadan-Jaradi *et al* 2004). It is also a widespread and common passage migrant over much of the country, early March–late April (most first half of April) and early September–late October. First recorded by Tristram (1864) and first confirmed breeding recorded at Charquieh in 1996 by Ramadan-Jaradi & Ramadan-Jaradi (1999).

Population size: The global population is estimated to number 51,400-156,000 individuals, while the national population comprises about 16-20 pairs of summer breeders and 488 individuals on migration, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

28. Circus aeruginosus Western Marsh Harrier sb, PM, wv

Brief description: The Western Marsh-harrier is 43 to 54 cm in length, and has a wingspan of 115 to 130 cm and a weight of 400 to 650 g in males and 500 to 800 g in females. The male's plumage is mostly reddish-brown with lighter yellowish streaks, which are particularly prominent on the breast. The head and shoulders are mostly pale greyish-yellowish. The rectrices and the secondary and tertiary remiges are pure grey, the latter contrasting with the brown forewing and the black primary remiges at the wingtips. The upperside and underside of the wing look similar, though the brown is lighter on the underwing.

Tips for identification: Whether from the side or below, flying males appear characteristically three-colored brown-grey-black. The female lacks the grey wing-patch and tail. Juveniles are similar to females, but usually have less yellow, particularly on the shoulders.

Status and national distribution: Breeding suspected at Aammiq (Kumerloeve 1962, Benson 1970, Tohmé & Neuschwander 1976) not confirmed until 2006 (Teeuw & Conroy 2007, Colin Conroy in prep). Fairly common on passage late February–late May (peak in March) and late August–mid-November (most mid-September–early October). Local winter visitor (December–February) in small numbers to Beqaa wetlands (Ramadan-Jaradi & Ramadan-Jaradi 1999), except for Aammiq where the winter harrier roost held up to 29 Marsh Harriers during the winter 2004-2005 (Teeuw and Conroy 2007). First recorded by Hemprich & Ehrenberg (1833).

Population size: The global population size is c.0.5-2 million individuals. In Lebanon an average of 311 individuals is recorded/ year on migration, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

29. Circus cyaneus Hen Harrier pm, wv

Brief description: The Hen Harrier is 43–52 cm long with a 97–118 cm wingspan and 350 grams weight.
The male of the nominate race, *C. c. cyaneus* is mainly grey above and white below except for the upper breast, which is grey like the upperparts, and the rump, which is white; the wings are grey with black wingtips. The female is brown above with white upper tail coverts, hence females, and the similar juveniles, have buff streaked with brown underparts.
Tips for identification: The male is grey above and white underneath, with obvious black wing-tips and contrasting yellow legs, eyes and facial skin. The female is larger and is quite different in appearance, being dark brown above, paler below, with dark streaks, and with bars on the wings and tail. Juvenile northern harriers resemble the female, but are usually darker above and more reddish-brown below, sometimes without streaking.

Status and national distribution: Relatively uncommon on passage and in winter at most wetlands in October–April. Most frequently recorded in the Beqaa Valley, particularly at Aammiq (Ramadan-Jaradi & Ramadan-Jaradi 1999, Teeuw and Conroy 2007). First recorded in 1882 by Van Dyck (Kumerloeve 1962).

Population size: The global population is estimated to number c.1,300,000 individuals (Rich *et al.* 2004 in BirdLife International, 2012). Nationally, about 23 individuals on average are recorded per year on migration and wintering.

Current IUCN Red List category: LC

30. Circus macrourus Pallid Harrier pm, wv

Brief description: Adults measure 40–48 cm long with a wingspan of 95–120 cm. Males weigh 315 g while the slightly larger females weigh 445 g. The male is whitish grey above and white below, with narrow black wingtips. It differs from the Hen Harrier in its smaller size, narrower wings, pale color different wing tip pattern. The female is brown above with white upper tail coverts, hence females and the similar juveniles are often called "ringtails". Her underparts are buff streaked with brown. It is best distinguished from the female Hen Harrier on structure. It is very similar to the female Montagu's Harrier, but has darker and more uniform secondaries from below.

Tips for identification: The pallid harrier male has very pale grey upperparts and is white below. In flight, the distinctive black wing tips can be seen. The female is brown, with a paler belly and a heavily marked breast and head.

Status and national distribution: Uncommon but regular on passage, principally from early March–early May and early September–mid-November over most of the country, with most at Aammiq. A rare winter visitor at least to Aammiq (Beale & Sprenger 2001, [Ghassan Ramadan-Jaradi *in* Balmer & Betton 2004], Teeuw & Conroy 2007) mid-November-late February. First recorded by Schrader (1892).

Population size: The global population is estimated at 9,000-15,000 pairs (Galushin *et al.* 2003 in BirdLife International, 2012). The national counts include about 21 individuals on migration and 7 wintering individuals/ year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: NT

31. Circus pygargus Montagu's Harrier pm

Brief description: Adults measure 43–47 cm long with a wingspan of 97–115 cm. Males weigh 265 g while the slightly larger females weigh 345 g. Adult males are characterized by their overall pale grey plumage contrasting with black wingtips. Compared with other harriers this species has characteristic black bands along the secondaries, both above and below the wing and rusty streaks on belly and flanks.

Adult females have a broadly similar plumage to that of Pallid and Hen Harriers. The underparts are mostly pale yellow-brown, the belly with longitudinal stripes and the wing

coverts spotted. The upper parts are uniform dark brown except for the white upper tail coverts ("rump"), and the sightly paler central wing coverts.
The juvenile plumage resembles that of the female, but differs by the belly and under wing coverts which are not spotted, but uniformly red brown in colour.

Tips for identification: Black bands along the secondaries, both above and below the wing.

Status and national distribution: Rare passage migrant in mid-March–mid-May (most first half April) and late August–late November over most of the country, especially the Beqaa Valley. First recorded by Hemprich & Ehrenberg (1833).

Population size: The population for the western Palearctic is estimated at 35,000–50,000 pairs. The global population is unknown and could be anything between 150,000 to 200,000 individuals (Birdlife International, 2004)., while nationally, the species observations showed on average 8 individuals on migration/ year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

32. Accipiter brevipes Levant Sparrowhawk FB, PM

Brief description: The Levant Sparrowhawk is is 30–37 cm long with a 63–76 cm *wingspan*. The species can be distinguished by its barred underparts and striking, dark red eyes. The sexes differ in size and plumage coloration, with the male being significantly smaller than the female and possessing blue-grey upperparts, along with a pale breast and belly which are lightly marked with rusty reddish bars. The female is brown above with heavily barred underparts and a dark streak on the throat. The juvenile resembles the adult female, but has streaked rather than barred underparts and a pale spot on the nape.

Tips for identification: Compared to the Eurasian Sparrowak, the Levant Sparrowhawk has dark red eyes and usually flies with 2 beats followed by gliding. The wing-tip is black. Difference in size between male and female is lesser in Levant Sparrowhawk.

Status and national distribution: Formerly bred (Benson 1970). A widespread and common passage migrant across Lebanon in large numbers, being one of the principal migrant raptor species (Beale & Ramadan-Jaradi 2001), from March–mid-May and September–October. First recorded by Schrader (1892).

Population size: The global population is estimated to number > c.1,300,000 individuals (Rich *et al.* 2004 in BirdLife International, 2012). In Lebanon, the observations point to 3210 individuals on migration/ year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

33. Accipiter nisus Eurasian Sparrowhawk ?FB, PM, wv

Brief description: The Eurasian Sparrowhawk is 28-38 cm long, with a wingspan of 58-65 cm in male, and 68-77 cm in female. The Weight is: Male 110-196 g, Female 185-342 g. Adult male Eurasian Sparrowhawks have bluish grey upperparts and orange-barred underparts; females and juveniles are brown above with brown barring below. The female is up to 25% larger than the male – one of the largest differences between the sexes in any bird species.

Tips for identification: Blue grey back male with brownish chest, upper belly and flanks, and blue brownish back female without the male's brounish markings. Eyes are yellow.
Status and national distribution: Probably nested formerly (Kumerloeve 1962, Benson 1970). A common passage migrant over most of the country in March–early May and September–early November, with a few overwintering in November–late February in montane areas and the Beqaa Valley. First recorded by Tristram (1865-68).

Population size: The global population is estimated to number > c.1,500,000 individuals (Ferguson-Lees *et al.*2001). In Lebanon, 124 individuals/ year on migration are recorded, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

34. Accipiter gentilis Northern Goshawk pm, wv

Brief description: Females are significantly larger than males. Males, being the smaller sex by around 10–25%, are 46–57 cm long and have a 89–105 cm wingspan. The female is much larger, 58–69 cm long with a 108–127 cm wingspan. Males average around 780 g, with a range of 500 to 1,200 g. The female can be more than twice as heavy, averaging 1,220 g with a range of 820 to 2,200 g. It is blue-grey above and barred grey or white below, but Asian subspecies in particular range from nearly white overall to nearly black above. Juveniles and adults have a barred tail, with dark brown or black barring. Adults always have a white eye stripe. Juveniles have pale-yellow eyes, however adults develop orange-colored eyes.

Tips for identification: Male is dark grey above with head appearing hooded and with white supercilium, and whitish but finely dark barred underparts. Juvenile is dark brown above and yellowish rusty below with bold streaks, and with bold-tail bands. Female shares with the juvenile its tail pattern, and like the males and juveniles it differs from falcons by the rounded wing-tips.

Status and national distribution: Scarce passage migrant across Lebanon in March–April and early September–November, and a rare winter visitor in December–February, mainly in pine and cedar groves. First recorded by Tristram (1864).

Population size: The global population is estimated to number > c.500,000 individuals (Rich *et al*. 2004). In Lebanon, about 18 individuals/ year are recorded on migration, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

35. Buteo b. buteo Common Buzzard PM, WV

Brief description: The Common Buzzard measures between 40 and 58 cm in length with a 109–136 cm wingspan and a body mass of 427–1,364 g, making it a medium-sized raptor. This broad-winged raptor has a wide variety of plumages, and can be confused with the similar Rough-legged Buzzard (*Buteo lagopus*) and the only distantly related European Honey Buzzard (*Pernis apivorus*), which mimics the Common Buzzard's plumage for a degree of protection from Northern Goshawks. The plumage can vary in from almost pure white to black.

Tips for identification: The upperparts are darker then the underparts, and the wing-tip and trailing edge of the wing are also noticeably darker than the rest of the wing feathers. Both the tail and flight feathers are barred, and the throat and breast may be streaked.

Status and national distribution: Widespread and common passage migrant on a broad front from late February–mid- May and early August–November, and a common regular winter visitor in November–mid-March, with most in the Beqaa Valley. First recorded as parent taxon by Tristram (1865-68).

Population size: The global population is estimated to number c.4,000,000 individuals (BirdLife International, 2012). The species is represented by an average of 922 individuals/

year during the migration and in winter, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

36. Buteo b. vulpinus Steppe Buzzard PM, WV

Brief description: Compared to Common Buzzard, it is a little bit smaller, with narrower wing and longer tail. There are three main morphs occurring in the country: Fox-red that is like Long-legged but with smaller carpal patch and with barred tail, grey-brown that is very similar to Common Buzzard, and dark morph that is very scarce.

Tips for identification: Less raised wings than Common Buzzard when gliding. Carpal comma patch is darker than underwing coverts. Head is dark.

Status and national distribution: More abundant passage migrant than Common Buzzard *B. b. buteo* on broad front from late February-early May and early August-early November, and less regular winterer from November-mid-March, with most in the Beqaa Valley. First recorded as parent taxon by Tristram (1865-68).

Population size: The global population is apparently not estimated, while estimates in Lebanon point to about 1591 individuals/ year on migration and in winter, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

37. Buteo rufinus Long-legged Buzzard R, PM, wv

Brief description: It is similar in appearance to the Rough-legged Buzzard (*Buteo lagopus*) below, but larger (approximate length 60–65 cm) and more robust. There are many different color forms, but usually Long-leggeds have a clear orange tint to the plumage, red or orange tail, pale head and largely white underwings. There is usually a distinctive black carpal patch and dark trailing edge to the wing. The rump and "trousers" are often dark or deep rufous. Plumage varies from ghostly pale individuals to very dark ones. Some plumages are almost similar to those of the Steppe Buzzard, the eastern subspecies of the Common Buzzard (*Buteo buteo vulpinus*), but Long-legged Buzzards have longer wings and are more like Rough-Legged buzzards or even a small Aquila eagle.

Tips for identification: Pale head, largely white underwings, distinctive black carpal patch,

dark trailing edge of wing, breast lighter than belly, and red or orange tail.

Status and national distribution: Breeding was confirmed in spring 1995, 1996 and 1997 (Ramadan-Jaradi & Ramadan-Jaradi, 1999); 2000 (Beale & Sprenger 2001), 2003 (Ramadan-Jaradi *et al* 2004), and 2006-2007 (Ghassan Ramadan-Jaradi). Present year-round with largest numbers in spring (March–April) and to a lesser extent in autumn (September–November). Uncommon in winter from November–early March in most of the country, being most frequent in the Beqaa. First recorded in 1877 by Van Dyck (Kumerloeve 1962) and first breeding confirmed at Jabal Barouk and Ehden in 1995 (Ramadan-Jaradi & Ramadan-Jaradi 1997).

Population size: The global population is estimated to number c.100,000 – 1.000.000 individuals (Ferguson-Lees *et al.*2001 *in* BirdLife International, 2012). The national observations include about 38 nesting pairs and 117 individuals on migration per year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

38. Buteo lagopus Rough-legged Buzzard pm

Brief description: Color pattern like Buzzard (Buteo buteo), but smaller-sized (L 60 cm). Extremely variable. From dark morph through reddish morph to very pale morph. Typical morph shows pale head, breast and tail contrasting with rufous belly, and lacks tail barring of most other buzzards. Dark carpal patches, rusty underwing coverts, flight feathers paler with black trailing edge and wing tip. Female slightly larger than male. Juvenile has faintly barred tail, black on trailing edge of wing less marked. Race cirtinsis smaller, often paler, lacks dark morph.

Tips for identification: Typical morph shows pale head, breast and tail contrasting with rufous belly, and lacks tail barring of most other buzzards.

Status and national distribution: Six records: singles at Ryaq on 26–28 March 1958, one over Ainab in September 1960 (Kumerloeve 1962), one at Qalaat Faqra near Faraya on 24 April 1973 (Tohmé & Neuschwander 1973), one at Aammiq on 28 March 1998 (Ramadan-Jaradi & Ramadan-Jaradi 1999), one at Dalhoun on 10 October 2002 and one at Aammiq on 29 November 2003 (Ghassan Ramadan-Jaradi & Mona Ramadan-Jaradi). From these records, the Rough-legged Buzzard is a scarce passage migrant rather than a true vagrant. First recorded by Kumerloeve (1962).

Population size: The global population is estimated to number c.100,000 – 1.000.000 individuals (Ferguson-Lees *et al.*2001 *in* BirdLife International, 2012). In Lebanon, 6 individuals were recorded on migration during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

39. Aquila pomarina Lesser Spotted Eagle PM, wv, s

Brief description: This is a medium-sized eagle, about 55-65 cm in length and with a wingspan of 143-168 cm. Its head and wing coverts are pale brown and contrast with the generally dark plumage. The head and bill are small for an eagle. There is usually a white patch on the upperwings, and even adults retain a clear-marked white V on the rump; the wing markings are absent and the white V is not well-defined in the Greater Spotted Eagle. The juvenile has less contrast in the wings, but the remiges bear prominent white spots. It differs from Greater Spotted Eagle juveniles by a lack of wing covert spotting and the presence of a cream-colored neck patch.

Tips for identification: Pale brown head and wingcoverts contrasting wirh darker flight feathers. White primary patch on the upper wing. The greater coverts, trailing edge of the wing and tail are tipped white. Juvenile is darker with rufous patch on the nape.

Status and national distribution: Widespread and very common on passage over most of the country in March–late May (mainly mid-March-mid-April), and mid-August–late October (mainly end September/ beginning October). Very small numbers overwinter in Beqaa and nearby in December–late February. One oversummered in fields alongside Aammiq from 9 May to 30 August 2001 (Andy Sprenger pers comm) and one also oversummered there in 2006 (Colin Conroy pers comm). First recorded by Tristram (1864).

Population size: The European population is estimated to number c. 42,000-57,000 individuals (BirdLife International, 2004). An average of 5234 individuals occurs on yearly migration, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

40. Aquila clanga Greater Spotted Eagle pm,?wv

Brief description: The Greater Spotted Eagle is 59–71 cm in length and has a wingspan of 157–179 cm and a typical body mass of 1.6–2.5 kg. This medium-sized eagle is very similar

in general appearance to its closest relative the Lesser Spotted Eagle (*A. pomarina*), which shares part of its range. Head and wing coverts are very dark brown and contrast with the generally medium brownplumage;

Tips for identification: Compared to Lesser Spotted Eagle, **t**here is often a less obvious white patch on the upperwings, but a light crescent on the primary remiges is a good field mark. The white V mark on the rump is less clear-cut in adults than in the Lesser Spotted Eagle. The juvenile has white spots all over its wings and lacks a lighter nape patch. Confusion is also possible with adult Steppe Eagle *A. nipalenis*, Tawny Eagle *A. rapax* and Imperial Eagle *A. heliaca*.

Status and national distribution: Irregular and scarce passage migrant over the country, with most recorded on the main migration routes, in March–April and September–October. One over Palm Islands on 16 November 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1999). Formerly rare winter visitor (Nevins 1960, Kumerloeve 1962). Sighted at Aammiq, Ainata North, Beisur, Beqaa Valley, Bustan, Dalhoun, Deir Mimas, Hermel, Jezzine, Kfarchima, Palm Islands, Qaa, Qbeiyat and Toumat Niha. First recorded by Tristram (1864).

Population size: The global population is estimated to number c. 5,000-13,200 individuals (BirdLife International, 2012). About 10 individuals occur in Lebanon every year during the migration season, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: VU

41. Aquila nipalensis Steppe Eagle PM

Brief description: It is about 62–81 cm in length and has a wingspan of 1.65–2.15 m. Females, weighing 2.3–4.9 kg, are slightly larger than males, at 2–3.5 kg. It was once considered to be closely related to the non-migratoryTawny Eagle (*Aquila rapax*) and the two forms have previously been treated as conspecific. They were split based on pronounced differences in morphology and anatomy (Clark, 1992; Olson, 1994; Sangster*et al.*, 2002). The plumage is mostly dark brown, with well-defined bars on the flight and tail feathers.

Tips for identification: The main distinguishing features are the reddish-brown patch on the nape of the neck, the oval nostrils, and the long, wide gape. The juvenile steppe eagle resembles the adult but is paler brown, with a characteristic broad white band running along the underside of the wing.

Status and national distribution: Uncommon to scarce passage migrant over most of the

country, in small flocks from early February–early May (mainly mid-March-mid-April) and late September–mid-November (mainly October). Very few scattered records in early February suggested winterers but in absence of Steppe eagles during December-January, these records should preferably be considered for early passage rather than for winter visitors. Reported from Aichyeh, Aammiq, Azour, Beirut, Beqaa Valley, Bustan, Jourd Nahleh, Dalhoun, Deir el Qamar, Deir Mimas, Doueir, Fraidies, Hasrout, Nabatyeh, Niha and Qaa. First recorded by Tristram (1864).

Population size: The Steppe Eagle *Aquila nipalensis* has an estimated *global population* of 100,000–1,000,000 individuals (Ferguson-Lees and Christie 2001), while nationally, an average of 16 individuals on migration is observed on yearly basis, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

42. Aquila heliaca Eastern Imperial Eagle ?FB, pm, ?wv

Brief description: The Eastern Imperial Eagle is a large eagle with a length of 72–90 cm, a wingspan of 1.8–2.16 m and a weight of 2.45–4.55 kilograms. Females are about a quarter larger than males. Generally dark brown with white scapular markings and pale golden-cream nape. Grey base to tail. Juvenile brown fading to pale buff with dark flight feathers. Shows flat wings in flight.

Tips for identification: Golden Eagle *A. chrysaetos* is paler with less obviously bi-coloured tail. Holds wings in flattened "V" shape. Steppe Eagle *A. nipalensis* lacks pale rusty yellow ventral area, bi-coloured tail and pale scapulars.

Status and national distribution: Reportedly once bred (Kumerloeve 1962, Benson 1970) and once overwintered (Kumerloeve 1962) but no recent evidence. Rare passage migrant in late February–mid-April and mid-September-October along main migration routes. Reported from Aammiq, Aley, Azour, Beirut, Bustan, Jourd Nahleh, Dalhoun, Deir el Qamar, Deir Mimas, Fraidies, Khirbet Qanafar, Nabatyeh, Nahr el Kalb, Niha, Qaa and Zahleh. First recorded by Tristram (1864).

Population size: The global population is estimated to number c. 3500-15,000 individuals (BirdLife International, 2012), while nationally, 14 individuals on migration are yearly observed, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: VU

43. Aquila chrysaetos Golden Eagle FB, pm, ?r

Brief description: The Golden Eagle is a large, dark brown raptor with broad wings. Its size is variable: it ranges from 66 to 102 cm in length and it has a typical wingspan of 1.8 to 2.34 m. The sexes weigh, between 2.5 kg and 5.1 kg. Adults are primarily brown, with a pale gold color on the back of the crown and nape, and some grey on the wings and tail. Tarsal feathers range from white to dark brown. In addition, some birds have white "epaulettes" on the upper part of each scapular feather tract. The bill is dark at the tip, fading to a lighter horn color, with a yellow cere. Juveniles have a darker, unfaded color, white patches in the remiges which may be divided by darker feathers, and a large amount of white on the tail with a black terminal band. Occasionally upper wing feathers of juveniles are also white, or birds lack white on the wing entirely. As the bird ages, the amount of white on wings and tail diminishes, and adult plumages is usually acquired by the fifth year.

Tips for identification: This huge bird of prey can be identified by its very long wings and long tail. When gliding or soaring it typically holds its wings in a shallow 'V'. The plumage is dark brown rather than golden and the massive talons are bright yellow. The feathers of the head and nape of the neck are typically light yellowish or reddish-brown, giving the appearance of a 'shawl'. Males and females are similar in appearance, but juveniles can be distinguished by the presence of white patches on the undersides of the wings and on both surfaces of the tail.

Status and national distribution: Former breeder (Tristram 1865-68) and scarce passage migrant, mid-March–mid-April and mid-September–mid-October, (Ramadan-Jaradi & Ramadan-Jaradi 1999). Three records in December, February and May that lie outside the range of spring passage dates suggest breeding in the Litani Valley (Ramadan-Jaradi *et al* 2004) or elsewhere [especially considering that very recently one was reported from Ehden on 3 June 2007 to Balmer & Betton 2007b)]. First recorded by Tristram (1865-68).

Population size: Ferguson-Lees and Christie (2001) estimated the global population (defined as the number of adults and immatures at the start of the breeding season) in the range of 100,101 to 1,000,000 individuals; while national records included 3 pairs during breeding season and about 9 individuals on dispersal, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

44. Aquila verreauxii Verreaux's Eagle v

Brief description: It is 75 to 96 cm long. Males weigh 3 to 4.2 kg and females weigh 3.1 to 5.8 kg. It has a wingspan of 1.81 to 2.2 m. It is black with a distinct white V marking on its back. Juveniles are usually light and dark brown with a black face.

Tips for identification: Wing with narrow base. Wing trailing edge in forme of S. White primary patches above and below. White V on shoulders and lower back contrasting with the black body. Juvenile is creamy white on upper wing coverts, black throat and upper breast contrasting with buffy white rear body and yellow-buff crown and hindneck.

Status and national distribution: Four records: an adult seen soaring high over Tyre on 6 June 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1999), one immature at Dalhoun on 1 May 2000 and one adult at Doueir on 1 October 2002 (Ghassan Ramadan-Jaradi); and one juvenile south of Aammiq on 5 May 2002 (A Rocha Lebanon 2006).

Population size: Ferguson-Lees and Christie (2001) placed the global population (defined as the number of adults and immatures at the start of the breeding season) in the range of 10,000 to 100,000 individuals, while remarking that the total population seems unlikely to exceed the upper tens of thousands (BirdLife International, 2012).

Current IUCN Red List category: LC

45. Aquila pennata Booted Eagle sb, pm, ?wv

Brief description: It is about 42-50 cm in length and has a wingspan of 113-134 cm. Weight: Male 635-770 g, Female 840-1,146g. Booted Eagles occur in 2 distinct colour morphs, pale and dark. There is also a rare rufous form which is essentially a pale extreme of the dark morph. Pale phase birds predominate, particularly so in the west of the bird's range where the ratio of pale to dark is approaching 4:1. The incidence of dark phase birds increases towards the east of the bird's range approaching a 3:2 ratio of pale to dark in Turkey. The light phase bird is reasonably easy to identify, with pale wing coverts and most flight feathers black; inner primaries are barred lighter. The dark phase is a little more tricky to ID but it is separated from similar sized raptors by its pale inner primaries which show faint barring, its 6 "fingered" hand and at the right angle, the white "landing lights" on the front wings proximally (which are not visible on all birds much less from all angles). Upperside is similar in the two phases, notice the paler median coverts on the upperwing and a narrow pale area where tail meets uppertail coverts.

Juvenilies are similar to adults, probably not separable in dark phase but in pale phase look for slightly more rufous in head and undersides and slightly more striped impression.

Tips for identification: About the same size as Common Buzzard, but depending on angle the plumage of the dark bird is more likely to mislead you to think about Black Kite or younger Bonelli's Eagle; pale phase birds share color pattern with Egyptian Vulture but that bird has a very different shape.

Status and national distribution: Bred in 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1997). An uncommon passage migrant over most of the country, mostly in mid-March–late April and, to lesser extent, September–October. In the past, the Booted Eagle was recorded in November and December (Tristram 1864), though the species has yet to be observed in winter. First recorded by Tristram (1864) and first breeding confirmed at Maanyeh in 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1997).

Population size: Ferguson-Lees and Christie (2001) placed the global population (defined as the number of adults and immatures at the start of the breeding season) in the range of 10,000 to 100,000 individuals, while remarking that the total population seems unlikely to exceed the upper tens of thousands. Nationally, about 56 individuals are yearly recorded on migration, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

46. Aquila fasciatus Bonelli's Eagle R, pm, wv

Brief description: This is a small to medium - sized eagle at 55–65 cm in length. The upperparts are dark brown, and the underside is white with dark streaks. The wings are relatively short and rounded. The long tail is grey on top and white below and has a single broad black terminal band. The feet and eyes are yellow. Immature birds have deep buff underparts and underwing coverts, and have fine barring on the tail without the terminal band.

Tips for identification: Dark brown upperparts. White patch on mantle. White underside with dark streaks. Short and rounded wings. Whitish fore-underwing-coverts (ie lesser/median coverts). Blackish rear underwing-coverts (ie greater/median coverts and primary coverts). Dusky flight-feathers. Tail: grey tail on top, white below, single broad black terminal band. Yellow feet and iris. Juvenile: deep buff below and on underwing coverts, fine barring on tail, which lacks a terminal band.

Status and national distribution: Bred in 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1997). Nested between 2000-2006, in other 8 localities (Azour, Ban, Chwayya, Deir Mimas, Ehden, Jabal Barouk, Jezzine, Marjayoun, Toumat Niha). A scarce passage migrant and winter visitor from early September–late April throughout the country. First recorded by Tristram (1865-68) and first breeding confirmed at Ijbeh in 1996 (Ramadan-Jaradi & Ramadan-Jaradi 1997).

Population size: Ferguson-Lees and Christie (2001) placed the global population (defined as the number of adults and immatures at the start of the breeding season) in the range of 10,000 to 100,000 individuals; while remarking that the total population seems unlikely to exceed the upper tens of thousands. Nationally population includes at least 5 breeding pairs and less than 5 are seen on dispersal (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

47. *Anthropoides virgo* Demoiselle Crane pm

Brief description: The Demoiselle is 85–100 cm long, 76 cm tall and has a 155–180 cm wingspan. It weighs 2–3 kg. It is the smallest species of crane. The Demoiselle Crane is slightly smaller than the Common Crane but has similar plumage. It has a long white neck stripe and the black on the foreneck extends down over the chest in a plume.

Tips for identification: Shorter neck and bill than Common Crane. Black head, neck and breast hanging feathers.

Status and national distribution: Scarce and irregular spring passage in March early April and uncommon autumn passage (October-November), through coastal, montane and the Beqaa Valley areas. The most recent records were of six at Mokhtara in Al Shouf on 4 April 1997 (Ramadan-Jaradi & Ramadan-Jaradi 1999), [a group of 45 at Laqlouq on 14 October and 160 individuals on 17 October 2003 at Nahr Ibrahim Valley were reported to Balmer & Betton (2004)]. Sighted at Beqaa Valley, Laqlouq, Marj Bisri, Mokhtara, Nahr Ibrahim and Saida. First recorded in 1958 (Flach 1959).

Population size: The global population is estimated to number c.230,000-280,000 individuals (Wetlands International 2006). The national records don't exceed 10 individuals during the last decade and half (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

48. *Grus grus* Common Crane PM, wv

Brief description: The Common Crane is a large, stately bird and a medium-sized crane. It is 100–130 cm tall with a 180–240 cm wingspan. The body weight can range from 3 to 6.1 kg. This species is slate-grey overall. The forehead and lores are blackish with a bare red crown and a white streak extending from behind the eyes to the upper back. The overall colour is darkest on the back and rump and palest on the breast and wings.

Tips for identification: Body with Grey plumage and contrasting black flight feathers, black head and upper neck, and white stripe from eye downside of neck. According to intensity of light it may be confused by biginners with white stork.

Status and national distribution: Common and abundant passage migrant during both periods, more so in the interior (the Beqaa Valley) in spring (March–April, but mainly early March), with maximum daily peaks of 3300 birds. In autumn it is generally more abundant (mid-September–November, but mainly late October), between the coast and the 300m contour, the largest total being 6500 on 21 October 2003. Outside the above passage period one was noted at Qaraoun on 12 January 2003 and another 11 over Beirut on 4 December 2003 (Ramadan-Jaradi *et al* 2005). Both winter records together with a record of 28 along the Anti-Lebanon past Joub Jannine on 1 December 2005, and two at Aammiq between 4 and 20 February 2000 (A Rocha Lebanon 2006) suggest that the species may also be considered a scarce winter visitor too. First recorded in 1958 (Flach 1959).

Population size: The global population is estimated to number c.360,000-370,000 individuals (Wetlands International 2006), while national population estimates include: c.100-10,000 breeding pairs and c.50-1,000 individuals on migration

Population size: The global population is estimated to number c.230000-280000 individuals (Wetlands International 2006), while there are about 3600 individuals passing yearly throughout Lebanon. Night passage is not considered here (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

2.8.1 The migratory soaring and semi-soaring birds of significance

In order to develop a table (Table 11 below) of migratory soaring and semi-soaring birds in Lebanon, we removed the species that have no meaningful ecological value due to their accidentality in the country (7 vagrant species: Pink-backed Pelican, Barbary Falcon, Crested

Honey Buzzard, Black-winged Kite, White-tailed Eagle, Lammergeier and Verreaux's Eagle). We also removed the resident soaring species that are not represented by true migrants (2 breeding species: Golden Eagle and Bonelli's Eagle), and the species that are dispersive or partial migrants and recorded in the country (6 species: Dalmatian Pelican, Red Kite, Merlin, Cinereous Vulture, Rough-legged Buzzard and Demoiselle Crane). Consequently, the Table (11) shows the **33** soaring birds of Lebanon. They are:

Key

Abbreviations are used to indicate the species status, a question mark indicating uncertain status.
Lower case abbreviations (*eg* r, sb, s, wv and pm) indicate that the species is uncommon or rare at the relevant season.
Rows highlighted with dark grey represent species that are omitted from the list of migratory soaring and semi-soaring bird species.

R	**Resident with definite breeding records**	**FB**	**Formerly bred (no breeding records since 1987)**
SB	**Breeding summer visitor**	**v**	**Vagrant**
S	**Non-breeding summer visitor**	**e**	**Extinct in Lebanon**
WV	**Winter visitor**	**I**	**Introduced**
PM	**Passage migrant**		

The following abbreviations denote threatened species as per the BirdLife International for 2012.
(EN): Endangered. (VU): Vulnerable. (NT): Near Threatened.
SCS: Sea Crossing Species.

Section Two: Status of Birds in Lebanon (Species)

	Scientific name	English name	TABLE 11: All Soaring and Semi-soaring Birds of Lebanon						
			Status in Lebanon	IUCN Red List	Soaring		Semi-soaring	Migration Day (D)/ Night (N)	Remarks (SCS=Sea Crossing Species)
1	*Ciconia nigra*	Black Stork	PM		X			D	
2	*Ciconia ciconia*	Western White Stork	PM, s		X			D	
3	*Pelecanus onocrotalus*	Great White Pelican	PM				X	D	SCS
4	*Pelecanus rufescens*	Pink-backed Pelican	v				X	D	African/Arabian, Traded, Dispersal,
5	*Pelecanus crispus*	Dalmatian Pelican	pm	(VU)			X	D	Partial migrant
6	*Falco naumanni*	Lesser Kestrel	sb, pm, s	(VU)			X	Mainly D	SCS
7	*Falco tinnunculus*	Common Kestrel	R, PM, WV				X	D & N	SCS
8	*Falco vespertinus*	Red-footed Falcon	pm	(NT)			X	D & N	SCS
9	*Falco eleonorae*	Eleonora's Falcon	FB, pm				X	D & N	SCS
10	*Falco columbarius*	Merlin	pm, wv				X	D & N	Most mvts dep. & arriv. of WVs
11	*Falco subbuteo*	Eurasian Hobby	SB, PM, wv, s				X	D & N	SCS
12	*Falco biarmicus*	Lanner Falcon	pm, wv, s, ?sb				X	D & N	SCS
13	*Falco cherrug*	Saker Falcon	pm, wv	(VU)			X	D	SCS
14	*Falco peregrinus*	Peregrine Falcon	?FB, pm, wv				X	Mainly D	SCS
15	*Falco pelegrinoides*	Barbary Falcon	v						Dispersive
16	*Pandion haliaetus*	Osprey	pm				X	D & N	SCS. Journal of Raptor Research 40(2):156-158. 2006
17	*Pernis apivorus*	European Honey Buzzard	PM		X			D	SCS
18	*Pernis ptilorhynchus*	Crested Honey Buzzard	v		X			D	
19	*Elanus caeruleus*	Black-winged Kite	v						Dispersive
20	*Milvus milvus*	Red Kite	FB, pm	(NT)	X			Mainly D	SCS.
21	*Milvus migrans*	Black Kite	PM, WV		X			Mainly D	SCS
22	*Haliaeetus albicilla*	White-tailed Eagle	v				X	D & N	SCS.J.Field Ornithol.70(2):283-295
23	*Gypaetus barbatus*	Lammergeier	v		X				Wanderer
24	*Neophron percnopterus*	Egyptian Vulture	FB, PM	(EN)	X			D	SCS
25	*Gyps fulvus*	Eurasian Griffon Vulture	FB,pm,?w,?r,?b		X			D	
26	*Aegypius monachus*	Cinereous Vulture	pm	(NT)	X			D	Mainly dispersive

Section Two: Status of Birds in Lebanon (Species)

27	*Circaetus gallicus*	Short-toed Snake Eagle	sb, PM		X			D	SCS
28	*Circus aeruginosus*	Western Marsh Harrier	sb, PM, wv				X	Mainly D	SCS
29	*Circus cyaneus*	Hen Harrier	pm, wv				X	Mainly D	SCS
30	*Circus macrourus*	Pallid Harrier	pm, wv	(NT)			X	Mainly D	SCS
31	*Circus pygargus*	Montagu's Harrier	pm				X	Mainly D	SCS
32	*Accipiter brevipes*	Levant Sparrowhawk	FB, PM		X			Mainly D	SCS
33	*Accipiter nisus*	Eurasian Sparrowhawk	?FB, PM, wv		X			Mainly D	SCS
34	*Accipiter gentilis*	Northern Goshawk	pm, wv		X			D	
35	*Buteo b. buteo*	Common Buzzard	PM, WV		X			D	
36	*Buteo b. vulpinus*	Steppe Buzzard	PM, WV		X			D	Considered *B. buteo*
37	*Buteo rufinus*	Long-legged Buzzard	R, PM, wv		X			D	
38	*Buteo lagopus*	Rough-legged Buzzard	pm		X			D	Rather accidental
39	*Aquila pomarina*	Lesser Spotted Eagle	PM, wv, s		X			D	
40	*Aquila clanga*	Greater Spotted Eagle	pm,?wv	(VU)	X			D	
41	*Aquila nipalensis*	Steppe Eagle	PM		X			D	
42	*Aquila heliaca*	Eastern Imperial Eagle	?FB, pm, ?wv	(VU)	X			D	
43	*Aquila chrysaetos*	Golden Eagle	FB, pm, ?r		X			d	Rather dispersal
44	*Aquila verreauxii*	Verreaux's Eagle	v		X				Dispersal?
45	*Aquila pennata*	Booted Eagle	sb, pm, ?wv		X			D	
46	*Aquila fasciatus*	Bonelli's Eagle	R, pm, wv		X				Rather dispersal
47	*Anthropoides virgo*	Demoiselle Crane	pm				X	D & N	
48	*Grus grus*	Common Crane	PM, wv				X	D & N	

In the Table (11) above, 9 species are threatened as per the 2012 IUCN Redlist. These species merit high conservation and protection effort. The most threatened species is the Endangered Egyptian Vulture that is followed by 4 Vulnerable species (Lesser Kestrel, Saker Falcon, Lesser Spotted Eagle and Eastern Imperial Eagle) and 2 Near Threatened species (Red-footed Falcon and Pallid Harrier) respectively.

2.8.2 Prioritazation of the significant soaring and semi-soaring migratory species

By ranking the significant soaring species in terms of priority (threatened, rare, noteworthy, etc.), we obtain a Table (Table12) in which the bird species are ranked from the most threatened to less threatened and from rarest to commonest.

Table (12): Ranked species in terms of priority

	Scientific name	English name	Status in Lebanon	Degree of threat		
1	*Neophron percnopterus*	Egyptian Vulture	FB, pm	(EN)	Most threatened	None of the bird species of Lebanon is endemic None of the selected soaring migratory bird species is invasive
2	*Falco cherrug*	Saker Falcon	pm, wv	(EN)		
3	*Aquila clanga*	Greater Spotted Eagle	pm,?wv	(VU)		
4	*Aquila heliaca*	Eastern Imperial Eagle	?FB, pm, ?wv	(VU)		
5	*Circus macrourus*	Pallid Harrier	pm, wv	(NT)	Less threatened	
6	*Falco vespertinus*	Red-footed Falcon	pm	(NT)		
7	*Gyps fulvus*	Eurasian Griffon Vulture	FB,pm,?w,?r,?b		Rarest	
8	*Aquila nipalensis*	Steppe Eagle	PM			
9	*Ciconia nigra*	Black Stork	PM			
10	*Milvus migrans*	Black Kite	PM, WV			
11	*Buteo rufinus*	Long-legged Buzzard	R, PM, wv			
12	*Buteo b. buteo*	Common Buzzard	PM, WV			
13	*Buteo b. vulpinus*	Steppe Buzzard	PM, WV		Commonest	
14	*Circaetus gallicus*	Short-toed Snake Eagle	sb, PM			
15	*Accipiter brevipes*	Levant Sparrowhawk	FB, PM			
16	*Grus grus*	Common Crane	PM, wv			
17	*Pelecanus onocrotalus*	Great White Pelican	PM			
18	*Ciconia ciconia*	White Stork	PM			
19	*Aquila pomarina*	Lesser Spotted Eagle	PM, wv, s			
20	*Pernis apivorus*	European Honey Buzzard	PM			

White Pelican juvenile

White Storks

Lesser-Spotted-Eagle

Steppe Buzzard

Steppe Eagle

Common Buzzard

Section Two: Status of Birds in Lebanon (Species)

2.9 Identified nature and importance of threats on migratory soaring and semi-soaring bird species in Lebanon and proposed measures for their conservation

Table (13) Identified nature and importance of threats on these species in Lebanon

	English name	Trend	Main Threats		Proposed conservation measures in Lebanon	Degree of threat
1	Egyptian Vulture	-recent rapid decline (poisoning) in India by 90%. -severe long-term declines in Europe (>50% over the last three generations [42 years]) -ongoing declines through much of the rest of its African range	-hunting -lead poisoning -direct poisoning -electrocution -antibiotic residues in carcasses -diclofenac drug use -Non steroidal anti-inflamatory drugs		-Research the cause of ceasing from nesting -Protect from illegal hunting - campaigns against illegal poison-baits - lobby for effective impact assessments to be carried out prior to construction of wind turbines where applicable	EN
2	Saker Falcon	-All available data suggests that declines have been less severe than was previously suspected. - the declines in Middle East over the 19 year period 1991-2010 equate to 32% (based on median estimates), with a minimum-maximum of 29-62%	- unsustainable capture for the falconry trade. - habitat degradation - impacts of agrochemicals. -Hunting		-Red-listed species in many range states, particularly in the western parts of its range. It is listed on CITES Appendix II, and in 2002 CITES imposed a trade ban on UAE, strongly affecting the unregulated market there (Fox, 2002) -Access CITES and enforce it. - red-listed species in many range states, particularly in the western parts of its range. It is listed on CITES Appendix II, and in 2002 CITES imposed a trade ban on UAE, strongly affecting the unregulated market there. -Control illegal hunting.	EN
3	Greater Spotted Eagle	This species has a small population which appears to be declining owing to extensive habitat loss and persistent persecution. It is therefore listed as Vulnerable.	-Habitat loss & degradation -Hunting -hybridisation between this species and Lesser Spotted Eagle *Aquila pomarina* -urbanisation and changes in agriculture. -Disturbance -deliberate and accidental poisoning -persecution -electrocution		-Access CITES -Access CMS -Survey range and population -Prevent illegal shooting -prevent lead poisoning -Raise awareness	VU
4	Eastern Imperial Eagle	Likely to be undergoing continuing declines	-persecution -electrocution -Habitat loss & degradation -shooting, -poisoning -illegal trade		-Access CITES -Access CMS -Survey range and population -Prevent illegal shooting -prevent lead poisoning -Raise awareness -prevent persecution in migratory routes -habitat management -Raise public awareness -involve stakeholders in conservation activities	VU

Section Two: Status of Birds in Lebanon (Species)

5	Pallid Harrier	Probably experiencing a moderately rapid population decline overall, and consequently it is categorized as Near Threatened. Decline in Europe is 30% per 3 generations (18 years)	-habitat change due to burning, cutting, overgrazing, -pesticides, rodenticides and other toxic chemicals.		-Access CITES -Access CMS -Raise public awareness -Survey range and population -Prevent illegal shooting -Enforce ban on use of harmful pesticides	NT
6	Red-footed Falcon	This species is listed as Near Threatened because it is experiencing a moderately rapid population decline.	-Habitat loss & degradation -Agriculture expansion -Overgrazing -Crow poisoning -Opportunistic hunting		-Access CITES -Access CMS -Persecution and awareness campaigns -Promote organic farming	NT
7	Eurasian Griffon Vulture	The population trend appears to be increasing, and hence the species does not approach the thresholds for Vulnerable under the population trend criterion (>30% decline over ten years or three generations).	-persecution, -shooting, -poisoning and loss of suitable food owing to changing farming practices		-Leave dead animals in the countryside for vultures and other raptors like eagles or kites, -Stop illegal hunting and poisoning,	LC
8	Steppe Eagle	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion. Populations in European Russia and Turkey are in decline (BirdLife International 2004), but these constitute <5% of the global population.	-Persecution -Electrocution -Habitat destruction		-Power lines must be made safe for birds. -Illegal trade and persecution must be stopped. -More research about the current population size is also needed.	LC
9	Black Stork	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion.	-agricultural intensification, -desertification -pollution caused by the concentration of pesticides and other chemicals. - occasionally killed by collisions with power-lines and overhead cables - -hunting in southern Europe and tropical Asia (especially during migration) have caused population declines		-Combat desertification -Ban illegal pesticide use -Power lines must be made safe for birds -Enforce hunting Law	LC
10	Black Kite	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion.	-Electrocution -Poisoning -River's pollution -Wetlands destruction -Poisoned locusts in Africa		-Power lines must be made safe for birds -Ban illegal pesticide use -Enforce hunting Law -Protect wetlands from degradation	

Section Two: Status of Birds in Lebanon (Species)

11	Long-legged Buzzard	Stable	-habitat destruction through intensification of agriculture in some areas. -Intensive agriculture may result in a reduction of prey. -Electrocution.		-Protect habitat -Power lines must be made safe for birds -Ban illegal pesticide use -Enforce hunting Law	
12	Common Buzzard	-The population is suspected to be increasing based on expanding populations in Britain (Ferguson-Lees and Christie 2001) and in Europe. -It copes pretty well with modern agriculture	-persecution -poisoning with baits due to being regular carrion eater. -Disturbance during the breeding season by forest operations, hikers or walkers can cause breeding failure		-An agriculture that does not use pesticides could benefit Common Buzzards (and many other bird species). -Fallow land, that benefits the prey of the Common Buzzard is also important for the conservation of other raptors, -Perches (for example, made of wood) or planted bushes in meadows can increase the habitat quality for Common Buzzards as they like those perches for hunting mice and other prey.	LC
13	Steppe Buzzard	Stable	Not threatened		-Power lines must be made safe for birds -Ban illegal pesticide use -Enforce hunting Law	
14	Short-toed Snake Eagle	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion.	-Habitat loss (mostly due to intensive agricultural practices) -reduction in the availability of snakes have caused a decline in some areas. Given it's high specialization in snakes, the Short-toed Eagle cannot live in places where snakes are gone. Many snake species have declined due to persecution and habitat destruction. -Illegal hunting is also a problem in some places, especially during migration [Mebs & Schmidt 2006].		-Illegal hunting must be stopped. -The conservation of suitable habitat with enough snakes is important. -Snakes themselves must be protected from (illegal) killing and habitat destruction. -A healthy population of snakes is important for the conservation of the Short-toed Eagle in Europe.	LC
15	Levant Sparrowhawk	The population trend appears to be stable	Not much is known about the threats on this secretive raptor. Habitat destruction and human persecution along the migration route and in the wintering areas are a known threat [Mebs & Schmidt 2006].		-Killing of Levant Sparrowhawks in the wintering quarters and along the migration route must be stopped. -More research is needed to learn more about the population size in Europe, it's population ecology and threats in the breeding areas as well as during migration and in the wintering quarters.	LC
16	Common Crane	Stable or unknown trend	-Threatened by habitat loss and degradation through dam construction, urbanisation and agricultural expansion -collision with wind turbines -Hunting -Pesticide poisoning		-Access CMS -Access CITES -Control illegal hunting and enforce hunting law -Habitat restoration -Ban use of harmful pesticides to cranes and other birds	LC
17	Great White Pelican	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion.	-habitat destruction through drainage -divergence of rivers for irrigation - climatic fluctuations that have a strong influence over water-levels in wetlands -persecution -hunting for sport, and hunting for food -drowned with fish net -collision with wind turbines or power electric lines		-Erecting markers on electricity powerlines or (preferably) burying the powerlines -Installing a series of horizontal strings spaced at intervals over aquaculture ponds is also a successful measure in preventing the species from depredating farmed fish' -Access CMS -Access CITES -Control illegal hunting and enforce hunting law -Ban use of harmful pesticides to pelicans and other birds	LC

Section Two: Status of Birds in Lebanon (Species)

18	White Stork	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion. The overall population trend is increasing.	-habitat alteration including the drainage of wet meadows, pumping stations and river canalization and schemes, -conversion of foraging areas -development, industrialization and intensification of agriculture -during the winter in Africa there may be high rates of mortality due to changes in feeding conditions owing to drought, desertification and the control of locust populations by insecticides, -poisoned baits put out to catch large carnivores, -electrocution -the species is hunted for food and sport, mainly on migration and in its winter quarters.		-Access CMS -Access CITES -Control illegal hunting and enforce hunting law -Ban use of harmful pesticides to pelicans and other birds -Erecting markers on electricity powerlines or (preferably) burying the powerlines -An agriculture that does not use pesticides could be of benefit -Stop the use of poisoned baits to kill large carnivores.	LC
19	Lesser Spotted Eagle	This species has an extremely large range, and hence does not approach the thresholds for Vulnerable under the range size criterion or the population trend criterion.	-collisions and electrocutions -unlawful killing such as poisoning and especially shooting - Illegal acts of poaching		-Access CMS -Access CITES -An agriculture that does not use pesticides could benefit Lesser Spotted Eagle (and many other bird species). -Fallow land, that benefits the prey of the Lesser Spotted Eagle is also important for the conservation of other raptors, -Control illegal hunting and enforce hunting law	LC
20	European Honey Buzzard	The species is suspected to be stable in the absence of evidence for any declines or substantial threats	-sensitive to habitat disturbance, -exploited lands for agriculture, forestry, recreation, and urbanisation, -Illegal hunting also poses a problem in some parts of southern Europe and Middle East during the migration, with juveniles.		-Access CMS -Access CITES -Ban use of harmful pesticides -Enforce hunting law -Erecting markers on electricity power-lines or (preferably) burying the power-lines	LC
21	Lesser Kestrel	The total population is likely to have declined rapidly, which qualifies the species as Vulnerable. It was predicted that these declines will continue but the opposite happened	-Habitat loss & degradation -Hunting -agricultural intensification - afforestation and urbanization -pesticide use - abandonment or restoration of old buildings		-Access CITES -Access CMS -Conduct research on species and management -Control illegal hunting -control pesticide use.	LC

2.10 Noteworthiness of the species

1. The Egyptian Vulture is a former breeder in Lebanon and it scavenges carrion such as road kill to recycle the dead animal matter from the landscape.
2. The Saker Falcon is among the very few raptors that are physically adapted to hunting close to the ground in open terrain, combining rapid acceleration with high maneuverability, thus specializing on mid-sized diurnal terrestrial rodents. http://www.birdlife.org/datazone/speciesfactsheet.php?id=3619
3. The Kestrel is a true falcon, but it is unusual in its flying style & prey. Like most birds of prey, its preferred method of finding prey is still-hunting, when hunting in flight it is unique in being the only bird of prey to be able to hover. Kestrels "hover" facing into the wind, so they are moving through the air, but staying stationary with respect to the ground, this is called "wind-hovering". The oncoming wind gives sufficient lift to remain stationary with respect to the ground, the tail is spread, supplementing the air-catching effect of the wings, the alulas (feathers at the front bend of the wing) are raised & wingtip feathers separated to reduce turbulence which would cause stalling at such effectively low speeds. They are also able to dip their head downwards, much further than other falcons, enabling them to spot their prey from a much more upright position when hovering. They have evolved such that they can keep their head still, while flapping their wings fast, high-speed video photography has shown that the head will move as little as 1/4" during wind-hovering. Hovering in such a manner uses a lot of energy, but studies have shown that they catch around 10-15 times as much food as when searching in flight or still-hunting. Under strong wind conditions, Kestrels can also stay poised in the air, with their wings wide open & still, referred to as "kiting". (http://www.raptorfoundation.org.uk/kestrel.html)
4. The Greater Spotted Eagle is the only vulnerable eagle that includes among its key threats a phenomenon of hybridization with another raptor species, the Lesser Spotted Eagle, *Aquila pomarina* (Dombrovski, 2002). http://www.birdlife.org/datazone/speciesfactsheet.php?id=3531
5. The Imperial Eagle adults of European population are sedentary whereas both adults and immatures of the eastern populations are migratory.
6. The Pallid Harrier feeds on small rodents like voles and mice [GRIN 2010]. Bird prey probably more important than formerly thought when rodents are scarce. Important bird prey are young larks, pippits, wheaters and wagtails [Mebs & Schmidt 2006]. During winter, locuts can be an important food source.
7. The Red-footed Falcon is usually colonial, insectivorous and breeding in disused nests of other birds (most commonly *C. frugilegus*), but can also be solitary.

8. The Griffon Vulture scavenges carrion to recycle the dead animal matter from the landscape.
9. The Steppe Eagle is the only one of the genus Aquila in which the yellow gape flange extends to the rear of the eye.
10. The Black Stork is an indicator of weather. It cannot utter cries but it can produce sounds by clapping its upper and lower bills.
11. The Black Kites are attracted to smoke and fires, where they seek escaping prey. This behavior has led to Australian native beliefs that kites spread fires by picking up burning twigs and dropping them on dry grass.
12. The long-legged Buzzard's younger birds disperse north of breeding grounds.
13. The Common Buzzard's usual tactic is to perch motionless on a branch of a large tree, its markings being excellent camouflage, rendering it almost invisible. It is a patient bird, quite content to sit for hours at a time until a young rabbit, a rat or a mouse chances to pass beneath it. Then it will swoop down on to its unsuspecting prey.
14. The Steppe Buzzard feeds on voles as the most important prey, and other small rodents, birds, frogs, and insects are also taken. Steppe Buzzards also feed on carrion and invertebrates.
15. The Short-toed Eagle has snakes as the most important prey. Mostly hunts nonpoisonous snakes from the family *Colubridae*, for example the Grass Snake *Natrix natrix* , but is also capable of killing venomous snakes from the family *Viperidae* [Mebs & Schmidt 2006].

    Contrary to popular belief, the Short-toed Eagle is not immune against poison. Since it depends on snakes, it does not occur in northern latitudes where there are no or only few snakes.
16. The Levant Sparrow hawk is a small raptor with short broad wings and a longish tail, both are adaptations to maneuvering through trees
17. The Common Crane has the habit of flying in flocks in 'V' formation and making trumpeting calls which may cause confusion with geese but the long trailing legs soon scotch that idea. The Common Crane is the only semi-soaring non raptor in Lebanon which reveals its nocturnal and diurnal passage through its calls.
18. The Great White Pelican diet consists mainly of fish, where each pelican needs about 1.4 kg of fish every day. It eats chicks of other birds, crustaceans, tadpoles and even turtles. During periods of starvation, pelicans also eat seagulls and ducklings. The gulls are held under water and drowned before being eaten headfirst. Pelicans will also rob other birds of their prey.
19. The White Stork is also an indicator of weather. It cannot utter cries but it can produce sounds by clapping its upper and lower bills.

20. The Lesser Spotted Eagle, as usual for eagles and only in breeding seasons with very abundant prey does more than one young fledge however: the female starts incubating when the first egg has been laid, and thus the first young to hatch usually outgrows its clutch mate(s) and will kill and even eat them sooner or later.
21. The Honey Buzzard involves a characteristic wing quivering which looks as if the bird is clapping its wings together above its head. This starts with normal soaring to a considerable height, followed by a steep plunge to provide the momentum for a sudden upward swoop. At the top of this swoop, the bird stalls with its wings quivering above its back. This display is certainly performed by males but possibly not by females.

2.11 Periods and peaks of passage of migratory soaring and semi-soaring birds in Lebanon

The periods and peaks of passage of migratory soaring and semi-soaring birds are charted in table (14) below, where pink represents period of passage and green visualizes period of peak passage.

Table 14: The periods and peaks of passage of migratory soaring and semi-soaring birds

	Scientific name	Mar	April	May	June	Jul	Aug	Sept	Oct	Nov
1	*Neophron percnopterus*									
2	*Falco cherrug*									
3	*Falco naumanni*									
4	*Aquila clanga*									
5	*Aquila heliaca*									
6	*Circus macrourus*									
7	*Falco vespertinus*									
8	*Gyps fulvus*									
9	*Aquila nipalensis*									
10	*Ciconia nigra*									
11	*Milvus migrans*									
12	*Buteo rufinus*									
13	*Buteo b. buteo*									
14	*Buteo b. vulpinus*									
15	*Circaetus gallicus*									
16	*Accipiter brevipes*									
17	*Grus grus*									
18	*Pelecanus onocrotalus*									
19	*Ciconia ciconia*									
20	*Aquila pomarina*									
21	*Pernis apivorus*									

In addition to the table (14) we present as an Annex of the present chapter the maps 1,2, 3, 4, 5 and 6 that show the GPS points of contacts with the following bird groups: falcons, hawks, harriers, buzzards, eagles and vultures. These points will certainly assist in tracing the modern flyways of the migratory soaring and semi-soaring birds in Lebanon.

2.12 Detailed status of the game birds in Lebanon

The members of the Higher Hunting Council are unanimous to allow hunting of the following species:

1. *Coturnix coturnix* Common Quail sb, PM, wv

Brief description: The species is a small (17 cm) rotund bird, essentially streaked brown with a white eyestripe, and, in the male, a white chin. As befits its migratory nature, it has long wings, unlike the typically short-winged game birds.

Tips for identification: compared to Corncrake it has smaller size and much shorter legs.

Status and national distribution: Uncommon and localised migrant breeder in Beqaa, on Palm Islands and elsewhere. Very common passage migrant over most of the country from mid-February–late May and early August–late November, with peaks in March and September. Few overwinter in December–February, mainly in the Beqaa Valley. First mentioned by Tristram (1864) and first breeding record was at the Beqaa (Aharoni (1931) (see Ramadan-Jaradi et al., 2008).

Population size: The global population is estimated to 35.000.000 - 300.000.000 individuals (BirdLife International, 2012). In Lebanon, the breeding population is estimated to c.600 pairs (areas to South Litani River excluded) and the passing population is roughly estimated to 3.000.000, mainly based on netted and shot birds gathered by calling machines (G. Ramadan-Jaradi, *in Litt.*).

Current IUCN Red List category: LC

2. *Anas platyrhynchos* Mallard PM, WV, s, sb

Brief description: The Mallard is 50–65 cm long, has a wingspan of 81–98 cm and weighs 0.72–1.58 kg.The male birds (drakes) have a glossy green head and are grey on wings and belly, while the females have mainly brown speckled plumage. Mallards are gregarious. This species is the ancestor of most breeds of domestic ducks.

Tips for identification: Drakes have black tail-curl, dark head, neck breast and under tail. Female and male have blue-violet wing mirror (speculum) with white border. Females have orange beak and legs.

Status and national distribution: First national breeding reported from Aammiq in 2005 (Ramadan-Jaradi 2006, Colin Conroy pers comm) followed also by breeding success in 2006-2007 (Colin Conroy pers comm). Previously, a nest with eggs, deserted probably due to hunting pressure at Aammiq in spring 1974, was believed to be of this species (Georges Tohmé pers comm). Widespread in large numbers, August–early April at Aammiq, Anjar, Bishmezzine, Tanayel, Qaraoun and the Litani River; with smaller numbers on coast, islands and other inland waters. First recorded by Van Dyck in 1873-1878 (Kumerloeve 1960a, 1962) (see Ramadan-Jaradi et al., 2008).

Population size: The global population is estimated to 19.000.000 individuals (BirdLife International, 2012)) while the average number of the passing birds counted in Lebanon is 8.440 individuals in the main wetlands of the country (G. Ramadan-Jaradi, *in Litt.*). The wintering population is about 5000 individuals while breeding population in 2012 was limited to one pair (photographed) and 6 ducklings (G. Ramadan-Jaradi, *in Litt.*).

Current IUCN Red List category: LC

3. *Anas querquedula* Garganey PM, sb

Brief description: This is a duck with 36 – 41 cm long and 60 – 70 cm wingspan. The adult male is unmistakable, with its brown head and breast with a broad white crescent over the eye. The rest of the plumage is grey, with loose grey scapular feathers It has a grey bill and legs. In flight it shows a pale blue speculum with a white border. When swimming it will show prominent white edges on its tertials.

Tips for identification: Female differs from female Teal by stronger face markings and more frequent head shaking when bubbling. Male and female have pale blue speculum with a white border.

Status and national distribution: It was reported to have bred at Aammiq in spring 1999 (Beale & Sprenger 2001) and a female also sighted there with ten ducklings on 31 May and with eight on 10 June 2005 (Colin Conroy pers comm). Widespread and common passage migrant through most wetlands in early February–April, but much rarer in August–early November. On Palm Islands, the Garganey has been recorded passage until 17 May (Ramadan-Jaradi & Ramadan-Jaradi 2001). First recorded by Tristram (1864) and first

breeding noted at Aammiq in 1999 (Beale & Sprenger 2001) (see Ramadan-Jaradi et al., 2008) (see Ramadan-Jaradi et al., 2008).

Population size: The global population is estimated to number c.2,600,000-2,800,000 individuals (Wetlands International 2006), whilst in Lebanon, an average of 8500 individuals per year is passing on migration, based on a count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

4. *Anas crecca* Eurasian Teal FB, PM, WV

Brief description: The Eurasian Teal is the smallest extant dabbling duck at 34–43 cm length and with an average weight of 360 g in drake (males) and 340 g in hens (females). The wingspan is 53–59 cm.
From a distance, the drakes in nuptial plumage appear grey, with a dark head, a yellowish behind, and a white stripe running along the flanks. Their head and upper neck is chestnut, with a wide and iridescent dark green patch of half-moon- or teardrop-shape that starts immediately before the eye and arcs to the upper hindneck.

Tips for identification: In both sexes, **t**he speculum feathers are iridescent blackish-green with white tips.

Status and national distribution: Widespread and common passage migrant in March–early May and mid-August–late November, and winter visitor from December–March in Beqaa wetlands; less common further west, along coast and on Palm Islands (Ramadan-Jaradi & Ramadan-Jaradi 1999, 2001). Recently, a pair was seen at Aammiq until at least 28 May 2006 and 31 May 2007 (Colin Conroy pers comm) but without breeding evidence in either year. First reported in 1877 by Van Dyck (Kumerloeve 1962) and first recorded as breeding by Festa (1894) (see Ramadan-Jaradi et al., 2008).

Population size: The global population is estimated to c.6,400,000 individuals, while national population estimates include c.11.300 individuals on migration and wintering, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

5. *Scolopax rusticola* Eurasian Woodcock PM, WV

Brief description: Adults are 33–38 centimetres in length, including the 6–8 centimetres long straight bill, and have a 55–65 centimetres wingspan. The Eurasian Woodcock has cryptic camouflage to suit its woodland habitat, with intricately patterned reddish-brown upperparts and buff underparts. The head is barred with black, not striped like that of its close relatives, the snipe. It has large eyes located high on the sides of its head, giving it 360-degree monocular vision.
The wings are rounded and the base of the bill is flesh-coloured with a dark tip. The legs vary from grey to pinkish. The species is sexually dimorphic, with the male much larger than the female, although the sexes cannot be separated in the field.

Tips for identification: Head with barred thick lines, without obvious white marking on upper wings, dark under wings and tail terminated with white (not only on the sides).

Status and national distribution: Not uncommon and regular passage migrant and winter visitor in moderate numbers across most of the country, mainly in mid-October–mid-April, chiefly in the Beqaa area. Reported from Aammiq, Ain Zhalta, Beirut, Beirut River Valley, Beqaa Valley, Bzebdine, Byblos, Cheikh Zennad, Damour Valley, Ehden, Jabal Barouk, Jabal Rihane, Jezzine and Tyre Coast. First recorded by Carruthers in 1904 (Kumerloeve 1962).

Population size: Ferguson-Lees and Christie (2001) placed the global population (defined as the number of adults and immatures at the start of the breeding season) in the range of 10,000 to 100,000 individuals, while remarking that the total population seems unlikely to exceed the upper tens of thousands; while national records include about 3000 individuals on migration/ year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

6. *Columba palumbus* Common Woodpigeon ?FB, PM, WV

Brief description: Adults are 41 centimetres in length, and have a 78 centimetres wingspan. The Common Woodpigeon is a basically grey bird, with a pinkish breast. It has large eyes located high on the sides of its head, giving it 360-degree monocular vision. The wings are rounded and the base of the bill is flesh-coloured with a dark tip. The legs vary from grey to pinkish. The species is sexually dimorphic, with the male much larger than the female, although the sexes cannot be separated in the field.

Tips for identification: The Common Wood Pigeon may be identified at once by its larger size and the white on its neck and wing.

Status and national distribution: Perhaps formerly bred but no proof (Kumerloeve 1968). Not uncommon passage migrant in March and late September-November, and an abundant but irregular winter visitor in late November–late February, with invasion peaks up to 3000 in December, principally at Bentael (Ramadan-Jaradi & Ramadan-Jaradi 1999, 2002). Sighted at Aramta, Arz el Shouf, Bentael, Beqaa Valley, Damour, Ehden, Kfarhouneh and Nahr Ibrahim. First recorded in 1958 (Flach 1959).

Population size: BirdLife International placed the global population in the range of 30-70 million individuals; while national observations include about 4500 individuals on migration and during winter per year, based on average count during 2009-2012 (G. Ramadan-Jaradi, *unpubl.*).

Current IUCN Red List category: LC

7. *Melanocorypha calandra* Calandra Lark R, PM, wv

Brief description: This is a large, robust lark, 17.5–20 cm long, average weight is 60 grams and wingspan 39 cm. It is an undistinguished-looking species on the ground, mainly streaked greyish-brown above and white below, and with large black patches on the breast sides. It has a white supercilium.

Tips for identification: Black semi-collar with white superclium, outer tail and trailing edges. Dark underwing.

Status and national distribution: Local and not uncommon breeding resident (eggs from early March) in relatively moderate numbers in the Beqaa Valley, principally in cultivated fields, but also on low hillsides of the Lebanon and Anti-Lebanon ranges bordering the valley. Abundant on passage in late September–late November and, less commonly, mid-February–mid-April through the Beqaa and Marjaayoun valleys, low hills of south Lebanon, and on Palm Islands (Ramadan-Jaradi 2001). Small numbers overwinter in December–February in the Beqaa, particulary in the Aammiq area. First recorded and first noted breeding at foot of Hermon by Tristram (1865-68).

Population size: The global population is estimated to c.61,200,000 – 288,000,000 individuals (BirdLife International, 2012).

Current IUCN Red List category: LC

8. *Turdus philomelos* Song Thrush PM, wv

Brief description: This is a medium sized robust thrush, with 23 cm length, 83 grams average weight and 34 cm wingspan. The sexes are similar, with plain brown backs and neatly black-spotted cream or yellow-buff underparts, becoming paler on the belly. The underwing is warm yellow, the bill is yellowish and the legs and feet are pink.

Tips for identification: Generally, spots on underbody don't completely cover lower belly and they are similar to upwarded heads of arrow. Tinged with pale reddish on under wing.

Status and national distribution: Very common passage migrant in early October–late November and mid-February–early May and an uncommon to scarce winter visitor late November–late February. Recorded in orchards, olive groves, open cedar groves, cultivation, maquis, isolated trees and around Aammiq Swamp. Rare on the coast and islands. Sighted at Aammiq, Assi, Ain Zhalta, Anjar, Arz el Shouf, Beirut, Byblos, Chwayya, Damour, Deir el Ahmar, Deir el Qamar, Doueir, Fneideq, Jabal Barouk, Jabal Rihane, Nahr Ibrahim, Palm Islands, Qammouha, Ryaq, Sannine, Tyre, Yarzeh and Zahleh. First recorded by Van Dyck in 1873-1878 (Kumerloeve 1960a, 1962).

Population size: The global population is estimated to c.150.000.000 individuals (BirdLife International, 2012).

Current IUCN Red List category: LC

9. *Turdus viscivorus* Mistle Thrush sb, pm, WV

Brief description: The Mistle Thrush is a large thrush. With 27-30 cm long it is distinctly larger than the similar Song Thrush and larger even than the Common Blackbird. The species has a wingspan of 42 to 50 cm. Body mass can vary from 93 to 167 g with an average of around 115 g. The sexes are similar, with plain greyish brown backs and neatly round-spotted underparts. The breast has much less buff than the Song Thrush.

Tips for identification: Generally, spots on underparts are abundant and rounded in shape. Underwing is whitish pale.

Status and national distribution: Very scarce and local migrant breeder to remote areas of the north, mainly in wooded parkland of fir at Qammouha, Cilician oak *Quercus cilicica* at Fneideq and cedar at Karm el Mohr, near Ehden. Uncommon to scarce on passage and

common in winter from late October–late March in open montane woodland and river valleys. Uncommon winterer in the Beqaa, including Aammiq. First recorded in 1872 by Van Dyck (Kumerloeve 1962) and first breeding noted at Ainata North by Meinertzhagen (1935).

Population size: The global population is estimated to c.16.000.000 individuals (BirdLife International, 2012).

Current IUCN Red List category: LC

Other species (Chukar partridge, Chaffinch, etc.) may be considered game birds also.

2.13 Conclusion

The present paper revealed some gaps in relation to the uncertain status of certain species that are in need of further verification research. This is the case of the Lanner Falcon, Peregrine Falcon, Eurasian Griffon Vulture, Eurasian Sparrowhawk, Greater Spotted Eagle, Eastern Imperial Eagle, Golden Eagle and Booted Eagle.

Furthermore, additional field experiments are needed in which raptor and possibly also other non-raptor soaring bird numbers are manipulated on a sufficiently large spatial and temporal scale to cover their study during the spring migration period as it was already done in the autumn period. In other words, additional studies are needed to identify the spring routes of soaring migrants.

Apparently, important flyways have not been well studied, however, and the relative numbers of raptors using them in spring and in autumn, the origin of the migrants, and their ultimate destinations, are all largely unknown.

It would be of high significance to study the impact of Climate Change on the routes of migratory soaring birds and the underlying Important Bird Areas that are known to generate good thermals to the migratory soaring birds.

Another aspect that has been neglected in Lebanon is the establishment of road counts of birds. A seasonal event promoting bird watching and increasing awareness of the public.

There is a need to develop 3 action plans for:

- The breeding soaring bird species in Lebanon (Lesser Kestrel, Common Kestrel,

Eurasian Hobby, Short-toed Snake Eagle, Western Marsh Harrier, Long-legged Buzzard, Booted Eagle and Bonelli's Eagle).
- The wintering soaring bird species in Lebanon (Hen Harrier, Pallid Harrier, Eurasian Sparrowhawk, Northern Goshawk, Common Buzzard, Steppe Buzzard, Long-legged Buzzard, Lesser Spotted Eagle, Bonelli's Eagle and Common Crane).
- The migratory soaring bird species in Lebanon (all the migratory species indicated in Table 7).

Other aspects that have been little studied are the role of predation by the non-breeding part of the raptor population, or floaters, on the breeding success and survival of gamebirds.

It is highly important to consider monitoring gamebirds on yearly basis as a source of information to assist relevant authorities in fixing the legal hours and the bag limit for hunting legal gamebirds.

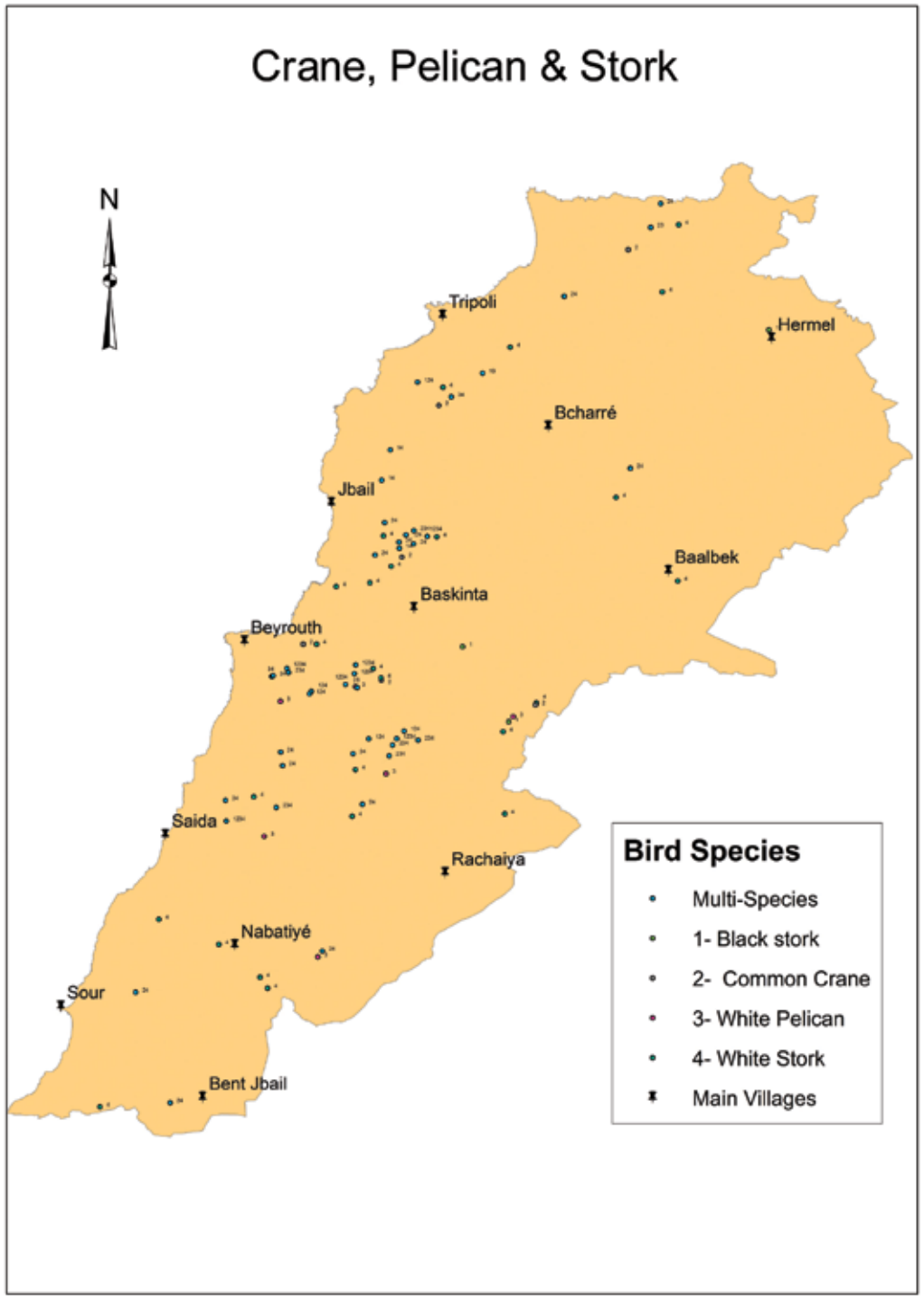
Finally there is a need for further research on practical methods to control raptor predation on gamebirds and thus reduce conflict between raptor conservation and game bird management.

2.14 Proposed Action Plan for the selected Migratory Soaring Species

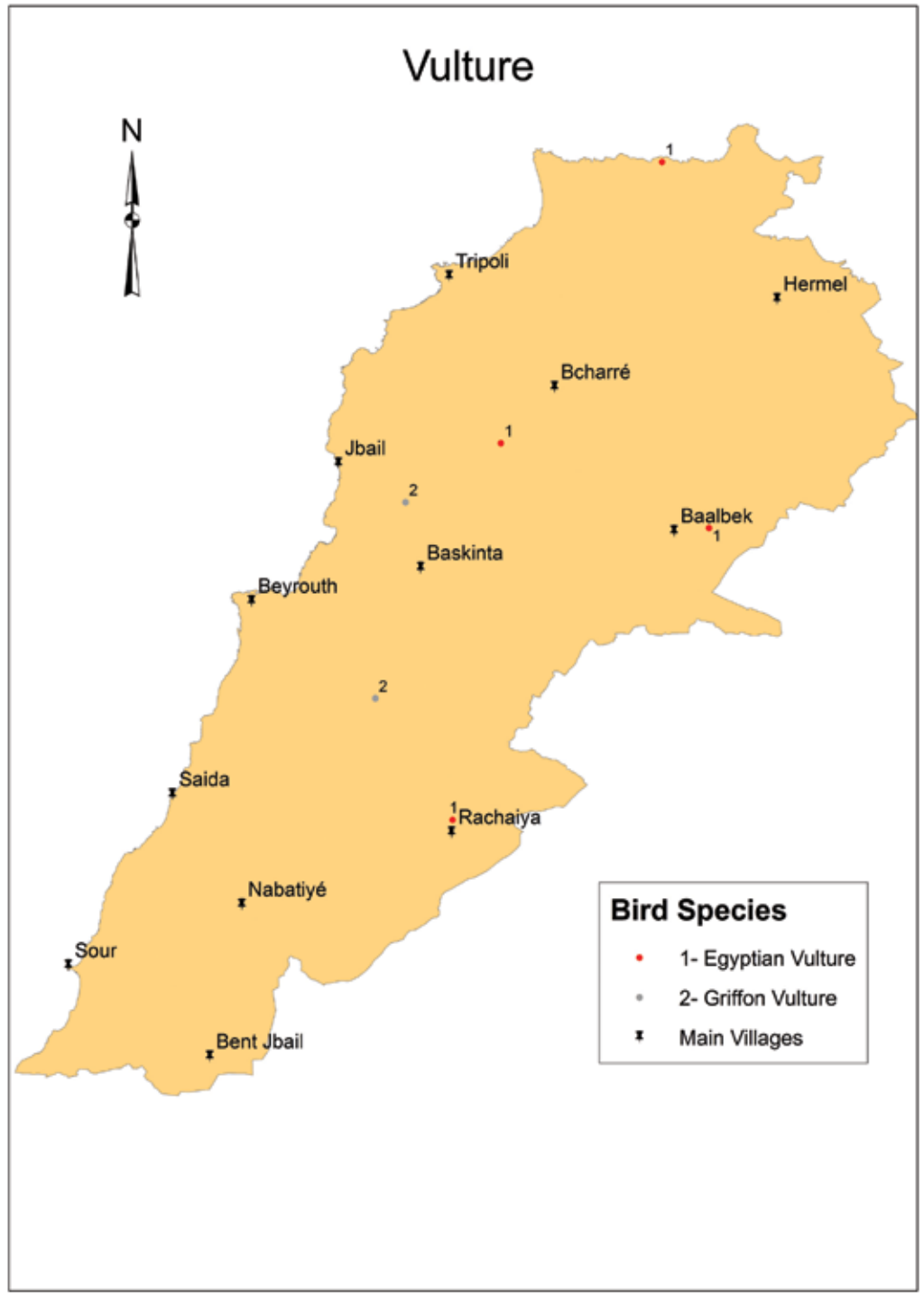
An Action Plan should be developed to address some of the threats facing the selected migratory soaring bird species in Lebanon: the misuse of poisons and pesticides; electrocution and collisions with overhead lines; habitat degradation; persecution and illegal harvesting or hunting. It would be ideal if the Action Plan provides a national overview of the conservation status of the selected birds occurring in Lebanon and offers a comprehensive tool for scientists, bird enthusiasts and researchers to recommend appropriate additional actions to minimize the threats. Habitats or areas of particular importance for bird conservation including key areas for threatened species need to be listed. The Action Plan will not need to identify processes that threaten birds as these are indicated under 2.9 above but it may necessitate the identification of the areas where these processes are a problem in order to recommend further conservation priorities including research and management actions. However, several of the actions are already being implemented in Lebanon, but will benefit by increased co-ordination; new actions should be incorporated into existing programmes/initiatives where possible, with a focus on increasing public involvement.

The following eight priorities must be taken into account while developing an Action Plan for the migratory soaring birds:

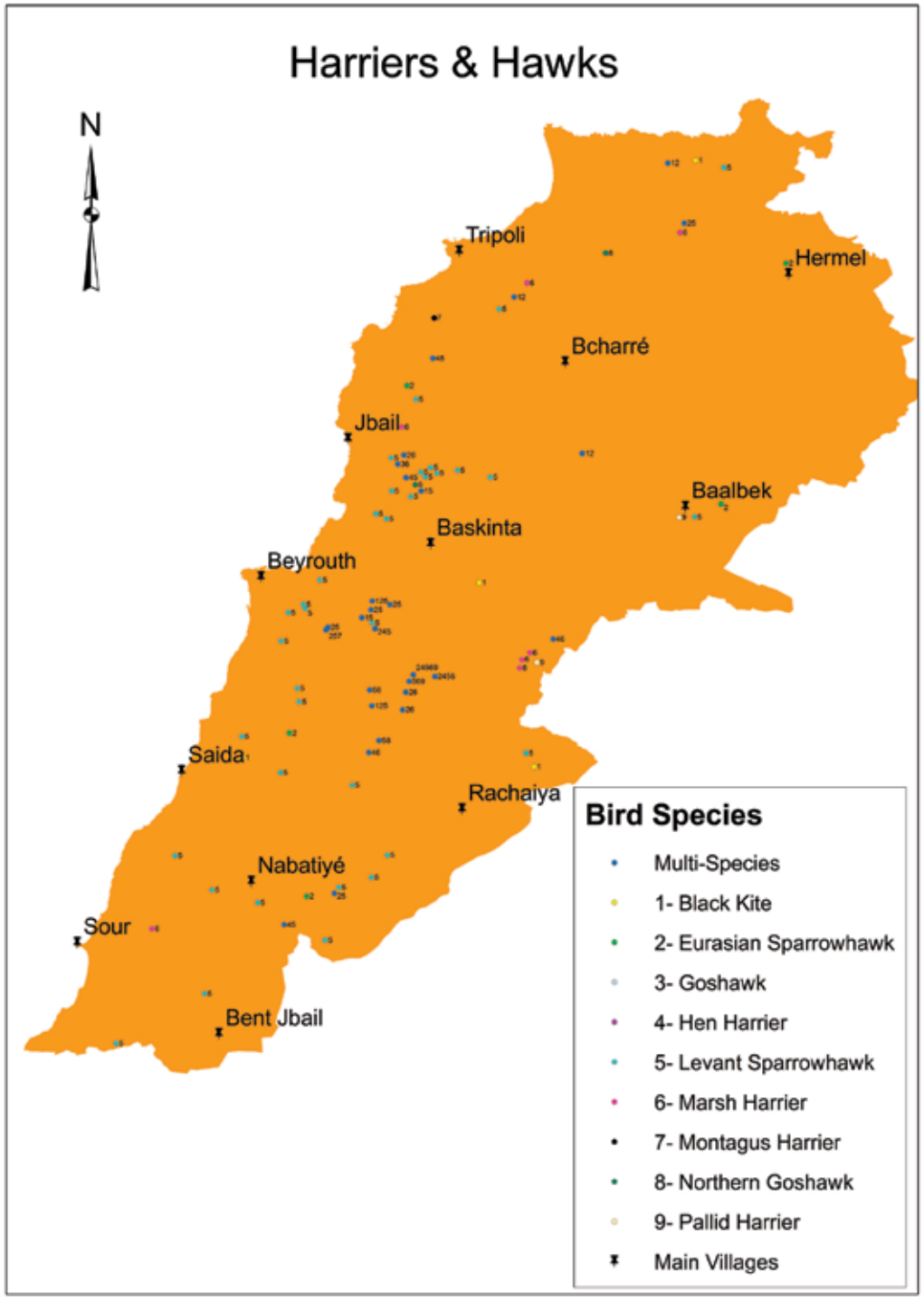
1. Encourage communication and collaboration through 1) forming a co-ordination working group and a migratory soaring bird working group.
2. Gather additional information such as: 1) radar surveys, ringing schemes, satellite or telemetry monitoring, national migratory soaring birds database, soaring birds counts involving public and coordination body, data analyses and recommendations.
3. Increase awareness among identified stakeholders, including media and eco-tourists, and improve education among students through curricula development, brochures, posters, TV spots, newsletters, websites, etc.
4. Manage migratory soaring bird populations and their hotspots in Lebanon through:
   4.1 Addressing threats prioritized and outlined in Table 13 above.
   4.2 Applying developed conservation measures of Table 13 above.
   4.3 Applying other scientific results that may assist in developing other practical conservation measures.
5. Build capacities and upgrade skills through:
   5.1 Identification of stakeholders that are in need of improved skills and capacities.
   5.2 Develop and distribute questionnaires to assess additional capacity building needs.
   5.3 Use existing NGOs to implement training and develop skills.
   5.4 Compile a manual on identification of migratory soaring species.
   5.5 Compile a manual on trapping and ringing or fixing telemetry or satellite devices.
   5.6 Improve financial capabilities through writing project proposals and development of a portfolio for prioritized actions.
6. Set national policy for conservation of migratory soaring bird species.
7. Enforce Law of hunting no. 580/2004 and its application decisions and decrees.
8. Access CMS and CITIES Conventions.



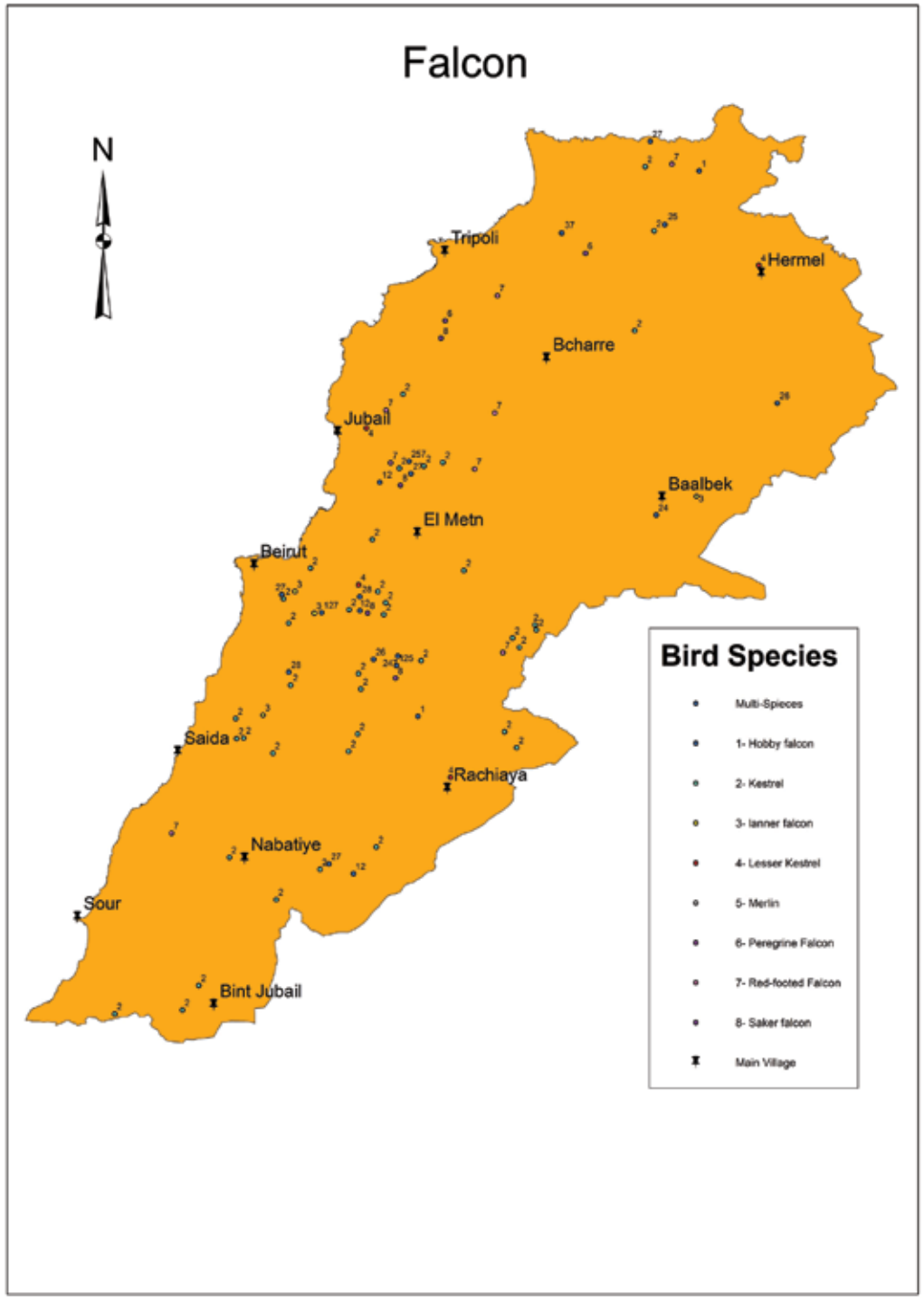
Map 1: GPS points of contact with 2 White Stork and one Crane species



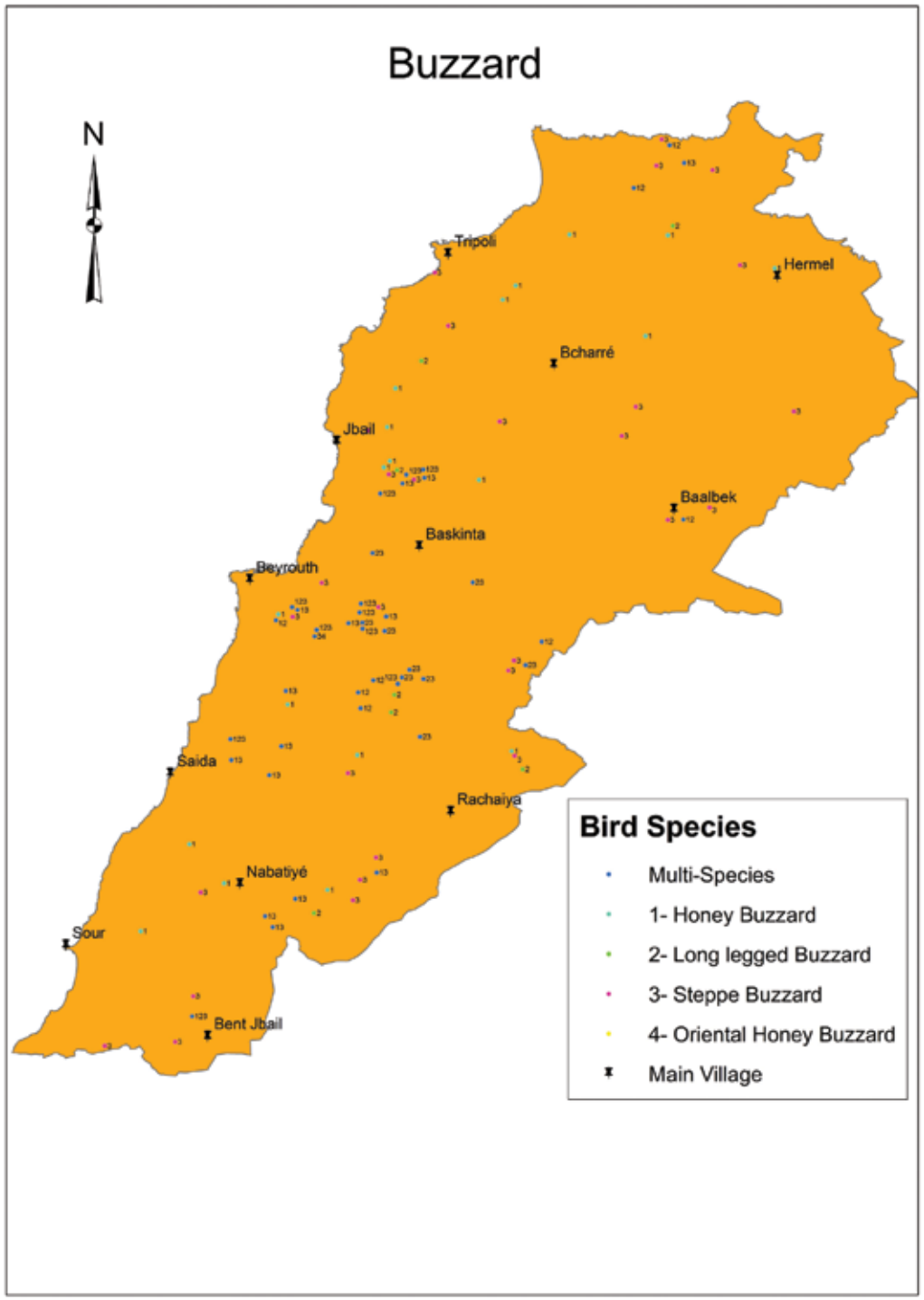
Map 2: GPS points of contact with 2 Vulture species



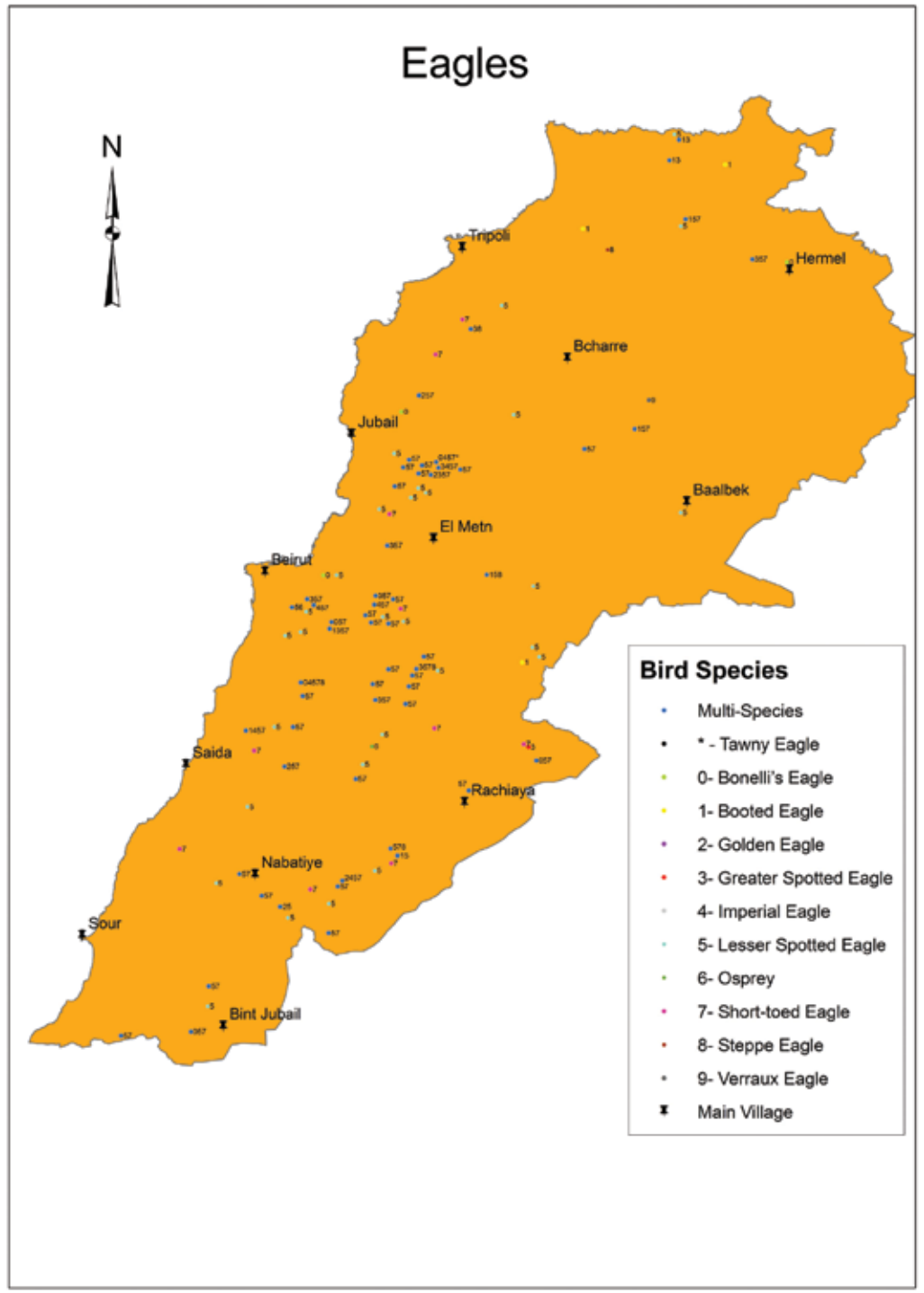
Map 3: GPS points of contact with 1 Kite, 4 Harrier and 3 Hawk species



Map 4: GPS points of contact with 10 Falcon species



Map 5: GPS points of contact with 4 Buzzard species



Map 6: GPS points of contact with 11 Eagle species

Section Three:
Birds habitats in Lebanon (Habitats)

Assad Adel Serhal, Bassima Chafic Khatib and Nabil Khairallah

Credit for
Illustrations by : Robin Rickett
Pictures by : Nabil Khairallah
Site pictures by : Fares Jammal

3.1 Birds and Bird Habitats in Lebanon

Lebanon has signed a number of international convention treaties concerned with the preservation of biological diversity at the species and ecosystem levels.

The Ministries of Environment and Agriculture carried out in collaboration with universities, research centers and enviromental associations, many projects to implement the provisions of these agreements, especially in the last ten years. A number of sites, habitats and natural ecosystems were declared "nature reserves" under the laws and declarations, and perhaps the launch of the Nature Reserves by the Ministry of Environment in 1996, was the beginning on the path to the preservation of biodiversity in Lebanon through the vision of protecting the diversified Lebanese natural ecosystems.

The Lebanese Environment Forum-LEF, and through the associations concerned in the preservation of nature, sought to highlight the importance of protecting the remaining natural heritage and biological diversity since its inception in 1994. We feel it is pertinant at this stage to note that most of the biodiversity in Lebanon is still exposed to various dangers since more than 90% of the Lebanese territory is still unprotected; the area that have been placed under protection now being actually around 10%.

We seek through this work focusing on the birds of Lebanon and their natural habitats to motivate all concerned parties to preserve the biodiversity in Lebanon by expanding the scope of work to conserve the different natural habitats located outside the nature reserves. Birds were found to be the most reliable index, being found in all these sites, and representing a simple and reliable gauge of the health of the environment and biodiversity.

The Royal Society for the Protection of Birds-RSPB and research suggest that generally the biggest risk to birds and biodiversity is the continuing deterioration and developments of the various natural habitats. This significant decline is the result of non-sustainable use of natural resources in these habitats mostly due to the lack of environmental objectives within the policies and laws for sectors such as agriculture, forestry, industry and tourism.

This approach which is based on the preservation of the natural habitats and stressing their importance for birds and biodiversity complements our ongoing and continuing strive to protect the species, sites and natural ecosystems in Lebanon. In this perspective, we have identified two categories for the kind of habitats important for birds, first aquatic habitats, and second the terrestrial habitats.

The aquatic was then divided into three habitats:
1- Marine 2- Coastal 3- Inland wetlands

While the terrestrial habitats were divided into five forms:
1- Forested areas, 2- Agricultural land and Plains, 3- Semi-arid habitats, 4- Subalpine Mountain Tops, 5- Parks and Urban Settings.

We present for each habitat the more common bird species as a preliminary step to a long-term work to preserve the birds and their natural habitats in Lebanon.

3.2 International Conventions on Bird Habitats signed by Lebanon

1- Barchelona Convention	١- اتفاقية برشلونة
لحماية البحر الأبيض المتوسط من التلوث for the protection of the Mediterranean sea from pollution	
2- Ramsar Convention	٢- اتفاقية رمسار
اتفاقية الأراضي الرطبة المهمة دولياً وخاصة لموائل الطيور for the protection of wetlands with international importance	
3- Bio-diversity Convention	٣-اتفاقية التنوع الحيوي
4- World Heritage Convention	٤- اتفاقية الإرث العالمي
اتفاقية تعنى بحماية الإرث الطبيعي والثقافي العالمي Convention on the protection of natural heritage and cultural world	
5- Law of the sea or "UNCOS" United Nations Convention of the seas	٥-اتفاقية البحور اتفاقية الأمم المتحدة للبحار
6- Climate Change Convention	٦-اتفاقية تغير المناخ
7- Desertification Convention	٧-اتفاقية مكافحة التصحر
٨- الاتفاقية الإفريقية الأوروآسيوية للطيور المائية (البط والإوز وغيرها).	
8- "AEWA", African Eurasian Waterfowl Agreement (Ducks, Geese and others)	

3.3 Bird Habitats in Lebanon

3.3.1 Marine Habitats

Marine habitats are defined, for the purposes of this study, as all areas related to saline water which lies at the limit of the wave splash zone. Maintaining the environmental quality of marine habitats is a prerquisite for the preservation of seabirds, but the changes and the devastating effects of the continuing destruction of marine habitats from nesting sites on land to the sea pollution with all manner of effluents, solid and liquid wastes, leads to a reduction of bird productivity and decrease in the food availabilty in these habitats.

Therefore, it is a must to continue to protect and manage nesting sites in these habitats, especially for the colonial nesting species such as gulls and terns, particularly in the Palm Islands.

As the seabirds disperse from their nesting colonies, all efforts have to be made to protect the receiving habitats from all causes of deterioration to the biodiversity and birds, and instigate a rapid reduction of the detriments affecting these habitats.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Yelkouan Shearwater	*Puffinus yelkouan*
Great White Pelican	*Pelecanus onocrotalus*
Northern Gannet	*Morus bassanus*
Great Cormorant	*Phalacrocorax carbo*
Audouin's Gull	*Larus audouinii*
Yellow-legged Gull	*Larus michahellis*
Lesser Black-backed Gull	*Larus fuscus*
Common Black-headed Gull	*Larus ridibundus*
Common Tern	*Sterna hirundo*
Arctic Skua	*Stercorarius parasiticus*

The main threats to marine habitats:

- Disturbance to nesting birds
- Introduction of predators, especially stray dogs and cats
- Changes to the coast
- Solid waste in the sea
- Oil pollution
- Overharvesting of smelts and fish hatchlings
- Changes to the vegetation in the birds nesting sites
- Toxic pollutants
- Organic pollution
- Increase in maritime activity, be it boats or barges
- Deterioration, distortion and erosion of beaches

3.3.2 Coastal Habitats

The concept of coastal habitats for this study, includes the sandy beaches, rocky shores, pebble beaches, terrestrial habitats with relationship to the coast, such as sea cliffs (Ras al Chaqaa) and sand dunes including salt marshes; all extending to the highest reach of the waves.

Those habitats attract large numbers of waders, shore birds and migratory birds, most often significant to the biodiversity of these sites. Unfortunately, the coast have been subjected to extensive distortion and destruction, some irreversible as a result of the unsustainable use, and demographic stress. Thus, natural coastal habitats have become rare, and therefore the number of birds that colonize these habitats are under severe pressure with numbers diminishing. Thus, the continuity of the existence of these birds depend on what remains of these habitats.

Many of these birds are migratory and use the shores as feeding or resting stations or even as breeding sites; therefore it is incumbent upon us to adopt an integrated national plan to manage the coastal strip.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Eleonora's Falcon	*Falco eleonorae*
Black-winged Stilt	*Himantopus himantopus*
Spur-winged Lapwing	*Vanellus spinosus*
Common Ringed Plover	*Charadrius hiaticula*
Common Greenshank	*Tringa nebularia*
Green Sandpiper	*Tringa ochropus*

Common Sandpiper	*Actitis hypoleucos*
Little Stint	*Calidris minuta*
Ruff	*Philomachus pugnax*
Spectacled Warbler	*Sylvia conspicillata*

Main threats to coastal habitats:

1- Unsustainable tourism and recreation
2- Land confiscation and squatters
3- All manner of pollution; solid, liquid, toxic or organic
4- Hunting and disturbance
5- Over fishing; commercial or recreational
6- Sand removal
7- Stray animals
8- Increase of sea level
9- Overgrazing

3.3.3 Inland Wetlands Habitats

This habitat includes all inland wetland that is not affected by the maritime environment. Ramsar Convention defines these wetlands as "marshlands or Fens, natural or man-made waters, permanent or transient, where the water is stagnant or moving, fresh or murky including salty water where the depth does not exceed 6 meters".

The movement of water through the natural ecosystems constitute an essential part of the hyrdological cycle, which is the most important and fundamental natural phenomenon of life on earth. Through it, rivers, lakes, swamps and other wetlands connect and integrate with each other. For these reasons, any fragmentation of wetlands are artificial because they are all linked at the catchment scale.

For the aims of this study and for practical reasons, focus will be placed on inland wetlands unrelated to the coast or connected with saline water.

Most of the wetlands in Lebanon have been drained, very little remains in its natural state, such as Ammiq and Kfar Zabad marshlands. In Lebanon there is also about 16 rivers; some are dammed while for others dam development and barriers are being planned. In spite of these facts, these habitats are still important for over 150 bird species; therefore the maintainance of environmental awareness on the significance of these wetlands is essential to save these birds, but in fact, continued loss and degradation of these habitats are still ongoing. Schemes for draining for agricultural use and flood prevention, water pollution, and the large extraction of water are still being designed.

On the other hand, a number of man-made lakes had been built for water conservation and hydropower generation, most important of which is the dam at Lake Qaraoun on the course of the Litani River. Also many agricultural ponds and small lakes in the plains and mountains, such as Taanayel Pond in the Beqaa Vally and the Japanese Pond in the Shouf Cedar Reserve respectively, and others add to the habitat complexity and do attract many birds species.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Mallard	*Anas platyrhynchos*
Little Grebe	*Tachybaptus ruficollis*
Black-crowned Night Heron	*Nycticorax nycticorax*
Grey Heron	*Ardea cinerea*
Common Moorhen	*Gallinula chloropus*
Eurasian Coot	*Fulica atra*
Common Kingfisher	*Alcedo atthis*
Cetti's Warbler	*Cettia cetti*
Eurasian Reed Warbler	*Acrocephalus scirpaceus*
White-throated Dipper	*Cinclus cinclus rufiventris*

Threats to Wetland Habitats:

1- Water drainage
2- Loss of vegetation on the banks of wetlands; thus the loss of nesting, feeding and resting sites, as well as increasing erosion
3- Unsustainable tourist, entertainment and security facilities
4- Increased sedimentation
5- Obstacles to the natural movement of water in rivers
6- Toxic pollution
7- Intervention in the natural water level (increase or decrease)
8- Hunting and fishing
9- Channels and ditches excavation
10- Introduction of predators
11- Introduction of commercial fish species (fish farming)
12- Increased acidity due to air pollution

3.3.4 Forest habitats

The forest habitats utilized by birds in Lebanon have been dealt with on the basis of two major groups (Mediterranean group and Mediterranean flora semi-Steppe group).

For a deeper study of all types of forests in Lebanon in terms of spread and distribution, we suggest you refer to the National Biodiversity Country Study in Lebanon in 1995 & 1996, and the State of Lebanon Forests, 2007 by AFDC; here we offer only a summary to highlight the importance of forest habitats to the birds.

We have to note that each type of forested area attracts specific assemblage of birds. For example, coniferous forests which include pine, fir, cedar and juniper attract birds such as the Northern Goshawk, Eurasian Jay, Coal Tit and Goldcrest. Although reforested areas of these species of trees, especially pine or cedar are like green deserts being a mono culture of uniformity lacking any significance under canopy growth of grasses and wild plants, and therefore are of limited biodiversity. While the mixed forest of several species of trees, especially *Quercus* species, decideous and evergreen, where herb and varied undergrowth can sprout and grow, are rich and diverse and therefore attract a larger number of bird species, examples of which are the Sparrowhawk, Woodpigeon, Wryneck and Syrian Woodpecker,.

The Mediterranean Group

Characterizing the western slope of the Mount Lebanon Range and the southern slopes of the eastern and western parts of the Anti-Lebanon Range, this group extends south of the line parallel to Beirut. It includes forests and varied wooded sections. This area is divided into the following zones depending on elevation and therefore the climate; starting with lowest elevation, these are: Warm Mediterranean Forest around the Mediterranean Sea basin, the Upper Mediterranean, Mediterranean Montane, and the High Elevation Mediterranean.

Mediterranean flora

This group covers the eastern slopes of the Mount Lebanon Range and the northern parts of of the Anti-Lebanon Range, and is characterized by scattered trees and shrubs interspersed by thorny bristly vegetation. The poor ecological state and the deteriorating environmental situation, weakens the hope, that in time it would develop into a higher succession. This group is divided into four zones again based on elevation and the resulting climatic conditions; these are, also starting with the lowest altitude: Mediterranean semi steppe, Mediterranean cold semi steppe, Mediterranean Montane semi steppe, and Lowest Limits of the Upper Mediterranean Cold semi steppe.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Eurasian Woodcock	*Scolopax rusticola*
Tawny Owl	*Strix aluco*
Syrian Woodpecker	*Dendrocopos syriacus*
Masked Shrike	*Lanius nubicus*
Eurasian Jay	*Garrulus glandarius*
Coal Tit	*Periparus ater*
Woodlark	*Lullula arborea*
Eurasian Blackbird	*Turdus merula*
Song Thrush	*Turdus philomelos*
Common Chaffinch	*Fringilla coelebs*

If the Lebanese forests were to be protected with sound management and foresight, they could attract a number of top of the food chain predators indicative of high ecological complexity such as raptors for reproduction needs, including the Short-toed Eagle, Bonelli's Eagle, Long-legged Buzzard, and Kestrel.

Threats to Forest Habitats:

1- Neglect of the land
2- Frequent large fires
3- Deforestation
4- Human pressure, such as unsustainable tourism and tree cutting
5- Quarries
6- Urban sprawl
7- Road construction
8- Overgrazing
9- Diseases of trees
10- Herbs and plants removal
11- Habitat fragmentation

3.3.5 Agricultural Lands and Plains

Most of the agricultural plains stretch along the coastline, and in the Bekaa Valley in the interior of Lebanon, representing around 65% of the Lebanese territory.

These diverse habitats attract a healthy number of birds, more than one hundred species of specialist and migratory birds utilize these lands, and many of the birds rely entirely on these types of habitats; therefore maintaining the environmental quality of the agricultural land and plains should be the main priority for saving these birds. But the continuing deterioration due to the poor application of the agricultural practices such as the mis-use and excessive use of fertilizers and toxic pesticides, and the eradication of the fringe habitats surrounding these agricultural lands.

The abandonment of traditional agricultural methods in farming and crop handling, resulted in the loss of certain niches in these fields, reflected adversly on the birds which inhabit them, since these techniques maintain the land in a quasi natural state preserving the essential needs for these birds.

To maintain these habitats in an environmentally sound condition for the birds that depend on them, still requires wide strides through the introduction of conservation objectives to the laws of land-use policies, especially agricultural land.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Common Quail	*Coturnix coturnix*
Common Kestrel	*Falco tinnunculus*
Long-legged Buzzard	*Buteo rufinus*
Northern Lapwing	*Vanellus vanellus*
Eurasian Eagle Owl	*Bubo bubo*
European Roller	*Coracias garrulous*
Red-backed Shrike	*Lanius collurio*
Hooded Crow	*Corvus cornix*
Crested Lark	*Galerida cristata*
Eurasian Skylark	*Alauda arvensis*
Common Starling	*Sturnus vulgaris*
Grey Wagtail	*Motacilla cinerea*
Corn Bunting	*Emberiza calandra*

Threats to agricultural land and plains:

1- Crop improvement, requiring more use of resources.
2- Excessive and mis-use of pesticide
3- Land abandonment
4- Cattle over stocking
5- Loss of marginal habitats
6- Deforestation
7- Grassland reduction
8- Modern farming operation
9- Loss of crop diversity
10-Recreation
11- Increased incidence of predators due to strays
12- Urbanization

3.3.6 Semi-arid Habitats (800 to 2000 m)

These include the eastern slopes of Mount Lebanon Mountain Range and the western slopes of Anti-Lebanon Mountain Range, areas considered primarily as pasture, but their condition has deteriorated drastically due to the high density of goat herds and the resulting overgrazing.

In the north of the Bekaa Valley (AlQaa-Hermel), these pastures are threatened by overgrazing, compacted soil surface and erosion. About 20 species of birds (several of them endemic) utilize these habitats, which is considerd the poorest in the country, in spite of their location on the main autumn migration flyway. Small birds such as the larks, are beleaguered facing a fate akin to a genocide at the hands of hunters each year.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Chukar Partridge	*Alectoris chukar*
Cream-coloured Courser	*Cursorius cursor*
Little Owl	*Athene noctua*
Eurasian Hoopoe	*Upupa epops*
Southern Grey Shrike	*Lanius meridionalis aucheri*
Sombre Tit	*Poecile lugubris*
Lesser Short-toed Lark	*Calandrella rufescens*
Scrub Warbler	*Scotocerca inquieta*
Western Rock Nuthatch	*Sitta neumayer*
Fieldfare	*Turdus pilaris*
Black-eared Wheatear	*Oenanthe hispanica*
Rock Bunting	*Emberiza cia*

Threats to semi-arid habitats (800 to 2000 m):

1- Pesticide use
2- Land abandonment
3- High stocking level
4 -Over grazing
5- Loss of marginal habitats
6- Afforestation
7- Cultivation of grass land
8- Recreation
9- Hunting
10- Urbanization

3.3.7 Subalpine Mountain Tops

Sub-alpine mountain tops are those habitats extending above the tree line, generally commencing at the 1800m altitude, and mostly colonized by stunned trees, low shrubberies and spiny vegetation. They are commonly perceived to be little more than unproductive areas with low biodiversity and therefore of limited conservation value, mostly used in drastically unsustainable manner such as extreme overgrazing and quarries.

However, these habitats are of great importance to high-elevation specialist bird species and autumn migrants. The delayed onset of spring and summer at high elevations means that the sub-alpine habitats produce a rich store of food between late July and early September, when much of the land below has passed its peak production period. Several species that breed at lower elevations move upslope during the post-breeding period or to rear another brood, a very good example here is the biome restricted, globally threatened Syrian Serin.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font):

Yellow-billed Chough	*Pyrrhocorax graculus*
Horned Lark	*Eremophila alpestris*
Mistle Thrush	*Turdus viscivorus*
Western Black Redstart	*Phoenicurus ochruros semirufa*
Isabelline Wheatear	*Oenanthe isabellina*
Pale Rock Finch	*Carpospiza brachydactyla*
Rock Sparrow	*Petronia petronia*
Long-billed Pipit	*Anthus similis*
Meadow Pipit	*Anthus pratensis*
Syrian Serin	*Serinus syriacus*

Threats to Sub-alpine Mountain Tops:

1 - Urban Expansion
2 - Quarries
3 – Poor land use
4 - Solid and liquid waste
5 – Uncontrolled hunting
6 - Overgrazing
7 – Recreational activities
8 - Unsustainable tourism

3.3.8 Parks and Urban Settings

The quantities and number of bird species that were introduced at different periods to the

parks and gardens of the capital Beirut, and especially in Horsh Beirut and the American University of Beirut campus have led us to include it among the important habitats for birds in Lebanon.

Many bird species resort to these few green spots in the capital to rest during the annual migration, while others are resident or breed in these habitats. More than thirty bird species were recorded during one visit to Horsh Beirut. Some are introduced to Lebanon or escapees from captivity which formed groups that now breed in these sites. This phenomenon should be studied as the increase in their numbers and/or these birds movement to the agricultural areas, forests and other habitats may become a competitor for the local birds or might become a blight with the increase in their numbers. International conventions prohibit the release of exotic birds in habitats other than their natural domain based on past experiences in more than one country where this action could led to significant economic and environmental problems.

Following are examples of birds using this habitat (resident bird species are in green font, threatened are in red font and introduced/escapees are marked *):

Eurasian Collared	*Streptopelia decaocto*
Laughing Dove	*Streptopelia senegalensis*
* Rose-ringed Parakeet	*Psittacula krameri*
Barn Owl	*Tyto alba*
Common Swift	*Apus apus*
Graceful Prinia	*Prinia gracilis*
White-spectacled Bulbul	*Pycnonotus xanthopygos*
* Common Myna	*Acridotheres tristis*
Palestine Sunbird	*Cinnyris osea*
House Sparrow	*Passer domesticus*

Threats to Parks & Urban Settings:

1-Change to landscape
2- Use of chemical pesticides
3- Loose pets (especially exotic species)
4- Unmarked windows
5- Destruction of local bird habitats and niches
6- Lights kept on over night in surrounding tall office buildings

Section Four:
Conservation & Management of IBAs & Birds (People)

Nabil Khairallah, Assad Adel Serhal and Bassima Chafic Khatib

Credit for pictures & maps by : Nabil Khairallah

4.1 Conservation Status of IBAs & the Revival of the Hima Approach by SPNL

This year marks a new milestone for the Society of Protection of Nature in Lebanon (SPNL), as it is SPNL's 30th anniversary. Through the years, SPNL has implemented several projects and activities in Lebanon to help conserve nature and promote its protection among the communities. In 2004 SPNL embarked on a new journey to enhance the protection of the environment, the Hima approach.

The Hima which means protected area in Arabic; is a community based approach used for the conservation of sites, species, habitats, and supporting people in order to achieve the sustainable use of natural resources. The first Hima established in Lebanon by SPNL in 2004 was in the village of Ebel es Saqi in South Lebanon. In the years that followed, several Himas were declared consequently, namely the Himas of: Anjar, Kfar Zabad wetlands, Qolieleh and Mansouri marine Hima, Upper Akkar, and lastly El Fekha in the Bekaa Valley which was declared as a Hima in May 2013. The Hima at El Fekha will primarily focus on promoting sustainable grazing and sustainable hunting in addition to ecotourism. SPNL and through the revival of the Hima approach in collaboration with municipalities of each area tries to promote the conservation of Important Bird Areas (IBAs)/Key Biodiversity Areas (KBAs) and promote the sustainable use of natural resources as well as to improve the livelihoods of the local communities.

In this context, SPNL has initiated in the beginning of 2013 a project funded by UN Women Fund for Gender Equality– "Promoting Hima Women Empowerment for Conservation and Livelihood" for empowering women. The three-year project aims at enhancing the livelihood of rural women through the revival of the Hima approach in the sustainable management of three IBAs of Lebanon, Aanjar, Kfar Zabad, and the Upper Mountains of Akkar- Donnieh. This project consequently aims to raise the voice of women in the local committees for the sustainable management of the sites, improve their livelihoods through acquired skills and new job opportunities linked to the sustainable use of the Hima natural resources.

Similarly, SPNL has launched in 2013 a project funded by the MAVA Foundation for the management of the water systems in Hima Anjar/Kfar Zabad. It aims to "restore Hima Ecosystem functions through promoting sustainable community based water management systems". The following project will focus on transferring traditional governance experiences from the Anjar Water Users Association to the farmers of Kfar Zabad in the domain of water management for agricultural purpose through the traditional open canal system, where it will promote the good governance and wise use of water for people and nature. SPNL is also working in Hima Upper Akkar in assessing the resilience of the local communities in the area in the face of climate change.

On the other hand, SPNL is currently working with BirdLife International on the establishment of the new GCC office in Qatar for the Gulf region in order to promote bird conservation, coordinate the programs, mobilize funding for conservation, and help build awareness on various levels.

As summarized above, the hard efforts that SPNL has managed in Lebanon and the region for the revival of the Hima approach has led to its recognition worldwide. As such, SPNL was awarded with a certificate of appreciation from the Dubai International Award for Best Practices (DIABP) organized by the Dubai Municipality and the United Nations Human Settlements Program «UN-Habitat» for the Qoleileh marine Hima project. This project aims to preserve the southern Lebanese coast mainly marine birds and globally threatened turtles and supporting the livelihood of local fishermen. In addition, and in the occasion of BirdLife's 90th anniversary celebrations which was held in Canada this June, BirdLife International awarded SPNL for reviving the Hima approach as one of the 20 international success stories. As such, the Hima approach has been welcomed by the local communities as it raises the value of their areas, promotes ownership and decision making by locals, supports their livelihood and promotes sustainable use of natural resources.

4.2 Jeju Declaration adopted to promote Hima

Top delegates of the 2012 World Conservation Congress pose after signing the Jeju Declaration during the closing ceremony on the 10th day of the environmental conference in Jeju Island.

Starting from the left, they are Governor of Jeju Special Self-Governing Province Woo Keun-min, the Minister of Environment Yoo Young-sook, the Chairman of the organizing committee Lee Hong-koo, and the president of the International Union for Conservation of Nature Ashok Khosla.

95% of the participating delegates at the 5th IUCN World Conservation Congress, Jeju, voted for SPNL's motion to promote and support community resource management and conservation as a foundation for sustainable development.
The delegates at the 2012 World Conservation Congress (WCC), at Jeju Island adopted a declaration, to promote Korea's green growth policy as a solution for sustainable development.

More than 10,000 participants of the United Nations, government agencies, nongovernmental organizations and companies from over 170 countries came up with the Jeju Declaration

that summarized the discussions in the 10-day environmental conference organized by the International Union for Conservation of Nature (IUCN), which in turn featured the program for the first time in this 23rd WCC.
Motion 122, Promoting and supporting community resource management and conservation as a foundation for sustainable development, presented by Ministry of Environment-Austria and SPNL- Lebanon and co-sponsored by several NGOs, was adopted with +95% of positive votes.

The new resolution # 122 will facilitate and enhance a broad exchange of information on current community resource management programs and systems, in addition to their levels of success, or reasons for failure to take place among practitioners, relevant interest groups and international conservation and development organizations. The emphasis should be placed on capacity building to contribute to the further development of community resource management programs.

The new resolution focuses on the importance of developing and implementing broad policy coherence amongst Multilateral Environmental Agreements and conservation organizations which would be beneficial for the conservation of terrestrial biodiversity through community resource management programs.

The resolution also recognizes the various forms and names of Community Conservation, such as Al Hima (الحمى), Mahjar, Agdal, Qoroq, Adat or any similar systems of community-based management present in West Asia and North Africa, as a holistic approach that empowers local and traditional knowledge, culture and heritage, including the conservation of natural resources and a boost to livelihoods.

BirdLife International in the Middle East, led by the Society for the Protection of Nature in Lebanon (SPNL, BirdLife Partner), is now reviving the hima approach in the region. The goal is to integrate these wise traditional practices with recent conservation science in order to achieve sustainable development.

Thereby, respecting the rights of local communities and promoting equity and responsibility for the environment; the revival of the hima approach, represents BirdLife's new Local Empowerment Programme.

At the time when economic difficulties were dominating international debates with relatively less interest towards the protection of nature, the quadrennial meeting that took place on the resort island, exclusively focused on promoting and supporting community resource

management and conservation as a foundation for sustainable development. Moreover, the declaration proposes the preservation of biodiversity and economical development through the sustainable development.

"Biodiversity should be seen not as a problem but as an opportunity to help achieve broader societal goals". As stated in the declaration,"We must work with the public and private sectors to enhance the transfer of green technology, share knowledge, experience and skills to integrate biodiversity and ecosystem values into global production and consumption. We encourage governments and businesses to pursue inclusive and gender-responsive green growth that ensures social integration of vulnerable groups, helps eradicate poverty, and keeps humanity's footprint within ecological boundaries."

The declaration includes discussions between the World Leaders' Dialogue, international environmental leaders, and members of the audience. In addition, further similar programs on regular basis will be initiated. The forum also known as the Jeju World Leaders' Conservation Forum, will focus on nature-based solutions to promote sustainable development.

In Korea's first WCC, the country managed to draw some local environmental issues to the attention of the international community. The IUCN approved a motion on the preservation of the female divers' culture and community in the Jeju Island. The divers who live upon collecting shellfish show the unique matriarchal family structure of the island. The IUCN also mentioned that through such activities, a contribution to the economic development and the protection of the ecosystem was achieved.

The Jeju Declaration will serve as the basis for the discussions of the environmental issues at the IUCN meetings, which will be led for the next four years by Zhang Xinsheng from China, whom in turn was elected for the new IUCN presidency.

4.3 Syrian Serin Species (Serinus syriacus) Action Plan in Hima Anjar

Syrian Serin feeding

within the project:
"*Improving Conservation Status of the GTB - Syrian Serin vulnerable specie in the Anjar Hima*"
Prepared by: Society for the Protection of Nature in Lebanon-SPNL

Submitted to the Secretariat & Technical Committee of the Hima Fund
Date: November 2012
Lifespan of the action plan: 5 years

Typical Male Syrian Serin

Table of Content

Geographical scope of the action plan

Anjar Kfar Zabad IBA has been given this international designation based on the evidence of a breeding population of the vulnerable Syrian Serin species. The scope of this action covers the status of the Syrian Serin and its needed habitat in Anjar Kfar Zabad IBA in specific.

Map of Lebanon indicating the location of Anjar Kfar Zabad IBA

Map of the Anjar Kfar Zabad IBA

Foreword

The Syrian Serin is one of the globally threatened bird species identified in Lebanon. The presence of Syrian Serin breeding pairs in Anjar Kfar Zabad wetlands in 2004 – 2005 was the basis for its declaration by SPNL as an IBA and its adoption by BirdLife International.

The preliminary field assessment study and the action plan for the Syrian Serin in Anjar Kfar Zabad IBA would be the basis for further detailed studies at the site, and further developments towards a national action plan for the Syrian Serin bird.

This action plan is crucial to direct the conservation efforts at the Anjar Kfar Zabad IBA based on scientific assessments for the bird that prompted its declaration.

We hope that this action plan would raise the value of the site by its local community and inspire prompt conservation action.

0 – Executive Summary

The Syrian Serin species is classified as Globally Threatened - Vulnerable because the small population, which was once thought to be stable, appears to have declined at key sites since 1996 by 20%, principally owing to the effects of drought that caused a decline in seed production and in the number of water pools. The drought conditions further enhance declines in habitat quality caused by grazing pressure and wood cutting (IUCN Red List, BirdLife International 2012).

Despite the fact that the protection of the globally threatened species is considered in the Lebanese legislation, there are not any studies on the status and trends of the taxa at national level nor do the habitats in which the restoration of species is an integral part of its conservation.

The aim of this species action plan is to prevent extinction of the species, promote the monitoring and conservation of the species and its habitat, to spread public awareness about value of the species and promote involvement of local community in its protection and its adoption as flagship species for the site, and upscale monitoring plans and conservation efforts for the Syrian Serin by the government on national basis.

Based on the field study, the main threats encountered in Anjar are possibly the following:

1- The availability of the 3 main components for Syrian Serin in the same area; these are coniferous trees (mainly cypress trees at the fringes), annual / perennial vegetation of soft seeds, and a source of water.
2- Since the Syrian Serin appeared to be a bird of the fringes, the shape and constitution of the wooded area in terms of density and tree species could be a factor.
3- Hunting seemed to be an additional pressure on the resident population for the season.

The Syrian Serin bird is vulnerable according to the IUCN red List. Thus, our goal for this species action plan is to downlist the Syrian Serin species/population from the IUCN Red List/AEWA.

The field study in Anjar has confirmed that Syrian Serin bird seeks breeding in the fringes of evergreen trees, specifically Cypress trees, the flat shaped type. It further needs nearby water resources and soft seeds perennials for feeding at the same area.

Therefore, our objectives for the Syrian Serin conservation in Anjar are as follows:

1- To increase the breeding pairs of Syrian Serin in Hima Anjar to 30 by 2017.
2- To increase the Syrian Serin population and distribution in Hima Anjar to 100 by 2017.

3- To raise the value of the Syrians Serin at Anjar village by 50% by 2017.

To reach objective 1, the suggested activities concentrate on reforestation plans for evergreen species, specially Cypress trees, taking into consideration the fringe space required. Further work concentrates on proliferation of soft seeds vegetation, which is supported by grazing plans. On the other hand, suggested activities concentrates on raising the quality of water resources by promoting good agricultural practices, and introducing sewerage network and water treatment which are the main identified sources of water pollution. As over-extraction of water, mainly for agriculture, is still practiced, effort should concentrate on awareness and promoting alternative irrigation schemes. Hoping that all above would lead to habitat conservation by 50% by end of 2017.

As hunting in Anjar is identified as the main threat on population and distribution, thus, to reach objective 2, the actions suggested include development of policy decisions by municipality regarding zonation and promotion of sustainable hunting practices, political will and institutional setup for enforcement of the hunting law at local level, in addition to awareness and capacity building program on hunting management is established and implemented. These actions would ensure the reduction of hunting threat on the Syrian Serin by 50% by end of 2017.

Objective 3 complements objectives 1 & 2, by raising the value of the Syrian Serin at Anjar village by 50% by 2017. Thus, to reach this objective, action concentrates on two levels: one on monitoring program for Syrian Serin, habitat, and raising the capacity of local people to implement the monitoring program. This helps as a scientific basis for policy decisions. The other level deals with awareness and outreach campaigns on the importance of the Syrian Serin vulnerable species, shows the importance of Anjar through branding for Syrian Serin, and linking economic opportunities for local community to the conservation of the Syrian Serin. It is expected that these actions would lead to raising the value of the Syrian Serin at the local level by 50%.

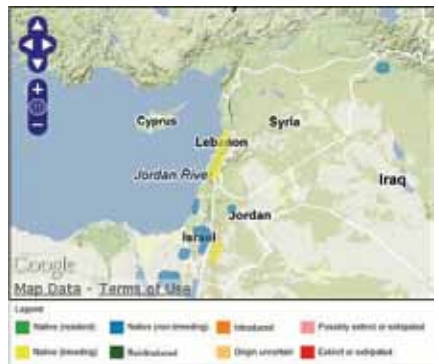
1 - Biological Assessment

1a. Taxonomy and Biogeographic Populations

The Syrian Serin is a small rather long tailed finch, with a subdued pale grayish yellow plumage, belonging to the family Fringillidae.

Taxonomy:*Serinus syriacus* Bonaparte, 1850
Other name: Tristram's Serin
Scientific classification
Kingdom: Animalia
Phylum: Chordata
Class: Aves
Order: Passeriformes
Family: Fringillidae
Genus: *Serinus*
Species: *S. syriacus*
Sometimes it had been considered as a race of Serin *S. Serinus*or Canary *S. canaria,* but it is Monotypic and quite distinct from these two species (Perrins & Cramp1994).
It is classified as category Vulnerable in current IUCN Red List because of its declining population.

Biogeographic Populations: The Syrian Serin is endemic to the Middle East and is considered biome restricted, breeding in mountains (900-1,900 m). Total population is estimated to be less than 5000, mostly breeding in Lebanon, Syria and Jordan (A Rocha).
- Jordan has a small population comprised of 1,000-1,250 mature individuals (Khoury 1998).
- Mount Hermon population is estimated at 100-360 individuals (Evans 1994).
- Iraq, a possible resident population, numbers are not given (Porter & Aspinall 2010).
- There are not any national population estimates for Syria, where it is considered as "local" (Baumgart 1995) or Lebanon where it has been described as "very common" with an estimate of 3,500 pairs in total, in a number of protected areas such as Qammouha, Horsh Ehden, Tannourine and Arz Al-Chouf (Ramadan-Jaradi 1999 & 2002).



Distribution through the Annual Cycle

The Syrian Serin is considered a resident bird and altitudinal and short distance migrant. Its movements are erratic and poorly known.
It is generally accepted that in winter, birds in Jordan disperse locally (Khoury 1998), while the breeding grounds in Lebanon, Syria and Mount Hermon are completely vacated (Evans 1994, Baumgart 1995, Ramadan-Jaradi 1999). The birds migrate to desert and semi-arid wintering grounds at lower altitudes, but near water, as far as north east Egypt (Sinai), Turkey and north Iraq (Perrins & Cramp 1994).

In autumn, birds gradually leave higher elevations to congregate in lower grounds before their migration (Perrins & Cramp 1994). Shirihai (1996) considered the autumn movement to extend from mid October to mid December, mainly in November.
The spring migration spans from February to mid April, but mainly in March, reaching breeding grounds by the latter part of March/early April (Perrins & Cramp 1994). The spring migration is more conspicuous than in autumn, with larger flocks forming in comparison to the scanty and irregular autumn passage (Shirihai 1996).
During the summer, where the topography allows, the Syrian Serin undergoes an altitudinal movement. After the first brood is raised, the birds move to higher elevations where they might rear a second brood. In Lebanon, early nests are at 900-1200 m, and then in July the birds ascend to 1500-1750 m. where a second nest maybe built.

1c. Habitat Requirements
The Syrian Serin breeds in a restricted zone of the east Mediterranean in warm sunny climate on mountainous or hilly terrain covered by open woodland or clumps of low bushes. Access to water is essential. Although nesting is mostly related to conifers, sometimes it has been recorded breeding in fruit orchards (Perrins & Cramp1994) and (Shirihai 1996).
In winter, it migrates to lower semi arid grounds with some trees and water source, or vegetated valleys or cultivated land. Migrants in Sinai frequent the valleys of high mountains, being recorded in large numbers in fruit gardens there in March (Perrins & Cramp1994).

1d. Survival and Productivity
Scouring the Syrian Serin database did not yield any information on breeding success or survival, this fact is confirmed by Perrins & Cramp (1994), but there was very limited insight on productivity. What is known is based on the two studies; Mount Hermon (Shirihai, 1996) and southwest Jordan (Khoury, 2001) populations.
Clutch size average is 4 eggs, range 3-5.
Broods can be two and sometimes three.
Incubation 12-14 days,
Fledging period 14-16 days

1e. Population Size and Trend
There is a significant discrepancy between published population numbers for the Syrian Serin;
BirdLife rounded the population size between 3,500-15,000 individuals; this in itself is quite a considerable range. The upper limits could well be over estimated since A Rocha placed the total population at 5000, and it is a well established fact that the Jordanian population is declining (please refer to Khoury 2000). Also the figure of 3500 individuals reported by Jaradi (2002) for Lebanon was not substantiated in later studies (Khairallah & Conroy 2010). The published numbers for Mount Hermon account in the hundreds (Shirihai 1996), as for Syria this finch is considered as "local" (Baumgart 1995).
There are not any data on population trends, but the species is suspected to be in decline at a moderately rapid rate, owing to the effects of drought and overgrazing.

2 - Threats
2a. General Overview of Threats
Review of published material on the Syrian Serin stressed the lack of information available on this species. BirdLife and IUCN (2012) based most of their accounts on Khoury 1998 & 2000, concluding that the main threats to this finch are **excessive tree-cutting, grazing and water abstraction**, stating that the drought conditions accelerate the declines in habitat quality caused by grazing pressure and wood cutting. **Hunting** was also listed as a potential threat in some parts of the range.
Shirihai (1996) presented a situation where the damage to water sources in Mount Hermon, apparently caused decline in numbers in the 1980s, resulting in fewer pairs in the latter part of that decade.

2b. List of Critical and Important Threats
Relatively little is known about this very significant aspect of the Syrian Serin continued existence, and even less about breeding success or survival as is presented in the "Survival and Productivity" section.
However, the IUCN Red List of Threatened Species version 2012.1 listed the threats on Syrian Serin species as follows:

2. Agriculture & aquaculture
   2.3 Livestock farming & ranching
   2.3.2 Small-holder grazing, ranching or farming
5. Biological resource use
   5.1 Hunting & trapping terrestrial animals
   5.1.1 Intentional use (species is the target)
   5.3 Logging & wood harvesting
   5.3.3 Unintentional effects: (subsistence/small scale)
11. Climate change & severe weather
   11.2 Droughts

The table presented below shows the importance of the identified threats according to the following criteria (critical, high, medium, low, local, unknown):

- **Critical**: a factor causing or likely to cause very rapid declines and/or extinction.
- **High**: a factor causing or likely to cause rapid decline leading to depletion.
- **Medium**: a factor causing or likely to cause relatively slow, but significant declines.
- **Low**: a factor causing or likely to cause fluctuations.
- **Local**: a factor causing or likely to cause negligible declines in small parts of the population.
- **Unknown**: a factor that is likely to affect the species but it is unknown to what extent.

Type of Threat	Importance of Threat
2. Agriculture & aquaculture	
2.3 Livestock farming & ranching	Low
2.3.2 Small-holder grazing, ranching or farming	High
5. Biological resource use	
5.1 Hunting & trapping terrestrial animals	Critical
5.1.1 Intentional use (species is the target)	Low
5.3 Logging & wood harvesting	Critical
5.3.3 Unintentional effects: (subsistence/small scale)	High
11. Climate change & severe weather	
11.2 Droughts	Critical

2c. Problem Tree

A field study was initiated on a known breeding colony of Syrian Serins in Anjar with the aim of acquiring a deeper understanding of this finch's biology and helps determine the limiting factors and/or threats affecting its numbers and distribution, which could prove to be instrumental in future conservation efforts.

A study area covering just over 400 hectares was delineated within the Anjar Kfar Zabad IBA incorporating examples of most of the major habitats in the IBA. A thorough study of the major habitats constituting it was completed, then focusing on the discovered nesting locations as indicated in the below Figure.

Study Area with Possible Colonization Sites

This study being of a search and find nature, it was opted to adopt the "search" field survey technique in preference to other census methods such as the line transact, point count or grid system. During each field visit, any behaviour that could be indicative of breeding was noted, no attempt was made to examine actual nests. The standards set for breeding evidence across Europe for all atlases were adopted (Possible → Probable → Confirmed); the highest level of breeding evidence was recorded.

19 field visits were carried out between mid March and mid October 2012, The Fort and its environs were the only locations of the study area with confirmed Syrian Serin breeding, with another site housing a possible pair in the Island (the below Figure).

Study Area and Confirmed (CBS) and Possible (PBS) Breeding Sites

The Fort

The Island

The numbers of Syrian Serins showed an influx of birds in early April with a maximum number of 32, then a reduction in numbers later on in that month, down to 4 (2 breeding pairs), with a slight increase by mid May; being mainly related to the fledglings leaving the nest. This was followed by a retreat in numbers later on in the month to stabilize till the end of June leading to total absence by mid July, with a renewed built up to 40, by mid August till end of September. This leads to a confirmed breeding population of 2 pairs.

Syrian Serin numbers versus the dates observed

The causes of the immigration/dispersal from this area could not be explained through this study, since at least two species of conifers abound, a broad variety of seed rich vegetation is in proximity and water sources were in excess in the Fort area.

Syrian Serin feeding

Man-made water sources

Results indicate that this finch has preference to the fringes, avoiding sparsely, i.e. a row of trees, or densely packed plantations such as large wooded areas, as in the cemetery and/or The Island.

Transient water

Syrian Serin courting

Based on the observations, it appears that the Syrian Serins arrive into the preferred breeding location as soon as weather conditions allow. Display/courting are initiated directly, with mating soon to follow. Once nest site is selected, the mate and location are then defended. Attempts at finding a mate seem to continue for the still unpaired birds, for the coming 10-14 days.

The daily behaviour and activities of the Syrian Serin in the colony of Anjar were studied and noted with particular relevance to habitat use.

This study has shed some light on the Syrian Serin's breeding requirements in Anjar, such as tolerance to human activities and settlements, the preference to the fringes of wooded areas, availability of soft seeds for feeding, and insignificant prosecution pressure in spring, yet in autumn hunting had drastic effect on the population. Birds that bred in Anjar succeeded in producing at least two broods.

However, the site seemed to lack one or more of the essential elements required for a more robust colonization since by the latter part of April, most of the population has vacated the site, which could not be defined within the limitations of this study.

Underground pre-grazing

Unground post-grazing

Many questions are still left unanswered at this stage of the study, most important of which are:

- What caused the mid April mass departure? Was The Fort a resting/staging post for the migrating Syrian Serins or was there a definite lack of basic nesting components?
- What is the effect of seeds maturity as a food source, preference being to soft seeds (Perrins, CM & S Cramp1994, Khoury, 2001)? Bearing in mind that the herds of goats and sheep brought into Fort domain on April 26, was past the mass departure date.
- How territorial is the Syrian Serin, and what is the requisite distance between nests?
- What is the type and size of the preferred nesting tree?

It is clear at the moment that these questions just touch on the basic needs of the Syrian Serin requiring a far more profound investigation.

Based on the field study, the main threats encountered in Anjar are possibly the following:

1- The availability of the 3 main components for Syrian Serin in the same area; these are coniferous trees (mainly cypress trees at the fringes), annual / perennial vegetation of soft seeds, and a source of water.
2- Since the Syrian Serin appeared to be a bird of the fringes, the shape and constitution of the wooded area in terms of density and tree species could be a factor.
3- Hunting seemed to be an additional pressure on the resident population for the season.

2d. Population Viability Analysis

No information is available

3 - Policies and legislation relevant for Management

This section gives a list of the international legal designations and an overview of relevant international and national policies that have direct effect on the species.

3a. **International conservation and legal status of the species**

This species is classified as Globally Threatened - Vulnerable because the small population, which was once thought to be stable, appears to have declined at key sites since 1996 by 20%, principally owing to the effects of drought that caused a decline in seed production and in the number of water pools. The drought conditions further enhance declines in habitat quality caused by grazing pressure and wood cutting (IUCN Red List, BirdLife International 2012).

The relevant international legislations (agreements and conventions) applicable to the Syrian Serin with their key requirements are summarized below:

- **Convention on the Conservation of Migratory Species of Wild Animals (CMS or Bonn Convention):** CMS is the only global convention specializing in the conservation of migratory species, their habitats and migration routes. CMS Parties strive towards strictly protecting these animals, conserving or restoring the places where they live, mitigating obstacles to migration and controlling other factors that might endanger them. Besides establishing obligations for each state joining the Convention, CMS promotes concerted action among the Range States of many of these species.

As Syrian Serin is listed in Appendix I of the convention for the endangered species, parties acknowledge the need to take action to avoid any migratory species becoming endangered. In particular, parties are obliged:

- To promote, cooperate and support research relating to migratory species.
- To endeavor to provide immediate protection for migratory species included in Appendix I that live within or pass through their national jurisdictional boundaries. This should include the following fundamental actions:
  - To conserve and, where feasible and appropriate, restore those habitats of the species which are of importance in removing the species from danger of extinction;
  - To prevent, remove, compensate for or minimize, as appropriate, the adverse effects of activities or obstacles that seriously impede or prevent the migration of the species;
  - To the extent feasible and appropriate, to prevent, reduce or control factors that

are endangering or are likely to further endanger the species, including strictly controlling the introduction of, or controlling or eliminating, already introduced exotic species.
- Shall prohibit the taking of animals belonging to such species.

Further, the CMS agreement encourages:

a) Periodic review of the conservation status of the migratory species concerned and the identification of the factors, which may be harmful to that status;
b) Coordinated conservation and management plans;
c) Research into the ecology and population dynamics of the migratory species concerned, with special regard to migration;
d) The exchange of information on the migratory species concerned, special regard being paid to the exchange of the results of research and of relevant statistics;
e) Conservation and, where required and feasible, restoration of the habitats of importance in maintaining a favorable conservation status, and protection of such habitats from disturbances, including strict control of the introduction of, or control of already introduced, exotic species detrimental to the migratory species;
f) Maintenance of a network of suitable habitats appropriately disposed in relation to the migration routes;
g) Where it appears desirable, the provision of new habitats favorable to the migratory species or reintroduction of the migratory species into favorable habitats;
h) Elimination of, to the maximum extent possible, or compensation for activities and obstacles, that hinder or impede migration;
i) Prevention, reduction or control of the release into the habitat of the migratory species of substances harmful to that migratory species;
j) Measures based on sound ecological principles to control and manage the taking of the migratory species;
k) Procedures for coordinating action to suppress illegal taking;
l) Exchange of information on substantial threats to the migratory species;
m) Emergency procedures whereby conservation action would be considerably and rapidly strengthened when the conservation status of the migratory species is seriously affected; and
n) Making the general public aware of the contents and aims of the agreement.

Although only CMS seems to mention the Syrian Serin species in specific in its appendix, several other conventions and agreements benefit the above species indirectly such as:

- **Convention on Biological Diversity (CBD):** where its objective are the conservation

of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. It encourages the signing parties in article 8 to:

(a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
(c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;
(d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
(e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas;
(f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, inter alia, through the development and implementation of plans or other management strategies;

And in article 9, it encourages parties to:

(c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions;
(d) Regulate and manage collection of biological resources from natural habitats for ex-situ conservation purposes so as not to threaten ecosystems and in-situ populations of species, except where special temporary ex-situ measures are required under subparagraph (c) above;

It further specifically encourages contracting parties for sustainable use of resources through its article 10, as follows:

(a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;
(c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;
(d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and
(e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

- **African-Eurasian Migratory Waterbird Agreement (AEWA) under the CMS:** which calls for the conservation of waterbirds especially globally threatened in addition to the protection, restoration and rehabilitation of their habitats. Its action plan specifies actions which the Parties shall undertake, under the following headings:

(a) Species conservation;
(b) Habitat conservation;
(c) Management of human activities;
(d) Research and monitoring;
(e) Education and information; and
(f) Implementation.

Although Syrian Serin is not a waterbird, but it is dependent on the wetlands habitat for its survival where the actions of the AEWA satisfies the habitat conservation.

- **Ramsar Convention for Wetlands:** is the only global environmental treaty that deals with a particular ecosystem. The Convention's mission is "the conservation and wise use of all wetlands through local and national actions and international cooperation, as a contribution towards achieving sustainable development throughout the world". It is important to highlight that the convention stresses the wise use concept defined as "the maintenance of their ecological character, achieved through the implementation of ecosystem approaches, within the context of sustainable development".

The Ramsar Contracting Parties, or Member States, have committed themselves to implementing the "three pillars" of the Convention: to designate suitable wetlands for the List of Wetlands of International Importance ("Ramsar List") and ensure their effective management; to work towards the wise use of all their wetlands through national land-use planning, appropriate policies and legislation, management actions, and public education; and to cooperate internationally concerning trans-boundary wetlands, shared wetland systems, shared species, and development projects that may affect wetlands.

3b. **National policies, legislations, and ongoing activities**

With the end of the internal war in Lebanon early 90's, and after the Earth Summit (International Conference on Environment and Development) held in Rio de Janero in 1992, the Lebanese government showed increased interest in the environmental issues in Lebanon, as proven by the establishment of the Ministry of Environment through the law number 216 dated 2/4/1993, which was later amended through law no. 667 dated 29/12/1997. These laws defined the general mandate of the Ministry of Environment-MoE. More specifically regarding biodiversity and bird conservation, the Ministry of Environment is responsible for the preservation of plant and animal species, habitats and ecological balance and the management of nature resources. MoE's responsibilities in biodiversity protection cover the following tasks:

- Participation in national land use classification and management as to minimize negative effect on environment.
- Classification of protected natural sites and, establishment, protection and management of protected areas.
- Specification of the animal and bird species allowed for hunting.
- Specification of the hunting season and the determination of sites allowed for hunting.
- Define the threatened bird species, animal, fish or plants; and suggest the appropriate procedure and measures for its preservation.
- Study the international agreements, and suggest the appropriate ones for signature by the government[25].

The law for the Protection of Environment (Law No.444 dated 29/7/2002) has mandated in article 4 several important principles, mainly:

- The precautionary principle which mandates the adoption of appropriate actions based on scientific information and best technologies available in order to prevent adverse effects on the environment.
- The principle of biodiversity protection that stipulates that all activities should avoid causing damages to the different components of the biodiversity.
- The principle of avoiding any deterioration in natural resources.
- The principle of impact assessment for major projects and plans as to their effect on the environment.

One of the achievements was the issuance of the new hunting law 580/2004, which has declared that all birds, whether local or migratory, are protected except the game birds. The law also prevents hunting of globally threatened birds or those listed on IUCN Red List. But, it is important to note here that national monitoring bird programme is not initiated yet.

Further, the application decrees for the new hunting law 580 are ready and approved by the Hunting Higher Council. The Minister of Environment have declared these decrees within the last period of 2012.

Regarding mainstreaming biodiversity into other relevant sectoral and cross-sectoral national plans, programmes and policies besides the environment, the fourth report to CBD reveals that some have addressed directly biodiversity considerations such as the "National Reforestation Plan" prepared by the Ministry of Environment in 2001 and executed since then, the "Hunting Law" issued in 2004, the "Strategy for Agricultural Development in Lebanon" prepared by the Ministry of Agriculture in 2004, the "National Master Plan for land Management in Lebanon (SDATL)" prepared by the Council for Development and Reconstruction in 2004 and approved by the Council of Ministers in 2009, the "Desertification National Action Plan" prepared by the Ministry of Agriculture in 2003. As for the "National

25- Law no. 667 dated 29/12/1997.

Strategy for Forest Fires" in Lebanon issued in 2009 although it did not refer explicitly to biodiversity but its implementation will contribute definitely to the conservation of forest biodiversity and ecosystems. However in all these mentioned cases, the major challenge remains the proper enforcement of the provisions of these strategies and plans.
Nevertheless in the majority of the cases, the other main sectors have integrated environmental considerations but not specifically biodiversity, thus contributing indirectly to biodiversity mainstreaming such as the following sectors: "Tourism" through promoting ecotourism activities, "Education" through the integration of environmental education within the school curricula into the various disciplines, "Communication" through the coverage of environmental news and issues in the media in addition to the internet, and "Fisheries" through the issuance of many decisions regulating fishing practices. In addition to the "National Master Plan for Quarries" prepared by the Ministry of Environment and issued in 2009 and which has incorporated environmental considerations in general but not particularly biodiversity.
Therefore, biodiversity considerations need to be integrated more specifically into the relevant main sectors and the sectoral and cross-sectoral plans, policies and strategies[26].

The Government Policy Statement issued on 5/8/2008 has included an entire section related to the environment, this section covered natural resources and green cover, but not specifically biodiversity.

It is important to note that the Minister of Environment has recently submitted the draft framework law for protected areas, draft EIA and SEA decrees, and draft decree for environmental officers to the Council of Ministers for adoption.

Furthermore, the Lebanese government has signed and ratified several conventions and international environmental agreements that mandate the protection of the cultural and natural heritage, sustainable management of natural resources, protection of biological diversity, and conservation of ecosystems including wetlands and forests. These conventions include:
- UNESCO Convention concerning the protection of the World Cultural and Natural Heritage-law no. 19 dated 30/10/1990.
- Convention on Biological Diversity (CBD)- law no. 360 dated 11/08/1994 (Goal: Conservation of biodiversity, sustainable use, fair and equitable benefit sharing).
- Ramsar Convention for Wetlands- law no. 23 dated 01/03/1999 (Goal: Protection of wetlands with international importance, due to their importance for water birds).

26- Forth National Report of Lebanon to the Convention on Biological Diversity, 2009.

- African Eurasian Water Bird Agreement (AEWA under the Bonn convention)- law no. 412 dated 13/06/2002 (Goal: Protection of migratory waterbirds along their flyways).
- Protocol for the Specially Protected Areas (marine) under Barcelona Convention- law no. 292 dated 22/02/1994 (Goal: Protection and management of specially Mediterranian marine protected areas and their globally threatened species).
- United Nations Convention to Combat Desertification (UNCCD) – law no. 469 dated 8/12/1995 (Goal: Reduction in land degradation).
- United Nations Framework Convention on Climate Change – Law No. 359 dated 1/8/1994.

It is important to note that Lebanon is not a signature of the CMS agreement yet which seems to be the most important convention for the protection of the Syrian Serin.
Anjar Kar Zabad is one of the 15 IBAs declared internationally for Lebanon. It is a wetlands area, and a good candidate for Ramsar designation as a wetland of international importance. It is important to note here that there is considerable increase in the number of protected areas of different categories (12 nature reserves, 3 biosphere reserves, 16 protected forests, 16 protected natural sites/landscapes, 4 Ramsar sites, 5 World heritage sites, 15 IBAs). With the exception of some nature reserves, all other protected areas are in need of a mechanism for proper management and monitoring.
Further, the adoption of community based conservation approaches such as Hima helped advance protection and sustainable use of resources on national basis.

The main difficulties are the lack of financial resources and up-to-date information, as well as the lack of specialists and opportunities for their training. Although important legislation were drafted and/or issued, the difficulty consists in the lengthy process of law endorsement as well as proper enforcement of existing legislation. The cooperation between sectors needs to be reinforced. There is also a lack of efficient coordination of both research and nature protection activities.

4 - Framework for Action

4a. Goal

Downlist the Syrian Serin species/population from the IUCN Red List/AEWA

4b. Objectives of the Plan

1- To increase the breeding pairs of Syrian Serin in Hima Anjar to 30 by 2017.
2- To increase the Syrian Serin population and distribution in Hima Anjar to 100 by 2017.
3- To raise the value of the Syrian Serin at Anjar village by 50% by 2017.

4c. Results

- Results are the underlying conditions that need to be achieved in order to accomplish each objective.
- Results are the direct consequences of successfully implemented actions.
- Results should address each important threat identified in the threat analysis. For example the result *"Annual adult survival rate increased to 75%"* corresponds to the threat *"An estimated 60% of adults die each year due to electrocution and poisoning."* Other example results could be *"Average breeding success increased to YY fledged young per pair"*.
- Results can also be planned for addressing important organizational and research issues. For example, *"Distribution and numbers of the population are known by DATE"*.
- To avoid poorly focused plans, it is recommended to limit the number of results to 3 – 6.
- Results should be ranked to follow a descending order of priority within each objective.

4d. Actions

Actions should be prioritized as:

- Essential
- High
- Medium
- Low

Time scales should be attached to each Action using the following scale:

- Immediate: completed within the next year
- Short: completed within the next 3 years
- Medium: completed within the next 5 years
- Long: completed within the next 10 years
- Ongoing: currently being implemented and should continue
- Completed: completed during preparation of the SSAP

The Framework for Action is presented using the following table format:

Goal: Downlist the Syrian Serin species/population from the IUCN Red List/AEWA			
Objective 1: To increase the breeding pairs of Syrian Serin in Hima Anjar to 30 by 2017.			
Result	Action	Priority	Time scale
Habitat conservation is increased by 50%	• Increase the evergreen forest cover in Hima Anjar through reforestation plans (fulfilling the needed tree species and fringe space required).	• Essential	• medium, ongoing
	• Enhance the proliferation of the soft seed vegetation that birds were seen to be feeding on.	• High	• medium, ongoing
	• Introduce system to manage grazing pressure in Hima Anjar.	• High	• Short
	• Quality of water resources is restored through promoting good agricultural practices	• Medium	• Short
	• Quality of water resources is restored through introducing sewerage network and water treatment.	• Medium	• medium
	• Appropriate Quantity of water needed for Syrian Serin survival is maintained.	• Medium	• Short
Objective 2: To increase the Syrian Serin population and distribution in Hima Anjar to 100 by 2017.			
Result	Action	Priority	Time scale
Hunting threat is decreased by 50%	• Policy documents elaborated by municipal council regarding Hima delineation and promotion of sustainable hunting outside Hima boundaries.	• Essential	• Immediate
	• Political will and institutional setup are available to enforce hunting ban inside the Hima and sustainable hunting practices outside the Hima.	• Essential	• Immediate
	• Capacity building Programme on hunting management is established and implemented.	• Essential	• Immediate

Objective 3: To raise the value of the Syrian Serin at Anjar village by 50% by 2017.			
Result	Action	Priority	Time scale
Data on breeding pairs and population size of Syrian Serin in Hima Anjar is maintained	• Baseline data about Syrian Serin population size, breeding pairs and distribution is collated. • Monitoring programme for Syrian Serin species and habitat is elaborated and maintained. • Capacity of local people to implement monitoring programme is raised.	• Essential • Essential • High	• Short • Immediate • Short
The value of the Syrian Serin is raised at the local level by 50%	• Awareness and outreach programme is elaborated & implemented. • Brand the Anjar village for Syrian Serin is adopted and implemented. • Conservation of Syrian Serin is linked to economic opportunities.	• Essential • High • High	• Short • Medium • Medium

The Syrian Serin bird is vulnerable according to the IUCN red List. Thus, our goal for this species action plan is to downlist the Syrian Serin species/population from the IUCN Red List/AEWA.
The field study in Anjar has confirmed that Syrian Serin bird seeks breeding in the fringes of evergreen trees, specifically Cypress trees, the flat shaped type. It further needs nearby water resources and soft seeds perennials for feeding at the same area.

Therefore, our objectives for the Syrian Serin conservation in Anjar are as follows:
1- To increase the breeding pairs of Syrian Serin in Hima Anjar to 30 by 2017.
2- To increase the Syrian Serin population and distribution in Hima Anjar to 100 by 2017.
3- To raise the value of the Syrians Serin at Anjar village by 50% by 2017.

To reach objective 1, the suggested activities concentrate on reforestation plans for evergreen species, specially Cypress trees, taking into consideration the fringe space required. Further work concentrates on proliferation of soft seeds vegetation, which is supported by grazing plans. On the other hand, suggested activities concentrates on raising the quality of water resources by promoting good agricultural practices, and introducing sewerage network and water treatment which are the main identified sources of water pollution. As over-extraction of water, mainly for agriculture, is still practiced, effort should concentrate on awareness and promoting alternative irrigation schemes. Hoping that all above would lead to habitat conservation by 50% by end of 2017.

As hunting in Anjar is identified as the main threat on population and distribution, thus, to reach objective 2, the actions suggested include development of policy decisions by municipality regarding zonation and promotion of sustainable hunting practices, political will and institutional setup for enforcement of the hunting law at local level, in addition to awareness and capacity building program on hunting management is established and implemented. These actions would ensure the reduction of hunting threat on the Syrian Serin by 50% by end of 2017.

Objective 3 complements objectives 1 & 2, by raising the value of the Syrian Serin at Anjar village by 50% by 2017. Thus, to reach this objective, action concentrates on two levels: one on monitoring program for Syrian Serin, habitat, and raising the capacity of local people to implement the monitoring program. This helps as a scientific basis for policy decisions. The other level deals with awareness and outreach campaigns on the importance of the Syrian Serin vulnerable species, shows the importance of Anjar through branding for Syrian Serin, and linking economic opportunities for local community to the conservation of the Syrian Serin. It is expected that these actions would lead to raising the value of the Syrian Serin at the local level by 50%.

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State of

Lebanon's Birds and IBAs

Ministry of Environment

The Ministry of Environment was established in 1993, and in order to address environmental challenges in Lebanon, the Ministry of the Environment identified the principles and objectives of environmental policy and strategic objectives; and thus re-organized the Ministry accordingly. The Ministry of Environment is strongly convinced about the importance of strengthening the capacity of its staff and building lasting partnerships with public and private sectors. The ministry has been able to integrate environmental concepts at different levels, and is also working to resolve the remaining obstacles in the application of the laws.
www.moe.gov.lb

United Nations Development Program - UNDP

UNDP is the UN's global development network, advocating for change and connecting countries to knowledge, experience and resources in order to help people build a better life. We are on the ground in 166 countries, working with them on their own solutions to global and national development challenges.
www.undp.org

Global Environment Facility - GEF

Established in 1990, the Global Environment Facility (GEF) invests in businesses around the world that provide cost-effective solutions to environmental and energy challenges. The firm concentrates on delivering favorable risk-adjusted investment returns to their limited partners over multiple vintage years and through varied macroeconomic climates.
www.thegef.org

BirdLife International

Is a global partnership of non-governmental organizations concerned with the preservation of birds and biodiversity for the benefit of humans. These organizations are distributed in more than 107 countries around the world.
www.birdlife.org

Society for the Protection of Nature in Lebanon - SPNL

Is a national non-governmental organization established under a no. 6. A.D. in 1986. SPNL is the national partner for BirdLife International in Lebanon. SPNL aims to conserve nature, birds, and biodiversity in Lebanon; and to promote the sustainable use of natural resources. SPNL is a leader in reviving the "Hima" community based approach as a decentralized approach for managing natural resources in a sustainable way.
www.spnl.org

"Mainstreaming Conservation of Migratory Soaring Birds into Key Productive Sectors along the Rift valley/Read Sea Flyway" - MSB project

The project aims to ensure the preservation of globally threatened bird species. It also seeks to mainstream the migratory soaring bird concerns into the productive economic sectors of hunting, energy, agriculture, waste management and tourism on the flyway for migratory birds in the Rift Valley / Red Sea, making it a safe road for them.

MSB Mainstreaming Conservation of Migratory Soaring Birds Into Key Productive Sectors Along The Rift Valley/Red Sea Flyway