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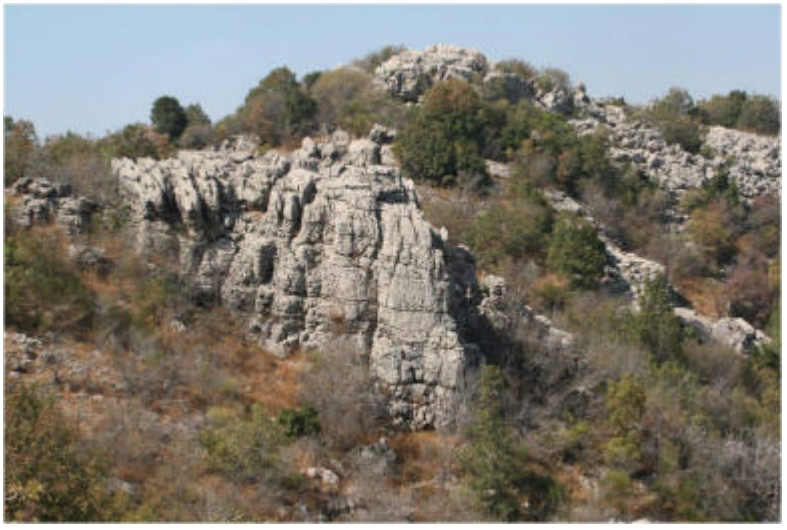
JABAL MOUSSA

IMPORTANT BIRD AREA STUDIES

PRELIMINARY RESULTS

December 2007



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JABAL MOUSSA

IMPORTANT BIRD AREA STUDIES – PRELIMINARY RESULTS

CONTENTS

LIST OF TABLES

LIST OF GRAPHS

JABAL MOUSSA

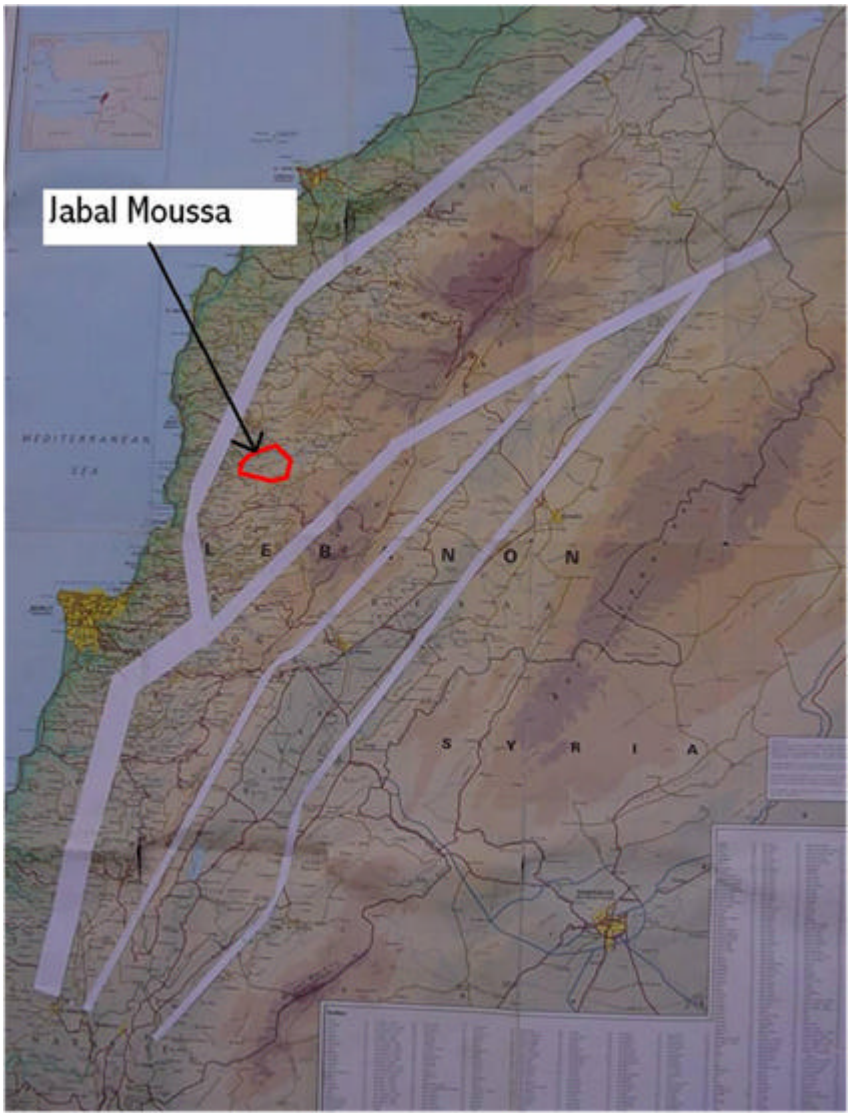
IMPORTANT BIRD AREA STUDIES – PRELIMINARY RESULTS

1.0 INTRODUCTION

1.1 Background

Lebanon is an extremely important country for birds, as many species pass through the country on their migration routes, in the Spring flying northwards to their breeding sites in Europe and Asia, and Autumn flying back South again to overwinter. The country of Lebanon itself forms a 'bottleneck' for many migratory species which do not wish to fly over the Mediterranean sea, nor too far off course to the East. There are several main bird migration routes that are known from limited data throughout Lebanon, as indicated on the map below.

Map 1: ***Known Bird Migration Routes Through Lebanon***



NB: This map is based on a very limited amount of data and is therefore incomplete.

Several sites along these broad migration fronts have been designated as Important Bird Areas (IBAs), due to the numbers of species, mainly soaring birds, migrating through. Soaring birds are those species that use rising warm air thermals to gain height and allow them to migrate, and are therefore unable to fly over large expanses of water as thermals only form over land. Included in this category are birds of prey, storks and cranes.

1.2 Important Bird Area Work

In spite of Lebanon's importance for soaring bird migration, prior to 2005 only 4 sites had been designated as IBAs. In 2005, A Rocha Lebanon, in partnership with the Society for the Protection of Nature in Lebanon (BirdLife International's partner organisation in Lebanon) began a three year program of fieldwork aimed at surveying potential IBAs and recommending them to BirdLife International for designation. One of the sites included within this project was Jabal Moussa.

1.3 Potential Importance of Jabal Moussa

The importance of Jabal Moussa lies in its potential as a bottleneck site for internationally large numbers of overflying bird species such as cranes, storks and raptors. Jabal Moussa is potentially very important for birds as it is on a broad front for soaring bird migration, which means that birds may fan out widely across the area and are not necessarily restricted to the routes shown on **Map 1**. Jabal Moussa may also be important for smaller passerine species, however not enough work has yet been carried out to ascertain this.

BirdLife International defines Important Bird Areas as:

"..key sites for conservation – small enough to be conserved in their entirety and often already part of a protected-area network – that do one of three things. They either have significant numbers of one or more globally threatened species, or are one of a set of sites that together hold a suite of restricted-range species or biome-restricted species, or they have exceptionally large numbers of ***migratory or congregatory species***." (BirdLife International Website: www.birdlife.org/action/science/sites/mideast_ibas/index.html).

The exact criteria vary depending on the region of the world into which a site falls. Criteria for Lebanon are set by the BirdLife Middle East office based in Jordan, which decides whether or not a site becomes designated as an IBA.

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

In some cases total numbers of birds has been based on an extrapolation of the actual data. This is particularly relevant for sites where the main interest is soaring birds on migration, where many species migrate over a period of several weeks, but visits are only made on a relatively small number of days during that period.

1.4 Important Bird Area Criteria

BirdLife International's list of criteria for Important Bird Areas (for both Global and Middle-Eastern importance is given in the section in Italics below:

A: Important Bird Areas - Global importance

A1. Species of global conservation concern
The site regularly holds significant numbers of a globally threatened species, or other species of global conservation concern.

A2. Restricted-range species
The site is known or thought to hold a significant component of the restricted-range species whose breeding distributions define an Endemic Bird Area (EBA) or Secondary Area (SA).

A3. Biome-restricted species
The site is known or thought to hold a significant assemblage of the species whose breeding distributions are largely or wholly confined to one biome.

A4. Congregations
- *i. The site is known or thought to hold, on a regular basis, = 1% of a biogeographic population of a congregatory waterbird species.*
- *ii. The site is known or thought to hold, on a regular basis, = 1% of the global population of a congregatory seabird or terrestrial species.*
- *iii. The site is known or thought to hold, on a regular basis, = 20,000 waterbirds or = 10,000 pairs of seabird of one or more species.*
- *iv. The site is known or thought to be a 'bottleneck' site where at least 20,000 storks (Ciconiidae), raptors (Accipitriformes and Falconiformes) or cranes (Gruidae) regularly pass during spring or autumn migration.*

B: Important Bird Areas - Middle Eastern importance

B1: Regionally important congregations
The site may qualify on any one of the three criteria listed below:

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

B2: Species with an unfavourable conservation status in the Middle East
The site is one of the five most important sites in the country/territory for a species with an unfavourable conservation status in the Middle East (threatened or declining throughout all or part of their range in the region) and for which the site-protection approach is thought to be appropriate.

B3: Species with a favourable conservation status but concentrated in the Middle East
The site is one of the five most important sites in the country/territory for a species with a favourable conservation status in the Middle East but with its global range concentrated in the Middle East, and for which the site-protection approach is thought to be appropriate.

Although it is possible that Jabal Moussa may hold significant numbers of Restricted-Range or Biome-Restricted Species, and thus qualify for IBA status on Criteria A2 or A3, judging from similar sites to the North and South it seems that its main importance is likely to be as a 'bottle-neck site' for soaring bird migration. This could make it either an IBA of Global Importance (see Criterion A4 iv, above) or of Middle-Eastern Importance (see Criterion B2 iv above), depending on approximately how many soaring birds pass over the site in Spring and Autumn.

1.5 Peak Flight Times

The peak flight times for the different species that migrate through Lebanon were calculated from data collected from neighbouring countries. Peak flight times are when the species in question is seen in the highest numbers migrating through Lebanon, either in Spring or in Autumn. Off-peak sightings are any observations of these species seen outside this main period. Dates are very approximate and are used as guides as to when different species are likely to be seen.

2.0 METHODOLOGY

Data was obtained through fieldwork, using binoculars and telescopes, watching for birds migrating over Jabal Moussa. Different watch points were utilised as some points were better than others on different days. Visits were carried out during the Spring and the Autumn, and were scheduled so that they would be within the peak migration time for as many soaring bird species as possible.

A total of fifteen visits were carried out during 2007, with seven undertaken during the Spring and eight in the Autumn. Where both a morning and an afternoon visit were undertaken on the same day, it is counted as just one visit.

The numbers of each species observed were recorded for each visit. Where it was not possible to identify birds to species level, the genus was used e.g. Sparrowhawk Spp.

Visits were undertaken on the dates shown below:

Table 1: ***Dates of Bird Migration Surveys at Jabal Moussa***

Visits in Spring	Visits in Autumn
24 Mar	07 Sept
09 Apr	18 Sept
10 Apr	19 Sept
30 Apr	25 Sept
19 May	02 Oct
20 May	10 Oct
17 Jun	17 Oct
	24 Oct

3.0 RESULTS

3.1 Soaring Birds

The table below shows numbers of each soaring bird species observed at Jabal Moussa, in Spring and in Autumn. Species are given in English and with their scientific name. A total of 622 and 1213 soaring birds were observed at Jabal Moussa during Spring and Autumn respectively.

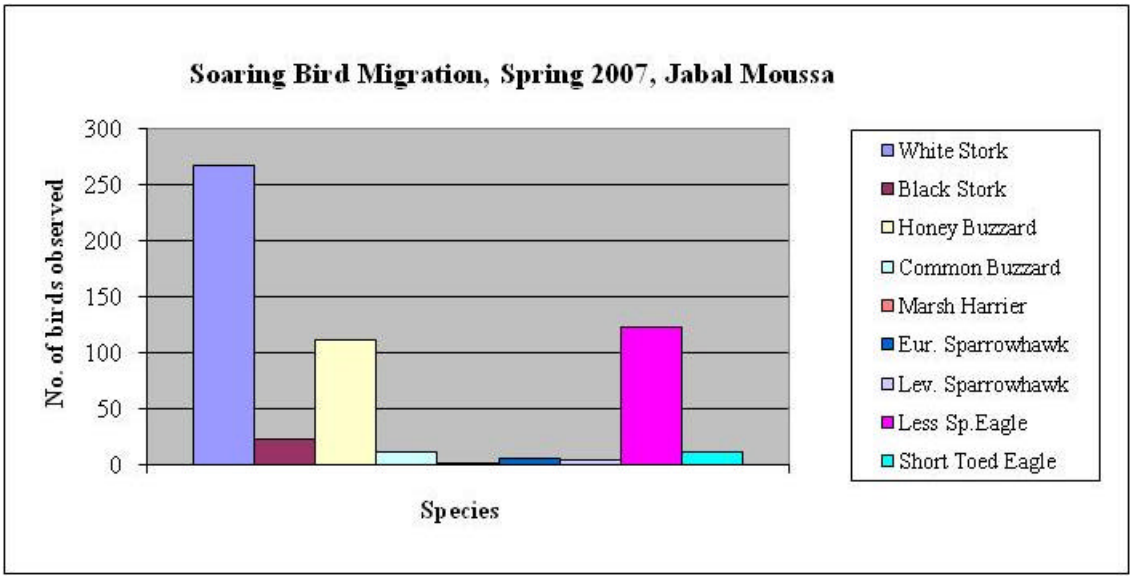
The corresponding graphs include the main soaring bird species, but these graphs do not include those species that were seen in very low numbers, or those that are likely to be resident, and are therefore not migrating.

Table 2: ***Numbers of Soaring Bird Species Observed at Jabal Moussa***

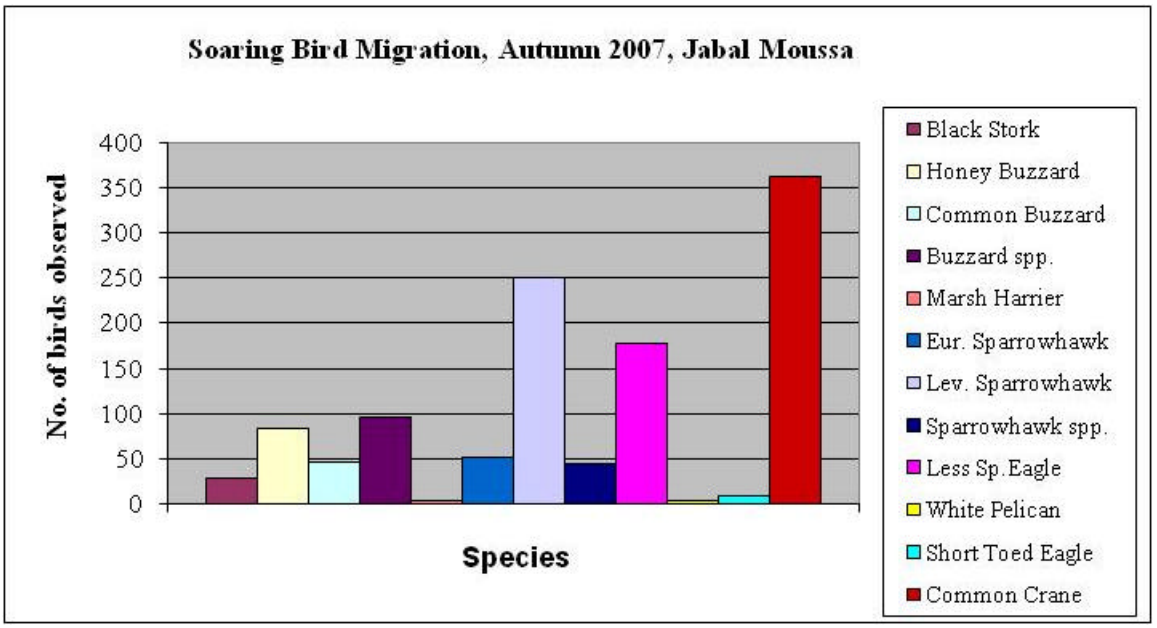
English Name	Scientific Name	Spring	Autumn
White Pelican	*Pelecanus onocrotalus*	**0**	**3**
White Stork	*Ciconia ciconia*	**267**	**0**
Black Stork	*Ciconia nigra*	**23**	**29**
Stork sp.	*Ciconia spp.*	**2**	**0**
Honey Buzzard	*Pernis apivorus*	**112**	**83**
Common Buzzard	*Buteo buteo*	**12**	**51**
Long-legged Buzzard	*Buteo rufinus*	**11**	**13**
Buzzard sp	*Buteo/ Pernis spp.*	**6**	**96**
Black Kite	*Milvus migrans*	**28**	**1**
Short-toed Eagle	*Circaetus gallicus*	**11**	**8**

English Name	Scientific Name	Spring	Autumn
Eurasian Marsh Harrier	*Circus aeruginosus*	**1**	**4**
Hen Harrier	*Circus cyanus*	**0**	**2**
Ringtail Harrier	female/imm *C. cyanus/pygargus/macrourus*	**0**	**3**
Eurasian Sparrowhawk	*Accipiter nisus*	**6**	**51**
Levant Sparrowhawk	*Accipiter brevipes*	**5**	**251**
Sparrowhawk sp	*Accipiter spp.*	**0**	**46**
Lesser Spotted Eagle	*Aquila pomarina*	**123**	**177**
Imperial Eagle	*Aquila heliaca*	**0**	**1**
Eagle sp.	*Aquila spp.*	**7**	**0**
Booted Eagle	*Hieratus pennatus*	**1**	**0**
Raptor sp.	*non-falco*	**2**	**12**
Common Kestrel	*Falco tinnunculus*	**3**	**8**
Lesser Kestrel	*Falco naumanni*	**0**	**2**
Kestrel sp	*F. tinn or naumanni*	**0**	**4**
Eurasian Hobby	*Falco subbuteo*	**1**	**4**
Falcon sp.	*Falco spp.*	**1**	**1**
Common Crane	*Grus grus*	**0**	**363**
TOTALS		**622**	**1213**

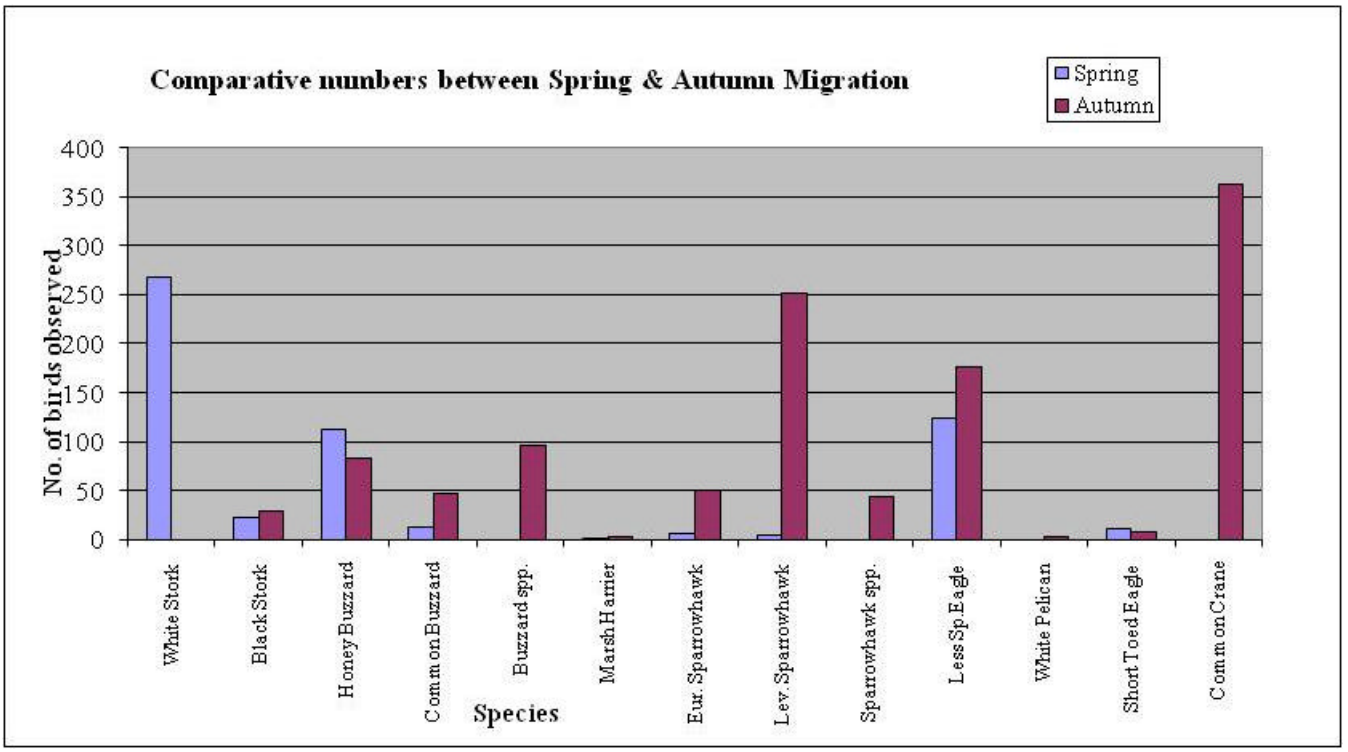
Graph 1: ***Soaring Bird Migration, Spring 2007, Jabal Moussa***



Graph 2: ***Soaring Bird Migration, Autumn 2007, Jabal Moussa***



Graph 3: ***Comparative Numbers between Spring & Autumn Migration, Jabal Moussa***



3.2 Non-Soaring species

Notes were taken of non-soaring species seen, although as the main focus was soaring birds, more attention was paid to these, and therefore numbers of non-soaring species should be taken as indicative rather than definitive. The table below shows non-soaring species observed at Jabal Moussa during the IBA surveys.

Table 3: ***Numbers of Non-soaring Species Observed at Jabal Moussa***

English Name	***Scientific Name***	**Total Observed Spring**	**Total Observed Autumn**
Chukar	*Alectoris chukar*	**7**	**0**
Common Quail	*Coturnix coturnix*	**0**	**1**
Common Cuckoo	*Cuculus canorus*	**1**	**0**
Tawny Owl	*Strix aluco*	**1**	**1**
Alpine Swift	*Apus melba*	**0**	**2**
European Bee-eater	*Merops apiaster*	**0**	**31**
Woodlark	*Lullula arborea*	**2**	**0**
Eurasian Swallow	*Hirundo rustica*	**1**	**1**
House Martin	*Delichon urbica*	**0**	**1**
Water Pipit	*Anthus spinoletta*	**1**	**0**
Tree Pipit	*Anthus trivialis*	**1**	**0**
Eurasian Wren	*Troglodytes troglodytes*	**9**	**0**
Northern Wheatear	*Oenanthe oenanthe*	**1**	**0**
Black-eared Wheatear	*Oenanthe hispanica*	**6**	**1**
Black Redstart	*Phoenicurus ochrurus*	**6**	**0**
Whinchat	*Saxicola rubetra*	**0**	**1**
Eurasian Blackbird	*Turdus merula*	**16**	**4**
Blue Rock Thrush	*Monticola solitarius*	**2**	**2**
Rufous-tailed Rock Thrush	*Monticola saxatilis*	**1**	**0**
Cetti's Warbler	*Cettia cetti*	**1**	**0**
Graceful Prinia	*Prinia gracilis*	**1**	**0**
Blackcap	*Sylvia atricapilla*	**4**	**1**
Lesser Whitethroat	*Sylvia curruca*	**25**	**0**
Sardinian Warbler	*Sylvia melanocephala*	**1**	**0**
Sylvia Warbler Sp	*Sylvia sp.*	**1**	**0**
Eastern Bonelli's Warbler	*Phylloscopus orientalis*	**1**	**0**
Chiff-chaff	*Phylloscopus collybita*	**1**	**2**
Willow Warbler	*Phylloscopus trochilus*	**0**	**3**
Spotted Flycatcher	*Muscicapa striata*	**2**	**0**
Blue Tit	*Parus caeruleus*	**5**	**0**
Great Tit	*Parus major*	**12**	**3**
Rock Nuthatch	*Sitta neumayer*	**11**	**20**
Red-backed Shrike	*Lanius collurio*	**1**	**0**
Masked Shrike	*Lanius nubicus*	**1**	**1**
Jay	*Garrulus glandarius*	**5**	**9**
Hooded Crow	*Corvus cornix*	**H**	**0**
House Sparrow	*Passer domesticus*	**2**	**0**
Rock Sparrow	*Petronia petronia*	**7**	**0**
Chaffinch	*Fringilla coelebs*	**6**	**21**
European Greenfinch	*Carduelis chloris*	**12**	**0**
European Goldfinch	*Carduelis carduelis*	**4**	**11**

English Name	*Scientific Name*	Total Observed Spring	Total Observed Autumn
Eurasian Linnet	*Carduelis cannabina*	**2**	**0**

H = Heard only

4.0 INTERPRETATION

4.1 Soaring Bird Species

Care should be taken when interpreting results from a small amount of data. The data we have so far is from only 17 days and during just one year, therefore the results should be considered as indicative rather than conclusive.

White Stork *Ciconia ciconia* had the highest number of any one species observed during the spring with a total of 267. This species was not observed during the Autumn, which is in keeping with IBAs to the North and the South of Jabal Moussa as White Storks are known to go further East during the Autumn. Other peaks in numbers during the Spring were Honey Buzzard and Lesser Spotted Eagle. Fewer Honey Buzzards were observed during the Autumn as they are an early Autumn migrant, passing through the Eastern Mediterranean countries in their largest numbers during late August to mid-September.

The highest number of any one species seen during the Autumn was the Common Crane, with 363 individuals observed. Cranes pass through Lebanon in very large numbers very early on in the season, during February and March, which means that we had no records of them during the Spring of 2007. Levant Sparrowhawk gave the 2nd highest total in the Autumn, with 250 observed on one day during September.

White Pelicans were observed in very low numbers and only during the Autumn.

The data shows that good numbers of migratory bird species pass through Jabal Moussa on migration. The total numbers have been **extrapolated,** as briefly mentioned in Section **1.3**, and this is shown in **Table 4** (Spring) and **Table 5** (Autumn) below.

Table 4: ***Extrapolation of 2007 data for Soaring Birds Observed at Jabal Moussa in Spring Passage***

Species	Total seen during peak period	No. of visits in peak period	Daily average during peak period	Total No. Of days of peak passage	Start of Peak Period	End of Peak Period	No. seen outside peak period	Predicted Seasonal total ((daily average x days of peak passage)+no. seen outside peak period)
White Stork	58	3	19.33	32	10th Mar	10th Apr	209	828
Black Stork	22	4	5.5	63	15th Mar	15th May	1	348
Honey Buzzard	112	3	37.33	28	28th Apr	25th May	0	1045
Common Buzzard	7	3	2.33	25	22nd Mar	15th Apr	5	63
Buzzard sp (assuming them to be Common)	0	0	0	0	22nd Mar	15th Apr	6	6
Marsh Harrier	1	4	0.25	52	20th Mar	10th May	0	13
Eurasian Sparrowhawk	1	2	0.5	16	10th Apr	25th Apr	5	13
Lesser Spotted Eagle	30	3	10	22	20th Mar	10th Apr	93	313
Levant Sparrowhawk	0	0	0	11	18th Apr	28th Apr	5	5
Snort-Toed Eagle	10	1	10	37	28th Feb	5th Apr	1	371

Species	Total seen during peak period	No. of visits in peak period	Daily average during peak period	Total No. Of days of peak passage	Start of Peak Period	End of Peak Period	No. seen outside peak period	Predicted Seasonal total ((daily average x days of peak passage)+no. seen outside peak period)
	241						**319**	**2999**

Table 5: ***Extrapolation of 2007 data for Soaring Birds observed at Jabal Moussa in Autumn Passage***

Species	Total seen during peak period	No. of visits in peak period	Daily average during peak period	Total no. of days of peak passage	Start of Peak Period	End of Peak Period	No. seen outside peak period	Predicted Seasonal total ((daily average x days of peak passage)+no. seen outside peak period)
White Stork	0			28	17th Aug	13th Sep		
Black Stork	9	4	2.25	19	15th Sep	3rd Oct	20	63
Honey Buzzard	2	1	2	19	28th Aug	15th Sep	81	119
Common Buzzard	24	3	8	16	25th Sep	10th Oct	18	146
Buzzard sp (assuming them to be Common)	34	3	11.33	16	25th Sep	10th Oct	62	243
Marsh Harrier	3	4	0.75	26	10th Sep	5th Oct	0	19.5
Eurasian Sparrowhawk	11	2	5.5	14	2nd Oct	15th Oct	38	115
Sparrowhawk sp (assuming Eurasian)	4	2	2	14	2nd Oct	15th Oct	40	68
Lesser Spotted Eagle	15	1	15	7	29th Sep	5th Oct	162	267
Levant Sparrowhawk	251	3	83.67	13	14th Sep	26th Sep	0	1088
White Pelican				23	10th Oct	1st Nov	3	3
Short-Toed Eagle	5	3	1.67	21	23rd Sep	13th Oct	3	38
Common Crane	363	1	363	32	15th Oct	15th Nov	0	11,616
	721						**427**	**13,786**

Going by the extrapolation of actual numbers of birds observed at Jabal Moussa, which has been used previously to designate other sites in Lebanon as Important Bird Areas, Jabal Moussa could be put forward for designation as an Important Bird Area (of Middle Eastern Importance) under *Criterion B1 iv* as described in Section **1.4**. However the extrapolation of data for this site is currently based on a very small number of visits: only 3 days during the peak period for Levant Sparrowhawk and 1 day for Common Crane (the two most numerous migrants during Autumn), and this may well be insufficient to satisfy BirdLife International. Once the 2007 data has been forwarded to BirdLife International, they will make a decision about whether to grant IBA status and at which level. However to achieve Global IBA status, it will be necessary to carry out more visits during peak migration periods in 2008.

4.2 Non-soaring Bird Species

A total of 42 non-soaring bird species were observed at Jabal Moussa during the visits of 2007. Further survey work is needed at Jabal Moussa to establish how important the site is for migratory or resident non-soaring species. However it was found that Blue Tit is present at Jabal Moussa, which is an interesting result as this species is considered to be scarce within Lebanon (although it is a common species in much of Europe).

5.0 CONCLUSIONS

Preliminary Important Bird Area studies were carried out at Jabal Moussa during 2007. A total of 15 visits were carried out, concentrating on surveys for migrating soaring birds (raptors, storks and cranes). Based on extrapolation techniques, data from the autumn surveys could be used to support Jabal Moussa becoming designated as an IBA of Middle Eastern Importance, however for the reasons given above, it is considered necessary to carry out further survey work, during peak passage periods, in 2008.

6.0 FUTURE WORK

As the dataset is currently inconclusive and only one year's fieldwork has been carried out, with ornithological work concentrating mainly on soaring birds, further work is proposed. This will have two aims:

1 –To assess the presence and abundance of bird species present at Jabal Moussa in all seasons of the year, and including Resident, Wintering, Passage Migrant and Summer Breeding species; and

2 – To establish whether or not the site qualifies as an Important Bird Area globally, according to the criteria laid down by BirdLife International.

Methodologies proposed to this end include:

- A survey of breeding birds based on standard BTO (British Trust for Ornithology) methodology;
- Walk-over surveys in all seasons of the year to cover all the major habitats in the site;
- Trapping and ringing of passerine birds (songbirds) during the spring, and possibly other times of year, to allow further assessment of breeding populations and give an indication of how important the site is for passerine migration. During ringing operations a field-log will be taken of all species seen and heard.
- Fixed-point counts for raptors and other soaring birds on migration, concentrating on the peak passage periods for the most abundant species.