

# The Aammiq Marsh: 1998 Autumn Bird Survey

## Report by the Aammiq Project of A Rocha Lebanon

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### Abstract

105 migrant and resident bird species were observed on 38 survey days between September 1<sup>st</sup> and November 30<sup>th</sup>, 1998, at the Aammiq marsh in the western Bekaa Valley of the Lebanon. The wetlands, though much diminished in size this century, remain an important area for birds to rest and refuel during the twice-annual migration between Europe and Africa. The Aammiq Project of A Rocha Lebanon is monitoring the marsh while negotiations to make it a national reserve continue. Casual observations of a further 13 species observed during the survey period at or near the marsh are noted. This report includes a species list and the dates on which maximum numbers of each species were observed, observation data presented in tabular form and remarks on disturbance.

### Introduction

#### *Objectives*

The primary objective of the Autumn Bird Survey at the Aammiq marsh was to determine what bird species used the wetlands or migrated over the wetlands between September 1<sup>st</sup> and November 30<sup>th</sup>, 1998. The three-month period was chosen in order to include the peak migration dates observed for raptor and songbird species in Israel (Shirihai, 1996), on the assumption that similar dates, to within a few days, would be observed in Lebanon. The secondary objective was to observe the approximate dates during which the populations of different migrant species peaked in numbers at the marsh.

#### *The Aammiq Marsh*

The Aammiq Marsh lies on the Syrio-African Rift Valley, a migratory flyway for birds since ancient times. The existing wetland (description to follow) is a remnant of much more extensive marshes that were drained for farmland over the past century. Though much reduced in size, it is still the only significant wetland of its kind - open pools and large standing reedbeds - for the 450 kilometres between the deltas of southern Turkey and the Hula Lake of Northern Israel (A Rocha Trust, 1998). The wetland has been recognized as a "wetland of international importance" in the directory of Western Palaearctic Wetlands (Carp, 1980); as an "important bird area in the Middle East" by BirdLife International (Evans, 1994); most recently it was included in the "Directory of Wetlands in the Middle East" (I.U.C.N., 1995).

The Skaff family, which owns two-thirds of the wetland, is in negotiation with the Lebanese Government and the United Nations Development Project to make the site a national reserve. In the interim, with the Skaff family's permission, the Aammiq Project of A Rocha Lebanon has undertaken to monitor wildlife use of the marsh and to inventory species of plants and animals found there. It is expected that these studies will prove useful to guide future management of the area. The A Rocha Trust has been investigating the site since 1996.

Three senior wardens of the Royal Society for the Protection of Birds were invited by the Aammiq Project of A Rocha Lebanon to spend five weeks intensively surveying the marsh during the spring migration of 1997. The wardens compiled a list of 144 species, including two listed as globally threatened and 49 listed as having unfavorable conservation status in Europe (Busuttill et al, 1997). The 1998 autumn bird survey represents the first recent systematic monitoring of bird use of the Aammiq wetlands during the autumn migration.

#### *Site Description*

The Aammiq Wetland (33° 46' N, 35° 46' E), as described by the A Rocha Trust (1998), lies 7 km SSW of Qabb Elias in the Bekaa valley at an altitude of approximately 865 m (see **Maps 1** and **2**). The area is drained by the Litani River into which extensive drainage channels run. The most significant area of

reed systems and open pools covers some 200 hectares on the northern side of the canalised Riachi stream. The Riachi stream runs 4.5 km in a straight course ESE from the foot of Jebel el Barouk to the Litani River. The spring-fed El Rahbe stream meanders through the wetland.

The wetland is relatively long and thin in shape and is composed of a mosaic of *Phragmites* - *Typha* reedbeds and unimproved pastures. Most of this area is under water through the winter months, but during the time of the survey only one small area (less than one hectare) of open water remained. An avenue of mature manna ash trees (*Fraxinus ornus*) runs along the raised northern banks of the Riachi stream. The avenue includes a few other species of trees, including an elm tree (*Ulmus sterile* c.f. *canescens*) and Plane trees (*Platanus orientalis*).

The area surrounding the Aammiq wetland includes intensively cultivated fields (winter cereals and irrigated crops such as maize, potatoes, sugar beet and cabbage) divided into 25 hectare parcels and delineated by drainage ditches; an area of neglected orchard; a rocky hillside of Evergreen Oak (*Quercus calliprinos*) maquis and stands of Umbrella Pine (*Pinus pinea*) on Jebel el Barouk to the west of the marsh.

### *Relevant Information*

During the three survey months the marsh suffered a great deal of disturbance from hunters; sugar beet harvesters; shepherds with dogs and flocks of sheep and goats; heavy machinery excavating overgrown irrigation ditches; and recreational use by picnickers. Ditches were burned to remove reeds and shrubs and entire reedbeds were charred to initiate new growth for grazing herds. In two places ground fires started as a result of the deliberate razing of reedbeds. Ploughing of the agricultural fields began when the two-month harvest was finished. During the survey period there were from two to eight family tents of farm laborers camped under the avenue of trees.

The weather during September, October and November 1998 was regularly sunny and clear with little to no daytime rain. The Lebanon enjoyed unseasonably warm temperatures during this time. Water levels - already low - in the Riachi stream and irrigation pool continued to fall throughout the study period. An irrigation pump on the Riachi stream frequently supplied water to the cultivated fields adjacent the areas of dry reedbed. The water quality in the Riachi was quite poor. Polluting factors included waste from the hundreds of herd animals grazing the marsh, fuel and oil spillage from irrigation pumps, rubbish left by picnickers and human waste.

### **Methodology**

Between September 1<sup>st</sup> and November 30<sup>th</sup>, 1998, a four kilometre - roughly rectangular - route representing a portion of the Aammiq marshlands was monitored three times a week. Surveys on the thirty-eight observation days began as the sun rose above the Anti-Lebanon mountain range and took from four to five-and-a-half hours.

The route (see **Map 1**) included six selected encounter transects interrupted by six point count stations and included each of the marsh's autumn habitats: dry reedbeds, drainage ditches with and without standing water, avenue of trees, cultivated and rough-grazed fields (with a variety of grasses, reeds, herbs and shrubs). On encounter transects the observers paused only long enough to identify birds (allowing up to four minutes); at point count stations the observers stopped to survey for fifteen minutes. The route was walked in the clockwise direction on alternate days in order to reduce bias due to time of day and bird activity levels.

The observers identified birds visually with binoculars (Minolta 10x 23, Bushnell 8x 32 and Leica 8x 32) or spotting telescope (Opticron HR 66 with 28x WHDF) and audially by birdcalls or song. With the exception of one survey day there were always two observers; they alternated days as record keeper. Birds on active migration were recorded along with their approximate direction of travel. Roosting migrants (for example: Honey Buzzards) were also noted, but birds hunting, feeding or engaged in any other activity were not especially recorded except for their presence and number. Species names and the order in which they are listed follow Porter et al, 1996.

At several other areas casual observations were made during the survey period - by the same or by other observers. These sites were: the Excavated Pool, a pond – circa 3 ha. - excavated by the Israeli Army about 2 km south of the wetland; the slopes of Jebel el Barouk, the mountain ridge immediately to the west of the marsh; Qabb Elias, a town 7 km to the north of the marsh; Ras El Ain, spring-fed wadi in Qabb Elias; and the Qaraaoun Reservoir, 35 km south of the marsh at the foot of the Bekaa Valley.

## Results

During the survey 105 species were recorded at the Aammiq marsh (see **Species Observations** and **Tables 1** and **2**). A further 13 species were casually identified in the same period by the same or other observers at the Aammiq marsh or at the Excavated Pool, on Jebel el Barouk, in Ras el Ain or at the Qaraaoun Reservoir (see **Table 3**).

Species not previously recorded at the Aammiq marsh included: Red-breasted Flycatcher (*Ficedula parva*), Dipper (*Cinclus cinclus*), Rook (*Corvus frugilegus*), Jackdaw (*Corvus monedula*) and Hawfinch (*Coccothraustes coccothraustes*). Globally threatened Lesser Kestrel (*Accipiter brevipes*) and Syrian Serin (*Serinus syriacus*) were both recorded during the survey months.

### *Passerine observations:*

On the eight survey mornings between September 15 and October 1, large flocks of passerines were observed just before sunrise. The flocks appeared within minutes of the sunrise over the marsh and, except on two occasions, descended towards the fields south of the Aammiq marsh. On the two exceptional days a flock went eastwards (Sept. 19) and westwards (Sept. 22). On the first four days these birds were recorded their numbers were very high (over 600 per flock with a peak of 1370 on Sept. 19); the flock sizes diminished to 40 by October 1 and were not seen thereafter. Morgan and Shirihai (1997) observed this phenomenon at Eilat, Israel: "As the sun lifts above the Jordan mountains these overnight travelers seemingly... drop from the sky". Due to poor light conditions it was not possible to identify any species within the flocks over Aammiq wetland.

| Date     | Numbers of unidentified passerines before sunrise |
|----------|---|
| Sept. 15 | 600 – going south                                 |
| Sept. 17 | 705 – going south                                 |
| Sept. 19 | 1370 – going east                                 |
| Sept. 22 | 550 – going south – 70 west                       |
| Sept. 24 | 155 – going south                                 |
| Sept. 26 | hundreds in south fields                          |
| Oct. 1   | 40 – going south                                  |

### *Wader and waterfowl observations:*

Few waders or waterfowl were seen. Moorhen used the Riachi Stream throughout the survey and Water Rail were present there at the end of November. The irrigation pool hosted very few of these birds – a Green Sandpiper, Squacco Heron, a Coot, a Common Snipe and a Teal. Two Garganey observed flying over the marsh were disturbed by hunters.

### *Raptor observations:*

Fewer raptors were seen than expected. High daytime temperatures probably permitted soaring and gliding birds to stay at high altitudes – thus less visible to observers at the marsh. In fact casual observations of raptors suggested that late afternoon and early evening would be good times to monitor raptors. On several hot days (with little wind evident from the ground) in early September migrating buzzards were observed at about 11:30 over the centre of the marsh. Further monitoring combined with wind and weather information may show the expected flight patterns of birds using thermals in the Bekaa.

*Hunting Activity.* on 21 of 38 survey days hunters were recorded as seen or heard. It may be that activity went unrecorded on other days.

Birds and animals found wounded or dead by gunshot included:

|                          |  |
|--------------------------|--|
| Marsh Harrier (female)   | Chaffinch                                    |
| two Ring-tail Harrier    | Greenfinch                                   |
| Moorhen (juvenile)       |  |
| Common Kingfisher        | Wild Boar (first year)                       |
| several European Swallow |  |
| two Starling             | And other unidentifiable remains – of larger |
| Spanish Sparrow          | birds and songbirds.                         |

### **Species Observations**

(Recorded at the Aammiq marsh unless stated otherwise)

#### **Little Grebe** (*Tachybaptus ruficollis*)

Last one of the summer months seen on Sept. 1<sup>st</sup> in a very small pool of water. If sufficient water were present throughout the year this species would probably remain year-round.

#### **Night Heron** (*Nycticorax nycticorax*)

Individuals observed roosting in the avenue of trees on two occasions in early- and mid-September.

#### **Squacco Heron** (*Ardeola ralloides*)

One present at the irrigation pool on Sept. 1<sup>st</sup>.

#### **Grey Heron** (*Ardea cinerea*)

Fifteen observed at the Qaraaoun Reservoir on Oct. 3<sup>rd</sup>.

#### **Black Stork** (*Ciconia nigra*)

Six observed migrating southeast on Sept. 26<sup>th</sup>, then also seen on migration on three consecutive survey days - Oct 19<sup>th</sup> to Oct. 23<sup>rd</sup>. Maximum 66 on Oct. 21<sup>st</sup>. Note that no White Stork were observed during the survey months. Cramp and Simmons (1977) place Black Stork migration approximately one month after White Stork migration. This information suggests that *Ciconia* species observed on Sept. 26<sup>th</sup> and Oct. 23<sup>rd</sup> were likely Black Stork.

#### **Teal** (*Anas crecca*)

One present on irrigation pool Sept. 7<sup>th</sup>.

#### **Garganey** (*Anas querquedula*)

Two present on Sept. 5<sup>th</sup> flying over marsh.

#### **Shoveler** (*Anas clypeata*)

Nine on the Excavated Pool on Oct. 9<sup>th</sup>.

#### **Honey Buzzard** (*Pernis apivorus*)

Seen on migration over centre of marsh at about 11:30 on Sept. 7<sup>th</sup> (461) and 10<sup>th</sup> (245). Twenty observed roosting on fields next to reedbeds at sunrise on Sept. 10<sup>th</sup>. A further 470 buzzard species observed on migration on Sept. 10<sup>th</sup> may also have been Honey Buzzard but were too far away to identify. Small groups (from one to three) were seen on three occasions up to Sept. 26<sup>th</sup>.

#### **Black Kite** (*Milvus migrans*)

Up to maximum five (Sept. 19<sup>th</sup>) observed on active migration on seven occasions between Sept. 7<sup>th</sup> and Nov. 11<sup>th</sup>. All were of the race *aegyptus*.

#### **Short-toed Eagle** (*Circaetus gallicus*)

Seen on migration on three days between Sept. 12<sup>th</sup> and 29<sup>th</sup>. Singles and a group of six (Sept. 26<sup>th</sup>).

**Marsh Harrier** (*Circus aeruginosus*)

Seen daily between Sept. 5<sup>th</sup> and Oct. 8<sup>th</sup>. Shirihai (1996) puts bulk of passage between Sept. 10<sup>th</sup> and Oct. 5<sup>th</sup>. Maximum seven seen on Sept. 15<sup>th</sup>. There was a nearly equal representation of males and females.

**Hen Harrier** (*Circus cyaneus*)

Seen at the end of November: a male and female on the 26<sup>th</sup> and one female on the 30<sup>th</sup>.

**Pallid Harrier** (*Circus macrourus*)

One male seen on migration Sept. 22 and one juvenile on migration Nov. 30<sup>th</sup>. Chris Naylor recorded two females and three juveniles coming down to roost in the reeds on Nov. 11<sup>th</sup>.

**Montagu's Harrier** (*Circus pygargus*)

One juvenile on Oct. 12 and two females on Nov. 30, all at the marsh.

**Sparrowhawk** (*Accipiter nisus*)

Single birds seen Oct. 3<sup>rd</sup> and 21<sup>st</sup>, Nov 4<sup>th</sup> and 30<sup>th</sup>.

**Levant Sparrowhawk** (*Accipiter brevipes*)

One on Jebel el Barouk Oct. 7<sup>th</sup>.

**Steppe Buzzard** (*Buteo buteo vulpinus*)

Positive identification of Steppe Buzzard was made on Oct. 23<sup>rd</sup> (maximum six), Oct 30<sup>th</sup>, Nov. 2<sup>nd</sup> and 23<sup>rd</sup>. All were hunting or roosting at the marsh. Due to a recording confusion many buzzard were recorded but not identified to species (*Buteo buteo*, *Buteo rufinus*) or race – but it is expected that almost all *Buteo buteo* were of the race *vulpinus*. Likely the 34 and 30 birds seen on Oct. 19<sup>th</sup> and 23<sup>rd</sup> were Steppe Buzzard. Throughout late Oct. and Nov. between one and four buzzard were regularly seen at the marsh.

**Long-legged Buzzard** (*Buteo rufinus*)

Although singles were seen twice in Sept. and early Oct., sightings were not regular until mid-Oct. and Nov.

**Lesser Spotted Eagle** (*Aquila pomarina*)

Seven on southwesterly migration on Oct. 3<sup>rd</sup>, observed at Qaraaoun Reservoir. 200 on south-westerly migration observed from Qabb Elias Oct. 5<sup>th</sup>.

**Steppe Eagle** (*Aquila nipalensis*)

One juvenile seen on southwesterly migration at Qaraaoun Reservoir on Oct. 3<sup>rd</sup>. Two seen on southwesterly migration from Qabb Elias on Nov. 5<sup>th</sup>.

**Booted Eagle** (*Hieraaetus pennatus*)

Singles on migration Sept. 7<sup>th</sup> and 22<sup>nd</sup>, two on Oct. 1<sup>st</sup>.

**Lesser Kestrel** (*Falco naumanne*)

Singles at the marsh Sept. 29<sup>th</sup>, Oct. 30<sup>th</sup> (two), Nov. 2<sup>nd</sup>, 4<sup>th</sup> and 23<sup>rd</sup>.

**Kestrel** (*Falco tinnunculus*)

Seen daily from Sept. 22<sup>nd</sup> to end of survey. Up to six on three days in early October and maximum seven on Oct. 23<sup>rd</sup>.

**Hobby** (*Falco subbuteo*)

One moving southwest Sept. 29<sup>th</sup>, two low over marsh Oct. 23<sup>rd</sup>, one Nov. 4<sup>th</sup>. Falcons observed from mid-Sept. to early Nov. may well have been Hobby.

**Quail** (*Coturnix coturnix*)

Seen frequently from Sept. 7<sup>th</sup> onwards. Maximum four.

**Water Rail** (*Rallus aquaticus*)

One seen Sept. 1<sup>st</sup> but no more until Nov. 18<sup>th</sup>. Maximum two on Nov. 20<sup>th</sup> and 30<sup>th</sup>.

**Moorhen** (*Gallinula chloropus*)

Present almost daily, especially along the Riachi stream. Maximums: seven on Sept 5<sup>th</sup> and eight on Nov. 2<sup>nd</sup>. At least one seemed undisturbed by the presence of a Bedouin campsite beside the Riachi, being found there regularly.

**Coot** (*Fulica atra*)

One at Irrigation Pool on Oct. 30<sup>th</sup>.

**Spur-winged Plover** (*Hoplopterus spinosus*)

Maximum fourteen seen on Sept. 1<sup>st</sup>, all had departed by Sept. 15<sup>th</sup>.

**Lapwing** (*Vanellus vanellus*)

Present daily from Oct. 23<sup>rd</sup>, maximum 189 on Nov. 6<sup>th</sup>.

**Common Snipe** (*Gallinago gallinago*)

One seen Sept. 24<sup>th</sup> at the Irrigation Pool.

**Jack Snipe** (*Lymnocyptes minimus*)

One at Excavated Pool on Oct. 24<sup>th</sup>.

**Woodcock** (*Scolopax rusticola*)

One observed flying over Qabb Elias Oct. 1<sup>st</sup>.

**Green Sandpiper** (*Tringa ochropus*)

Maximum two on Sept. 10<sup>th</sup>. Singles sighted early Sept. and Nov. 16<sup>th</sup>.

**Turtle Dove** (*Streptopelia turtur*)

Streptopelia doves were present almost daily to early October – these were probably Turtle Doves as they were the only species identified when it was possible to do so. A maximum of eight Turtle Doves on Sept. 5<sup>th</sup>, maximum of eleven unidentified doves on Sept. 19<sup>th</sup>.

**Alpine Swift** (*Apus melba*)

Three observed on migration Sept. 22.

**Common Kingfisher** (*Alcedo atthis*)

Up to three seen for the duration of the survey, mostly along the Riachi stream and occasionally at the Irrigation pool. At least one was killed by hunters during the survey.

**European Bee-eater** (*Merops apiaster*)

Small groups (maximum eleven) seen on migration between Sept. 24<sup>th</sup> and Oct. 3<sup>rd</sup>. Two more on Oct. 14<sup>th</sup>. Casual observation of thirty roosting on Oct. 18<sup>th</sup>.

**European Roller** (*Coracias garrulus*)

Between one and three present from Sept. 1<sup>st</sup> to 10<sup>th</sup>. Usually on rough-grazing fields adjacent reedbeds.

**Hoopoe** (*Upupa epops*)

Present from Sept. 1<sup>st</sup> to 24<sup>th</sup>, maximum five. Often beside reedbeds where pools were dried up or in process of doing so.

**Wryneck** (*Jynx torquilla*)

Individuals observed Sept. 5<sup>th</sup>, 7<sup>th</sup> and 26<sup>th</sup>.

**Syrian Woodpecker** (*Dendrocopos syriacus*)

One in Umbrella Pine forest on Jebel el Barouk on Oct. 7<sup>th</sup>.

**Calandra Lark** (*Melanocorypha calandra*)

Observed throughout survey period, maximum 185 on Sept. 15<sup>th</sup>. Another surge of larger numbers with 128 on Nov. 2<sup>nd</sup>.

**Skylark** (*Alauda arvensis*)

One group of twenty Sept. 3<sup>rd</sup>; and no more until Oct. 21<sup>st</sup>. Maximum of 684 on Nov. 6<sup>th</sup>. The arrival of this species heralded a fresh and heavy onslaught of hunting.

**Sand Martin** (*Riparia riparia*)

Groups of up to 54 observed on five days between Sept. 7<sup>th</sup> and 26<sup>th</sup>.

**Crag Martin** (*Ptyonoprogne rupestris*)

Observed three times to Sept. 17<sup>th</sup>, largest group - twenty - on that day.

**Barn Swallow** (*Hirundo rustica*)

Present regularly between Sept. 3<sup>rd</sup> and Oct. 19<sup>th</sup>, maximum counted 1408 on Sept. 22<sup>nd</sup> although likely much higher numbers in vicinity. Several found shot; one (injured?) observed roosting on branch over Riachi stream.

**Red-rumped Swallow** (*Hirundo daurica*)

Five counted Sept. 24<sup>th</sup> among a large flock of Barn Swallows.

**House Martin** (*Delichon urbica*)

Sightings between Sept. 1<sup>st</sup> and Oct. 8<sup>th</sup>. The largest group being 77 on Sept. 26<sup>th</sup>.

**Tawny Pipit** (*Anthus campestris*)

Groups of two to four present regularly between Oct. 1<sup>st</sup> and 12<sup>th</sup>.

**Tree Pipit** (*Anthus trivialis*)

A single and a group of two sighted in early Sept., another single Sept. 26<sup>th</sup>.

**Meadow Pipit** (*Anthus pratensis*)

One individual on Nov. 9<sup>th</sup>.

**Red-throated Pipit** (*Anthus cervinus*)

One individual on Nov. 4<sup>th</sup>.

**Water Pipit** (*Anthus spinoletta*)

Heard and seen daily from Nov. 5<sup>th</sup>. Largest group 34 on Nov. 18<sup>th</sup>.

**Yellow Wagtail** (*Motacilla flava*)

Present in singles or groups of two in early Sept., three on Sept. 24<sup>th</sup>, last individual seen Oct. 30<sup>th</sup>.

**Grey Wagtail** (*Motacilla cineria*)

One in Ras el Ain on Oct. 24<sup>th</sup>.

**White Wagtail** (*Motacilla alba*)

Flock of ten on Nov. 11.

**Dipper** (*Cinclus cinclus*)

One seen beside Riachi stream on Nov. 2<sup>nd</sup>. Although known to breed nearby in Ras el Ain, Qabb Elias, it has not been seen at the marsh before. Probably accidental.

**Wren** (*Troglodytes troglodytes*)

An individual heard and seen three times between Sept. 3<sup>rd</sup> and 12<sup>th</sup> near the Riachi stream.

**Robin** (*Erithacus rubecula*)

Present daily from Oct. 23<sup>rd</sup>. Frequently in avenue of trees and reedbeds. Maximum ten on Nov. 18<sup>th</sup>.

**Thrush Nightingale** (*Luscinia luscinia*)

One on avenue of trees Sept. 10<sup>th</sup>.

**Bluethroat** (*Luscinia svecica*)

Individuals observed frequently from Sept. 19<sup>th</sup>. Two to eleven (Oct. 9<sup>th</sup>) observed daily from Oct. 8<sup>th</sup> to end of survey.

**Black Redstart** (*Phoenicurus ochruros*)

Single on Sept. 19<sup>th</sup>. Present daily from Oct. 9<sup>th</sup> to end of survey. Maximum eight on Nov. 18<sup>th</sup>. All of subspecies *gibraltariensis*.

**Common Redstart** (*Phoenicurus phoenicurus*)

Present almost daily for entire survey. Between eleven and maximum thirty (Oct. 6<sup>th</sup>) present from Oct. 3<sup>rd</sup> to Nov. 4<sup>th</sup>. Between one to eight present for remainder of period.

**Whinchat** (*Saxicola rubetra*)

Present almost daily from Sept. 1<sup>st</sup> to Oct. 12<sup>th</sup>. Singles observed twice after in mid-late Oct. Maximum 21 on Sept. 24<sup>th</sup>.

**Stonechat** (*Saxicola torquata*)

Present daily from Oct. 9<sup>th</sup> to end of survey. Maximum 29 on Oct. 26<sup>th</sup>. Individuals of the subspecies *maura* seen regularly.

**Isabelline Wheatear** (*Oenanthe isabellina*)

Between one and maximum five (Sept. 5<sup>th</sup>) in early to mid Sept. A single seen Oct. 23<sup>rd</sup>.

**Northern Wheatear** (*Oenanthe oenanthe*)

Present daily between Oct. 6<sup>th</sup> and 28<sup>th</sup>. Maximum seventeen on Oct. 12<sup>th</sup>. Groups of two and three seen in mid Sept. Singles seen in early Nov.

**Blackbird** (*Turdus merula*)

Seen along the Riachi stream in early Sept. (two on Sept. 1<sup>st</sup>). Singles seen regularly from Oct. 26<sup>th</sup> to Nov. 23<sup>rd</sup>. Two seen again on Nov. 26<sup>th</sup>.

**Song Thrush** (*Turdus philomelos*)

Group of five seen Oct. 30<sup>th</sup>, a group of two and three present on Nov. 4<sup>th</sup> and 18<sup>th</sup>.

**Mistle Thrush** (*Turdus viscivorus*)

Single observed along avenue of trees Nov. 20<sup>th</sup>.

**Cetti's Warbler** (*Cettia cetti*)

Present daily to Nov. 18<sup>th</sup>, often identified by call. Maximum 24 on Sept. 29<sup>th</sup>. One present Nov. 23<sup>rd</sup>.

**Fan-tailed Cisticola** (*Cisticola juncidis*)

Present daily (maximum eighteen on Sept 10<sup>th</sup>) until Nov. 9<sup>th</sup>. Groups of four observed Nov. 20<sup>th</sup> and 26<sup>th</sup>. Often seen in reedbeds beside Irrigation pool and adjacent rough-grazing fields.

**Graceful Prinia** (*Prinia gracilis*)

Present almost daily throughout survey. Maximum thirty on Sept. 17<sup>th</sup>. Heard and seen on all transects and point count stations.

**Moustached Warbler** (*Acrocephalus melanopogon*)

Present almost daily to Oct. 26<sup>th</sup>, especially along Riachi stream and Irrigation pool. Maximum five on Oct. 19<sup>th</sup>.

**Marsh Warbler** (*Acrocephalus palustris*)

Singles observed Sept. 1<sup>st</sup> and 24<sup>th</sup>. Two on Sept. 19<sup>th</sup>. Birds counted between Sept. 29<sup>th</sup> and Oct. 8<sup>th</sup> as *Acrocephalus* species were possibly Marsh Warbler but certain identification could not be made.

**European Reed Warbler** (*Acrocephalus scirpaceus*)

Present almost daily to Nov. 6<sup>th</sup>. Maximum seven on Sept. 15<sup>th</sup>.

**Great Reed Warbler** (*Acrocephalus arundinaceus*)

Two on Sept. 19<sup>th</sup> and a single on Oct. 12<sup>th</sup>.

**Olivaceous Warbler** (*Hippolais pallida*)

Single on Oct. 21<sup>st</sup> along avenue of trees.



**Barred Warbler** (*Sylvia nisoria*)

One casual observation at the Aammiq marsh along avenue of trees on Sept. 18<sup>th</sup>.

**Lesser Whitethroat** (*Sylvia curruca curruca*)

Seen regularly between Sept. 3<sup>rd</sup> and Nov. 6<sup>th</sup>. Maximum four on Sept. 17<sup>th</sup> and 24<sup>th</sup>.

**Whitethroat** (*Sylvia communis*)

Single observed Sept. 12<sup>th</sup> and 22<sup>nd</sup>.

**Blackcap** (*Sylvia atricapilla*)

Seen regularly until Nov. 18<sup>th</sup>, maximum six on Oct. 19<sup>th</sup>. Almost exclusively seen along Riachi stream in one particular patch of shrub and trees. The area was burned in late Nov., which may have contributed to their absence during the last ten days of the survey.

**Wood Warbler** (*Phylloscopus sibilatrix*)

Two identified on Sept. 3<sup>rd</sup> and Oct. 1<sup>st</sup>. A single on Sept. 22<sup>nd</sup>.

**Chiffchaff** (*Phylloscopus collybita*)

Up to four observed between Sept. 3<sup>rd</sup> and 12<sup>th</sup>. The occasional single until Oct. 19<sup>th</sup>, then present daily to Nov. 30<sup>th</sup>. Maximum 27 on Oct. 26<sup>th</sup> and Nov. 2<sup>nd</sup>.

**Willow Warbler** (*Phylloscopus trochilus*)

Maximum ten on Sept. 22<sup>nd</sup>. Seen regularly until Oct. 19<sup>th</sup> although none between Oct. 3<sup>rd</sup> and 12<sup>th</sup>.

**Spotted Flycatcher** (*Muscicapa striata*)

Present daily to Oct. 16<sup>th</sup> with two more on Oct. 30<sup>th</sup>. Maximum ten on Sept. 24<sup>th</sup>.

**Red-breasted Flycatcher** (*Ficedula parva*)

A single first winter bird present in avenue of trees Nov. 4<sup>th</sup> and 6<sup>th</sup>. A first for the Aammiq marsh.

**Collared Flycatcher** (*Ficedula albicollis*)

A single on Sept. 1<sup>st</sup>.

**Great Tit** (*Parus major*)

Present almost daily in avenue of trees, maximum eighteen on Sept. 12<sup>th</sup> and 22<sup>nd</sup>.

**Penduline Tit** (*Remiz pendulinus*)

Present daily from Oct. 3<sup>rd</sup> to end of survey. Maximum twelve on Oct. 26<sup>th</sup>.

**Rock Nuthatch** (*Sitta neumayer*)

Individuals seen Oct. 3<sup>rd</sup> at Qaraaoun Reservoir and Nov. 29<sup>th</sup> on Jebel el Barouk.

**Golden Oriole** (*Oriolus oriolus*)

Single male in avenue of trees on Sept. 17<sup>th</sup>.

**Red-backed Shrike** (*Lanius collurio*)

Present between Sept. 3<sup>rd</sup> and Oct. 1<sup>st</sup>, with singles seen regularly to Oct. 16<sup>th</sup>. Maximum six on Sept. 3<sup>rd</sup> and 15<sup>th</sup>.

**Lesser Grey Shrike** (*Lanius minor*)

Singles seen on Sept. 1<sup>st</sup> and 26<sup>th</sup>.

**Great Grey Shrike** (*Lanius excubitor*)

Casual observation of one individual in reedbed near marsh Oct. 1<sup>st</sup>.

**Woodchat Shrike** (*Lanius senator*)

Present between Sept. 1<sup>st</sup> and 15<sup>th</sup>. Maximum eight on Sept. 1<sup>st</sup>. Tended to use reed or shrub perches overlooking rough grazing areas.

**Masked Shrike** (*Lanius nubicus*)

Seen until Sept. 22<sup>nd</sup>. Maximum three on Sept. 5<sup>th</sup> and 7<sup>th</sup>. Tended to use avenue of trees.

**Jay** (*Garrulus glendarius*)

Present in avenue of trees. Maximum three on Sept. 1<sup>st</sup>.

**Jackdaw** (*Corvus monedula*)

A one-legged bird on Nov. 6<sup>th</sup> in company with a one-legged Rook.

**Rook** (*Corvus frugilegus*)

A one-legged juvenile seen in the fields on Oct. 23<sup>rd</sup> and Nov. 6<sup>th</sup>.

**Hooded Crow** (*Corvus corone cornix*)

Present daily from Oct. 28<sup>th</sup> to end of survey. Maximum ten on Nov. 9<sup>th</sup>. A couple seen in mid-Sept. and mid-Oct.

**Starling** (*Sturnus vulgaris*)

Present in groups of over twenty from Nov. 4<sup>th</sup> to Nov. 16<sup>th</sup> and Nov. 30<sup>th</sup>. Maximum 84 on Nov. 16<sup>th</sup>.

**House Sparrow** (*Passer domesticus*)

Often present at an old pumphouse beside avenue of trees – numbers rarely recorded. Maximum recorded was twenty-five on Nov. 23<sup>rd</sup>.

**Spanish Sparrow** (*Passer hispaniolensis*)

Present regularly throughout survey. Maximum 436 on Sept. 19<sup>th</sup>. The largest flocks (100+) were recorded between Sept. 10<sup>th</sup> and Oct. 8<sup>th</sup>. Unidentified *Passer* species seen in early Sept. (maximum 510 Sept. 3rd) may have been Spanish Sparrow.

**Chaffinch** (*Fringilla coelebs*)

Present daily in the avenue of trees and rough grazing fields from Oct. 19<sup>th</sup> onwards. Maximum 241 on Nov. 4<sup>th</sup>.

**Brambling** (*Fringilla montifringilla*)

Five seen with Chaffinch on Oct. 28<sup>th</sup> and two more on Nov. 20<sup>th</sup>.

**European Serin** (*Serinus serinus*)

Two seen in shrubs/trees along Riachi Oct. 30<sup>th</sup> and Nov. 4<sup>th</sup>. An individual seen Nov. 18<sup>th</sup>.

**Syrian Serin** (*Serinus syriacus*)

Three recorded on Jebel el Barouk on Oct. 7<sup>th</sup>.

**Greenfinch** (*Carduelis chloris*)

Small numbers identified among flocks of other finches, mostly in Oct. although a few in early Sept. Maximum eleven on Oct. 26<sup>th</sup>.

**Goldfinch** (*Carduelis carduelis*)

Present regularly throughout survey. Maximum 60 on Sept. 15<sup>th</sup>. Surges in early- to mid-Sept. and early to mid-Oct.

**Linnet** (*Carduelis cannabina*)

Small group present between Nov. 18<sup>th</sup> and 26<sup>th</sup>. Maximum four on Nov. 23<sup>rd</sup>.

**Hawfinch** (*Coccothraustes coccothraustes*)

One along avenue of trees on Nov. 11<sup>th</sup>.

**Ortolan Bunting** (*Emberiza hortulana*)

Maximum nine on Sept. 5<sup>th</sup>. None after Sept. 19<sup>th</sup>.

**Cretzschmar's Bunting** (*Emberiza caesia*)

Three on Sept. 1<sup>st</sup> and twenty on Sept. 5<sup>th</sup>.

**Reed Bunting (*Emberiza schoeniclus*)**

Three on Nov. 18<sup>th</sup>, four on Nov. 26<sup>th</sup>.

**Corn Bunting (*Miliaria calandra*)**

Present infrequently: a couple in early Sept., late Oct/early Nov., a flock of 100 on Nov. 30<sup>th</sup>. (NB: Large flocks present in December.)

**Table 1:** Species observed on three or fewer survey days during the 1998 autumn bird survey at the Aammiq marsh. Bold numbers indicate that the birds were seen on migration. Lowercase letters indicate compass direction of travel of migrating birds.

| Species  | Dates                      | Number of birds |
|--|----------------------------|-----------------|
| Little Grebe ( <i>Tachybaptus ruficollis</i> ) | Sept. 1                    | 1               |
| Night Heron ( <i>Nycticorax nycticorax</i> )   | Sept. 5/Sept. 19           | 1/3             |
| Squacco Heron ( <i>Ardeola ralloides</i> )     | Sept. 1                    | 1               |
| Teal ( <i>Anas crecca</i> )                    | Sept. 7                    | 1               |
| Garganey ( <i>Anas querquedula</i> )           | Sept. 5                    | 2               |
| Short-toed Eagle ( <i>Circaetus gallicus</i> ) | Sept. 12/Sept. 22/Sept. 29 | 1sw/6sw/1sw     |
| Hen Harrier ( <i>Circus cyaneus</i> )          | Nov. 26/Nov. 30            | 2/1             |
| Pallid Harrier ( <i>Circus macrourus</i> )     | Sept. 22/Nov. 30           | 1sw/1sw         |
| Montagu's Harrier ( <i>Circus pygargus</i> )   | Oct. 12/Nov. 30            | 1/2             |
| <i>Aquila</i> species                          | Sept. 22                   | <b>2</b>        |
| Booted Eagle ( <i>Hieraaetus pennatus</i> )    | Sept. 7/Sept. 22/Oct. 1    | 1sw/1sw/2sw     |
| Hobby ( <i>Falco subbuteo</i> )                | Sept. 29/Oct. 23/Nov. 4    | 1sw/2/1         |
| Coot ( <i>Fulica atra</i> )                    | Oct. 30                    | 1               |
| Common Snipe ( <i>Gallinago gallinago</i> )    | Sept. 24                   | 1               |
| Sandpiper species                              | Sept. 29                   | 1               |
| <i>Columba</i> species                         | Oct. 23                    | 1               |
| Alpine Swift ( <i>Apus melba</i> )             | Sept. 22                   | <b>3sw</b>      |
| Wryneck ( <i>Jynx torquilla</i> )              | Sept. 5/Sept. 7/Sept. 26   | 1/1/1           |
| Crag Martin ( <i>Ptyonoprogne rupestris</i> )  | Sept. 7/Sept. 15/Sept. 17  | 2/1/20          |
| Red-rumped Swallow ( <i>Hirundo daurica</i> )  | Sept. 24                   | 5               |
| Family Hirundinidae                            | Sept. 7/Sept. 17           | 20/17           |
| Meadow Pipit ( <i>Anthus pratensis</i> )       | Nov. 9                     | 1               |
| Red-throated Pipit ( <i>Anthus cervinus</i> )  | Nov. 4                     | 1               |
| White Wagtail ( <i>Motacilla alba</i> )        | Nov. 11                    | 10              |
| <i>Motacilla</i> species                       | Nov. 2                     | 1               |

| Species   | Dates                      | Number of birds |
|---|----------------------------|-----------------|
| Dipper ( <i>Cinclus cinclus</i> )                       | Nov. 2                     | 1               |
| Wren ( <i>Troglodytes troglodytes</i> )                 | Sept. 3/Sept. 5/Sept. 12   | 1/1/1           |
| Thrush Nightingale ( <i>Luscinia luscinia</i> )         | Sept. 10                   | 1               |
| <i>Oenanthe</i> species                                 | Sept. 10/Sept. 17/Sept. 22 | 4/1/1           |
| Song Thrush ( <i>Turdus philomelos</i> )                | Oct. 30/Nov. 4/Nov. 18     | 5/2/3           |
| Mistle Thrush ( <i>Turdus viscivorus</i> )              | Nov. 20                    | 1               |
| <i>Turdus</i> species                                   | Oct. 12                    | 1               |
| Great Reed Warbler ( <i>Acrocephalus arundinaceus</i> ) | Sept 19/Oct. 12            | 2/1             |
| Marsh Warbler ( <i>Acrocephalus palustris</i> )         | Sept. 1/Sept. 19/Sept.24   | 1/2/1           |
| Olivaceous Warbler ( <i>Hippolais pallida</i> )         | Oct. 21                    | 1               |
| Whitethroat ( <i>Sylvia communis</i> )                  | Sept. 12/Sept. 22          | 1/1             |
| Red-breasted Flycatcher ( <i>Ficedula parva</i> )       | Nov. 4/Nov. 6              | 1/1             |
| Collared Flycatcher ( <i>Ficedula albicollis</i> )      | Sept. 1                    | 1               |
| Golden Oriole ( <i>Oriolus oriolus</i> )                | Sept. 17                   | 1               |
| Lesser Grey Shrike ( <i>Lanius minor</i> )              | Sept. 1/Sept. 26           | 1/1             |
| <i>Lanius</i> species                                   | Sept. 15                   | 1               |
| Jackdaw ( <i>Corvus monedula</i> )                      | Nov. 6                     | 1               |
| Rook ( <i>Corvus frugilegus</i> )                       | Oct. 23/Nov. 6             | 1/1             |
| Brambling ( <i>Fringilla montifringilla</i> )           | Oct. 28/Nov. 20            | 5/2             |
| European Serin ( <i>Serinus serinus</i> )               | Oct. 30/Nov. 4/Nov. 18     | 2/2/1           |
| Hawfinch ( <i>Coccothraustes coccothraustes</i> )       | Nov. 11                    | 1               |
| Cretzschmar's Bunting ( <i>Emberiza caesia</i> )        | Sept. 1/Sept. 5            | 3/20            |
| Reed Bunting ( <i>Emberiza schoeniclus</i> )            | Nov. 18/Nov. 26            | 3/4             |
| Bunting species   | Sept. 3/Sept. 10/Nov. 9    | 3/35/3          |

**Table 2:** Species observed during the 1998 autumn bird survey at the Aammiq Marsh. (Four pages) Species recorded on four or more of 38 survey days between September 1 and November 30, 1998. Bold numbers indicate birds seen in migration. Lowercase letters indicate travel direction of migrating birds. Underlined numbers indicate



migrant species seen at roost. Five-letter codes for bird species are used to distinguish rows of data on pages 13 and 15. Note that species observed on three or fewer survey days are listed in Table 1.

|                         | Oct. 12 | Oct. 14 | Oct. 16 | Oct. 19 | Oct. 21 | Oct. 23 | Oct. 26 | Oct. 28 | Oct. 30 | Nov. 02 | Nov. 04 | Nov. 06 | Nov. 09 | Nov. 11 | Nov. 16 | Nov. 18 | Nov. 20 | Nov. 23 | Nov. 26 | Nov. 30 |
|-------------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <i>Ardea</i> spp.       | 1       | 1       |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 1       |         |         |
| BLAST                   |         |         |         | 2       | 66 SW   | 3SW     |         |         |         |         | 1sw     |         |         |         |         |         |         |         |         |         |
| <i>Ciconia</i> spp.     |         |         |         |         |         | 9SW     |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| HONBU                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| BLAKI                   |         |         |         |         | 1ne     |         |         |         |         |         | 2sw     |         |         | 1sw     |         |         |         |         |         |         |
| MARHA                   |         |         |         |         |         |         |         |         | 3       |         | 2       |         |         |         |         | 1       |         |         |         |         |
| <i>Circus</i>           | 1       |         |         |         | 1       |         | 1       | 1       | 2       | 1       | 1       | 1       |         |         | 1       | 5       | 4       |         | 2       | 3       |
| SPAHA                   |         |         |         |         | 1       |         |         |         |         |         | 1       |         |         |         |         |         |         |         |         | 1       |
| <i>Accipiter</i> spp.   |         |         |         |         |         |         |         |         | 1       | 1       |         |         |         |         |         |         |         |         |         |         |
| STEBU                   |         |         |         |         |         | 6       |         |         | 2       | 1       |         |         |         |         |         |         |         | 2       |         |         |
| LOLBU                   |         | 1       |         |         |         | 2       | 1       |         |         | 1       | 1       |         |         | 1       |         | 1       |         | 1       | 2       |         |
| <i>Pernis Buteo</i> spp |         |         |         | 34 SW   | 1       | 30 SW   |         | 2       | 1       |         | 2       | 2       | 1       | 1       |         |         | 3       |         | 1       | 4       |
| LESKE                   |         |         |         |         |         |         |         |         | 2       | 1       | 1       |         |         |         |         |         |         | 1       |         |         |
| KESTR                   |         | 3       | 4       | 4       | 2       | 7       | 4       | 3       | 1       | 3       | 4       | 3       | 2       | 1       | 3       | 2       | 1       | 2       | 2       | 3       |
| <i>Falco</i> spp.       |         |         |         |         | 2       |         |         |         |         |         |         |         | 2       |         |         |         |         |         |         |         |
| QUAIL                   |         |         |         |         |         | 2       | 2       |         |         |         | 2       | 4       |         |         |         |         | 2       | 1       |         |         |
| WATRA                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 1       | 2       | 1       | 1       | 2       |
| MOORH                   | 2       | 1       |         | 5       | 2       | 2       | 6       | 3       | 6       | 8       | 4       | 4       | 5       | 5       | 3       | 6       | 2       | 5       | 5       | 4       |
| SPWPL                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| LAPWI                   |         |         |         |         |         | 27      | 59      | 80      | 45      | 5       | 66      | 189     | 94      | 101     | 89      | 57      | 36      | 37      | 64      | 38      |
| GRESA                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         | 1       |         |         |         |         |         |
| TURDO                   | 1       |         | 1       |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| <i>Streptopelia</i> spp |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| KINGF                   | 2       | 2       |         | 3       | 2       | 1       | 2       | 2       | 3       | 2       | 3       | 1       | 1       | 2       | 1       | 1       | 1       | 2       | 1       | 1       |
| BEEEA                   |         | 2sw     |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| ROLLE                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| HOPOO                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| CALLA                   | 4       |         | 9       | 11      | 6       | 1       | 3       | 33      | 10      | 128     | 29      | 23      | 1       | 1       |         | 1       |         | 3       | 12      | 3       |
| SKYLA                   |         |         |         |         | 14      | 26      | 314     | 60      | 169     | 159     | 234     | 648     | 271     | 446     | 91      | 151     | 116     | 210     | 194     | 116     |
| Lark spp.               |         | 5       | 10      |         | 37      |         |         |         | 1       |         |         |         |         |         |         |         |         |         |         |         |
| SANMA                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| SWALL                   | 3       |         |         | 2       |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| HOUMA                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| TAWPI                   | 2       |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| TREPI                   |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |         |
| WATPI                   |         |         |         |         |         |         |         |         |         |         |         | 9       | 11      | 18      | 18      | 34      | 16      | 29      | 27      | 18      |
| <i>Anthus</i> spp.      |         |         |         |         |         |         |         |         |         |         | 8       | 3       | 14      |         | 2       |         |         |         |         |         |
| YELWA                   |         |         |         |         |         |         |         |         | 1       |         |         |         |         |         |         |         |         |         |         |         |
| ROBIN                   |         |         |         |         |         | 1       | 3       | 4       |         | 5       | 9       | 7       | 9       | 4       | 6       | 10      | 7       | 9       | 6       | 5       |





**Table 3:** Bird species casually recorded at the Aammiq or in surrounding areas between September 1 and November 30, 1998 (not recorded in survey). Bold numbers indicate migrating birds; 'sw' indicates direction of travel. Observers' initials refer to Chris Naylor (C.N) and Karin and Alain Boisclair-Joly (B-J.).

| Species  | Date(s)           | # of birds                   | Location                              | Observers' Initials |
|--|-------------------|------------------------------|---------------------------------------|---------------------|
| Grey Heron<br>( <i>Ardea cinerea</i> )               | Oct. 3            | 15                           | Qaraaoun Reservoir                    | B-J.                |
| Shoveler<br>( <i>Anas clypeata</i> )                 | Oct. 9            | 9                            | Excavated Pool                        | B-J.                |
| Levant Sparrowhawk<br>( <i>Accipiter brevipes</i> )  | Oct. 7            | 1                            | Jebel el Barouk                       | C.N.                |
| Lesser Spotted Eagle<br>( <i>Aquila pomarina</i> )   | Oct. 3<br>Oct. 5  | <b>7</b> sw<br><b>200</b> sw | Qaraaoun Reservoir<br>Qabb Elias      | B-J.<br>C.N.        |
| Steppe Eagle<br>( <i>Aquila nipalensis</i> )         | Oct. 3<br>Oct. 5  | <b>1J</b> sw<br><b>2</b> sw  | Qaraaoun Reservoir<br>Qabb Elias      | B-J.<br>C.N.        |
| Jack Snipe<br>( <i>Lymnocyptes minimus</i> )         | Oct. 24           | 1                            | Excavated Pool                        | B-J.                |
| Woodcock<br>( <i>Scolopax rusticola</i> )            |                   | 1                            | Qabb Elias                            | C.N.                |
| Syrian Woodpecker<br>( <i>Dendrocopos syriacus</i> ) | Oct. 7            | 1                            | Jebel el Barouk                       | C.N.                |
| Grey Wagtail<br>( <i>Motacilla cinerea</i> )         | Oct. 24           | 1                            | Ras el Ain                            | B-J.                |
| Barred Warbler<br>( <i>Sylvia nisoria</i> )          | Sept. 18          | 1                            | Aammiq Marsh                          | C.N.                |
| Rock Nuthatch<br>( <i>Sitta neumayer</i> )           | Oct. 3<br>Nov. 29 | 1<br>1                       | Qaraaoun Reservoir<br>Jebel el Barouk | B-J.<br>B-J.        |
| Great Grey Shrike<br>( <i>Lanius excubitor</i> )     | Oct. 1            | 1                            | fields next to Aammiq marsh           | B-J.                |
| Syrian Serin<br>( <i>Serinus syriacus</i> )          | Oct. 7            | 3                            | Jebel el Barouk                       | C.N.                |

## Discussion

### **Critique of survey methods:**

Pre-survey records from the Aammiq marsh in August, 1998 suggest that an earlier start to the autumn bird survey would permit observation of the earlier passage migrants (for example: White Stork, Little Egret, various raptors) and of the departure dates of summer resident birds (for example: Little Bittern, Squacco Heron, Great Reed Warbler, Olivaceous Warbler, Masked Shrike). The survey period could probably be successfully extended to include from mid-August to mid-December.

Further and more intensive monitoring is required to determine accurate peak periods of marsh use by bird species although definite patterns emerge as a result of this survey.

Where species identification was uncertain, observers erred on the side of caution. As a result some species (for example: Red-throated Pipit and Meadow Pipit) may have been present during the survey in greater numbers than were recorded, especially if they were in a group with similar but more common species; also, some species may have been omitted.

### **Habitats (bird use, disturbances and general notes):**

#### *Water*

As the marsh was all but dry during the survey period, very few waterfowl or waders were seen. A long, hot summer and autumn as well as heavy drainage for irrigation purposes contributed to absence of water. If the marsh were to be managed for retention of water, it would likely be a very good place for over-wintering birds (for example: Little Grebe, Great White Egret and Grey Heron). Qaraaoun Reservoir, a large, open body of water to the south attracts water birds throughout the winter. The reedbeds, shallower pools and



better water quality of the Aammiq marsh could provide much better habitat – food and protective cover for these birds.

Where the Riachi stream retained water for the duration of the survey Moorhen continued to live even despite the proximity of farm laborers' tents. With dumping of rubbish by these same campers, burning of the Riachi's banks in places, the deafening operation of irrigation pumps and pollution of the water by fuel spillage and herd animal faeces, it is interesting that they stayed. Water Rail were also observed using the Riachi several times.

Where the pools were almost or completely dry it was evident that Wild Boar were coming down from Jebel el Barouk at night to forage in the damp soil. They left square areas of soil exposed, having pushed back the decaying water-plant material to find invertebrates.

#### *Reedbeds*

Surveying took place along the edges of reedbeds and in one area of dried pools surrounded by reedbeds. The reeds were used by both resident and migratory species of birds. Jackals were sighted several times using the reedbeds for daytime cover. It was unfortunate that large areas of reeds were burned during the survey. Sightings of species like Fan-tailed Cisticola were reduced as patches of reeds where they were particularly noted were destroyed. The burning must also have affected the insect population, Tree Frogs, toads and snakes, and small mammal population – all of which are important as food for the birds and animals using the marsh. Smoke from resulting ground fires lingered each morning after sunrise for at least an hour – affecting air quality and visibility. The ground fires continued to burn until the water table had risen high enough over winter to extinguish them (March 1999).

#### *Avenue of trees*

The avenue of Manna Ash trees was an important place for passerine populations and roosting raptors. While the leaves remained on the trees large flocks of songbirds roosted there, staying mostly out of sight. Finches and sparrows bathing in the Riachi stream used the trees for cover. Shrikes, Kestrel and Buzzard used the trees as hunting perches. Common Kingfishers used lower tree branches and reedbeds overlooking the Riachi stream.

The avenue suffered extensive damage from burning during the survey period. Chopping at trees by temporarily resident agricultural workers for firewood also occurred. Although some people chose only dead and fallen branches, others caused damage to live sections of trees. Families of agricultural laborers were resident along the avenue of trees throughout the survey as the harvest was underway. Inevitably this meant an increase in strewn garbage and human sewage in the Riachi stream. Recreational use of the avenue by weekend picnickers contributed to general pollution and damaged trees by placing fires in the lee of trees for wind protection. While there was no indication that agricultural workers did any hunting, the picnickers certainly did. These four disturbances likely affected bird (and animal) use of the avenue of trees.

Future surveys would be more successful if there were less general human activity at the marsh.

#### *Rough grazing and farm fields*

Graceful Prinia, finches and shrikes were often seen in the brambles and scrubby ditches alongside fields. Swallows and martins often congregated to feed on insects over the fields. Pipits, buntings, wheatears and larks were also present regularly on the soil or rough-grazing areas; further observation might reveal more species than were recorded. Fewer Starling and Lapwing were observed than expected – this may have been due to the dryness of the marsh.

Because the three survey months overlapped with harvest and ploughing, there was daily human activity at the marsh. Flocks of birds were frequently frightened from one feeding area to another. Irrigation demands regularly kept up to two pumps busy. The noise was deafening and interfered with identification of birdcalls. Hunters seemed to prefer to hunt in fields, using the vegetation in irrigation ditches as cover.

## ***Other Disturbances***

### *Hunting*

Hunting pressure - as evidenced by discarded shot casings at the irrigation pool and in other areas of the marsh - likely contributed to the scarcity of ducks and waders. The avenue of trees was another target area and many birds were shot or wounded there. Probably as a result of hunting the birds tended to be very timid of humans and were therefore harder to survey. Although the surveyors experienced no personal interference from hunters, the survey route had to be altered on a couple of occasions to avoid the danger of being accidentally shot or of being hit by falling shot. Most hunters drove into the marsh area and hunted near their cars. Some used recorded bird song to attract their prey. The presence of bird surveyors seemed to keep hunters from prowling the marsh's reedbeds as much as they used surrounding lands.

### *Grazing*

Several flocks of sheep and goat were seen daily, one actually was resident on the marsh. The banks of the Riachi were in some places denuded during the survey by the grazing herds. Trees were also subject to damage by goats able to stand on hind legs and eat from lower branches. Faeces covered entire areas of the marsh – notably the avenue of trees and areas adjacent to water (Irrigation pool). Reeds were stamped down as paths for herds sprang up all over the marsh. After the sugar beet harvest herd animals ate the discarded leafy beet tops and the fields were left dusty and dry with nothing to prevent soil erosion by wind and nothing to attract insects, birds or animals. Shepherds endeavoring to stimulate fresh plant growth for herds frequently burned reedbeds.

## ***Conservation Suggestions***

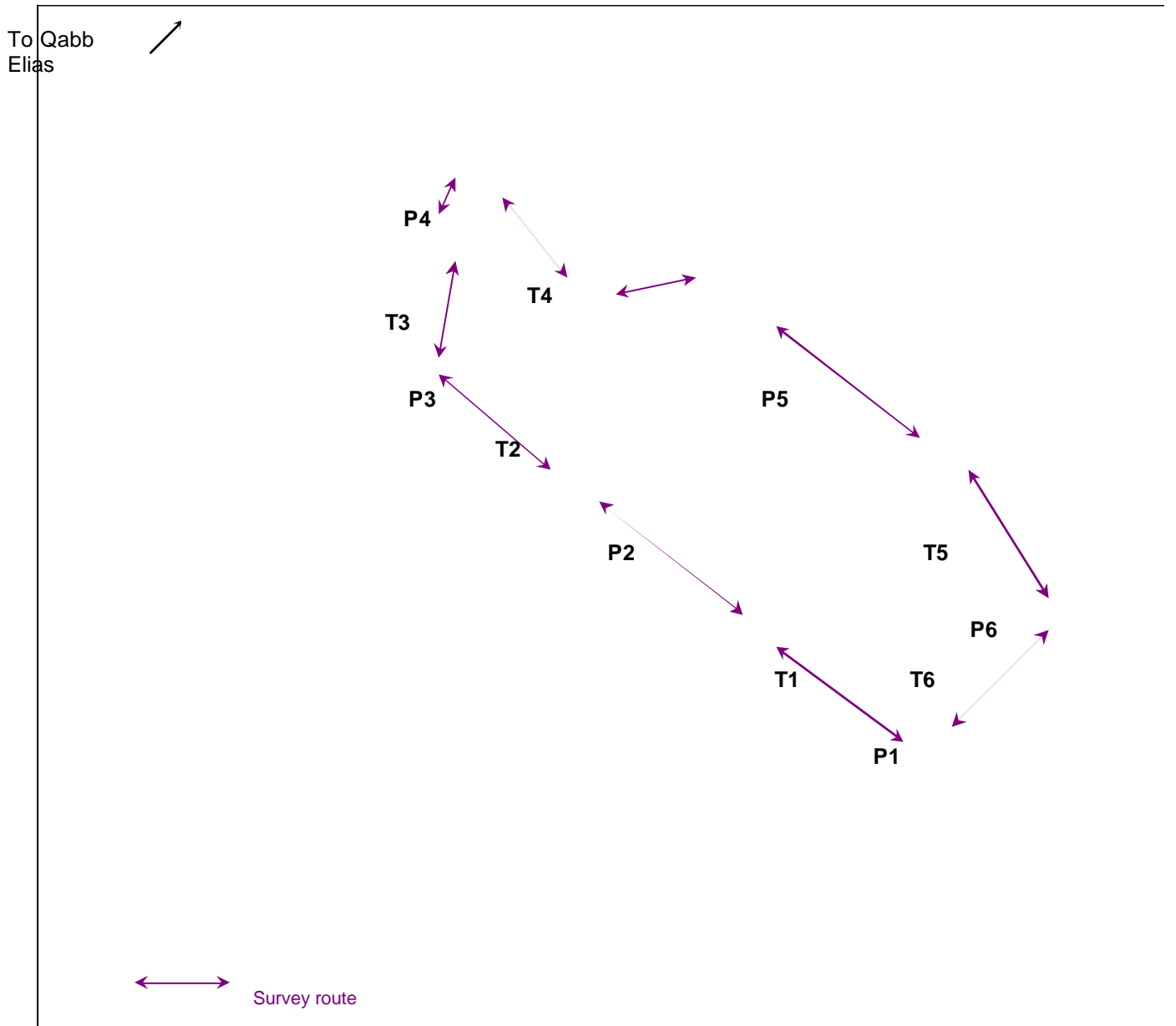
- ◀ Prevent hunting at the marsh and in the general vicinity of the marsh.
- ◀ Introduce measures to improve the marsh's retention of its water and thus improve habitats for migrating birds and over-wintering species.
- ◀ Prevent grazing or reduce it to a controlled minimum.
- ◀ Prohibit the burning of reedbeds and trees.
- ◀ Control access to the marsh by recreational users and limit or prevent camping at the marsh.

## ***Conclusions***

That 105 species were recorded over three months of autumn migration in a disturbed and degraded area like the Aammiq marsh fully indicates its value as a refuge for birds resident in the Bekaa and as a rest and refueling haven for birds on migration. Protection and management in the interests of wildlife will attract greater numbers of birds and more species. Future autumn surveys could be extended to include part of August and December. Indications of peak autumn use by bird species may be of value in organizing future species-specific surveys and ringing schemes, and will clarify environmental and water management issues and decisions.

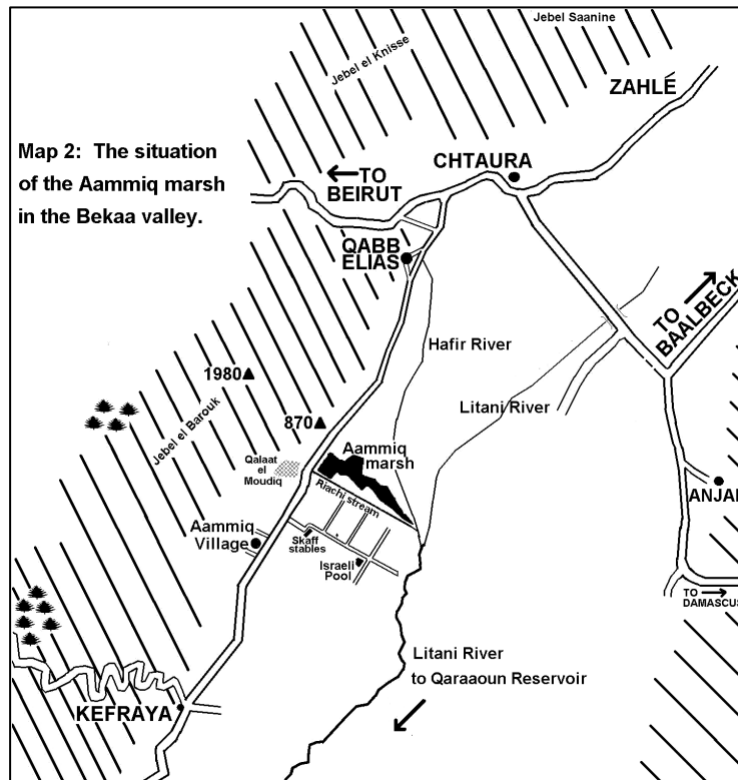
**Appendices:**

**Map 1:** The Aammiq marsh and surrounding lands including survey route. **T1** to **T6** indicate transects followed in the clockwise direction on alternate days. **P1** to **P6** indicate point count stations at which observers monitored for fifteen minutes. The entire route is approximately 4 km long.





**Map 2:** The situation of the Aammiq marsh in the Bekaa Valley.



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