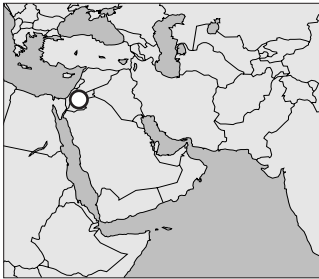


Observations on the avifauna of the eastern Jordan Valley, during July–August 2005.

FARES KHOURY*, KHALDUN AL-OMARI, JOSEPH AZAR
AND IBRAHIM AL-HASANI



The avifauna of the near-border areas along the Jordan River and at the southern and northern tips of the Dead Sea were studied during a survey from mid-July to early August 2005. Around 15% of the breeding species within the study area do not breed anywhere else in Jordan. These include Black Francolin *Francolinus francolinus*, Blue-cheeked Bee-eater *Merops persicus*, Pied Kingfisher *Ceryle rudis*, Nightingale *Luscinia megarhynchos*, Clamorous Reed Warbler *Acrocephalus stentoreus* and Dead Sea Sparrow *Passer moabiticus*. Large and continuous colonies of the Dead Sea Sparrow and a high frequency of Blue-cheeked Bee-eater were found along the flood plains adjacent to the lower and central Jordan River. Range extensions of Namaqua Dove *Oena capensis*, Little Green Bee-eater *Merops orientalis* and Arabian Babbler *Turdoides squamiceps*, in addition to an invasion of Indian Silverbill *Lonchura [Eudice] malabarica* were evident during this survey. The low-lying habitat patches of the study area, many of which have previously been fragmented by agricultural projects, include salt marshes, *Tamarix* scrub and riparian-type habitats along the banks of the Jordan River. Further habitat destruction and fragmentation is expected in the near future, if action is not taken to protect the remnant natural habitats, particularly along the floodplains of the Jordan River.

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INTRODUCTION

The avifauna of the agricultural landscapes on the eastern side of the Jordan Valley is, in general, well documented (Andrews 1995). However, there remains a gap in our knowledge of the birds inhabiting the remnant natural habitats along the Jordan River and south of the Dead Sea due to limited access to this area, which has been a closed military zone for many decades. Natural habitats include flood plains with patches of salt marsh vegetation, riparian vegetation lining the Jordan River, and dense *Tamarix* scrub. These remnant, and for Jordan rather unique patches of natural habitats, are threatened by agricultural, industrial and other forms of developments causing further destruction and fragmentation. We provide here supplementary knowledge about the breeding birds of Jordan in general and the Jordan Valley in particular (Andrews 1995, Andrews *et al* 1999, Khoury 2001). We include significant records of birds in the border areas of the Jordan Valley where status and breeding range had been unclear due to limited access.

STUDY AREA

From mid-July to early August 2005, which period, through less than ideal nevertheless does allow a good indication of breeding species, we observed and counted birds at 20 sites, which are mostly below sea level and are representative of the southern and northern shores of the Dead Sea (*ie* Fifa and Sweimeh) and the flood plains along the Jordan River, from Baqura south to the Dead Sea (**Plate 1**). The flood plains are continuous, but their width varies from 100m to nearly 1km along the Jordan River. They are bordered in the east by the sedimentary *Katar* hills, which separate the flood plains from the rest of the Jordan Valley. We also visited a few sites

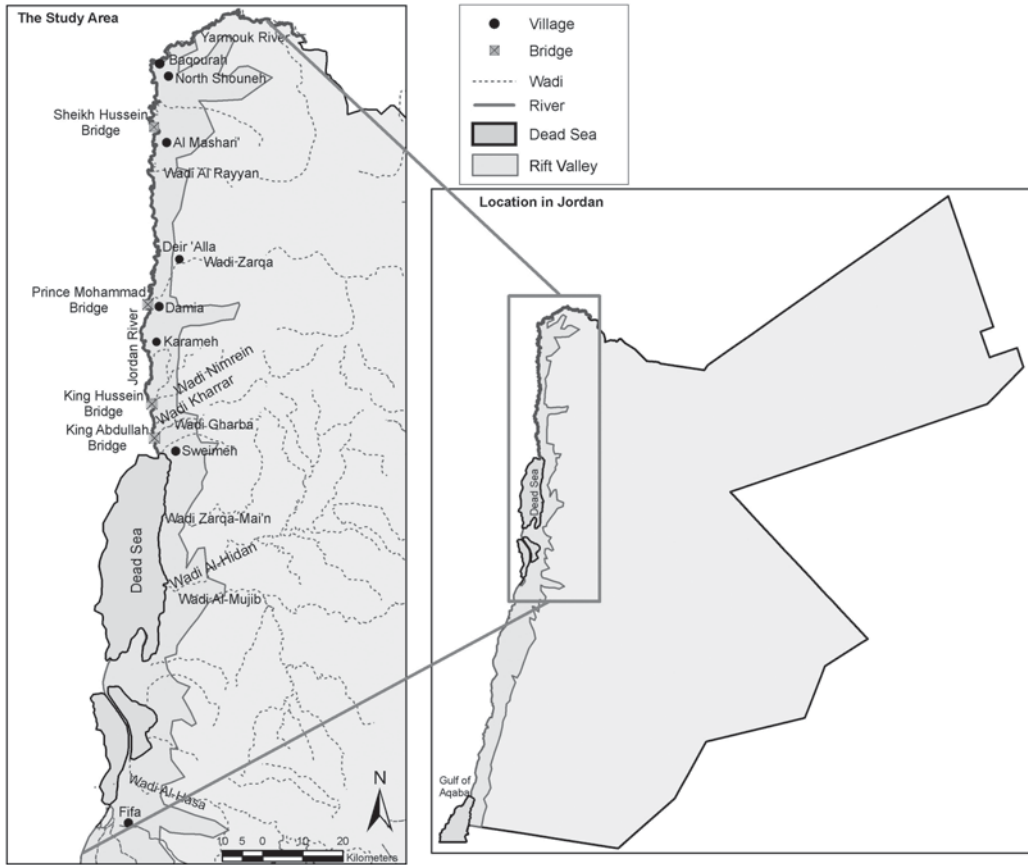


Figure 1. Map of the study area. The northern and upper Jordan River, as referred to in the text, extends from Baqourah south to the Wadi Ar Rayyan area; the central part extends further south to the Karamah area, and the southern and lower Jordan River extends from the Karamah area to the mouth of the Jordan River at the northern tip of the Dead Sea, south of King Abdallah Bridge. The study area comprised only of the near-border areas on the western edge of the Rift Valley. Prepared by Natalia Boulad © RSCN.

along the southeastern shores of the Dead Sea, but our study area was generally limited to the near-border region that forms the western edge of the eastern Jordan Valley. Most areas visited have remnant patches of natural habitats that usually comprise dry or waterlogged saltmarshes and *Tamarix* thickets (**Plate 2**) studded with reed *Phragmites sp* and poplar *Populus sp* stands that are characteristic of a narrow and nearly continuous riparian zone along the banks of the Jordan River. Farmland dominates the landscape along the central and northern Jordan River valley and recently also the south-eastern shores of the Dead Sea, where intensive agricultural expansion caused major destruction and fragmentation of natural habitats.

The area is also home to industrial projects; for example an industrial and tax-free zone is planned for the lower Jordan Valley near King Muhammad (Damia) Bridge. Tourist rest houses, hotels and a few isolated villas occur along the northern shores of the Dead Sea and at the Baptism Site at Wadi Kharrar. Intensive grazing by sheep and goats appears not to be a major concern, being noted only locally during our visits at Sweimeh and at few sites along the banks of the central and northern Jordan River.

METHODS

We counted all bird species at the 20 sites, but we include here only significant records of resident and breeding species. We assumed that birds recorded during the eight study days during the period between 19 July and 2 August 2005 were breeding summer visitors or residents, except for those known only to be non-breeding visitors, residents or migrants (Andrews 1995, Andrews *et al* 1999). We recorded the total numbers of birds for each site where possible or logged the daily maximum. In addition, for the Dead Sea Sparrow *Passer moabiticus*, we undertook 100m line transects to count nests and also spot counts (30m radius) of birds in order to estimate the total population and colony sizes. (See News & Information, this issue.)

LIST OF SELECTED SPECIES

Black Francolin *Francolinus francolinus*. Recorded at three different sites along the central (Karamah area) and northern banks (Wadi Ar Rayyan area) of the Jordan River, with 1 – 4 birds per site. It had previously been recorded also in the lower Jordan Valley (Khoury 2001), but we found none at Sweimeh, where it is now probably extinct (Andrews 1995). This species is currently confined in Jordan to the floodplains of the Jordan River, but may also occur at Fifa.

Black-crowned Night Heron *Nycticorax nycticorax*. Recorded at four sites along the lower and central Jordan River in small groups of 2–4 in late July. An earlier survey period might provide confirmation of the species' status as a breeder or non-breeder; there birds may have been early migrants.

Cattle Egret *Bubulcus ibis*. Recorded throughout the study area: maximum daily counts of 30 birds, mainly in agricultural landscape in the central and northern Jordan Valley.

Little Egret *Egretta garzetta*. Recorded throughout the study area: maximum daily counts of 18 in the upper/northern Jordan River area.

Note. Large, unoccupied nests of herons/egrets on Eucalyptus *Eucalyptus sp* trees near the lowermost Wadi Gharba indicate the presence of breeding herons or egrets along the lower Jordan River. Proven breeding of Night Herons, Little Egrets and Cattle Egrets in Jordan has occurred only along the upper, northern banks of the Jordan River (Andrews *et al* 1999). However, the presence of these birds in our study and also of nests that probably belong to at least one of these species suggests breeding further south. Their status in the lower Jordan Valley needs to be established.



Plate 1. *Tamarix* thickets growing on the saline waterlogged soil of the northern shores of the Dead Sea near Sweimeh. © Masaro Amano.

Eurasian Hobby *Falco subbuteo*. Single adults at two different sites, in the lower (Wadi Nimrein) and central (Karamah area) Jordan Valley. Both were recorded in mid- and late July while hunting larks over the *Katar* hills. It is probably a localized breeding species in the Jordan Valley (cf Shirihai 1996), and our records could indicate breeding on the Jordanian side. It certainly breeds in the highlands c30km to the east (Andrews 1995).

Namaqua Dove *Oena capensis*. Like the three *Streptopelia* species breeding in the Jordan Valley (Andrews 1995, Khoury 2001), the Namaqua Dove has been very successful in colonizing most parts of the valley. It was recorded at all sites except the northernmost, ie north of Wadi Ar Rayyan. We usually counted over five birds each day in the southern and central Jordan Valley during mid- or late July. One group of 17, including 8–10 juveniles, was located in the Karamah area on 27 July. The species occupied mainly open saltmarsh habitats scattered with *Tamarix*, saltbush *Atriplex* sp or sea-blight *Suaeda* shrubs, but also occasionally frequented the field-edges in agricultural habitats. Because it is also regularly recorded in winter in this area, it has probably established a resident population in the Jordan Valley, unlike at Azraq, where it appears only from April to early September (Khoury, pers obs).

European Roller *Coracias garrulus*. Single birds recorded at the lower extent of Wadi Zarqa, at Baqqurah and along the Yarmouk River during late July. Previous summer records of 2 adults with 2 juveniles at the lower Wadi Zarqa and one at Wadi Kharrar (Khoury 2001) suggest that this species is a thinly distributed summer visitor breeding along the Jordan River banks, and not just at the rift margins as confirmed by Andrews (1995).

Pied Kingfisher *Ceryle rudis*. Singles or pairs were recorded at three sites along the central and northern banks of the Jordan River, as was a group of 15 on the eastern bank of the Jordan River near Wadi Ar Rayyan on 2 August. The presence of numerous nesting holes at this particular site suggests a breeding colony may have existed in recent years.

(Little) Green Bee-eater *Merops orientalis*. Recorded in the lower Jordan River area at King Abdullah Bridge (1 adult, 2 juveniles) and the lower Wadi Nimrein (1 juvenile). Recorded also in recent years at Sweimeh and Al-Karamah Dam during April–May (Khoury pers obs). This species seemingly has started to colonise the southern Jordan Valley, north of the Dead Sea, where it occupies relatively undisturbed, open habitats scattered with trees or shrubs, similar to their breeding habitats in Wadi Araba. It appears that its spread northwards was facilitated by the inadvertent establishment of suitable habitats such as hotel gardens along the Dead Sea's northeastern shores.

Blue-cheeked Bee-eater *Merops persicus*. Recorded at all sites in the southern and central Jordan Valley, particularly Fifa, and from King Abdullah Bridge northwards to the lower Wadi Zarqa. Significant counts included 13 birds between Damia and lower extent of Wadi Zarqa on 24 July, several of which were juveniles, and 8 at one site, west of the Karamah area, on 27 July. It is mostly absent as breeding species along the upper Jordan River. The current breeding range of this species in Jordan now includes the banks of the central and southern Jordan River, where probably a few hundred pairs breed. There is a colony of 10+ pairs at Fifa, and there are others, including occasional small colonies along the Dead Sea's southeastern shores (Andrews *et al* 1999).

European Bee-eater *Merops apiaster*. Summer resident on the Israeli side (Shirihai 1996) and at several sites in the highlands and rift margins (Andrews 1995). Singles and

groups of up to 12 birds at most sites visited along the Jordan River's central and northern floodplains, and also at the Yarmouk River. The species is less frequent in the lower Jordan River area, where it was recorded at the lower extent of Wadi Nimrein (King Hussein/Allenby Bridge) during late July; it previously had been noted at Wadi Kharrar during the breeding season (Khoury 2001). By this time, nest-holes were inactive, but some may have been used by *M. apiaster*. Our summer records support their presence as a summer breeder (Shirihai 1996) in the Jordan Valley.

Syrian Woodpecker *Dendrocopos syriacus*. No previous published records from the Jordan side of the Jordan Valley, but reported on the Israeli side (Shirihai 1996). Resident in highlands and rift margins of NW Jordan and Yarmouk basin (Andrews 1995). Singles recorded only along the banks of the upper Jordan River from Wadi Ar Rayyan north to Baqourah and the Yarmouk River. It appeared to be associated with the presence of large Euphrates poplar *Populus euphraticus* and some planted trees such as Cypress *Cupressus sp* and Eucalyptus sp.

Great Grey Shrike *Lanius excubitor* Resident in the Jordan Valley (Andrews 1995), but not reported before from the floodplain; also in some other localities.. Uncommon in open habitats of the Jordan River flood plain where it usually avoids very dense *Tamarix* thickets. Within the Jordan Valley, it appears to be more numerous to the east of the Katar Hills, in areas scattered with bushes and Rhamnaceae *Zizyphus* (=Zizyphus, Kew 2006) trees and also along field edges (Andrews 1995).

Masked Shrike *Lanius nubicus*. The only previous Jordanian breeding records are from the northern highlands and nearby rift margins. One male adult and single juveniles at 4 sites along the central and northern banks of the Jordan River indicate localized breeding in this area, not mapped by Andrews (1995).

Great Tit *Parus major*. Recorded from the other side of the Jordanian Valley (Shirihai 1995) it is relatively widespread in the northern highlands and rift margins. It also occurs in montane SW Jordan from Dana south to Petra (Andrews 1995). Although not recorded in the flood plains, finding a single singing bird in a garden at Al Mashari' village in the northern Jordan Valley on 2 August is significant, being the first record of this species on the Jordanian side of the Jordan Valley.

Desert Lark *Ammomanes deserti isabellinus* Recorded at several sites, such as Sweimeh and the Jordan River mouth, and along the Katar hills of the lower and central Jordan Valley (up to the lower Wadi Zarqa). It has also been recorded previously at one site in the lower Jordan River (Khoury 2001). It is more widespread in western Jordan north of the Dead Sea than previously known (eg Andrews 1995).

Zitting Cisticola *Cisticola juncidis*. Not recorded in the flood plains or saltmarshes of our limited study area, but the not wholly unexpected discovery of several singing birds over fields at Deir 'Alla on 24 July appears to be significant in the light of the absence of recent summer records.

Clamorous Reed Warbler *Acrocephalus stentoreus*. Now restricted to the Jordan Valley, mostly along the banks. Single birds seen at 6 sites along the eastern banks of the lower and central Jordan River and the lower extent of Wadi Nimrein during late July. Despite its known attachment to dense, mature reedbeds, such as at Wadi Kharrar (Khoury 2001), during this survey the species was recorded mostly in dense *Tamarix* thickets containing some reed.

Eastern Olivaceous Warbler *Iduna [Hippolais] pallida*. Single birds were recorded at 10 sites, mainly in *Tamarix*, along the banks of the Jordan River during late July. Although no birds were singing, perhaps being early migrants, previous observations at Wadi Kharrar (Khoury 2001) and along the Jordan River (Shirihai 1996) showed that the species does breed, and locally at high densities, in the Jordan Valley (cf Andrews 1995).

Sardinian Warbler *Sylvia melanocephala*. Recorded during late July as pairs or family parties of 3–5 at 6 sites near the Jordan River, from King Abdallah Bridge north to the Wadi Ar Rayyan area. Birds were seen always in relatively open habitat bordering *Tamarix* thickets often containing dense bushes (eg *Atriplex*, *Nitraria* (Zygophyllaceae) or Acacia (Silk-tree) *Prosopis (Albizia) farcta*) (Lasolf 2006). The species' previous status, as described by Andrews (1995), was as a winter visitor to the Jordan Valley. This species' status here would benefit from an earlier survey period.

Arabian Babbler *Turdoides squamiceps*. At least two were heard calling at Sweimeh on 19 July, and a group of over 6 were found in a saltmarsh dominated by *Atriplex* to the west of Karamah on 27 July. The species had previously been reported from only two other sites in the lower and central Jordan Valley (Andrews 1995, Khoury 2001).

Nightingale sp. *Luscinia sp.* Up to three individuals recorded in damp *Tamarix* thickets at Sweimeh on 19th July. Common Nightingale *L. megarhynchos* is known to breed along the banks of the Jordan River (Shirihai 1996, Khoury 2001).

Mourning Wheatear *Oenanthe lugens*. One adult recorded at the edge of the Jordan River flood plains, along the Katar hills, southwest of Karamah. Previously it had not been known from western Jordan north of the Dead Sea (Andrews 1995).

Spanish Sparrow *Passer hispaniolensis*. Locally common, breeding mainly in *Zizyphus* and *Eucalyptus* trees, at Fifa, and from Swaimah north to Baqourah and the Yarmouk River. It was most abundant in the agricultural landscapes bordering the upper Jordan River, and totally absent from those few sites dominated by continuous and undisturbed tamarisk scrub along the lower Jordan River.

Dead Sea Sparrow *Passer moabiticus*. Found breeding in extensive *Tamarix* scrub near water at Fifa (along Seil Al-Nukhbar, south of the Dead Sea, **Fig 1**), the northern shores of the Dead Sea (Sweimeh, **Plate 1**), and nearly continuously along the banks of the Jordan River, and the lower Yarmouk River, particularly near its junction with the Jordan River at Baqqourah. The largest and most continuous concentrations were found in the floodplains adjacent to the southern Jordan River. This undisturbed and undeveloped strip of suitable habitat extends for around 35km between the mouth of the Jordan River and the Karamah area, enclosing extensive *Tamarix* thickets growing on the flood plains. It also extends along the lower parts of several wadis belonging to the Jordan system, just before they join the Jordan River – examples are Wadi Kharrar (Khoury 2001) and Wadi Nimrein. Other sites with large colonies include Fifa (50–100bp), Sweimeh (40–80bp), and some along the central and northern Jordan River, like Damia and the lowermost Wadi Zarqa where it meets the Jordan River, and also confluence of the Jordan and Yarmouk Rivers at Baqqourah.

Due to habitat unsuitability (dominance of reed over *Tamarix* and destruction of remaining *Tamarix*-dominated scrub), the species has bred only at a few localities and in low densities along the northern Jordan River (Khoury *et al* 2005). Although not covered completely during this survey, the Dead Sea's southeastern shores, including

the some wadi mouths at Safi (eg lower Wadi al-Hasa), and other sites further north did not appear to hold breeding Dead Sea Sparrow. Most of the *Tamarix* scrub in this area, covered by Mike Evans in 1996 (Andrews *et al* 1999), appeared to be fragmented, highly degraded and dry. We estimated the total breeding population in Jordan to be 1300 – 2000 pairs, at least half being concentrated on the Jordan River floodplains between Wadi Kharrar and the Karamah area.

Indian Silverbill *Lonchura [Eudice] malabarica* Its spread since its history was given by Andrews (1995) lacks data. Present only at two sites along the southern and lower Jordan River (Sweimeh and Wadi Kharrar), but further north very frequent and locally common along river, groups of up to 15 birds present per site from the Karamah area north to North Shouneh. The species appears to prefer agricultural landscapes, where it may invade remnant natural habitats such as *Tamarix* scrub close to farms.

Desert Finch *Rhodospiza obsoletus*. Groups of 3–14 at three different sites along the banks of the southern and central Jordan River, between the lower Wadi Nimrein and the lower Wadi Zarqa areas, during late July.

DISCUSSION

The above list considers only significant records of species not previously known to occur or to be widely distributed along the near-border areas of the Jordan River or at the northern and southern tips of the Dead Sea. The breeding bird fauna of the area comprising the Jordan River floodplains and the low-lying saltmarsh and *Tamarix* scrub habitats at Sweimeh and Fifa probably numbers over 60 species (Andrews 1995, Andrews *et al* 1999, Shirihai 1996 and Khoury 2001). If we include the rest of the Jordan River and the lower rift margins, this number of breeding species exceeds 100 (cf Andrews 1995 and Shirihai 1996). Around 10 species (c15% of our study area's breeding species) appear to be limited (or nearly so) in to this specific area in Jordan, namely several egrets and herons (Andrews *et al* 1999), Black Francolin, Blue-cheeked Bee-eater, Pied Kingfisher, Common Nightingale, Clamorous Reed Warbler and Dead Sea Sparrow. Moreover, the breeding ranges of two species characteristic of the Afro-tropical Wadi Araba, Green Bee-eater and Arabian Babbler stretch into the lower and central Jordan River Basin, while a few Mediterranean species typical of the Northern Highlands, such as Syrian Woodpecker, also have ranges that extend into the river's northern and central banks. The result is a unique latitudinal variation of bird communities within the Jordan River Basin.

In terms of recent colonisation, Namaqua Dove has been successful in the lower and central Jordan Valley, and we often found Indian Silverbill frequenting the central and northern banks of the Jordan River, its invasion seemingly facilitated by agricultural expansion. Until recently, it had not been appreciated that the habitats immediately bordering the Jordan River were so varied as to hold such a diverse avifauna, uniquely so in the region. By themselves, such facts would be amongst the prime reasons for any area to be considered for protection and conservation, but the urgent need for action to seek the granting of the highest conservation priority in Jordan is driven by the steady erosion of these fragile habitats by a multiplicity of independent interests using and managing this narrow area.

Natural habitats, including the riparian and saltmarsh vegetation communities of the central and northern Jordan Valley have been mostly converted to farmland. Saltmarsh habitats and *Tamarix* scrub along the Dead Sea's southeastern shores have been recently reduced to a few remnant and degraded patches from agricultural

expansion, leading to the reduction and probable disappearance of several Dead Sea Sparrow colonies. The southern and lower Jordan River floodplain and the near-border area at Fifa still retain relatively intact natural undisturbed saltmarshes and *Tamarix* scrub. The *Tamarix* thickets along the northern shores of the Dead Sea at Sweimeh, although surrounded by land-use changes, offer the best and only opportunity to watch breeding colonies of Dead Sea Sparrow in Jordan, all other sites having very limited access. However, even these near-intact undisturbed habitats are currently under threat because of loss of water resources that feed perennial streams and springs. Not only would these sites become degraded, but year-round water availability is so important for the existence of Dead Sea Sparrow and other species. In addition, introduced mesquite *Prosopis juliflora* shrubs have recently become invasive, apparently replacing *Tamarix* at several sites along the Dead Sea shores. Industrial and tourist projects are also potential major threats to the southern reaches of the Jordan River, despite of the declaration of an IBA along the southern Jordan River (RSCN 2000).

We recommend that the Jordan Valley Authority and the Royal Society for the Conservation of Nature seek formal protection for all remnant natural habitat patches along the flood plains of Jordan River and at Fifa and Sweimeh and that the IBA inventory of Jordan be reviewed in the light of our newly-acquired information from the Jordan Valley. Accordingly, we suggest that BirdLife International, through its Jordanian partner the Royal Society for the Conservation of Nature discuss with the Jordan Valley Authority how this recommendation can be implemented. A continuous and suitably broad belt of riparian habitat could, with little effort, be preserved along the banks of the Jordan River to act as corridors allowing the movement of animals between suitable habitat patches, and to provide appropriate stopover habitats for migrant bird species.

This paper highlights but a few aspects of the value of the habitats within our study area; there remain many gaps in our knowledge of the status of bird species relying on aquatic habitats (eg herons, rails and *Acrocephalus* warblers) We also have a poor understanding of the (meta-) population and community structure of birds and how these are affected by the impact of human activities in the northern rift valley. Surveys slightly earlier in the season would probably provide more definitive breeding information.

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