

A survey of the birds in South Sinai, Egypt

From 28 June to 05 August 2006 we conducted bird surveys of the birds in the south Sinai peninsula, Egypt, mountains, wadis (ephemeral river beds), plains, and oases in and adjacent to the St. Katherine Protectorate Important Bird Area. We recorded 30 bird species, of which nine were migrants and only three were birds of prey. The most abundant species were Rock Dove, Rock Martin and Laughing Dove and the most widespread species was White-Tailed Wheatear, which was detected in all 38 surveys. Most vegetation in the St. Katherine Protectorate occurs in gardens managed by Jabaliya Bedouin people. Birds in the St. Katherine Protectorate are threatened by recent shifts from traditional fruit crops to cannabis plantations and by the demands placed on scarce water supplies by a recent increase in tourism. A critical area for both resident and migrant birds, the St. Katherine Protectorate deserves ongoing protection, appropriate management, with more detailed research and community-based conservation.

Introduction

Located where the Asian and Africa continents meet, the Sinai Peninsula is a distinctive biological region with characteristic flora and fauna (Zalat et al 2001). The region has a predominantly mountainous environment consisting of different drainage systems made up of a number of connected wadis. Geologically the peninsula is split into three sections; the northern sand dunes, a central limestone plateau, and high altitude igneous rock mountains in the south.

South Sinai lies in the North African belt and has a Saharan-Mediterranean climate. Summers are hot, with a mean temperature of 36°C (August) and winters are cool with a mean minimum temperature of -7.8°C (February). The area has an arid climate with a mean annual rainfall of 60 mm/year with the addition of snow melt on higher mountain peaks which can receive around 300mm/year (Grainger 2003).

There are no endemic birds in the Sinai (Meakin 2005). Resident bird communities include Egypt's Sahara-Sindian biome-restricted species with many of these species uncommon or not represented in other IBA's in Egypt (Birdlife International 2005). There are around fifty resident species of breeding birds and some other notable species such as the Sinai Rosefinch *Carpodacus synoicus* and Tristram's Starling *Onychognathus tristramii* (Goodman et al 1989).

Bedouin people have inhabited the mountains of South Sinai for hundreds of years using range land for camels, goats and sheep and tending gardens with fruit and olive trees in various wadis. These natural resources and cultural heritage are now at risk from unsustainable long-term development pressures. The tourism industry in the form of coastal resorts such as Sharm el Sheikh is one of the fastest growing in the world and increasing numbers of people are visiting the historical sites in St Katherine. Granger (2003) states there is average of 700 people per day to the monastery, which must have detrimental effects to the local fauna.

A large part of South Sinai was given protection status in 1996 through the St. Katherine Protectorate, established through the Egyptian Environmental Affairs Agency (EEAA). Birdlife International has given the Protectorate Important Bird Area (IBA) status. Hunting has been banned but larger species such as the Sinai Leopard *Panthera pardus jarvisi* have been hunted to extinction and the Nubain Ibx *Capra ibex nubiana* is rare (threatened?). Many of the raptor species are also threatened by persecution by residents who consider them agricultural pests.

There have been few bird surveys from the South Sinai on a systematic basis and little published material exists for the interest of the wider scientific community. After several ad-hoc surveys in 1996-2001 and 2002 Operation Wallacea in collaboration with the EEAA Biomap project have started a long-term monitoring project piloting surveys in 2005. This year in 2006 the south Sinai survey was refined and various new locations were surveyed and some were repeated.

Methods

Surveys were conducted between June 28th and 4th August 2006 by Nico Dauphine, Matthew White and Alaa Eldeen. Various large wadis were surveyed representing a range in habitat and altitude including Wadi Nasb, Ain Hodra, Wadi Marra, Wadi Gharba and Wadi Itlah. Also three sites were surveyed in St Katherine including Nuweiba, St Katherine Monastery and Wadi Arbaein.

Transects lengths of (1 to 2km) were walked along each wadi starting around 0600am at a slow pace of 1km per hour, late afternoon surveys were also conducted from around 16:00pm. Various GPS readings were recorded along the transect line so points could be plotted on a GIS map later. Each bird species, possible sex, habitat and notes were recorded. From 10:00 – 11:00am temperatures began to get very hot and bird activity reduced thus only incidental observations were made after this period until the cooler late afternoon.

Results

Overall abundance

Thirty bird species were recorded during 38 surveys in 2006, plus some casual observations out of the surveys. A total of 2077 individual birds were recorded in the survey time.

Rock Doves were the most abundant species of bird mixed with a minority of feral birds (546.2) in survey areas, followed by the Rock Martin (289.9). Laughing Dove was third most abundant species recorded (220.1).

White-tailed Wheatears were the most widespread species recorded in all thirty eight wadi desert surveys. Rock martins were second most widespread (32/38 surveys), third was Laughing Dove (27/38 surveys).

The species and number of individuals recorded in each general wadi survey are presented in the appendix.

Wadi Surveys

Wadi Nasb surveyed with six line transects had the highest total abundance of birds (519) and also the highest number of species recorded (14). Wadi Gebel also surveyed six times had a total of 433 individual birds and a maximum of 13 species seen on one transect.

Lowest abundance was recorded in Ain Hodra, 138 individuals and a maximum of four species, but notably only in four surveys. Wadi Marra on the other hand was surveyed five times with a very similar abundance of 140 individuals and a maximum of eight species.

Various other species were recorded out of the surveys on an ad hoc basis such as Brown-necked raven, Hooded Wheatear and Blackcap.

Discussion

Following on from last years surveys in 2005, the records this year were very important for clarification of the species present in the south Sinai. Most notable were the non presence of birds of prey and corvids in the region and the early migration of several species of warbler.

Over six weeks of intensive surveying only three species of bird of prey were recorded and in very small numbers. Two Short-toed Eagles were seen once observed roosting on the high cliffs of Wadi Arbaein, these were probably migratory birds as described in Goodman et al. (1989). Two Egyptian Vultures were also seen at Wadi Arbaein on two occasions, but on a trip back to Sharm el Sheikh over one fifty vultures were seen gliding over the local rubbish dump (White pers. obs. 2006). Maybe the majority of Egyptian Vultures have simply moved south to a more reliable source of food. Although on a large number of surveys Spiny Mice were noted and wild Rock Hyrax in reasonable numbers.

(Meakin *et al* 2005) reasons on the degradation of the entire ecosystem of South Sinai being a possible cause of the dramatic decline of raptors. There has also been a notable 10 year period of lower

rainfall and overgrazing probably taking its toll on Sinai's higher trophic levels. A more likely case for the decline is persecution and hunting by the local Bedouin communities that have no management restrictions. A dislocated brown wing of a large raptor was discovered on one of the surveys at Wadi Marra alongside one of the Bedouin gardens.

Brown-necked and Fan-tailed Ravens surprisingly were not recorded on surveys but were seen in very few numbers on an ad hoc basis. Most were unidentified due to being sighted from distance. Three ravens were seen on the walk back from Ain Hodra gliding over the cliffs. Again prey was available in the form of small mammals, reptiles and carrion which could support a population of ravens. The local St Katherine rubbish dump has now been cleaned up and this may be another partial reason for low numbers as raven have moved on.

White-crowned Wheatears were seen in every survey but other species of wheatear were very uncommon, which corresponds to the surveys of 2005. Only two Hooded Wheatear were noted out of survey, one outside Fox Camp, St Katherine. Claims that Hooded, Mourning and Desert wheatears are common residents of the Sinai have not been proven in these surveys. (Snow and Perrins 1998) state the Desert Wheatear as having a north-Sinai distribution with altitudinal movements in the non-breeding season (Goodman et al 1989) but none were seen in the surveys of the south Sinai over two years.

From as early as mid-July possible migrants augmented the resident population of birds on passage from their breeding grounds in the Middle East and Eastern Mediterranean to wintering grounds in sub-Saharan Africa. As the weeks progressed through July many more species of warbler were recorded. Migrants included six species of warbler, the largest total of 24 Olivaceous Warblers was recorded on survey, some of which could have been resident (Snow et al 1998). The highest number of warblers on one survey was recorded at Wadi Ithah on the first week of August. Many warblers were observed on scattered trees in Bedouin gardens.

Acknowledgements

We are grateful to Operation Wallacea, BioMAP Egypt, the St. Katherine Protectorate, the British Council in Egypt, and the Warnell School of Forestry and Natural Resources at the University of Georgia, USA, for funding, equipment and logistical support that made this research possible. BioMAP Egypt directors Francis Gilbert and Samy Zalat supervised field research, and St. Katherine Protectorate manager Mohamed Abdulla Kotb provided critical and timely field assistance. We thank the Egyptian Environmental Affairs Agency for permission to conduct research and St. Katherine Protectorate rangers Adnan Abd Elhamed Abd Elhalim, Mohamed Kamel and Ismail Hatab for assisting field research. Alanna Maltby, Haitham Zalat and Yasmin Maaly provided exceptional support and friendship in the field. Ahmed Ghieth and Mohammad Abd Elaal respectively provided excellent logistical and medical support. We are indebted to the staff at Farag Fox Desert Camp for providing field support, particularly our singular cook, Abdul xxx xxx and Bedouin guides Hussein Musa Saly Tarawa, Jamil Mansour Hussein, Salim Derwish Sadala and Nasr Mansour Awad. Finally, we thank the British and Egyptian student volunteers for their valuable contributions, especially: David Doyle, Mohamed Naguib, Mohamed Effat, Mahmoud Farag, Wael Sayed Saleh, Hemy xxx, Mohamed Attiya Rhagheb, Ahmad Hassan, Abdul Elezeem, Tobias Farman, Emma Oxxx, Catherine Evans, Chris Newton, Maddie Moate, Kylie Maisey, Nick Brown, and Malek Youssif.

References

Baha El Din, S. M., a& M. Baha El Din (2000) Biodiversity inventory and monitoring in St. Katherine Protectorate with a special emphasis on reptiles and birds of prey. Unpublished report.

Birdlife International (2005) Birdlife IBA Factsheet: St Katherine Protectorate. Available at <http://www.birdlife.org/datazone/sites/index.html?action=SitHTMDetails.asp&sid=6211&m=0>. Birdlife International, Cambridge.

Goodman, S.M., Meininger, P.L., Baha El Din, S.M., Hobbs, J.J., & Mullie, W.C. (1989) The Birds of Egypt. Oxford University Press, Oxford.

Grainger, J. (2003) 'People are living in the park'. Linking biodiversity conservation to community development in the Middle East region: a case study from the Saint Katherine Protectorate, Southern Sinai. *Journal of Arid Environments*. Vol. 54, pp29-38.

Meakin, K., de Kort, R. S, Gilbert, H, Gilbert, F, Zalat, S., Mohi, L., Ibrahim, S., Griffin, J. & the volunteers of Operation Wallacea in Egypt (2005) Monitoring birds, reptiles and butterflies in the St Katherine Protectorate, Egypt. *Egyptian Journal of Biology*, Vol. 7 pp 66-95.

Meakin, K. (2005) Operation Wallacea/ Conservation Egypt St. Katherine Protectorate Sinai Expedition 2005 Bird Report. Unpublished report.

Svensson, L., Grant, P. J., Mullarney, K., and Zetterström, D. (2001) The most complete field guide to the birds of Britain and Europe. HarperCollins Publishers Ltd., London.

Snow, D.W., Perrins, C.M., Gilmoor, R., Hillcoat, B., Roselaar, C.S., Vincent, D., Wallace D.I.M., & Wilson, M.G. (1998) *The Birds of the Western Palearctic. Concise Edition*. Oxford University Press, Oxford.

Tharwat, M. E. (1997) *Birds known to occur in Egypt*. Ains Shams University, Cairo.

Zalat, S, Semida, F, Gilbert, F, El Banna, S, Sayed, E, El-Alqamy, H and Behnke, J 2001. Spatial variation in the biodiversity of Bedouin gardens in the St. Katherine Protectorate, South Sinai, Egypt. *Egyptian Journal of Biology*. Vol. 3, pp 147-155.

Appendix: Total bird species (30) observed in south Sinai from 28 June to 05 August 2006. 'Status' is resident or migratory, 'No. of surveys recorded' shows how many surveys a species was recorded on. All wadis refer to each survey expedition. Taxonomy and order follows Sibley and Monroe (1997).

Species	Status	No. of Surveys Rec.	Wadi Nasb	Ain Hodra	Wadi Marra	Wadi Gharba	Wadi Gebel	St Katherine Mount	Wadi Iltah	Nuweiba Mean	Monastery Mean	Wadi Arbaein Mean	Total
Sand partridge <i>Ammoperdix heyi</i>	R	6	7	0	9	0	0	0	0	0	0.2	0.2	16.3
Chukar <i>Alectoris chukar</i>	R	3	0	0	0	0	30	1	0	0	0	0	31
European Bee-eater <i>Merops apiaster</i>	R	1	1										1
Hoopoe <i>Upupa epops</i>	R	3	0	0	10	0	0	0	0	0	0	0	10
Hume's Owl <i>Strix butleri</i>	R	2	2	0	0	0	0	0	1?	0	0	0	3
Rock Dove <i>Columba livia</i>	R	17	142	24	0	23	164	0	64	45.6	51	33	546
Laughing Dove <i>Streptophtilia senegalensis</i>	R	27	43	32	0	45	18	0	31	4.8	22	25	220
Eurasean Collared-Dove <i>Streptophtilia decaocto</i>	R	7	0	10	5	7	0	0	0	0	0.5	0	22.5
Short-toed Eagle <i>Circaetus gallicus</i>	M	1	0	0	0	0	0	0	0	0	0	0.3	0.33
Egyptian Vulture <i>Neophron percnopterus</i>	R	2	0	1	0	0	0	0	1	0	0	0	2
Brown-necked Raven <i>Corvus ruficollis</i>	R	0	0	0	0	0	0	0	0	0	0	0	0
White-tailed Wheatear <i>Oenanthe leucopyga</i>	R	38	47	11	20	40	34	1	42	5.5	7.1	7.5	215
Hooded Wheatear <i>Oenanthe monacha</i>	R	0	0	0	0	0	0	0	0	0	0	0	0
Rufous Bush Robin <i>Cercotrichas galactotes</i>	M												
Blackstart <i>Cercomela melanura</i>	R	18	26	5	38	6	0	0	13	0	0	0	88
Tristram's Starling <i>Onychognathus tristramii</i>	R	15	59	0	0	2	11	0	1	1.5	4.5	11	90
Eurasean Crag Martin <i>Hirundo rupestris</i>	R	4	0	0	0	0	1	0	18	0	0	0	19
Rock Martin <i>Hirundo fuligula</i>	R	32	69	4	44	49	80	1	30	1.8	6	5	290
Streaked Scrub Warbler <i>Scotocerca inquieta</i>	R	24	1	2	9	12	46	11	15	1.6	2	2.3	102
White-spectacled Bulbul <i>Pycnonotus xanthophygos</i>	R	15	17	1	1	8	7	0	29	0	0	0	63
Olivaceous Warbler <i>Hippolais pallida</i>	M	7	5	0	0	5	0	0	14	0	0	0	24
Olive-tree Warbler <i>Hippolais olivetorum</i>	M	4	1	0	0	6	0	0	0	0	0	0	7
Blackcap <i>Sylvia atricapilla</i>													
Bonelli's Warbler <i>Phylloscopus bonellis</i>	M	2	0	0	3	0	0	0	0	0	0	0	3
Lesser Whitethroat <i>Sylvia curruca</i>	M	6	1	0	0	0	10	0	3	0	0	0	14
Arabian Warbler <i>Sylvia leucomelaena</i>	M	5	0	0	0	5	0	0	6	0	0	0	11
Orphean Warbler <i>Sylvia hortensis</i>	M	12	8	0	0	0	5	0	6	0	0.2	0.3	19.4
Desert Lark <i>Ammomanes deserti</i>	R	21	23	0	1	45	7	2	3	5.1	2.6	3.5	92.2
Palestine Sunbird <i>Nectarinia osea</i>	R	4	2	0	0	0	0	0	0	0	0.7	0.7	3.32
House Sparrow <i>Passer domesticus</i>	R	4	0	48	0	1	0	0	0	0	0	0	49
Trumpeter Finch <i>Rhodopechys githaginea</i>	R	2	3	0	0	0	0	0	0	0	0	0	3
Sinai Rosefinch <i>Carpodactus synoicus</i>	R	13	63	0	0	25	20	1	0	1.3	8.6	13	132
TOTAL			520	138	140	279	433	17	277	67.2	105	101	2077