

Recent surveys of resident breeding birds in the St Katherine Protectorate, south Sinai, Egypt

MATTHEW L J WHITE, ALAA E I MOHAMMED, NICO S DAUPHINÉ, FRANCIS S GILBERT,
SAMY ZALAT & HILARY GILBERT

We report records of 25 species of resident breeding birds in St Katherine Protectorate, south Sinai, Egypt in 2006, 2007 and spring 2008. We note a number of chronological and geographical discrepancies in the distributions and abundances of these species in reference to earlier surveys and records. Located in the southern Sinai mountains, St Katherine Protectorate is an important area for both breeding and migratory birds and requires ongoing protection, appropriate management, and more detailed research in ecology and community-based conservation. A number of bird species that formerly appeared to be common in the St Katherine Protectorate were detected only rarely or were not detected at all in recent surveys. Remaining bird populations are threatened by overgrazing, illegal hunting and the demands placed on water supplies by development associated with a recent increase in tourism.

INTRODUCTION

Located where the Asian and African continents meet, the Sinai peninsula is a distinctive biological region with characteristic flora and fauna (Zalat *et al* 2001). A large part of southern Sinai was given protected status in 1996 through the St Katherine Protectorate, established by the Egyptian Environmental Affairs Agency (EEAA). Birdlife International has given the protectorate Important Bird Area (IBA) status. Resident bird communities include Egypt's Saharo-Sindian biome species, with many of these species uncommon or not represented in other IBAs in Egypt (Birdlife 2005). Goodman *et al* (1989) reported c50 resident species of breeding birds in the area, including species such as Sinai Rosefinch *Carpodacus synoicus* and Tristram's Starling *Onychognathus tristramii*.

Geologically, the Sinai peninsula is split into three sections: the northern sand dunes, a central limestone plateau, and high altitude igneous rock mountains in the south. Southern Sinai's predominantly mountainous environment has drainage systems made up of a number of connected wadis (ephemeral river beds). Southern Sinai 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—higher mountain peaks can receive c300 mm/year (Grainger 2003).

Culturally and historically the south Sinai has various important sites such as Mount Sinai (Gebel Musa, 2286 m), St Katherine's Monastery and Mount St Katherine (Gebel Katrin, 2642 m), the highest mountain in Egypt. Over 7000 Bedouin people belonging to six tribes inhabit the mountains of southern Sinai. One tribe, the Gebeliya, originally of Macedonia, were sent to St Katherine by Justinian to build and protect the monastery in sixth century BCE (Grainger 2003). Traditionally, Bedouin tribes use the land for livestock, such as hardy camels, goats and sheep; they also cultivate gardens containing fruit and olive trees and vegetables in various wadis. This natural resource base and cultural heritage are now at risk from significant recent development pressures (BirdLife 2005).

Overgrazing, development and tourism appear to be the most significant problems facing the St Katherine Protectorate (Gilbert 1999, James 2004, Hoyle 2005). When we compared photographs from around the end of the 19th century with modern imagery, we could ascertain a significant and steep decline in the plant cover of the area, a change that

surely will have had a deleterious effect on the density and composition of the fauna of the region, a conclusion also reached by Baha El Din & Baha El Din (2000). Moreover, 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 and travelling out into the desert. For example, Grainger (2003) stated there is an average of 700 tourists/day visiting St Katherine's Monastery.

Birds in the St Katherine Protectorate are threatened by hunting and records of raptors are low in number for such a large area. Diurnal raptors in particular face directly the double threat of trapping for use in falconry and persecution by residents who consider them agricultural pests. Hunting is apparently banned in St Katherine Protectorate, but illegal hunting persists due to pressure on the Bedouin to find an income and source of food. Hunting will probably have a negative effect on local populations of raptors (and other predators). Small mammals such as Rock Hyrax *Procapra capensis* and birds like the Sand Partridge *Ammoperdix heyi* are important prey for larger eagles (Baha El Din & Baha El Din 2000).

There has been no monitoring of birds in the southern Sinai on a systematic basis and little published material exists for the interest of the wider scientific community. Operation Wallacea (www.opwall.com) in partnership with BioMAP Egypt (www.biomapegypt.org) has therefore conducted bird surveys to clarify what species are present. The St Katherine Protectorate is an important area for both resident and migratory birds and requires ongoing protection, appropriate management and further research in ecology and community-based conservation.

METHODS

Line transect surveys were conducted 28 June–4 August 2006 and 29 June–29 July 2007 with an aim to record resident and migratory birds in south Sinai. Migratory bird results were published in White *et al* (2007). In 2006, bird research was led by Nico Dauphiné (Operation Wallacea/BioMAP/University of Georgia) and Matthew White (Operation Wallacea/BioMAP/University of Plymouth) and again by Matthew White in 2007 assisted by Alaa Eldeen Mohammed in both years (St Katherine Protectorate Ranger). Meakin *et al* (2005) undertook the first Operation Wallacea/BioMAP surveys using the same methodology from the end of June–August 2005. Line transects of 1 to 2.5 km were walked along wadis at different locations at least 250 m apart, starting as near as possible to 06.00 h (local time) at a slow pace of 1 km/h. Late afternoon surveys were also conducted from c17.00 h. Temperatures were very high and bird activity low throughout the middle of the day. In surveys of previous years, most birds were concentrated along the relatively lower altitude semi-vegetated parts of wadis and in the Bedouin gardens: the landscape was therefore divided into wadi beds and mountain sides for survey work.

St Katherine City (Plate 1) transect surveys were conducted in 2006 and 2007, representing three transects with different predicted levels of human disturbance (low, medium, high). Each was repeated six times (06.00 and 17.00 h) to estimate the average diurnal abundance of common birds, diversity and densities. All transects were 2.5 km long. Abundance and average density of birds in summer 2007 for St Katherine City are presented in White *et al* (2007).

In previous surveys, Goodman *et al* (1989) mainly used ad hoc sightings recorded over previous decades. Baha El Din & Baha El Din (2000) used an atlas mapping methodology to record birds of prey in St Katherine Protectorate. We also collated records from ad hoc observations in summer 2002 and spring 2008.

SOUTH SINAI STUDY SITES

A satellite map of southern Sinai including St Katherine Protectorate and the 2006/2007 bird survey sites is presented as Figure 1. Our schedule was as follows: Wadi Nasb was surveyed in the last week of June 2006, in the first week of July we visited Ain Hodra, followed by Wadi Marra in the second and the Sheikh Awad area (including Wadi Gharba) in the third. Wadi Gebel system was covered in the last week of July and Wadi Itlah in the first week of August. St Katherine City surveys were conducted over five weeks from the end of June till the first week of August 2006. In the first week of July 2007, we repeated several surveys at the oasis of Ain Hodra and surveyed some new areas there. In the second week, new parts of the Sheikh Awad area were surveyed (including Wadi Sulaf). Some of Wadi Gharba was repeated in 2007. Wadi Kid was surveyed in the third week of July, for the first time. Throughout June and July, three transects in St Katherine City (Nuweiba

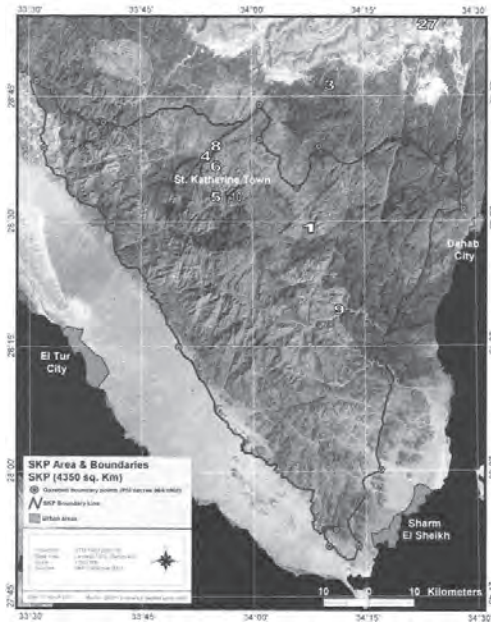


Figure 1. St Katherine Protectorate, south Sinai, bird survey locations in 2006 & 2007.

Key: 2006: 1 = Wadi Nasb, 2 = Ain Hodra, 3 = Wadi Marra, 4 = Wadi Gharba, 5 = Wadi Gebel, 6 = Wadi Itlah. 2007: 7 = Ain Hodra, 8 = Sheikh Awad area (Wadi Sulaf), 9 = Wadi Kid, 10 = St Katherine City (2006 & 2007) © John Grainger



Plate 1. St Katherine City © Matthew White



Plate 2. Ain Hodra © Matthew White

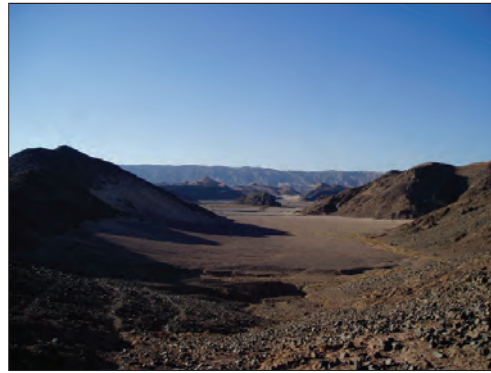


Plate 3. Wadi Marra © Matthew White

Road, St Katherine Monastery, Wadi Arbaein) were repeated using the same methodology as 2006.

Ain Hodra (600 m asl, visited 2006/2007, Plate 2). Situated near the head of Wadi Hodra just outside the St Katherine Protectorate, north east of St Katherine City. The site consists of two fenced Bedouin gardens and a groundwater well with cultivated date palms, fruit trees and various vegetable crops. The gardens are also used for tourist campsites on Bedouin safaris. North of the oasis the wadi opens into a wide sandy wadi bed with low level sparse scrub overhung by steep cliffs and canyons of sandstone and metamorphic rock. Several surveys were repeated in 2007 near the oasis gardens.

Wadi Nasb (1200–1550 m asl, 2006). Located near to St Katherine with predominantly rocky mountain slopes containing large igneous intrusions. The wadi bed consists of boulders and fine gravel and there are several walled Bedouin gardens with large palm and fruit trees.

Wadi Marra (900–1000 m asl, 2006, Plate 3). Situated north east of St Katherine, Wadi Marra is a long wadi system with igneous scree slopes that descend into a large boulder and gravel wadi bed. There are a few acacia trees and some patchy low level scrub vegetation providing grazing for several feral camels and goats. A groundwater spring provides a good source of water.

Sheikh Awad (1100–1200 m asl, including Wadis Gharba, Brega and Sulaf, 2006/2007). Located just outside the volcanic rock intrusion of the granite Ring Dyke. The area is surrounded by high granite mountains and shallow gravel and sand wadis. A series of groundwater wells are used to irrigate flat sandy parts of the wadi bed for the UNEP World Food Program. There are a variety of vegetables and crops grown in Bedouin gardens with several different types of fruit and olive trees. Al Karm Ecolodge has been developed by the Protectorate and provides ecologically-friendly accommodation for tourists in the area. In 2007 the Bedouin community stated there was less water in the wadi that year with possible detrimental effects to the local ecosystem. 2007 surveys were conducted in new areas such as Wadi Sulaf.

Wadi Gebel (1800–2000 m asl, including Wadis Zawatein, Shagg and Ahmar, 2006). A series of high altitude wadi systems to the west of St Katherine. From St Katherine, Wadi Gebel can be reached by ascending the pass of Abu Geefa. Higher rainfall and lower temperatures help sustain a few fertile Bedouin gardens with fruit and olive trees and vegetable patches. The wadis are mostly narrow granite ravines with low-level scrub vegetation.



Plate 4. Wadi Kid © Clay Truernicht

Wadi Itlah (1400–1520 m asl, 2006). Located close to St Katherine, Wadi Itlah is a narrow and long wadi system with scree slopes and extensive boulder fields. There are several Bedouin fruit gardens and small holdings with goats, sheep and donkeys, also a few carob trees and date palms outside of the gardens.

Wadi Kid (583–716 m asl, 2007, Plate 4). A very dry, lower-altitude, wadi system in the mid-west of St Katherine Protectorate with only one small Bedouin garden and settlement. Most of the wadi consists of an open flat large gravel plain with high cliffs, low scrub and acacia trees sparsely concentrated near the wadi cliff sides. One isolated Bedouin garden had an old date palm plantation.

Nuweiba Road (1500 m asl, St Katherine City, 2006/2007). Is a disturbed large flat open wadi with patchy low-level scrub vegetation and high granite mountains on either side. It contains the only main road out of St Katherine, heading north-east. There is also a visitor centre and gravel car park.

St Katherine's Monastery (1500 m asl, St Katherine City, 2006/2007). Located in Wadi El Deir is a heavily disturbed, large open wadi. The monks of the monastery have cultivated and tended fruit and vegetable gardens for centuries. The road and pathway leading to the monastery receive very heavy vehicle, animal and human traffic. Early most mornings, hundreds of people walk from the car park up to the monastery and Mount Sinai.

Wadi Arbaein (1700–1900 m asl, 2006/2007). Situated on the south side of St Katherine City, with the Suez Canal University Environmental Research Centre at its mouth, rising through red granite boulders with high steep cliffs, and ending at the largest garden of Deir El Arbaein (Garden of Forty Martyrs), at the foot of Gebel St Katherine, Egypt's highest mountain. Lower down the Wadi Arbaein transect there are various smaller well tended

gardens with a mixture of olive, fig, cypress, poplar, fruit trees and vegetable patches, also bee hives at the research centre. Wadi Arbaein receives reasonably heavy camel traffic and human disturbance along the pathway. In winter months the steep wadi sides can receive snow melt from the high mountains, replenishing wells and groundwater which may help sustain plant growth.

RESIDENT BREEDING BIRDS OF ST KATHERINE PROTECTORATE

Chukar *Alectoris chukar*. The Chukar was described by Goodman *et al* (1989) as a fairly common breeding resident of the high mountains in Sinai. In 2005 Chukars were recorded in groups at Gebel Safsafa and at Wadis Gebel, Talah, and Isla (Meakin *et al* 2005). In 2006 we recorded Chukars in larger numbers only at Wadi Gebel, with an individual on Mount Katherine. In 2007 surveys, Chukars were rarely seen but were apparently quite common in the higher altitude parts of Wadi Arbaein.

Sand Partridge *Ammoperdix heyi*. The Sand Partridge is described as a common breeding resident in central and southern Sinai (Goodman *et al* 1989). Sand Partridges were recorded ad hoc in August 2001, but were not noted in 2002 records; in 2005, 20 Sand Partridges were seen at Sheikh Awad and smaller numbers at Wadis Isla and Arbaein (Meakin *et al* 2005). In surveys in 2006, we recorded Sand Partridges in Wadis Nasb and Marra as well as St Katherine's Monastery and larger numbers at Wadi Arbaein. In 2007 several Sand Partridges were observed in July at Ain Hodra and Wadi Arbaein.

Common Kestrel *Falco tinnunculus*. Goodman *et al* (1989) described this species as a fairly common breeding resident in Egypt, probably nesting at St Katherine City and Wadi Taba. In 2005 surveys a Kestrel was observed in the Sheikh Awad area (Meakin *et al* 2005). In July 2007 a Kestrel was seen in the Sheikh Awad area in Wadi Gharba. Interestingly, in late July 2007 a Kestrel was found dead in Wadi Kid, cause of death unknown. Another individual was observed hunting over St Katherine Monastery in late July 2007.

Egyptian Vulture *Neophron percnopterus*. The Egyptian Vulture is a rare breeding resident of St Katherine (Goodman *et al* 1989). The species was considered to be locally common at the beginning of the twentieth century (Baha El Din & Baha El Din 2000). Records are noted in Wadi Umm Hashiba (1975), Ain Musa (1982) and near St Katherine Airport (1983). In 1997 some sightings of this species were made at Wadi Feiran, but it was not detected in 2002 and 2005 surveys. In July 2006 we recorded low numbers of Egyptian Vultures, including an adult with a juvenile at Wadi Arbaein, as well as individuals at Ain Hodra and Wadi Itlah. A single Egyptian Vulture was again observed at Ain Hodra in July 2007. In addition, we made one sighting of over 50 flying around the rubbish dump on the road between St Katherine and Sharm El Sheikh. Egyptian Vultures consume a wide range of food items, not only carrion but other organic refuse (Snow & Perrins 1998) and therefore they may be more concentrated nearer more readily available food sources such as rubbish dumps.

Bonelli's Eagle *Aquila fasciatus*. According to Goodman *et al* (1989), this species is a rare and local breeding resident in Egypt. Breeding records for the Sinai include a courtship-displaying pair at Ain El Furtaga in north Sinai in 1978 and an active nest at Wadi Taba in 1979. In previous raptor surveys Baha El Din & Baha El Din (2000) made observations that indicated certain breeding in at least three different locations in the Protectorate. On 8 June 1999 a single adult was observed gliding very close to the ridge of Gebel Safsafa over Wadi Arbaein. The area was thought to be part of a larger feeding territory of a nesting pair. Also a medium-sized freshly-built nest was found over a shady overhang in Wadi Arbaein which probably belonged to this species (Baha El Din & Baha El Din 2000). In January 2000,

a pair of Bonelli's Eagle adults were seen flying low half way up Wadi Let-hi (Tim Watcher pers com). Also, in April 2000, a pair of adults were seen early in the morning at the entrance of Wadi Isla, gliding over ridges and observed in aerial display (Baha El Din & Baha El Din 2000). In May 2000, a fresh nest was found on a steep-sided granite outcrop in Wadi Yahmed, the nest was the correct size and location for Bonelli's Eagle (Baha El Din & Baha El Din 2000). On 23 July 2006 at 19.00 h a pair of Bonelli's Eagles was observed at Wadi Arbaein, roosting late in the afternoon on a crag in the cliffs notably covered in white droppings. A pair was also seen in Sharm El Sheikh in May 2006. After four observations, one in late June and three in July 2007, a pair of Bonelli's Eagles were observed gliding and perching in various locations along Wadi Arbaein in the early morning and late afternoon. On one occasion a young juvenile was seen flying and calling by the side of one of the adults, strong evidence that breeding had taken place. After several conversations with local Bedouin, they also positively identified the eagles from field guides and said they may have moved from Wadi Gebel to breed in Wadi Arbaein two years previously. Baha El Din & Baha El Din (2000) noted that Bonelli's Eagle's were present in Wadi Arbaein in 2000, and it seems likely these individuals have remained, feeding on the plentiful Rock Hyrax *Procapra capensis* and spiny mice *Acomys* spp. A pair of Bonelli's Eagles was also noted on 26 July on the Qena-Safaga road (Lee Evans pers obs). Interestingly, three Bonelli's Eagles were recorded later in the year, at Sharm El Sheikh, on 27 October 2007 (Ingo Weiss pers obs).

Rock Dove *Columba livia*. The Rock Dove is described by Goodman *et al* (1989) as a common breeding resident of the Sinai. In 2002, the Rock Dove was widespread with flocks of up to 50 seen; in 2005 they were noted as most abundant in wadis with tall cliffs and gardens, including Wadis Ithlah, Tala, Arbaein and Isla, Ain Hodra and St Katherine's Monastery (Meakin *et al* 2005). Rock Dove was the most abundant bird in 2006/2007 surveys, seen in most areas surveyed except Wadi Marra.

Eurasian Collared Dove *Streptopelia decaocto*. The Collared Dove is a locally common breeding resident in the Sinai that began its colonization of Egypt in the 1970s (Goodman *et al* 1989). It was not noted in surveys of 2002 and 2005 (Meakin *et al* 2005). In 2006 and 2007 we recorded low numbers at Ain Hodra, Wadi Marra and Wadi Gharba, increasing on average in St Katherine's Monastery over the two years (White *et al* 2007).

Laughing Dove *Streptopelia senegalensis*. The Laughing Dove was described by Goodman *et al* (1989) as an abundant breeding resident in the Sinai. In 2002 and 2005 they were noted as very abundant in Ain Hodra (Meakin *et al* 2005). More recently in 2006 and 2007 we found the Laughing Dove to be common in most areas surveyed, with largest numbers at Wadis Arbaein and Nasb and around St Katherine's Monastery where there are Bedouin gardens with palms and fruit trees.

Hume's Owl *Strix butleri*. Hume's Owl was described nearly twenty years ago as a rare and local breeding resident in a few wadis of southern Sinai (Goodman *et al* 1989). Most have been recorded around St Katherine (Baha El Din & Baha El Din 2000). In the 1990s Hume's Owl was regularly heard and seen in Wadi Feiran and St Katherine near the Monastery, where there are possibly several pairs (Mindy & Sherif Baha El Din pers obs). Surveys by Baha El Din & Baha El Din (2000) have found a more extensive distribution than previously known. Hume's Owl appears to be fairly widespread in the mountains of south Sinai, from low to higher attitude habitats with several pairs located in more favourable habitats such as areas with palms and trees. Other observations include one individual calling at Wadi Ithlah in 1995 and two individuals were recorded after dusk at Wadi Arbaein, also it

was heard at night in Ain Hodra (Meakin *et al* 2005). In the 2006 surveys we heard vocalizations of three individuals of this species in Wadis Nasb and Itlah. In 2007 one individual responded to playback in Wadi Arbaein. Two Hume's Owls were heard calling at dusk at Wadi Feiran at the end of July 2007 (Lee Evans pers obs). Later in the year, at the end of October, one was observed in St Katherine City (Ingo Weiss pers obs).

Eurasian Hoopoe *Upupa epops*. The Hoopoe was described by Goodman *et al* (1989) as a possible breeding resident in southern Sinai. In 2002, Hoopoes were seen in Wadis Tarfa, Razana and Feiran; in 2005 they were observed in Wadis Arbaein, El Deir, Gebel, and Feiran (Meakin *et al* 2005). In 2006 we observed a total of 10 Hoopoes calling, in Wadi Marra, where they appeared to be breeding residents. A single Hoopoe was observed flying to St Katherine Monastery in late July 2007.

Brown-necked Raven *Corvus ruficollis*. The Brown-necked Raven is a common breeding resident in most desert areas of Egypt (Goodman *et al* 1989). It was sighted in Wadi Gebel (August 1995) and Wadi Feiran (May 1997) (Meakin *et al* 2005). Two were observed in St Katherine December 2000 (Pederson pers obs 2000). Around 70 were observed at Sharm Water Treatment Works in August 2001 (Wilson pers obs 2001). In 2002 and 2005 surveys Brown-necked Ravens were seen rarely, with sightings in El Galt Al Azraq and Wadi Feiran (2002) and Wadi Isla (2005) (Meakin *et al* 2005). In 2006 surveys only four individuals were observed, at Wadi Nasb. In 2007 the Brown-necked Raven was uncommon in surveys, two were observed patrolling the cliffs at Wadi Kid in July. In late March 2008, two were observed in the St Katherine City area confirming they still occur there (Annie Sevin pers obs).

Rock Martin *Ptyonoprogne fuligula*. The Rock Martin is a common breeding resident in the mountains of southern Sinai (Goodman *et al* 1989). In records from 1996 to 2002, they were very common in Wadi Feiran and at Gebel Serbal. In 2005 surveys, Rock Martins were noted at Ain Hodra, Wadis Feiran and Arbaein (Meakin *et al* 2005). In 2006 we found this species to be very common at most sites, especially in Wadi Gebel where they gathered to forage above standing water in Bedouin gardens. Also in St Katherine's Monastery we observed several juveniles perched on the monastery buildings, being fed by their parents. This was also the case in 2007 where Rock Martin took to nesting in Bedouin buildings as late as July.

Desert Lark *Ammomanes deserti*. The Desert Lark is described by Goodman *et al* (1989) as a common breeding resident in rocky wadis and on mountain slopes in Sinai. In ad hoc surveys the Desert Lark was noted as common in Zeituna and Wadi Remham (August 1996) and Gebel Serbal (May 1997); in 2002 and 2005 the Desert Lark was common in areas with rocky-bottomed wadis (Meakin *et al* 2005). In 2006/2007, we found this species to be widely distributed, recorded in large numbers in the Sheikh Awad area and Wadi Nasb. Several individuals were noted in the open desert near St Katherine.

Scrub Warbler *Scotocerca inquieta*. The Scrub Warbler is a common breeding resident in the mountains of southern Sinai (Goodman *et al* 1989). In ad hoc records from 1996–2002 they were noted as reasonably common in high mountains; in 2005 surveys Scrub Warblers were more frequent in the wadis around St Katherine and Gebel Safsafa (Meakin *et al* 2005). They also occurred at lower altitudes along Wadi Isla and Wadi Hamman, but notably were absent from the more open areas of sandy desert (Meakin *et al* 2005). In 2006/2007, we recorded Scrub Warblers at most sites, and in greatest abundance in Wadi Gebel and the Sheikh Awad area.

White-spectacled Bulbul *Pycnonotus xanthopygos*. The White-spectacled Bulbul is described by Goodman *et al* (1989) as a locally common breeding resident in Sinai. In ad hoc records from 1996–2002, it was noted in Wadi Rim and Gebel Serbal in May 1997 and in Wadi Tobouq August 2001; in 2005 surveys it was fairly widespread and abundant in the Bedouin gardens at Ain Hodra (Meakin *et al* 2005). In 2006 we recorded this species in most sites surveyed, and found it to be most abundant in Ain Hodra and Wadis Itlah and Nasb. In 2007, it was present in Ain Hodra and Wadi Kid, both areas associated with date palm and fruit tree gardens.

Arabian Warbler *Sylvia leucomelaena*. The Arabian Warbler is described as a locally common breeding resident in south-eastern Egypt with a few observations of possible breeding in the Sinai (Goodman *et al* 1989). In mid-August 1984 individuals were noted in Wadi Sulaf and Wadi Nasb; in summer 2002 individuals were noted in Wadi Gebel. More recently, 19 July 2006, two pairs of Arabian Warblers were noted in Bedouin gardens in Wadi Gharba (Sheikh Awad area) alarm calling. Also in the first week of August 2006 three pairs were recorded in Wadi Itlah. In late July 2007, several Arabian Warblers were again noted in the Wadi Itlah area (Jeremy Truscott pers comm).

Tristram's Starling *Onychognathus tristramii*. Tristram's Starling is a locally common breeding resident in the mountains of southern central Sinai, recorded in St Katherine and Wadis Feiran, Kid, Nasb and Zaghra (Goodman *et al* 1989). In ad hoc records from 1996–2002 it was found throughout the southern Sinai, in small groups, outside gardens and on steep rocky wadi slopes; 15 Tristram's Starlings were recorded in 2005 surveys in cypress trees near St Katherine's Monastery (Meakin *et al* 2005). In 2006 surveys, we recorded large numbers at Wadi Nasb with several groups at Wadis Gharba, Gebel and Itlah, and, in 2006/2007, observed it regularly in Wadi Arbaein and St Katherine's Monastery. An active nest site was recorded on a high cliff at Wadi Kid, late July 2007.

Mourning Wheatear *Oenanthe lugens*. The Mourning Wheatear is a fairly common breeding resident of south Sinai, present in higher altitude mountain areas (Baha El Din pers comm 2008). There have been few observations in ad hoc records before 2002, one was noted at Wadi Tarfa in 2002, none were recorded in surveys in 2005 and 2006 but in 2007 a male was recorded perching on an acacia tree in Wadi Gharba. Several Mourning Wheatears were observed in central Sinai on road trips in July and October 2007 (Lee Evans & Ingo Weiss pers obs).

White-crowned Wheatear *Oenanthe leucopyga*. The White-crowned Wheatear was described by Goodman *et al* (1989) as a common breeding resident of southern Sinai. In ad hoc records from 1996–2002 they were noted as very common; in 2005 the White-crowned Wheatear was seen in most surveys and the highest number (14) was recorded at Wadi Isla (Meakin *et al* 2005). In 2006 we recorded it in all areas surveyed with highest abundance in Wadis Nasb and Itlah. In 2007 surveys, the White-crowned Wheatear was common and had a wide distribution from Ain Hodra in the north of St Katherine Protectorate to the lower altitude Wadi Kid further south.

Hooded Wheatear *Oenanthe monacha*. The Hooded Wheatear is a fairly common breeding resident of southern Sinai, where it is resident in the mountains and at lower altitudes in rocky areas (Goodman *et al* 1989). In ad hoc records in 1995 it was noted in Wadi Gebel; it was not recorded in 2002 (Meakin *et al* 2005). It was sighted in 2004 at Wadi Itlah and was found to be rare in 2005 surveys, observed at Gebel Musa, Wadi Zawatein and Sheikh Awad. In 2006, we recorded only two casual observations of Hooded Wheatear, both individuals (one male, one female) in St Katherine City. Most recently, in 2007 surveys, several

individuals were recorded; one in Ain Hodra perched on a rock just outside a Bedouin garden, one perched on an acacia tree at Wadi Sulaf also two individuals at Wadi Kid near acacia trees.

Blackstart *Cercomela melanura*. The Blackstart is described by Goodman *et al* (1989) as a locally common breeding resident in rocky wadis of southern and central Sinai. In 2002 records, Blackstarts were observed in gardens of Wadi Feiran, El Haswa and Ain Hodra, and in 2005 they were recorded at Wadis Isla and Feiran and Ain Hodra (Meakin *et al* 2005). In 2006, we recorded Blackstarts in most of the wadis surveyed; it was most abundant in Wadis Marra and Nasb, observed frequently in acacia trees. In Ain Hodra, we observed two juveniles being fed by an adult in one of the Bedouin gardens. In 2007, Blackstarts were again most abundant at Ain Hodra, none were recorded in St Katherine City.

Palestine Sunbird *Cinnyris osea*. The Palestine Sunbird is a local breeding resident in the gardens and vegetated wadis of southern Sinai (Goodman *et al* 1989). It was observed frequently in St Katherine in ad hoc records from 1996–2002; in 2005 surveys they were noted in gardens with fruit trees, others were recorded at Wadis Tubug and Shagg (Meakin *et al* 2005). In 2006, we recorded Palestine Sunbirds in Wadi Nasb and around St Katherine City, where we frequently observed them foraging on flowers, but in no other surveys. In 2007, Palestine Sunbirds were recorded again around St Katherine City, associated with flowering plants in St Katherine Monastery and Fox Camp.

House Sparrow *Passer domesticus*. The House Sparrow is described by Goodman *et al* (1989) as a breeding resident at a few localities in the Sinai. It was not noted in records from 1996–2002 but was recorded in 2005 in low numbers at Ain Hodra and Sheikh Awad (Meakin *et al* 2005). In 2006, we recorded House Sparrows at Ain Hodra and made a single observation at Wadi Gharba. In 2007, they were recorded at Ain Hodra with a maximum count of 15 in the Bedouin gardens.

Trumpeter Finch *Bucanetes githagineus*. The Trumpeter Finch is a locally common breeding resident in the Sinai in rocky wadis and mountain habitats (Goodman *et al* 1989). In 2002, Trumpeter Finch was noted rarely in the gardens of El Galt Al Azraq and Wadi Feiran; in the 2005 surveys only three were recorded, drinking from a leak in a water tank at Ain Hodra, none were noted elsewhere. In 2006, we recorded three at Wadi Nasb.

Sinai Rosefinch *Carpodacus synoicus*. The Sinai Rosefinch is described by Goodman *et al* (1989) as a fairly common breeding resident in the mountainous area of southern Sinai, including Gebel Musa and Gebel Umm Shomar. This species was also noted in ad hoc records: Wadi Isla in August 1996 and Gebel Serbal, May 1997. In 2005 surveys, they were commonly noted at Wadi El Deir and the trail at Gebel Musa and Wadi Arbaein; a few were also noted in the garden of Moyat Zalaqa at the head of Wadi Isla (Meakin *et al* 2005). In 2006 surveys, we observed Sinai Rosefinches in Wadis Nasb, Gebel and Marra. The highest abundance was recorded at Wadi Arbaein where they were frequently seen feeding off camel dung on pathways. In 2007, Sinai Rosefinches had the third highest average species abundance in all St Katherine City surveys and were common again in Wadi Arbaein, observed feeding on the wadi pathways picking seeds out of camel dung.

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Matthew LJ White, Operation Wallacea & BioMAP EEAA, Maadi, Cairo, Egypt. matt.white4@tesco.net

Alaa El Mohammed, St Katherine Protectorate, St Katherine City, South Sinai Government, Egypt.

Nico S Dauphiné, Warnell School of Forestry and Natural Resources, University of Georgia, Athens, Georgia, US.

Francis S Gilbert, BioMAP & School of Biology, Nottingham University, Nottingham, UK.

Samy Zalat, BioMAP & Department of Zoology, Suez Canal University, Ismalia, Egypt.

Hilary Gilbert, Community Foundation for South Sinai, Fox Camp, St Katherine, south Sinai, Egypt.