

An attack by Ratel *Mellivora capensis* on pre-release Asian Houbara Bustards *Chlamydotis macqueenii* in central Saudi Arabia

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Abstract

On 8 December 2009 a Ratel *Mellivora capensis* broke into a purportedly predator-proof pre-release cage for Asian Houbara Bustards *Chlamydotis macqueenii* in Mahazat as-Sayd Protected Area, Saudi Arabia, and caused the death of 29 of the 75 housed Houbaras. The Ratel ate six of them; 23 more died through panic-stricken collision with the walls. This is the first documented instance of Ratel, one of six predators in the area, attacking the reintroduction Houbaras, but on three occasions Ratsels have attacked captured foxes *Vulpes*. Loss of juveniles by predation in the first few weeks after release is the single largest cause of Houbara mortality in the project and radio-tracking studies of Ratel are planned.

Keywords: Honey Badger, MacQueen's Bustard, Mahazat as-Sayd Protected Area, Ratel-human conflict, Reintroduction.

هجوم حيوان غرير العسل (ميليفيرا كابينسيس) على طيور الحباري الآسيوية (كلاميدوتس ميكويناي) في مسيجات المعدة لمرحلة ما قبل الإطلاق في منطقة وسط المملكة العربية السعودية .

ملخص: في الثامن من ديسمبر من سنة 2009 ميلادي قام حيوان غرير العسل باقتحام المسيج الخاص بطيور الحباري المعد لمرحلة ما قبل الإطلاق ولحمايتها ضد المفترسات في محمية محازة الصيد مما تسبب في قتل 29 من 75 طير حباري متواجدة في المسيج التهم حيوان الغرير 6 من طيور الحباري و 23 الأخرى نفقت بسبب خوفها واصطدامها بجدار المسيج وهذه أول حالة موثقة عن غرير العسل وهو واحد من ستة أنواع أخرى من المفترسات المتواجدة في المنطقة التي تقوم بمهاجمة طيور الحباري المعاد توطينها , ولكن في ثلاث حوادث أخرى قام حيوان الغرير بمهاجمة الثعالب التي تم الإمساك بها في أقفاص . وخسارة صغار الحباري الآسيوية بواسطة الافتراس في الأسابيع الأولى من بعد إطلاقها هو اكبر سبب لوفيات الحباري الآسيوية في مشروع إعادة التوطين وهناك دراسة يتم إعدادها لمتابعة غرير العسل بواسطة أجهزة الراديو في المحمية .

مفاتيح الكلمات : غرير العسل , طيور الحباري الآسيوية , محمية محازة الصيد , التحكم في المفترسات , التداخل بين الغرير و الانسان .

Introduction

The reintroduction of Asian Houbara Bustard *Chlamydotis macqueenii* into Mahazat as-Sayd Protected Area, Makkah province, Saudi Arabia, started in 1989 (Child & Grainger 1990). This note documents an incursion of a Ratel (Honey Badger) *Mellivora capensis* that caused the death of 29 Houbaras in a fenced enclosure in Mahazat as-Sayd PA.

Mahazat as-Sayd Protected Area (centred on 22°15'N, 41°40'E; elevation 900–1,100 m a.s.l.), declared in 1988 and ratified in 1989 by the Council of Ministers, covers about 2,200 km² of fairly level sandy plain (Islam *et al.* 2008a, 2010a, 2010b). In 1988 the whole area was fenced to protect it from grazing: it is one of the world's largest fenced protected areas. The 2 m high chain-link fence is topped with three strands of barbed wire, has 0.9 m of mesh buried in the ground, and lies behind a large earth embankment. The consequent spectacular recovery of native vegetation has allowed the re-introduction of Arabian Oryx *Oryx leucorox* (IUCN Red List: Endangered), Sand Gazelle *Gazella subgutturosa marica* (Vulnerable, as *G. subgutturosa*), Mountain Gazelle *Gazella gazella cora* (Vulnerable, as *G. gazella*), Asian Houbara Bustard (Vulnerable, as *C. undulata*) and Ostrich *Struthio camelus* (Least Concern) (Islam *et al.* 2007, 2008a, 2008b, 2010b; Red List categories from IUCN 2011).

A 4 km² pre-release enclosure for Houbara was built in 1989, with an anti-predator electric fence, containing six tunnels of 10

m × 28 m in three net-houses covered with a shade-cloth synthetic net. On arrival from the captive-breeding unit of the National Wildlife Research Center in Taif [NWRC], the Houbaras are kept in the tunnels for 3–4 weeks to allow acclimatisation to the natural environment, with minimal human intervention.

Mammalian carnivores threaten the Houbaras at three stages: prior to release; after release, when they are inexperienced with wild predators; and during the breeding season, when eggs and chicks are vulnerable to predators. Carnivores are thus trapped in and around the pre-release enclosure. Six small carnivore species are trapped regularly: Rüppell's Fox *Vulpes rueppellii*, Red Fox *V. vulpes*, Sand Cat *Felis margarita*, Wild Cat *F. silvestris*, feral cat *F. catus* and Ratel. Of them, Red Fox is the major predator of Houbara in Mahazat as-Sayd PA (Islam *et al.* 2010a).

Loss of juveniles by predation in the first few weeks after release is the single largest cause of Houbara mortality. Hence, it has become the practice to trap predators directly before the Houbara release. Levels of predator translocation from the enclosure have varied over the last 20 years. The high probability of return by translocated foxes and cats hinders the maintenance of low predator densities around the release site. Red Fox and Ratel are released some 200 km away from the re-introduction site, while Rüppell's Fox and cats are released back to the Reserve with numbered ear tags. Thus, prior to the Houbara releases in early 2010, 19 Tomahawk live-traps (collapsible double-ended traps, 40 × 40 × 108 cm in size; Tomahawk Live Trap Company, Wisconsin,

Table 1. Measurements of Ratels trapped in Mahazat as-Sayd Protected Area, Saudi Arabia, 2010–2011.

Date of capture	Age/sex	Head-and-body length (cm)	Tail (cm)	Shoulder height (cm)	Body mass (kg)
26 February 2010	Adult male	89	19	24	3.98
25 January 2011	Adult male	98	21	28	4.76

U.S.A.) were set for 12 nights, baited with pieces of raw chicken. In total, 17 animals were caught, mostly Rüppell's and Red Foxes, including the problematic male Ratel inside the enclosure.

The incident

On 8 December 2009, a male Ratel penetrated the net-houses (which held forty Houbaras of the 2007 cohort and 35 of the 2008 cohort) and ate six of them; a further 23 died due to panic, and crashing into the walls of the net-house. The Ratel might have climbed the enclosure fence (footprints were found in one corner of the enclosure); and at the net-house, the net in the ground had tears in two corners of around 20 cm diameter, where the Ratel presumably penetrated. This is the first such incident in 20 years of re-introduction of Houbaras.

After this incident, traps placed inside the pre-release enclosure and baited with fresh chicken meat did not capture the Ratel, although it twice broke a trap. Next, a live chicken was placed in one closed trap with three open traps left, right and on top of it; after waiting through the night of 26 February 2010, a Ratel was trapped at around 03h00 and taken to NWRC, where it is held captive. Were it to be released in Mahazat as-Sayd PA, it might well return to the pre-release enclosure and swiftly re-enter it, using its knowledge of the presence of easy prey. As C. M. Begg (*in litt.* 2011) points out, reflecting her experience of seeing Ratels return multiple times to vulnerable prey, the only long-term security against future such attacks is to keep the pre-release birds in completely predator-proof enclosures.

Other notes on Ratels in Mahazat as-Sayd Protected Area

Ratels are caught in the protected area more frequently than the following list suggests, because they break the trap and escape if the traps are unattended for 5–6 hours (Islam *et al.* 2010a). The following did not escape: an adult female on 22 December 1992 at 22°09'30"N, 41°44'30"E (Olfermann 1994); two (unsexed) at the boundary of the pre-release enclosure in 1994 (P. M. Basheer own data); two (unsexed) in 1996 (Meloney 1996); an adult male on 18 October 1999 at 22°11'25"N, 42°03'59"E, and a male and a female at 22°13'54"N, 41°59'00"E on 5 May 1997 (Lenain 2000); one (unsexed) in 1998 (Judas 1998), singles (unsexed) in each of September and October 2000, around the pre-release enclosure (Judas *et al.* 2000); the male in February 2010 detailed above; and another male on 25 January 2011 from the same location, released 200 km away from the Houbara re-introduction site (Fig. 1). Measurements of the two most recent are in Table 1. In addition, a sub-adult female has been caught in Saja Umm ar Rimth Reserve, around 180 km from Mahazat as-Sayd PA (Shah 2007).

Three cases of Ratel attacking trapped foxes have been observed. In October 1996, a male Rüppell's Fox was captured and the trap had been moved by 4.5 m and turned a few times



Fig. 1. Male Ratel *Mellivora capensis* captured in Mahazat as-Sayd PA, Saudi Arabia, 25 January 2011 (Picture by M. Z. Islam).

by the Ratel. One ear of the fox and both hind legs were missing. In January 1997, two Ratels attacking a caged male Rüppell's Fox growled aggressive noises and after few minutes ran away (Lenain 1997). In May 1997 a young Red Fox died from massive haemorrhaging when a Ratel removed its tail and hindquarters (Lenain 2000).

Concluding remarks

Globally, Ratel is considered Least Concern on *The IUCN Red List of Threatened Species* (IUCN 2011). Ratels are widespread in Saudi Arabia, but sightings are relatively rare. They are protected in the Kingdom under the 1977 National Hunting Law, Decree n° 457. Ratels are generalist carnivores with an extremely wide diet (Kingdon 1977, Dean & Macdonald 1981, Dean 1985, Paxton 1988, Harrison & Bates 1991, Begg *et al.* 2003).

The incident documented here was a serious setback to the Houbara reintroduction programme. Elsewhere in their range, Ratels come into conflict with farming of bees (e.g. Begg & Begg 2002) and also livestock (e.g. they reportedly frequently attack poultry in chicken-coups; C. M. Begg *in litt.* 2011), emphasising the risk of further such incidents with the Houbaras. Thus far, there has been no proof of Ratels taking Houbaras after release, even females sitting on nest. However, hundreds of Houbaras have been predated, and while most were surely taken by foxes or cats, it is possible that Ratel might be involved as well. To address this uncertainty, radio-collared Ratels will be monitored in the Reserve in 2011–2012.

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