

CAMERA TRAP SURVEY IN THE DUBAI DESERT CONSERVATION RESERVE

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Introduction

The Dubai Desert Conservation Reserve (DDCR) was established in 2003 as a protected area with the main aim of conserving the natural resources of Dubai's inland desert and to restore the natural fauna and flora of the reserve to its natural state. In order to achieve this aim it was decided to carry out a number of surveys to assess the current situation and to determine the priorities for the next phase.

Within the DDCR very little was known about species belonging to the order *Carnivora*, so the following questions were asked: 1) what wild carnivore species are found in the DDCR?, 2) what is the distribution of these species?, 3) what is the population size of these species?, and 4) are there any feral species and where are they concentrated? It was decided that the best method to answer these questions was to utilize camera traps. Camera traps have the advantage of detecting, with equal efficiency, nocturnal and diurnal activities while having minimal environmental disturbance. In addition to animal detection, camera traps can also provide information about patterns of activity and habitat use.

Target Species

The main focus of the survey was to assess the presence and distribution of the following species:

Gordon's wild cat	<i>Felis silvestris gordonii</i>
Sand cat	<i>Felis margarita</i>
Caracal	<i>Felis caracal schmitzi</i>
Arabian red fox	<i>Vulpes vulpes arabica</i>
Sand fox	<i>Vulpes rueppelli</i>



Ruppell's fox (©Declan O'Donovan).

In order to attract these species the camera traps were baited with meat on a regular basis.

Results

The current sampling was done over a period of 1,029 active camera days at seven sites over the study area of the DDCR. These sites were representative of most habitats and vegetation cover types present in the DDCR and resulted in 1,991 pictures. A total of 1,286 (64.59%) were classified as "Live" pictures and were then sorted as follows: a) Wild mammals; b) Wild birds; c) Grazing livestock; d) Feral mammals, before being used in further analysis.

Table 1. Activity records of camera trap photographs in the DDCR

Site	Wild Mammals	Wild Birds	Grazing livestock	Feral Mammals	Total wildlife activity
Fox den	87.14%	0.00%	5.71%	0.00%	87.14%
Nazwa	17.78%	40.00%	0.00%	35.56%	57.78%
Faqa'a	35.61%	31.62%	19.37%	0.00%	67.23%
Spot	26.87%	52.00%	0.00%	0.00%	78.87%
Cam7	83.71%	14.93%	0.90%	0.00%	98.64%
Shj	17.14%	58.09%	7.62%	0.00%	75.23%
Cam8	47.06%	16.18%	5.88%	0.00%	63.24%

So far only two of the target species, Arabian red fox and Gordon's wildcat, were recorded. This would suggest that the other target species within the DDCR are not resident. Other wild mammal species that were recorded include cape hare (*Lepus capensis*), lesser jerboa (*Jaculus jaculus*) and Ethiopian hedgehog (*Hemiechinus aethiopicus*) as well as the introduced antelope Arabian oryx, (*Oryx leucoryx*), Arabian gazelle (*Gazella gazelle cora*) and sand gazelle (*Gazella subgutturosa marica*). Wild bird species include brown-necked raven, great grey shrike, long-legged buzzard and Lappet-faced vultures.

The most abundant and dispersed wild mammal species recorded was the Arabian red fox, then the Arabian gazelle (which was also recorded at all the sites but with less frequency) and finally the Gordon's wildcat. The density estimates show that the Arabian red fox has a strong representation in the DDCR with approximately 168 individuals (0.75 individuals /km²). Gordon's wildcat does occur within the DDCR, however, the density estimate is very low at 0.02 individuals /km² yielding an estimated population of only five individuals. There is strong evidence to suggest that competition with feral cats, which occur in high concentrations around human habitation, camel farms and tour operator camps have forced the Gordon's wildcats out of these areas limiting their range within the DDCR.

Conclusions

Mammal species of the Dubai inland desert have been badly affected by decades of unsustainable utilization with unregulated grazing and off-road driving. Our results support this with only two of our target species being recorded and it can be concluded with confidence that species such as the sand cat, caracal and sand fox are absent from the DDCR. The Arabian red fox and Gordon's wildcat are the only remaining small to medium sized predatory mammals left in the reserve. While the Arabian red fox population is relatively abundant, the Gordon's wildcat population is suppressed and could be classified as threatened within the area. The main reason for the pressure on the wildcat population is through competition with feral cats which compete for food resources and territory and at the same time threaten the genetic integrity of the species by hybridization. In order to protect the remaining Gordon's wildcats, a program has been started to capture and remove as many feral cats from the DDCR as possible. This program has been concentrated around human habitation and so far has been yielding good results but will need to be continued indefinitely as feral cats continue to move into the area from surrounding towns.

This survey has shown that the diversity of predatory mammals within the DDCR is critically low and that serious conservation measures are required to protect the remaining species as well as focusing on the potential re-introduction programs for both sand fox and sand cat in the near future.

Acknowledgements

We thank Emirates Airlines for their continued support and sponsorship of the Dubai Desert Conservation Reserve.



Study site at the Dubai Desert Conservation Reserve
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