

A SAND GAZELLE PROJECT LAUNCHED IN AL WUSTA WILDLIFE RESERVE, OMAN

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INTRODUCTION



Arabian sand gazelle *Gazella subgutturosa marica* (Khalid Al Jahwari)

Historically the Arabian sand gazelle *Gazella subgutturosa marica*, ranged the open sand habitats of the Arabian Peninsula through Iraq, Jordan, Syria and into southern Turkey (Mallon & Kingswood 2001 in Wacher et al. 2010). In Oman the species inhabited the open sands of the Empty Quarter Desert, Eastern Sands/Wahiba Sands and marginally the gravel desert of central Oman. A survey by the Saudi Wildlife Commission in 1990 reported that sand gazelles were found in the border area of Ghanim in the

Omani side, with sizeable herds ranging across 30 kms of the border. In 2000 when Massolo et al. (2008) carried out a two days survey (line transect by car) in the central sand desert of Oman, only 44 gazelles were sighted and 34 were tracked, totaling 78 gazelles (estimated density 1.26 ind./sqkm).

Unfortunately in recent years, the sand gazelle populations throughout the range have been subject to habitat degradation and excessive hunting and poaching. The unprecedented economic development in the region and availability of four-wheel vehicles and automatic rifles to poachers resulted in an almost complete wipe-out of the wild species.

Many range states established captive populations of sand gazelles in zoos and breeding centres. Some of these were later used for introductions/re-introductions into the wild. During 1990 in Saudi Arabia, a captive group was successfully re-introduced into the Mahazat As Sayd Reserve, a fenced protected area located c. 150 kms northeast of Taif (Haque & Smith 1996). Today the IUCN's Red List of Threatened Species classifies the Arabian sand gazelle as vulnerable.

ARABIAN SAND GAZELLE PROJECT IN OMAN

Today the Ministry of Environment & Climate Affairs spoke of only few reem sightings in the north-western outskirts of Dhofar reported by the Maqshan Ranger Unit during 2011 - 2013. A small captive group of sand gazelles has been safeguarded in the Omani Wild Animals Breeding Centre which was built in As Seeb, Muscat in the early 1980s. Currently a large-scale program is being undertaken by the Office for Conservation of the Environment of Oman's Diwan of Royal Court to introduce a free-ranging Arabian sand gazelle population in Al Wusta Wildlife Reserve of central Oman. Here we present the early works of this project, the captive management and the future research program.

Project site and aims

Al Wusta Wildlife Reserve (WWR) is located in the central desert of Oman, c. 100 kms to the east of Haima, and enclosed by a 2m high chain-link perimeter fence. The WWR covers c. 2,824 km² tract of open, sparsely-vegetated limestone desert including part of the Al Huqf escarpment to the east.

The WWR is home to the Arabian Oryx which was successfully reintroduced to the Jiddat al Harasis (known as the Jidda') plateau of the central desert in 1982. The Jidda' is also a core habitat for Arabian gazelle, Nubian ibex and a relatively diverse spectrum of avifauna and reptiles. Although there was never a permanent population of sand gazelle in the area defined by the WWR, on occasions, after rain, sand gazelles came onto the Jidda' from the sands of the Empty Quarter. Unfortunately, during the late 1990s there was excessive wildlife poaching and many oryx, ibex and gazelle were lost. Consequently sand gazelles have not been sighted on the Jidda' in recent years.

In January 2013, a sand gazelle project was launched in the WWR. The aims are multi-fold:

- to release sand gazelles to the WWR as free ranging with the long term aim of establishing a wild population along side the Arabian oryx and Arabian gazelle.
- to ensure that the introduced population is genetically-diverse,
- to re-establish the support and understanding of the local people through outreach programs for public awareness and education, and
- to increase the tourism value of the WWR.

Within Jaaluni, WWR's field headquarters, a new 1×1km pre-release enclosure including holding pens was built for the sand gazelles. The enclosure has well established tree cover including ghaf *Prosopis cineraria*, samr *Acacia tortilis* and salm *Acacia ehrenberginia*. Holding pens were provided with additional man-made shading. New staff were recruited to take on the daily feeding, caring and observation of the captive herd supported by a complete veterinary team.

Translocation

To diversify the gene pool of the species over 300 captive sand gazelles were provided to the project from three different captive groups in three range countries (Table 1). Prior to translocation the animals were separated from their main captive populations into holding pens and ear-tagged for identification.

Table 1. Details on number of animals provided and means of transport to the introduction site

Country	Number of animals provided			Means of transport	Date of shipment
	Total	Male	Female		
Oman	75	19	56	Pairs of animals in ventilated wooden boxes transported via shaded vans	January 2013
Saudi Arabia	80	20	60	Groups of animals in aircrafts to Jaaluni Airport and then in shaded vans to the WWR	January 2013
UAE	160	40	120	Groups of animals in shaded vans	February 2013

In-situ captive management

On arrival at Jaaluni the animals were moved into separate holding pens for a three week quarantine. On completion of their quarantine, the majority were released together into the 1×1km pre-release breeding enclosure. A small number of individuals from each country group remained in separate holding pens to retain their genetic origin. During January - March the reem population had 41 births and 18 deaths, with the population size numbering 338 by March 31st (Figure 1).

The captive reem are fed alfalfa hay and concentrated feed every morning and afternoon. A monitoring scheme was put in place on a daily basis with veterinary intervention in cases of severe injury or suspected disease.

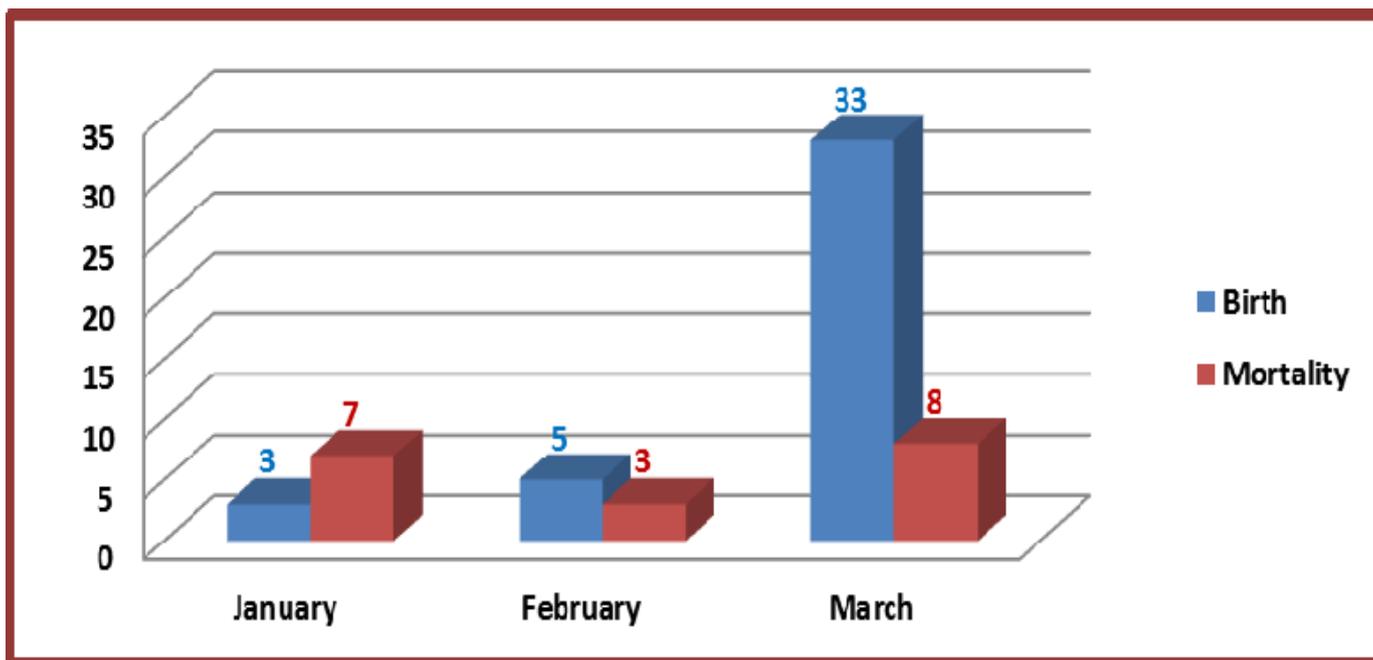


Fig 1. Births and mortality of the captive reem population during the 1st three months in Jaaluni

Genetic management and future research:

A coherent and specific genetic monitoring and management policy is imperative in order to minimize loss of genetic diversity of this population. This will be done through screening of nuclear and mtDNA markers for representative individuals from the population in order to:

1. Verify species status of the population (e.g. *G. g. marica* versus *G. g. subgutturosa*).
2. Assess population genetic diversity and relatedness to other captive populations; setting the foundation for coordinated genetic research of sand gazelle across the region.
3. Assess the power of nuclear genetic markers to determine parentage, individual identification and resolve the pedigree of the population.
4. Develop a genetic management plan for sand gazelle and a studbook management system or group based management system.
5. Develop a detailed on-going plan for population genetic screening and monitoring.

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