

# **FAUNAL SURVEY: SIR BANI YAS ISLAND, UAE REPORT WITH MANAGEMENT PROPOSALS**

Chris & Mathilde Stuart, Stuart on Nature, 1996

## **PREAMBLE**

At the request of the office of HH Sheikh Mohammed bin Zayed, Chris and Tilde Stuart of the African-Arabian Wildlife Research Centre undertook a nine day survey of the antelope populations of the Arabian Gulf island of Sir Bani Yas. This island falls within the Emirate of Abu Dhabi, one of the seven units that make up the country of the United Arab Emirates. The brief was to establish the numbers of each species present as accurately as possible, with particular emphasis on the gazelles.

Apart from the above, we also collected information on other mammals occurring on the island (this included the setting of 20 rodent traps and direct night observations), as well as the compilation of a bird list.

The first part of the report covers the results of the antelope and wild sheep counts, followed by a number of management proposals in the second section.

## ANTELOPE SURVEY RESULTS

The methods employed to establish, as closely as possible, population sizes of the ungulates occurring on Sir Bani Yas, included road counts, counts at feeding stations, walking counts (that is on foot into those areas of the hills not accessible by road) and one helicopter count. In order to eliminate any time bias, we undertook comprehensive counts, covering the entire island during all daylight hours; that is morning, midday and afternoon. During the time of our survey we found that the most productive counting periods were during the afternoon hours (from 15h00) until dark. This could have been influenced by the fact that our visit coincided with Rhammadan, when all construction and silvicultural work ceased from about 12h00 each day. The cool weather almost certainly influenced antelope activity patterns during the survey, with gazelles lying on the sunward slopes during the earlier daylight hours, and allowing feeding to take place at midday and through the afternoon. The fact that all free-ranging ungulates, as well as most of those in enclosures, are obliged to feed at the numerous feeding stations on the island also makes for relatively easy counting, once principal activity times have been established. In order to facilitate counts during the hotter summer months it would be necessary to establish principle times of activity.

From the actual counts made we have estimated what we consider to be maximum population sizes for each species present on the island at the time of the survey, as well as making comments on basic management issues. The latter are primarily dealt with in the section on management proposals. Below we deal with the survey results on a species by species basis.

### SAND GAZELLE (RHEEM)

(*Gazella subgutterosa*)

This is by far the most abundant antelope species on the island, with past estimates having ranged from 10 000 to 15 000 individuals, to as high as 30 000. However, as far as we have been able to establish, no serious attempt has been made in the past to undertake a disciplined and organised count of any of the island's free-ranging species. Rheem, on the island, are encountered singly, in small groups and in herds of up to several hundred strong; the latter mainly within the proximity of the feeding stations and in most cases seem to constitute temporary aggregations. Our counts for this species ranged from 2077 to 2699 individuals, with the low of 1692 (16.02.96) being influenced by rain and a cold wind. From past ungulate counting and assessment experience we are confident that the highest estimate of 2699 individuals constitutes approximately 65% to 75% of all rheem occurring on the island; that would mean a total of **3600** to **4150** individuals. Although this figure is considerably lower than the "guesstimates" made in the past, we feel that this number is still too high for the island and it would be best maintained at a maximum of **1500** to **2000** individuals. Surplus animals could be transferred to designated areas on the mainland (as has already been initiated), used to exchange for new genetic stock, distributed to other regions of the Arabian Peninsula and culled on a regular basis to maintain numbers suggested above.

**ARABIAN GAZELLE (IDHMI)**                      (*Gazella gazella*)  
**DORCAS GAZELLE (CHINKARA)**            (*Gazella dorcas*)

The Arabian and Dorcas gazelles on Sir Bani Yas, probably number fewer than **800** individuals together, with the former constituting some two thirds, or more, of this total. Although the Arabian gazelle is generally smaller and usually somewhat darker in colour than the dorcas gazelle, this is often difficult to establish in the field. When observed in close proximity to the abundant and larger sand gazelle, identification was relatively simple but distant views of solitary individuals and small groups complicated the issue. A further problem was the lack of information on the origins of the dorcas gazelle population on the island, as many races have been recognised, with considerable variation in form and structure. We also encountered some individual gazelles at close quarters that could not be positively labelled as either Arabian or dorcas, which raises the possibility that hybridisation has taken place between the two on the island, or at the source of initial introductions (for example Al Ain Zoo). We would suggest that genetic testing be done of as many individuals of both species as possible, and any animals of doubtful purity should be culled. Although we are well aware of the practical difficulties involved efforts should be made to separate the two species on the island, and no transfers to the mainland should be considered at this time.

**GRANT'S GAZELLE**                                      (*Gazella granti*)

Veterinary staff on Sir Bani Yas island have mistakenly identified this species as the very much smaller (and distinctive) Thomson's gazelle. This is a common antelope found naturally in East Africa and several races have been recognised. The latter is primarily based on the form of the horns of the rams. If one accepts that as a valid criteria (we do!) there are probably two races present on the island and interbreeding has almost certainly taken place. We only encountered this gazelle on the flats and never in the hills. Based on our counts there are less than **100** Grant's on the island, and probably no more than **80** individuals.

**BLACKBUCK**    (*Antelope cervicapra*)

The blackbuck during the survey was most frequently sighted on the plain in the island's south-western quarter, with adult and sub-adult rams occasionally venturing into the hills. The figure of **200** individuals is realistic, as this is one of the easiest species to count and monitor.

**COMMON ELAND**    (*Taurotragus oryx*)

All animals encountered appear to be of East African (probably Kenya) origin, as this race is more distinctly marked and brighter in colour than those from Southern and south-Central Africa. Although a figure of 200 individuals has been suggested for the island we feel this is too high and between **120** and **150** animals would be more realistic. They roam throughout the island and we observed them jumping into and out of a number of fenced plantations. This is still a fairly common species in Africa and we feel this would be a candidate species for partial, or complete, removal from the island. Animals retained should be kept in a large but adequately fenced enclosure to prevent escape. They can cause considerable damage to larger trees by breaking off higher branches with their horns to gain access to leaves and shoots.

### **BEISA ORYX**

*(Oryx gazella beisa)*

This oryx has been misidentified as the fringe-eared oryx (also gemsbok) by the island staff; the former is a distinct race distinguished by long hair tufts on the tips of the ears, and the gemsbok is the distinctive southern race. The latter are in fact present in a separate enclosure on the island. See the appropriate appendix for the numbers of both races held in enclosures on the island. According to staff on the island about 60 beisa oryx have been released but we feel that it is unlikely that there are this many, with **30** to **40** animals being more realistic. We only encountered them in the hills and they only made use of the higher located feeding stations during the period of the survey. It is of critical importance to ensure that the beisa oryx and gemsbok be kept separated as they will readily interbreed. This risk could also be run with the scimitar-horned and Arabian oryx. Neither the gemsbok or beisa oryx are threatened or endangered in the wild.

### **SCIMITAR-HORNED ORYX**

*(Oryx dammah)*

### **ARABIAN ORYX**

*(Oryx leucoryx)*

### **ADDAX**

*(Addax nasomaculatus)*

See appropriate appendix for total number on the island.

### **DEFASSA WATERBUCK**

*(Kobus ellipsiprymnus defassa)*

There are only **5** defassa on the island, one bull and four cows.

### **MOUNTAIN NYALA**

*(Tragelaphus buxtoni)*

Although there are said to be some 65 individuals of this seriously endangered Ethiopian antelope living in the island's hills we have very serious reservations about its presence. If it was present we would certainly have encountered at least a few individuals. We are familiar with this large and distinctive antelope, and as far as we are concerned it should be removed from the island's faunal list.

### **IMPALA**

*(Aepycerus melampus)*

This is another species which we know very well and no evidence was found of its presence during the course of the survey.

### **OTHER UNGULATES**

#### **FALLOW DEER**

*(Dama dama)*

Individuals were encountered throughout the island but the majority appear to be located in the vicinity of the plantations in close proximity to the palaces. Apart from normally coloured individuals, there is at least one melanistic stag and one white stag in the population (not a good idea in our opinion unless kept in separate enclosures away from the rest of the population). Probably less than **50** individuals on the island.

#### **AXIS DEER**

*(Axis axis)*

We counted **46** individuals; the population remaining in close proximity to the palaces and adjacent plantations.

#### **HOG DEER**

*(Cervus porcinus)*

Only **2** individuals encountered in vicinity of the giraffe enclosures.

### **BARBARY SHEEP**

*(Ammotragus lervia)*

Less than **20** individuals and restricted to the hills.

### **OTHER “WILD SHEEP”**

Apart from the **Asiatic mouflon** held in a large enclosure close to the coast (more than **200** individuals), there are several groups roaming free in the hills. However, there is also at least one other wild sheep race (possibly two) ranging through the island’s hills. Wild sheep of the *Ovis “ammon”* group have been separated by taxonomists into a number of distinct to less distinct races and most will readily interbreed. The total number of wild sheep roaming the hills, excluding the Barbary sheep, is probably less than **50**.

### **WILD GOATS**

Apart from three ibex (not clearly Nubian) held in a pen on the island, we only encountered an extremely old (deaf and nearly blind) ibex of obscure race in the hills. Although the **Mountain Goat** (*Oreamnos americanus*), a very distinctive species, is listed as occurring in the hills of the island we made no sightings and we doubt its presence.

# MANAGEMENT PROPOSALS

- I. A short-, medium-, and long-term **management plan** for Sir Bani Yas island, in particular those aspects affecting the ungulate collection, should be drawn up as a matter of urgency. The impression that we have gained is that most aspects tend to be dealt with in a random and haphazard way. Such a plan should deal with species to be maintained under enclosure or free-ranging status; a decision on the purpose of the collection - as we understand it the original aim of HH Sheikh Zayed was to maintain rare and endangered species with a view to making surplus stocks available for reintroduction purposes. The island would be highly suitable as a breeding centre for Arabian and North African and perhaps Asian arid area adapted species. With the correct management approach Sir Bani Yas could become a world leader in the breeding and redistribution of rare and endangered species to their original ranges. In addition such a management plan should involve the compilation of comprehensive and detailed information on all aspects of the collection. There should also be regular and detailed monitoring of all populations and their requirements. The management plan should be compiled by a competent authority with island staff assisting where appropriate.
- II. Species which are at present secure or **not seriously threatened** within their natural ranges, for example common eland, fallow deer, Defassa waterbuck, gemsbok and Beisa oryx should be confined to a limited area of the island or removed. Alternatively such species could be exchanged for species that would be most beneficial to international recovery programmes.
- III. Numbers of **sand gazelle** should be maintained at an estimated maximum of 1500-2000 animals with continued efforts to resettle populations elsewhere on the Arabian Peninsula. Animals involved in such transfers should be held at a mainland quarantine centre for a reasonable period before release. As no predators of the antelope are present on the island a programme of removal and culling should be implemented. Special emphasis should be given to culling obviously sick, maimed and injured animals and those with physical deformities. During the course of the survey we encountered numerous individuals with serious injuries and deformities that would warrant culling. In addition surplus males should be removed from populations.
- IV. It is our understanding that such endangered species introduced to the island as Arabian oryx, scimitar-horned oryx, addax, Arabian gazelle, sand gazelle and Barbary sheep had very small founder populations that have not been supplemented by the infusion of **new genetic material**. Therefore, it is strongly recommended that exchange programmes be investigated and initiated with internationally recognized collections, to introduce "new blood". This would necessitate regular and ongoing exchanges. Should the readers of this report require a list of desert ungulates which would be potential candidates for an extended breeding/ reintroduction programme the authors would happily supply one based on CITES and IUCN guidelines.

- V. As part of an improved management programme, **counts** of the introduced mammal species (enclosures and free-ranging) should be made at least twice each year at predetermined times in order to monitor change in population sizes, to keep a check on sex ratios and to determine removal/ culling needs. Those species occurring in low numbers should be monitored on a more regular basis. Counting should always follow the same pattern and methods to ensure continuity. Individuals undertaking the counts should be able to clearly identify all species present.
- VI. Species and sub-species that could hybridize and produce fertile young, such as dorcas/Arabian gazelles, beisa oryx and southern oryx (gemsbok), and the wild sheep races should be kept separately in order to prevent **genetic contamination**. This also applies to current efforts to cross the Maasai (red-legged) and Somali (blue-legged) ostriches, as this serves no useful purpose.
- VII. A stop should be put to all **bulldozing** in the hills, as this is an essential retreat for antelope, particularly gazelles, during the daylight hours. The bulldozing of dam and retaining walls should be carefully considered as these could also have negative impacts on the animals.
- VIII. **Tree planting** should not be continued in blocks as at present but along contours and natural erosion lines, this is particularly important in the hills. It should be noted that random and staggered tree planting offers better cover for many mammals and birds.
- IX. Any new animals (mammals and birds) introduced to the island should first be held for a **quarantine period** on the mainland to prevent accidental disease spread, to which species on the island could be highly vulnerable. Quarantine should also apply to any animals taken from the island to the mainland.
- X. Wherever possible all freshly dead mammals and birds should be fully post-mortemed and examined to establish **cause of death** and to monitor the health of the populations. During the course of the survey we encountered a substantial number of freshly dead gazelles close to the feeding sites and these would have warranted detailed examination as to cause of death. Also of concern are the considerable number of animals with easily remedied problems, such as gross over-growth of hoofs, that are obviously going either unnoticed or unattended by staff on the island.
- XI. **The rat-breeding house**, established to provide a supplementary feeding source for the houbara bustard during the breeding season is cause for concern. The domesticated rat (usually forms of *Rattus rattus* or *Rattus norvegicus*) has caused massive destruction of island faunal populations throughout the world. Although we found no evidence of escapees on Sir Bani Yas we strongly suggest that all rats in the rat-house be exterminated and alternatives be investigated. Although we were informed of the measures taken to prevent escapes (we looked for ourselves and were not convinced) this is no guarantee that through natural or man-made events escapes will not occur. During our survey of the island we found the indigenous Baluchistan gerbil to be abundant and would suggest that a captive breeding programme of this species be investigated as an alternative to the domestic rat. Current housing is



inefficient and more intensive methods should be investigated.

- XII. Evidence of **domestic / feral cats** was encountered throughout the island and we noticed considerable numbers of box-type traps set to catch them. Although fish is currently being used as bait we would suggest that a commercial cat lure (scent bait) be used to increase catchability. These are probably not available locally but we could supply further information on this if required. There are a number of other methods that should be investigated.
- XIII. The continued breeding and raising of excessive numbers of **rheas and emus** (both common in the wild) serves little purpose and consumes time and resources that could be directed at more needy species. Neither species should be allowed to free-range over the island.
- XIV. We were informed that **raptors** (including several migrant eagle species) are regularly caught on the island and placed in aviaries. This goes against all international conservation principles and should be stopped.