Reintroduction of Arabian Oryx in Dubai Desert Conservation Reserve, Dubai, UAE.

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Background:
The Arabian oryx (Oryx leucoryx) is a very significant species to the Arabian Peninsula as it is the indigenous oryx in Arabia and an essential part of the indigenous fauna and culture. The species was extirpated from the wild during the early 1970s of last century. Many efforts were therefore made to allow Arabian to restore its current. Experiments were investigated in the zoos and in the wildlife in Saud Arabia in Manalaa Protected Area (Al-Ashraf and Mehmud, 2003) and in Umm Bani Muain (UBM) (Ostrowski, 2001 and Mehmud and Al-Ashraf, 2003) in addition to Omani Oryx in various re-introduction in Oman (Jungius, 1987; UAE deserts were also partially of the historical range of the species.

With the growing awareness of conservation and ecological restoration in Dubai, a lengthy long-wait was taken to set aside an area for conservation and designated as a national reserve. An initial area of 500 km² was fenced out and cleared from vegetation and other activities in late 1989 and formed as Al Maha Reserve (AMD). Later, this area was called out for 2,000 ha forming Dubai Desert Conservation Reserve (DDCR), which is a system of sand dune impregnated with five gravel plains (48.5% and 45.3%), thereby restoration and reintroduction of the indigenous species are the main objectives of the Reserve.

Currently reintroducing the Arabian Orx (noting other species) is the main ongoing conservation activity in DDCR.

Although the area is not too big compared to the huge herds of oryx, this project of re-homing the species to its habitat is planned as the species is still conservative dependent to its survival through its range. A conservative opinion would rather re-introduce 100 gisus, and that is why expansion is feasible to the overall species survival specially bearing in mind the fact those large undeveloped nature habitats available to be set aside as a conservation land to ensure indeed the indigenes commodities in the UAE and Arabia in general.

Reintroduction:
The process started with 2 groups, the first of 38 animals that were introduced to AMD in February 1999. These animals were released in a protected area in Umm Alqai, which comprises the core conservation area. These animals were provided by the government of Bahrain, which is the closest country of the Arabian oryx. This process was continued, and new groups were released to AMD later. It is important to mention that each group of animals provided by the Bahrain government was released to the area.

In November 1999 about 19 animals from Wisconsin DNR, USA, were brought in the reserve and were directly released into the reserve. Again neither information was given about sex ratios of the second lot also. Oryx is a AMR sex of breeding status with good supplemental numbers of males, and their knowledge of the habitat and behavior of the animals.

Water is also supplied in natural water holes.

By the end of 2003 the Oryx population had grown and reached 194 as determined by total counts. In the same year the reserve was approved to become a Ramsar as the largest area of the UAE and with the remaining areas within its core as an extension. A total of 23 animals including 14 females and 9 young were targeted for translocation. A small part of the population in the animals were translocated on these one. The call was separately transported and not allowed to get into the trailer to avoid possible injury due to trampling or being squashed by the adult animals.

Animals were translocated to their pre-release sites in a site chosen in the north of AMD. Animals stayed in the habitat for about a week, provided with the usual diet and day and period. Water was also provided through a trough. After a period of week, gates were open for animals to wander freely in AMD.

Oryx started wandering for long distances during the first week after the release. Some individuals were spotted at a distance of 17 km away from the release site. Later, animals split into smaller groups. Currently only 19 individuals of this group seem to keep consistent company of other white oryx in smaller changing groups.

In the second translocation that took place in April 2005, a group of 40 oryx were moved out of AMD and into DDCR. The site of a natural Ghaf (Prosopis cineraria) trees forest. Animal site provided similar nature to the site but tended to get used again to the release site. On long term these animal inhabited the Ghaf forest as it provided generous amount of shade through the dry and good forest is the ear by vegetation. Calving in observed to occur after the translocation in both groups indicating adaptability and potential establishment of the population.

Population Parameters:
The population has been monitored since 2002. Population size was approximately 241 oryx in 2002. Population comprised 241 oryx which represents 200% growth over 6 years since the first release. This means that the population has been experiencing a sustained rate of 24.8% of annual increase during the period 2002 to 2005 assuming linear growth. Recruitment and mortality rates were estimated using the capture-mark-recapture model in 2004. Calves on weekly basis and died from death. There was a considerable decrease in the recruitment at less than 10%. Annual Mortality was under 9% most of the time during the period 2002 to 2005 except for 2004 which saw a spike in mortality from about 1% to 7%.

Survival rates reported were satisfactory. Mean adult survival rate of 94.58% was recorded through the period 2002-2004, with a minimum of 96.21% in 2004 and the lowest 90.48% during 2004. Calves’ survival rate during their first year was highest scoring in mean of 87.12%. The lowest calves’ survival rate was also recorded during 2002 as 94.29%.

The future trend of the population is expected to continue at depression but it is still uncertain whether it will maintain the current rate or will it go lower rates. It is noticed that recruiting percentage is increasing with the increasing population rates suggesting that there is some density independent effect. It is predicted to make up such effect but it is possible that growing numbers of young males are in strong competition with other established males who control available females and thus discharge the males from the chance to reproduce their future generations to occur accordingly.

The reintroduced oryx population in DDCR seems to be very important as a source of knowledge and the survival of the species. The oryx population in DDCR seems to compare to those of Mazraat and Fagri Bani Musha (UBM) of Fezli or Arabia. The population of UMM suffered a lot of stress since the 1980s and was started in 2000 and continued to 2004. The population was decreasing from 198 to less than 80. This decline is attributed to higher mortality rates as response to environmental stress of unfavorable conditions (Chevallier et al. 2000). Also, in Mahazza Al-Azr a study conducted by Tadvad et al. that showed that the optimum strategy for species survival should involve setting all individuals above 70% of the carrying capacity of the reserve. The DDCR population has reached numbers that are similar to those in Manalaa and AMD but yet still on conservation order, showing the growth and current indicators shows that there is potential for increase to continues. This suggests that there are conditions in different sites that control the population dynamics.

Although DDCR is much smaller in surface area compared to AMD and Mahazza, it provides more resources to accommodate the oryx population.

Vegetation rehabilitation programs (grass is a) providing a habitat for the oryx reintroduction. These programs also provided indigenous trees where they were planted in various types of areas, with the aim of creating more numbers of oryx that can support the survival of the oryx.

Thus the DDCR reintroduction is unique compared to other reintroduction projects conducted in various countries. First, the initially introduced areas are relatively larger in number compared to those habitats initially introduced in Mahazza Al-Azr (17 sq. km), Umm Al Qai (7 sq. km) or even 80 sq. km in Oman. Second, the parallel habitat rehabilitation going adjoined with the reintroduction sites, providing safety and security for the species survival and extending the carrying capacity towards the lands that are supported by or is it limited to the surface area of the reserve.

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