BODY CONDITION SCORING OF THE ARABIAN ORYX INSIDE THE DUBAI DESERT CONSERVATION RESERVE

Photo: Marios Mantzourogiannis

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Table of Contents

1. Introduction

Arabian Oryx (*Oryx leucoryx*) is the biggest native species of ungulate from the desert habitat of the Arabian Peninsula. It is listed as Vulnerable in the IUCN Red List of Threatened Species. Continuous conservation efforts have been made to reach this status since this species reached the level of "Extinct in the Wild" in the early 1970s.

The Dubai Desert Conservation Reserve (DDCR) holds a large and flourishing number of Arabian Oryx. Located 60 km Southeast of Dubai, the DDCR is a 225 km^2 natural protected area which has become a haven in the UAE for free roaming oryx (Figure 1 & 2). The maximum carrying capacity of Arabian Oryx inside the DDCR was assessed as 250 – 300 individuals. The reintroduced and initial Arabian Oryx population consisted of 70 individuals, released in 1999. Today there are over 500 oryx in the reserve. Looking at oryx records over the past two decades, years with an overpopulation of oryx and years with a decrease of naturally growing vegetation, has contributed to a deterioration of overall oryx health. DDCR's management established several protocols to mitigate these times of urgency, including the regular monitoring of the oryx's physical condition, the implementation of a feeding program, and the continuous counting of oryx inside the reserve.

One process used to assess the overall health of the oryx in the DDCR is The Body Condition Scoring (BCS) method. BCS is conducted twice a year, one in winter and one in summer, in order to analyse oryx body conditions in different seasons during the year. This evaluation system uses different morphological measurements such as the fat cover of the animal, its back posture and the appearance of the musculature and the spine. The scores go from 0 – 5, 0 being emaciated and 5 being obese. The ideal score would be 3 (Flach, 2004).

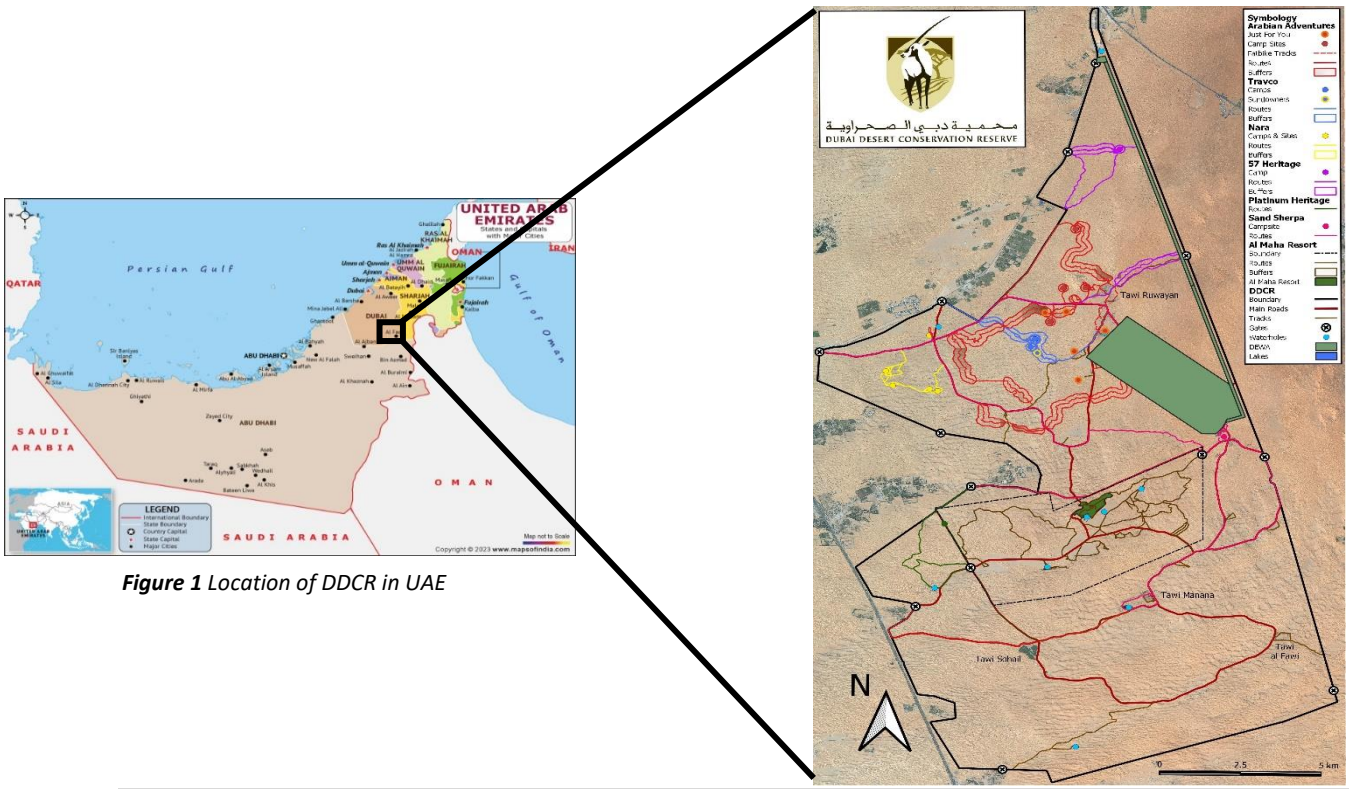

Figure 1 *Location of DDCR in UAE*

2. Methodology

Figure 2 *Map of the DDCR*

The BCS survey took place in the Dubai Desert Conservation Reserve (DDCR) the 29th of October 2024. In this moment of the year there were only 4 feeding stations active – N2, N9, S4, S10 (figure 4). During warmer months, when the vegetation is lower, the amount of feeding stations is increased. Pictures of the Arabian Oryx were taken at each one of the sites, identified by gender and age (Figure 3). A latter assessment of their Body Condition Scoring (BCS) was done and analysed through excel (Table 1).

The assessment of their BCS was as followed: body condition scoring can go from 0 to 5, depending on their fat coverage, the visible appearance of spine and/or musculature:

0 = Emaciate Condition

1 = Thin Animal

2 = Malnutrition

3 = Fit & Healthy

4 = Fattened Animal

5 = Obese Animal

Arabian Oryx BCS Report Oct 2024					
Date	**Location**	**# Oryx**	**Sex**	**Age**	**BCS**
29-Oct-24	Feeding Station N2	1	Female	Adult	4
		2	Female	Adult	4
		3	Female	Adult	4
		4	Female	Adult	3
		5	Male	Adult	3
		6	Unidentified	Adult	3
		7	Male	Adult	3
		8	Male	Adult	3
		9	Male	Adult	4
		10	Male	Adult	4
		11	Male	Adult	2
		12	Unidentified	Adult	3
	Female Average BCS				3.75
	Male Average BCS				3.166667
	Unidentified Average BCS				3
	Average BCS				3.333333

Table 1 *Arabian Oryx BCS N2*

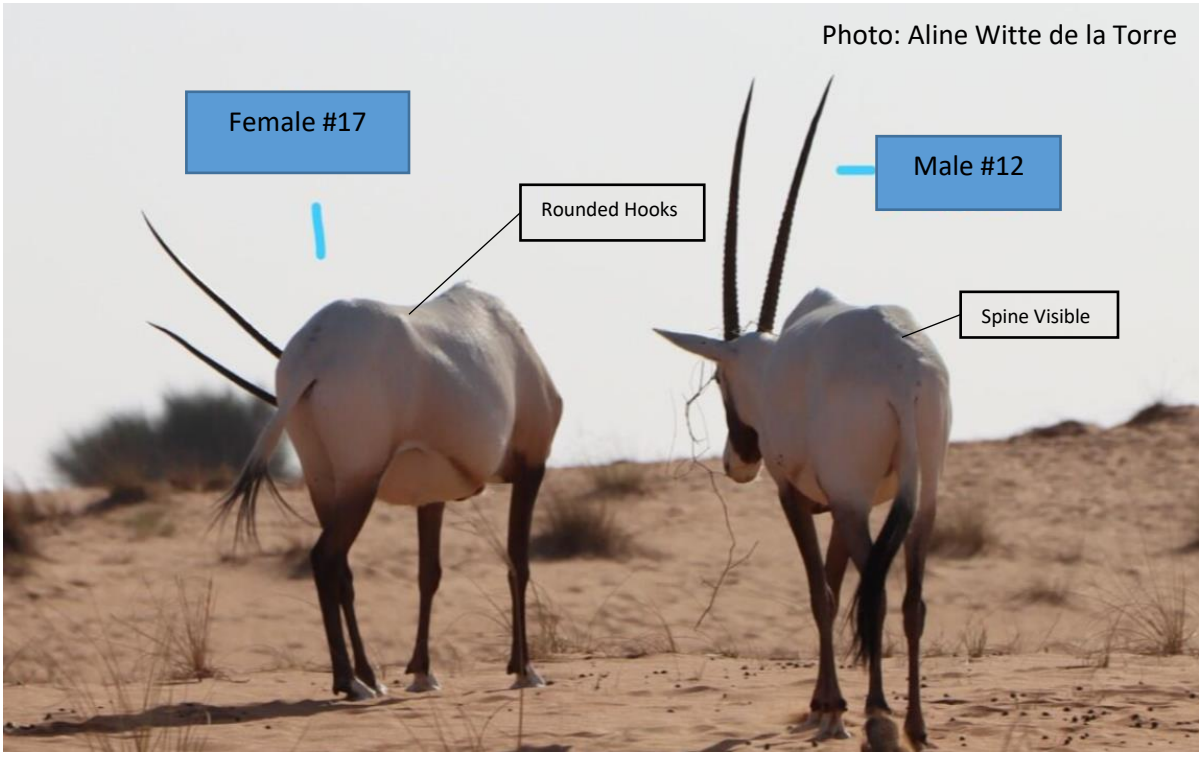

Figure 3 *Picture taken in Feeding Station N9 - example of assessment*

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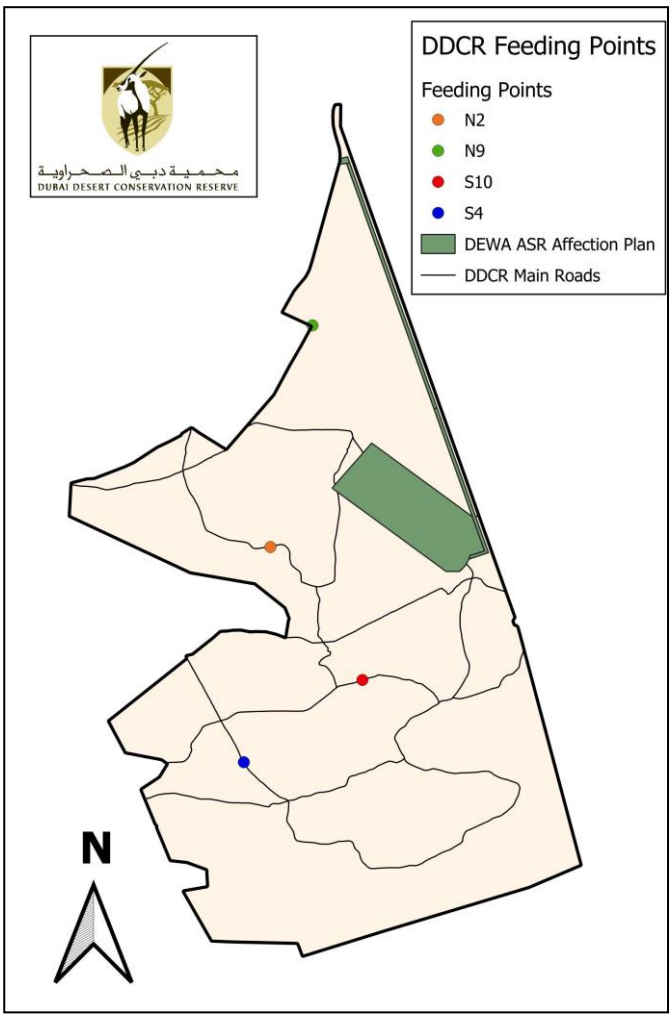

Figure 4 *Feeding points location in the DDCR – October 2024*

3. Results and Discussion

A total of 69 Arabian Oryx were evaluated – 34 females, 25 males, and 10 were unidentified. The overall BCS is 3.19 during the month of October 2024 (table 2). The results indicate that oryx overall are fit and healthy and that the feeding program is still necessary for the sustenance and well-being of the oryx population inside the DDCR.

Location	Female	Male	Unidentified	Total
N2	3.75	3.17	3	3.33
N9	3	2.92	3	2.97
S10	3.33	NA	NA	3.33
S4	3.75	3	2.80	3.13
Average	**3.46**	**3.03**	**2.93**	**3.19**

Table 2 *Overall results of BCS in the DDCR.*

Some of the oryx evaluated could not be identified due to their age, as well as the distance and angle at which the photo was taken. The grand majority of unidentified oryx were calves and juveniles who were mostly evaluated fit and healthy. At Feeding Station S10, all individuals were identified as females, therefore, no average BCS for males could be calculated. At all feeding stations, females had higher scores than males (figure 5). One explanation for this difference in scores could be because female oryx are feeding more due to pregnancy, are preparing for pregnancy, or have calves which still depend on suckling. Most births occur in the non-drought season, November to May (Ismail, Kamal, Plath, & Wronski, 2011), therefore, in October when the survey was taken, females might have been already pregnant or in oestrus to start the reproductive season.

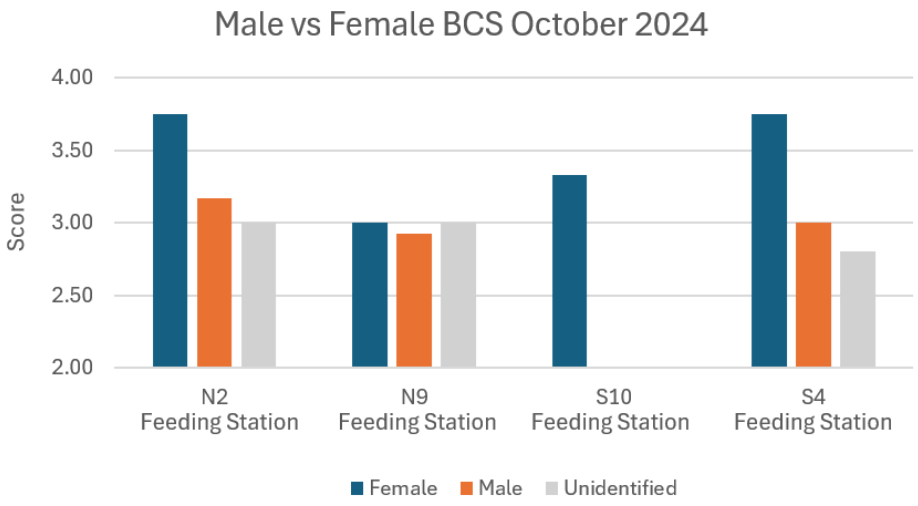

Figure 5 *Male Vs. Female BCS October 2024*

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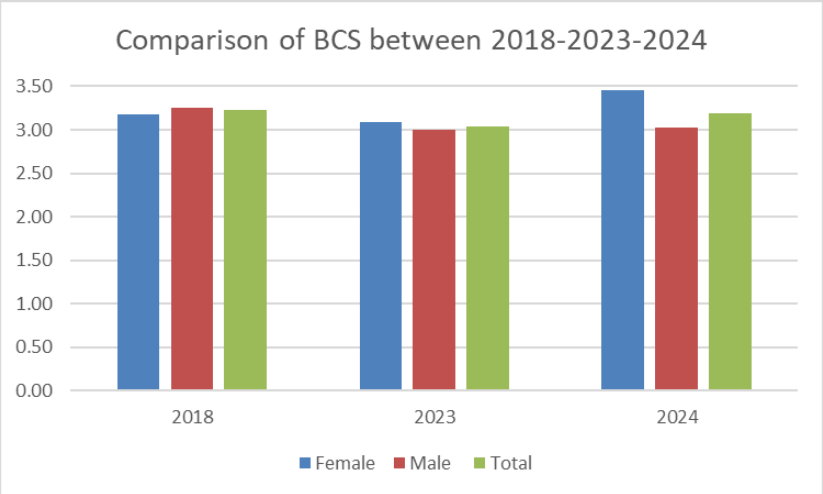

Figure 6 *BCS comparison between results from 2018-2023-2024*

Compared to last year's survey, the average BCS went from 3.04 to 3.19, suggesting a slight increase in health, primarily in female oryx. In 2018 and 2023, female body condition scores were almost the same as males, however this year, there is a more apparent difference in scores between both genders. Regardless of an increase in a gender's body condition score over another, it is still significant to see that averages have not decreased and that overall, the oryx population has scored 3 and above and are staying fit and healthy.

4. Conclusions

The data collected in this survey demonstrates that the oryx population in the reserve is properly sustained from supplemented feeding points and natural vegetation. This result also shows that the feeding program implemented in 2013 is still significant for the welfare of the oryx inside the DDCR. The feeding stations established can be vital for the oryx of the DDCR, especially in times of extreme environmental changes, such as a decline in natural vegetation due to overgrazing or a decrease in yearly precipitation. From the original strategy, some adjustments have been done such as moving periodically the feeding points to allow natural movements of the herds and to avoid diseases for accumulations of faeces and other residual components. Another benefit of moving feeding points is to control oryx consumption of naturally growing vegetation and relieve areas of the reserve from overgrazing. Also, the number of feeding points changes along the year, having less during winter months due to the presence of more vegetation and, having more feeding points during summer. The quantity of food also changes during the year.

5. Recommendations

Following last year's recommendation, this year was conducted in October, the same month as the previous one, to allow a better comparison between results. It is also important to note that the more individuals evaluated during the BCS survey the more data is collected, which gives a better understanding on the health status of the oryx population as a whole. In order to assess the most oryx at the same time, it is recommended to start the survey at the same time the feeding stations are being replenished.

Bibliography

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Ismail, K., Kamal, K., Plath, M., & Wronski, T. (2011). Effects of an exceptional drought on daily activity patterns, reproductive behaviour, and reproductive success of reintroduced Arabian oryx (Oryx leucoryx). *Journal of Arid Environments, 75*, 125-131. doi:10.1016/j.jaridenv.2010.09.017