



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



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1. Introduction

The Arabian Oryx (*Oryx leucoryx*) is the largest native ungulate species in the desert habitats of the Arabian Peninsula. It is currently listed as Vulnerable on the IUCN Red List of Threatened Species. This status has only been achieved through continuous conservation efforts, following the species' dramatic decline to the level of Extinct in the Wild in the early 1970s.

The Dubai Desert Conservation Reserve (DDCR) is home to a large and thriving population of Arabian Oryx. Located 60 km southeast of Dubai, the DDCR spans 225 km² and has become a key sanctuary in the UAE for free-roaming oryx (see Figures 1 & 2). The reserve's maximum carrying capacity for Arabian Oryx has been assessed at 250–300 individuals. The reintroduction began in 1999 with an initial population of 70 individuals.

Over the years, the oryx population increased rapidly, surpassing the reserve's carrying capacity. This overpopulation began to negatively impact natural vegetation growth and the animals' overall health. In response, DDCR management implemented several protocols to mitigate the situation. These include regular monitoring of the oryx's physical condition, the introduction of a supplementary feeding program, and continuous population counts within the reserve.

Despite these efforts, the reserve still maintains a population above the ideal capacity. To manage this, the DDCR continues operating 14 supplementary feeding stations across the reserve.

To assess the overall health of the oryx, the Body Condition Scoring (BCS) method is used. BCS is conducted twice a year—once in winter and once in summer—to evaluate how seasonal changes affect the animals' condition. This system assesses various physical indicators, such as fat cover, back posture, musculature, and spine visibility. Scores range from 0 (emaciated) to 5 (obese), with a score of 3 considered ideal (Flach, 2004).

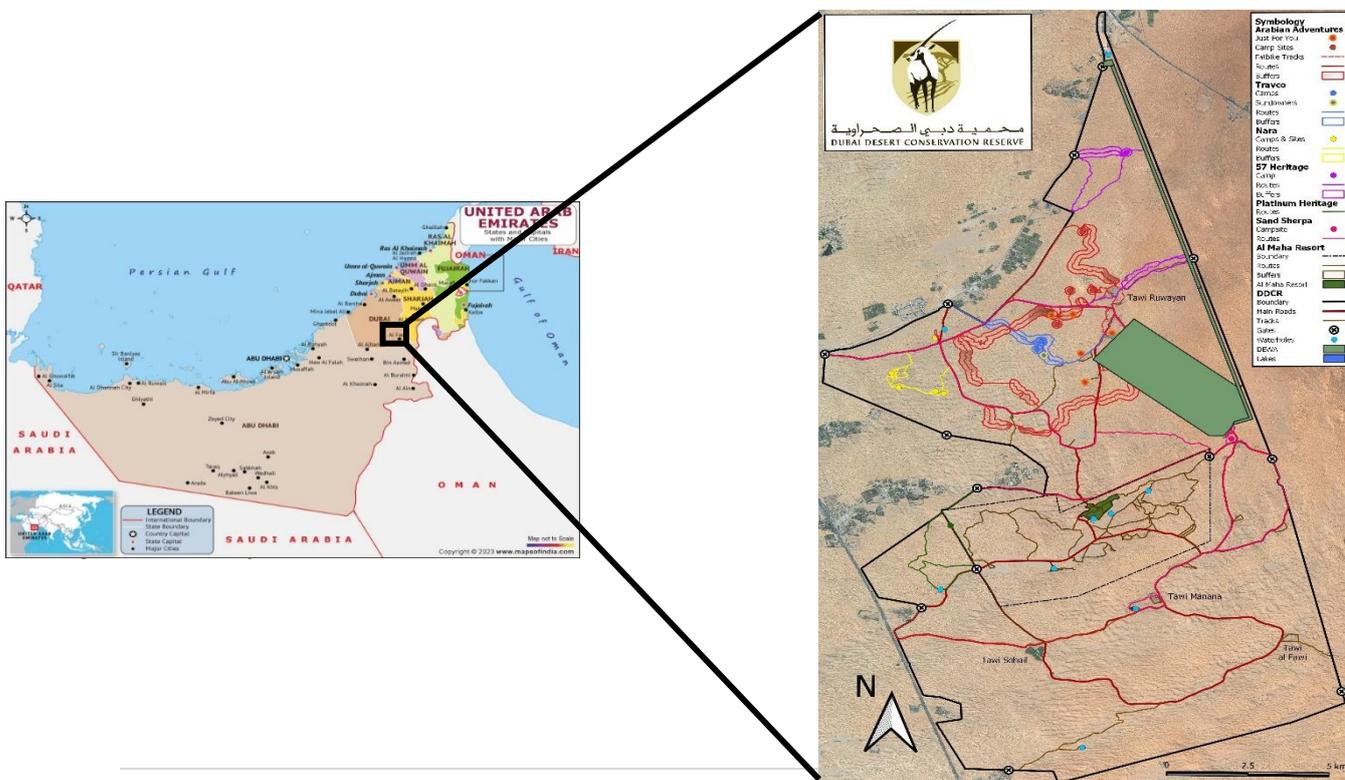


Figure 2 Map of the DDCR



2. Methodology

The BCS survey took place in the Dubai Desert Conservation Reserve (DDCR) the 11th of September 2025. To facilitate the counting of Arabian Oryx, DDCR Conservation Officers and Ranger divided the feeding stations into three groups and observed the animals during feeding time. Since the Oryx naturally gathered at the feeding stations, it made the counting process more efficient and accurate. At this moment there were 12 feeding stations active – six in the north and six in the south of the reserve (Figure 4). Typically, during the warmer months, when vegetation is sparse, the number of feeding stations is increased. However, due to the lack of rainfall this year, the number of feeding stations has remained the same across both seasons.

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					
Date	Location	# Oryx	Sex	Age	BCS
11-Sep-25	South Site 1	1	Female	Adult	3
		2	Female	Adult	3
		3	Female	Adult	3
		4	Female	Adult	3
		5	Female	Adult	2
		6	Female	Adult	2
		7	Female	Adult	3.5
		8	Female	Adult	2
		9	Female	Adult	2
		10	Male	Adult	3
		11	Male	Adult	3
		12	Male	Adult	2
		13	Male	Adult	3
		14	Male	Adult	3
		15	Male	Adult	2
		16	Male	Adult	2
		17	Male	Adult	3
		18	Male	Adult	3
		19	Male	Juvenile	3

Female Average BCS	2.6
Male Average BCS	2.7
Average BCS	2.7

Table 1 Arabian Oryx BCS in feeding station S1

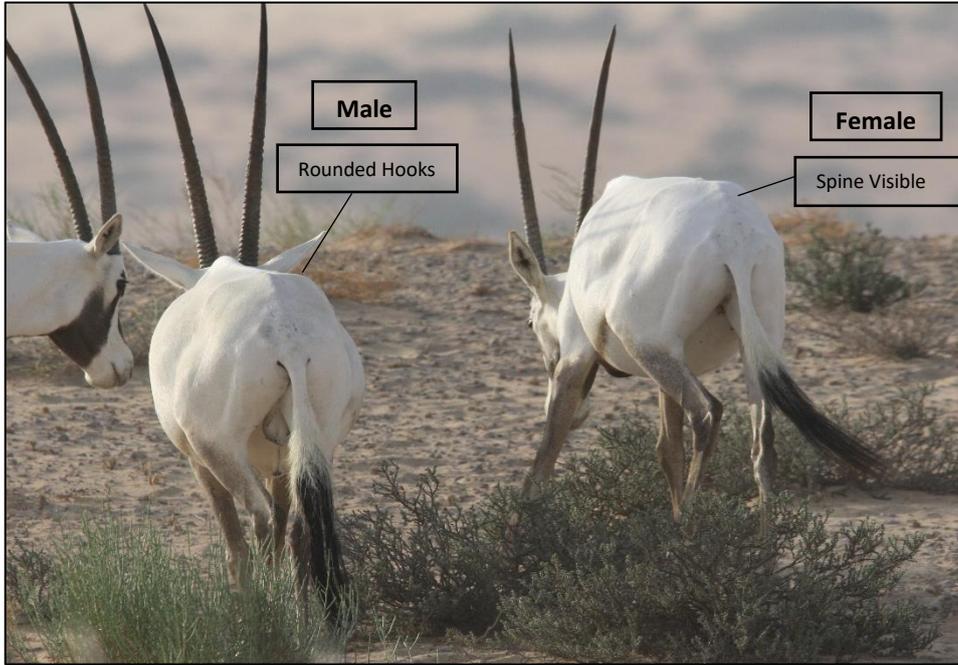


Figure 3 Picture taken in Feeding Station S1 - example of assessment

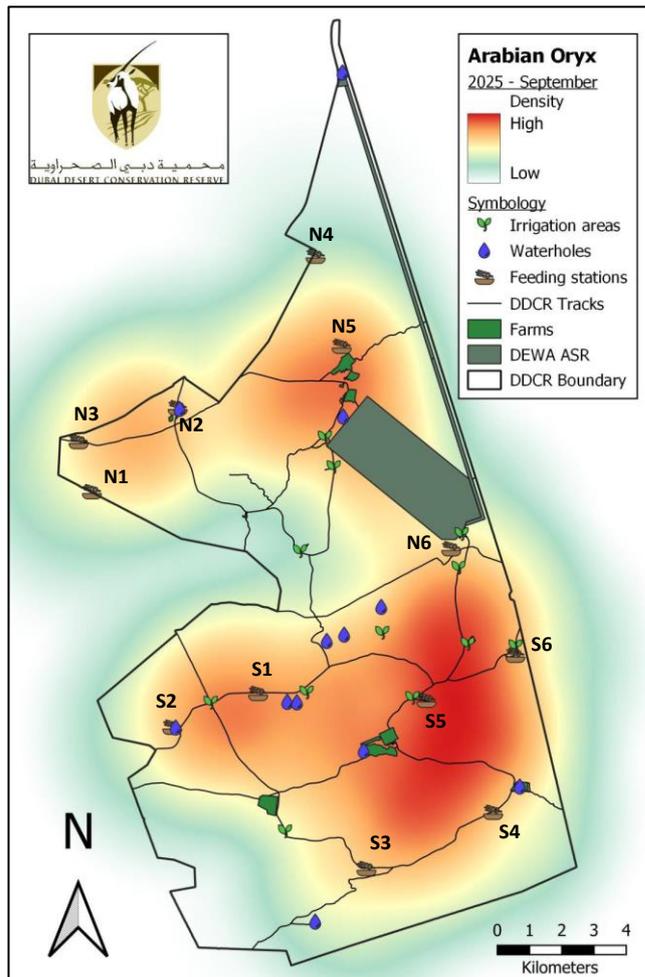


Figure 4 Feeding stations distribution in the DDCR



3. Results and Discussion

A total of 300 Arabian Oryx were evaluated – 172 females and 128 males. The overall Body Condition Score (BCS) in September 2025 was 2.67 (Table 2). Since the ideal score is 3, the current health status of the Arabian Oryx is below the target. This score is lower than last year’s (3.19), which can be attributed to minimal rainfall this year. In contrast, 2024 experienced heavy rains in April, promoting vegetation growth. Consequently, only four feeding stations were needed, and 69 Arabian Oryx were assessed. For this survey, both the number of feeding stations and individuals evaluated tripled compared to 2024.

The results indicate that the oryx population is generally fit and healthy, and that the feeding program remains essential for the sustenance and well-being of the oryx within the DDCR.

2025			
Site	Female	Male	Both
S1	2.6	2.7	2.7
S2	2.8	2.5	2.7
S3	2.8	2.8	2.8
S4	2.7	3	2.8
S5	2.9	3	3
S6	2.9	2.9	2.9
N1	0	0	0
N2	3	3	3
N3	3.1	3	3.1
N4	0	3	3
N5	3	3.1	3
N6	2.9	3	3
ALL	2.39	2.67	2.67

Table 2 Average BCS per feeding station and overall results.

The number of individuals assessed at each feeding station varied, but on average, there were more females than males in the herds. This aligns with the species’ natural behaviour, where females typically travel in groups with juveniles, while males tend to be more solitary. Only feeding station N1 had no individuals present at the time of the survey. This absence may be explained by the proximity of another feeding station, located near a waterhole, which likely attracts more herds. The BCS for females (2.39) was slightly lower than for males (2.67).

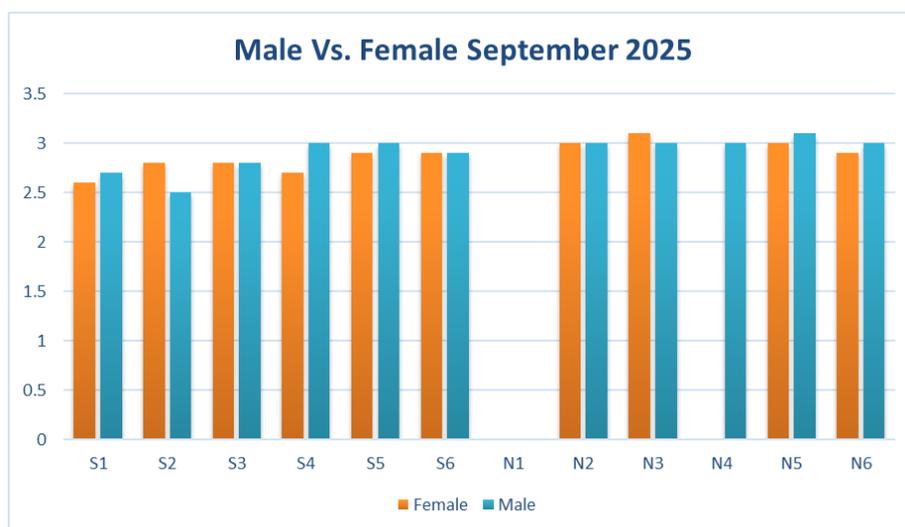


Figure 5 Comparison between male and female BCS in 2025

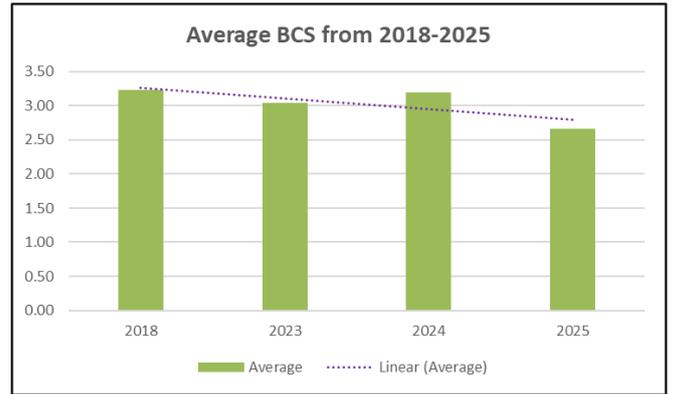
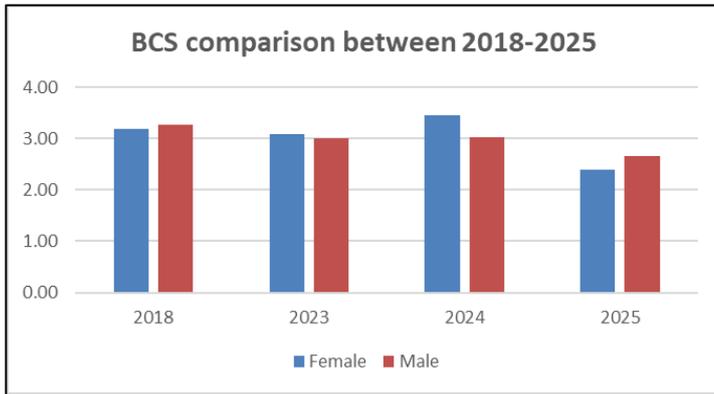


Figure 6 Left: BCS comparison between males and females from 2018-2025. **Right:** Oryx Average BCS between 2018-2025

A comparison of Body Condition Scores (BCS) from recent surveys reveals that 2025 has recorded the lowest average scores since the inception of the feeding program. This decline can likely be attributed to several factors, most notably the lack of rainfall in the reserve throughout the year. Prolonged dry conditions have limited vegetation growth, reducing the nutritional quality of natural forage available to the animals.

In contrast, the reserve experienced significant rainfall last year, which led to a marked increase in vegetation cover (Figure 7). This was reflected in the annual vegetation survey, where a total of 57 plant species were recorded (Martin, Witte de la Torre, Roy, & Madurapperuma, 2024), in comparison with the 46 plant species recorded in 2023 (Conservation Officers and Conservation Ranger, 2023) or 43 plant species recorded this year (unpublished data). As shown in the figure below, rainfall this year (indicated in light blue in both graphs) has been largely absent for most of the period.

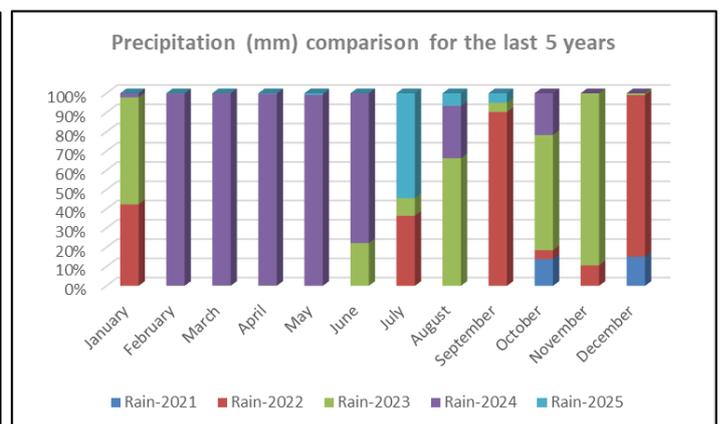
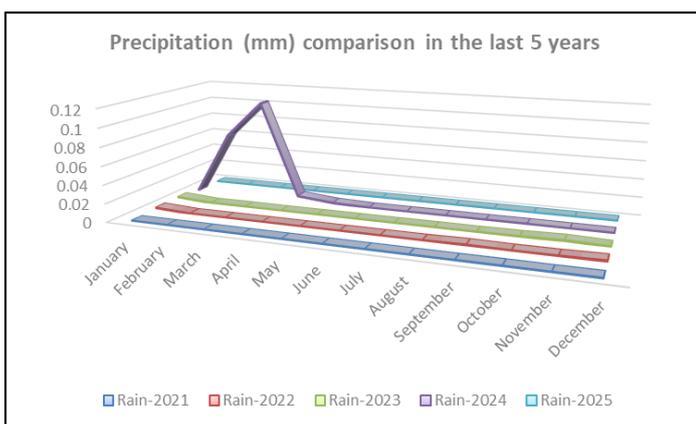


Figure 7 Left: 3-D Line-Precipitation (mm) comparison between from 2021 to 2025 **Right:** 3-D Column



Additionally, the number of individuals assessed this year is higher than in previous years. This increase may indicate that more Oryx are relying on the feeding stations instead of engaging in their typical foraging activities.

Currently, the population of Arabian Oryx in the DDCR exceeds 700 individuals – more than double the reserve’s estimated carrying capacity. Under normal conditions, the DDCR receives 500 bundles of alfalfa daily, distributed across all feeding stations. However, since the summer months, this has been reduced to only 100 bundles per day to be divided among all feeding stations. With more animals depending on a reduced supply of supplemental feed, feeding stations have become increasingly crowded. The DDCR team has observed a corresponding rise in aggressive behaviour and fights over food, which may further impact the overall health and condition of the population.

4. Conclusions

The data collected during this survey indicates that the Arabian Oryx population in the reserve is being affected by the impacts of climate change. This year’s drought has negatively impacted the natural growth of vegetation, reducing the availability of natural forage. In response, additional feeding stations were established to mitigate food shortages; however, this intervention has not fully met the nutritional needs of the growing population.

While the overall health of the population remains relatively good – with an average Body Condition Score (BCS) of 2.7, just below the ideal score of 3 – the decline compared to previous years is concerning. It underscores the urgent need to manage population size. One proposed solution is to conduct translocations to reduce the number of individuals within the reserve, bringing it closer to its carrying capacity and encouraging more natural behaviours among the Oryx.

A follow-up survey is scheduled in six months to reassess the health status and evaluate the effectiveness of any implemented management actions.



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