Effect of a Food Enrichment and a Variable Feeding Time on the Behavioural Welfare of Rescued Leopards (Panthera pardus) at an Indian Rescue Centre

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"Assess the effects of food-based enrichment and variable feeding times on food anticipatory behaviours and other welfare indicators"

INTRODUCTION

The impact of food anticipatory behaviors on animal welfare is an intriguing area of research in captive bioparticularly with felids. While these majestic animals are known for displaying such behaviors, the intricate relationship between these actions, husbandry practices and overall welfare remains largely unexplored. Our study aims to fill this gap by investigating the effectsof food-based enrichment and variable feeding times on 13 rescued leopards (nine males and four females) at the Greens Zoological, Rescue, and Rehabilitatio Centre (GZRRC) in Jamnagar, India. Housed in spacious enclosures of 800 to 1200 square meters, these leopardslive in compatible iso-sexual pairs, surrounded by species-specific features, lush vegetation, and engagingenrichment. By delving into these dynamics, we seek to enhance the care and welfare of these leopards, sparking important conversations about improving the lives of animals in captivity. Together, we can drive transformative change for these extraordinary creatures.

MATERIALS AND METHODS

Focal animal sampling was used to collected 15 minutes of behavioural data per subject during the baseline "on-time feeding" period, after which food enrichment (choice) and variable feeding schedules were introduced. During the variable feeding phase, the leopards were fed once daily, six days a week, at randomized times between 6:00 AM and 12:00 AM, with feeding times shuffled. Behaviours recorded in seconds, during the 15-minute sampling periods around feeding times were analysed and compared across individuals between the "on-time feeding" and "variable-time feeding with food enrichment" conditions, with a primary focus on food anticipatory pacing behaviours and conspecific- directed agonistic interactions. Feeding time data was compared across the same individuals across the on-time feeding and variable-time feeding with food enrichment conditions. Finally we compared food anticipatory pacing behaviours and conspecific-directed agonistic interactions across the test conditions.

FINDINGS AND TAKE-HOME MESSAGES

This groundbreaking study explores the captive management of rescued leopards from Indian rescue centers, highlighting their unique needs as a conflict-prone species. Our findings urge a transformative re-evaluation of husbandry practices for rescued large carnivores. By tailoring these practices, we can significantly enhance their welfare and social interactions, setting a new standard for the care of rescued wildlife. It's time to prioritize their well-being and advocate for better management approaches.

RESULTS

A Wilcoxon signed-rank test revealed captivating results about food anticipatory pacing behaviors across two feeding conditions. The analysis showed a significant decline ($V = 587$, $p < 0.001$) when moving from on-time feeding ($M = 158.43$, $SD = 230.41$) to a variable time feeding and enrichment regimen ($M = 5.33$, $SD = 15.36$). The large effect size ($d = 1.25$, 95% CI [0.76, 1.74]) highlights the striking impact of feeding strategies on behaviour. Similarly, we observed a significant reduction in agonistic interactions among conspecifics ($V = 620$, $p < 0.001$) when transitioning from on-time feeding ($M = 36.12$, $SD= 27.46$) to the variable schedule ($M = 7.76$, $SD = 11.51$), with a large effect size ($d = 1.34$, 95% CI [0.84, 1.84]). These findings suggest that varying feeding strategies profoundly influence both individual behaviors and social dynamics, paving the way for enhanced animal welfare practices.

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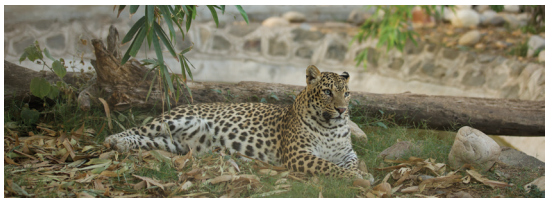

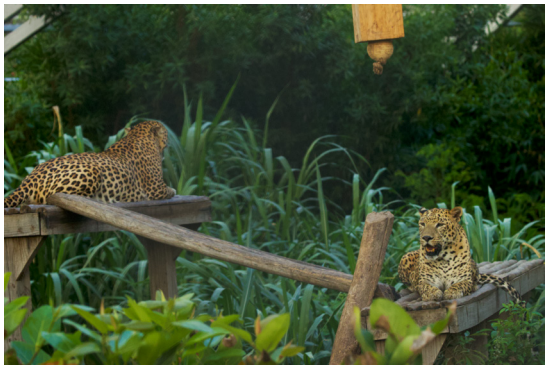

Indian leopards are more than just majestic predators; they are intelligent and curious creatures that thrive on engagement. Introducing food enrichment transforms their environment into an exciting playground, showcasing their natural instincts and brilliance.

Display innovative food placements, like dangling meat from branches or hiding it at various heights, encouraging climbing and playful exploration. Focus on a hollow log or rock crevice where food is cleverly hidden. Use natural materials like leaves or moss to demonstrate how this sparks the leopard's curiosity and hunting instincts.