SPECIES

To Cite:
Kadariya R, Bahadur KCR, Paudel U, Shrestha BP. First photographic record of albinism in Chital (*Axis axis*) from Bardia National Park, Nepal. *Species* 2023; 24: e73s1581
doi: https://doi.org/10.54905/disssi.v24i74.e73s1581

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Peer-Review History
Received: 14 June 2023
Reviewed & Revised: 17/June/2023 to 22/August/2023
Accepted: 26 August 2023
Published: 30 August 2023

Peer-Review Model
External peer-review was done through double-blind method.

Species
pISSN 2319–5746; eISSN 2319–5754

DISCOVERY
SCIENTIFIC SOCIETY

First photographic record of albinism in Chital (*Axis axis*) from Bardia National Park, Nepal

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ABSTRACT

Chital or spotted deer (*Axis axis*) is one of the important cervids in Bardia National Park of Nepal, serving as the primary prey species of tiger within the national park. They are easily observed throughout the national park. However, albino chital is rarely found in the national park, and this study presents the first photographic evidence of albino chital from the park.

Keywords: *Bardia National Park, Chital, Albinism*

1. INTRODUCTION

Chital or spotted deer (*Axis axis*) is endemic to South Asia, occurring in Bangladesh, Bhutan, India, Nepal, and Sri Lanka (Duckworth et al., 2015). Chital are found in various habitats but avoid extremes such as dense, moist (evergreen) forests and open semi-desert or deserts (Duckworth et al., 2015). Chitwan occurs in subtropical grasslands and forest areas and mostly prefers the riverine forest during the hot and dry season, while Sal Forest is in the monsoon season (Jnawali et al., 2011). Chital have been listed as the "least concern" on the IUCN's red list Duckworth et al., (2015) because they have an extensive range. In Nepal, the highest population densities, approximately 200 chitals per sq. km, were reported from the Bardia National Park (Moe and Wegge, 1994). Chitals are distributed along the Terai-Bhabar region of Nepal and within all of the protected areas of the lowlands and adjoining forests. Chital is the primary prey of tigers in Bardia National Park (BNP) Upadhyaya et al., (2018), and the recent national tiger survey revealed that tiger prey density comprises 44 chital per sq. km in BNP (DNPWC and DFSC, 2022).

2. METHODOLOGY

Study Area

BNP, the biggest national park in the lowland terai of Nepal (Figure 1), was established in 1988 AD and comprises a total area of 968 sq. km (BNP, 2022). Geographically, BNP lies between 28°15′ to 28°35.5′ N and 80°10′ to 81°45′ E, with an elevation of 152 -1564m above sea level. BNP makes part of the transboundary

terai arc landscape, which stretches east-west along southern Nepal and straddles North-West India. The national park is drained by two major rivers, Karnali and Babai, and their tributaries. Karnali river in the southwestern and Babai River in the western part of BNP provides a floodplain, having highly alluvial grasslands, and riverine forests, which support a high density of ungulates.

The park is very rich in biodiversity resulting in 839 species of flora and 62 species of mammals, including ten endangered animals like the Asian Elephant (*Elephas maximus*), Bengal Tiger (*Tigris tigris*), One-horned Rhinoceros (*Rhinoceros unicornis*), Swamp Deer (*Cervus duvauceli duvauceli*), etc., 513 birds, 25 species of reptiles, and 121 species of fish (BNP, 2022). Dinerstein, (1979) divided BNP consists of seven main vegetation types sal forest (*Shorea robusta*), khair-Sissoo forest, Riverine Forest, Hardwood Forest, and three grasslands (Dinerstein, 1979). *Shorea robusta, Dalbergia sissoo, Terminalia spps, Trewia nudiflora, Acacia catechu, Mallotus philippinensis*, etc., are major dominant tree species and mainly *Saccharum spontaneum* and *S. bengalensis* are the dominant grass species of the park.

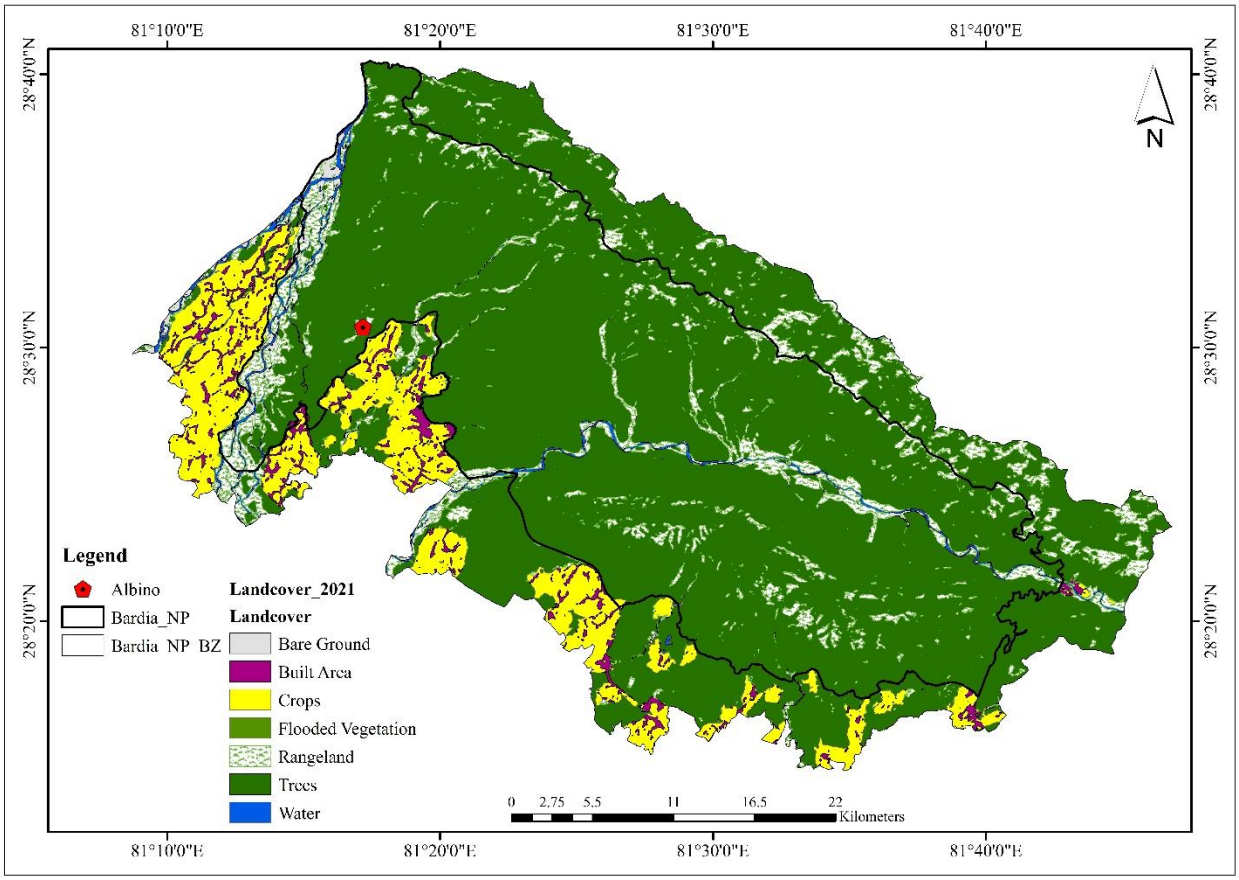

Figure 1 Map of Bardia National Park and its Buffer Zone of Nepal with Landcover 2021 with the observation location of adult albino chital.

3. RESULT AND DISCUSSION

Albinism is a general scientific terminology that describes conditions characterized by hypopigmentation of the skin resulting in a snow-white body with pink limbs, snouts, and ears (Hayashi and Suzuki, 2018; Menon, 2003). Albinos have poor vision or may even be blind, which puts them at a disadvantage when hunting for food and while escaping from predators, making them more susceptible to predation (Rall and Fahay, 1985). Additionally, the majority of animals' body colors act as camouflage, enabling predators to sneak up on their prey without being spotted by them (Abreu et al., 2013; Cuthill et al., 2005). Also, it is recorded that because of the color, albinos are left out of the herd and a similar case was recorded (Patel, 2020). However, here in our findings, we record the albino chital with its herd foraging in the grassland and a similar case was recorded by Pathak et al., (2023) in Chitwan National Park.

Figure 2 An albino chital with its sibling grazing in the grassland of Bardia National Park, Nepal. Photo: ©Santosh Tharu

The albino spotted deer was recorded along with another normal-colored adult in the core area of the national park from Lamkauli Phanta (grassland) while visiting BNP on May 22, 2022, by Santosh Tharu, a nature guide in the BNP (Figure 2). Similarly, Pathak et al., (2023) have recorded similar cases from Chitwan national park, Nepal. While, Pradhan et al., (2014), Sayyed et al., (2015), and Patel, (2020) has recorded albinism in chital from different part of India. Also, earlier Yadav et al., (2023) have recorded the albino hog deer (*Axis porcinus)* from BNP.

4. CONCLUSION

In conclusion, this is the first case of albinism found in chital in Bardia National Park. The majority of albino animal species are in decline because their color makes them desirable. Therefore, particular care and treatment must be given, and they should be kept in captivity.

Acknowledgments

We express our special thanks to the Department of National Parks and Wildlife Conservation and Bardia National Park for their support in conducting this research. We are grateful to Santosh Tharu, staff of the NTNC-BCP, Phiru Lal Choudhary, Khushiram Choudhary, Ramraj Choudhary, and for help in the field and support of this project.

Informed consent

Not Applicable

Ethical approval

Chital (Axis axis) from Bardia National Park, Nepal was observed in the study. The animal ethical guidelines are followed in the study for species observation & identification.

Conflicts of interests

The authors declare that there are no conflicts of interests.

Funding

The study has not received any external funding.

Data and materials availability

All data associated with this study are present in the paper.

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