

Study on the Docility Pattern of Nilgai (*Boselaphus tragocamelus*) in the Gopalganj District of Bihar

Anjali Srivastava¹, Rana Vikram Singh²

¹Department of zoology, Kamla Rai College, Gopalganj
Corresponding Author Email: [anjali.sinha19515\[at\]gmail.com](mailto:anjali.sinha19515[at]gmail.com)

²Department of zoology, J. P University Chhapra, Bihar

Abstract: Nilgai is a hoofed ungulate and largest antelope in Asia. It is endemic to peninsular India having prominent sexual dimorphism and partially gregarious in nature. The present paper deals with the study conducted on the docile behaviour pattern of Nilgai in the Gopalganj district of Bihar. The method followed was direct sighting and observation using camera photography, questionnaire method, survey form direct conversations with the local inhabitants. The local village population were not well acknowledged with the docile behaviour of the Nilgai. It was observed that Nilgai was very comfortable with cattle, grass egret. If possible this docility can be harnessed for beneficial purpose to mankind.

Keywords: Antelope, Dimorphism, Docile, Endemic, Gregarious, Ungulate

1. Introduction

Nilgai is the largest Asian antelope, often marked with white socks thus called white footed antelope also called as blue bull. It is a mixed feeder, primarily a grazer but also preferring browsing. It belongs to class mammalia, order artiodactyla, and family bovidae they can thrive on variable proportion of grass herbs [1]. They also prefer to eat paddy, maize, sugarcane and gram [15]. They are crop raiders, they damage the crops by feeding and also by trampling the crops. [5]. Females are less aggressive than males. It is endemic to the peninsular India but also in Pakistan and Nepal adjoining the border area of India. Found in 16 states and almost absent in north east India. The north central India covering four states (Haryana, UP, MP and Rajasthan) account for a large majority (about 60%) of the total Nilgai population in the country. However introduced Nilgai population occur in USA, Mexico and S. Africa [16]. They are found in undulating hills, but not in the steeper hills. they are absent from true arid zones having inadequate woody cover Sexual dimorphism is prominent. the Nilgai calves and cows are light brown in color. the light brown color of male calves begin to darken by tenth month and they develop black legs and brownish grey color by 18 months. by the fourth year, adult Nilgai bulls are blue grey in color [14]. It is categorised as least concerned animal by IUCN red list [11]. In India Nilgai is protected under the schedule III of the wildlife protection act 1972. Due to exponential human population growth, pollution, industrialisation, the natural habitat of Nilgai has rapidly dwindled resulting in their migration towards human settlements periphery for food and habitat purposes [2]. Their adaptive ability is very high to their new habitat [9]. Apart from this their sturdy built up and keen senses also favour for their adaptability. Keeping in view this background the study on the docility pattern was assessed for its possible domestication in near future for better economic prospects.

2. Methodology

Study area - - The study area chosen is Gopalganj district in which the focal region was Balesara, Sabeya, Mirganj and

Sasamusa. This district is a part of saran division. And the focal regions lie in the north central part of Gopalganj district. It occupies area of 2033 square kms. located between 83.54^o – 85.56^o latitude and 26.12^o – 26.39^o north longitude. This district is good for irrigation and cultivation of crops and well suited for sugarcane production.

The methodology followed was direct sighting [3], seeing the animals from close distance and observing their behaviour during different time intervals in a day. the animals were observed very cautiously from a close distance and the various behavioural pattern of the animal accordingly observed., along with photography and recording in camera [10]. Also questionnaire cum survey was done various data and necessary information about this animal was gathered from the villagers living in the Mirganj town of Gopalganj district comprising of Balesara and Sabeya regions. . The questionnaire cum survey was done comprised of different behavioural aspect of Nilgai including the aggressive behaviour, docile behaviour, feeding behaviour, crop raiding behaviour, and reproductive behaviour. Direct conversation with the villagers emphasising on the attitude and knowledge of the villagers especially farmers about the docile behaviour of Nilgai was done. This study was done in the above mentioned regions from February 2023 – January 2024.

3. Results

The questionnaire cum direct conversation with the villagers regarding the behavioural aspect of Nilgai was inferred accordingly.

Group size —

The group size of the animal during the study were as follows —

- 08 adult cows with calves
- Male groups varying in number from 3 to 7 in the Balesara region.
- They are partially social in nature. Large groups are rare. They are diurnal and sometimes nocturnal also in habit.

1) Questionnaire cum survey form analysis

The results from questionnaire form were inferred as follows –

The villagers were giving vast number of examples regarding aggressive behaviour of Nilgai but very few were aware about the docile or reproductive behaviour of the animal, even they are of belief that nilgai reproduces twice in a year they were well acknowledged about the feeding behaviour, about the food preferences. But still the villagers didn't support their culling.

2) Direct sighting using camera photography

After direct sighting and observation using camera photography the following inferences could be deduced:

- In the Balesara area of Mirganj block the Nilgai were seen grazing with cattle. (Fig.1)
- A herd of females were seen grazing with bull, may be a sign of interbreeding but that is questionable.

- Camouflage behaviour – it was observed that when the animal in alone was active it prefers green grasses but while resting it prefers to rest in brown dry grass but may be it points towards their defensive mechanism, as when the animal was seen in herds they were seen resting in green grasses also. while resting also some of the members used to stand and other members were resting, might be for signalling a coming danger at least two or three members always stand in a group (Fig.2 & 3)

3) Direct conversation with local human population

The direct conversations with villagers elicited their view of conservation and protection of the animal rather than culling them. They preferred some innovative techniques like:

Planting sunflower crops around the margin of the field which is nowadays popular among the farmers especially in the districts of Vaishali and Palamau [8].



Figure 1: Nilgai grazing with cattle in the Balesara region of Gopalganj



Figure 2: A Nilgai resting in dry grasses in Sabeya block of Gopalganj



Figure 3: Herd of Nilgai resting in green grass

4. Conclusion

Nilgai are known for their crop raiding, aggressive behaviour or due to their pest status called as vermin also. But it is also true that Nilgai is the sole member of the genus *Boselaphus* so efforts should be made for their conservation else some day in future they will be on the verge of extinction. In this regard switching our attitudes positive toward Nilgai, enhancing our knowledge about the docile behaviour which if harnessed properly can lead to better economic status of human population.

References

- [1] Prasad S, Prabhakar CS (2019). Is domestication of Nilgai possible?. *Current science*, 116 (7): 1045 - 1046
- [2] Prasad S, Singh D K, Choudhary S K (2020). Residential population structure and abundance of Nilgai (*Boselaphus tragocamelus pallas*) in Bihar, India. *Current Journal of Applied Science and Technology*, P39 (13): 110 - 117
- [3] Prasad S, Prabhakar C S (2020). Docility behavioural development in Nilgai (*Boselaphus tragocamelus*), a signs of Taming towards domestication. *Current Journal of Applied Science and Technology*; 39 (41): 30 - 39
- [4] Kalyankar V B, Dhondage T B, Rahod R N (2017) Domestication of Rohi (Nilgai) a directional use of bioenergy for well - being of farmers. *International Journal of Applied research*; 3 (f): 156 - 157
- [5] Vijay, S (2018, september12) Nilgai menace gives bihar farmers sleepless nights, *Hindustan times*. <https://www.hindustantimes.com>
- [6] Haque. N (1990). Study on the ecology of wild ungulates of koeladeo National Park, Bharatpur. phd thesis. centre for wildlife and ornithology, Aligarh Muslim University, Aligarh 308Pp
- [7] <https://zsi.gov.in>
- [8] <https://pipanews.com/farmers-adopted-a-new-idea-to-save-the-wheat-crop-from-nilgai-pipa-news/>
- [9] Sankar K, Johnsingh A J T, Acharya Bhaskar (2004), *Ungulates Of India*, ENVIS Bulletin on wildlife and protected areas, 07 (1): 29 - 40
- [10] Altman J, Observational study of behaviour sampling methods. *behaviour*.1974; 40: 227 - 265
- [11] Mallon, D. P.2008. *Boselaphus tragocamelus*. IUCN 2013. IUCN red list of threatened species. version 2013.
- [12] RanjitSingh, M. K.1987. Unusual Coloration of Nilgai (*Boselaphus tragocamelus*). *Journal of the Bombay Natural History Society*, 84: 203
- [13] Sankar, K. and Vijayan V.1992. Notes on the food habits of nilgai, *Boselaphus tragocamelus*. . *Journal of the Bombay Natural History Society* 89; 115 - 116
- [14] Corbet, G. B. and Hill, J. E.1992. *The Mammals Of the Indomalayan region: a systemic review* (vol.488): oxford university press oxford.