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Nilgai and Agriculture: Approaches for a Balanced Coexistence

*A. H. Nayi[1], K. J. Bhuva[1], R. R. Waghunde[1], C. K. Borad[2] and J. J. Dand[1]
[1]AINPVPM: Agricultural Ornithology, AAU, Anand, Gujarat, India
[2]Main Vegetable Research Station, AAU, Anand, Gujarat, India
*Corresponding Author's email: ashishnayi@aau.in

The nilgai (scientific name: *Boselaphus tragocamelus*) is a herbivorous mammal belonging to the kingdom: animalia, phylum: chordata, class: mammalia, order: artiodactyla and the family: bovidae. It is an even-toed ungulate. The adult male is called bulls, while the female and young ones are referred to as *rozdi* or *rozda*. The sexual dimorphism is clearly visible in this species. The adult male is large, measuring about 4.9 to 5.2 feet whereas female is 4.3 to 4.6 feet in height, adult male has bluish-grey coat resembling that of a horse. The female is comparatively shorter and brownish, similar in appearance to a deer. Male nilgais possess a patch of stiff, dark hair that resembles a beard beneath their throats. Their lips, jaws, inside of ears, and under tails are white. Females have white patches on the face and cheeks. Calves resemble the mother in colour. Male individuals possess a set of robust, conical horns that gently curve forward and narrow towards the end. Both sexes have a mane running from the back of the head along the spine. Their back appears slightly arched.

Habitat and Distribution

Nilgai are found throughout India, with populations also present in parts of Nepal and Pakistan. They are absent from North-Eastern states and some arid western regions of India.

Habitat Types

Grasslands: Nilgai thrive in open grasslands which provide ample forage and cover for hiding. Grass species are their primary diet, and seasonal changes in vegetation affect their distribution.

Thorny Scrublands: They are commonly found in areas with thorny bushes, scattered trees, and open patches, offering both food and movement corridors.

Forest Edges: Often found along the borders of dense forests where open and forested zones meet, offering a mix of grasses, shrubs, and small trees.

Agricultural Fields: In areas where natural habitats have been lost or degraded, nilgai are seen near agricultural lands, feeding on crops and field margins, which can lead to conflict with farmers.

Crop Damage and Conflict

Similar to cattle, nilgai feed primarily on grass while also consuming leaves, flowers, and fruits much like goats do. In dry regions, they eat parts of hardy plants like Acacia and Prosopis. Their herds often invade standing crops, causing extensive damage. Hence, farmers frequently drive them away.

Nilgai are most active from mid-morning to evening and rest during the afternoon heat. They can survive for extended times without water, which makes them ideal for dry environments. A typical herd includes 7–8 animals, usually one male and several females with young. Sometimes, groups as large as 20–22 individuals are seen. Nilgai possess remarkable olfactory and visual abilities, but their hearing is only moderate. When they feel threatened, they escape by bounding away in long jumps similar to those of deer. Uniquely, they defecate at the same spot repeatedly, possibly to maintain group cohesion.

Breeding season for this animal occur during cooler months often from November to February. During this time, males compete for access to female by engaging in display of dominance and clashing their horns. Once male establish dominance, he gains access to a group of females. Females become sexually mature at around 25 months and give birth after a gestation of 8–9 months. Breeding occurs year-round, so herds often have calves of various ages. Due to religious beliefs in Gujarat, people refrain from harming nilgai, often considering them sacred like cows. However, due to land use change, their natural habitats are shrinking, putting pressure on their survival.

Wildlife Protection Act, 1972: In India, nilgai are safeguarded by the Wildlife Protection Act 1972. This law aims to conserve wild animals and their habitats and regulates trade and capture of protected species.

Strategies to Reduce Crop Damage

Mitigation Strategies: Balancing crop protection and wildlife conservation is key. This includes barriers, sensory deterrents (olfactory, auditory, visual), fencing, relocation, crop pattern changes, and farmer education.

Fencing and Barriers: Physical barriers like fences, ditches can prevent nilgai from entering farmlands. Their efficiency should be assessed to avoid harming other wildlife.

Crop Selection and Rotation: Choosing crops less preferred by nilgai and rotating them can reduce attractiveness of the field and discourage habitual visits.

Intercropping and Agroforestry: Growing less palatable crops alongside main crops can deter nilgai. Agroforestry may also provide alternative food sources and reduce crop raiding.

Non-lethal Deterrents: Tools like noise makers, visual repellent, or spiked wheels can disrupt feeding behaviour and prevent entry into fields.

Supplemental Feeding Areas: Providing designated grazing or feeding zones outside of farmlands can divert nilgai from crops.

Habitat Management and Restoration

Protecting and restoring natural habitats can reduce their reliance on crops. This includes habitat corridors, regeneration of native grasslands, and establishing protected areas.

Community Awareness and Education

Educating local communities about the ecological role of nilgai and promoting coexistence fosters better participation in conservation measures.

Disclaimer

All information presented complies with national and state wildlife protection laws. This article promotes awareness and coexistence without encouraging any harm or illegal activity against wildlife.

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