Habituation of Indian peafowl (*Pavo cristatus*) to human activities

In recent years, we are witnessing a rich abundance of Indian peafowl (*Pavo cristatus*) populations in the wild as well as in human-populated areas. The Indian peafowl, the largest among pheasants, is commonly known as the blue or common peafowl. It belongs to the order Galliformes and family Phasianidae (pheasant) and is 6–7 ft in length, making it one of the largest birds that can fly. Due to its 'flagship' value and its exalted position in Hindu mythology, the peafowl was proclaimed the National Bird of India in 1963. There are three species of peafowl, viz. the Congo peafowl, which is indigenous to parts of Africa, the blue peafowl and the green peafowl, which are endemic to Asia. The Indian peacock has the most exquisite feathers compared to the other peacock species with only a few scattered sets of feathers. Peafowl are ground-dwelling birds that consume a variety of foods, including snakes, amphibians, ants, flies, plants, fruits and seeds. They can be found in warm, open spaces with low trees, such as farms, wooded areas and wilderness. Peafowl are widespread throughout Asia, although they are particularly prevalent in India, Sri Lanka and Myanmar[1].

The head of the peacock has feathers, giving it a crown-like appearance. It has an elongated tail with magnificent blue and green-coloured feathers, while its body has brown feathers. A peacock's tail accounts for about 60% of its total length. Eye-like patches of red, gold and green feathers encircle the eyes on the tail. Peacocks have about 200 feathers on their tails at any given time. They have an inch-long beak that is designed to consume tiny insects. The amount of light and angle affect the colour of their iridescent feathers. This is a result of the crystal-like structures found in their feathers, which reflect various wavelengths of light depending on their spacing. After the mating season, their beautiful tail feathers fall out. Despite their colourful look, peacocks have a loud and unsettling call. Peahens produce three to six eggs in a batch. After hatching, peachicks spend months with their mothers learning how to feed themselves, care for their feathers and interact with another peafowl. Peachicks practically reach adulthood in a year. Tails without ocelli, or distinctive eyes, start to appear at the age of two. After a year, peacocks reach sexual maturity, while peahens reach sexual maturity earlier than peacocks. In the wild, peacocks can live up to 20 years. Due to their large tails, they can only fly a short distance and often choose to stay on the ground. One of the loudest sounds of any family of birds belongs to the peacock. During the rainy season, they make loud wailing noises, and their presence signals the start of the monsoon season. Additionally, they produce noise at all hours of the day and night. When in danger or during mating, peacocks make distinctive noises[2].

The peacock enjoys the highest level of legal protection as our national bird. It is punishable under Section 51 (1-A) of Schedule I of the Wild (Life) (Protection) Act, 1972, with a maximum sentence of seven years in prison and a fine of not less than Rs 10,000. Despite this, the peafowl populations have been declining for decades due to habitat degradation, hunting and contamination of their food supplies. The Worldwide Fund for Nature undertook a peafowl population census in 1991, which indicated a 50% decline in the species since independence. Since 2014, the Indian peafowl has been protected by the export and import regulations of India and Appendix III of the Convention on International Trade in Endangered Species of Wild Fauna and Flora, which impose strict restrictions on the import and export of animal products and demand more documentation. Their population has remained constant in recent decades, thanks to improved awareness and strengthened legislative action. The peafowl is now classified as Least Concern (LC) in the Red Data List of the International Union for Conservation of Nature[3].

Peafowl populations have increased dramatically in recent years in forest and human-populated areas, rural (farmlands, bushes, backyards, etc.) and urban (university and institution campuses, etc.). A group of peacocks is called a muster, ostentation, pride or party. Peafowl in rural areas have been reported to have a low fear response to human activities or disturbances in or around farmlands, cattle pens, backyards, roadsides, temples, ponds, rivers, lakes, bridges, etc. This is assumed to be the result of habituation, which is defined as a reduced behavioural response to a repeated, neutral stimulus[4], therefore, it is a form of behavioural plasticity and implies a learning process. Habituation in peafowl to farmland activities is a negative adoption behaviour for our economy. Peafowl are becoming a significant and emerging pest of important agricultural and horticultural crops[5]. They damage crops by overfeeding on grains and fruits, and trampling on and dislodging seedlings. In order to protect their crops, farmers have reportedly attempted poisoning, trapping, poaching, and even electrocution of peafowl populations. This should be avoided, and people should be aware of the importance of protecting our national bird. Interestingly, peafowl activities did not damage any medicinal and aromatic plants (MAPs) grown in the CSIR-CIMAP Research Centre, Bengaluru. However, the problem of pests arose when the MAPs were intercropped with food crops. Thus, MAPs can be recommended (either as a hedge or border crop) for crop damage due to peafowl activity. This will also ensure farmers' livelihoods and maintain biodiversity richness.

1. Ali, S. and Ripley, S. D., *A Pictorial Guide to the Birds of the Indian Subcontinent*, Bombay Natural History Society, Oxford University Press, Mumbai, India, 1989, 2nd impression edn, p. 6.
2. Johnsigh, A. J. T. and Murali, S., *J. Bombay Natl. Hist. Soc.*, 1978, **75**, 1069–1079.
3. International Union for Conservation of Nature (IUCN), Red List of Threatened Species, 2008; www.iucnredlist.org.
4. Blumstein, D. T., *Anim. Behav.*, 2016, **120**, 255–262.
5. Veeramani, A., Dalson, M. J. and Mohanakrishnan, H., *Zool. Res.*, 2019, **3**, 6–12.

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