

Occurrence of beak deformity in Indian Eagle Owl in Tamil Nadu, India

Beak deformities are abnormal growth of beak- either shortening or elongation of the beak or in abnormal shape and size. Different forms of beak deformities were observed among birds, but the exact causes of these abnormalities are unknown. Many reasons could be attributed for bird beak deformity which may be environmental contamination, nutritional deficiencies, injury, bacterial or viral infections, fungal or parasitic infections (Handel et al. 2010). Earlier, observations had been made and documented on birds with abnormal beak growth (Craves 1994). According to Handel et al. (2010), environmental contamination of organochlorine compound of selenium from Great Lake in California could be responsible for high rates of beak malformations. The beak deformity will affect the behaviour of birds for feeding (Benkman & Lindholm 1991; Temeles & Kress 2003), preening (Van Hemert et al. 2012), feather maintenance, cleaning of ectoparasites (Clayton et al. 2005). Birds with beak deformity change their habits and adapt to the malformations for their survival (Verea & Verea 2010).

As a part of our research work on radio-telemetry studies on Indian Eagle Owls *Bubo bengalensis* (Franklin, 1831), they were captured from Paithamparai Village (11.074° N & 78.458° E) in Tiruchirappalli District, using Bal-chatri trap on 4th September 2019. After capturing, morphometric measurements



Front view of Indian Eagle Owls: (a) normal beak and (b) beak deformity. © T. Siva.

were taken in the field. It was a male bird and weighed 855g. The beak of the bird was observed to be deformed; however, all other body parts like wings and legs were well developed and found to be normal.



Beak deformity observed in an Indian Eagle Owl with cut nostrils. © T. Siva.

In general, Indian Eagle Owls have curved and thick bill with a pointed tip. The upper and lower mandibles of this bird was different from the normal bird. The upper mandible appeared as curved towards right side but the nostrils had a small cut in the beak. The upper mandible was slightly crossed over lower mandible and the cutting edges of lower beak was found to be abnormal with thin structure, however, the claws were found to be normal. These nocturnal birds hunt their prey with the help of beak and claws. The bird may hunt the prey species with the help of claws and kill it quickly. After killing, the bird may swallow the prey as a whole and lead a healthy life. Earlier, Bai et al. (2016) concluded that the over-expression of LOC426217 gene in the beak of poultry birds (pure line of a local breed Beijing You in China) may be related to the malformation. The observed deformity in the Indian Eagle Owl may be correlated to over-expression of a gene or genes which requires further investigation and confirmation.

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T. Siva¹, A. Muthusamy² & P. Neelanarayanan³

¹⁻³ Research Department of Zoology, Nehru Memorial College (Autonomous and Affiliated to Bharathidasan University), Puthanampatti, Tiruchirappalli District, Tamil Nadu 621007, India.

Emails: ¹sivanaturewild@gmail.com (corresponding author), ²muthusamy9514@gmail.com, ³dr.pnn31@gmail.com.

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