

Captive breeding of Black-crowned Night Heron at Sardar Patel Zoological Park, India

Black-crowned Night Heron *Nycticorax nycticorax* is a widely distributed species throughout the Indian subcontinent (Ali 2012; Grimmett et al. 2011). It is primarily nocturnal and crepuscular except when feeding young ones (Grimmett et al. 2011). It is found in ponds, inland waters, tidal creeks, and mangrove swamps. The nesting season is between April and September in northern India, whereas December to February in the south (Ali 2012). The Black-crowned Night Heron is a natural colonial nesting bird that lays 4–5 pale sea-green eggs. The male and female share incubation, and the eggs are laid between 23 and 26 days. After 42 to 49 days, the chick flies away (Kabir et al. 2019).

Black-crowned Night Herons are frequently seen in Gujarat's wetlands and are listed in Schedule IV of the Wildlife (Protection) Act of 1972. During breeding, Pelecaniformes water birds



Twenty-day chicks in the nest and after 46 days, the juveniles are out of the nest. © Ravi Patel.

gather their nests in spatially and temporally defined nesting colonies, sometimes heronries or egrettries (Ali 2012). Examples of how these birds have adapted to newer nesting environments include Reef Heron *Egretta gularis* and White Ibis *Threskiornis melanocephalus* nesting in zoo aviaries (Devkar et al. 2005, 2006). Inadequate protection for at-risk species may hasten the regional loss of biodiversity (Terborgh & Winter 1980).

Here, we report the nesting of the Black-crowned Night Heron in an aviary of the Sardar Patel Zoological Park, Kevadiya, Gujarat. Since Gujarat has not reported any instances of these species being bred in captivity, the knowledge gathered here may ultimately be crucial for managing this species and creating a programme for conservation breeding.

The Indian aviary of Sardar Patel Zoological Park (SPZP) is located in the Narmada District, Gujarat, India. The SPZP has the largest geodesic dome aviary in India, with a 150x50x15m and 6962.5 m² area. The aviary has a water body of 44x35x1.5m. The aviary has 32 birds that are frugivorous, carnivorous, graminivorous, piscivorous, and omnivorous. Indian aviary has 10 individuals of Black-crowned Night Heron, out of which two individuals were seen collecting nesting material and set on the tree branch. Later, we started taking the observations during the daytime through 10x50 Nikon Aculon binoculars. We also kept some dry nesting material on the ground as there is a limited source inside captive conditions. The pair started making a nest on the dry Neem tree

Azadirachta indica, situated behind the Golden Bamboo *Phyllostachys aurea* for better hiding from other birds. We avoided observing at night as most species got disturbed and had accidental issues. We also make sure that sufficient food is available for the nesting pair.

We observed two individual Black-crowned Night Heron copulating, and three eggs were laid at the two-day interval in the first week of February 2021. The incubation of eggs was done by both parents alternatively. We took every management and care about bird diet, nesting area habitat, atmosphere, and disturbance. During the incubation period, sufficient food and proper shelter were provided to the pair. At the end of February 2021, after 27 days, all eggs were hatched. One of the parents is always present in the nest, while the other provides the food. After the chicks were born, the veterinary doctor took a detailed observation of the chicks and made sure that the parents were feeding the young ones. We chopped the fishes and prawns into smaller pieces to provide for the young ones. The sound of a chick begging for food may only indicate that a nest is no longer in stage one. After 46 days, we saw chicks rarely off the nest platform; they all settled on the tree branch.

After 62 days, the three juveniles completely took flight and started feeding with adults with all other species on the feeding platform. Five different platforms were there - large fish for pelicans and storks, small fish and prawn for egrets, herons and ibis, seeds plate for graminivorous, fruit platforms for parakeets, starlings and peafowl, muddy pond for ducks,

goose, and flamingos. The heron feeding platform was around 174m away from the nest. The small freshwater fish and prawns kept on the feeding platforms were *Ctenopharyngodon idella*, *Labeo calbasu*, *Cirrhinus mrigala*, and *Macrobrachium rosenbergii*. They were seen roosting on the nesting tree. After breeding, the group joined with other herons and got habituated to the captive aviary environment.

Hérons sexually mature by two years (Davis 1993) and have only one brood per season (Nickell 1966). In tropical areas, the heron family undergoes breeding at any time (Nagelkerken et al. 2008), and here we report captive breeding in the post-winter months. This survey reveals how they reproduce in captivity and creates valuable baseline data for further thorough research. Thanks to the captive breeding program, we gained essential knowledge about the reproductive biology of these ecologically significant waders that contribute to the biodiversity of Indian wetlands. Enhancing the captive breeding programme requires careful planning, including acquiring wild birds to prevent inbreeding depression and maintain healthy lines of captive birds and developing reintroduction procedures like releasing young birds into groups in the wild.

References

- Ali, S. (2012).** *The Book of Indian Birds*. Thirteenth edition. Bombay Natural History, Mumbai, 354 pp.
- Davis, W.E., Jr. (1993).** Black-crowned Night Heron *Nycticorax nycticorax*, No. 74. In: A. Poole & F. Gill (eds). *The Birds of North America*. Philadelphia: The Academy of Natural Sciences; Washington, DC; The American Ornithologists' Union.
- Devkar, R., J. Buch, P. Khanpara & R. Katara (2006).** Management and monitoring of captive breeding of Painted Stork and Eurasian spoonbill in zoo aviary. *Zoos' Print Journal* 21(3): 2189–2192.
- Devkar, R.V., S.H. Bhimani & R.D. Katara (2005).** Breeding of Oriental White Ibis *Threskiornis melanocephalus* Latham in captivity. M.Sc. Dissertation, Bahauddin Science College, Junagadh, Gujarat, India.
- Grimmett, R., C. Inskipp & T. Inskipp (2011).** *Birds of the Indian Subcontinent*. 2nd ed. Oxford University Press & Christopher Helm, London, 528 pp.
- Kabir, A., D. Makhan & T. Hawkeswood (2019).** Colony breeding of the Great White Egret and the Black-crowned Night Heron in northern regions of Bangladesh. *Calodema* 716: 1–8.
- Nagelkerken, I., S.J.M. Blaber, S. Bouillon, P. Green, M. Haywood, L.G. Kirton, J.O. Meynecke, J. Pawlik, H.M. Penrose, A. Sasekumar & P.J. Somerfield (2008).** The habitat function of mangroves for terrestrial and marine fauna: A review. *Aquatic Botany* 89: 155–185.
- Nickell, W. (1966).** The nesting of the Black-crowned Night-heron and its associates. *Jack Pine Warbler* 44:130–139.
- Terborgh, J. & B. Winter (1980).** An Evolutionary-Ecological Perspective, pp. 119–133. In: Soule, M. & B. Wilcox (Eds.). *Conservation Biology*, Sinauer, Massachusetts.
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