

construction, incubation, etc. I retired as curator of the egg collection in 2003, after 33 wonderful years.

Received 12.iv.2005

[Michael P. Walters was the Curator of the Egg Collection in The Natural History Museum (Tring, U.K.) for 33 years. This is a

greatly pared and edited version of a talk the author gave at a conference in Leiden, a couple of years ago. Here he has tried to restrict himself to what he said about eggs from the Indian subcontinent.]

## Do Great Cormorants *Phalacrocorax carbo* displace other colonial nesting waterbirds at Kumarakom heronry (Kerala)?

S. Prasanth Narayanan, David V. Raju, N. Unnikrishnan, Saju Vasan & B. Sreekumar

Narayanan, S.P., Raju, D.V., Unnikrishnan, N., Vasan, S. & Sreekumar, B. 2006. Do Great Cormorants *Phalacrocorax carbo* displace other colonial nesting waterbirds at Kumarakom heronry (Kerala)? *Indian Birds* 2 (5): 138.

S. Prasanth Narayanan, Salim Ali Centre for Ornithology and Natural History—Deccan Regional Station, 12-13-588/B, Nagarjuna Nagar Colony, Tarnaka, Hyderabad, Andhra Pradesh. Email: [narayanank@gmail.com](mailto:narayanank@gmail.com)

David V. Raju, Kottayam Nature Society, Srililayam, Near Union Club, Kottayam, Kerala, India.

N. Unnikrishnan, Kottayam Nature Society, Srililayam, Near Union Club, Kottayam, Kerala, India.

Saju Vasan, Kottayam Nature Society, Srililayam, Near Union Club, Kottayam, Kerala, India.

B. Sreekumar, Kottayam Nature Society, Srililayam, Near Union Club, Kottayam, Kerala, India.

The 112 acre Kumarakom heronry (9°37'–93°8'N 76°25'–76°26'E) is situated in Kerala Tourism Development Corporation's 'tourist complex' of Kumarakom in Kottayam district, 14 km west of Kottayam town. The primary vegetation of the heronry consists of mangroves such as *Avicennia officinalis*, *Bruguiera gymnorrhiza*, *Rhizophora mucronata*, *Sonneratia caseolaris*, besides marshy mangrove associates, non-mangrove species, and hydrophytes (Ravi 2002). Some of the native vegetation was converted to plantations of coconut and rubber.

The discovery of two nests of Great Cormorant *Phalacrocorax carbo* at Kumarakom heronry on 18.v.2005 has increased the number of colonial nesting waterbirds at the site from ten (Narayanan 2004) to 11. During the current (2006) breeding season ten nests of Great Cormorants were located at the heronry and the number of birds increased from six (2005) to more than 25. The nests were found in a mangrove-associate, *Terminalia catappa*, at a height of about 12.2 m. Nesting of Great Cormorants at this heronry were first discovered by the second author (DVR) and later the third (NU) and fourth (SV) authors, successfully photographed the nesting birds. The location and height of their nests are similar to those of the Darter *Anhinga melanogaster* and Indian Shag *Phalacrocorax fuscicollis*, except that they are larger. Whenever Brahminy Kites *Haliastur indus* flew close to brooding birds, the latter produced 'threatening' postures and made high-pitched sounds. The vocalizations made by Great Cormorants are distinct, being buzzy and loud, and can be easily differentiated from those of other cormorants and darters. Narayanan (2004) did not spot any Great Cormorants at this heronry during the 2004 breeding season.

Great Cormorants are reported from Vembanad Lake and adjacent areas (Sreekumar 2003), but their status there varies from 'uncommon' to 'fairly common', according to the season. Neelakantan (1996) and Sashikumar & Palot (2002) reported that the Little Cormorant *Phalacrocorax niger* and Darter

populations in the Periyar Tiger Reserve declined due to the 'invasion' of and competition from Great Cormorants at the heronry. According to Narayanan (2004) 2.76% of the Darter's estimated world population is found in the Kumarakom heronry. Now, with the Great Cormorant nesting in Kumarakom heronry, it may compete with Indian Shag and Darter for nesting trees and other nesting 'requirements'. The selection of a nesting tree, height of the nest, and social factors influence nesting (Donzar et al. 1993). We wonder whether this will gradually lead to a reduction of Darters in the Vembanad and adjacent areas. Narayanan (2004) mentions about the Great Cormorant and its possible impact on the nesting of Darter population. But in the same instant we suspect that large colonies of nesting wetland birds attract other colonially nesting species such as Open-billed Stork *Anastomus oscitans* and Grey Heron *Ardea cinerea*, two large colonially nesting species, have started visiting Kumarakom heronry. It is possible that they will nest here in the future.

### Reference

- Ali, S & Ripley, S.D. 1983. *Handbook of the birds of India and Pakistan*. Compact ed. New Delhi: Oxford University Press.
- Donazar, J. A., Ceballos, O., Travani, A., Rodriguez, A., Funes, M. & Hiral, F. 1994. Breeding performance in relation to the nest site substratum in Buffbacked Ibis *Theristicus caudatus* population in Patagonia. *Condor* 96: 994–1002.
- Narayanan, S. P. 2004. Status and ecology of the breeding wetland birds in the KTDC tourist complex, Kumarakom, Kerala. M.Sc. Thesis submitted to Mahatma Gandhi University, Kottayam, Kerala.
- Neelakantan, K.K. 1996. *Keralathile pakshikal*. Trichur: Kerala Sahithya Academy. (In: Malayalam.)
- Ravi, N. 2002. Flora of Kumarakom tourist complex. In: *Vembanad water bird count 2002*. Sreekumar, B. (Ed.) Kottayam: Department of Forests and Wildlife, Government of Kerala.
- Sreekumar, B. 2003. *Vembanad water bird count 2003*. Department of Forests and Wildlife, Government of Kerala, Kottayam.