

Short Communication

Observation on the Black-headed Ibis *Threskiornismelanocephalus*, Red-naped Ibis *Pseudibis papillosa* and Cattle Egret *Bubulcus ibis* at cattle carcass dumping site, Dhanera, Banaskantha District, Gujarat, India

Vaithianathan Kannan* and Sanjay Babu

<https://doi.org/10.56343/STET.116.016.001.001>
www.stetjournals.com

Article History

Received: 15.07.2022

Revised and Accepted: 16.08.2022

Published: 10.09.2022

Here we report the observations on Black-headed Ibis *Threskiornismelanocephalus*, Red-naped Ibis *Pseudibis papillosa* and Cattle Egret *Bubulcus ibis* at a cattle carcass-dumping site, Dhanera, Bhanaskantha district, Gujarat, India. Field surveys were carried out in Dhanera as part of ecological profiling study in December 2022. Dhanera is located at (24° 35 05 N 71° 57 53 E), spread over 866.26 km². Agricultural land with dry areas is the maximum area covered in Dhanera, providing habitat to many waterbird species in north Gujarat, composed of very low forest cover, vast arid land and highly dominated by agricultural and pastoral activities (Gajera and Dharaiya 2011). The present observations were recorded at three locations in Dhanera, [Location 1: [24° 563550 N -72° 013930 E], [Location 2: 24° 488010 N 71° 495892 E] and [Location 3: 24° 609781 N 71° 928826 E]. The climatic of the district are subtropical, having four different seasons; the summer season from May to July; autumn commences in August and ends in late October; the winter season approaches from November and lasts until January; the spring season occurs from February to April. District Banaskantha remains arid in summers with an intense hot environment and cold winters. This region annually receives approximately 200 mm of rainfall, of which about 75% occurs in the monsoon (late June to August) .

Vaithianathan Kannan

Gujarat Institute of Desert Ecology

Gujarat, India - 370001

email: kannan.vaithianathan@gmail.com

The birds were observed from a distance of approximately 10 m using a monocular and Camera (Canon Power shot SX70HS). The observations were ad libitum and recorded during a field work for bird study. Ibises falls under the order Pelecaniformes and the family Threskiornithidae of class Aves (IUCN 2022), which contains average-sized waders having a probing type downward curved beak (Hancock *et al.* 2001; IUCN 2022). Black-headed Ibis *Threskiornis melanocephalus*, Red-naped Ibis *Pseudibis papillosa* and Cattle Egret *Bubulcus ibis* are widely distributed species in northern and western India (Hancock *et al.* 2001; Ali and Ripley 2007; BirdLife International 2022). Black-headed Ibis is known to utilize the area in and around the shallow water habitat (Hancock *et al.* 2001). The preferred habitat for Black-headed Ibis include wetlands, lagoons, freshwater ponds, riverine lakes, paddies, swamps, marshlands, and salty marshes (Hancock *et al.* 2001; Chaudhury and Koli 2018). Cattle Egret largely feeds on insects and crustaceans in agricultural land and is generally associated with grazing animals for efficient food catch from the farms or grasslands. Feeding Cattle Egrets (*Bubulcus ibis*) has been adequately described and recorded, picking flies off live (Vincent 1947, Dawn 1959) and dead (Fogarty and Hetrick 1973) cattle and rotting fish (Reynolds 1965).

Black-headed Ibis and Red-naped Ibis always nest and roost in heronries (Balakrishnan and Thomas 2004; Laughlin *et al.* 2014; Chaudhury and Koli 2016; Chaudhary 2018). Black-headed Ibis usually prefers to feed in seasonal wetlands, as food availability is higher than in perennial wetlands (Sundar 2006; Chaudhury and Koli 2018). Studies on ecology and behaviour of Black-headed Ibis are minimal in India (Balakrishnan and Thomas 2004; Senma and Acharya 2009; Thapa and Saund 2012; Chaudhury and Koli 2018).

The diet of the white ibis primarily consists of crabs, crayfish, fish, snakes, frogs, and insects. In terms of frequency of occurrence, water bugs, water beetles and dragonfly larvae were commonly eaten by ibis. Earthworms and snails were taken from pastures. Marine prey such as crabs, isopods, snails, and mussels are consumed along the coast (del Hoyo *et al.* 1992).



Bird species feeding at the cattle carcass dump site

The Red-naped ibis (*Pseudibis papillosa*), also known as the Indian black ibis or black ibis, is a species found in the plains of the Indian Subcontinent. Unlike other ibises in India, it is not very dependent on water and is often found in dry fields away from water (Baker 1929). Chiefly a non-visual tactile forager that exhibits various types of feeding behaviour, viz. probing (shallow, profound, stepping, stationary and multiple), standing, walking, running, groping, pecking, standing fly catching, bill dragging and flipping. It is either solitary or in flocks of 5 to 7 birds, generally found in agriculture fields and grasslands during the rainy season. However, during the summer season, they feed in a wide variety of habitats, viz. dunes, wastewater bodies, garbage dumps, and carcasses (Rasmussen and Anderton 2005), and the muddy shore of wastewater ponds are the common feature throughout the year (Soni *et al.* 2010). It is generally described as omnivorous, feeding on carrion (Khan 2015), insects, frogs, other small vertebrates, and grain (Ali and Ripley 1978). It is

also found eating frogs hiding in crab holes (Johnson 2003). During droughts, they are known to feed on carrion and insect larvae, as well as a large number of crickets in the fields (Inglis 1903; Mason 1911).

During our observations, it was found that in fact the Black-headed Ibis, Red-naped Ibis and Cattle Egret feed on worms and grubs and flies rather than the carcass of the dead cattle dumped at the site, not the flesh of the rotting carcass of cattle as reported elsewhere. It appears for the easy food availability, the birds could have used the opportunity for their food requirements. An area's species largely depends upon a suitable habitat with all the resources required for survival and reproduction (Whittaker *et al.* 1973; Krausman 1999). The dead cows are in decomposed status and more than 20-25 days old; hence flies and bugs have developed and crawling on the carcass. Since the carcass was exposed, we could clearly see white maggots feasting on the corpse. At the site, the smell is gross. Thus, this observation clarifies that the birds are not eating cattle carcasses, rather on the maggots and flies in the rotting meat. This observation helps us understand the ecology and behaviour of these bird species in terms of their strategy towards easy food and opportunistic feeding. The most frequent foraging technique employed by these species was walking slowly (Meyerriecks, 1960) and picking up flies directly off the carcass, although some may have been captured just as they flew (Kushlan 1976).

Vertebrate scavengers belong to diverse group and are attracted towards carrion as it is high energy and nutrient rich resources. However, it is highly seasonal in availability and the bird species like Black-headed Ibis, Red-naped Ibis and Cattle Egret are mesoscavengers, the way animals utilise the carcass further develop our knowledge of ecosystem functioning linked with detritus ecosystem (Vandersteen *et al.* in press). This note describes and indicates what, how and why these birds feed on flies attracted to a dead cow.

Acknowledgements

We thank Dr V. Vijay Kumar, Director, Gujarat Institute of Desert Ecology (GUIDE), Bhuj, Dr Jayendra Lakhmapurkar and Dr Deepa Gavali,

Gujarat Ecology Society, Vadodara, for the opportunity to explore the Banaskantha district for taluka profiling (faunal component). First author want to thank Dr PA Azeez, Dr Ranjit Manakadan and Dr Asad R. Rahmani for sharing the information on these birds during the initial part of preparing the note. VK extends our thanks to Dr Mahediran of SACON for going through this manuscript.

References

- Ali, S. & S.D. Ripley (2007). *Handbook of Birds of India and Pakistan* (2nd ed.). Oxford University Press, New Delhi.
- Ali, S. & S.D. Ripley (1978). *Handbook of the Birds of India and Pakistan* (2nd ed.). New Delhi: Oxford University Press. pp. 112-113.
- Baker, E.C.S. (1929). *The Fauna of British India, including Ceylon and Burma*. Birds. Volume 6 (2nd ed.). London: Taylor and Francis. pp. 316-317.
- Balakrishnan, M. & S.K. Thomas (2004). Conserving the breeding habitat of the near threatened Oriental White ibis *Threskiornis melanocephalus*. *Current Science* 87(9): 1190-1192.
- BirdLife International (2022). *Threskiornis melanocephalus*. The IUCN Red List of Threatened Species 2012. e.T22697516A37830989. Date accessed: 27 December 2022. <https://doi.org/10.2305/IUCN.UK.20121.RLTS.T22697516A37830989.en>
- Chaudhary, S. (2018). Study on the distribution, ecology and ethology of Black-headed Ibis *Threskiornis melanocephalus* in southern Rajasthan. Ph.D. Thesis, Mohanlal Sukhadia University, Udaipur, Rajasthan, India.
- Chaudhury, S. & V.K. Koli (2016). Carcass feeding by Black-headed Ibis *Threskiornis melanocephalus*. *Indian Birds* 12: 26.
- Chaudhury, S. & V.K. Koli (2018). Population status, habitat preference, and nesting characteristics of Black-headed Ibis *Threskiornis melanocephalus* (Latham, 1790) in southern Rajasthan, India. *Journal of Asia-Pacific Biodiversity* 11(2): 223-228.
- Dawn, W. (1959). Cattle Egrets provoke cattle to move and pick flies off bulls. *Auk* 76: 97-98.
- del Hoyo, J., A. Elliot & D.A. Christie (1992). *Handbook of the Birds of the World - Volume 1. Ostrich to Ducks*. Barcelona: Lynx Edicions, pp. 244-295.
- Fogarty, M.J. & W.M. Hetrick (1973). Summer foods of Cattle Egrets in north central Florida. *Auk* 90: 268-280.
- Gajera, N. & N. Dharaiya (2011). Status, Occurrence, Distribution of some mammals of north Gujarat, India. *Proc. Zool. Soc.* 61(1): 46-53.
- Hancock, J.A., J.A. Kushlan & M.P. Kahl (2001). *Storks, Ibises and Spoonbills of the World*. Academic Press, London.
- Inglis, C.M. (1903). The birds of the Madhubani sub-division of the Darbhanga district, Tirhut, with notes on species noticed elsewhere in the district. Part 6. *J. Bombay Nat. Hist. Soc.* 15 (1): 70-77.
- IUCN (2022). The IUCN Red List of Threatened Species. Version 2016-3. Available at: www.iucnredlist.org. Accessed on 27 December 2022.
- James Vandersteen, J., Fust, C., Crowther, M., Smith, M., Viola, B., Barton, P. & Newsome, T. (In press). Carcass use by mesoscavengers drives seasonal shifts in Australian alpine scavenging dynamics. *Wildlife Research*
- Johnson, J. M. (2003). Black ibis *Pseudibis papillosa* feeding on frogs from crab holes. *J. Bombay Nat. Hist. Soc.* 100 (1): 111-112.
- Khan, A.N. (2015). *Indian Black Ibis Pseudibis papillosa feeding on carrion*. *J. Bombay Nat. Hist. Soc.* 112 (1): 28.

- Krausman, P.R. (1999). Some basic principles of habitat use. *Grazing Behavior of Livestock and Wildlife* 70: 85-90.
- Kushlan, J.A. (1976). Feeding behavior of North American herons. *Auk*93: 86-94.
- Laughlin, A.J., D.R. Sheldon, D.W. Winkler & C.M. Taylor (2014). Behavioral drivers of communal roosting in a songbird: a combined theoretical and empirical approach. *Behavioral Ecology* 25(4): 734-743.
- Mason, C.W. (1911). *Maxwell-Lefroy, H. (ed.). The food of birds in India. Imperial Department of Agriculture in India. pp. 280-282.*
- Meyerriecks, A.J . (1960). Comparative breeding behavior of four species of North American herons. *Publ. Nuttal Ornithol.*
<https://doi.org/10.2307/1439856>
- Rasmussen, P.C. & J.C. Anderton (2005). *Birds of South Asia. The Ripley Guide. Volume 2. Washington, D.C. and Barcelona: Smithsonian Institution and Lynx Edicions. pp. 65-66.*
- Reynolds, J. (1965). Feeding habits of Cattle Egrets. *Brit. Birds*58: 509.
- Senma, R.C. & C.A. Acharya (2009). Nest and nest contents of near threatened Black Headed Ibis *Thriskiornis melanocephalus*. *Asian Journal of Animal Science* 4(2): 146-148.
- Soni, K.C., A.N. Sharma & V.C. Soni (2010). Foraging behaviour and feeding success of the Black Ibis (*Pseudibis papillosa*) inhabiting rural and urban area of Churu city, Rajasthan, India. *Recent Research in Science and Technology* 2010, 2(5): 63-72.
<https://doi.org/10.1063/1.3431356>
- Sundar, K.G. (2006). Flock size, density and habitat selection of four large waterbirds species in an agricultural landscape in Uttar Pradesh, India: Implications for management. *Waterbirds* 29(3): 365-374.
- Thapa, J.B. & T.B. Saund (2012). Water quality parameters and bird diversity in Jagdishpur Reservoir, Nepal. *Nepal Journal of Science and Technology* 13(1): 143-155.
- Vincent, J. (1947). Habits of Bubulcus ibis, the Cattle Egret, in Natal. *Ibis*, 89: 489-491. - Eugene W. Schupp, 17707-A N. 51st. St., Tampa, Florida 33617.
<https://doi.org/10.1111/j.1474-919X.1947.tb04365.x>
- Whittaker, R.H., S.A. Levin & R.B. Root (1973). Niche, habitat, and ecotope. *The American Naturalist* 107(955): 321-338.