Reporting of Bar Headed Goose (*Anser indicus*, Latham 1790) from pitlakes of Eastern Coal Fields, India

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(Received 4 November, 2023; Accepted 30 December, 2023)

**ABSTRACT**

Here we report occurrence of the species *Anser indicus* from a freshwater pitlake of Eastern Coal Fields, India. The very first pictures (in recent times) of 62+ individuals are presented with a note on conservation measures of its new habitat and scope of future research on *Anser indicus* in this region of eastern part of India.

**Key words**: Bar headed goose, Pitlakes, Eastern coal fields

**Introduction**

Aquatic ecosystems such as lakes, rivers and wetlands are an imperative features of this planet however long-term research have demonstrated continual decline in aquatic species and habitat loss across the world (Gopal et al., 1982; Mitsch and Gosselink 2000; Keddy 2000; Birdlife International, 2001; Delany and Scott 2006; Kirby et al., 2008; DeGroot et al., 2006; Robinson and Hughes 2006; Palit and Mukherjee 2007, 2010; Maltby and Barker 2009; Hassall and Anderson 2015; Devika et al., 2022; MoEF & CC 2018, 2019, 2020, 2023).

Open Cast surface mining process creates a unique aquatic ecosystem – Pitlakes which are not only ecologically threatened and critical aquatic landscapes but also a source of potential biological resources for the future (Palit, 2016). Latest inventory of pitlakes (Gupta, 2018) in Eastern Coal Fields region, INDIA documented a total of 62 numbers of pitlakes which were identified from 11 coal mining areas distributed over West Bengal (48, 77.4%) and Jharkhand 14 (22.6%) of Eastern Coal Field Limited. According to Ali and Ripley (1983), 273 species of birds in India can be considered as waterfowls, the birds that depend on aquatic ecosystems. Water birds of eastern part of India are well documented (Roy et al., 2011; Roy et al., 2012; Mukherjee and Gupta, 2012; Chaterjee et al., 2017) though there is limited research on dry land birds especially from eastern coal fields region and there is scope for future research on exploring occurrences, new sighting records and range extensions in this part of Southern Bengal as reported by Gupta et al., (2013), (2014).

Bar headed goose (*Anser indicus*) is a widespread winter visitor species (Inskipp et al., 2011) in India. As per IUCN (2018) this species is categorized as least concern and is native (extant, breeding) to Afghanistan; Kyrgyzstan; Mongolia; Russian Federa-
tion (Central Asian Russia), Tajikistan and only extant to the following countries: Bhutan; China; India; Kazakhstan; Nepal; Pakistan; Russian Federation (Eastern Asian Russia); Thailand; Uzbekistan; Viet Nam respectively. However it is extant (non breeding) in Bangladesh and Myanmar. This is the only genus of Anser which is indigenous to the Indian region. This pale grey bird is easily identified by the black bars on its head. It has yellow legs and black tipped yellow bill. Adult has white head with black banding across crown, and white line down grey neck. However the juvenile has white face and dark grey crown and hind neck. Their plumage is paler steel grey with more uniform pale grey forewing compared with Greylag. Anser indicus weighs between 2 and 3 kg (4.5 and 6.5 lbs) with a wingspan between 140 and 160 cm (55 and 62 inch), and are between 68 and 78 cm (27 and 30 inch) in length (Cucinello, 2013).

Habitat of Anser indicus chiefly includes freshwater Wetlands (inland), Rocky areas (eg. inland cliffs, mountain peaks), Artificial/Aquatic and Marine areas. Its terrestrial biome includes savanna or grassland. This species breeds on swampy ground by high altitude lakes, winters near large rivers, lakes and reservoirs (Over 8 ha); also coastal islands in the Sunderbans, Bangladesh. Anser indicus feeds mainly at night in cultivation or grassland on river bank. This species generally feed on the highland grasses surrounding their lakes and streams where they nest. During other times of the year they can be found eating on agricultural crops such as corn, wheat, barley, and rice. This is a social species migrating in family groups or large colonies and like most geese, bar-headed geese fly in “V”-shaped formations. Notable works on this species include Gole, (1982), Bishop et al., (1997), Bhattacharyya et al., (2008), Wetlands International, 2010; Bird Life International, (2011).

Methodology

At 9.20 hr on 6th March 2019, we visited a freshwater pitlake (PLR029, N23.69518°, E87.283187°, Plate 1) locally called “Sarovar Udyan” on Jhanjra – Pandeswar road for our ongoing pitlake monitoring programme (Postmonsoon season), regular waterbird surveys and bird counts (9.30 am – 10.31 am). The weather was clear and the air temperature was 27.4 °C.

At 9.30 we watched a group of Bar headed geese (Anser indicus) with 62+ individuals (Plate 2, 3) in the eastern catchment of the lake. We first examined these birds from a distance of 200 feet. The birds were observed to swim away (north direction) from lake catchment to more central part of the lake due to human presence. We were using Olympus binoculars (10X21 RCI; 8X40DPSII) and photographed a few shots using NIKON D5300. Birds were identified in field following “Pocket Guide to the Birds of the Indian Subcontinent” (Grimmett et al., 2011). Note on habit and habitat were derived from Ali and Ripley, 1982; Kumar et al. 2005 and IUCN Redlist (Birdlife International, 2018). We also measured factors of water samples like Water temperature, pH, conductivity, total dissolved solids (TDS) and Salinity on the spot by Eutech PCSTestr 35 Multi parameter and Dissolved Oxygen was measured using Lutron DO 5509 meter. Air temperature was measured using a glass thermometer.

Results and Discussion

Occurrence of Bar headed goose in this pitlake has been observed for the first time by the present authors since two wintering periods of study. This is also informed that the presence of these birds have been observed in this lake since two weeks (<200 individuals). It is clear that this group of Anser indicus were utilizing this pitlake as a stopover site during their migration. This species is earlier recorded from the nearby reservoirs (Bakreswar Dam, 23.831477,87.3923348). The PLR029 or the studied pitlakes is situated in Pandeswar block of Durgapur subdivision which is also one of the most biologically diverse aquatic ecosystem in this region. This is included for long term monitoring by the

Plate 1 View of Pitlake “Sarovar Udyan” (PLR029) from observation point on 06.03.2019
present authors since 2016. The limnological characteristics measured on the same day includes the following Water temperature 24.3 °C – 24.6 °C, pH- 7.4, Conductivity – 920 µS, TDS – 652 ppm, Salinity – 448 ppm and dissolved oxygen – 9.3 mg/l. As per NLCP (2008), Lake ecosystem should maintain pH between 6.5 to 8.5 and Dissolved Oxygen content 4 mg/l or more for propagation of Wild life and Fisheries. Some of the ecosystem services as provided by this pitlake include fishing activity, water supply, long term research and monitoring etc. Eastern Coal Fields has proper management plan regarding its water resource.

The positive impact of *Anser indicus* is on Ecotourism. As reported by Bhattacharyya *et al.* (2008) that these species benefit the society because of ecotourism possibilities in wilderness areas such as “The East Calcutta Wetlands” in West Bengal. Though *Anser indicus* has range in this region this is the first time record of this species from pitlake ecosystem which urges further research covering the population ecology studies and habitat management of Bar headed goose (*Anser indicus*) in lakes of coal field areas which is in line with India’s National Action Plan for Conservation of Migratory Birds and their Habitats along Central Asian Flyway (2018-2023) as proposed by MoEF & CC (2018) for conservation of this high altitudinal migratory water bird species in CAF(Central Asian Flyway).

**Acknowledgements**

This study was supported by INSPIRE Division, Department of Science and Technology, Govt. of India. The financial assistance of DST through the research project (Sanction NO – DST/INSPIRE Faculty Award/IFA 16 – LSPA45 dated 27.08.2018, SG) is acknowledged. Authors are grateful to Dr Goldin Quadros, Principal Scientist, Wetland Ecology Division, SACON and Dr Amit Dubey, Head, Wetlands, WWF-India for their encouragement. Authors are grateful to Late Professor Ambarish Mukherjee, Department of Botany, Burdwan University for his support, love and motivation.

**Conflict of Interest:** None

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