

First record of *Marecastrepera* (Linnaeus, 1758) from an abandoned coal mined lake of Eastern Coal Fields, India

Santanu Gupta^{1*} and Aparajita Mukherjee²

¹World Wide Fund for Nature India, 172-B, Lodi Estate, New Delhi 110 003, India

²Salim Ali Centre For Ornithology and Natural History, Anaikatty (Post), Coimbatore 641 108, Tamil Nadu, India

(Received 8 November, 2023; Accepted 29 December, 2023)

ABSTRACT

Here we report occurrence of the migratory species *Marecastrepera* (Linnaeus, 1758) commonly known as Gadwall from a freshwater pitlake of Eastern Coal Fields, India. The very first pictures (in recent times) are presented with a note on potential threat to its new habitat and possibilities of future research on this species in abandoned coal mined lakes.

Key words: Coalmine lakes, Migratory birds, Wetland conservation, Central Asian Flyway, SSP

Introduction

Pitlakes - An unique aquatic ecosystem are born from open cast surface mining process. They are strongly wind sheltered, have small catchment and biologically diverse (Palit, 2016). Recent studies have confirmed the presence of suitable pitlakes for waterfowls in eastern coal fields region, India (Gupta, 2018; Gupta *et al.*, 2022).

Gadwall (*Marecastrepera*) is a medium sized dabbling duck and winter migrant to Indian subcontinent (Kumar *et al.*, 2005). The adult male shows a gray plumage in the breeding season with distinct vermiculation on the scapular and back feathers. *Marecastrepera* has a brownish head and the upper and lower tail covers are black. The adult male tertials are long, and acutely pointed colored silver-gray. The adult female tertials are shorter and more bluntly pointed, more brownish on the back and buffy tan on the breast (Cone, 2002; Clements, 2007).

This species is congregatory (and dispersive)

which prefers habitat like marshes, tanks and small lakes with grasslands (Bird Life International, 2016). *Marecastrepera* are more abundant on small prairie marshes than in temporary water areas, deep marshes, and open water marshes. This species generally avoid wetlands which are bordered by woodlands or thick vegetation. They prefer freshwaters with abundant leafy aquatic vegetation. This is one of the most common and locally abundant migratory wildfowl (Ali, 2002) but less common in peninsular India. *Marecastrepera* breeds in subarctic northern Europe and Asia. This species flocks in association with other ducks on suitable waters. This species is largely vegetarian and a surface feeder as Mallard (*A. platyrynchous*).

Materials and Methods

On 7th March 2019, We visited a freshwater pitlake (PLR059, N23.604255°, E87.070547°) on Damalia road in Satgram area of Eastern Coal Fields Limited.

The lake was approached during our ongoing pitlake monitoring programme (postmonsoon season), regular water bird surveys and bird counts. The weather was clear, sunny and the air temperature was 32°C.

At 1.30 hr we observed a group of (*Marecastrepera*) with 118+ individuals (Plate 1 - 2) from the southern catchment of the lake. We first examined these birds from a distance of 300+ feet. These dabbling ducks were swimming and searching their food near the central part of the lake water. Binocular count detected presence of 78 male and 40 female individuals respectively. We were using Olympus binoculars (10X21 RCII; 8X40DPSII) and photographed a few shots using NIKON D5300 with 70- 300 mm lens. We recorded coordinates of sighting point using Garmin GPS Etrex 30. Birds were identified in field following "Pocket Guide to the Birds of the Indian Subcontinent" (Grimmett *et al.*, 2011). Habit and habitat were assessed after Ali and Ripley, (1982); Kumar *et al.*, (2005) and IUCN Redlist (Birdlife International, 2018). Air temperature was measured using a glass thermometer.

Results and Discussion

Mukherjee and Gupta (2012) reported this species from a freshwater wetland in the region. Occurrence of *Marecastrepera* in this 6.8 ha lake has been observed for the first time by the present authors. There was no reporting of this species from 'abandoned coal mining' lake habitat in modern times which fall under Central Asian Flyway. It is also informed that the presence of these birds have been observed in this lake since 2-3 weeks only (<200 individuals). It is apparent that this group of

Marecastrepera utilized this pitlake as a stopover site during their migration. The PLR059 or the studied lake is situated at 84msl, fall under Asansol subdivision of Paschim Bardhaman district in West Bengal. This lake is also included under a "cluster of pitlakes (n = 5)" which have been studied by the present authors since 2016 for designating a wetland complex of international significance. Altogether these lakes constituted the ecologically diverse aquatic ecosystem in this region. A seasonal, rain fed river named Damodar is flowing from (west to east direction) through the southern catchment of this lake cluster (approx 500 feet). Such geographic distribution of the studied lake is a key factor which supports excellent habitat quality and species diversity as well as suitable waters for *Marecastrepera* in current scenario.

Marecastrepera prefer freshwater marshes (BirdLife International, 2016). The characteristic aquatic and emergent vegetation of the studied lake is providing quality habitat for this exclusively migrant species which needs more in depth assessment as per MoEF & CC (2019) visionary perspective plan (2020-2030) for conservation of avian diversity and India's National Action Plan for Conservation of Migratory Birds and their Habitats along Central Asian Flyway MoEF & CC (2018). Point to note that is the adjacent landscape of this lake is undergoing rigorous and rapid coal-mining / excavation activities that need attention under MoEF & CC (2020) Guidelines for implementing Wetlands (Conservation and Management Rule, 2017). New open cast mining pits are forming huge overburden dumps adjacent to the studied lake(s). This is threatening the water bird habitat which demands more scientific habitat management plan at earliest. Subse-



Plate 1. View of congregatory *Marecastrepera* in the studied pitlake



Plate 2. View of adult male and female *Marecastrepera* in the studied pitlake

quently long term monitoring will explore more scientific insights of *Marecastrepera* habitat use pattern and population ecology in pitlakes of coal - mining areas of eastern coalfields region, INDIA. Robinson and Hughes (2008) International Single Species Action Plan for the Conservation of the Ferruginous Duck *Aythya nyroca* may be adopted for conservation of *Marecastrepera* in eastern coal fields region.

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

There is none.

References

- Ali, S. and Ripley, S.D. 1983. *Handbook of the Birds of India and Pakistan* (compact edition). Oxford University Press and BNHS, Mumbai. Ali, S. and SD Ripley (1995). *The Pictorial Guide to the Birds of Indian Sub-continent*. Oxford University Press and BNHS, Mumbai.
- Bird Life International, 2016. *Marecastrepera*. The IUCN Red List of Threatened Species 2016: e.T22680149A86020572. <http://dx.doi.org/10.2305/IUCN.UK.20163.RLTS.T22680149A86020572.en>. Downloaded on 05 April 2019.
- Clements, James, 2007. *The Clements Checklist of the Birds of the World* (http://www.cornellpress.cornell.edu/cup_detail.taf?ti_id=4566). Ithaca: Cornell University Press.
- Cone, M. 2002. “*Anas strepera*” (On-line), Animal Diversity Web. Accessed April 05, 2019 at https://animaldiversity.org/accounts/Anas_strepera/
- Grimmett, R., Inskipp, C. and Inskipp, T. 2011. *Birds of the Indian Subcontinent*, Helm Field Guides (Oxford University Press: UK).
- Gupta, S., Quadros G., Mukherjee, A., Das, S. and Naik, A. 2022. Ecological exploration and Socioeconomic valuation of Pitlakes in Eastern Coalfields, India: Implications for Conservation and Sustainable use. Final Technical Report submitted to INSPIRE Division, Department of Science and Technology, Government of India, Page 1 – 715.
- Gupta, S. 2018. Ecological exploration and Socioeconomic valuation of Pitlakes in Eastern Coalfields, India: Implications for Conservation and Sustainable use. Annual Progress Report. Submitted to INSPIRE Division, Department of Science and Technology, Government of India.
- Kumar, J.P., Sati, Tak, P.C. and Alfred, J.R.B. 2005. *Handbook on Indian Wetland Birds and their Conservation*: i-xxvi; 1–468 (Published by the Director, Zool. Survey. India).
- MoEF & CC, 2020. Guidelines for implementing Wetlands (Conservation and Management Rule 2017).
- MoEF & CC, 2018. India's National Action Plan for Conservation of Migratory Birds and their Habitats along Central Asian Flyway (2018-2023).
- MoEFCC, 2019. Visionary perspective plan (2020-2030) for conservation of avian diversity, their ecosystems, habitats & landscapes in the country: Second Draft Of VPP (14.2019)
- Mukherjee, A. and Gupta, S. 2012. Assessment of avifaunal diversity of santragachi wetland, West Bengal, India. *Ecology, Environment and Conservation*. 18(2): 357-362.
- Palit, D., Roychowdhury, S., Mukherjee, A., Garai, B., Gupta, S., Kar, D. and Kar, P. 2016. Determinants of Pitlake Usage in Raniganj Coalfield Region, West Bengal: Implications for Sustainable Use. *International Journal of Innovative Research in Engineering & Management*. 3(2): 72- 80.
- Robinson, J. A. and Hughes, B. 2006. International Single Species Action Plan for the Conservation of the Ferruginous Duck *Aythya nyroca*. CMS Technical Series No. 12 & AEW Technical Series No. 7. Bonn, Germany.