



New record of Pallas's gull [*Ichthyiaetus ichthyiaetus* (Pallas, 1773)] in the Brahmani river, Bonai forest division, Odisha, India

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Date of receipt: 06.05.2026

Date of acceptance: 03.06.2026

ABSTRACT

The Pallas's gull, *Ichthyiaetus ichthyiaetus* (Pallas, 1773) or the Great black-headed gull, happens to be the world's largest black-headed gull and the third largest species of gull in the world, followed by the great black-backed gull. It is the most spectacular fish-eating predator among the world's gulls. A survey was conducted in and around Brahmani river at Bonai forest division, Odisha. The water level of Brahmani was low during the winter season. However, for the first time the authors sighted these migratory bird species in the Brahmani basin under Bonai forest division. The present data on the current status and distribution of the Pallas's gull in the Brahmani river stretch has been documented. Previously the Pallas's gull has been reported from different parts of Odisha. But in recent times, due to lack of food and impact of climate changes, these birds might have changed their distribution pattern. These birds were found for the first time in Bonai under the present survey. Authors herewith suggest that a long-term monitoring is required to determine and establish the exact status, distribution of these species at Bonai, Odisha.

Keywords: Bonai forest division, Brahmani river, migration, Odisha, Pallas's gull

INTRODUCTION

India is recognized as one of the world's megadiverse countries, occupying only about 2.4% of the global land area while supporting approximately 7–8% of the world's recorded biodiversity. The country is home to more than 45,000 plant species and 91,000 animal species (Swain and Samantarai, 2024). Among these, birds constitute an important component of biodiversity and play a vital role in maintaining ecosystem functions. They contribute significantly to pollination, seed dispersal, pest control, and nutrient cycling, thereby supporting ecological

balance and providing substantial benefits to both natural ecosystems and human well-being (Nazneen et al., 2001). Owing to their sensitivity to environmental changes, birds are also considered effective indicators of ecosystem health and habitat quality.

India supports a rich avifaunal diversity, with approximately 1,340 bird species recorded from the country, representing nearly 13% of the world's bird species (Ali & Ripley, 1987; Grimmett et al., 2012). Of these, around 310 species are associated with wetland ecosystems and depend on these habitats for

feeding, breeding, nesting, or migration (Kumar et al., 2005). Wetlands are among the most productive ecosystems and provide critical habitat for a wide range of resident and migratory birds. However, the increasing anthropogenic pressures, including habitat degradation, pollution, encroachment, and unsustainable resource use, have severely affected wetland ecosystems across India (Prasad et al., 2002). Such disturbances can alter habitat quality and availability, thereby influencing the composition, abundance, and distribution of bird communities (Reginald et al., 2007).

The Pallas's gull *Ichthyaeetus ichthyaeetus* (Pallas, 1773) is one of the largest and most spectacular fish-eating predators among the world's gulls. The breeding area of the species is located entirely in the Palearctic, inside the continent. By the beginning of the 21st century, the range of the Pallas's gull extended from the Black and Azov Seas in the west to the Great Lakes in Mongolia and Uryugnor in China in the east. Non-breeding individuals were mainly found in the breeding area of the species and to the south (including south of the southern border of the Palearctic region).

The rare migratory Pallas's gull belongs to the family Laridae. It is classified as Least Concern under the IUCN Red List. A frequent seasonal yearly journey taken by birds to meet the challenges of food availability, weather or habitat has been known as migration (Berthold et al., 2001). In the last decade, the importance of understanding the pattern and timing of migration for the conservation of migratory bird species has greatly increased. (Boere and Stroud, 2006; Mundkur, 2007). There are around 1377 bird species recorded in the Indian subcontinent, 370 migratory bird species that visit in the winter (Birdlife International 2016). Among the water birds ducks and geese only represent about 85% of the migrant populations to the Indian subcontinent (Kumar et al., 2003, 2005). Only 2.8% of work has been conducted on bird migration in India (Narwade et al., 2012). The present study documents the first sightings and record of Pallas's gull [*Ichthyaeetus ichthyaeetus* Pallas, 1773]] at Bonai, Odisha.

It is a large piscivorous gull and one of five species of gulls that are included in the family Laridae. This species breeds in colonies in marshes and islands from southern Russia to Mongolia. It is migratory; wintering in the eastern Mediterranean, Arabia and India. According to Olsen and Larsson (2004), Pallas's gull is a large migratory gull widely distributed across Europe and Asia, with wintering populations occurring in parts of the Indian subcontinent. The species is generally associated with large rivers, reservoirs, lakes, wetlands, estuaries, and coastal habitats. Breeding adult has a black head with a thin incomplete crescent around the eye and a red-and-black-tipped bill. Non-breeding adults retain a partial "hood" of patchy black on the back of the head. Young birds also have this dark patch, though it is much smaller in size (<https://ebird.org/species/gbhgul2>). These birds are predatory in nature, feeding on fish, crustaceans, insects and small mammals.

Pallas's gull is one of the species covered under the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA). However, in parts of Odisha, there have been sighting of these birds including monitoring and documentation of the species (Changder et al., 2015). Against this background, the authors tried their best to document the current status and distribution pattern of Pallas's gull in Bonai.

MATERIALS AND METHODS

Study area

The Bonai forest division is located between 21° 39'–22° 8' N latitude and 84° 30'–85° 23' E longitude in the northwestern part of Odisha, eastern India. The division covers an area of approximately 2934.21 km² within Sundergarh district (Fig. 1). It is bounded to the north by Jharkhand state and the Rourkela forest division, to the east by Keonjhar forest division and Deogarh forest division, and to the west and south by Bamra forest division and Deogarh forest division. The division falls under the Rourkela forest circle of Sundergarh district. The Bonai forest division is administratively divided into seven forest ranges: Bonai, Kuliposh, Tamra, Jarda, Sole, Barsuan, and Koira. Ecologically,

the division is part of the Chotanagpur Plateau within the Deccan Peninsular Biogeographic Zone (Rodgers and Panwar, 1988). The region's terrain, climate, and vegetation types provide suitable habitats for a wide variety of flora and fauna, including a rich diversity of avian species.

The mean daily temperatures of winter range from 5°C to 20°C and that of summers range from 30°C to 45°C. There are three distinct seasons that is Summer; March to June, Rainy; July to October and winter; November to February. The rainfall of the division and the nearby areas varies from 1000 mm to 1800mm. According to Champion and Seth (1968), the forest under Bonai forest

division belong to following types: North Indian tropical moist deciduous forest, Northern tropical dry deciduous forest, and northern tropical semi-evergreen forests. In sal forests (*Shorea robusta*), the top or canopy storey is typically dominated by sal trees, and the common associate species in the upper storey include a mix of other tall, emergent, and semi-emergent trees. Some of the frequent associates are: *Terminalia alata*, *Madhuca indica*, *Diospyros melanoxylon*, *Lagerstroemia parviflora*, *Pterocarpus marsupium*, *Dalbergia paniculata*, *Anogeissus latifolia*, *Syzygium cumini*, *Adina cordifolia*, *Mitragyna parviflora*, *Terminalia bellirica* etc.

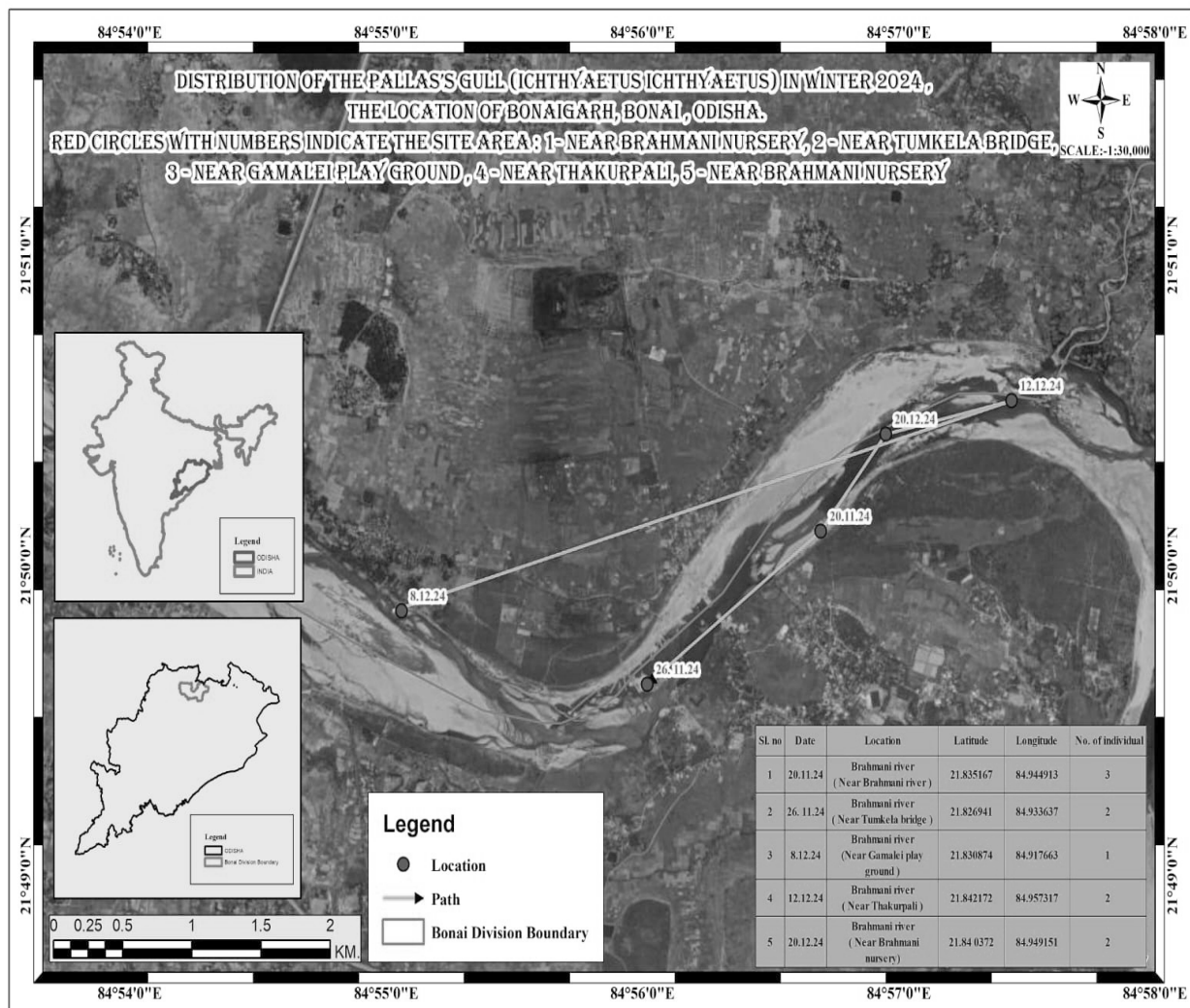


Fig. 1. Distribution of Pallas's gulls in 5 different sites at Brahmani river, Bonai, Odisha, India

Field survey and data collection

The authors made routine field trips around Brahmani river for structured data collection from 20th November to 20th December 2024. The authors came across the particular bird during their survey, photographed and later identified it as Pallas's gull with the help of standard literature (Ali, 1996; Neelakantan et. al., 1993) and expert consultation. These particular birds were never sighted so far in this region as per the data collected from the localities. Hence, it was decided to record the sightings with photographs to analyze its distribution pattern. Direct observation was made using a binocular and photographed by a camera (NIKON-COOLPIX P1000) the observation and data were collected per day for two months from 01.11. 2024 to 31.12. 2024 (morning 06.00 -10.00 and evening 4.00-6.30 PM). Most of the observations were carried out from a distance of 50 - 600 m. Care was taken not to disturb the activity of these birds in the study area. For secondary inputs, the authors recorded the location of the places and also the number of individual species found to interpret the density pattern of the species and also the ratio of young and adult.

RESULTS AND DISCUSSION

Bonai forest division is recognized as a biodiversity-rich landscape; however, its avifaunal diversity remains inadequately documented (Singh et al., 2007). Previous studies have largely focused on noteworthy species records rather than comprehensive assessments of bird diversity. Mishra et al. (2008) and Nath et al. (2011) reported the first occurrence of the Cinereous vulture (*Aegypius monachus*) from the region, highlighting the ecological significance of Bonai forest division as an important habitat for both resident and migratory bird species.

The present study documents the first wintering record of the Pallas's gull (*Ichthyaelus ichthyaelus*) from Bonai forest division, Odisha. During routine monitoring surveys, individuals of the species were recorded from multiple locations along the Brahmani river system within the division, enabling a preliminary assessment of its

local distribution (Fig. 2). Although Pallas's gull has been reported from several parts of Odisha, including a recent sighting at Mangalajodi Wetland, Khordha, reported by Bharatendra Singh Parihar on 27 December 2024. As such no previous records of Pallas's gull sighting are available from the Brahmani River system of Bonai forest division, Sundargarh district, Odisha. Pallas's gull is a fully migratory species, although immature individuals may occasionally remain within wintering grounds throughout the year. The absence of earlier records from this region and the recent observations suggest a possible shift or expansion in the wintering distribution of the species. Such changes may be influenced by factors including habitat alteration, anthropogenic disturbances, food availability, and changing climatic conditions. Continued monitoring of riverine habitats and wetland ecosystems in the region is therefore essential to better understand the distribution, ecology and conservation requirements of this species.

The study further indicates that rivers are not the only lotic ecosystems facilitating the spread of the species toward eastern Odisha. The increasing number of fish ponds and aquaculture areas around Bonai also appear to provide suitable feeding habitats for gulls. In the context of climate warming, fish-rich ponds, wetlands, and associated water bodies along the Brahmani River may now be acting as important ecological drivers influencing the modern distribution and expansion of the Pallas's gull beyond its historical range. The analysis highlights the growing ecological importance of the Brahmani river and associated wetlands in supporting the present distribution of the Pallas's gull in Bonai. The species was observed utilizing multiple rivers, lakes, reservoirs, and water bodies within the landscape. It is expected that additional records may emerge in the near future if birdwatchers, researchers, and forest officials continue regular monitoring and documentation of migratory water birds across Odisha. Although the current findings are preliminary, they provide valuable baseline information regarding the status and distribution of Pallas's gull in the region. Future studies focusing on seasonal movement, habitat preference, and population trends will be

essential for understanding the species' response to environmental changes. Despite the relatively stable global population of the species, continuous monitoring remains important for understanding its changing wintering distribution and potential

breeding ecology in eastern India. Regular surveys of major rivers, wetlands, lakes, reservoirs, and fish ponds throughout the year are necessary to better understand migratory movement patterns and habitat use by wintering water birds.



Fig. 2. The Pallas's gull sited in specific location of Brahmani river basin - A. Brahmani nursery; B. Tumkela bridge; C. Gamalei playground; D. Thakurpali; E. Brahmani nursery

The development and maintenance of suitable wetland habitats may help support the expanding wintering range of migratory gulls while also reducing potential ecological conflicts among different migratory bird species in the future. At present, limited information is available regarding the detailed distribution pattern of the Pallas's gull in Odisha. Therefore, systematic documentation of

sightings and habitat associations will be crucial for future conservation planning and wetland management. The major outcomes of this study include preliminary estimates of the current status and distribution of Pallas's gull along the Brahmani river system and adjacent wetlands within Bonai forest division (Table 1).

Table 1. Status and abundance of Pallas's gulls (*Ichthyaeetus ichthyaeetus*) in Brahmani river (Nov – Dec 2024)

Sl. No.	Date	Location	GPS Coordinates	No. of individual
1	20.11.2024	Brahmani river (near Brahmani nursery)	21.835167 N 84.944913 E	3
2	26.11.2024	Brahmani river (near Tumkela bridge)	21.826941 N 84.933637 E	2
3	08.12.2024	Brahmani river (near Gamalei playground)	21.830874 N 84.917663 E	1
4	12.12.2024	Brahmani river (near Thakurpali)	21.842172 N 84.957317 E	2
5	20.12.2024	Brahmani river (near Brahmani nursery)	21.840372 N 84.949151 E	2

CONCLUSION

The study is the first report of the distribution of gull species at Bonai, Odisha. The conservation of river ecosystems, feeding habitats, and breeding sites, coupled with continued monitoring, is essential for the long-term survival and management of aquatic bird populations. Routine surveys helped in finding out the present status and occurrence. This study is very significant in describing the current status of gulls and their present habitat that have not been explored much and addressed properly so far. This study will benefit the wild fragmented migratory aquatic bird population and have a significant conservation value. Additional scientific interdisciplinary research is essential for saving both wetland habitats and the aquatic bird diversity that rely on them in future. These findings also put hope in the field of conservation, showing the potential and possibility of habitat expansion to support thrive the cross country migratory avian species.

ACKNOWLEDGEMENT

We express our sincere gratitude to the Divisional Forest Officer, Bonai forest division, for valuable guidance and support throughout the study. We are also thankful to the Forest Range Officers of Bonai, Kuliposh, and Barsuan ranges, as well as the Foresters, Forest Guards, and all field staff of Bonai forest division for their assistance during field surveys, data collection, and valuable support. Their cooperation greatly contributed to the successful completion of this research work.

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