



Summer congregation of oriental pratincole (*Glariola maldivarum*) in Tungabhadra dam back waters, Hagaribommanahalli Taluk, Karnataka, India

Manohara G¹, BB Hosetti²

¹ Department of Zoology, Veerashaiva College, Ballari, Karnataka, India

² Department of Applied Zoology, Kuvempu University, Shankaraghatta, Shivamogga, Karnataka, India

Abstract

The study was conducted to record migratory birds visiting to different water bodies located in Ballari district, Karnataka during 2014 to 2019. Among the major group of migratory birds, the Oriental pratincole (*Glariola maldivarum*) found visiting T.B Dam backwater areas like Bannigola, Ankasamudra, Nakaral Tanda etc, during summer (March to May). Earlier records revealed that this bird has not been sighted in Indian subcontinent (Salim Ali 1941) but Grimmet *et al.*, (2011, Birds of the Indian sub-continent) recorded it as a rare visitor to Indian subcontinent. However, it might have become resident migratory bird of Indian sub-continent but has not been recorded in the study area earlier. Since 2014 onwards visitation of Oriental pratincole to this study area is regularly observed during summer and also found breeding (lays 2-3 eggs) on the open grounds of open areas of T.B. Dam backwaters, Further, the bird was not sighted after May month onwards in any of the study area.

Keywords: oriental pratincole, migration, breeding, t.b. dam backwaters

Introduction

The *Glariola maldivarum* (L. Glarea-gravel, maldivarum-Maldive islands) (Forster, 1795) is a wader commonly known as Grass hopper bird or Swallow-plover, Swarmer, Eastern collared or large Indian pratincole, Storm bird or little storm bird (Dementive and Gladkov, 1951; Higgins and Davies, 1996)^[14, 21] belongs to the order - Charadriiformes and family- Glareolidae. IUCN listed it in least concern (LC) category due to its abundancy. The Oriental pratincole was considered as a sub species of the common pratincole (*Glareola pratincole*), however, it is now recognized as a monotype species (Bamford *et al.*, 2008)^[6]. The Oriental pratincole is a medium sized (23-24cm long and weighs approximately 75g), tern-like shore bird with short legs, short bill, pointed wings and a forked tail. The sexes are alike with seasonal variation. The breeding plumage of adults is dark olive brown back and upper rump, while lower rump, upper tail coverts and tail with a narrow black sub terminal band across the tail. During non-breeding season the back and head are brown and wings are brown with black flight feathers. The belly is white, under wings are chest nut. The ear coverts are pale creamy buff and are separated from the chin and throat and run down from below the eye to encircle the throat and separate from the upper breast in the form of a black line. The bill is black with a red gape and base of lower mandible, the eyes are dark brown. The species occurs at numerous and widespread sites in northern Australia (Blakers *et al.*, 1984 and Barrett *et al.*, 2003)^[9, 8]. In the East Asian-Australian flyway, the Oriental pratincole is recorded as passage migrant. In central and north-eastern China, Hong Kong, Japan, Indo-china, Philippines, Malay Peninsula and Indonesia and intermittently occurred in Micronesia (de Schauensee, 1984; Chalmers, 1986; Pratt *et al.*, 1987; Dickinson *et al.*, 1991; Mackinnon and Phillips 1993;

McClellan 1996; Wells 1999; Grimmet *et al.* (1999b)^[13, 15, 26, 27, 40, 19, 20] recorded moving at low elevations through Nepal.

Oriental pratincole usually inhabits open areas such as plains, meadows, airstrips, playing fields and pastures around wetlands such as marshes, rivers, lakes, saltpans, fish ponds, rice fields, artificial reservoirs (Dement'ev and Gladkov, 1951; Ali and Ripley, 1969; de Schauensee, 1984, Mackinnon and Phillipps, 1993; Maclean, 1996 and Ornithology Society, Japan, 2000)^[14, 2, 13, 26, 27, 29]. During day time they roost near water at the edges of terrestrial wetlands (Bockel, 1990; Jaensch, 2004)^[23] and bare areas such as clay pans or areas with low vegetation such as saltmarsh or air fields (Van Tests *et al.*, 1969; Gill, 1970; Jaensch, 1985; Garnett, 1986; Waugh, 1998)^[38, 17, 22, 16].

The Oriental pratincole was found to be breeding in Southern, South-eastern and eastern Asia, from North parts of the Indian sub-continent, east through Bangladesh, Burma, Thailand and Vietnam to southern, eastern and Northern China, Mongolia and adjacent areas of south-eastern Siberia. It also breeds at the peripheral regions of peninsula and various Islands including Srilanka, the Maldives, the Philippines and Southern Japan (Dickinson *et al.*, 1991; Wells, 1999; Cross land 2003; Round 2006)^[15, 40, 11, 32]. According to McClellan (1996) and Crossland (2003)^[11], the O. pratincole breeds in colonies on open grasslands or stubble fields or at the edge of the wetlands such as lakes, rivers, or rice fields.

It is a partly migratory species with most of the population breeding in the Northern hemisphere and flying south for the winter (Higgins and Davies, 1996; Lane 1987 and Maclean 1996)^[21, 25, 27]. The population on the Indian sub-continent is not migratory but may make local movements (Ali and Ripley, 1969)^[2].

Materials and Methods and Study area

Tungbhadra dam back waters

A dam has been constructed across the river Tungbhadra near Hosapete, Ballari (District), Karnataka and its storage water spreads in an area of 378 Sq.km during monsoon (T.B. Board, 2012) (Fig. 1). This impounded water formed number of wetlands in different areas; N. D. Kere, Nakaral Tanda, Ankasamudra, Bannigola, and Venkatapura, located between 15° 7' and 15° 10' N and 76° 13' and 76° 06' E ranges. The present study was conducted to record migratory birds visiting to these water bodies

during 2014 to 2019. Among the major group of migratory birds, the Oriental pratincole (*Glariola maldivarum*) found visiting to the study areas frequently since the past 4-5 years. The birds were enumerated by direct and point count methods (Colin *et al.*, 1992). A total of 12 visits (one per week) in each year were made in the field observing the status of the bird from March to May. Birds were observed from 6 am to 11 am and 4 pm to 6 pm by Olympus binoculars (Olympus 10X 50 DPSI, Field 6.50). The photographs were taken by using Cannon DSLR Camera (Cannon EOS 6001).



Fig 1: Study areas of T.B. Dam Back waters

Results and Discussion

The present study revealed that the visitation of Oriental pratincole to the study area during summer season started (March-May) since 2014. According to the earlier reports of Salim Ali (1941-The book of Indian birds) and revised by J. C. Daniel (2002) [1] (Reprint-April, 2017) [1] this species is not sighted in the Indian sub-continent earlier.

However, Grimmet *et al.* (2011, Birds of the Indian sub-continent) [18] recorded it as a rare and occasional visitor to Indian subcontinent.

According to the information available at Bombay Natural History Society (BNHS) library, the Oriental pratincole has been sighted at different parts of the country viz; Kerala (Praveen, 2015) [30], Goa (Baidya and Bhagat, 2018) [5], Karnataka (Praveen *et al.*, (2016). Maharashtra (Anand Prasad, 2003 and Sarkar, 2007) [3, 35]. Chennai (Daniels, 2014) [12].

Punjab (breeding record) (Sangha, 1999) [33] Odisha (Nair and Pradhan, 2015) [18]. Himachal Pradesh (Kumar, 2015). Rajasthan (Kaur and Nair, 2000; Sangha, 2008) [34], Orissa (Ukil, 2013) [37]. Haryana (Kalsi, and Kalsi, 2014) [24], Andhra Pradesh (Thampy, 2009) [36]. Praveen *et al.* (2016), Rao and Mohapatra (1992) [31] and Anon (1997) [4] also reported the visitation of the species in different parts of the country.

However, the information about the visitation and breeding of Oriental pratincole in Karnataka is patchy and varies from place to place. In the hitherto study, it has been confirmed that the Oriental pratincole was visiting the study area since 2014 during summer (March to May) in hundreds because as and when back waters of the T.B. Dam start to reduce during summer which makes the availability of vast open submerged gravel area which is preferred by the species for roosting and nesting. However, no detailed studies are conducted.

Table 1: Backwater regions of T.B. Dam

Sl. no.	Regions of Back waters	No. of Individuals	% composition	# of Nests		Distance between the regions
1	Bannigola	200	30.8	100	Bannigola to Ankasamudra	15 km
2	Ankasamudra	100	15.4	50	Ankasamudra to Nakaral Tanda	6 km
3	Nakaral Tanda	100	15.4	50	Nakaral Tanda N.D. Kere (LadakanaBavi)	6 km
4	N.D. Kere (LadakanaBavi)	200	30.8	80	N.D. Kere (LadakanaBavi) Venkatapura	4 km
5	Venkatapura	50	7.7	30		

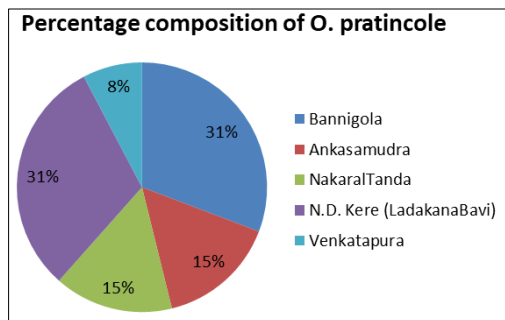


Fig 2: Percentage composition of *O. pratincole* in different regions

Among the backwater areas, maximum number of *O. pratincole* and percentage composition were recorded in Bannigola and N.D. Kere (LadakanaBavi) (200 birds, 30.8% each) followed by Ankasamudra and Nakaral Tanda with 100 birds each (15.4 % each). Less number of birds were recorded in Venkatapura (50 birds, 7.7 %) (Table 1 and Fig. 2). The distance between these areas varies from 4 km to 15 km. Hence the overlapping or double counting of the species was not possible. The variation in abundance of *O. pratincole* in different places of the study areas may be due to the availability of abundant invertebrate larvae and insects along the back water and in the surrounding farm lands for foraging with favourable climatic conditions. According to Barker and Vestjens (1989) and McClean (1996) the *O. pratincole* feeds on insects, dragon flies, cicadas, beetles, moths, ants, termites, locusts, grass hoppers, flies, bees and wasps which were abundantly available in the study area during summer season as the water levels recedes. The present study also revealed that the breeding of Oriental pratincole in colonies in the entire back water area. In Bannigola it was found highest number of (100) ground nests followed by N. D. Kere or Ladakana Bavi (80), Ankasamudra and Nakaral Tanda with 50 nests each and Venkatapura with 30 nests. The maximum nests in the study areas was due to availability of open gravel area where the birds make small depressions on open land (ground nests) and lay 2-3 eggs in the first week of April month and incubate them up to 2 weeks by male and female both. Later, both male and female feed the juveniles till the end of May and then flew away.



Fig 2: Oriental Pratincole Adult (Above), with egg and juvenile (below)

Conclusion

During the study it was found that the back water areas were utilised for agriculture, horticulture, and other domestic activities like fishing. These anthropogenic activities may threaten this species to establish their colonies for long time. Further, filling up of backwater area with water during rainy season might cause their habitat loss. To conserve this species the reservoir should be protected from any kind of anthropogenic activities so as to make the habitat free from threats to this species visitation in the future.

Acknowledgement

The authors are thankful to Sagar B. Satpute, Program officer, BUCEROS, ENVIS Newsletter, BNHS Bombay for encouraging to write the manuscript. Mr. Vijay Ittigi and Mr. Rajendra, local bird watchers and conservationists are acknowledged for their help during the field study.

References

1. Ali Salim. The book of Indian birds {(Ed): J. C. Daniel (2002) (Reprint-April, 2017)} BNHS, Bombay, 1941.
2. Ali S, Ripley SD. Handbook of the Birds of India and Pakistan. Bombay: Oxford University Press, 1969, 3.
3. Anand Prasad. Annotated checklist of Birds of Western Maharashtra. Buceros. 2003; 8(2-3):1-174.
4. Anon. Common name changes of the birds of the Indian Subcontinent. Buceros. 1997; 2(4):1-79.
5. Baidya P, Bhagat M. A checklist of the birds of Goa, India. Indian Birds. 2018; 14(1):1-31.
6. Bamford M, Watkins D, Bancroft W, Tischler G, Wahl J. Migratory Shorebirds of the East Asian - Australasian Flyway: Population estimates and internationally important sites. Canberra, ACT: Department of the Environment, Water, Heritage and the Arts, Wetlands International-Oceania. Available from: <http://www.environment.gov.au/biodiversity/migratory/publications/shorebirds-east-asia.html>, 2008.
7. Barker RD, Vestjens WJM. The Food of Australian Birds. 1 Non-Passerines. Lyneham, ACT: CSIRO, 1989.
8. Barrett G, Silcocks A, Barry S, Cunningham R, Poulter R. The New Atlas of Australian Birds. Melbourne, Victoria: Birds Australia, 2003.
9. Blakers M, Davies SJF, Reilly PN. The Atlas of Australian Birds. Melbourne, Victoria: Melbourne University Press, 1984.
10. Boekel C. Birds of Victoria River Downs Station and of Yarralin, Northern Territory. Part 1. Australian Bird Watcher. 1980; 8:171-193.

11. Crossland A. Observations at a breeding colony of Oriental Pratincole (*Glareola maldivarum*) near Songkla Lake, Southern Thailand. *Stilt*. 2003; 43:28-29.
12. Daniels RJR. Bird of Pallikarnai Marsh, Chennai. *NLBW*. 2014; 54(3):27-30.
13. De Schauensee RM. *The Birds of China*. Oxford, UK: Oxford University Press, 1984.
14. Dement'ev GP, Gladkov NA. (Eds) *Birds of the Soviet Union*. Jerusalem. Israel Program for Scientific Translations, 1951, 3.
15. Dickinson EC, Kennedy RS, Parkes KC. *The birds of the Philippines*. B.O.U Check-list, 12, Tring, Hertfordshire: British Ornithologists Union, 1991.
16. Garnett ST. Seasonal changes in the wader population in the south-east of the Gulf of Carpentaria. *Stilt*. 1986; 8:9-13.
17. Gill HB. *Birds of Innisfail and hinterland*. *Emu*. 1970; 70:105-116.
18. Grimmett RC, Inskippand T Inskipp. *Birds of India sub-continent*. Oxford publication London, 2011.
19. Grimmett RC, Inskippand T Inskipp. *A Guide to the Birds of India, Pakistan, Nepal, Bangladesh, Bhutan, Sri Lanka, and the Maldives*. Princeton, New Jersey: Princeton University Press. UK, 1999b.
20. Grimmett RC, Inskippand T, Inskipp A *Guide to the Birds of India, Pakistan, Nepal, Bangladesh, Bhutan, Sri Lanka, and the Maldives*. Princeton, New Jersey: Princeton University Press, 1999b.
21. Higgins PJ, Davies SJJF, eds. *Handbook of Australian, New Zealand and Antarctic Birds*. Volume Three Snipe to Pigeons. Melbourne, Victoria: Oxford University Press, 1996.
22. Jaensch RP. The attraction of Argyle. *Western Australian Bird Notes*. 1985; 33:1.
23. Jaensch RP. Little Curlew and other migratory shorebirds on floodplains of the Channel Country, arid inland Australia, 1999-2004. *Stilt*. 2004; 46:15-18.
24. Kalsi RS, Sharma S, Kalsi M. Threat status of birds of Yamuna Nagar district, Haryana, India. *JoTT*. 2014; 7(3):7024-7028.
25. Lane BA. *Shorebirds in Australia*. Sydney, NSW: Reed, 1987.
26. MacKinnon J, Phillipps K. *A Field Guide to the Birds of Borneo, Sumatra, Java and Bali*. Oxford, UK: Oxford University Press, 1993.
27. Maclean GL. Glareolidae (coursers and pratincoles) species accounts. In: del Hoyo, J. A Elliott and J. Sargatal, eds. *Handbook of the Birds of the World*. Hoatzin to Auks. Barcelona: Lynx Editions. 1996; 3:377-383.
28. Nair MV, Panda SK, Pradhan AK. Hirakund wetlands: A little-known refuge for breeding and wintering waterfowl and a potential important bird area in Odisha, India. *Water birds of India*. *ENVIS WII*. 2015; 16:186-201.
29. Ornithological Society of Japan (Orn. Soc. Japan) *Check-List of Japanese Birds*. Tokyo, Japan: Orn. Soc. Japan, 2000.
30. Praveen J. A checklist of birds of Kerala, India. *JoTT*. 2015; 7(13):7983-8009.
31. Rao P, Mohapatra KK. Biometrics of the Collared Pratincole *Glareola pratincola maldivarum* J. R. Forster. *JBNHS*. 1992; 89:248-250.
32. Round PD. Shorebirds in the Inner Gulf of Thailand. *Stilt*. 2006; 50:96-102.
33. Sangha HS. Breeding record of Oriental Pratincole *Glareola maldivarum* in Punjab. *NLBW*. 1999; 39(2):37.
34. Sangha HS. The birds of Sambhar Lake and its environs *Indian Birds*. 2008; 4(3):82-97.
35. Sarkar S. *Shore Birds (Waders) of the Mumbai region Buceros*. 2007; 12(3):5.
36. Thampy U. Unusual bird sightings Pitta. 2009; 6(8):5.
37. Ukil PM. *The Magic of Mangalajodi*. Sanctuary Asia. 2013; 35(2):38- 41.
38. Van Tets GF, Vestjensand WJM, Slater EC. Orange runway lighting as a method for reducing bird strike damage to aircraft. *CSIRO Wildlife Research*. 1969; 14:129-151.
39. Waugh J. An Oriental Pratincole in Tasmania. *Stilt*. 1988; 12:58-60.
40. Wells DR. *The Birds of the Malay Peninsula*. San Diego: Academic Press, 1999.