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Research Paper

GLOBALLY THREATENED SPECIES OF BIRDS RECORDED FROM POKKALI WETLAND, KERALA, SOUTH INDIA

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Abstract

The pokkali wetlands lie between 10° 01′ 53″ – 10° 4′ 21″ N latitude; 76° 14′ 25. 7″ – 76° 16′ 46″ E longitude, with an extend of 4050 hectare spread over Trichur, Alappuzha and Ernakulam district, Kerala state. Avifauna of pokkali fields of Ernakulam District, Kerala was studied from May 2006 to April 2009. A total of 119 species of birds belonging to 18 orders and 45 families were recorded during the study.
Key words: bird, pokkali, wetland, prawn, ecofriendly.

INTRODUCTION

The term 'Pokkali' refers to a saline resistant rice variety largely cultivated in Ernakulam District. Pokkali lands are known after the renowned pokkali rice cultivar which is internationally accepted as gene donor for salt tolerance in rice. The farming system now followed in the pokkali land is internationally acclaimed as a sustainable system. The integration of rice and prawn rotationally with the change in the field water salinity augurs well with the system of nature. It does not interfere with the natural flow of tidal water, unlike in Kuttanadu of Kerala where, Thanneermukkom salt water barrier prevents the entry of brackish water to facilitate the cultivation of rice during the post monsoon season. The retention of tidal flow during the post rice season causes inundation of brackish water into the pokkali fields (Sasidharan, 2004).

Natural recruits of prawn larvae are trapped in the pokkali fields, grown and harvested after 2-4 months of cultural period. The disintegrating paddy stubbles, internationally left during rice harvest, release nutrients to the system, invigorating photosynthetic activity, periphyton production and live feed generation. The live feed thus generated forms the basis of perpetual renewable bio- energic resources for the alternate production of rice -prawn in pokkali fields (Purushan, 2002).

IMPORTANCE OF POKKALI CULTIVATION

Pokkali is a unique variety of rice that is cultivated in an organic way in coastal areas and it is one of the most eco friendly farming practices in the world. There is no need of chemical pesticide and a fertilizer for high yield. This method which has been

passed down from generation to generation relies on the symbiotic nature of prawn and rice. The organically grown pokkali is famous for its peculiar taste and its high protein content and has several medicinal properties. Pokkali is a tall, saline resistant rice variety largely cultivated in coastal areas of Ernakulam district (Tomy *et al.* 1984). 'Pokkali' rice is cultivated in the pokkali field during May/June to October and the remaining period (November – April) is utilized for prawn culture or "Chemeenkettu". An attempt is made here to study the globally threatened species of birds recorded from pokkali wetland, kerala, south india

METHODOLOGY

Birds were studied based on direct observation method. Point count and line transect method were also followed and five intensive study areas were selected for detailed observations. Bird population was estimated by total count method.. Birds were identified with the help of different field guides (Ali & Ripley 1987; Grimmet *et al.* 2000;) using Bushnell (7x35mm) binoculars. Five intensive study sites of 5 hectares each were identified and selected in each of the five study areas namely Kadamakudy, Kuzhuppilly, Kumbalangy, Edavanakad and Cheranelloor (abandoned pokkali wetland) on the basis of representation of different pokkali fields of different areas of Ernakulam District.

RESULT AND DISCUSSION

According to Rahmani (2012), 153 globally threatened bird species occur in India, of these three species were recorded from the pokkali wetland area (Table.1)

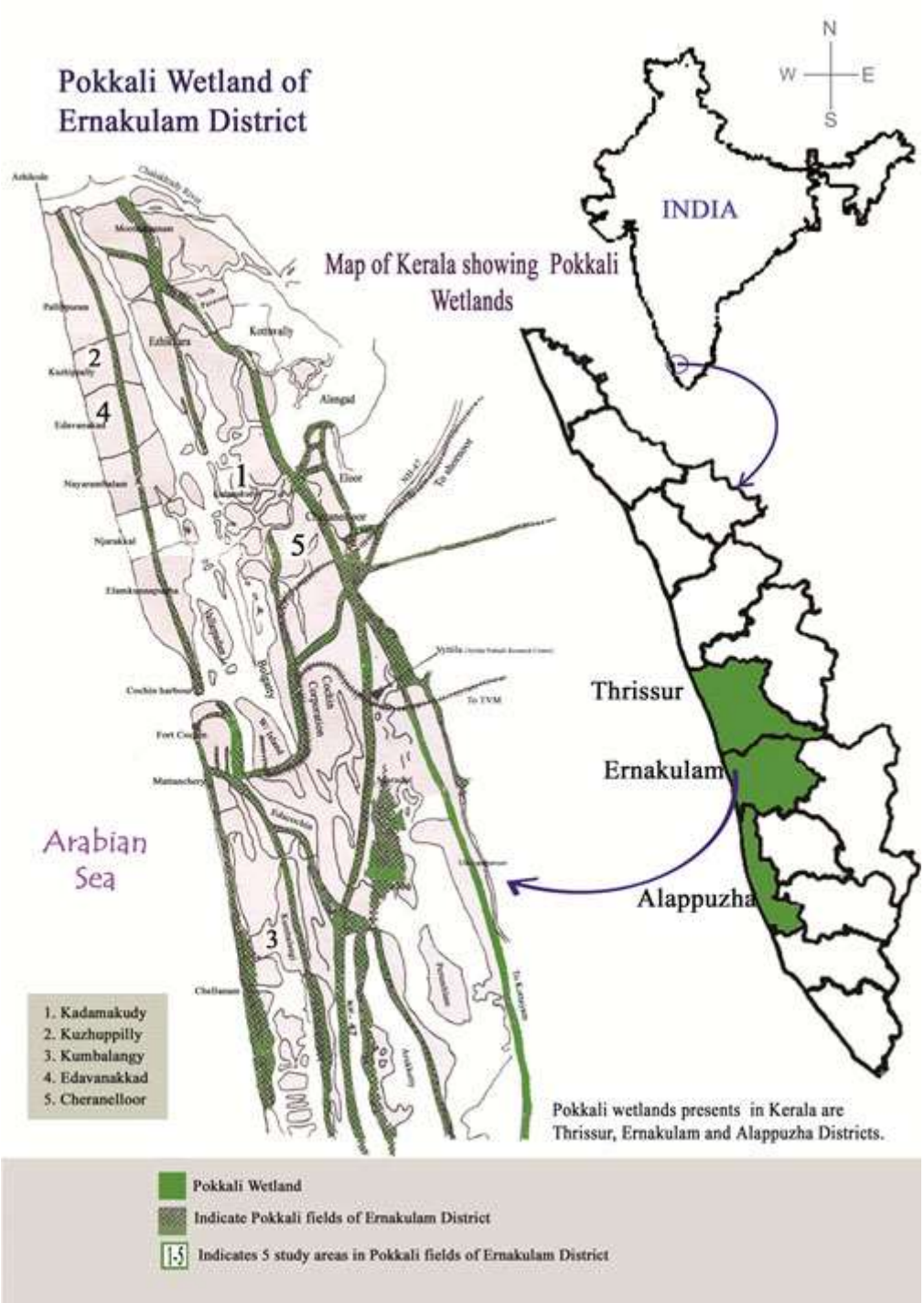
Table: 1. Globally threatened species recorded from pokkali wetland

Sl No	Species name	Scientific name	Number of birds observed
1	Oriental Darter	*Anhinga melanogaster*	495
2	Oriental White Ibis	*Threskiornis melanocephalus*	861
3	Spot -billed Pelican	*Pelecanus philippensis*	1

I. Oriental White ibis (*Threshkiornis melanocephalus*)

According to Bird life International (2011), the Oriental White ibis is common with most large wetland species in Asia is undergoing a population reduction. It faces threats like hunting and disturbance at breeding colonies to drainage and conversion of foraging habitats to agriculture. It consequently qualifies as Nearthreatened.

Oriental White Ibis was noticed in the pokkali wetland through out the study period and their number was maximum (2000) during April 2012. The presence of more birds in April month may be due to the easy availability of food and preferred habitat like mud flat etc minimum number was (16) of these birds were noticed during November 2009 in the pokkali wetland. This may be due to the increased water level and there by less availability of food in the habitat.



(*Source: Pokkali Research centre Vyttila*).Fig 1. Pokkali wetland area of Ernakulam District

II Spot- billed Pelican (*Pelecanus philippenis)*

Bird life International had listed the Spot- billed Pelican as vulnerable bird species in 2001 as their number had declined at a moderately rapid rate owing to a number of threats. The Spot-billed Pelican is a resident and local migrant in well watered tract of almost the whole of India. It mainly breeds in South India (Subramanya, 1996).

In Kerala Spot- billed Pelican was reported earlier by Nameer (1993) Ravindran (1995), Sreekumar (2002). Spot-billed Pelican was a common species in Pulicat Lake and also breeds in the Nelappattu heronry. Only one Spot billed Pelican was noticed on 30th

January 2013 in pokkali wetlands. The bird preferred open water with vegetated areas for feeding and were noticed feeding on the fishes in the habitat. This bird was noticed in the habitat only for 90 minutes in the shallow water area. This bird was noticed in association with birds like Large Egret and Grey Heron.

III Oriental Darter *(Anhinga melanogaster)*

This species is classified as near threatened because its population is declining moderately rapidly owing to pollution, drainage, hunting and collection of eggs and nestlings (Bird life international, 2011)

One species of bird namely Darter belonging to the family Anhingidae was reported from Kerala (Sashikumar *et al*. 2011). This bird species was also reported from Thattekad Bird Sanctaury (Seema *et al.* 2004), Kole wetland (Tomy, 2014), Kuttanad wetland (Prasanth *et al.* 2011) and Pokkali wetland during the present study. The Kole wetland supported more than 2% biogeographical population of Darter (Tomy, 2014). Prasanth *et al.* (2011) noticed that Kumarakom heronry holds 8% of the biogeographical population of the near threatened Oriental darter. A total of 442 nests were recorded in the heronry. It was noticed that the increased tourism activities on the feeding grounds of Darters might have influenced in the reduction in the breeding population of this bird in the Kumarakom heronry.

The presence of more number of Darters may be due to the breeding of Darters in several places near to pokkali wetlands. Maximum Darters were noticed in the Kuzhuppilly site which was very close to the sea (500 meters). The nearest breeding record of Darters were from Kumarakom heronry (about 60 km away). The maximum numbers of Darters (329) were noticed during prawn culture season and minimum (60) during the transient period. The globally threatened Darter (family: Anhingidae) crossed 4% South Asian population in pokkali wetland. Oriental Darter was noticed through out the pokkali wetland during all the season.

CONCLUSION

This wetland supported near threatened bird species like Oriental Darter, Oriental White Ibis and Spot billed Pelican which were reported from the well known wetlands like Chilika, Pulicat lake, Vembanad wetland and Kole wetlands. Pokkali wetlands showed high species richness, abundance and density of wetland birds due to the peculiarities of its habitats. Pokkali wetland is the only area where unique, organic, ecofriendly symbiotic traditional (Rotational- GIS Qualified pokkali rice /Prawn culture) farming practices followed in the country.

As the Pokkali wetlands are serving as “stepping stone” for the transcontinental migrants, urgent measures are needed to protect this unique wetland ecosystem for the conservation of water birds especially transcontinental migrants. Since the cultivation procedure adopted in the habitat is unique, farmers and local people should be given an awareness to conserve the wetland for pokkali rice/prawn culture and also the migratory and local birds.

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