



Short Review Paper

## Major biodiversity of poovar beach along the Neyyar River: a tourism destination of Kerala, India

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Available online at: [www.isca.in](http://www.isca.in), [www.isca.me](http://www.isca.me)

Received 1<sup>st</sup> December 2016, revised 19<sup>th</sup> January 2017, accepted 10<sup>th</sup> February 2017

### Abstract

The biodiversity of Estuary and Backwaters always show the virginity in the exploration of flora and fauna. They also the harbor of many medicinal plants, avifauna and other taxa. Due to salinity, plants develop the defense mechanisms by synthesizing some secondary metabolites which show the medicinal potential for human beings. During a weekend visit along the Neyyar River, we could identify many beneficial indicators of rich biodiversity near Poovar beach. It is a prime tourist destination near the capital of the state of Kerala. A cursory observation revealed that the most prominent flora are *Cerbera odollam*, *Barringtonia racemosa*, *Cocos nucifera* etc and most visible avifauna are *Haliastur indus*, *Corvus splendens*, *Bubulcus ibis*, *Ardeola grayii* etc. It was also observed that the place is a prime tourist destination of the Capital of said state and the movement of the water boat have been disturbing the balance of the ecosystem. The present study highlights the importance of the area as rich biodiversity spot and recommends the needed action for the conservation of the coastal ecosystems.

**Keywords:** Avifauna, Backwater, Ecosystems, Estuaries, Flora, Poovar, Tourist destination.

### Introduction

In the estuary and backwater ecosystem, the water has higher level of salinity as compared to fresh water but lesser than that of sea water<sup>1</sup>. The ecosystem is hostile to the growth of some terrestrial plant species and many aquatic faunal species<sup>2</sup>. It is the also prime habitat of many avian species. The small faunal species and others attract the predators too. The whole ecosystem gives a rich biodiversity along with medicinal plants and other beneficial bio-resources for the human beings<sup>3</sup>. Kerala, the prominent state of India having rich backwater ecosystems<sup>4</sup>. On 29 October 2016, as a weekend visits, we visited Poovar area Figure-1(a)(b), where river and sea meet. The study area has a panoramic view along with Golden beach. It is known as the name of legendary King Marthanda Varama of Princely State of Travancore. The Poovar beach separates the River Neyyar from the sea. Poovar is basically a fishing village and the only way to reach Poovar is through water. The estuary there is one among the natural wonders where the Lake, River, Sea and Beach meet the land, and is situated adjacent to the Poovar Island; a rare find in the state<sup>5</sup>. The area is abundant with local flora, exotic flowers and coconut plantation<sup>6</sup>. Poovar is a fishing villages which can be easily reached by water transport through the Neyyar river. The estuary created at the converging point of the lakes, river and the sea which is situated adjacent to the poovar (a group of small islands and the golden beach). The fishing communities of Poovar live a water based life style and make a luring by fishing through traditional

means. They rely on the river and the sea for catering to their day to day life and livelihood. On 29 October 2016, Authors visited the site and were highly inspired to see the floral and avifaunal wealth of the study area and immediately started the enumeration of major flora and avifauna. The present paper highlights the importance of the bio-wealth available in the study area which closes to urban city of Trivandrum. It also highlights the ecotourism potentials of the study area.

### Materials and methods

The study was based on date and observation collected during a weekend visit to the study area Figure-1(a)(b) on 29 October 2016. The major plants and birds were identified by the authors in evening (from 3:30 PM to 6:00 PM). The results presented here, are based on the field observatory work.

### Results and discussion

Field survey revealed that out of common plant species, the major are tress and palm. The prominent plant species among them are *Cerbera odollum*, *Barringtonia racemosa*, *Pandanus utilis*, *Cocos nucifera*, *Derris trifoliata* etc.

The plant parts of the major flora available in the study area have medicinal values and used in different forms. The juice of the *Eichhornia crassipes* is used against Jaundice while fruits of *Cerbera odollam* Figure-1(c) are used as bio insecticides. The

dry branches of *Barringtonia racemosa* Figure-1(d) are used as fire wood. The squashed root decoction is very effective to stop bleeding on post delivery phase<sup>7</sup>. Leaves of *Derris trifoliata* are frequently used as insecticides<sup>8</sup>.

*Anhinga melanogaster* is sighted which comes under the Near Threatened categories of IUCN 3.1. Details are listed in Table-1.

The survey on avifaunal diversity revealed that there are 11 major birds species are sighted. Among them, it was noted that *Haliastur indus* (Brahminy Kite) and *Corvus splendens* (House Crow) have rich population in the study area.

**Recommendations:** The area is a popular tourism destination of Kerala and supports the livelihood of the local communities. The following practices need to be adopted for maintaining the natural serenity of the study area: i. Use of traditional row boats/solar boats instead of speed boats/diesel runs boats which

will ensure lowering the pollution level- air, noise and water pollution in the study area. ii. Complete ban on plastic entering the river systems which finally pollutes the Poovar beach. iii. Construction of sewage treatment plants along the river bank. iv. Need of trainings and awareness programme to the boat drivers on biodiversity, history, avifauna, ecology of the study area. v. Calculating the carrying capacity and practicing sustainable and ecologically viable tourism. vi. Regular fish count, bird count and biodiversity inventorization needs to be carried out. vii. Environment impact assessment of the area needs to be carried out to ascertain the impact of tourism on the biodiversity and ecology of this fragile habitat, viii. Safety measures for tourists needs to be strengthened, ix. Need an interpretation centre at starting point for a formal lecture / video clipping about the ecological and historical importance of the place including safety measures. x. Need a guideline(s) for the tourists regarding what they have to do or have not to do for maintaining the backwater ecosystem.



**Figure-1:** Most Common plant species, BW ecosystem and Tourist destination (a) *BW ecosystem*; (b) Panoramic view of study area; (c) *C. odollom*; (d) *B. racemosa*.

**Table-1:** Major Flora and Avifauna of study area

Flora				
Scientific name	Family	Parts used	Uses	References
<i>Eichhornia crassipes</i> (Mart.) Solms.	Pontederiaceae	Whole plant	Extract of the plant is used to cure Jaundice	9
<i>Cerbera odollam</i> Gaertn.	Apocynaceae	Fruits	Fruits are used for manufacturing the bioinsecticides	10
<i>Barringtonia racemosa</i> (L.) Spreng.	Lecythidaceae	Stem	Dry brnaches are used as fire wood	11
<i>Pandanus utilis</i> Bory.	Pandanaceae	Stem	The stem fiber of the plant is used as a source to isolate nan0-particles	12
<i>Cocos nucifera</i> L.	Areacaceae	Roots	Squashed root decoction is used to stop bleeding after delivery	7
<i>Derris trifoliata</i> Lour.	Fabaceae	Leaves	The leaves are used as insecticides	8
<i>Thespesia populnea</i> (L.) Sol. Ex Correa	Malvaceae	Leaves	Juice is used against abscess.	13
Avifauna				
Common name	Family	Scientific name	Status	
Stork-billed Kingfisher	Alcedinidae	<i>Pelargopsis capensis</i> (Linnaeus, 1766)	LC	
Common Kingfisher	Alcedinidae	<i>Alcedo atthis</i> (Linnaeus, 1758)	LC	
Marsh Sandpiper	Scolopacidae	<i>Tringa stagnatilis</i> (Bechstein, 1803)	LC	
Brahminy Kite	Accipitridae	<i>Haliastur indus</i> (Boddaert, 1783)	LC	
Little cormorant	Phalacrocoracidae	<i>Microcarbo niger</i> (Vieillot, 1817)	LC	
Little egret	Ardeidae	<i>Egretta garzetta</i> (Linnaeus, 1766)	LC	
Indian Pond Heron	Ardeidae	<i>Ardeola grayii</i> (Sykes, 1832)	LC	
Cattle egret	Ardeidae	<i>Bubulcus ibis</i> (Linnaeus, 1758)	LC	
House Crow	Corvidae	<i>Corvus splendens</i> (Vieillot, 1817)	LC	
Oriental darter	Anhingidae	<i>Anhinga melanogaster</i> (Pennant, 1769)	NT	
Black Kite	Accipitridae	<i>Milvus migrans</i> (Boddaert, 1783)	LC	

## Conclusion

The findings of the study emphasizes that the area is rich with medicinal as well as economic plants and avifaunal species which maintain the beauty and ecological balance of the study area. The conservation of these bio-wealth is very important for the sustainability of the available taxa as well as the ecotourism which provide livelihood for the local people.

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