

Trees of Mahanadi River areas of Cuttack, Odisha: Part I

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Abstract: Mahanadi river is one of the major river systems of India. This river has a complex relationship with the livelihoods of people around the banks of Mahanadi River since the ancient period. Many riparian floras of Mahanadi River not only have a religious and cultural significance but also impacts the aquatic fauna and avifauna in a direct or indirect manner. The study of riverine ecology could never be complete without the knowledge of the associated riverine flora. The present study aims to document the diversity of tree species from Mahanadi rivers areas of Cuttack, Odisha. This documentation could provide a key role in studying riverine ecology of Mahanadi River for the conservation of biodiversity and the river itself.

Keywords: Flora, tree diversity, river ecology, Mahanadi conservation

Introduction

Mahanadi river originates from the state Chhattisgarh and flows through the state Odisha before releasing into the Bay of Bengal. The river originates from Dhamtari district of Chhattisgarh and passes through Kanker, Jahangir Champa and Raigarh districts before entering Odisha in Sambhalpur district and flows through Subarnapur, Boudh, Khordha and Cuttack districts of Odisha. The river Mahanadi then forms a delta distributing its waterbody to numerous distributaries before it releases into the Bay of Bengal. Some of the major tributaries of Chhattisgarh include Seonath, Hasdeo, Mand and Ib rivers. Hasdeo river also flows through Madhya Pradesh before forming a tributary with Mahanadi River. Again, some of the major tributaries of Mahanadi in Odisha include Ib, Ong, Tel, Jonk, Jira, Salki, Kuanria, Sagada, Ret, Hati, etc. South Koel River in Jharkhand flows through Brahmani River in Odisha and the tributaries of Brahmani River merged with the distributaries of Mahanadi rivers in the Mahanadi delta before reaching Bay of Bengal. Some of the major distributaries of Mahanadi River include Kathajodi, Kuakhai, Birupa, Paika, Chitrotpala, Genguti and Lun rivers Kathajodi is a large distributary of Mahanadi River formed at Cuttack. Mahanadi river in Cuttack district of Odisha forms a lower course of the river and forms an important junction before distributing its course.



Figure 1: Flowers of *Anogeissus acuminata*



Figure 2: Fruits and leaves of *Syzygium cumini*



Figure 3: Flowers of *Peltophorum pterocarpum*



Figure 4: Flowers of *Cassia fistula*



Figure 5: Fruits of *Streblus asper*

The course of Mahanadi River has closely integrated in the cultural and religious aspects of the communities residing near the bank of Mahanadi River. The entire course of the Mahanadi River is lined with several sacred groves and beliefs. The famous Geet Govinda that is sung every day before Lord Jagannath in Puri Temple was written by Shri Jayadev Goswami near the bank of Prachi River, a small tributary of Mahanadi River. The river provides food, livelihood, drinking water, fertile land for agriculture, etc. The river also provides home faunal diversity including aquatic birds, aquatic fauna, reptiles, amphibians, crustaceans, etc. Trees play a key role in riparian ecology as it interacts with vast faunal species and linked to the local communities in religious and cultural aspects. Few floral documentations have been observed so far near the Mahanadi River areas. Earlier Singh in 2000 documented the gymnosperm diversity of Gondwana period. About 443 plants were described from the Mahanadi delta especially the Mangrove ecosystem (Rao and Banerjee, 2001). Mangrove Forest Division of Rajnagar in 2015 documented 94 plants belonging to true mangroves, mangrove associates, back mangrove, and beach flora. 140 medicinal plants have been documented from Mahanadi River areas (Kumar et al., 2018). 15 medicinal plants were revealed from the Mahanadi River bed (Lal et al., 2024). 45 medicinal wetland herbs were reported from Mahanadi River by Marndi and coworkers in 2022. Recent floral diversity report of APRF revealed 246 plants from Cuttack, Angul and Nayagarh districts of Odisha (APRF Report, 2024). The present study aims to document the tree species near the banks of Mahanadi River basin at Cuttack district.

Methodology

Several field surveys were carried out for the exploration of tree species near Mahanadi River areas of Cuttack district of Odisha from April 2023-April 2024. Plant identification was carried out using the standard classical methods of identification.

Results and discussion

The survey enumerated 30 tree species from Mahanadi River areas of Cuttack belonging to 17 families and 27 genera (Table 1). Among them, the most observed were *Ficus hispida*, *Streblus asper*, *Azadirachta indica*, *Ailanthus excelsa*, *Aegle marmelos*, *Anogeissus acuminata*, *Pithecellobium dulce*, *Trema orientale*, *Ziziphus mauritiana*, *Cassia fistula*, *Peltophorum pterocarpum*, *Syzygium cumini*, etc.

Table 1: List of common trees of Mahanadi River areas near Cuttack, Odisha

Botanical Name	Family
<i>Aegle marmelos</i>	Rutaceae
<i>Ailanthus excelsa</i>	Simaroubaceae
<i>Anogeissus acuminata</i>	Combretaceae
<i>Azadirachta indica</i>	Meliaceae
<i>Bombax ceiba</i>	Malvaceae

<i>Butea monosperma</i>	Fabaceae
<i>Cassia fistula</i>	Fabaceae
<i>Crateva religiosa</i>	Capparaceae
<i>Ficus benghalensis</i>	Moraceae
<i>Ficus hispida</i>	Moraceae
<i>Gmelina arborea</i>	Lamiaceae
<i>Holoptelea integrifolia</i>	Ulmaceae
<i>Lannea coromandelica</i>	Anacardiaceae
<i>Mallotus nudiflorus</i>	Euphorbiaceae
<i>Mallotus philippensis</i>	Euphorbiaceae
<i>Mallotus repandus</i>	Euphorbiaceae
<i>Mangifera indica</i>	Anacardiaceae
<i>Peltophorum pterocarpum</i>	Fabaceae
<i>Pithecellobium dulce</i>	Fabaceae
<i>Pongamia pinnata</i>	Fabaceae
<i>Spathodea campanulata</i>	Bignoniaceae
<i>Sterculia foetida</i>	Malvaceae
<i>Streblus asper</i>	Moraceae
<i>Strychnos nux-vomica</i>	Loganiaceae
<i>Syzygium cumini</i>	Myrtaceae
<i>Tamarindus indica</i>	Fabaceae
<i>Tectona grandis</i>	Lamiaceae
<i>Terminalia arjuna</i>	Combretaceae
<i>Trema orientale</i>	Cannabaceae
<i>Ziziphus mauritiana</i>	Rhamnaceae

Photographs of some common trees near Mahanadi River are shown in Figure 1-5. Tree species like *Ficus benghalensis* was observed to provide nesting place for various aquatic birds like Little Egret, Cattle Egret, Oriental Darter, Little Cormorant, etc. Fruits and flowers of *Streblus asper* were observed to be preferred by small birds like Red whiskered Bulbul, Asian Pied Starling, Yellow eyed Babbler, etc. Fruits of *Trema orientale* were fed upon by Scaly breasted Munia, Red whiskered Bulbul, Red Vented Bulbul, etc.

Conclusion

Documentation of flora is the key for studying riverine ecology or faunal studies as many of the plant species are directly or indirectly interdependent. The conservation activities of Mahanadi River and associated faunal and avifaunal diversity cannot neglect the floral aspect as it would be incomplete without it.

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