

Karankadu mangroves – an ecological asset to the Indian east coast

The Karankadu mangrove forest is situated in Ramanathapuram district, Tamil Nadu, India. Falling under the Gulf of Mannar Marine National Park, this human-made mangrove forest is important to the surrounding ecosystem. This area is present between Ramanad–Thondi East Coast Road. The Karankadu mangrove swamp lies at 9°36'N lat. and 78°83'E long. and is situated in the Palk Bay region of the south-east coast of India. It has a long coastline (around 241 km). About 40–50 years ago, the Karankadu village was surrounded by *Prosopis* species (Karachedi). The area was deforested for living, and hence the village is named Karankadu. Hunting of birds and fish is the main livelihood of the villagers. Earlier, this area was dry and backward. The Ramanathapuram district receives rainfall under the influence of both southwest (SW) and northeast (NE) monsoons, with the latter being the chief contributor. Most of the precipitation occurs in the form of cyclonic storms caused by depressions in the Bay of Bengal. The hottest months are May and June. The annual rainfall of the district from the SW monsoon is 136.1 mm, and NE monsoon is 534.74 mm. It spreads over 400 ha having a luxuriant growth of mangroves in an area of 102 ha along the banks of the estuary of Kottakari¹. During high tide, the mangrove habitat receives saline water up to 5 km towards the creek. Being in a geographically

important location, it is a predominant place for the flocking populations of 25 species of birds, including migratory birds. Marine organisms such as crabs, bivalves, fishes, birds and snakes are found in the Karankadu mangrove swamp. The mangroves here are the major feeding ground for birds such as painted stork, open bill stork, spoonbill, white ibis, black ibis, great knot, sea-gull, Caspian tern, purple heron, Curlew Sandpiper, whimbrel, grey heron and black-winged stilt, which are seen visiting throughout the year (Figure 1). The major mangrove species in the Karankadu forest is *Avicennia marina*, followed by *Ceriops tagal*, *Rhizophora apiculata* and *Rhizophora mucronata*. *C. tagal* is endemic to this mangrove forest in the entire state of Tamil Nadu. The marine habitat is also enriched by exceptional marine life forms. The mangrove forest hosts a variety of marine fauna like crabs, shrimps, flathead grey mullet, crescent tiger perch, Devis' anchovy, Vietnamese catfish, flat needlefish, Eeltail catfish, Bloch's gizzard shad, Indian white shrimp and Indian squid.

Mangrove conservation efforts are largely aimed at preventing the destruction of mangrove ecosystems and increasing coverage. A key issue is not just destruction but the degradation of mangrove ecosystems through pollution, siltation and changes in salinity or loss of biodiversity. The region is industrialized and heavily contaminated by dif-

ferent sources. Mangroves employ several strategies to accommodate the presence of salts, and they have developed the mechanisms of salt avoidance and tolerance. Thus, the conservation of mangroves is highly essential. Priority should be given to biodiversity conservation and ecosystem restoration in mangrove areas. Creating proper awareness among the public is the most important aspect of the conservation of mangroves in Karankadu.

The government of Tamil Nadu has launched an ecotourism initiative in the area, thereby promoting mangrove conservation. The recreational activities launched by the Forest Department of Tamil Nadu in collaboration with the villagers of Karankadu have promoted ecotourism, which includes boating, kayaking, snorkelling², etc., an island with a watchtower has been named 'kadal pasu' in recognition of a rare marine species sea cow. It is also known as 'bird's island' due to the migration of birds to this place. The mangrove plants here have high medicinal value, and this mangrove ecosystem is one of the best biodiversity hotspots. Currently, educational tours are also being promoted in the area to educate the public as well as students about the importance of mangroves. With such initiatives, the locals also benefit from employment and other monetary benefits. In the coming years, the Forest Department of Tamil Nadu is planning to expand this mangrove forest by introducing new varieties of true mangroves.



Figure 1. The Karankadu mangrove forest of Ramanathapuram district.

1. Prasanna, J., Anand, M., Vijayasekaran, D. and Kumaraguru, A. K., *Indian J. Geo-Mar. Sci.*, 2017, **46**(8), 1682–1692.
2. Walter Scott, D. J., Ecotourism planned in the mangrove forest area. *The Hindu*, 2017.

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