



Assessment Of Mangrove Species Diversity And Distribution In Dahanu Taluka, Maharashtra, India

¹Raut Sachin, ²Raut Asmita and ³Mali kamlesh

Assistant Professor

Department of Botany,

Comrade Godavari Shamrao Parulekar College of Arts, Commerce and Science, Talasari. Palghar
Maharashtra, INDIA

Abstract: Mangrove ecosystems play an important role in providing ecological and economic benefits to coastal communities. The present study was conducted to assess the species diversity and distribution of mangroves in Dahanu, Maharashtra, India. Field surveys were conducted to identify and map the different mangrove species in the area. A total of 8 species of mangroves were identified, including *Avicennia marina*, *Rhizophora mucronata*, *A. marina* var. *acutissima*, *A. officinalis*, *Sonneratia apetala*, *Brugiera cylindrical* and *Ceriops tagal*. Among these, *Avicennia marina* was found to be the most dominant species in the area, followed by *Rhizophora mucronata*. The study also revealed that the mangroves were distributed unevenly in the study area, with the highest density of mangroves observed in the southern part of the estuary. The results of the study suggest that Dahanu has a diverse range of mangrove species, and conservation efforts should be undertaken to protect and restore these ecosystems.

Index Terms - Mangrove, Dahanu

I. INTRODUCTION

Mangroves are a unique ecosystem found in the intertidal zones of tropical and subtropical regions. These ecosystems are made up of trees and shrubs that are adapted to living in saline water and are capable of withstanding the constant tidal fluctuations. Mangroves are found along the coasts of over 118 countries worldwide, covering approximately 137,760 square kilometres.

India is home to some of the largest mangrove forests in the world, covering an area of approximately 4,000 square kilometres along its coastline. These mangrove forests are located in the states of West Bengal, Odisha, Andhra Pradesh, Tamil Nadu, Kerala, Gujarat, and the Andaman and Nicobar Islands (Banerjee & Ghosh 1998; Giri et al. 2011).

Mangroves in India play a crucial role in protecting coastal areas from natural disasters such as cyclones, tsunamis, and floods. The dense root systems of mangrove trees act as a natural barrier, reducing the impact of strong waves and winds, and preventing soil erosion. They also provide a habitat for a wide variety of wildlife, including migratory birds, reptiles, and mammals, and support a rich ecosystem of marine life, including fish, crabs, and mollusca (Govindasamy 2011; Kathiresan & Rajendran 2005; Mukherjee et al. 2015).

In addition to their ecological significance, mangroves in India also have significant economic value. They support fisheries and aquaculture industries, which provide employment to millions of people in coastal areas. They are also a source of non-timber forest products such as honey, medicinal plants, and fruits, which are used by local communities.

Mangroves are a unique type of forest that grows in coastal regions and is adapted to survive in saline and brackish water conditions. These ecosystems provide a range of ecological and economic benefits, including shoreline protection, carbon sequestration, and fishery resources. However, mangrove ecosystems are threatened by various anthropogenic and natural factors, including deforestation, land-use change, and sea-level rise.

In India, the mangrove forests are found along the east and west coasts, and Dahanu in Maharashtra is one such region that has a significant mangrove cover. The present study was conducted to assess the species diversity and distribution of mangroves in Dahanu (Kadam et al. 2015).

II METHODS:

The study area was located in Dahanu, Maharashtra, India, and covered an area of approximately 20 km². Field surveys were conducted during the months of October to December 2022 to identify and map the different mangrove species in the area. A total of 50 plots were established in the study area, and within each plot, the different mangrove species were identified and recorded.

III RESULTS:

A total of 8 species of mangroves were identified in the study area, including *Avicennia marina*, *Rhizophora mucronata*, *A. marina* var. *acutissima*, *A. officinalis*, *Sonneratia. apetala*, *Bruguiera cylindrical* and *Ceriops tagal*. Among these, *Avicennia marina* was found to be the most dominant species in the area, followed by *Rhizophora mucronata*, *Acanthus ilicifolius*, *Sonneratia alba* and *Bruguiera gymnorhiza*, *Ceriops tagal*. The study also revealed that the mangroves were distributed unevenly in the study area, with the highest density of mangroves observed in the southern part of the estuary. The Shannon-Wiener index and the Pielou's index indicated a high level of species diversity and evenness in the study area.

IV CONCLUSION:

The study concludes that Dahanu has a diverse range of mangrove species, with *Avicennia marina*, *Rhizophora mucronata* and *Acanthus ilicifolius* being the dominant species in the area. The study also reveals that the mangroves are distributed unevenly in the study area, with the southern part of the estuary having the highest.



Fig:1 Some species of Mangroves in Dahanu

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