

## Mangroves of Andhra Pradesh

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### Introduction

The State of Andhra Pradesh has a geographical area of 2,76,000 sq.km. Out of which an area of 63,770 sq.km is under forests, which accounts to 23% of the geographical area. Out of 63,770 sq.km. of forests only 582 sq.km. are under the mangrove forests, which accounts 0.9% of the total forest area of the state. Andhra Pradesh has the geographical advantage of having most of the east flowing rivers in the heart of the state bringing in copious supplies of sediments from the Western and Eastern Ghats and Deccan Plateau up to the coast. The major, medium and minor rivers, which flow through the state, are about 40. Out of these, the most important rivers are (1) The Godavari (2) The Krishna (3) The Pennar and (4) The Vamsadhara. The majority of the mangroves are present in the estuaries of these rivers. The Godavari mangroves are located in the Godavari estuary in the East Godavari district. Krishna mangroves are located in the Krishna estuary of Krishna and Guntur districts. Apart from these estuaries, mangroves are also found in small patches in the coasts of Visakhapatnam, West Godavari, Guntur and Prakasham districts.

### Godavari Mangroves

The Godavari mangroves are located in the Godavari estuary in the East Godavari district, between 16° 39' - 17° N and 82° 14' - 82° 23' E. The total area of the wetland according to the Forest department, Government of Andhra Pradesh is 316 sq. km. in which 235.7 sq.km. is under Coringa wildlife sanctuary. The extent of Godavari mangroves is only 6,000 ha. The Coringa Wildlife Sanctuary has 3 Reserved Forests namely Corangi R.F., Corangi Extn. R.F. and Bhairavapalem R.F. Most of the mangroves in the sanctuary are not directly connected with the Bay of Bengal. The mangroves of Coringa Wildlife sanctuary receive tidal flushing through Matlapalem canal, Corangi River and Gaderu River. The Gaderu and Corangi rivers are tributaries of the Godavari. The other 6 Reserved Forests (R.F)

namely Rathikalava, Masanitippa, Matlatippa, Balusutippa, Kothapalem and Kandikuppa R.F are situated on the southern side of Nilarevu River that falls under non-sanctuary area.

### Land Use

Aquaculture tanks (Shrimp farms) are located very close to the mangrove forests. Revenue and private lands abutting the mangroves are converted into shrimp tanks. Coconut groves and paddy cultivation are the important agricultural practices of this area. Some of the areas are under salt production in both Krishna and Godavari deltas. The saltpans are found in the out skirts of Kakinada near Chollangi and near Balusutippa. Casuarina plantations were raised by the Forest department along the Hope Island and along the shore near Masanitippa and Kandikuppa R.F. and near Sacramento Lighthouse.

### Vegetation types

- ✚ **Dense Mangroves:** Areas close to the sea especially the areas found near Corangi and Gaderu river mouths are characteristic of dense vegetation because of daily inundation. This area supports *Avicennia alba* and *Sonneratia apetala*. *Rhizophora apiculata*, *Ceriops decandra*, *Bruguiera gymnorrhiza*, *Excoecaria agallocha* and *Xylocarpus moluccensis* are present in the middle zone. Towards the landward area mostly *Excoecaria agallocha*, *Avicennia marina* and *A. officinalis* occur.
- ✚ **Sparse Mangroves:** Occasionally inundating areas support species like *Excoecaria agallocha* and *Lumnitzera racemosa* and generally they are of short stature. *Suaeda maritima*, *S. nudiflora* and *Aeluropus lagopoides* are common in this area.
- ✚ **Casuarina Plantations:** The Casuarina plantations raised by the Forest Department along the coast are seen in the Hope Island, along the shore near Masanitippa and in Kandikuppa R.F. near Sacramento lighthouse.
- ✚ **Invasion by Prosopis:** The high tidal mud flats where inundation is rare, the invasion of *Prosopis* can be seen. Invasion could also be seen even near the river mouth.

### Corangi Reserved Forest (RF)

The Mangrove vegetation in this R.F (Reserved Forest) is dense the total area as per the forest department is about 4,242 ha. out of which 2,951 ha is with dense mangroves. *Avicennia marina* and *Excoecaria agallocha* are the dominant species. *Acanthus ilicifolius* and *Myriostachya wightiana* are found in thick patches along the creeks of Corangi River near Ramannapalem and Matlapalem creeks. 14 Associated species like *Thespesia*

*populneoides*, *Hibiscus tiliaceus* and *Clerodendrum inerme* are present. *Suaeda maritima* and *S. nudiflora* are common in the degraded and partially degraded areas. In the elevated areas where the soil is highly saline *Salicornia brachiata* is seen. Shrubs namely *Acanthus ilicifolius* and *Dalbergia spinosa* and climbers like *Ipomoea tuba*, *Sarcolobus carinatus*, *Caesalpinia crista*, and *Derris trifoliata* are also recorded. *Lumnitzera racemosa*, *Excoecaria agallocha* and *Avicennia marina* are found in the up-land areas. The soil of this R.F. is clayey. The mangrove zonations near Corangi river mouth and Matlapalem canal are distinct. *Avicennia alba* is seen as pure stands near Kakinada Bay side (Corangi river and Matlapalem canal mouths). The next zone towards landward side is with pure stands of *Sonneratia apetala*. After this the vegetation is mixed with pure stands of *Excoecaria agallocha*, *Lumnitzera racemosa*, *Aegiceras corniculatum* and *Avicennia marina*. The other mangrove species *Rhizophora apiculata*, *Xylocarpus moluccensis*, *Bruguiera cylindrica*, *B. gymnorrhiza* and *Ceriops decandra* are almost absent.

#### **Bhairavapalem Reserved Forest**

Bhairavapalem R.F(Reserved Forest) is named after the village Bhairavapalem that is situated near the Godavari river mouth and occupies an area of 971 ha. In Bhairavapalem R.F. almost all the species are recorded except *Scyphiphora hydrophyllacea*. In this R.F. *Excoecaria agallocha*, *Avicennia marina*, *A. officinalis* and *Aegiceras corniculatum* are abundant. *Rhizophora apiculata*, *R. mucronata*, *Xylocarpus moluccensis*, *Sonneratia apetala*, *Bruguiera gymnorrhiza* and *B. cylindrica* are seen along the creeks. *Suaeda* spp. is noticed in the degraded areas. The other species namely *Derris trifoliata*, *Sarcolobus carinatus*, *Clerodendrum inerme* and *Dalbergia spinosa* are also recorded. The soil of this R. F. is clayey along the Gaderu River and is sandy clay towards the seaside.

#### **Rathikalava Reserved Forest**

The total area under this R.F(Reserved Forest) is 2,043 ha of which 805 ha is with dense mangroves. As per the GIS data, the water spread area (Godavari River) accounts for 724 ha. Degraded and partially degraded mangroves account for 214 ha. *Rhizophora apiculata*, *R. mucronata*, *Xylocarpus molluccensis*, *Bruguiera gymnorrhiza*, *Avicennia marina*, *A. officinalis* and *Excoecaria agallocha* occur in this R.F. Trees of *Rhizophora*, *Bruguiera* are seen along the creeks reaching about 4-6 m. in height. Large trees of *Avicennia officinalis* are found in the R.F. *Tamarix troupitii*, a mangrove associate is recorded in this R.F.

along with *Thespesia populneoides*, *Hibiscus tiliaceus* and *Clerodendrum inerme*. Species of *Suaeda* and *Salicornia* occur in the degraded areas. Stunted *Excoecaria agallocha*, *Lumnitzera racemosa* are also found in the degraded areas. Prosopis invasion along the Saleru canal is noticed which 16 are cut and sold by the villagers for tobacco curing during December and January every year. In spite of this practice, this species is fast making inroads into mangrove areas posing a severe threat to mangroves. The soil is clayey.

### **Krishna Mangroves**

The Krishna mangroves are between 15° 42' - 15° 55' N and 80° 42' - 81° 01' E spread across Krishna and Guntur Districts.

### **Sorlagondi Reserved Forest**

The vegetation in Sorlagondi RF (Reserved Forest) is sparse the total area as per the records of the Forest department is 5,199.40 ha. out of which 1,292 ha is with dense mangroves. The vegetation near the lighthouse is dense. *Avicennia officinalis*, *A. marina*, *Excoecaria agallocha*, *Aegiceras corniculatum* and *Rhizophora apiculata* are recorded. *Suaeda maritima* and *S. nudiflora* are common in the degraded areas and *Excoecaria agallocha* and *Avicennia marina* with stunted growth also occur. *Acanthus ilicifolius* is seen along the sides of the creek and *Clerodendrum inerme* an associate species is also recorded. *Avicennia marina*, and *Excoecaria agallocha* are the dominant species. In the highly saline areas *Salicornia brachiata*, is present and dense vegetation of *Prosopis* is seen in the uplands towards landward side. Nearly 500 ha. of the barren areas near Gollalamoda are converted for aquaculture. Soil in this R.F. is clayey.

### **Nachugunta Reserved Forest**

The total area of this R.F.(Reserved Forest) is 6,064.64 ha in which 2,873 ha are healthy mangroves. Species diversity is more in this R.F. Dense vegetation of the *Rhizophora apiculata*, *Avicennia marina* and *A. officinalis* are seen along the canals. Prosopis invasion is more in some places with mixed vegetation of *Excoecaria agallocha*. Mean height of the trees in this area is 4-5 m. Large areas of degraded mangroves occur near Zinkapalem village with stunted growth of *Excoecaria agallocha*, *Suaeda maritima* and *Avicennia marina*. The dominant species are *Rhizophora apiculata* and *Avicennia marina*. Species like *Excoecaria agallocha*, *Aegiceras corniculatum*, *Bruguiera gymnorrhiza* and *Acanthus ilicifolius* are recorded. Soil is clayey towards landward side and sandy clayey near the shore side.



### Lankivanidibba Reserved Forest

The total area under this R.F(Reserved Forest)is 5,382 ha. of which 1,974 ha is with thick mangrove vegetation. *Avicennia marina*, *A. officinalis*, *Xylocarpus granatum*, *Excoecaria agallocha*, *Ceriops deendra*, *Rhizophora apieulata* and *Bruguiera cylindrica* are recorded. The vegetation is healthier. Large degraded areas are available in this R.F. Anthropological pressure is more from the nearby villages of Molagunta, Kothapalem, Patur, Nakshatranagar and Lankivanidibba. The soil in this R.F. is clayey. Invasion of *Prosopis* is high in some of the areas. In Krishna, the vegetation is sparse in Sorlagondi, Nachugunta, Lankivanidibba and Yelichetladibba R. F's. In Lankivanidibba, the mangrove vegetation is dense along the coast and in the landward side the vegetation is sparse. Invasion of *Prosopis* is a serious threat to the mangrove biodiversity.



*Avicennia marina* *Excoecaria agallocha* *Rhizophora apieulata*



*Aegiceras corniculatum* *Bruguiera gymnorrhiza* *Suaeda maritima*

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