



# MANGROVES OF UTTARA KANNADA COAST

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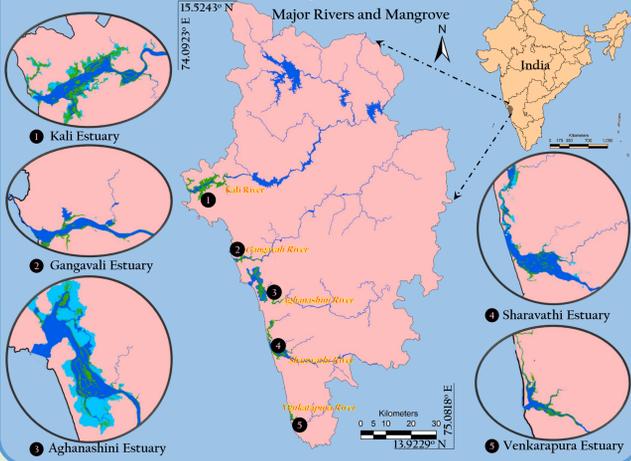
Mangroves are salt tolerant plants growing in the swampy mud of coastal areas. They grow in intertidal zones of river mouths, lagoons and creeks which forms the estuaries where the river water mixes with seawater. Mangroves are equipped with many biological adaptations like pneumatophores, stilt roots, buttress roots, salt filtering roots, salt glands, lenticels etc. to survive in salt rich, oxygen poor soil that is periodically flushed by tides. Based on mangrove species found in different salinity range we classified in to three category

- 1) High salinity mangroves - *Rhizophora mucronata*, *R. apiculata*, *Sonneratia alba*, *Avicennia marina*, *Bruguiera cylindrica*, *Acanthus ilicifolius*, *Excoecaria agallocha*.
- 2) Medium salinity mangroves - *Kandelia kandel*, *Avicennia officinalis*, *Aegiceras corniculata*, *Bruguiera gymnorrhiza*, *Lumnitzera littorea*.
- 3) Low salinity mangroves - *Sonneratia caseolaris*, *Acrostichum aureum*.

## Importance of Mangroves

- Coastal shore stabilization, protection from erosion
- Acts as Bio shield - Tsunami and Cyclones.
- Nutrient rich regions and habitat for diverse taxa
- Feeding and roosting grounds for birds and wetland animals.
- Goods include -Fire wood, Medicine, Fodder, etc.
- Sequester carbon and helps in reducing Global Warming.
- Nutrients and Heavy metal uptake - helps in maintaining water quality and salinity
- Education, Research and Eco Tourism.

## Study Area



## Low Saline Mangroves

*Sonneratia caseolaris*  
(Sonneratiaceae)

Taller straight trees. Longer pneumatophores than *Sonneratia alba*. Leaves rounded to egg shaped with knob (hydathode) at tip. Leaves stalk pinkish to red. Flowers dark red. Fruits depressed rounded ball size.



*Acrostichum aureum*  
(Pteridaceae)

Fern Ferns to 1-1.5 m tall. Rhizome woody. Pinnately compound leaves. Dark brown sporangia on the under surface of leaves.



## High Saline Mangroves

*Rhizophora mucronata*  
(Rhizophoraceae)

Tall trees with branched stilt roots, Leaves broad, tip long narrow pointed, Flowers cream coloured, stalked. Propagules long, straight.



*Rhizophora apiculata*  
(Rhizophoraceae)

Tall trees with branched stilt roots, Leaf stalk and midrib pinkish. Leaf tip long pointed, Flowers cream coloured stalkless. Propagules long, slightly bent at tip.



*Sonneratia alba*  
(Sonneratiaceae)

Bushy trees with pneumatophores. Leaf sub-rounded, thick. Flowers white with numerous white stamens. Fruit large ball size berry.



*Avicennia marina*  
(Avicenniaceae)

Trees with yellow stems. Pencil like pneumatophores. Leaf tip pointed, whitish beneath. Flowers yellow, stamens-4, exerted. Fruits almond like.



*Bruguiera cylindrica*  
(Rhizophoraceae)

Tall buttressed tree. Knee roots rounded egg shaped. Leaves tip pointed. Flowers white Calyx tube green, reflexed (inside turned) lobes.



*Excoecaria agallocha*  
(Euphorbiaceae)

Small trees with milky latex. Serpentine roots. Leaf turning red before shedding, margins smoothly toothed. Flowers tiny yellow fragrant, catkin.

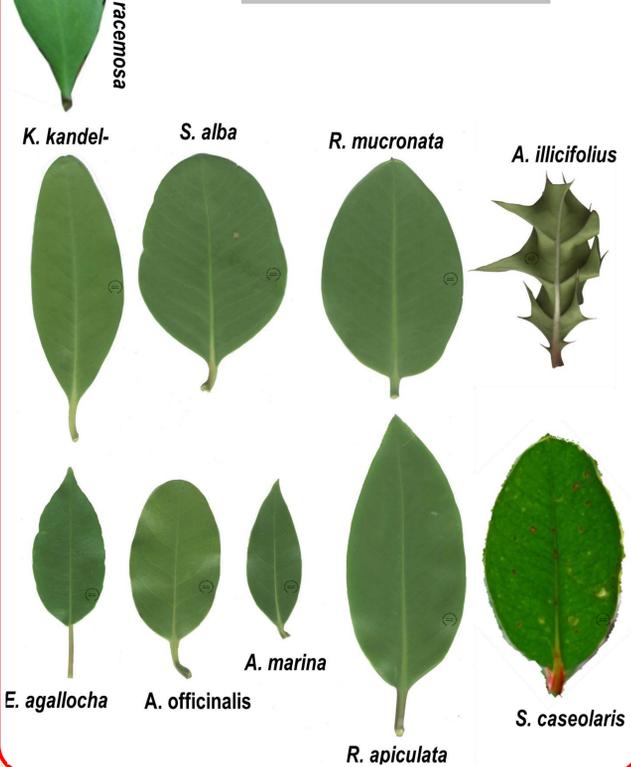


*Acanthus ilicifolius*  
(Acanthaceae)

Shrubs, Leaf lobed, tip spiny, Flowers blue.



## Leaf morphology



## Medium Saline Mangroves

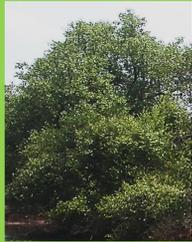
*Kandelia kandel*  
(Rhizophoraceae)

Trees with stem base buttressed with closely attaching stilt roots. Leaves slightly rounded at tip. Flowers white, petals-5. Propagules narrow and long.



*Avicennia officinalis*  
(Avicenniaceae)

Large trees. Pencil pneumatophores. Leaf tip rounded. Flowers yellow. Stamens 4, included.



*Aegiceras corniculata*  
(Myrsinaceae)

Shrubs. Leaves leathery, gland dotted, abovate. Flowers white, fragrant in dense umbels. Fruits sickle shaped and pointed at apex.



*Bruguiera gymnorrhiza*  
(Rhizophoraceae)

Tree with rough bark; stem base buttresses. Leaves elliptic with a narrow tip



*Lumnitzera racemosa*  
(Combretaceae)

Small trees or shrubs. Leaves alternate, stalkless. Leaf tip notched (emarginate) with hydathode (water pore). Flowers white,



*Porteresia coarctata*  
(Poaceae)

Perennial grasses. Leaves with spinulose margins. Spikelets in narrow panicles.



## Root morphology

