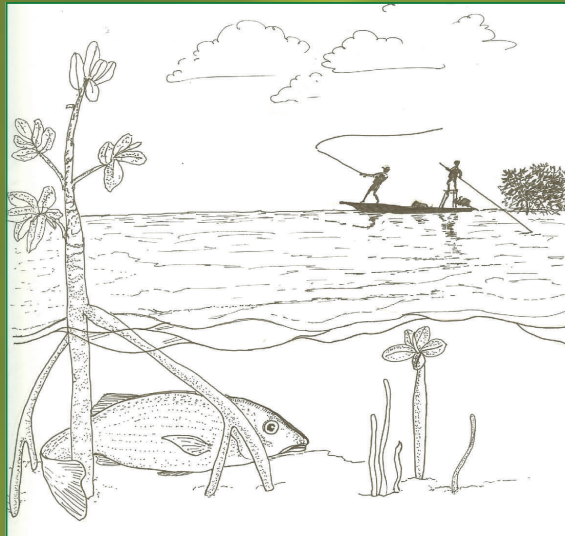


Why are mangroves important?

- Mangroves cycle nutrients and remove pollutants
- Mangroves absorb wind and wave energy protecting the coast
- Mangroves provide food and habitat for birds, mammals, reptiles and invertebrates
- An estimated 75% of game fish and 90% of commercial fish use mangroves as habitat
- Mangroves provide attachment surfaces for filter-feeders, like oysters
- Mangroves reduce excessive sediment and nutrients from run-off, thereby protecting adjacent sea grass and coral habitats



Patricia Clark

The mangrove nursery

- Healthy mangroves provide structural habitat, protection and nursery areas for young fish
- Snook, tarpon, and seatrout are some of the fish that use mangroves
- 70% of the fish and shellfish we eat originate within mangrove estuaries

J.N. "Ding" Darling
National Wildlife Refuge
1 Wildlife Drive
Sanibel Island, FL 33957
239-472-1100



This work is part of collaborative partnership between the J.N. "Ding" Darling NWR and the Federation of Fly Fishers
Photograph was donated by Denny Souers

Threats to mangroves

Though natural disturbances pose a threat to mangroves, the greater threat is human activities.

- Development and destruction of coastlines
- Deterioration of water quality from run-off
- Home-owner pruning
- Exotic plant introduction and invasion

Mangroves are protected under the Florida state Mangrove Preservation Act. It is against the law to trim or remove mangroves. With only an estimated 400,000 acres of mangroves in Florida, conservation is critical.

U.S. Fish & Wildlife Service

J.N. "Ding" Darling National Wildlife Refuge

Mangroves The trees of the



Patricia Clark

MANGROVE

SPECIES

OF FLORIDA

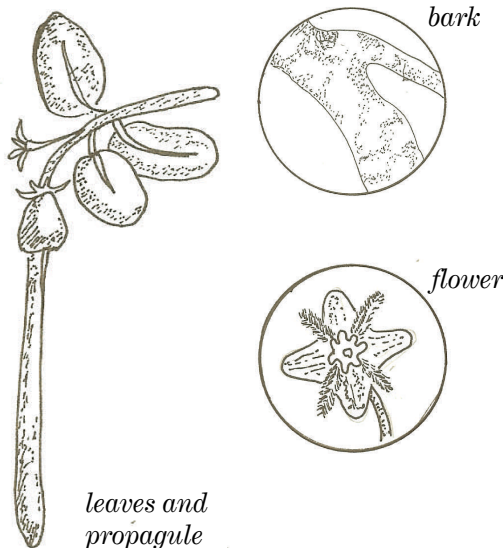
What are mangroves?

Mangroves are tropical trees that grow in the intertidal environment. They are adapted to survive water-saturated soils, high salt concentrations and periodic tidal submergence. Mangroves disperse their propagules by water.

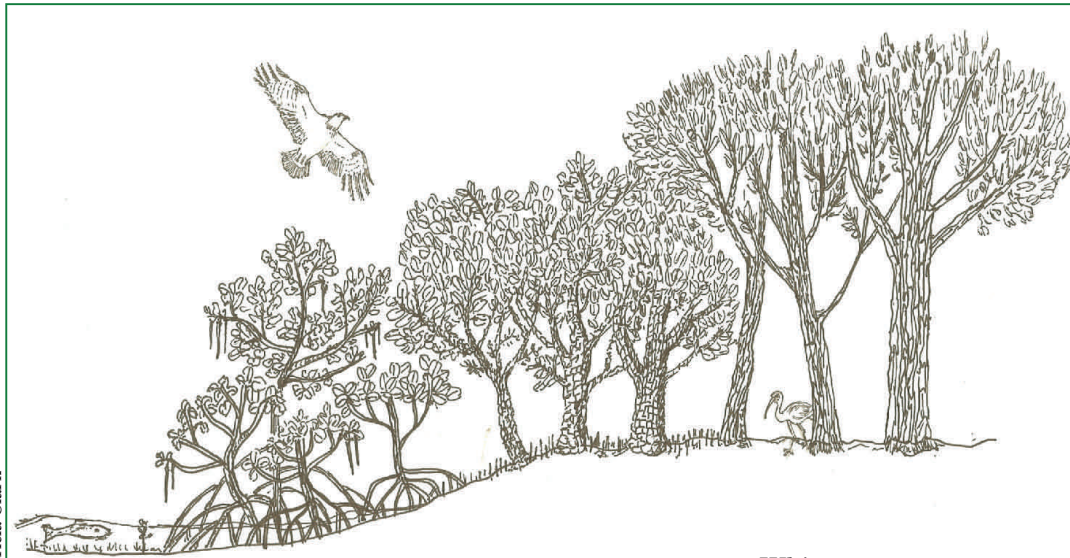
Mangrove communities are an integral part of Florida's natural heritage.

Red Mangrove (*Rhizophora mangle*)

- Grow 5 to 20 meters tall
- Thick glossy leaves are opposite and elliptical with a dull underside
- Arching stilt roots called "prop roots" and "drop roots"
- Pencil-shaped propagule (seedling)
- Filtration at the roots reduces salt intake



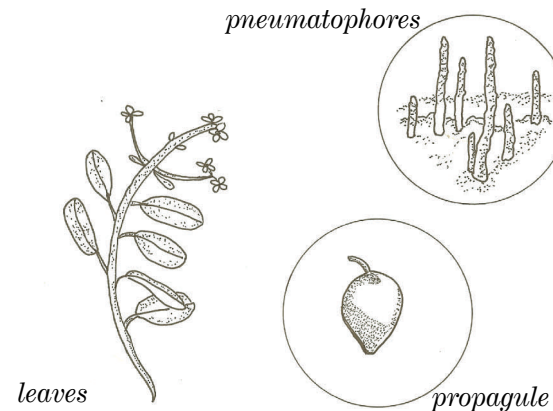
Patricia Clark



Mangroves are adapted to live with different exposure to salt water. Red mangroves are found closest to the water's edge. Black mangroves are found further inland, and white mangroves are found in the interior mangrove forest.

Black Mangrove (*Avicennia germinans*)

- Grow 15 to 20 meters tall
- Shiny leaves are opposite with silver underside
- Horizontal roots and upward projections at the base of the tree called pneumatophores
- Lima bean-shaped propagule (seedling)
- Excrete excess salt visible on leaf surface



White Mangrove (*Laguncularia racemosa*)

- Grow 15 meters tall
- Leaves are opposite and succulent with notched tip
- Nodules at the base of leaf
- Tear drop-shaped propagule (seedling)
- Excrete excess salt from leaf surface

