Florida's Mangroves

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What Are Mangroves?

Mangroves are one of Florida's true natives. They thrive in salty environments because they are able to obtain fresh water from saltwater. Some secrete excess salt through their leaves, others block absorption of salt at their roots.

Florida's estimated 469,000 acres of mangrove forests contribute to the overall health of the state's southern coastal zone. This ecosystem traps and cycles various organic materials, chemical elements, and important nutrients. Mangrove roots act not only as physical traps but provide attachment surfaces for various marine organisms. Many of these attached organisms filter water through their bodies and, in turn, trap and cycle nutrients.

The relationship between mangroves and their associated marine life cannot be overemphasized. Mangroves provide protected nursery areas for fishes, crustaceans, and shellfish. They also provide food for a multitude of marine species such as snook, snapper, tarpon, jack, sheepshead, red drum, oyster, and shrimp. Florida's important recreational and commercial fisheries will drastically decline without healthy mangrove forests.

Many animals find shelter either in the roots or branches of mangroves. Mangrove branches are rookeries, or nesting areas, for beautiful coastal birds such as brown pelicans and roseate spoonbills.

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Worldwide, more than 50 species of mangroves exist. Of the three species found in Florida, the red mangrove,Rhizophora mangle, is probably the most well-known. It typically grows along the water's edge. The red mangrove is easily identified by its tangled, reddish roots called "prop roots." These roots have earned mangroves the title, "walking trees." The mangrove appears to be standing or walking on the surface of the water.

The black mangrove, Avicennia germinans, usually occupies slightly higher elevations upland from the red mangrove. The black mangrove can be identified by numerous finger-like projections, called pneumatophores, that protrude from the soil around the tree's trunk.

The white mangrove, Laguncularia racemosa, usually occupies the highest elevations farther upland than either the red or black mangroves. Unlike its red or black counterparts, the white mangrove has no visible aerial root systems. The easiest way to identify the white mangrove is by the leaves. They are elliptical, light yellow green and have two distinguishing glands at the base of the leaf blade where the stem starts.

All three of these species utilize a remarkable method of propagation. Seeds sprout while still on the trees and drop into the soft bottom around the base of the trees or are transported by currents and tides to other suitable locations.

Florida's mangroves are tropical species; therefore, they are sensitive to extreme temperature fluctuations as well as subfreezing temperatures. Research indicates that salinity, water temperature, tidal fluctuations, and soil also affect their growth and distribution.Mangroves are common as far north as Cedar Key on the Gulf coast and Cape Canaveral on the Atlantic coast. Black mangroves can occur farther north in Florida than the other two species. Frequently, all three species grow intermixed.

People living along the south Florida coasts benefit many ways from mangroves. Mangrove forests protect uplands from storm winds, waves, and floods. The amount of protection afforded by mangroves depends upon the width of the forest. A very narrow fringe of mangroves offers limited protection, while a wide fringe can considerably reduce wave and flood damage to landward areas by enabling overflowing water to be absorbed into the expanse of forest. Mangroves can help prevent erosion by stabilizing shorelines with their specialized root systems. Mangroves also filter water and maintain water quality and clarity.

Mangrove Losses in Florida

It is true that mangroves can be naturally damaged and destroyed, but there is no doubt that human impact has been most severe. Department of Environmental Protection, Florida Marine Research Institute scientists are studying changes in Florida's coastal habitats. The scientists are able to evaluate habitat changes by analyzing aerial photographs from the 1940's and 1950's and satellite imagery and aerial photography from the 1980's. Frequently the changes illustrate loss of mangrove acreage. Through researching the history of study sites, these losses are often attributed to human activities.

Tampa Bay, located on the southwest Florida coast, has experienced considerable change. It is one of the ten largest ports in the nation. Over the past 100 years, Tampa Bay has lost over 44 percent of its coastal wetlands acreage; this includes both mangroves and salt marshes.

The next major bay system south of Tampa Bay, Charlotte Harbor is one of the least urbanized estuarine areas in Florida. However there has been some mangrove destruction here also. Punta Gorda waterfront development accounts for 59 per cent of the total loss. An increase in mangrove acreage was noted in parts of the Harbor. This is due to changes in the system. As tidal flats were colonized by mangroves, tidal flat acreage decreased while mangrove acreage increased. Spoil islands, created as by-products of dredging, provided suitable habitat for mangroves.

A changing system was also observed on the Southeast Florida coast in Lake Worth, near West Palm Beach. Lake Worth naturally evolved from a saltwater lagoon to a freshwater lake. Human changes modified the lake back to an estuarine lagoon. Lake Worth has experienced an 87 per cent decrease of its mangrove acreage over the past forty years. Mangroves appear to be replaced by Australian Pines and urbanization. The remaining 276 acres of mangroves occur in very small areas and are now protected by strict regulations.

Another study site included the Indian River from St. Lucie inlet north to Satellite Beach. Indian River is the longest saltwater lagoon in Florida. There are just less than 8,000 acres of mangroves within the

study site, but only 1,900 are available as fisheries habitat because of mosquito impoundments. Consequently, 76 percent of the existing mangrove areas are not productive to fisheries. A total of 86 percent of the mangrove areas have been lost to fisheries since the 1940's.

State and local regulations have been enacted to protect Florida's mangrove forests. Local laws vary. Be sure to check with officials in your area prior to taking any action, to determine if a permit is required.

Mangroves are one of Florida's true natives and are part of our state heritage. It is up to us to ensure a place in Florida's future for one of our most valuable coastal resources- mangroves.