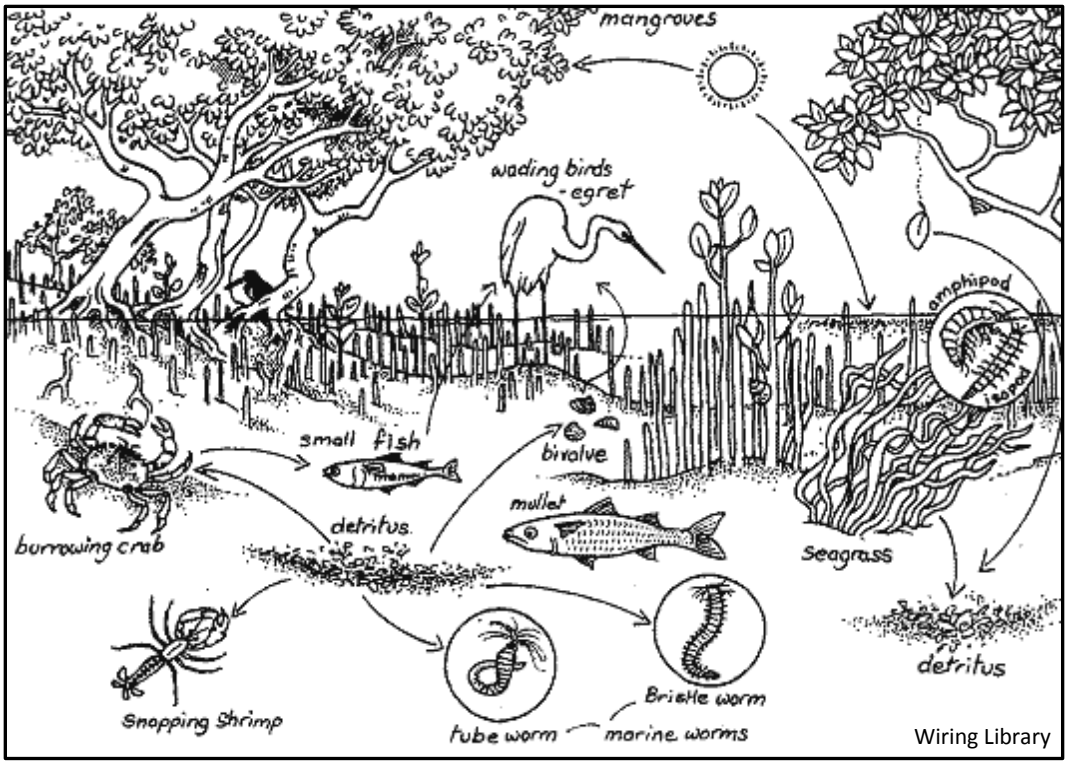
“On the Edge” with Mangroves

(Author’s Note: This is the twenty-second in a series of articles by members of the City of Sanibel Vegetation Committee dealing with vegetative matters of concern to island residents. Members of the Vegetation Committee are Sanibel residents appointed by City Council for one-year terms. To be considered for appointment, contact the City Manager’s Office at (239) 472-3700.)

The Vegetation Requirements for the City of Sanibel, based on the Sanibel Land Development Code, identifies mangroves as “vital components of the estuary” providing multiple benefits to people, fish and wildlife as well as creating a habitat for over 80% of the fish and shellfish species in southwest Florida. Mangroves benefit communities through their ability to block wind and wave energy, stabilize soils, and improve water quality through uptake of nutrients. Moreover, they provide roosting and nesting sites for many wading birds and seabirds.



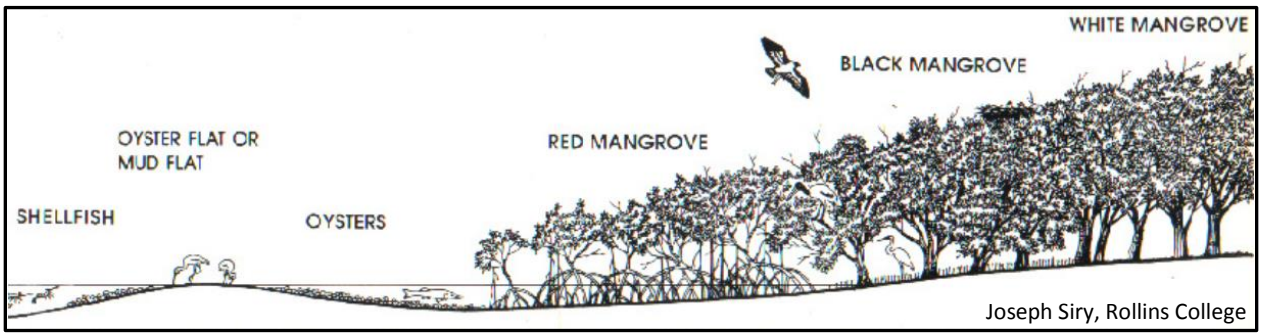
The history of mangroves is fascinating and there are approximately 70 species of mangroves worldwide! There are three varieties of mangroves that are native to Florida, none of which are in the same botanical family.

Probably most recognized by the arching prop roots and the drop roots coming down from the upper branches is the red mangrove (*Rhizophora mangle*). The seedling, referred to as a propagule, develops into a complete plant while still attached to the parent tree. When the propagule breaks free, it may drift around in the water for a year or more before anchoring in the sediments. It is the tree found closest to the water and can tolerate and thrive in varying degrees of salinity. Red mangroves are salt excluders –the salt in seawater is prevented from entering the plant at the root interface, so only freshwater enters the tree. An acre of red mangroves can shed up to three tons of leaves per year. The resulting detritus is the foundation for the food web from micro-organisms to fish to wading birds.

Black mangroves (*Avicennia germinans*) with their dark bark and two-toned leaves, green on top and silvery undersides, are salt extruders –these trees take in saltwater and expel salt through small openings on the surface of the leaf. As the water evaporates, salt crystals are left. Pneumatophores, pencil or straw-like projections, along the horizontal roots are like breathing tubes for the tree and conduct oxygen to the underground root system. Black mangroves are the most cold tolerant of the three species, and can extend much farther into the "frost zones".

White mangroves (*Laguncularia racemosa*) grow furthest upland in the mangrove fringe, and do not like their "feet" to be as wet as red and black mangroves. The leaves are oval in shape, rounded at both ends, and the leaf tip has a distinguishing notch. Much like the black mangrove, the white mangrove is also a salt extruder –they take in saltwater and excrete the salt through two small glands, referred to as nectaries, on the petiole just below the leaf base. White mangroves are the least cold tolerant of the three species and tend to colonize closer to the tropics.

Destruction of mangroves worldwide has increased the vulnerability of areas to coastal storms and flooding. Threats to mangroves include development and alteration of coastlines, poor water quality from runoff, and invasion by exotic plants. In Collier County, nearly 70% of the mangroves have been destroyed to build homes around Naples Bay. Efforts are being made to protect and manage these areas through conservation, restoration, and educational opportunities regarding the value of these trees.



Florida has approximately 400-600,000 acres of mangrove fringe, which are fortunately protected under the 1996 Mangrove Trimming and Preservation Act and reinforced by City's local ordinance (Section 38-31—38-200). Mangrove trimming and alteration is governed by the Florida Department of Environmental Protection; however, authority has been delegated to the City of Sanibel to regulate mangrove protections on-island.

A homeowner that wishes to trim mangroves is required notify the City of Sanibel. Upon notification, City staff will inspect the project area before and after trimming to ensure compliance with mangrove regulations. Mangrove trimming projects should be designed to minimize environmental impacts and protect this natural resource. To view more information about mangrove and mangrove trimming please visit the City's website: http://www.mysanibel.com/Departments/Natural-Resources/Vegetation-Information/Mangroves. You can also contact the City's Natural Resources Department to discuss mangrove trimming regulations or schedule an on-site meeting: (239) 472-3700.

Your efforts to comply with the City's mangrove laws help guarantee the preservation of this unique native vegetation and wildlife habitat that exists on our island. Mangroves are our bridge between the land and the sea!

Where can I learn more about native plants on Sanibel? The Vegetation Committee hosts free plant walks from November to April at City Hall to view and discuss the use of native plants. Everyone and their questions are welcome!

Go native with the right help!

To view pictures of the Invasive Exotic Plants "Worst of the Worst" or the City's "The Alien Invasion" brochure, visit the City's website at http://www.mysanibel.com/Departments/Natural-Resources/Vegetation-Information/Exotic-Vegetation/Other-Invasive-Exotic-Vegetation or contact the City's Natural Resources Department at 472-3700.

To read other Vegetation Committee articles in this series please visit the City of Sanibel's Natural Resources Department website: http://www.mysanibel.com/Departments/Natural-Resources