Magic in the Mangroves:
A Profile of Mangrove Communities
What is a Mangrove?

A mangrove is a tree that is found in tropical and sub-tropical areas, usually in estuarine waters. The mangrove is a halophyte, but it can survive in freshwater provided there is no competition from other plants.
Halophyte-

Literally, a salt-loving plant.
The Everglades, a wetland area in Florida, contains multiple mangrove ecosystems. The principles that dominate these communities can be an excellent case study for mangrove communities all over the world. This “river of grass” is one of the last wilderness areas in the United States.
Mangrove Diversity

There are over 14 species worldwide, but only three are found along Florida’s coast. They range as far north as Cape Canaveral, but are generally located along the southern coast and in the Everglades.
What is Mangrove Zonation?

Originally, scientists believed that mangroves could only grow in a certain order, moving from the most low-lying areas, to higher, drier ground.

However, work by scientists such as Rabinowitz (1975) and Ball (1980) has shown that external physical forces are more likely the cause of this zonation rather than the plants themselves.
What Makes Mangrove Ecosystems Productive?

Among other factors, high nutrient retention and large amounts of litter fall are important to mangrove productivity.
Red Mangrove
(Rhizophora mangle)

This species is found closest to the water. Identifying characteristics include:

1. **Prop roots**
2. Shiny, green leaves located opposite one another on the branches
3. Reproduction by means of seed pods called **propagules**
4. Lenticles, breathing pores, are located along the top arches of prop roots
Prop roots-

These stilt-like roots extend from the main branch in all directions. Prop roots anchor the mangrove because it is usually inundated at high tide. The prop roots also contain lenticles, breathing pores that allow the mangrove to respire.
Propagule-

Seedlings of mangrove trees. Red mangrove propagules are cigar-shaped, but they vary by species. These seeds fall off the parent tree and can be carried long distances before finally settling in an appropriate place. Propagules can stay viable for up to a year before taking root.
Black Mangrove

*(Avicennia nitidia)*

The black mangrove is found further inland than the red mangrove. Other characteristics include:

1. Leaves that are 2-3 inches and dark green on top with salt crystals on the bottom
2. Breathing lenticles located on **pneumatophores**
3. Reproduce with a small seed pod that grows to about 1.5 inches
Pneumatophore-

Pencil-like projections of the black mangrove. They stick up through the surrounding mud and silt, reaching just far enough to be out of the water during high tide. They allow the plant to breathe.
White Mangrove

(Laguncularia racemosa)
The white mangrove typically thrives in drier soils. It is often short and very bush-like. The white mangrove is characterized by:

1. Oval-shaped, medium, green leaves
2. Lenticles located on the trunk
3. Leathery, reddish-brown seed pods that are about .5 inches long
4. Two glands below each leaf excrete salt
Mangrove Denizens

Mangroves, particularly red and black mangroves, are important to wetland ecosystems in southern Florida.
Birds

- Wood Stork
- Roseate spoonbill
- Herons
- Egrets
- Pelicans
- Frigate birds
- Bald Eagles
- Ospreys
Invertebrates

Hermit Crabs  Starfish
Barnacles
Polychaete Worms  Molluscs
Penaeid Shrimp  Gastropods
Sea Urchins  Swimming Crabs
Stomatopods
Mammals

- Cotton Rat
- Marsh Rabbit
- Striped Skunk
- Virginia Opposum
- Florida Panther
- Raccoon
- Manatee
- Bobcat
- Bottle-nosed Dolphin
- White-tailed Deer
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Importance of Mangrove Ecosystems to Man

As defined in “The Ecology of the Mangroves of South Florida: A Community Profile” by Odum et al.

1. Shoreline Stabilization and Storm Protection
2. Habitat Value to Wildlife
3. Importance to Threatened and Endangered Species
4. Value to Sport and Commercial Fisheries
5. Aesthetics, Tourism, and the Intangibles
6. Economic Products
The area of the Everglades has been reduced by 50% in the last 100 years because of unwise agricultural and water management practices, as well as by urbanization. CERP is an attempt to pass legislation that will allot 7.8 billion dollars to restore some of the wetlands, including mangrove communities.
Acknowledgments and Sources for Further Reading

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