



Coastal Reforestation Technology



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ECOLOGICAL IMPORTANCE OF MANGROVE HABITAT

Mangrove trees are an indigenous species to Florida and a major contributor to the state's marine environment. The mangrove tree is a halophyte, a plant that thrives in salty conditions. It has the ability to grow where no other tree can, thereby making significant contributions that benefit the environment. Their coverage of coastal shorelines and wetlands provides many diverse species of birds, mammals, crustacea, and fish a unique, irreplaceable habitat. Mangroves preserve water quality and reduce pollution by filtering suspended material and assimilating dissolved nutrients.



The tree is the foundation in a complex marine food chain and the detrital food cycle. The detrital food cycle was discovered by two biologists from the University of Miami, Eric Heald & William Odum, in 1969. As mangrove leaves drop into tidal waters they are colonized within a few hours by marine bacteria that convert difficult to digest carbon compounds into nitrogen rich detritus material. The resulting pieces covered with microorganisms become food for the smallest animals such as worms, snails, shrimp, mollusks, mussels, barnacles, clams, oysters, and the larger commercially important striped mullet. These detritus eaters are food for carnivores including crabs and fish, subsequently birds and game fish follow the food chain, culminating with man. Many of these species, whose continued existence depends on thriving mangroves, are endangered or threatened. It has been estimated that 75% of the game fish and 90% of the commercial species in south Florida rely on the mangrove system. The value of red mangrove prop root habitat for a variety of fishes and invertebrates has been quantitatively documented. Data suggest that the prop root environment may be equally or more important to juveniles than are sea grass beds, on a comparable area basis. Discovery of the importance of mangroves in the marine food chain dramatically changed the respective governmental regulation of coastal land use and development.



Despite increasing awareness regarding value and importance, the destruction of mangrove forest continues to take place in many parts of the world under a variety of economic as-well-as political motives. In some areas, mangroves are protected by law but a lack of enforcement coupled with the economic incentive to reclaim land can result in deliberate destruction. Escalating pressure on mangrove populations and increasing quantities of pollutants reaching coastal and intracoastal waters

has brought new interest in the importance of mangroves to a healthy marine ecology.

The beneficial effects mangroves have on the marine ecology include:

- Basis of a complex marine food chain.
- Creation of critical habitat for fisheries and coastal bird populations.
- Establishment of restrictive impounds that offer protection for maturing offspring.
- Filtering and assimilating pollutants from upland run-off.
- Stabilization of sediments and protection of shorelines from erosion.
- Water and atmospheric quality improvements.
- Contribute to the health of coral reefs. <http://mangrove.org/video/Coral.pdf>
- Application in Green Funeral & Living Memorial services. <http://ecoMemorial.org/>



As natural members of the estuary system, mangroves help mitigate the environmentally adverse effects of development and pollution.

mangrove.org Proven Methodology and Patented Technology in coastal reforestation, habitat creation and ecosystem restoration.