♦Coastal Reforestation Technology
♦Habitat Creation and Restoration
♦Sustainable Development
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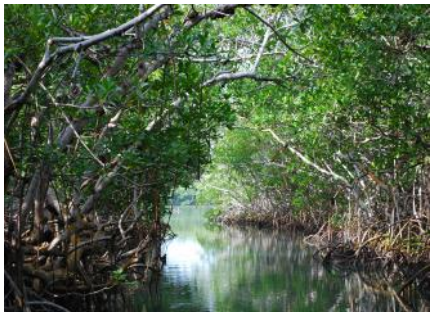
Mangrove and Coral Reef Ecosystems

YouTube Respect the Coral Reef

Coral reef and mangrove ecosystems function in a symbiotic relationship, which enhances tropical and subtropical coastal environments. The health and extent of coral reefs are largely dependent on coastal mangrove forests, which stabilize shorelines, remove pollutants, improve water quality, and provide nursery habitat that maintain fisheries. If fisheries are degraded due to the destruction or loss of mangrove habitat, then coral reefs will be adversely affected. Corals are correlated with the strength of fisheries and without viable fisheries, coral reef cannot survive.

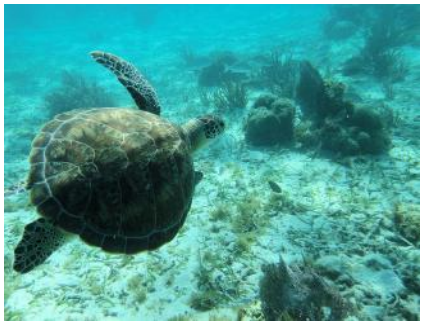


Barrier reefs are coral reefs extending roughly parallel and in close proximity to the shoreline. They function in reducing surf and shoreline energy. Together the coral reef and mangrove ecosystems form a barrier that protects shorelines from the destructive forces of wind, waves and driven debris. These living structures decrease the erosion and physical damage that can often impose significant economic and environmental costs on coastal communities. To a large extent, both help form and shape the shoreline. As essential components in shoreline protection and coastal resilience, they buffer entire regions against hydrological forces of the oceans and periodic inclement weather events, such as hurricanes and tropical storms.

The barrier reefs and mangrove forests are also critical in supporting biodiversity and a range of organisms in marine and littoral environments. Commercial and recreational fisheries are renewable economic resources important to indigenous populations and coastal areas for livelihood. A recent study published in the journal Nature, confirmed that mangrove habitat provides critical nursery grounds for juvenile coral reef fish. It was also found that fish species are more abundant on the coral reefs with associated mangrove tidal wetlands.

The monetary value of coral reef fish in commercial harvesting can be substantial; however, the economic value of the coral reef and mangrove in many parts of the world is most significant for the recreation and tourism industries. Sport fishing, boating, snorkeling and scuba diving along with other water sports as-well-as ecotourism have had a significant impact on converting the economic base of fishing villages and towns into travel destinations and ecotourism centers with international appeal.

A challenge faced by these transitional communities is in the balance that must be maintained between construction of the modern infrastructure needed to accommodate growing populations and the quality of native habitat. Coastal development and economic expansion can help build prosperity for local inhabitants but threaten the natural amenities that actually attract visitors. In order to maintain sustainable ecotourism in the economic base, there is a need for long-term vision in the conservation and restoration of surrounding ecosystems required to build resilience and preserve the social-ecological systems that compose coastal population centers.



The following diagram illustrates the mangrove as nursery grounds and critical habitat in the life cycle of coral reef fish.