

## What is Happening To Our Coast?

The Louisiana coastal zone is a geographic feature unique in the world. As Egypt was said to be a gift of the Nile River so is Louisiana a gift of the Mississippi River. The Mississippi drains forty-one per cent of the continental United States and part of Canada (Figure 1.). Soil carried by the river has been deposited in Louisiana for the last 6000 years to form what we now know as coastal Louisiana (See **BTNEP Video [Clip Three](#)**). All natural features in coastal Louisiana relate in some fashion to materials and processes associated with the emptying of the Mississippi River into the Gulf of Mexico. The Gulf of Mexico is the second major force making the Louisiana Coastal Zone what it is today. The interactions of these two water systems have made Louisiana an important center of domestic and world trade.

Winds, tides, and currents shape the land, deposit or rework sediments, subsidence occurs, and influence the climate of the coast. Storms originating in the Gulf cause harm to man and the land. Gulf resources, such as fish, furs, and petroleum, support great numbers of people in Louisiana and the rest of the country. Less than careful practices in harvesting these resources have helped the coastline to deteriorate. Since, we are losing the delta to the continental shelf; Louisiana is unable to replenish the necessary sediment to rebuild the land it needs.

Each component of the coastal zone contributes to the quality and character of the environment. The natural levee ridge areas, with their relatively higher elevations and firm, solid ground, provide the land areas along which settlement and agriculture can occur with minimum environmental modification. They are a solid base from which humans are able to utilize the resources of the coastal zone. They also provide habitats for thousands of migratory birds in the spring and fall. The distributary channels provide water access and, historically, have been major routes of transportation. The nearby swamp and marsh basins provide some protection to the ridge areas from coastal storms.

The estuary is the zone where saline and fresh waters meet. These estuarine areas are principal breeding and nursery grounds for many important fish and shellfish (See **BTNEP Video [Clip One](#)**, **BTNEP publication: [Healthy Estuary \(Environmental Indicators, 2002\)](#)**). The estuaries also supply nutrients for an extensive food web and they have the ability to absorb natural wastes and supply nutrients for an extensive food web (See Activity One). Like the rest of the delta



zone, the marshes depend upon continuous land building and a balance of fresh and salt water. Changes in elevation or salinity drastically alter the vegetation and wildlife of an area.

The outermost zone of concern is the shoreline itself. Barrier islands, cheniers, and oyster reefs are extremely important aspects of the coastal area. These features buffer inland areas from eroding tides, winds, and dangerous storms. They limit the amounts of saltwater entering the estuary. Thus helping to create a brackish environment. They, also, protect humans and estuarine wildlife alike. Barrier islands are built up by the deposition of sand and delta sediment by Gulf currents. The currents move the sediment along the coast, forming long chains of islands. If this process is impaired, the barrier simply erodes away; the coastline is left vulnerable, and is likely to deteriorate.

We know that Coastal deterioration is a natural phenomenon. The mighty Mississippi River has been changing its course for millions of years to build new deltas and land formations. Since the Mississippi River was harnessed, it is unable to complete its natural course, so plans must be made to help correct the problems occurring. Efforts are now being made to reintroduce the Mississippi River into Bayou Lafourche. This Coastal Restoration Plan is one of many trying to focus on saving our coast. Lafourche and Terrebonne Parishes in particular are experiencing increasing rates of wetland loss. Many of the restoration plans are taking affect in these two parishes.

Another problem occurring is the Hypoxia Zone or “Dead Zone.” The map (see figure 1) shows the Mississippi River Watershed. As you can see 31 states and two Canadian Providences drain into Louisiana. Due to fertilizers and other contaminants other states and areas are polluting our water area. Dr. Nancy Rabalais, Executive Director of LUMCON (Louisiana University Marine Consortium), is the renowned expert on hypoxia.

Hypoxia is an oxygen–depleted area caused by excessive nitrogen and phosphorus in the freshwater supply to the ocean. It causes immobility in fish and may cause many of them to die. Increased plankton growth decomposing on the ocean floor creates the hypoxic zone. This is one of the reasons why the wetlands are so important to Louisiana. They act as a filter system. The activity on creating a Wetscape will help your students to see how effective the wetlands can be at filtering out pollutants.



# Mississippi River Basin



Figure 1. Mississippi River Basin Watershed.  
[www.epa.gov/msbasin/index.htm](http://www.epa.gov/msbasin/index.htm)