



Coastal Bend Bays & Estuaries Program, Inc.

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Nueces River Delta

The Nueces River Delta is a semi-enclosed body of water where the Nueces River meets the Gulf of Mexico. This mixture of freshwater with salt water is referred to as a “brackish water system.” The mouth of the river carries not only water, but sediment as well, which provides the buildup of soils and nutrients at the mouth of the river. The accumulation of these materials at the point of deposition provides suitable habitats for different species of organisms. However, the combination of the fresh and salt water provides chemical and physical differences within the same estuarine system that provide a diversity of saline conditions within the estuary.

At the Nueces River Delta, water from the river and groundwater contribute to the inflow of fresh water. Here, as in other estuaries, the differences in the densities between the fresh water and salt water cause the salt water to flow upstream along the bottom of the delta and the fresh water to flow downstream along the surface causing a layered effect. Some of the saltwater mixes with the freshwater at the interface (the area where the fresh water and salt water are in close proximity). Estuaries, such as the Nueces Delta, are unique ecosystems because they provide variety in the physical and chemical conditions, depending on the source and closeness to either the salt water, freshwater, or the interface. Because of the varying degrees of salinity, estuaries provide diverse habitats for a variety of organisms that have adapted to the different chemical and physical factors of the ecosystem.

The Nueces River Delta is an estuary and offers a variety of habitat to the different species that have adapted to the differing degrees of salinity as the freshwater meets the salty ocean water. Estuaries provide important functions to the ecosystems of the area. Other kinds of estuaries include include the coastal marshes, natural reefs, open bays, tidal flats, sea grass meadows, gulf beaches, and barrier islands. Each provide unique ecological areas for organisms that have adapted to the conditions found in each of these systems.