



## Estuarine Contribution and Environmental Implications

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### DESCRIPTION

Freshwater from rivers and streams and saltwater from the ocean mix in an estuary, a partially enclosed, coastal body of water. Estuaries and the lands around them act as transitory zones between the land and the sea. They are nevertheless protected from the full force of ocean waves, winds, and storms by land features like barrier islands or peninsulas, although being impacted by the tides. Estuarine environments are among the planet's most prolific, creating more organic matter each year than comparable-sized areas of forest, grassland, or agricultural land. The protected estuarine waters also sustain distinct ecosystems of plants and animals that are specially adapted for living near the sea.

Mudflats, sandy beaches, saltwater and freshwater marshes, swamps, and open shallow rivers are just a few of the various habitat types that may be found in and surrounding estuaries.

### Crucial estuaries

Estuaries provide us with a multitude of goods, benefits, and services. Some of these can be measured in terms of dollars and cents, but not all of them. Estuaries provide areas for recreational activities, academic research, and aesthetic enjoyment. Estuaries are a limited natural resource that must be wisely maintained for the good of all those who depend on and use them.

### Important natural environments include estuaries

Numerous kinds of fish, birds, mammals, and other organisms find homes, food, and breeding grounds in estuarine habitats. Moreover, estuaries are essential for the development of a wide range of marine organisms, including the bulk of fish species that are relevant to commerce. Estuaries are great resting and refueling spots for migratory birds since they are biologically productive. Because they provide as secure breeding habitats for a variety of fish and animal species, estuaries are usually referred to as the "nurseries of the sea."

Estuaries are very valuable commercially, and the resources they contain are good for tourism, fishing, and recreational activities. Significant public infrastructure is supported by estuaries, which offer ports and harbors that are necessary for shipping and transit. Many coastal regions' economies are based on the beauty and abundance of their natural estuaries. A trillion dollars' worth of Gross Domestic Product (GDP) and 69 million jobs were supported by coastal watershed counties in 2007.

### The environment benefits from estuaries

Estuaries provide many more beneficial purposes. Water that drains from uplands carries sediments, fertilizers, and other pollutants to estuaries. As the water moves through wetlands like salt marshes and swamps, a significant amount of the sediment and toxins are filtered away. This filtration procedure produces cleaner, clearer water, which benefits both people and marine life. Salt marsh grasses and other estuarine plants also aid in preventing erosion and stabilizing the coastline. Furthermore, the vegetation and soils of wetlands act as storm surge absorbers and as a natural barrier separating the land from the ocean. Important real estate and upland habitat are protected from storm and flood damage in this way.

### Estuaries are under risk

Coastal counties are increasing three times more quickly than other counties nationwide. Sadly, the natural equilibrium of estuarine ecosystems is disrupted by the rising population density, which also affects the ecosystems' integrity and increases the stress on vital natural resources like estuaries.

What occurs on the land has an effect on the water quality as well as the health of the species that live in an estuary. For instance, the runoff from farming activities during a storm collects fertilizer, dung, and pesticides when a river or stream flows through fields. It gathers substances such as fertilizers or pet waste that run off lawns as it passes through urban and suburban areas, untreated sewage from malfunctioning septic tanks, wastewater discharges from industrial facilities, and silt from construction sites.

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