

Estuaries

Why Are Estuaries Important? Ecosystem Services

Many estuarine habitats filter pollutants such as herbicides, pesticides, and heavy metals out of the water flowing through them. **Click the image** to see a large animation of this process.

In addition to providing economic, cultural and ecological benefits to communities, estuaries deliver invaluable ecosystem services. Ecosystem services are fundamental life-support processes upon which all organisms depend (Daily et al., 1997). Two ecosystem services that estuaries provide are water filtration and habitat protection.



Habitats associated with estuaries, such as salt marshes and mangrove forests, act like enormous filters. As water flows through a salt marsh, marsh grasses and peat (a spongy matrix of live roots, decomposing organic material, and soil) filter pollutants such as herbicides, pesticides, and heavy metals out of the water, as well as excess sediments and nutrients (USEPA, 1993).

One reason that estuaries are such productive ecosystems is that the water filtering through them brings in nutrients from the surrounding watershed. A watershed, or drainage basin, is the entire land area that drains into a particular body of water, like a lake, river or estuary. In addition to nutrients, that same water often brings with it all of the pollutants that were applied to the lands in the watershed. For this reason, estuaries are some of the most fertile ecosystems on Earth, yet they may also be some of the most polluted.

Estuaries and their surrounding wetlands are also buffer zones. They stabilize shorelines and protect coastal areas, inland habitats and human communities from floods and storm surges from hurricanes. When flooding does occur, estuaries often act like huge sponges, soaking up the excess water. Estuarine habitats also protect streams, river channels and coastal shores from excessive erosion caused by wind, water and ice.

Unlike economic services, ecosystem services are difficult to put a value on, but we cannot do without them, and thus, they are essentially priceless.

National Oceanic and Atmospheric Association.

Source: http://oceanservice.noaa.gov/education/kits/estuaries/estuaries03_ecosystem.html