

Know Your Estuary



Estuaries are places where fresh water from lakes, rivers and streams join with salt water from the ocean – places commonly known as bays, lagoons and tidal rivers. Estuaries contain salt, *brackish*, and freshwater marshes. South Carolina contains some 504,445 acres of coastal marshes – more than any other state along the east coast. Of this amount, 334,501 acres are classified as salt marsh. A salt marsh is often dominated by expanses of Oyster flats (A) or Grass flats (B), the latter made up of predominantly smooth cordgrass, *Spartina alterniflora* (C). The rivers and creeks of an estuary (D) serve as important coastal arteries, transporting nutrients washed from uplands in addition to *detritus* and rich oceanic nutrients brought in with the tides. Except for rain forests, salt marshes are considered the most productive natural resources in the world.

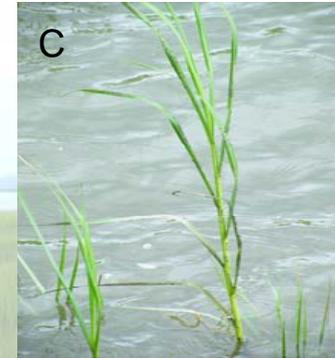
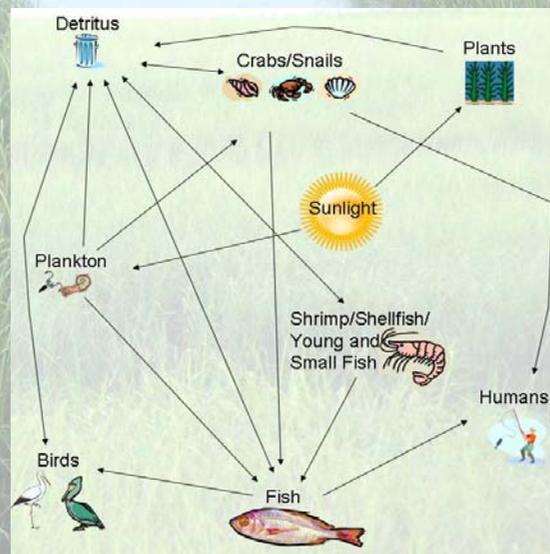


Estuaries provide many benefits to humans and to the environment. They provide a sheltered habitat, or home, for countless plants and animals that like to live in water that is part fresh and part salty. They also play an important role as breeding and/or nursery grounds for many of the animals we like to eat such as shrimp, crab, oysters, clams and numerous types of fish. In fact, it has been estimated that two-thirds of the species of fish harvested in offshore Atlantic and Gulf coast waters are *estuarine dependent*. In addition to providing food and shelter for animals, estuaries protect water quality by filtering out dirt and pollution. They also help keep humans safe by protecting us from floods. Healthy estuaries are extremely important to our coastal region, and their continued health is vital to our jobs and the quality and safety of our lives. Finally, the natural beauty of estuaries and the land surrounding them make them very desirable for people to live, sail, fish, swim, and bird watch. All of these benefits make estuaries the centers of our coastal communities.

Estuarine Food Web

Primary producers, *Autotrophs* (plankton and plants), use the sunlight to sustain themselves. Primary consumers (herbivores such as some fish, shellfish, filter feeders, etc.), convert the energy from primary producers into *biomass* through consumption. Secondary consumers (usually carnivores such as crabs, birds, small fish, etc.) prey upon the primary consumers for their energy. Tertiary consumers (usually large fish, and birds) prey upon secondary consumers for their energy. Finally, apex predators (humans, dolphins, and sharks) make up the highest *trophic level* of the estuarine food web, by exploiting large fish and crabs.

An important component of the estuarine food web are the *detritivores* (crabs, snails, some fish), who feed upon decaying animal and plant debris. They become an integral part of the ecology by beginning the process of breaking down decomposing matter, thus transferring nutrients back into the food web.



Glossary of terms:

Brackish: Water that is part fresh and part salty.

Estuarine dependent: Describes a species who inhabits and utilizes an estuary for some part of its life.

Autotrophs: Organisms that can produce their own food using inorganic materials (i.e. sunlight).

Detritus: Dead and decaying plant and animal matter.

Detritivores: Organisms whose diet is predominately detritus.

Biomass: The total mass of an organism (or organisms) in a given area.

Trophic level: Describes a position of an organism in a food chain.