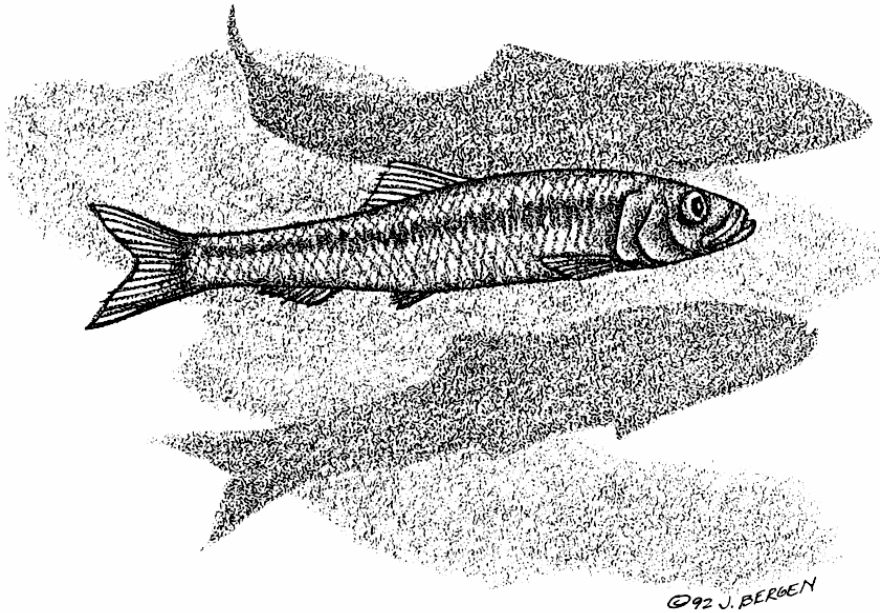


# Estuaries as Nurseries

by Kenn Oberrecht

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*Estuaries are often characterized by labyrinthine tidal creeks winding through shallow marshes, prairies of eelgrass growing on broad mud flats, and a tremendous variety of cover types*

*providing protection and ideal habitat for numerous species of animals. They are the only kind of environment capable of supporting a great diversity of saltwater, freshwater, anadromous, catadromous, and uniquely estuarine residents and passersby.*

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Salt marshes, the croplands and pastures of the estuary, are among the most fertile areas on the planet. An acre of salt marsh, for example, may produce six times as much organic matter as the average acre of wheat-producing farmland, and may be seven times more fruitful than the waters of the continental shelf and 20 times richer than the deep sea.

Some organisms live out their entire existence within the estuary, while others begin life here and move elsewhere. Still others move to and from estuaries for various reasons, or migrate through them bound for fresh or salt water.

One of the estuary's most important roles is that of nursery, a vital rearing area for many species of fish and shellfish. It's estimated that 65 percent of America's commercial food fishes and shellfishes and nearly all inshore

and near-shore saltwater sport fishes are vitally linked to the estuarine environment.

A number of popular food and sport fishes, surf smelt, jacksmelt, herring, and some races of chum and pink salmon spawn in or near the estuaries where their hatchlings grow to fingerlings or young adults before venturing out to sea. Some species remain in or near the estuaries all their lives. Several of the surf perches regularly visit Pacific estuaries to feed and to bear live young there. A few are permanent estuarine residents.

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All of the anadromous fishes, those that spend most of their lives in salt water but reproduce in fresh water, use the estuaries. Similarly, the catadromous species those that mainly live in fresh water but spawn in salt water migrate through the estuaries and may reside there as juveniles. Among the most important anadromous fishes are Atlantic and Pacific salmon, steelhead trout, striped bass, and American shad. The American eel is catadromous.

Many species that spawn in the open sea produce young that eventually make their way to the estuaries. Among them are Dover sole, starry flounder, and cabezon, to mention a few. Estuaries are also rearing grounds for various species of crab and shrimp, some of which are commercially important, while others are critical links in the food chain.

Ambient temperatures and species requirements combine to determine spawning places and times for these pelagic or open-ocean spawners. Eggs and larvae drift shoreward in ocean currents for varied distances, from a few to a few hundred miles. Eventually, they enter the estuary, sometimes in the form of eggs, but usually as larvae or juveniles.

Having reached the nutrient-rich waters that have nurtured their kind for untold eons, the young fish and shellfish will find food and become food. A few will eventually mature to adults and begin the cycle anew.

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