

# Facultative, Highly Migratory Activity of American Eel

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## EDITORIAL

### American eel

*Anguilla* species are called catadromous because their juveniles (yellow stage eels) spawn in coastal waters and mature in freshwater environments after a long migration from the spawning place (thousands of kilometres in temperate zones). Yellow eels have been documented migrating between freshwater and brackish water settings in various areas, particularly in the Canadian Maritime provinces. Even though these migrations are short (less than 10 km) compared to those of silver eels and leptocephalus larvae, they are significant because they take place during the yellow eel's prolonged growth stage and involve switching between environments that are vastly different in terms of salinity, temperature, substrate, depth, and a variety of other factors. The only catadromous fish in North America is the American eel. Catadromous fish are those that are born in the ocean, mature in fresh water, and then return to the ocean to reproduce.

The Atlantic coast is home to the American eel. It's also found in the eastern Gulf of Mexico's river systems, as well as in some regions further south. American eels, like all *Anguilla* eels, prefer to hunt at night and hide during the day in mud, sand, or gravel near the coast at depths of 5 to 6 feet. Crustaceans, aquatic insects, small insects, and practically any aquatic species they can find and eat are among their favourite foods. In some regions along the East Coast, American eels are commercially important as bait for sport fish such as striped bass, or as a food fish in others.

American eels can reach a length of 1.22 metres (4.0 feet) and a weight of 7.5 kilogrammes (17 pounds). Females are larger, lighter-

colored, and have smaller eyes and higher fins than males. The snake-like body is elongated. The rudimentary caudal fin connects the dorsal and anal fins. It doesn't have ventral fins, but it does have pectoral fins. The lateral line is complete and well-developed. With small, well-developed eyes, the head is long and conical. The jaws are not unusually extended, and the mouth is terminal.

### Life cycle

The complicated life history of the American eel begins with a semelparous and panmictic reproduction far offshore in the Sargasso Sea. In 1926, Marie Poland Fish published a taxonomic description of the larval egg development based on a sample of eggs she saw hatching into eels. Young eels then travel inland, following ocean currents into streams, rivers, and lakes. This journey could take many years, with some eels covering more than 6,000 kilometres. They feed and mature for 10 to 25 years after reaching these freshwater basins before migrating back to the Sargasso Sea to complete their life cycle.

The sexually immature adult stage of the American eel is known as the yellow eel. They start to turn yellow, and their bellies turn creamy or yellowish. Eels are still primarily nocturnal during this stage. Those who stayed in the estuary environment completed their life cycle at a faster rate than those who moved to freshwater. Freshwater fish, on the other hand, live longer and grow to enormous proportions.

The yellow eel metamorphoses into a silver eel as the maturation process progresses. Silvering causes morphological and physiological changes in the animal, preparing it to return to the Sargasso Sea. The eel's skin becomes greyish with a white or crinkly appearance.

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