

Fluvarium Fact Sheets

American eel

Anguilla rostrata



Photo by Flickr user Charles and Clint

American eels have a thick mucus layer, helping them escape from predators. It is also the basis for the expression "slippery as an eel". They have an interesting lifecycle that takes adults all the way to the Sargasso Sea to breed.

Description

American eels have a snake shaped body and a pointed head with many small teeth. Their thick mucus layer surrounding their body helps them escape predators and slip between rocks and sediments. Mature adults eels are bronze to almost black with a light belly and a metallic sheen. Newly transformed eels (glass eels) are transparent and elvers are usually grayish green to black.

Size

Females are generally larger than males.

- In Newfoundland females grow to be 102 cm long whereas males only grow to 40 cm long.
- The largest eel ever caught was 127 cm and weighed about 4.5 kg (10 lb).

Lifespan

The oldest eel on record was caught as a young glass eel and placed in an aquarium. It lived to be 85 years old.

Habitat

American eels live in cool to cold streams, rivers and lakes. They bury their body in silt

Range

The American eels are found from the southern tip of Greenland, all along the east coast of North America to the northern part South America.

A native species of Newfoundland, they are generally found in streams with an uninterrupted path to the ocean. They are abundant on the Avalon Peninsula, in Trinity

Bay, Bonavista Bay, Hamilton Sound, Notre Dame Bay and White Bay.

Box 1: Definitions

Catadromous - fish that live in freshwater but return to the ocean to reproduce.

Elver - a young eel that has migrated from saltwater to freshwater. They are generally dark in colour.

Leptocephalus larvae - The stage eel development where the fish are thin, transparent, leaf-shaped creatures.

Glass eel - The stage of eel development after the leptocephalus larval stage where the eels look like small transparent eels.

Silver eel - The adult stage of eels that are sexually mature and migrate to saltwater to spawn. They are darkly coloured with a metallic sheen.

Species of special concern - A COSEWIC status of a wildlife species that may become threatened or endangered because of a combination of biological characteristics and identified threats.

Yellow eel - The adult stage of eels where they are not sexually mature. They may be a yellowish or greenish colour with a light belly.

Diet

These fish are carnivorous. American eels hide under rocks and sediment and catch their prey as it passes by.

- Larval eels (**leptocephalus** and **glass eel** stages) are herbivorous feeding on plankton as they drift in the ocean.
- **Elvers** eat aquatic insects, small crustaceans and small fish.
- Adult eels (**silver** and **yellow eels**) feed on worms, clams, frogs, fish and dead animals.

Reproduction and development

Unlike other fish in Newfoundland, American eels hatch in the ocean and travel to freshwater to spend their adult lives. The downstream migration to the ocean for spawning generally occurs around mid-August to mid-October.

All eels, including their close relative the European eel migrate thousands of kilometres to the Sargasso Sea (South of the Bahamas, north of Bermuda) to spawn. No eel has ever been observed spawning, but it has been predicted to occur from February to April in the upper few hundred meters of water.

Females may produce about 2-20 million eggs, which are then fertilized by males. The eggs drift for 1-2 days before hatching in to larvae called leptocephalus larvae. They drift along the Atlantic Ocean for 8-12 months and transform into glass eels over winter.

As they enter North American estuaries, they become elvers and turn a dark, almost black colour.

The young eels either migrate upstream into freshwater or stay in the estuary. At this point, the eels become male or female, a process thought to be partially controlled by environmental conditions. In warmer areas in the southern United States, many of the eels are male whereas in cooler Atlantic Canada, most of the eels are female.

After a few years of feeding and growth, the eels become yellow eels, which are adults that are not sexually mature. This stage lasts for an average of 12 years in Newfoundland depending on food availability and temperature.

The eels then transform into silver eels which are sexually mature adults. They develop a metallic sheen and return to saltwater to spawn.

Predation

American eels are most vulnerable during their larval stages. Larval eels and elvers are eaten by other American eels, gulls and large fish like haddock. Adult eels are likely eaten by raptors like osprey in freshwater and by large predatory fish while migrating.

Relation to humans

The American eel is commercially, recreationally and traditionally fished. Aboriginal peoples depended on them as winter and travelling food. In the recreational food fishery, these eels are caught using baited lines, nets, pots weirs and spears.

Eels are exported from Canada alive to Europe. Live eels are needed for preparing jellied eel, a popular food in England. The most popular eel product is smoked eel which commands a high price.

Interesting facts

- American eels are most active at night.
- The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) has listed the American eel as a species of special concern.
- Habitat destruction is one of the main threats to this species. Blockage of streams, pollution and destruction of near shore habitats limit available habitat for eels.
- There is a high demand for glass eels which are a delicacy in Asia.
- American eels are the only catadromous fish in North America.

At The Suncor Energy Fluvarium

- See our American eel up close on our Fluvarium level. Watch this animal as it eats during feeding time.

Additional resources

Scott, W.B. and M.G. Scott. 1988 Atlantic Fishes of Canada. Canadian Bulletin of Fisheries and Aquatic Sciences, 219: 731 p.

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