

Sea Lamprey *Petromyzon marinus*

A Connecticut River Watershed Native



Description

The Sea Lamprey (*Petromyzon marinus*) is an ancient, jawless fish that is often under-appreciated. However, it is an important native in the Connecticut River. The lamprey is often confused with eels, but its jawless, circular sucking disk helps to distinguish it from the American Eel, which has a true jaw. Adult lampreys are mottled brown above and lighter below, with lighter areas becoming bright yellow during the spawning season. Adults average 28 inches in length.

Life History

The Sea Lamprey migrates from the ocean to freshwater specifically to reproduce. When lampreys enter the Connecticut River to spawn, they have stopped feeding on fish, so they are not a threat to inland fishes. All of their reserve energy is saved for spawning, which primarily occurs in June. Upon depositing the eggs and milt (sperm) in a nest made of stones, the adults die within a week. The unattended eggs hatch in less than a week. Larvae drift downstream, eventually burrowing into a sandy or silty area, where they remain for four years filter feeding on planktonic drift. In the fifth year they transform into juveniles, migrating to the ocean during late fall, winter, and spring. While juveniles may use their mouths to attach to fish, they rarely actively feed during outmigration. It is when the juveniles reach the salt-water estuary that lamprey become parasitic (using their sucking disks lined with rows of teeth to extract body fluids from a host fish). Parasitism continues during their ocean phase, which lasts one to two years.

Interesting Facts about Sea Lamprey

- ❖ Although a lamprey's body resembles an American Eel's, lampreys have no bones, no jaw, no paired fins, and a very different life history than the eel.
- ❖ Non-feeding adult lampreys return from the ocean in May and spawn in June. Adults become blind and stop feeding prior to spawning.
- ❖ Lamprey nests, which are built from gravel and cobble, form circular depressions in the streambed that are free of silt and sediment.
- ❖ When the adults die after spawning, their bodies provide important marine derived minerals and nutrients to the stream.
- ❖ The most adult lampreys ever counted passing the Holyoke Dam is 97,277 in 1998.

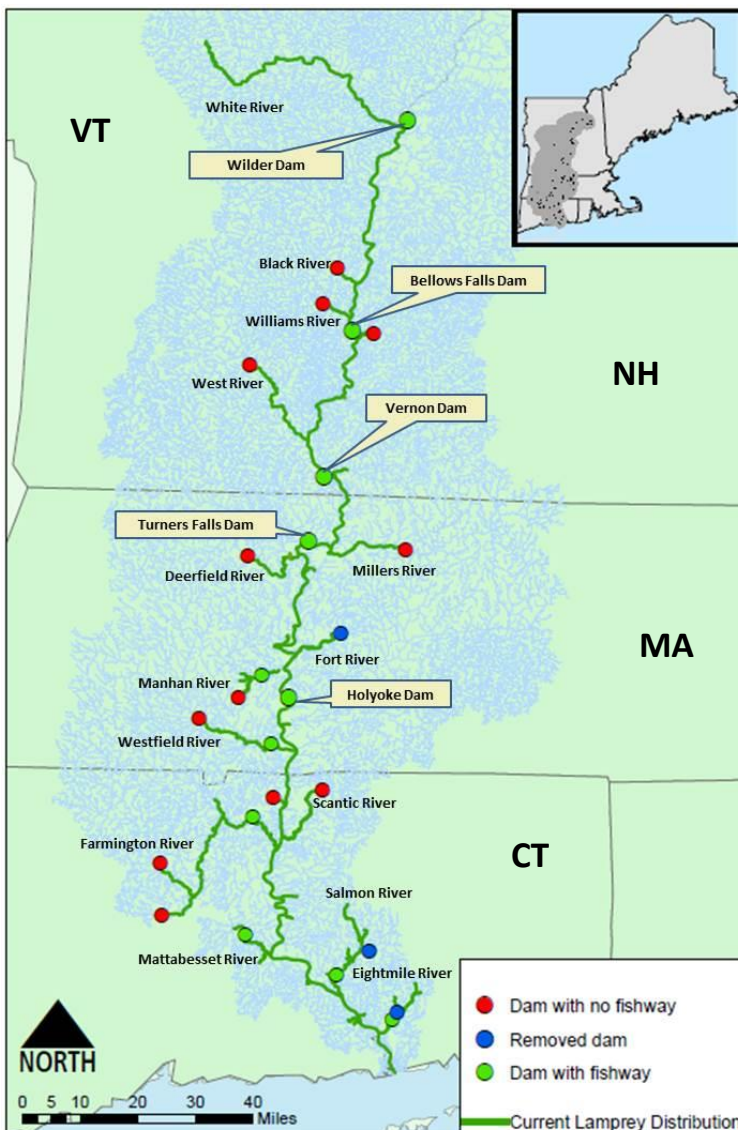


Distribution

The Sea Lamprey is widely distributed along the coasts of eastern North America and Europe. Landlocked populations also exist in some inland water bodies such as the Great Lakes and Lake Champlain. In the Connecticut River basin, adult sea lamprey move upstream to tributaries, and reproduction has been documented as far upstream as the White River in Vermont.

Ecological Benefits

- Adults bring marine nutrients to freshwater streams
- Juveniles export nutrients from rivers back to the ocean
- Nest construction restores and enhances streambed structure and creates habitat diversity in the stream.
- Both active and inactive lamprey nests may be used by aquatic insects, shiners, fallfish and trout for foraging and breeding habitat.
- Lamprey eggs, larvae, and juveniles are food for a variety of birds, fish and mammals.



Fishery

Many years ago lampreys were harvested for food by New Englanders and they continue to be eaten by Europeans today. In North America, adult lampreys are primarily captured for use in biological laboratories and larvae are used as bait in parts of Canada.

Status

The construction of impassible dams has reduced the number of lampreys in the larger rivers of New England. While fish passage facilities at dams on the Connecticut River have restored access to portions of the lamprey's historical range, dams on tributaries still prohibit lampreys from reaching a substantial quantity of suitable spawning habitat. Removing these barriers to passage allows lampreys to utilize upstream habitat and fulfill important ecological functions.

Lampreys that were accidentally introduced to landlocked areas (such as the Great Lakes and Lake Champlain) have become parasitic in fresh water, causing great damage to native fisheries in these systems. In such areas, State and Federal agencies carry out lamprey control programs in an effort to protect fish diversity. In contrast, Sea Lampreys pose no threat to fisheries in the Connecticut River, where they are a unique, natural part of the ecosystem.