



Pacific lamprey

Lampetra tridentata

The long, skinny snakelike creatures you see attached to the windows of the fish ladder are lamprey going upriver to spawn. Adult lamprey look so much like eels that people often call them "lamprey eels." They are not related to eels, however, as they lack the jaws, bony skeleton and other characteristics common to eels and other more advanced bony fish.

These "three-toothed" lamprey are anadromous (ann-ADD-dra-mus), meaning they are born in freshwater, swim to the ocean, where they grow to adulthood and then return to freshwater to spawn. Their total life span is probably 7 years or more. The Latin name "*lampetra*" means rock-sucking, which refers to the lamprey's habitat of attaching to rocks with its mouth to rest while swimming upstream; "*tridentata*" refers to the lamprey's three prominent teeth.

Adult Pacific Lamprey migrate upstream in the Columbia River tributaries to spawn between June and October. Thrashing their long bodies snakelike through the water, they struggle upstream against the swift river currents, using the suction of their oral disc to attach themselves to a rock (or the window!) to rest. Like the salmon, they do not feed during this spawning migration. Little is known about their spawning habits, but it is thought that they do not always return to their birthplace. In the spring after migration, the male and female work together to build a nest in cool, slow moving water. Using a swimming motion in the sandy gravel, they form a depression two to three feet in diameter and six inches deep where the female lays 34,000-106,000 eggs. The male winds himself about his mate, releasing milt into the nest to fertilize the eggs. Shortly thereafter, the parents die. Because lamprey have grown up in the ocean, they enrich food chains by returning ocean-rich nutrients to spawning streams when they die.

In two to three weeks, the eggs hatch. The larvae, blind, toothless and wormlike, are called ammocoetes (AM-oh-seets). The ammocoetes burrow in the mud downstream of the nest and grow to a length of only six inches in four to six years. At this age, they begin their transformation into adult parasites capable of ocean survival. In the ocean where they spend from 1 year to 4 years, a lamprey will feed by attaching themselves to host fish by means of their suction-cup-like mouth. Using disc teeth, they rasp through the scales and skin of the fish and drink its body fluids. An anti-coagulant in the lamprey's saliva prevents the host's blood from clotting.

Several years ago, the Great Lakes fishery was nearly devastated by the Atlantic sea lamprey, *Petromyzon marinus*. Construction of dams and locks on the St. Lawrence River allowed lamprey to get around natural barriers. Heavy damage to the fish population occurred when many lamprey remained and began feeding in the lakes. None of the lamprey's natural predators existed in the lakes. Efforts to rid the Great Lakes of lamprey have been somewhat successful, including lampricide poisons and electric weirs that electrocute them.

Adult lamprey have a few natural predators in the Columbia River. White sturgeon feed on dead lamprey after the lamprey migration and spawning seasons. Fishery research shows that the young lamprey are eaten by some fish. Biologists have also observed sea lions and seals in the Columbia River below Bonneville Dam feeding heavily on lamprey, when available. Columbia River Indian tribes also eat lamprey and they are important to Indian culture.

Like salmon, lamprey are an important part of the Columbia River ecosystem. Pacific salmon are among the several species of fish that lamprey parasitize, evidenced by the round scars you may see on some of the salmon. As ammocoetes, they become food for other fish. As adults, lamprey are also food for sturgeon, sea lions and people. Like salmon, they return rich ocean nutrients to the streams when they die. The Pacific lamprey seen in these windows have been spawning in the Columbia River and its tributaries for centuries.

For more information on Lamprey and their importance to the Pacific Northwest ecosystem, search for them on the Internet. Or come visit Bonneville Dam and watch them migrate up the fish ladder between June and August.

Some websites you might find interesting are: Fish Passage Center: <http://www.fpc.org/>
US Fish and Wildlife Service also has a wealth of information including pictures and video clips:
<http://columbiariver.fws.gov/programs/lamprey.htm>



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Life Cycle of the Pacific Lamprey (*Lampetra tridentata*)

