

Pacific Lamprey Fact Sheet

By Susan Farrar, SPAWN Naturalist

DID YOU KNOW: The Pacific Lamprey has no true fins, jaws, or bones.

SCIENTIFIC NAME: *Lampetra tridentata*, from the Latin *lambere*, to suck, *petra* meaning stone, and *tridentata* meaning three-toothed.

COMMON NAMES: Pacific sea-lamprey, three toothed lamprey, tridentate lamprey, and sea lamprey.

DESCRIPTION: The lamprey has a round, elongate, flexible cartilaginous body, and skin with no scales. Lamprey are very smooth and slimy to the touch. Its mouth is down-turned and adapted for clinging and sucking. Pacific lamprey are a dark bluish gray or dark brown in color and can reach 30 inches in length and weigh over a pound.

LIFE CYCLE: The Pacific lamprey is anadromous. Like salmon they are born in freshwater streams, migrate out to the ocean, and return to fresh water as mature adults to spawn. Also like the salmon, lamprey do not feed during their spawning migration. Mating pairs of lamprey construct a nest by digging together using rapid vibrations of their tails and by moving stones using their suction mouths.

The lamprey enter streams from July to October; spawning takes place the following spring when water temperatures are between 50 and 60 degrees Fahrenheit. They ascend rivers by swimming upstream briefly, then sucking to rocks and resting. Spawning takes place in low gradient sections of water, with gravel and sandy bottoms. Adults die within four days of spawning, after depositing about 10,000 to 100,000 extremely small eggs in their nest. The young hatch in 2-3 weeks and swim to backwater or eddy areas of low stream velocity where sediments are soft and rich in dead plant materials. They quickly burrow into the muddy bottom where they filter the mud and water, eating microscopic plants (mostly diatoms) and animals. The juvenile lamprey will stay burrowed in the mud for 4 to 6 years, moving only rarely to new areas. After a two month metamorphosis, triggered by unknown factors, they emerge as adults averaging 4.5 inches long. Then during high water periods, in late winter or early spring the new adults migrate to the ocean. During its ocean phase of life the Pacific lamprey are scavengers, parasites, or predators on larger prey such as salmon and marine mammals. After 2 to 3 years in the ocean they will return to freshwater to spawn.

RANGE: Baja California, to the Bering Sea in Alaska and Asia.

HABITAT AND ECOLOGY: While in their 4-6 year larval stage lamprey occupy a special niche in the stream system, filtering microscopic plants and animals

from the bottom sediments. They fall prey to a wide variety of species including trout, crayfish, and birds.

Lamprey have similar freshwater habitat requirements as do some of the Pacific salmon, therefore they have encountered similar habitat problems. Though absolute historical population sizes of the lamprey are not known, it is clear that the fish, once a significant tribal subsistence food, have shown severe decline.

Historical splash damming has scoured many of the stream bottoms down to bedrock, removing necessary habitat. Dams can hinder adult and juvenile passage or completely cut off prime spawning habitat. Inappropriate logging and grazing practices can alter stream flows and degrade habitat severely.

The first 4 to 6 years of the Pacific lampreys life are critical times. Animals that filter water and mud for food are very susceptible to pollutants in the water column and sediments. Lamprey may be impacted by pollutants from urban and agricultural runoff that can concentrate in the sediments. Because this species depends on muddy bottoms, backwater areas, and low gradient areas during its juvenile life stage, it is susceptible to loss of wetlands, side channels, back eddies, and beaver ponds resulting from agricultural, forestry or urban development practices or channelization for flood control. High stream temperatures and lack of stream cover can also reduce the lampreys' food supply.

ECONOMIC VALUE: The Pacific lamprey has little or no economic value in the Pacific Northwest. Before its decline the lamprey was a very important fish for many of the Tribal people of the Pacific coast and interior Columbia River basin. Tribal people harvested these fish for subsistence, ceremonial, and medicinal purposes.