

FACT SHEET

Pacific Lamprey (*Lampetra tridentata*)



Life History:

As adults in the marine environment, Pacific lampreys are parasitic and feed on a variety of marine and anadromous fish including Pacific salmon, flatfish, rockfish, and pollock, and are preyed upon by sharks, sea lions, and other marine animals. They have been caught in depths ranging from 300 to 2,600 feet, and as far off the west coast as 62 miles in ocean haul nets.

After spending 1 to 3 years in the marine environment, Pacific lampreys cease feeding and migrate to freshwater between February and June. They are thought to overwinter and remain in freshwater habitat for approximately one year before spawning where they may shrink in size up to 20 percent. Most upstream migration takes place at night. Adult size at the time of migration ranges from about 15 to 25 inches.

Pacific lampreys spawn in similar habitats to salmon; in gravel bottomed streams, at the upstream end of riffle habitat, typically above suitable ammocoete habitat. Spawning occurs between March and July depending upon location within their range.

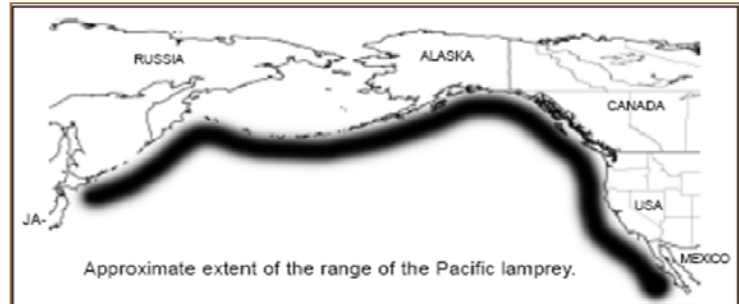
The degree of homing is unknown, but adult lampreys cue in on ammocoete areas which release pheromones that are thought to aid adult migration and spawning location. Both sexes construct the nests, often moving stones with their mouth. After the eggs are deposited and fertilized, the adults typically die within 3 to 36 days after spawning.



Embryos hatch in approximately 19 days at 59° Fahrenheit (F) and the ammocoetes drift downstream to areas of low velocity and fine substrates where they burrow, grow and live as filter feeders for 3 to 7 years and feed primarily on diatoms and algae. Several generations and age classes of ammocoetes may occur in high densities. Ammocoetes move downstream as they age and during high flow events. We know little about movement and locations of ammocoetes within the substrates. Anecdotal information suggests that they may occur within the hyporheic zone and may move laterally through stream substrates.

Metamorphosis to macrophthalmia (juvenile phase) occurs gradually over several months as developmental changes occur, including the appearance of eyes and teeth, and they leave the substrate to enter the water column. Transformation from ammocoetes to macrophthalmia typically begins in the summer and is complete by winter. They move downstream as they emigrate to the ocean between late fall and spring where they mature into adults.

Range: Pacific lampreys are the most widely distributed lamprey species on the west coast of the United States. They have been found in streams from Hokkaido Island, Japan, and around the Pacific Rim including Alaska, Canada, Washington, Oregon, Idaho, and California to Punta Canoas, Baja California, Mexico. Their distribution includes major river systems such as the Fraser, Columbia, Klamath-Trinity, Eel, and Sacramento-San Joaquin Rivers. Pacific lamprey distribution patterns are similar to that of anadromous salmonids.



Status: Historically, Pacific lampreys are thought to be distributed wherever salmon and steelhead occurred. However, recent data indicate that distribution of the Pacific lamprey has been reduced in many river drainages. They no longer exist above dams and other impassable barriers in west coast streams, including many larger rivers throughout coastal Washington, Oregon, and California, and above dams in the upper Snake and Columbia Rivers. Available data also indicates that Pacific lampreys have declined in abundance throughout the Columbia River basin and southern California. Thus, the need for immediate conservation of lampreys is evident.

THREATS:

- Passage (dams, culverts, water diversions, tide gates, other barriers) both upstream & downstream.
- Dewatering and flows (reservoir management, water diversions, construction projects).
- Poisoning (accidental spills, chemical treatments).
- Poor water quality.
- Dredging (channel maintenance and mining).
- Stream and floodplain degradation (i.e., channelization, loss of side channel habitat, scouring).
- Ocean conditions (loss of prey, increase in predators).
- Predation by nonnative fish species.

CONSERVATION OPPORTUNITIES:

1. Provide Lamprey Passage
2. Protect Ammocoete Habitat
3. Restore Stream Channel Complexity



For more information visit the following website:

http://www.fws.gov/pacific/fisheries/sp_habcon/lamprey/index.html