PACIFIC LAMPREY - *Lampetra tridentata*

General Species Description: Lampreys belong to a primitive group of fishes that are eel-like in form but lack the jaws and paired fins of true fishes. These species have a round sucker-like mouth, no scales, and breathing holes instead of gills

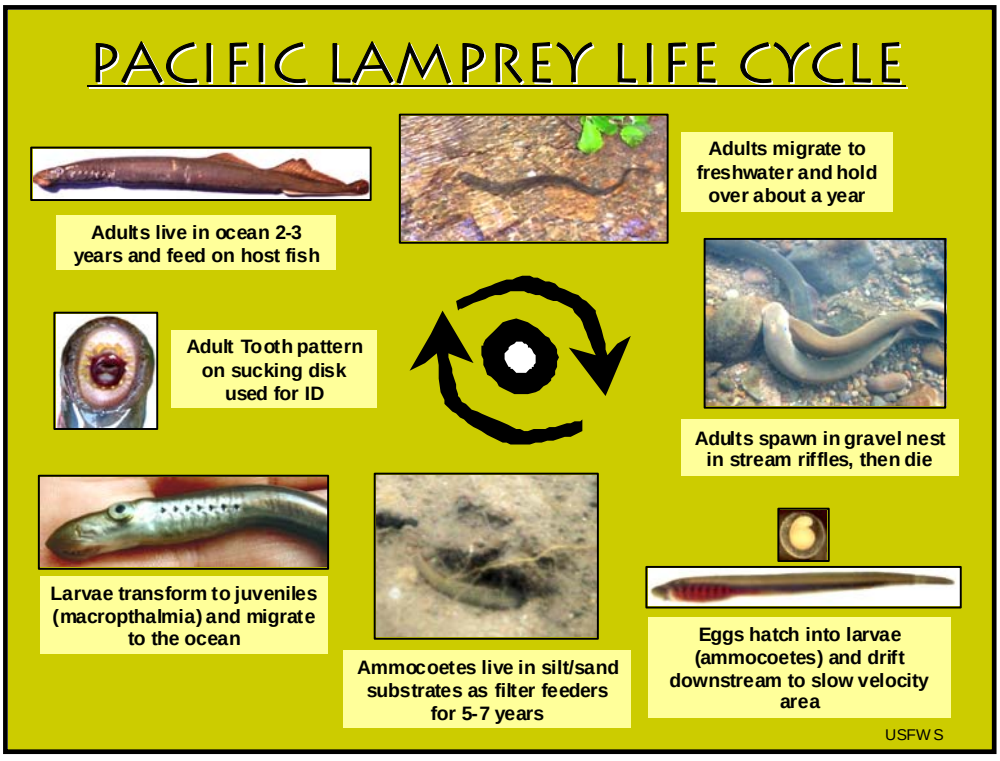
Life History: As adults in the marine environment, Pacific lampreys are parasitic and feed on a variety of fish and are preyed upon by sharks, sea lions, and other marine animals. They have been caught in depths ranging from 300 to 2,600 feet, and as far off the west coast as 62 miles in the ocean.

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. Most upstream migration takes place at night.

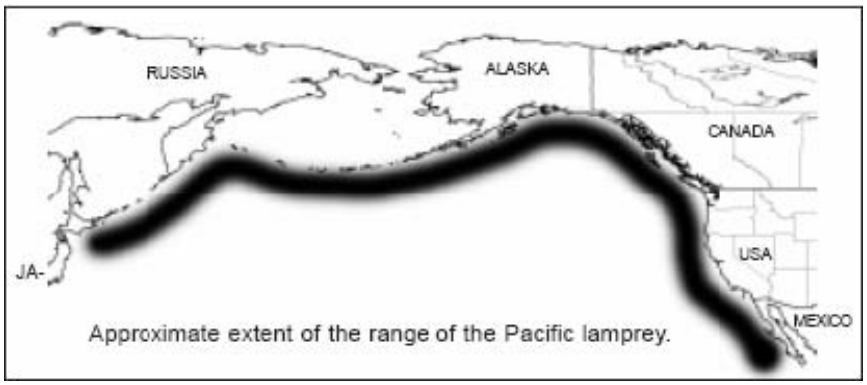
Pacific lampreys spawn in similar habitats to salmon; in gravel bottomed streamsin riffle habitat. Spawning typically occurs between March and July. The degree of homing is unknown, but adult lampreys cue in on ammocoete areas which release pheromones that are thought to aid adult migration and spawning 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 20 days and the larvae (ammocoetes) drift downstream to areas of low velocity and fine substrates where they burrow, grow, and live as filter feeders for 2 to 7 years and feed primarily on algae. Several generations and age classes of ammocoetes congregate in high densities that form colonies. Ammocoetes are relatively immobile in the stream substrates, though will move during high flow events.

Metamorphosis to macropthalmia (juvenile phase) occurs gradually over several months as they develop eyes, teeth, and become free swimming. Transformation from ammocoetes to macropthalmia typically begins in July to October. They drift and swim downstream as they emigrate to the ocean between late fall and spring where they mature into adults.



Range: Pacific lampreys are distributed 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. Historically, Pacific lampreys are thought to be distributed wherever salmon and steelhead have occurred.



Approximate extent of the range of the Pacific lamprey.

Status: Recent data indicate that distribution of the Pacific lamprey has been reduced in many river drainages. They are extirpated 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. In addition to extirpations, Pacific lampreys have declined in abundance throughout the Columbia River basin and southern California.

THREATS: Pacific lampreys face a variety of threats to its various life history stages. Taking into account the potential for lamprey utilization of an area is essential to their conservation.

- 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.
- Overutilization of adult Pacific lampreys

CONSERVATION OPPORTUNITIES: Primary opportunities to protect and restore Pacific lamprey populations include:

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