

Pacific Lamprey Spawning Characteristics in the American River, CA

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RECLAMATION
Managing Water in the West

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Objective

Establish a baseline abundance index for the Pacific lamprey spawning population in the American River and determine key spawning habitat areas and timing.



Methods

- All spawning habitat surveyed for redds and lampreys every 14 days by boat.
- Redd measurements and fish observation data recorded with GPS.



Deep water surveyed by jet boat



Redds measured and marked with GPS



Underwater observations helped identify questionable redds



Field data entered into GIS data dictionary on GPS unit for easy integration into GIS coverage

GPS locations identify where lamprey spawn under different environmental conditions

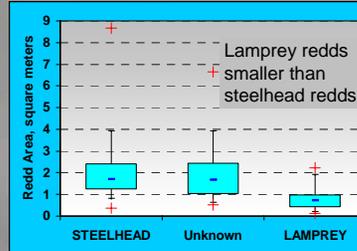
Lamprey and Steelhead Spawning Locations, Mile 15-20



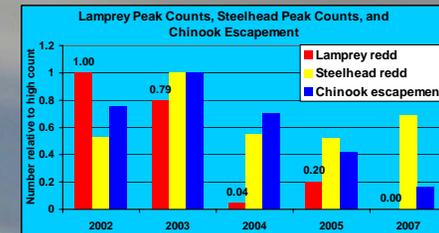
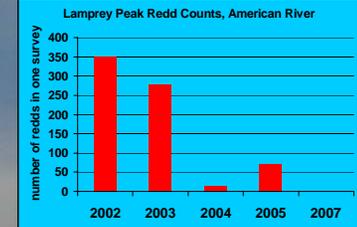
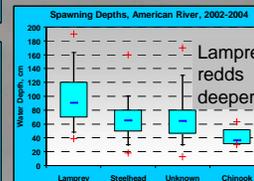
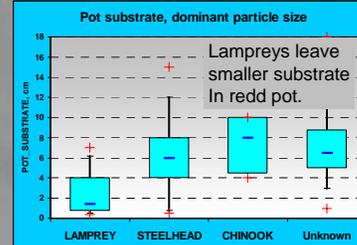
Pacific Lamprey Spawning Sites



Lamprey tended to spawn more in main channel and deeper water than steelhead.



Lamprey entangled in fishing line.



Commercial Harvest of Pacific Lampreys

Lampreys are harvested daily off of redds, during spawning, to be sold in bait shops.

Conclusions

- Peak spawning about April 1 in American River
- Spawning occurred January through May
- Number of spawners varied greatly between years
- High density spawning areas different than steelhead
- Lamprey redds generally smaller with more fines in pot
- Commercial harvest for bait may have significant population effects.
- Redds can be enumerated as an adult population index
- An area under the curve population estimate for spawning Pacific lamprey could be developed using observations of lampreys holding on redds and the estimated amount of time spent on redds as the residence time.