

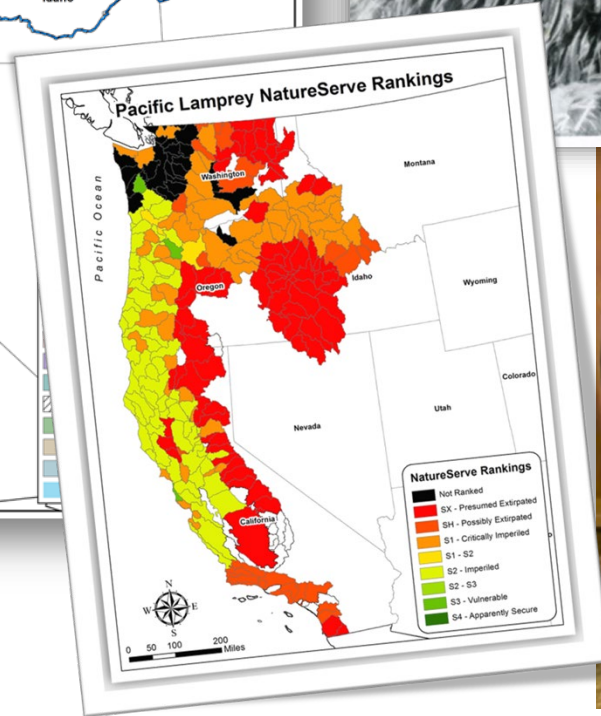
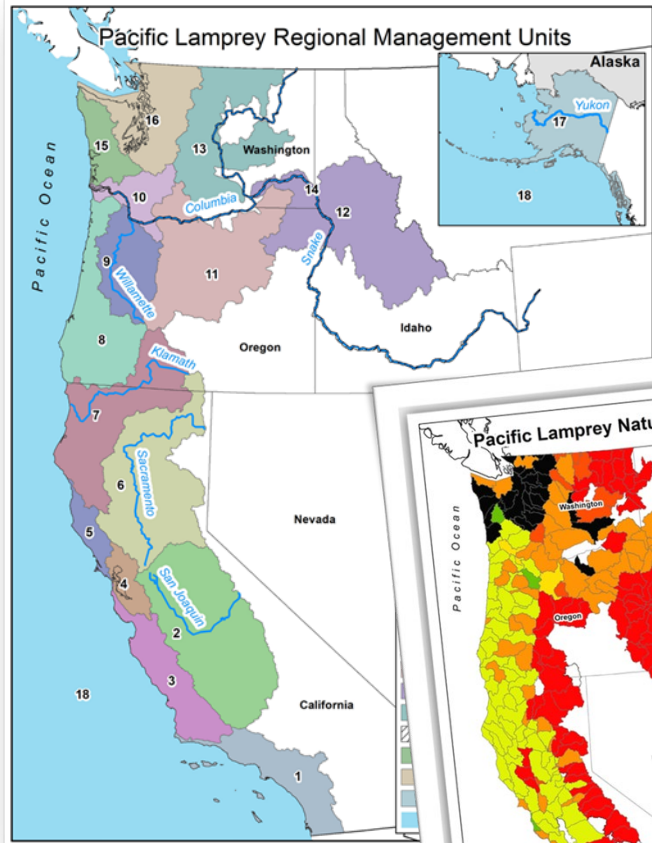


PLCI and Resources

Christina Wang
U.S. Fish and Wildlife Service
Pacific Lamprey Conservation Initiative



Pacific Lamprey Conservation Initiative



How is PLCI thinking about Restoration? Getting Involved!

Partnerships

RMUs/Projects

Funding

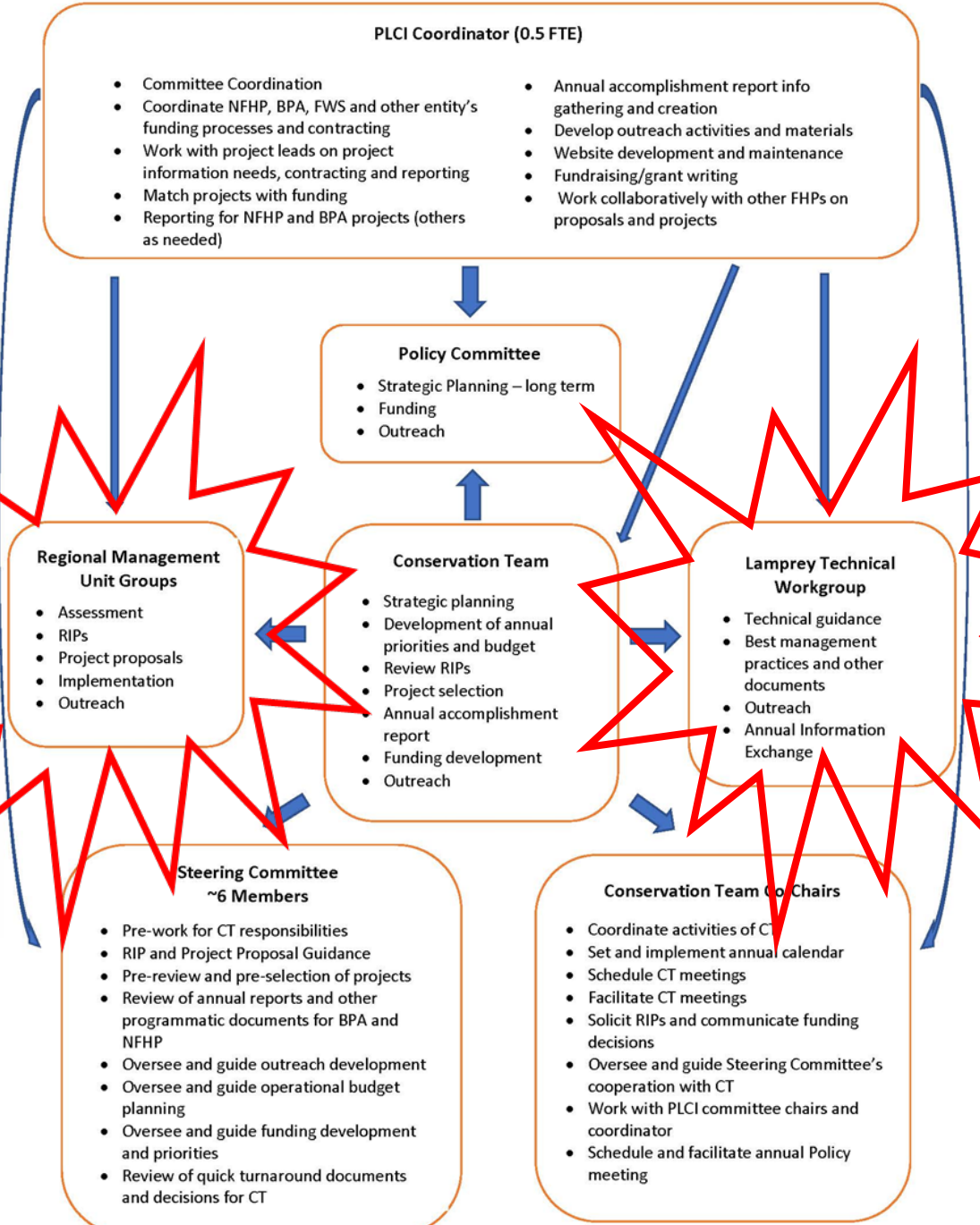
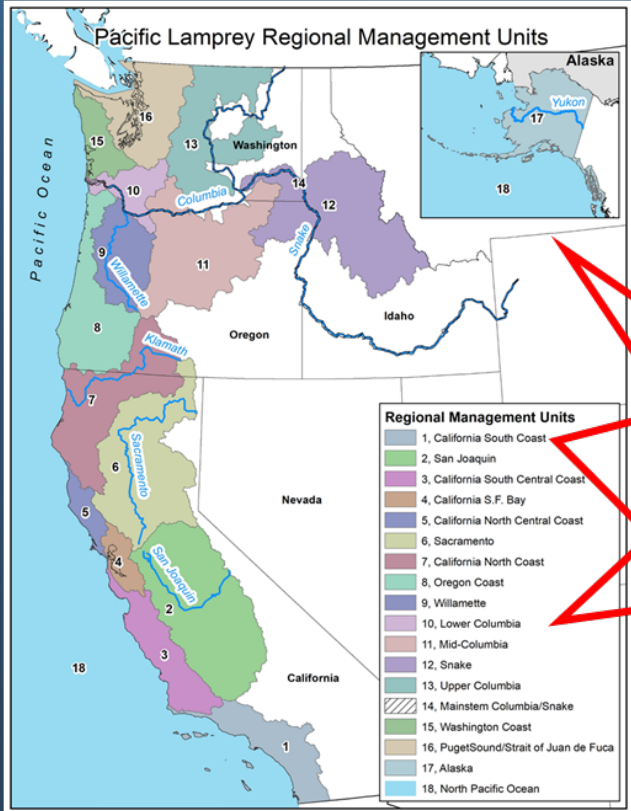
Lamprey Technical Workgroup

Outreach

Technical Guidance and Resources







PLCI Funding

1. BPA Columbia River Basin Projects
 - \$300K Project Funds
 - Columbia Basin Regional Management Units
 - Passage improvement, habitat restoration, assessments leading to on the ground projects, research that informs management
 - RFP – September/October
2. National Fish Habitat Partnership
 - \$275K Project Funds
 - All Regional Management Units (AK – CA)
 - Habitat restoration and assessments, stakeholder outreach and monitoring
 - RFP – December/January

Project Name	Project Type	Project Lead & Partners	RMU
Lower South Fork McKenzie River Floodplain Enhancement	Restoration	USFS, McKenzie Watershed Council, USACE, ODFW, NMFS, USFWS, Eugene Water & Electric Board (EWEB), Outfitters and Guides	Willamette

Project Name	Project Type	Project Lead & Partners	RMU
Translocating Adult Lamprey Past Mainstem Dams to Snake Basin	Translocation	USFS, ODFW, McKenzie Watershed Council, Siuslaw Watershed Council, Conf. Tribes of the Siletz Indians, Conf. Tribes of the Coos, Lower Umpqua & Siuslaw Indians	Willamette & North Oregon Coast
Improving lamprey passage at Prosser Dam	Assessment	Lower Columbia River Watershed Council	Lower Columbia
Assessment of Larval Lamprey use in areas of salmonid habitat restoration vs non-restoration and above vs. below a Salmonid Electronic Weir	Assessment	Beyond Salmon: Lamprey Use of Salmonid-Focused Habitat Restoration Projects	Methow Salmon Recovery Foundation, Yakama Nation, Cascadia Conservation District, USFWS
Pilot test of an acoustic telemetry array to monitor juvenile lamprey in the lower Columbia River	Other	Okanogan River Basin Pacific Lamprey Translocation & Monitoring	Colville Tribes, Yakama Nation, Grant PUD, Douglas PUD, USGS
Okanogan River Basin Pacific Lamprey Translocation and Monitoring	Assessment, Restoration	Assessing & Restoring Lamprey Habitat in SW Washington	Cascade Forest Conservancy, USFS, LCFEFG
Evaluation of Historic Presence of Pacific Lamprey in the Okanogan River Basin	Research	Influence of Lamprey Origin (Artificial Prop vs Wild) on Performance	USGS, USFWS, Chelan PUD
Natal Origins of Pacific Lamprey	Assessment, Outreach & Education	Citizen Science Approach to Assess Lamprey Distribution & Raise Awareness of the Cultural & Ecological Importance of Lampreys	ODFW, Student Watershed Research Project @ PSU, CRITFC
Evaluation of Larval Lamprey Survival Following Salvage: A Pilot Study	Assessment	Snake Basin Larval Lamprey Collaboratory	Nez-Perce, CRITFC, Conf. Tribes of Umatilla, IDFG, Idaho Power, ODFW, USFWS, USFS, Yakama Nation
	Assessment	Nez-Perce Lamprey Legacy Internship	Nez Perce
	Assessment	USGS, Colville Tribe	Upper Columbia
	Assessment Research	USFWS, Oregon State University, St. Mary's College (Maryland), NOAA, CRITFC	Multi-RMU
	Assessment Research	USGS, USFWS	Multi-RMU



Lamprey Technical Workgroup

Restoration

Adult Passage and Engineering

Juvenile Entrainment, Dewatering and Dredging Investigations (JEDDI)

Barriers to Tidal Connectivity

Outreach

Genetics and eDNA

Ocean

Contaminants

Subgroup of Other Lamprey -Anadromous and Resident (SOLAR)

Tagging

Partnership for the Aquaculture of Lampreys (PALs)

Abundance Based Goals

Available Resources –

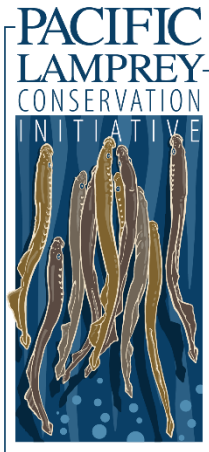
Lamprey Regional Plans and General Information:

- [Pacific Lamprey Conservation Initiative](#)
- [2022 Pacific Lamprey Assessment](#)
- [Pacific Lamprey Regional Implementation Plans](#) (18 different Regional Management Units)
- [Lamprey Distribution Maps: Databasin.org](#) (online, interactive GIS map – search “lamprey”) – ****Changing to ArcGIS Online**
- [Coastal, Columbia, and Snake Conservation Plan for Lampreys in Oregon - ODFW](#)
- [Tribal Plan Pacific Lamprey Restoration Plan for the Columbia River —Columbia River Inter-Tribal Fish Commission \(2011\)](#)
- [USACE Pacific Lamprey Improvements Implementation Plan](#)

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Lamprey Toolbox



Lamprey Toolbox

Available Resources –

Lamprey Summary Documents

- [Best Management Guidelines for Native Lampreys during In-Water Work](#) (Lamprey Technical Workgroup 2022) Covers a broad spectrum of actions including biology, salvage during dewatering actions, habitat restoration, screening, and passage and includes case studies.
- [Comparison of Pacific Lamprey and Pacific Salmon Life Histories, Habitat and Ecology](#) (Lamprey Technical Workgroup 2023)
- [Monitoring and Minimizing Effects of Dredging on Lampreys](#) (Lamprey Technical Workgroup 2021) Summarizes knowns and uncertainties regarding the effects of Human-Caused Substrate Disturbances (HSCD) on larval and juvenile lampreys, and provides best management guidelines.
- [Pacific Lamprey Habitat Restoration Guide](#) (Crandall and Wittenbach 2015). Description of the biology, ecology, and cultural significance of lamprey, threats and best management practices to protect and restore populations.

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Available Resources –

[Lamprey Passage Guidance](#)

- [Practical Guidelines for Incorporating Adult Pacific Lamprey Passage at Fishways](#) (Lamprey Technical Workgroup, Version 2.0 2022). Guidance on providing upstream passage within existing fishways and in new fishway designs, discussion of lamprey passage structures.
- [Design Guidelines for Pacific Lamprey Passage Structures](#) (Zobott et al. 2015). Guidance for designing and installing lamprey ramps for upstream passage.
- [Barriers to Adult Pacific Lamprey at Road Crossings: Guidelines for Evaluating and Providing Passage](#) (Lamprey Technical Workgroup 2020) includes culvert passage assessments and recommendations for lamprey passage, and includes case studies.
- [Barriers to Tidal Connectivity for Native Lamprey Species](#) (PLCI, PMP, CFPF 2021)
- **CA Fish Passage Forum (cafishpassageforum.org):**
 - [Lamprey Passage Recommendations](#)
 - [Culvert passage assessment](#)

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Lamprey Toolbox

Available Resources –

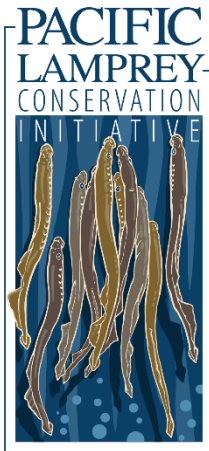
Lamprey Summary Documents

- [Native Lampreys of Oregon](#) (ODFW) Brochure describing native lampreys in Oregon.
- [Overview of eDNA and Applications for Research and Monitoring of Lampreys](#) (Lamprey Technical Workgroup 2021) Provides a reference for fisheries managers, biologists, and other stakeholders interested in learning more about environmental DNA (eDNA) and applying this technique to lamprey research and monitoring projects.
- [Lamprey Identification Guide](#) (Ralph Lampman – Yakama Nation Fisheries) ID guide for Adult and Juvenile Pacific Lamprey, Western River Lamprey, Western Brook Lamprey and Pacific Brook Lamprey in the Columbia River Basin.
- [Conservation challenges and research needs for Pacific Lamprey in the Columbia River Basin](#) (Clemens et al. 2017). Broad overview paper.
- [Climate Change Vulnerability Assessment for Pacific Lamprey in Rivers of the Western U.S.](#) (Wang et al. 2020).

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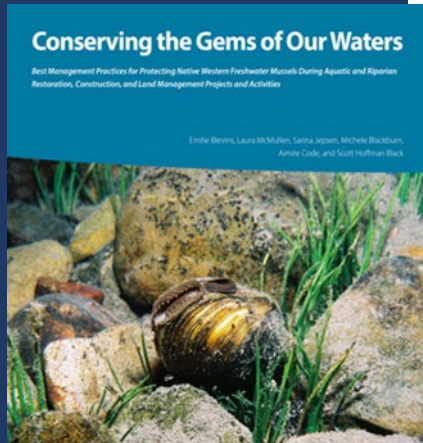
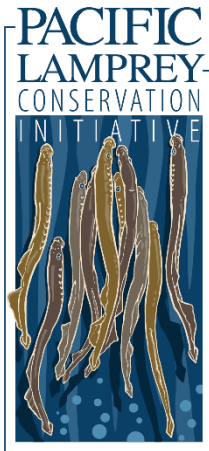
Lamprey Toolbox



Lamprey Toolbox

Available Resources – *Fish Screens*

- [Review of Factors Affecting Larval and Juvenile Lamprey Entrainment and Impingement at Fish Screen Facilities](#) (Lamprey Technical Workgroup 2022).
- [Fish Screen Oversight Committee](#) (FSOC) provides technical information necessary to facilitate effective planning and implementation of fish screening projects.
- [Fish Passage Solutions on the West Coast: Culverts, Tidegates, and Fish Screens](#) (NOAA Fisheries website)
- [Anadromous Salmonid Passage Facility Design](#) (NMFS 2011) includes screening criteria for salmonids
- [Effectiveness of common fish screen materials for protecting lamprey ammocoetes – Influence of sweeping velocities and decreasing flows](#). (Mesa et al. 2017).
- [Effectiveness of fish screens in protecting lamprey ammocoetes – Pilot testing of variable screen angle](#) (Liedtke et al. 2019a).



Available Resources – *Native Freshwater Mussel Resources*

Conserving the Gems of Our Waters: Best Management Practices for Protecting Native Western Freshwater Mussels and its shorter, companion user's guide *Mussel-Friendly Restoration* include information on determining if native mussels are present at your site, identification, project development and review, and salvage and relocation.

- [Mussel Identification](#) (CTUIR 2016)
- [Extinction risk of Western North American freshwater mussels](#) (Blevins et al. 2017). Conservation overview paper.
- [Pacific Northwest Native Freshwater Mussel Workgroup](#)
- [Western Freshwater Mussel Database](#) (Xerces Society/Confederated Tribes of the Umatilla Indian Reservation). Geospatial data for freshwater mussel occurrence in the western U.S. Available upon request (mussels@xerces.org)

pnwmussels.org

PLCI Website

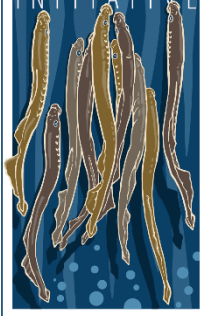


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Pacific Lamprey Conservation Initiative

A COLLABORATIVE EFFORT TO RESTORE OUR
ANCIENT FRIEND

www.pacificlamprey.org



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