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September 6, 2023

MEMORANDUM

TO: Council Members

FROM: Mark Fritsch

SUBJECT: Update on Project #2017-005-00, Pacific Lamprey Conservation Initiative

BACKGROUND:

Presenter: Ben Clemens - *Statewide Lamprey Coordinator for the Oregon Department of Fish and Wildlife and State/Federal Co-Chair of the Conservation Team of the Pacific Lamprey Conservation Initiative;* Kelly Coates - *Natural Resources Director of the Cow Creek Band of Umpqua Tribe of Indians and Tribal Co-Chair of the Conservation Team of the Pacific Lamprey Conservation Initiative;* and Max Calloway - *Coordinator of the Pacific Lamprey Conservation Initiative*

Summary: Ben, Kelly and Max will provide an update and overview of the accomplishments administered by this project that is a cooperative effort among agencies and tribes to achieve long-term persistence of Pacific Lamprey and support traditional tribal cultural use over the U.S. range. The project facilitates funding for high-priority lamprey restoration actions and complements other efforts in the Columbia River Basin.

This presentation provides an update on the project's accomplishments and results as recommended in the Council's 2022 Anadromous Fish Habitat and Hatchery Review. No decision is needed at the meeting.

Relevance: This project addresses a critical emerging priority and supports the efforts of the Pacific Lamprey [Conservation Agreement](#)¹ (Agreement) as outlined in the 2014 Fish and Wildlife Program

Workplan: 2023 Fish and Wildlife Division Work Plan; Program Planning and Coordination.

Background: Pacific lamprey, *Entosphenus tridentatus* (formerly *Lampetra tridentata*), have inhabited the Pacific for millennia. Historic runs of Pacific lamprey in the Columbia River Basin numbered in the hundreds of thousands, but their distribution and abundance has decreased. They now return in drastically smaller numbers from the mouth of the Columbia River to Chief Joseph and Hells Canyon dams in the mainstem Columbia and Snake rivers.

Threats to Pacific lamprey occur throughout their entire range and include restricted mainstem and tributary passage; reduced flows and dewatering of streams; stream, floodplain and water quality degraded water quality; and changing marine and climate conditions.

The fish and wildlife program recognizes Pacific lamprey not only as an ecologically important species, but also as a key cultural species to the tribes in the Columbia Basin.

In 1994, the Council approved the first lamprey project in the Program. The project (Project #1994-026-00, Pacific Lamprey Research and Restoration Project) was proposed by the Confederated Tribes of the Umatilla Indian Reservation. This effort was followed by additional projects in 2002, 2007, and 2008. Currently, there are five active projects that focus on Pacific lamprey funded through the Program. These projects have a variety of goals and objectives, but their overall aim is to establish population status and trends; document distribution; identify limiting factors; and develop reintroduction and supplementation actions.

The Lamprey Technical Workgroup (LTWG), active since 1995, has provided guidance and recommendations to the Anadromous Fish Committee of the Columbia Basin Fish and Wildlife Authority, and the region.

In 2011, the [Tribal Restoration Plan for the Columbia River Basin](#) (TPLRP) was completed, outlining objectives to halt the decline of Pacific lamprey and restore them throughout their historical range for ecological health and tribal cultural use.

¹ The agreement is updated every five years. The most recent is in 2022.

With the development of the U.S. Fish and Wildlife Service's Pacific Lamprey Assessment and Template for Conservation Measures in 2011, which noted and built upon the needs and actions identified in the TPLRP, there was a need to solidify regional commitments for lamprey actions and in response the original Agreement was signed in 2012 by tribal, state and federal partners in the region to collaborate on efforts that reduce or eliminate threats to Pacific Lamprey. The goal of the Agreement is to achieve long-term persistence of the species.

The Council recognized and supported the TPLRP and Agreement in its 2014 Fish and Wildlife Program as an emerging priority.

Based on collaboration, regional support, the status of the Agreement and the TPLRP, the Council and Bonneville approached the Agreement Conservation Team with an opportunity to develop a proposal to implement high priority lamprey restoration actions in the Columbia River Basin.

On October 26, 2017 the Council and Bonneville received a submittal from the U.S. Fish and Wildlife Service for [Proposal #2017-005-00, Pacific Lamprey Conservation Initiative Columbia River Basin Projects](#). The overarching goal of the proposal is to support the effort among agencies and tribes to achieve long-term persistence of Pacific lamprey for traditional tribal cultural use over its U.S. range by funding on--the--ground implementation of restoration actions.

The proposal facilitates funding for high-priority lamprey restoration actions that are currently unfunded or partially funded in the Columbia River Basin.

This project works in parallel with other current lamprey projects. In essence, it is an umbrella-type project (*see the following section for information on the Fish and Wildlife Program's umbrella projects*). The Agreement Conservation Team uses identified priority projects from the annually updated Regional Implementation Plans from Regional Management Units within the Columbia and Snake River basins (i.e., Lower Columbia/Willamette, Mid-Columbia, Snake, and Upper Columbia).

On October 27, 2017 the proposal was submitted to the Independent Science Review Panel (ISRP) and on November 28, 2017 it provided its review ([ISRP document 2017-13](#)). Due to the umbrella nature of the project, the emphasis of the review focused on the operating guidelines and selection criteria that guide the implementation of priority lamprey actions.

Based on the ISRP review on March 14, 2018, the Council approved the Pacific Lamprey Conservation Initiative project for implementation.

Umbrella Projects

Umbrella projects are a smaller subset of the projects (#7) currently being implemented through the Program. These umbrella projects are unique, because of the coordination role they play in a particular sub-region and because of their approach to their implementation. They offer a solicitation and review process that funds local entities to implement projects.

The funding, review, and selection process is much like a mini-grant program for the area. The ISRP review at the local level uses ISRP-reviewed criteria and local technical teams.

While the processes differ slightly in each area, umbrella projects are largely defined by their approach to: 1) Serve as a coordinating entity among sponsors in a particular sub-region to identify, review, and select projects; 2) Use a formal project solicitation process; and 3) Allocate and administer Bonneville funds to other entities for implementation.

In 2013, as part of the Geographic Category Review in 2013, the Council formalized and established a set of principles to guide umbrella habitat projects. They are a unique subset of the habitat projects implemented through the Program because of the coordination role they play in a particular subregion and their project solicitation and review process enables local entities to implement habitat projects with Program funds.

All the Program's umbrella projects (except this lamprey project²) were part of the Anadromous Fish Habitat and Hatchery Review, completed in April 2022.

The Council confirmed the importance of umbrella projects and the principles established in 2013 and 2017 and requested that umbrella project sponsors present their accomplishments and results to the Council biennially.

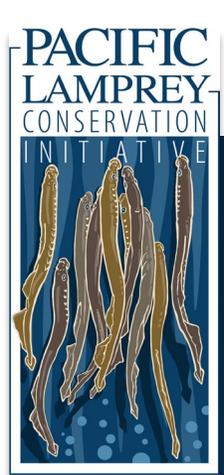
More Info:

- Pacific Lamprey Conservation Initiative [website](#)

² In 2017, Project #2017-005-00, Pacific Lamprey Conservation Initiative was included with the original umbrella projects. It is implemented with the guidance established in the Council's 2013 recommendation through the established principals. The project narrative was reviewed and recommended as part of the *Mainstem and Program Support Project Review* in April 2019.



Update on Pacific Lamprey Conservation & Restoration in the Columbia River Basin



Agenda

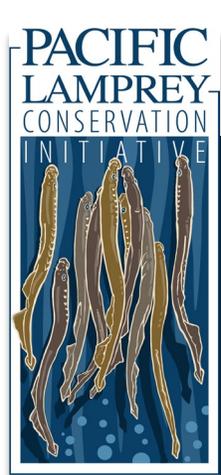
Introductions

Pacific Lamprey 101

Overview of PLCI

Project Implementation & Funding

Increased PLCI Reach & Engagement



PLCI
Conservation
Team
Co-Chairs &
Coordinator



Kelly Coates
Cow Creek Umpqua Tribe
PLCI Tribal Co-Chair



Benjamin Clemens
Oregon Department of Fish & Wildlife
PLCI State/Federal Co-Chair

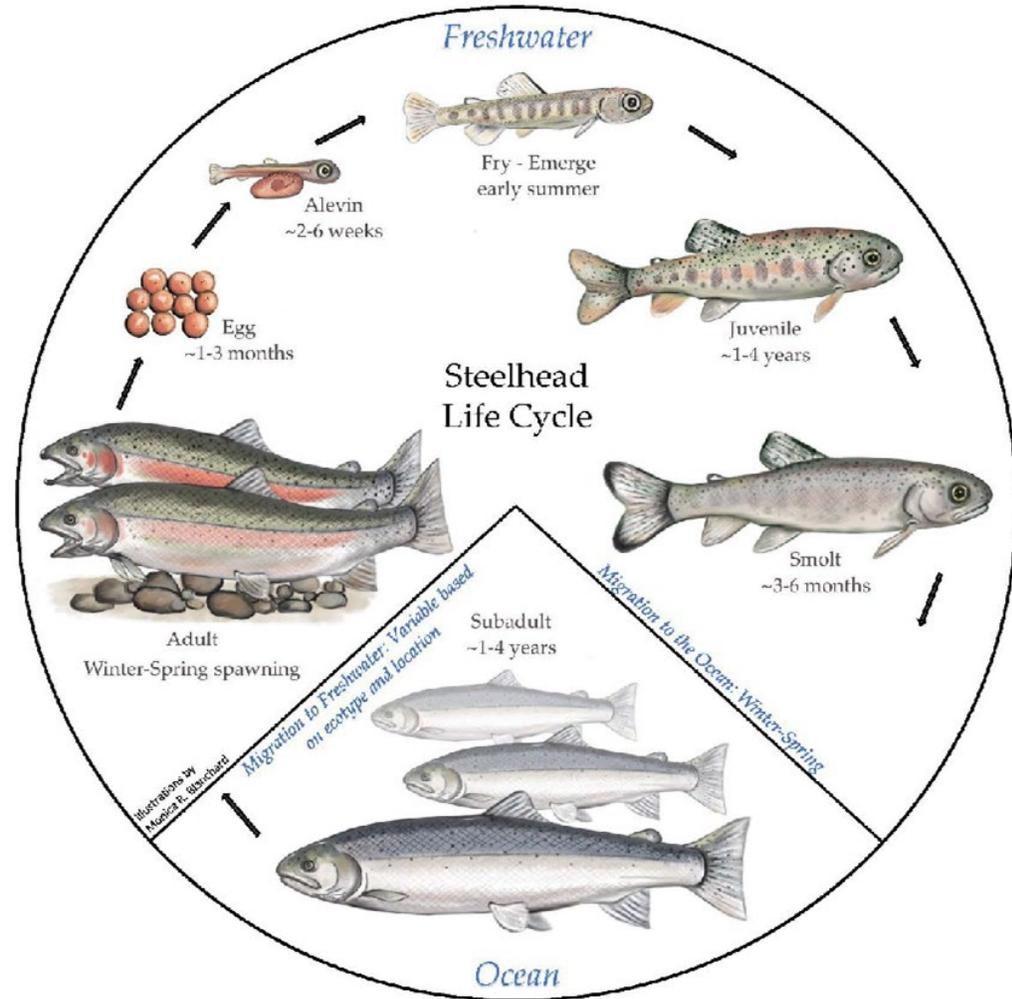
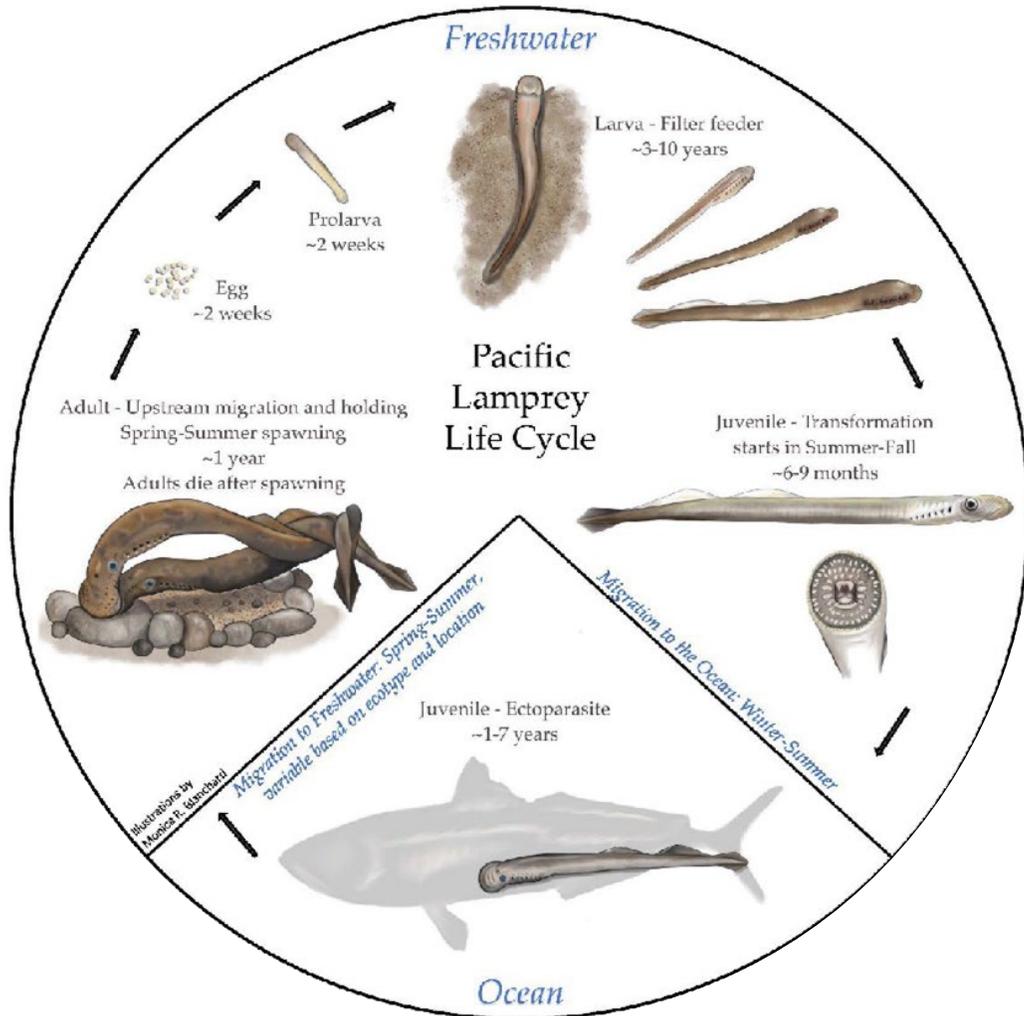


Christina Wang
U.S. Fish & Wildlife Service
Lamprey Technical Workgroup Chair



Max Calloway
PLCI Coordinator

Lifecycle & Ecology



THE LOST FISH

“We are the circle.
That’s what life is all about.
We take care of one another.
So, when we have someone in trouble,
that’s when the rest of us have to step in.”
~ *Elmer Crow Jr.*





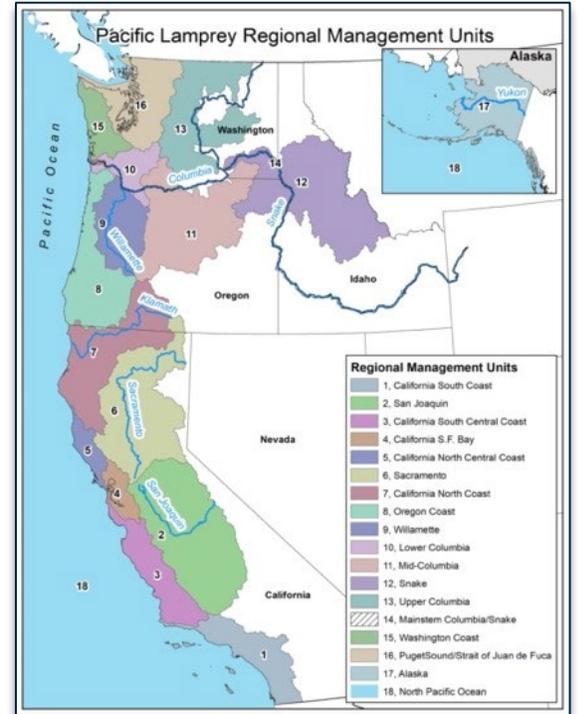
Pacific Lamprey Conservation Initiative (PLCI)

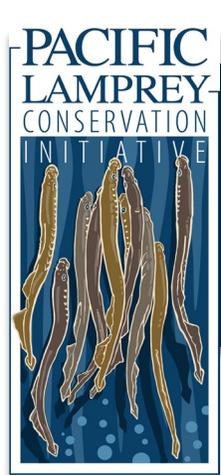
What is the Pacific Lamprey Conservation Initiative?

The Pacific Lamprey Conservation Initiative (PLCI) is a collaboration of Native American tribes, federal, state, municipal and local agencies, and non-profits working together to conserve Pacific Lamprey.

Our Mission

Achieve long-term persistence of Pacific Lamprey and their habitats and support their traditional tribal use throughout their historical range (AK, CA, ID, OR, WA).





PLCI Foundations

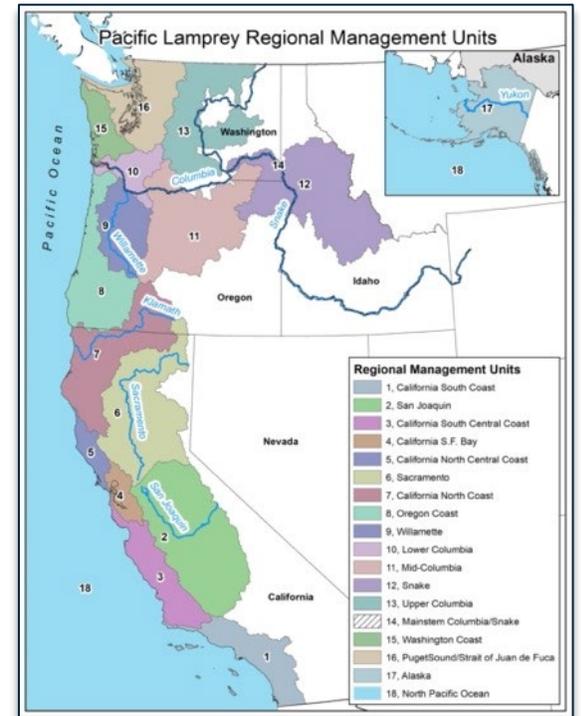
1. Assessment:

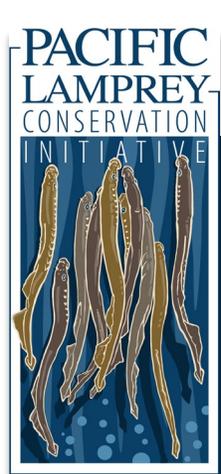
Partners evaluate Pacific Lamprey habitat condition, population demographics, distribution, and threats every 5 years to characterize conservation risk across their range.

2. Conservation Agreement:

First signed in 2012, voluntary commitment to collaborate to reduce or eliminate threats to Pacific Lamprey.

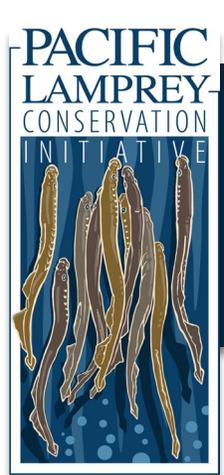
3. Regional Implementation Plans: Developed by 18 Regional Management Units (RMUs) spanning Pacific Lamprey's range in the U.S.





Origins of the PLCI/CRB Lamprey Umbrella Project

- **Informed by threats & conservation needs** identified by
 - PLCI Regional Management Units (annually)
 - Pacific Lamprey Assessment (every 5 years)
- **Developed through a partnership** between PLCI, NWPCC, and BPA
 - Led to **dedicated annual funding** support from BPA for lamprey projects in the CRB
- Program has successfully:
 - **implemented projects** in multiple RMUs
 - **engaged** a diverse range of partners
 - **addressed** threats across the CRB



BPA Funded Projects 2018 – 2023

(\$300 K Annually)

2018

Three projects

- Snake
- Upper Columbia
- Willamette

2019

Eight projects

- Upper Columbia
- Mid Columbia
- Lower Columbia Willamette

2020

Six Projects

- Upper Columbia
- Lower Columbia
- Multi-RMU

2021

Nine projects

- Snake
- Upper Columbia
- Lower Columbia
- Willamette/North Coast Oregon
- Multi-RMU

2022

Six projects

- Upper Columbia
- Lower Columbia
- Multi-RMU (Upper Columbia x3)
- Multi-RMU (Mid Columbia)

2023

Five projects

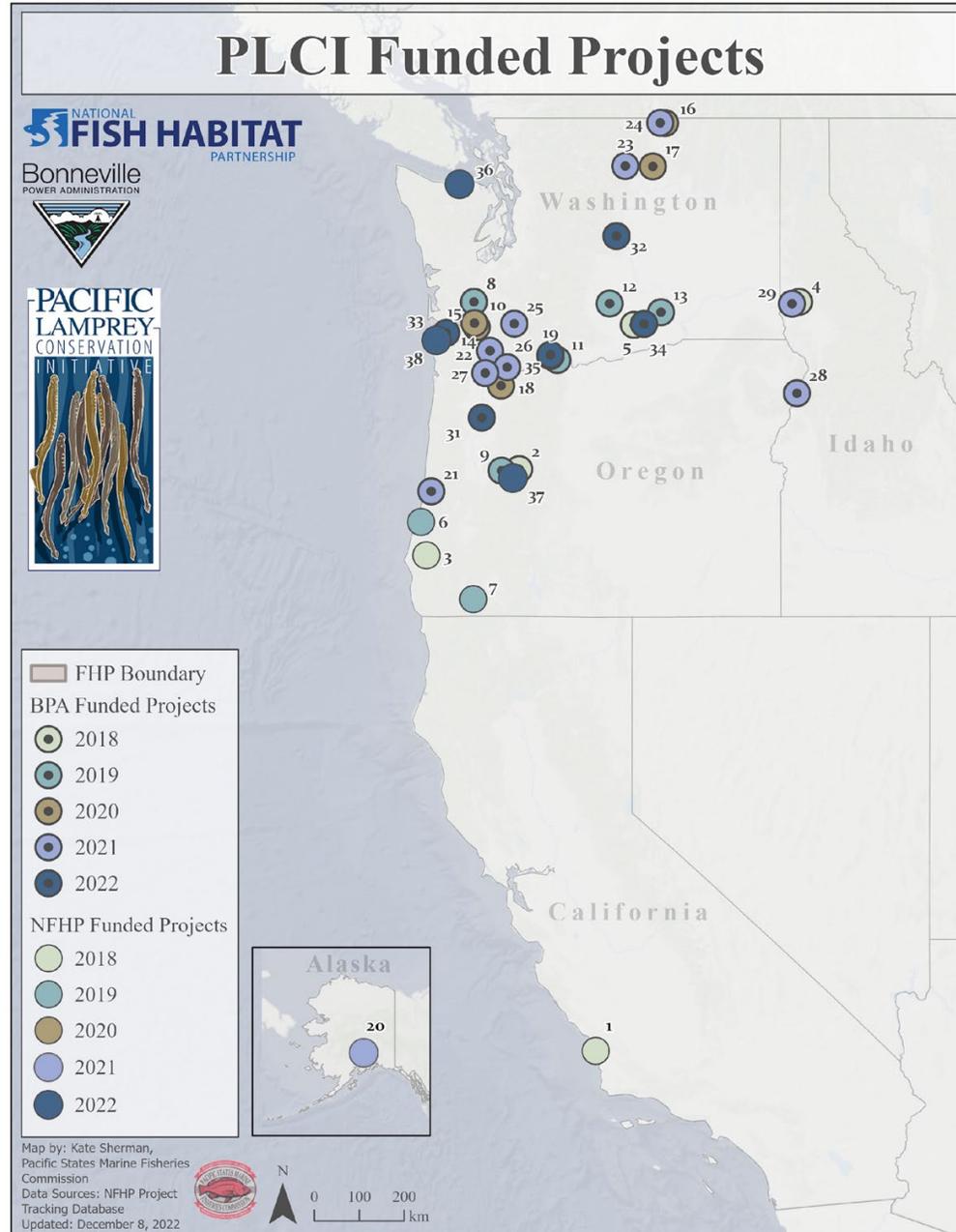
- Mainstem Columbia/Snake
- Willamette
- Mid-Columbia

FY23 PLCI CRB Projects

PROJECT TYPE	PROJECT TYPE	THREATS ADDRESSED	PROJECT LEAD & PARTNERS	RMU
Defining sediment handling practices to limit negative impacts to larval lampreys	Assessment, Outreach & Education, Research	Dewatering & Streamflow Management Stream & Floodplain Mitigation, Water Quality, Small Effective Population Size, Lack of Awareness, Climate Change	USGS	Mainstem Columbia/Snake
Customization of a Novel Floating Elver Trap for Adult Pacific Lamprey Passage	Passage Improvement	Passage, Predation, Disease, Climate Change	CRITFC/Whooshh Innovations	Mainstem Columbia/Snake
Evaluating the restoration potential for Pacific Lamprey with a life-stage demographic model	Assessment	Passage, Dewatering & Streamflow Management, Stream & Floodplain Mitigation, Water Quality, Predation, Climate Change	USGS	Willamette
Trend and source identification of mercury contamination in Mid-Columbia Basin Pacific Lamprey larvae	Assessment, Monitoring, Outreach & Education, Research	Passage, Dewatering & Streamflow Management, Stream & Floodplain Mitigation, Water Quality, Predation, Climate Change Water Quality, Lack of Awareness	Yakama Nation Fisheries	Mid-Columbia
Characterization of prey fishes of ocean-feeding Pacific Lamprey via metabarcoding analysis of gut contents of ocean- and river-caught specimen	Research	Predation, Ocean Conditions, Climate Change	Oregon State University	Willamette
eDNA & Lamprey Bile Acids Monitoring to Assess the Impacts of Adult Translocation in the Upper Columbia Basin Above Wells Dam	Monitoring, Outreach & Education	Small Effective Population Size	Yakama Nation	Upper Columbia
Lamprey ID & Integrating Lamprey into Restoration Projects Workshop Series (Phase 2)	Assessment, Outreach & Education	Passage, Dewatering & Streamflow Management, Lack of Awareness, Climate Change	PLCI/LTWG Restoration Subgroup , USFWS, Washington Dept of Fish & Wildlife, Yakama Nation Fisheries, etc.	Multi-RMU (Upper Columbia)



Expanding Opportunities for Funding Lamprey Projects (2018-2021)



38 lamprey projects funded from 2018 to 2022

- 30 projects funded by BPA
- 7 funded projects in CRB in FY23

Bonneville Power Administration

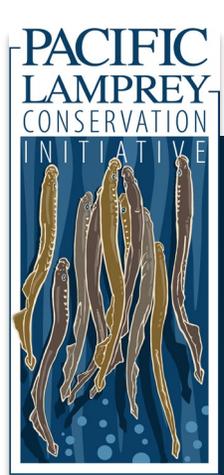
- Providing \$300K annually since 2018
- Funding available to projects in the Columbia River Basin

National Fish Habitat Partnership

- PLCI became eligible for project funding in FY22
- Funding available to projects in any RMU

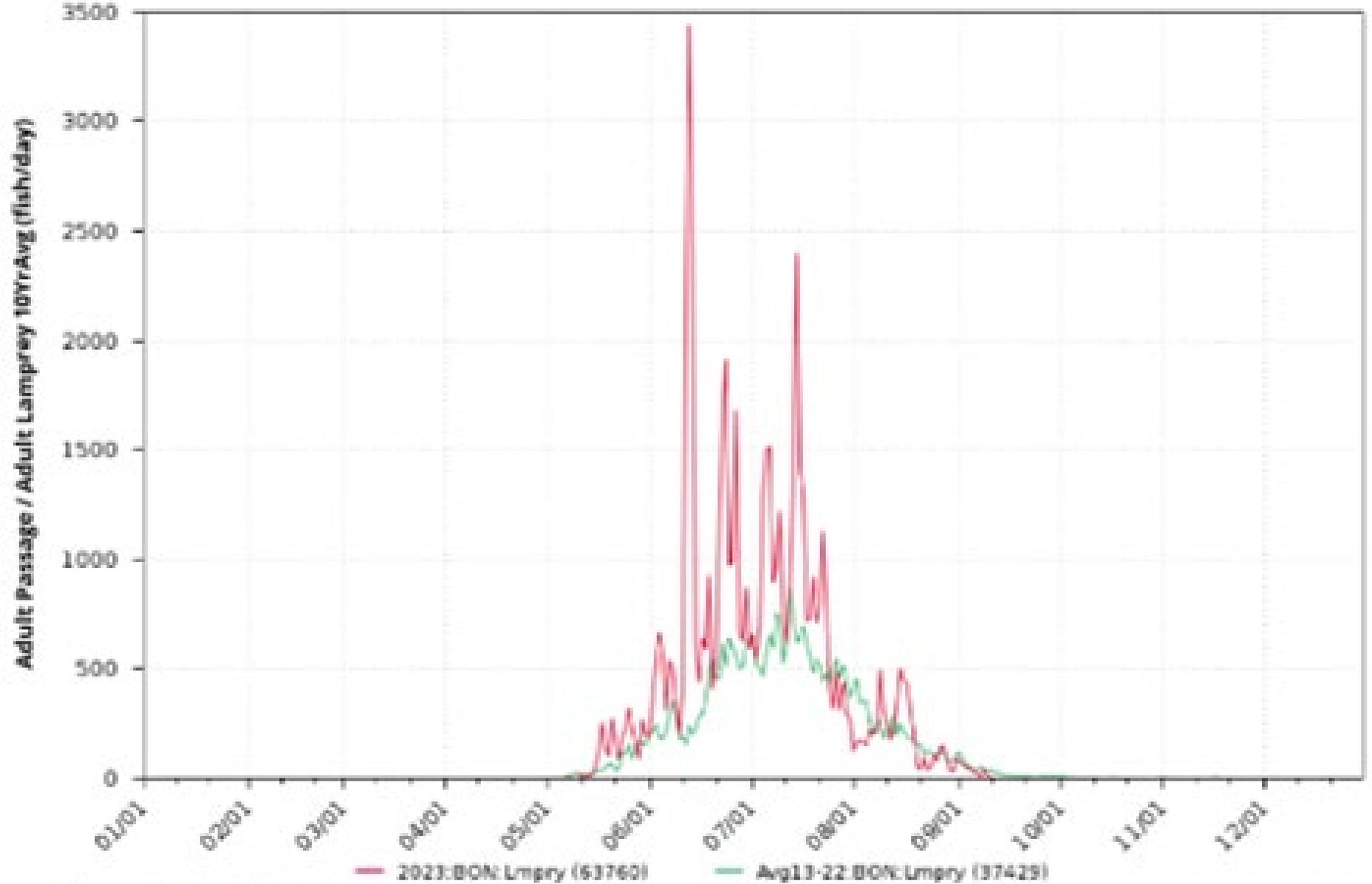
Updated Project Selection Process

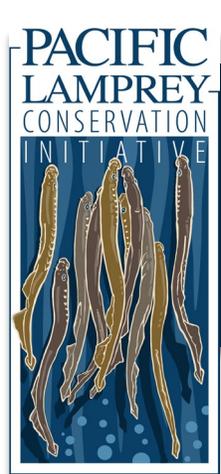
- Two distinct funding cycles in 2024 for BPA and NFHP



2023 Return Counts

Adult Passage Counts Adult Passage, Adult Lamprey 10YrAvg





Lamprey Summits

Lamprey Summit I (2003)

Petition to List

Lamprey Summit II (2007)

Workshop to lay the groundwork to est. PLCI

Lamprey Summit III (2012)

First Conservation Agreement signed

Lamprey Summit IV (2017)

Recommitment to Conservation Agreement
& Revised Assessment

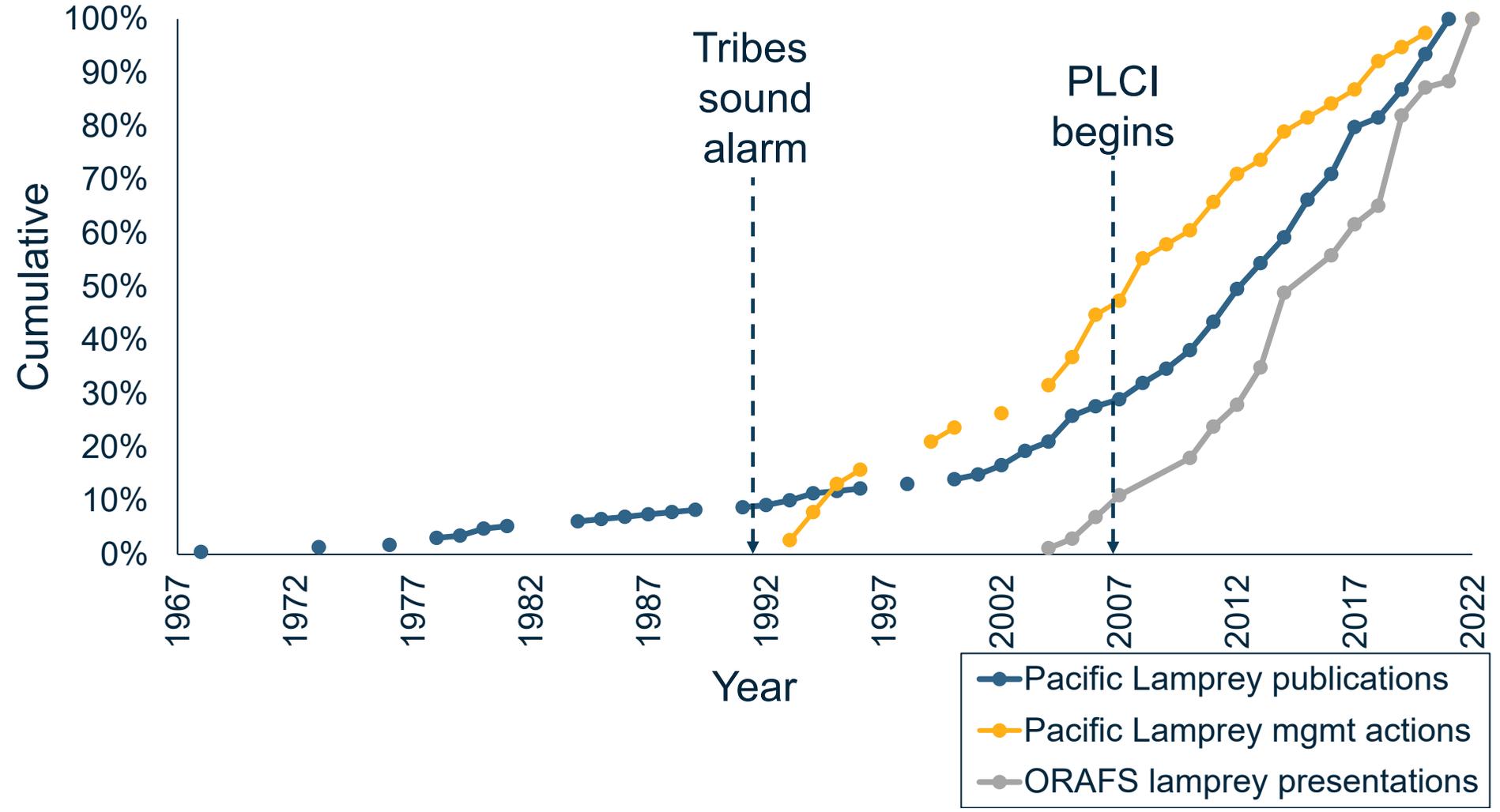
Lamprey Summit V (2022)

Conservation Agreement Update
Revised Assessment



*Signing of first Conservation Agreement
Lamprey Summit III, 2012*

Growing awareness





Lamprey Technical Workgroup (LTWG)

~ 175 members

12 subgroups

Shares information & techniques

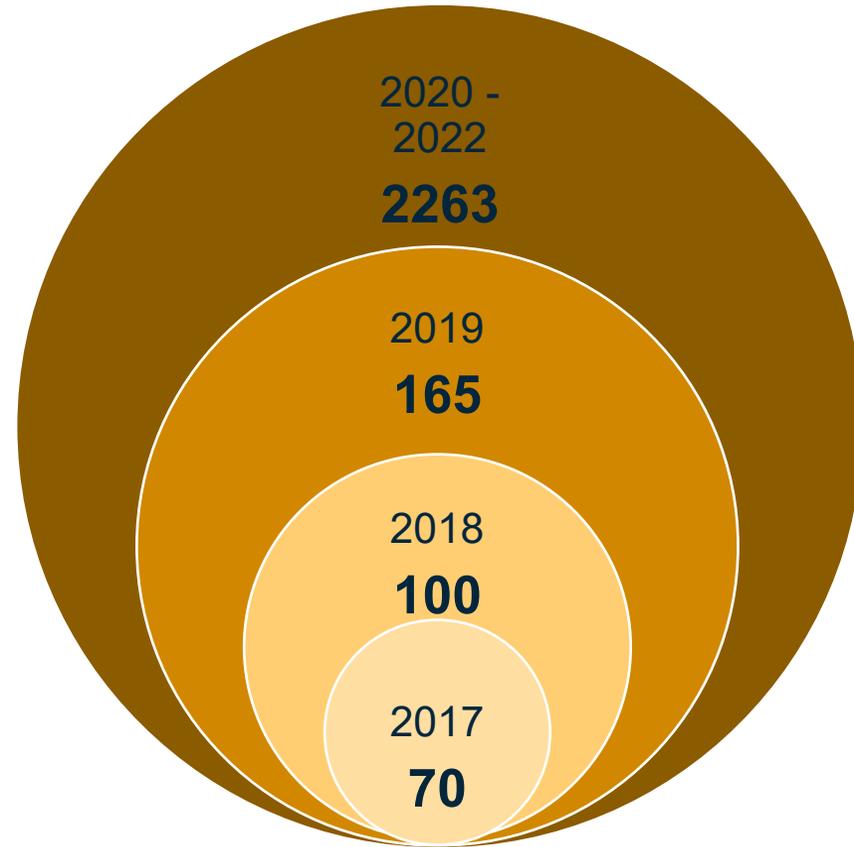
Hosts Annual Lamprey Information Exchanges

Open to all lamprey enthusiasts

LTWG Chair:
Christina Wang (USFWS)
christina_wang@fws.gov

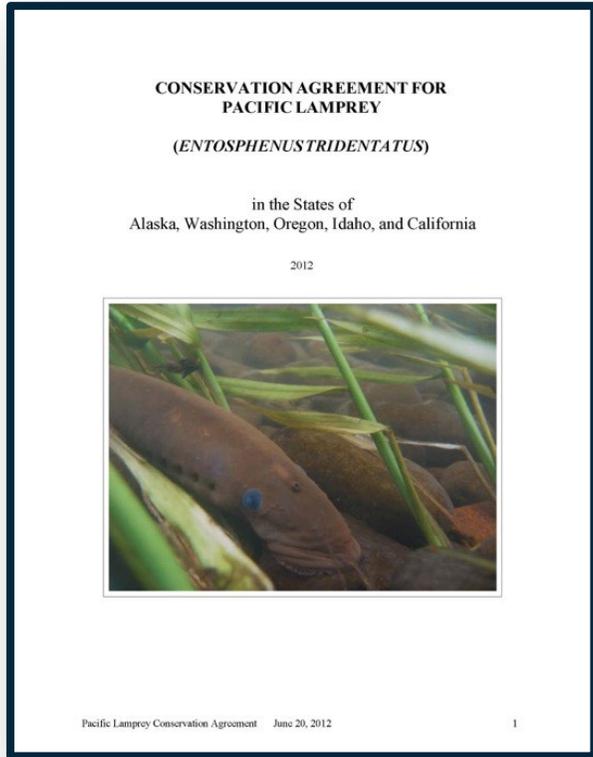
ALL LTWG PUBLICATIONS AVAILABLE AT

www.pacificlamprey.org/ltwg



Annual Information Exchange Attendance

Lamprey Technical Workgroup & Information Exchanges



Conservation Agreement is revisited every 5 years

2022 is the first true update

No changes made in 2017 – only added signatories

Captures current status and progress made by PLCI and partners since 2012

Conservation Agreement Signatory and Supporters	
Signatory 2012	26
Supporter 2012	4
Letter of Support 2012	7
Signatory 2017	3
Signatory 2022	38
Letter of Support 2022	16

2022 Signatory Metrics	
New Signatory	Continuing Signatory
16	22
New Supporter	Continuing Supporter
10	6

2022 Conservation Agreement Update



Questions?

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