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February 23, 2012

## MEMORANDUM

**TO:** Council Members

**FROM:** Lynn Palensky

**SUBJECT:** Progress update on Lamprey Synthesis Report

In the final programmatic recommendations for the lamprey projects in the RME/AP review, the Council called for follow-up documents (described below) to be developed during the project funding period. The Co-Chairs of the Lamprey Technical Work Group, Christina Luzier (US Fish and Wildlife Service) and Dave Ward (CBFWA Members Advisory Group), will present a progress update and an overview of the draft report to the Council on the group's work.

The *Synopsis of Lamprey-Related Projects Funded through the Columbia River Basin Fish and Wildlife Program* is anticipated to be submitted to the ISAB for review in April, 2012.

In its *Final Review of 2010 Proposals for the Research, Monitoring, and Evaluation and Artificial Production Category* the ISRP suggests: *the Inter-Agency Lamprey Technical Working Group would be a possible group of experts that could write a basinwide synthesis including major conclusions that could be drawn at this point with supporting evidence, status and trends, and a candid evaluation of whether tributary habitat projects are improving lamprey returns. A draft outline could be developed based on comments from this RM&E review, other project reviews, and ISAB suggestions (ISAB 2009-3). The ISAB should review the synthesis.*

# Columbia River Basin Lamprey Technical Workgroup



## Synopsis of Lamprey-Related Projects Funded Through the Columbia River Basin Fish and Wildlife Program





# Columbia River Basin

## Lamprey Technical Workgroup

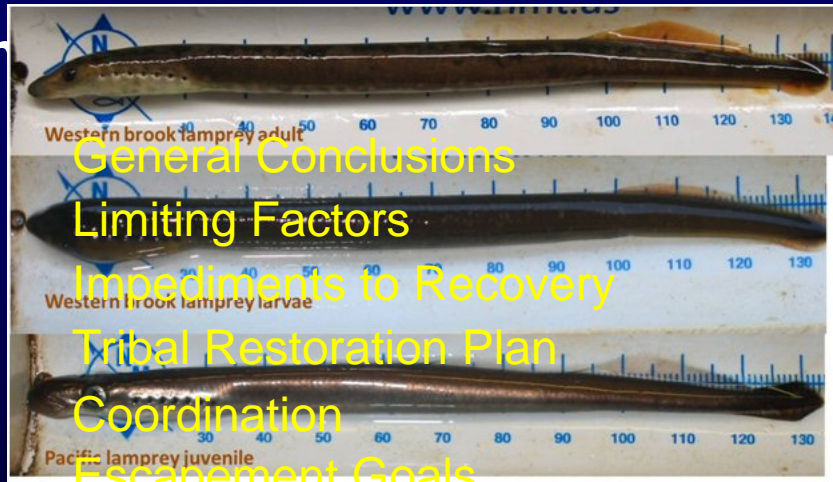


### Synopsis of Lamprey-Related Projects Funded Through the Columbia River Basin Fish and Wildlife Program

#### Summary of Lamprey Projects

Response

ions



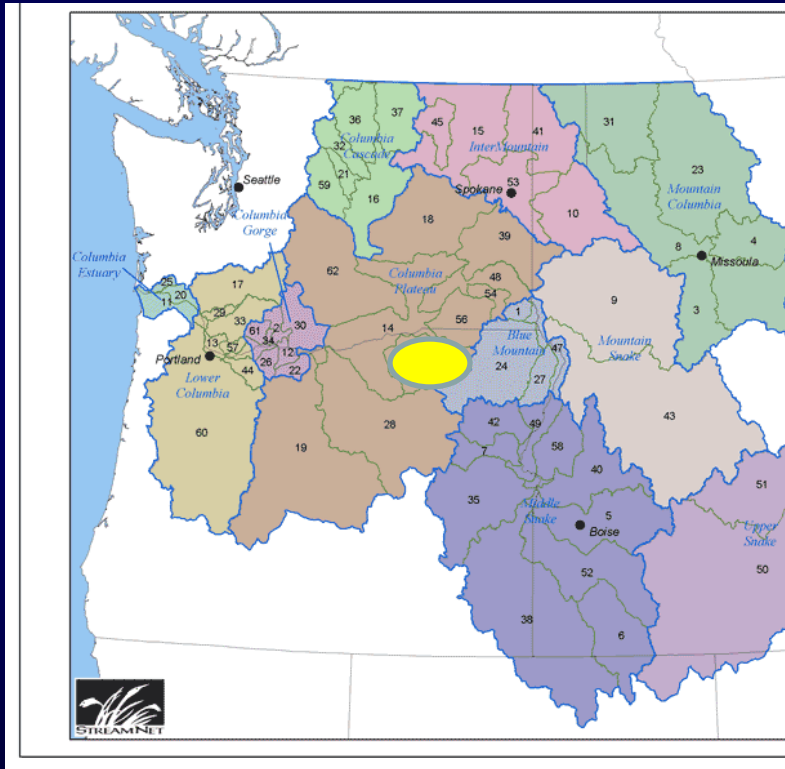
Status

Brook Lamprey



# Pacific Lamprey Research and Restoration

1994-026-00



First Lamprey Project

Findings Widely Applicable

Important Components

Translocation

Low-Elevation Structures

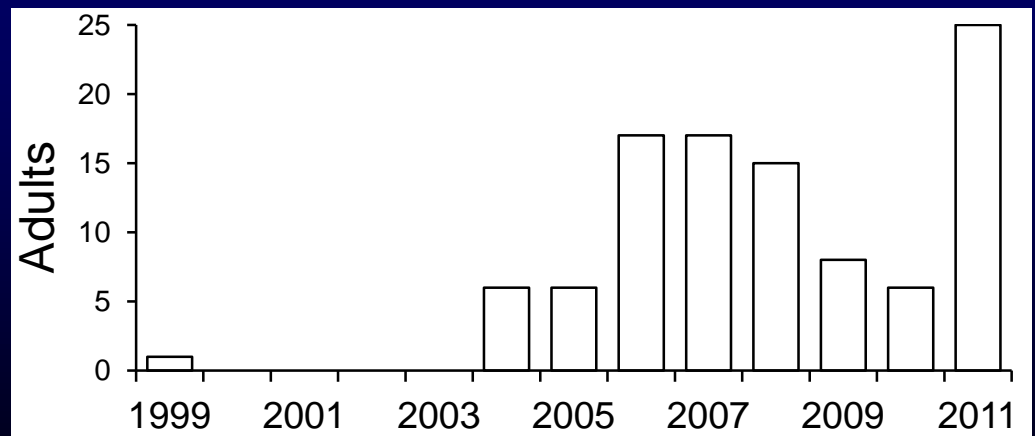
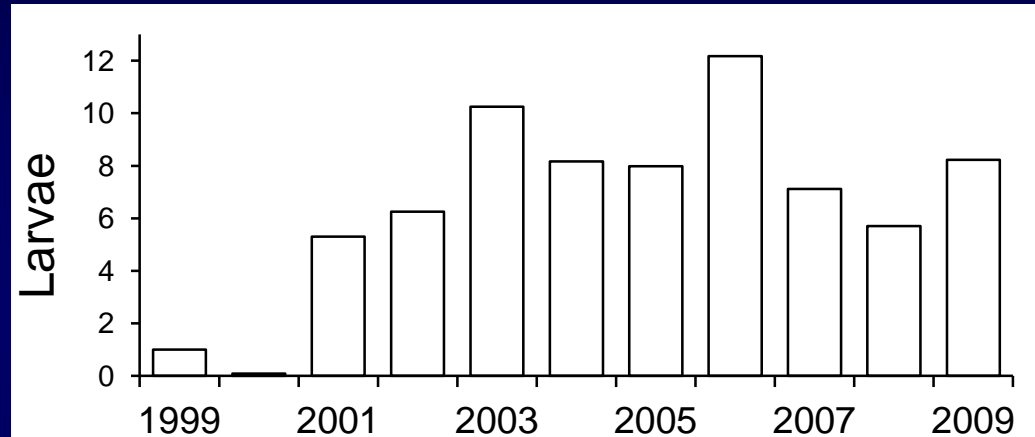
Genetics



# Pacific Lamprey Research and Restoration

1994-026-00

## Translocation







# Pacific Lamprey Research and Restoration

1994-026-00



## Low-Elevation Structures

## Pacific Lamprey Genetics



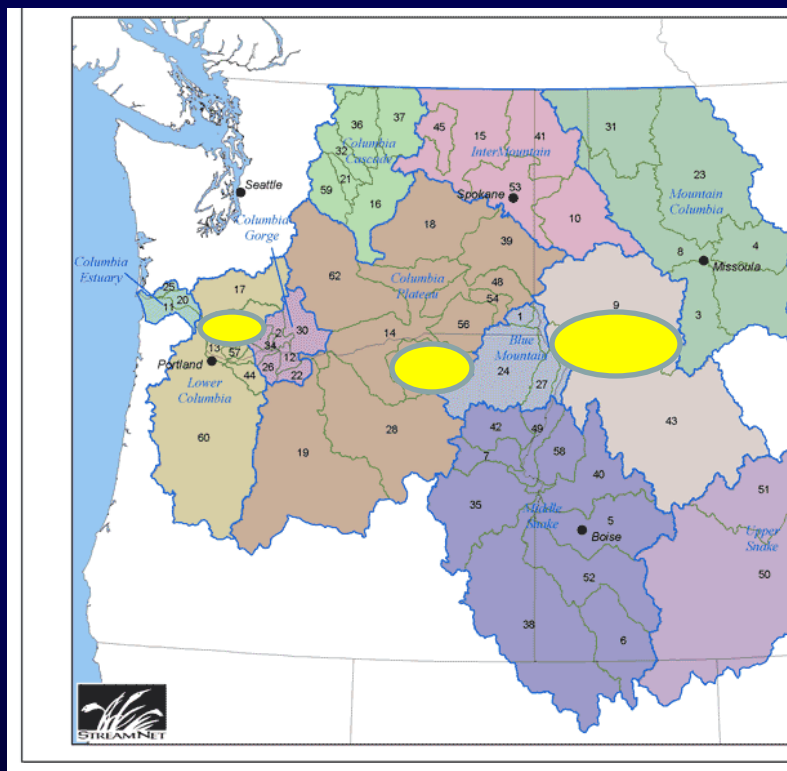


# Early Lamprey Survey Projects



## Habitat Use and Population Dynamics of Lampreys in Cedar Creek

2000-014-00



## Objectives

Abundance

Spawning Requirements

Migration Timing

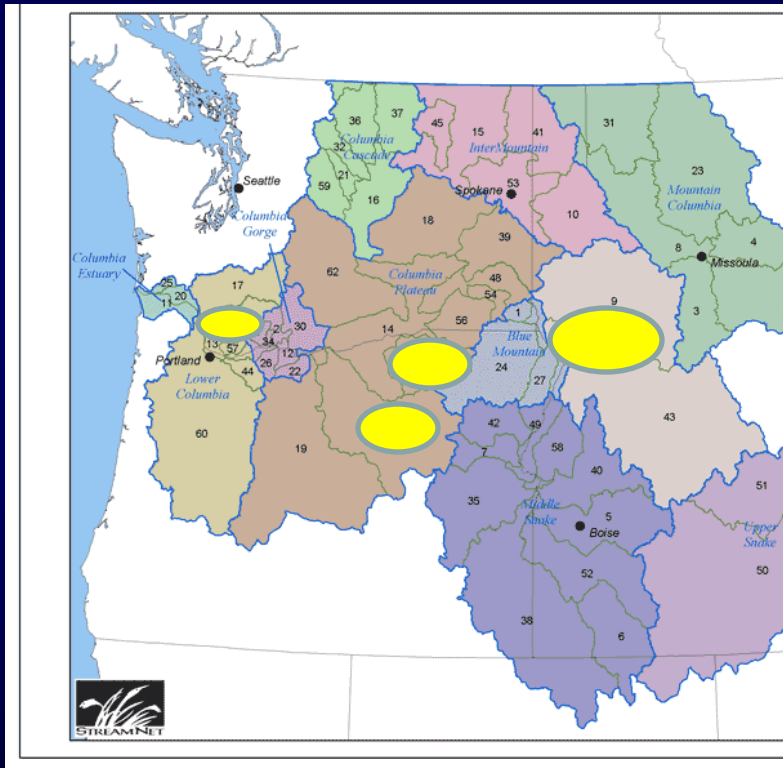
## Status of Pacific Lamprey in Idaho

2000-028-00

# Early Lamprey Research Projects

## Lamprey Identification and Thermal Requirements

2000-029-00



## Objectives

Differentiate Species  
Temperature Requirements

Innovative Project

## Upstream Migration, Timing, and Habitat Use

2000-052-00



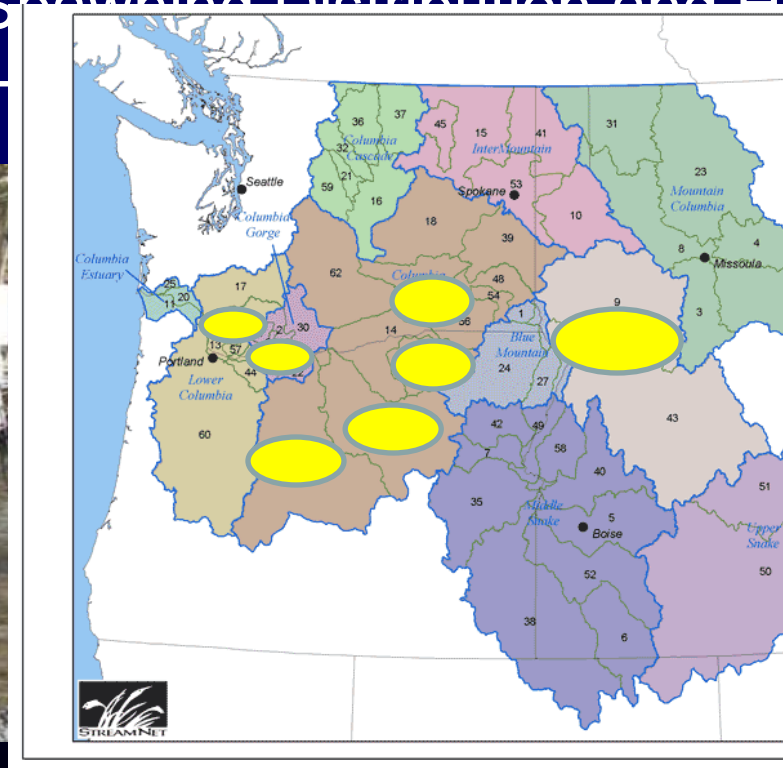


# Current Lamprey Survey Projects



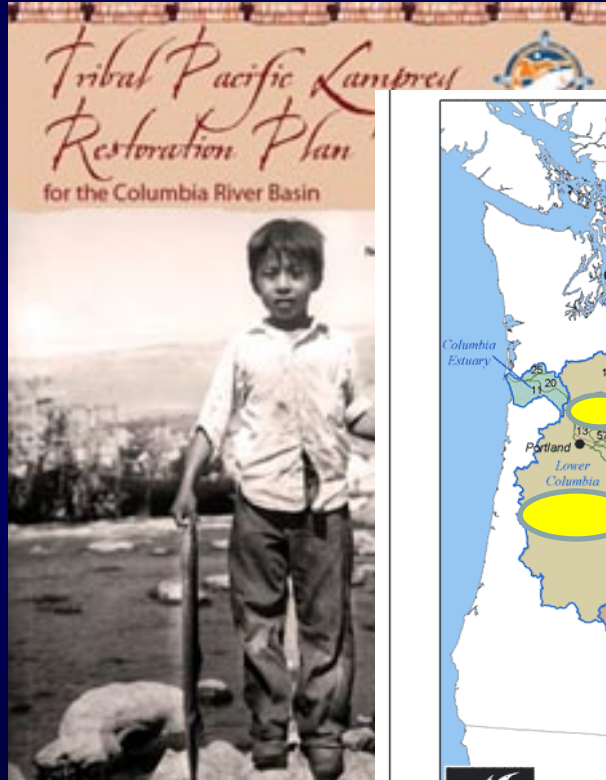
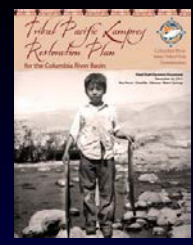
## Objectives

- Larval Distribution and Habitat
- Species Composition
- Larval and Adult Abundance
- Spawning Distribution and Habitat

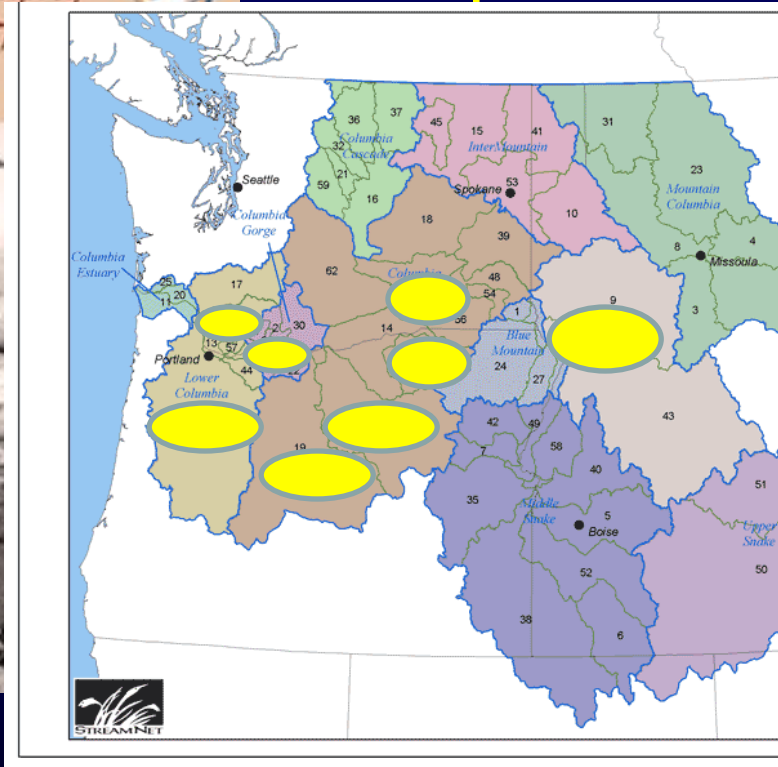




# Implement Tribal Pacific Lamprey Restoration Plan 2008-524-00



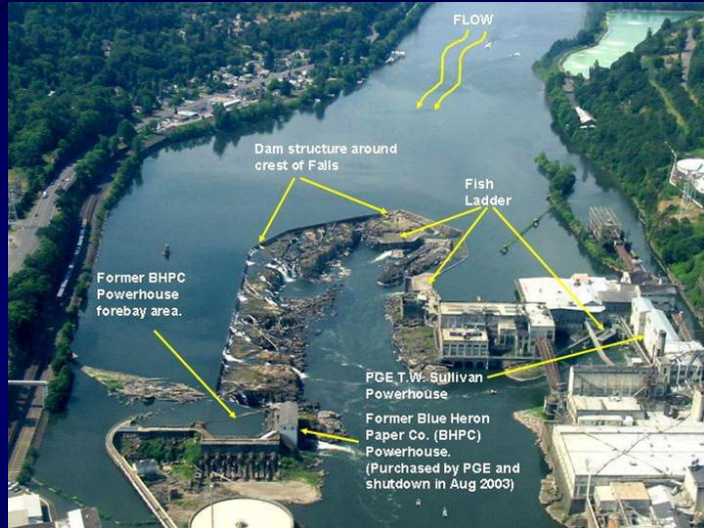
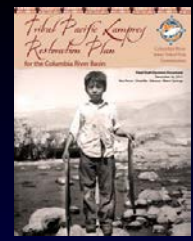
## Comprehensive Basin-Wide Project



Plan and Tributary Passage  
Implementation Strategies  
Pollutants/Water Quality  
Education  
Stages



# Willamette Falls Lamprey Escapement Estimate 2008-308-00



## Objectives

Estimate Lamprey Escapement  
Develop Long-Term Index

2010 Passage = 22,000-36,000

2010 Harvest = 4.4% - 7.3%





# Columbia River Basin Lamprey Technical Workgroup



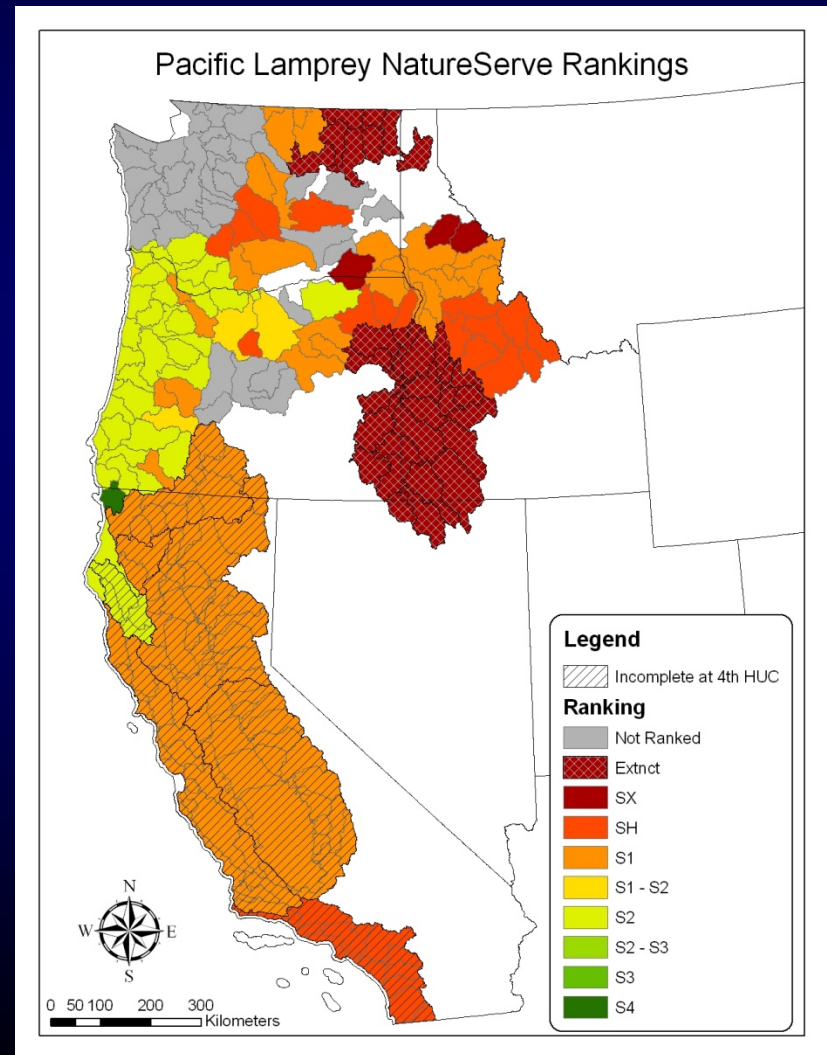
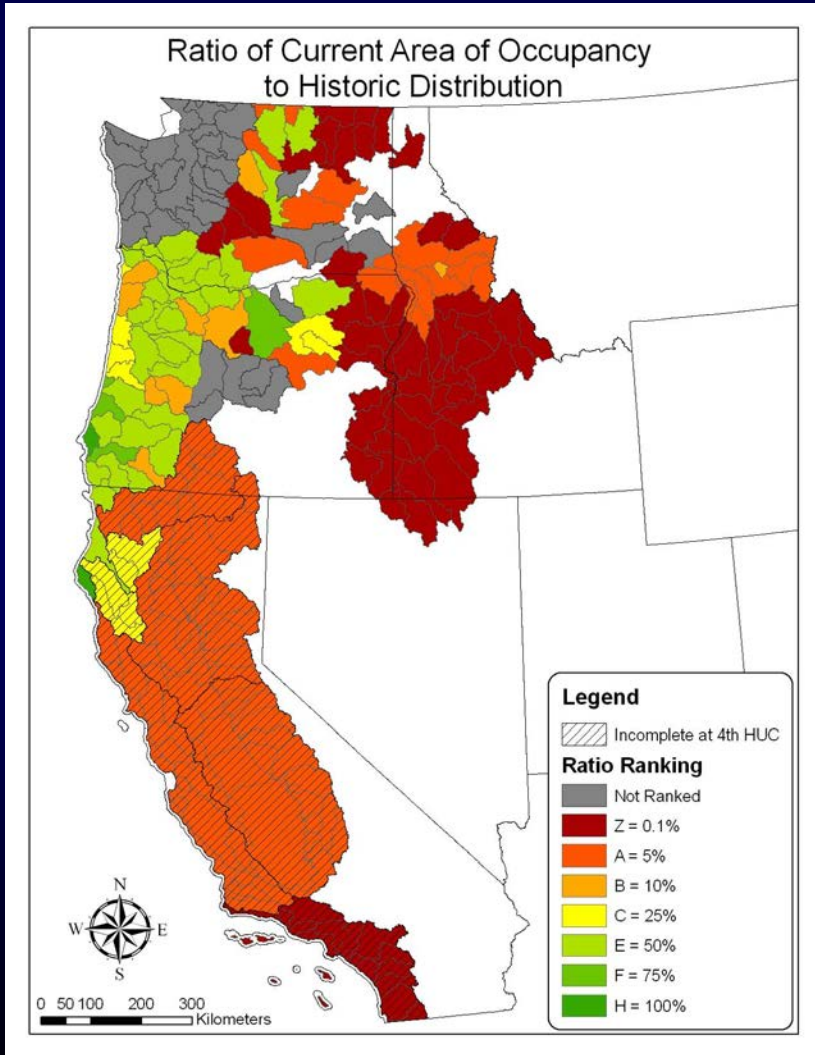
## Response by LTWG to ISRP Questions

1. General Conclusions
2. Limiting Factors
3. Impediments to Recovery
4. Tribal Restoration Plan
5. Coordination
6. Escapement Goals
7. Status
8. Brook Lamprey



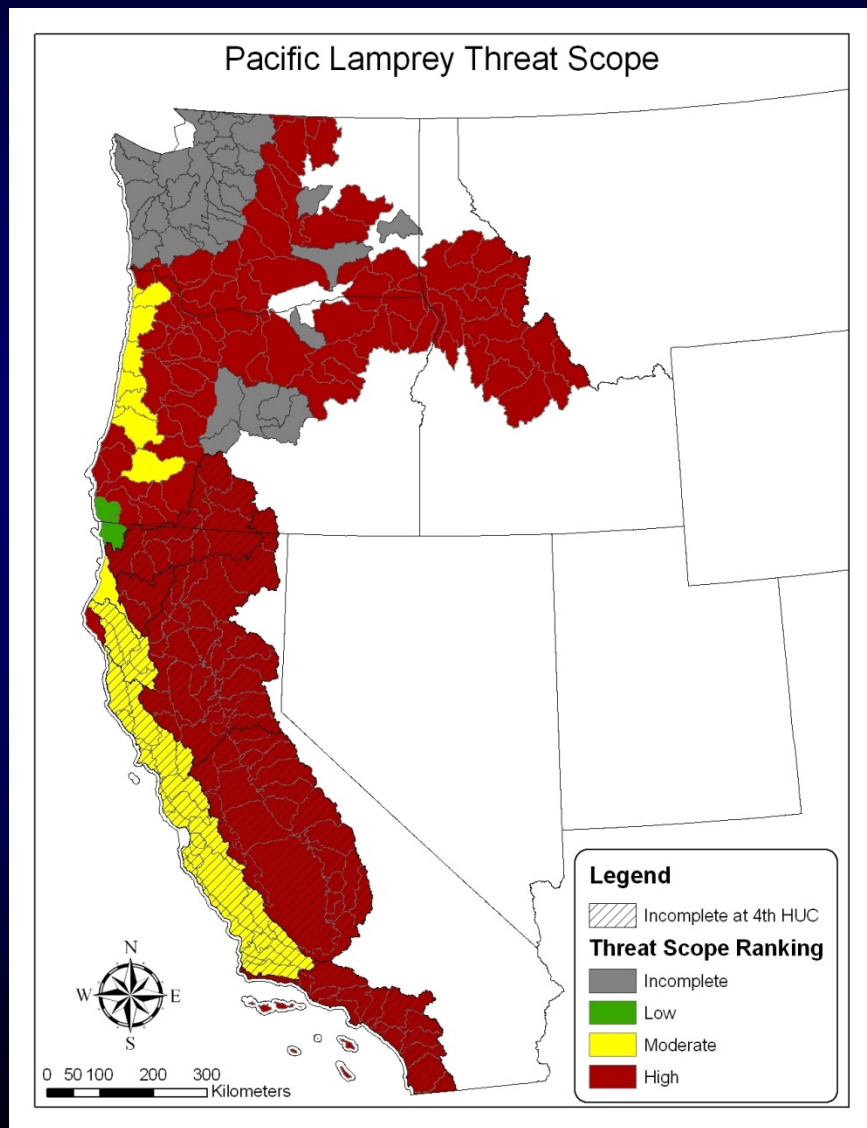
# General Conclusions and Status

## Are lamprey recovering in the basin?





# Limiting Factors



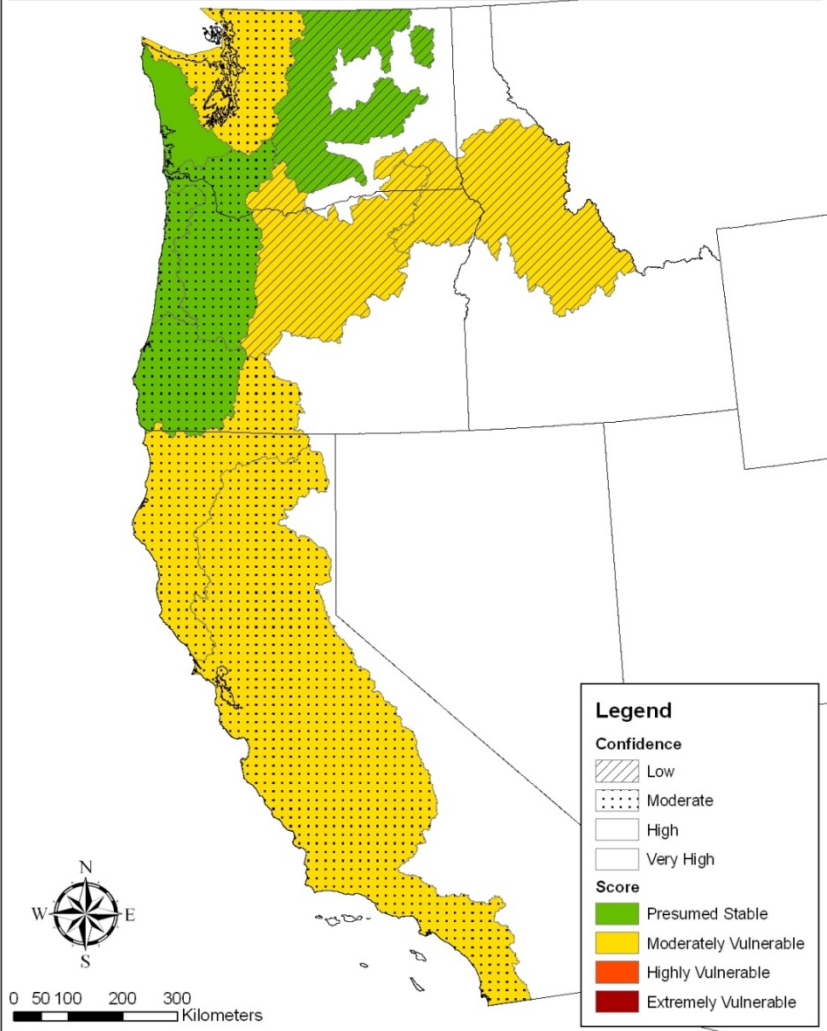
1. Passage
2. Dewatering and flow management
3. Stream and floodplain degradation
4. Poor water quality
5. Predation
6. Ocean conditions
7. Climate change



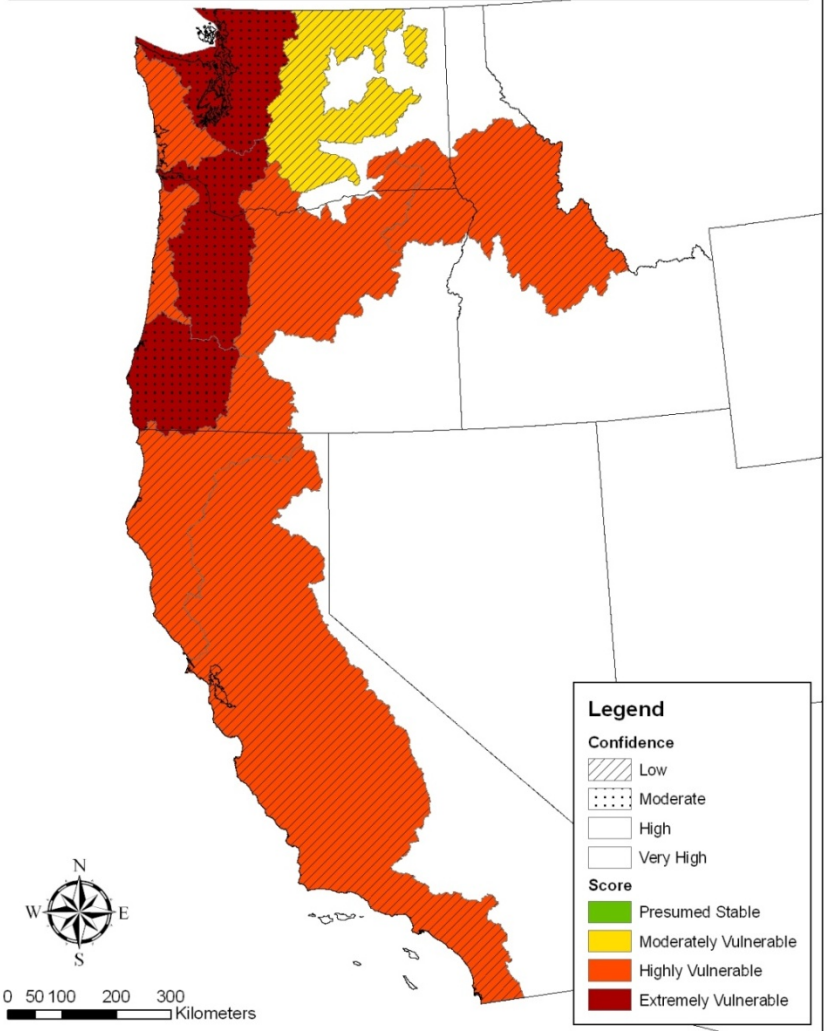


# Climate Change

Climate Vulnerability Results for the A1b Mid Century Model Run



Climate Vulnerability Results for the A2 End Century Model Run





# Impediments to Recovery

1. Lack of resources
2. No requirement for recovery
2. Slow progress on fixes



BEST MANAGEMENT PRACTICES  
TO  
MINIMIZE ADVERSE EFFECTS TO  
PACIFIC LAMPREY  
(*Entosphenus tridentatus*)



(Photo courtesy of U.S. Fish and Wildlife Service)

U.S. Fish and Wildlife Service  
April 2010





# Tribal Restoration Plan

## Finalized in December 2011

- Mainstem and tributary passage and habitat
- Supplementation and augmentation
- Contaminants and water quality
- Outreach and education
- Research, monitoring and evaluation

Not a master plan though incorporates information in other regional lamprey planning documents







## Other Plans

### U.S. Army Corps of Engineers

- 10 year Passage Plan for lamprey

### NPCC Fish and Wildlife Program

### PUD and State Lamprey Plans

### USFWS Pacific Lamprey Assessment and Template for Conservation Measures

- Assessment
- Conservation Agreement
- Regional Implementation Plans
- Lamprey Summit III





# Coordination and Metrics

- Coordination has improved
- Key issues like sampling efficiencies, tag development, survival estimation, and escapement are being worked on
- Monitoring and evaluation to provide such metrics is needed
- Workgroup members working on these issues and collaborate
- Forums for discussion have increased





# Western Brook Lamprey

- Genetic analyses for WBL indicate fine scale population structure
- Funding for non-anadromous lamprey status research is needed

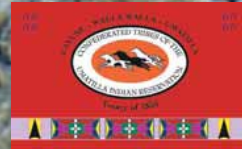




# Columbia River Basin Lamprey Technical Workgroup



## Synopsis of Lamprey-Related Projects Funded Through the Columbia River Basin Fish and Wildlife Program



Questions?



CHELAN COUNTY