

# PACIFIC LAMPREY RESEARCH AND RESTORATION PROJECT

9402600

## SHORT DESCRIPTION:

Assess status and survival limitations of Pacific lamprey, develop restoration plans and implement in Northeast Oregon and Southeast Washington.

## SPONSOR/CONTRACTOR: CTUIR

Confederated Tribes of the Umatilla Indian Reservation  
Gary James, Fisheries Program Manager  
Pendleton, OR 97801  
541/276-4109

## SUB-CONTRACTORS:

Columbia River Inter-Tribal Fish Commission and Oregon State University

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## GOALS

### GENERAL:

Supports a healthy Columbia basin, Maintains biological diversity, Maintains genetic integrity, Increases run sizes or populations, Provides needed habitat protection

### ANADROMOUS FISH:

Research, M&E

### NPPC PROGRAM MEASURE:

7.5F.1

### RELATION TO MEASURE:

Project relates directly to language: "upon approval by the Council, fund actions recommended in the lamprey status report"

### OTHER PLANNING DOCUMENTS:

Wy Kan Ush Me Wa Kush Wit and all subbasin plans for subject subbasins

### TARGET STOCK

NE Oregon/SE Washington Lamprey

### LIFE STAGE

All life stages

### MGMT CODE (see below)

S and/or N depending on restoration plans to be developed

### AFFECTED STOCK

Unknown at this time

### BENEFIT OR DETRIMENT

Likely beneficial

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## BACKGROUND

### Stream name:

Mainstem Columbia, John Day, Grande Ronde, Imnaha, Umatilla, Walla Walla, and Tucannon rivers

### Subbasin:

Several

### Stream miles affected:

Hundreds - exact amount of lamprey habitat restoration to be determined

### HISTORY:

The once-abundant Pacific lamprey populations are believed to be severely depressed or absent in mid and upper Columbia and Snake River tributaries where hydroelectric projects have created serious migration impacts. To date, little attention has been given to the enhancement efforts for this species. Depressed upriver lamprey runs have forced the tribes to gather this traditional food fish in lower Columbia locations and declining runs have impacted treaty secured fishing rights. The tribes desire to see lamprey problems identified and restoration plans developed with implementation beginning within 3 to 4 years.

**BIOLOGICAL RESULTS ACHIEVED:**

Only status report completed at this time. Near-term results will be assessment of lamprey abundance, distribution, and limiting factors. Anticipated eventual results are enhancement or re-establishment of depressed or extirpated lamprey populations.

**PROJECT REPORTS AND PAPERS:**

Columbia Basin lamprey status report to BPA initially and annual project reports thereafter.

**ADAPTIVE MANAGEMENT IMPLICATIONS:**

The initial project will involve research on Pacific lamprey abundance, distribution, habitat condition, passage impacts, and transplantation or artificial production techniques. This information will enable managers to identify problems and potential solutions to be later implemented.

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**PURPOSE AND METHODS**

**SPECIFIC MEASUREABLE OBJECTIVES:**

Address lamprey population limiting factors by implementing mainstem and tributary restoration measures. Rebuild/restore currently depressed/absent populations to levels which can be self sustaining and provide for traditional tribal fisheries. Conduct lamprey counts at mainstem dams to help measure success.

**CRITICAL UNCERTAINTIES:**

Numerous habitat problems are suspected to be responsible for the currently low lamprey populations. Specifically, mainstem passage and tributary spawning/ rearing are thought to be the critically impacted life history stages. This project will help clarify these problems and recommend actions to address them.

**BIOLOGICAL NEED:**

The once abundant Pacific lamprey populations in the Columbia and Snake rivers are thought to be severely depressed or extirpated in many locations. Without efforts to identify the problems and implement solutions or restoration projects, the Pacific lamprey will likely go extinct in the entire upper Columbia and Snake rivers and tributaries.

**HYPOTHESIS TO BE TESTED:**

NE Oregon and SE Washington depressed/extirpated lamprey populations can be restored by assessment of problems and development/implementation of specific restoration actions.

**ALTERNATIVE APPROACHES:**

Various restoration approaches to be considered after they are developed.

**JUSTIFICATION FOR PLANNING:**

Assessment of past and present lamprey abundance and distribution and identification of limiting factors has never been done therefore these efforts are necessary prior to implementing projects to restore lamprey populations. Various fishery entities are expected to be involved in coordination, however the tribes are expected to be the primary parties to be funded due to their unique interests and values regarding lamprey.

**METHODS:**

1) Monitor lamprey abundance at mainstem Columbia and Snake River dams; 2) Identify past and present distribution of lamprey in NE Oregon and SE Washington subbasins; 3) Identify habitat limiting factors, both in tributaries (spawning & rearing) and the mainstem Columbia River (passage); 4) Research transplantation and artificial propagation techniques and identify potential stock sources; 5) Develop and implement lamprey restoration projects in mainstem Columbia and/or tributaries.

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**PLANNED ACTIVITIES**

**SCHEDULE:**

<b><u>Planning Phase</u></b>	<b><u>Start</u></b> 1995	<b><u>End</u></b> ongoing	<b><u>Subcontractor</u></b>
<b><u>Task</u></b> Initial status report was completed in 1995. Monitor abundance at mainstem dams starting in 1996. Passage research and evaluation of artificial production/transplantation to begin in 1997. Identify lamprey restoration projects beginning in 1998/1999.			
<b><u>Implementation Phase</u></b>	<b><u>Start</u></b> 1998	<b><u>End</u></b> ongoing	<b><u>Subcontractor</u></b>
<b><u>Task</u></b> Implementation of lamprey restoration projects to begin in 1998 or 1999.			
<b><u>O&amp;M Phase</u></b>	<b><u>Start</u></b> 1999	<b><u>End</u></b> ongoing	<b><u>Subcontractor</u></b>
<b><u>Task</u></b> Maintain projects to be identified and implemented.			

**PROJECT COMPLETION DATE:**  
ongoing

## **OUTCOMES, MONITORING AND EVALUATION**

### **SUMMARY OF EXPECTED OUTCOMES**

**Expected performance of target population or quality change in land area affected:**

Following identification of limiting factors and development and implementation of restoration actions, the downward trend in upper Columbia and Snake river lamprey populations would be expected to stop and numbers would likely begin to increase.

**Present utilization and conservation potential of target population or area:**

Although current habitat potential for lamprey production exists in the upper Columbia and Snake Rivers, populations are so low (or extirpated) that tribal members must travel to the Willamette Valley to collect this traditional food item.

**Assumed historic status of utilization and conservation potential:**

Lamprey were once a very abundant part of the upper Columbia River and Snake River ecosystems and tribes enjoyed traditional uses of this valued resource.

**Long term expected utilization and conservation potential for target population or habitat:**

With implementation of restoration measures, it is hoped that productive lamprey populations and traditional uses can be restored (similar to long-term desired potential for salmon).

**Contribution toward long-term goal:**

Results from FY 96 work should include more information about the status of the species. Later work will provide a better understanding of the limiting factors to lamprey survival, and an evaluation of the possible uses of transplantation and artificial propagation -- with guidelines on how to proceed with this.

**Indirect biological or environmental changes:**

Unknown at this time.

**Physical products:**

Specific restoration projects to be determined.

**Environmental attributes affected by the project:**

Unknown at this time.

**Changes assumed or expected for affected environmental attributes:**

Unknown at this time.

**Measure of attribute changes:**

Unknown at this time.

**Assessment of effects on project outcomes of critical uncertainty:**

Abundance monitoring at mainstem dams is ongoing. This effort will be continued to monitor near and long term effects of uncertainties associated with mainstem passage and to monitor results of project implementation.

**Information products:**

A better understanding of past and present lamprey abundance and distribution and identification of limiting factors (particularly passage problems) and development/implementation of specific restoration actions to address the problems.

**Coordination outcomes:**

All interested entities who desire involvement in development and discussion of the products above are anticipated to participate in multi-agency lamprey work group meetings beginning in early 1997.

**MONITORING APPROACH**

(See Methods section)

**Provisions to monitor population status or habitat quality:**

Abundance monitoring at mainstem dams is ongoing. This effort will be continued to monitor near and long term effects of uncertainties associated with mainstem passage and to monitor results of project implementation.

**Data analysis and evaluation:**

Project data is expected to be discussed and analyzed by project proponent, other tribes, and the multi-entity lamprey work group.

**Information feed back to management decisions:**

Discussion on the above project data will continue by the same parties for identification, development, and implementation of necessary lamprey restoration measures.

**Critical uncertainties affecting project's outcomes:**

Expanded and continued lamprey abundance monitoring (counts at all mainstem dams) will be necessary to assess population trends and project outcomes.

**EVALUATION**

A better understanding of past and present lamprey abundance and distribution and identification of limiting factors (particularly passage problems) and development/implementation of specific restoration actions to address the problems.

**Incorporating new information regarding uncertainties:**

It is anticipated that any new information would be provided through representatives on the multi-entity lamprey work group.

**Increasing public awareness of F&W activities:**

Along with salmon restoration efforts, the lamprey project will be a part of CTUIR's public relations efforts through various program representations, annual project reports, newspaper articles, etc. The newly formed lamprey work group will increase involvement of various entities and also increase public awareness.

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**RELATIONSHIPS**

**RELATED BPA PROJECT**

**RELATIONSHIP**

No other lamprey restoration projects ongoing.

**RELATED NON-BPA PROJECT**

Mainstem Lamprey Tracking Project/US Army COE

**RELATIONSHIP**

Additional mainstem passage investigations

**OPPORTUNITIES FOR COOPERATION:**

The tribe will coordinate with U.S. Army COE to conduct adult lamprey counts and sample juveniles at existing smolt facilities at mainstem dams. The Columbia River Intertribal Fish Commission and Oregon State University will participate in the project. A multi-agency work group is being formed to address issues related to transplantation and artificial production. Numerous ongoing salmon and steelhead habitat enhancement projects may be found also beneficial for lamprey production/restoration.

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**COSTS AND FTE**

**1997 Planned:** \$300,000

**FUTURE FUNDING NEEDS:**

<u>FY</u>	<u>\$ NEED</u>	<u>% PLAN</u>	<u>% IMPLEMENT</u>	<u>% O AND M</u>
1998	\$380,000	80%	20%	
1999	\$388,000	50%	50%	
2000	\$408,000	50%	50%	
2001	\$430,000	20%	70%	10%
2002	\$450,000	20%	70%	10%

**PAST OBLIGATIONS (incl. 1997 if done):**

<u>FY</u>	<u>OBLIGATED</u>
1995	\$17,490
1996	\$334,560
<b>TOTAL:</b>	<b>\$352,050</b>

Note: Data are past obligations, or amounts committed by year, not amounts billed. Does not include data for related projects.

**LONGER TERM COSTS:** Estimated \$500,000 per year.

Majority of cost would be lamprey restoration project implementation with some costs for planning and O & M.

**1997 OVERHEAD PERCENT:** 34%

**HOW DOES PERCENTAGE APPLY TO DIRECT COSTS:**

Percentage applies to all direct costs except capital equipment and sub-contracts. Subcontracts to date have averaged 45% of project.