Northwest **Power** and **Conservation** Council

March 6, 2018

DECISION MEMORANDUM

TO: **Council members**

FROM: **Mark Fritsch, project implementation manager**

SUBJECT: **Proposal #2017-005-00, *Pacific Lamprey Conservation Initiative Columbia River Basin Projects*.**

PROPOSED ACTION: The Fish and Wildlife Committee recommends that the Council support proposal #2017-005-00 for implementation. This recommendation is conditioned on the following.

1. Be funded at a level of $248,204 for Fiscal Year 2018.
2. The project demonstrates benefit and value added through a performance review associated with the first season contract due in November 2018.
3. Further implementation in 2019 will be based on the performance review and the availability of funds.

SIGNIFICANCE: The intent of this project is to address a critical emerging priority and support the efforts of the Conservation Agreement for Pacific Lamprey (Agreement) as outlined in the 2014 Fish and Wildlife Program.

BUDGETARY/ECONOMIC IMPACTS

Funds for this proposal were derived from cost saving from existing projects that had decreasing expenditures or were closing out. The proposed Fiscal Year 2018 expense budget for this proposal is $248,204.

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BACKGROUND

Pacific Lamprey, *Entosphenus tridentatus (*formerly *Lampetra tridentate)*, have inhabited the Pacific for nearly 350 million years (same age as coal). Historic runs of Pacific Lamprey in the Columbia River Basin numbered in the hundreds of thousands, but the distribution and abundance of lampreys have decreased and currently they 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, respectively. Threats to Pacific Lamprey occur throughout the entire range of the species and include but are not limited to: restricted mainstem and tributary passage, reduced flows and dewatering of streams, stream and floodplain degradation, degraded water quality, and changing marine and climate conditions.

The Fish and Wildlife program recognizes Pacific Lamprey not only an ecologically important species, but also a key cultural species to the Tribes in the Columbia Basin.

In 1994, the Council approved the first lamprey project in the Fish and Wildlife Program. The project (Project #1994-026-00, *Pacific Lamprey Research and Restoration Project*) was proposed by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) and called for research and restoration of Pacific Lamprey throughout tribal ceded lands. 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 F&W Program. These projects have a variety of goals and objectives, but aim at establishing population status and trends, documenting distribution, identifying limiting factors, and develop reintroduction and supplementation actions. Funding for these five projects totals $2,335,186[1] in FY 2018 (see table below).

Project #	Title	Sponsor
1994-026-00	Pacific Lamprey Research and Restoration Project	National Oceanic and Atmospheric Administration (NOAA), Umatilla Confederated Tribes (CTUIR), @ $670,848
2008-308-00	Willamette Falls Lamprey Escapement Estimate	Confederated Tribes Of Warm Springs, @ $182,760
2008-470-00	Yakama Nation Ceded Lands Lamprey Evaluation and Restoration	Yakama Confederated Tribes, @ $304,601
2008-524-00	Implement Tribal Pacific Lamprey Restoration Plan	Columbia River Inter-Tribal Fish Commission (CRITFC), @ $700,582
2011-014-00	Evaluate Status & Limiting Factors of Pacific Lamprey in the lower Deschutes River, Fifteenmile Creek and Hood River Subbasins	Confederated Tribes Of Warm Springs, @ $476,395

In addition to the projects listed above, the USACE developed a Passage Improvement Plan as part of the MOA with Tribes and CRITFC. The goal of this 10-year plan was to

[1] Reflects FY2018 contracted amount.

improve adult and juvenile passage and survival through the Federal Columbia River Power System with emphasis on improvements at Bonneville, John Day, and McNary dams.

Prior to and concurrent with the work above, the Columbia River Basin Lamprey Technical Workgroup (LTWG), active since 1995, assisted the region in providing guidance and recommendations as a subcommittee to the Anadromous Fish Committee of the Columbia Basin Fish and Wildlife Authority. In 2011, the Tribal Restoration Plan for the Columbia River Basin (TPLRP) was completed which outlined objectives to halt the decline of Pacific Lamprey and restore them throughout their historical range for ecological heath and tribal cultural use. With the development of the Pacific Lamprey Assessment and Template for Conservation Measures by USFWS 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 a Conservation Agreement for Pacific Lamprey (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.

This Agreement provides a mechanism for interested parties to collaborate and pool available resources to expeditiously and effectively implement conservation and restoration actions. The objectives of the Agreement are: 1) Evaluate Pacific Lamprey population structure; 2) Identify global issues that are impacting Pacific Lamprey; 3) Public outreach; 4) Data sharing; 5) Identify and characterize Pacific Lamprey for the Regional Management Units (RMUs); 6) Identify, secure and enhance watershed conditions contained in the RMUs; and 7) Restore Pacific Lamprey to the RMUs.

In an effort to demonstrate and reaffirm the importance of Pacific Lamprey to the ecological needs of the Basin and to respect the importance to the Tribal sovereigns, the Council recognized, and supported the TPLRP and Agreement in the 2014 Fish and Wildlife Program. This was also confirmed by the need to integrate and take the necessary steps to implement additional lamprey measures into the Program (i.e., Emerging Priorities).

Based on collaboration, regional support, the status of the Agreement and the TPLRP, and the critical need to provide additional support for Pacific Lamprey in the Columbia River Basin, 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 USFWS for Proposal #2017-005-00, Pacific Lamprey Conservation Initiative Columbia River Basin Projects. The overarching goal of the proposal is to support the intent of the 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 by funding on--the--ground implementation of restoration actions that contribute to this effort. The purpose of the proposal is to facilitate funding for high priority lamprey restoration

actions that are currently unfunded or partially funded in the Columbia River Basin. This process will work in parallel with other programs that are currently and will continue to fund lamprey restoration projects. In essence, this proposal is an umbrella type project[2] for Pacific Lamprey in the Basin. That is, the Agreement Conservation Team will utilize identified priority projects from the annually updated Regional Implementation Plans (RIP) from Regional Management Units (RMU) 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 ISRP and on November 28, 2017 the ISRP provided its review (ISRP document 2017-13) – due to the umbrella intent of the proposal the emphasis of the review focused on the operating guidelines and selection criteria that guide the implementation of the priority lamprey actions. The ISRP found the proposal "Meets Scientific Review Criteria (Qualified)". The three qualifications raised by the ISRP are intended to generally strengthen the proposal as it is implemented. In addition, the ISRP requested that it be allowed to review projects that contain research and assessment elements. Following is a brief outline of the three qualifications.

- *The initiative to develop and implement studies to further elucidate regional population structure and the spatial scale of adaptations in the lamprey populations they seek to restore or enhance.*
- *Request for additional clarity regarding the Strategic Habitat Conservation (SHC) approach, described in the Adaptive Management section of the proposal, could be applied to individual Regional Management Unit (RMU) projects.*
- *The sponsors should strengthen processes to reduce conflicts of interest and ensure the scientific objectivity of the Conservation Team during the proposal review process*.

ANALYSIS

The ISRP found that the proposal provided a comprehensive confirmation of the proposal justification and acknowledged the large amount of effort it has taken for the Agreement Conservation Team to achieve what they have over the past five years in the development of a coast-wide structure that is capable of identifying, coordinating, and supporting work needed to restore Pacific Lamprey.

The proposal received is facilitated by the USFWS and administered through Pacific States Marine Fisheries Commission (PSFMC). The restoration actions in the

[2] Umbrella projects are a smaller subset of the habitat projects (currently six projects) being implemented through the Program. Umbrella projects are unique, because of the coordination role they play in a particular sub-region, and also because of their approach to their implementation in offering a solicitation and internal review process to fund entities to implement projects. The science review associated with these projects focuses on the operating guidelines and criteria that guide the implementation of the actions being implemented by the projects not the project as a whole. While the processes differ slightly in each area the umbrella projects currently being implemented are largely defined by their approach, which is 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.

appropriate RMU's will be reviewed and selected by the Agreement Conservation Team based on the following criteria as outlined in the Pacific Lamprey Conservation Agreement Operating Guidelines;

1. Project Rationale
2. Linkage of Actions to Threats
3. Project Feasibility
4. Partner Engagement and Support
5. Monitoring and Evaluation – Contribution to Knowledge Gaps
6. Budget and Timelines

In addition, the Agreement Conservation Team's selection criteria are consistent with those of the Council in regard to whether they:

1. Are based on sound science principles;
2. Benefit fish and wildlife;
3. Have clearly defined objectives and outcomes; and
4. Have provisions for monitoring and evaluation of results.

Following are the proposed actions that the project intends to implement this Fiscal Year (2018) to address priority restoration needs across RMUs in the Columbia/Snake and reduce overall risk to lamprey populations (see table below; also see Attachment 1).

Project	**Description**	**Partners**	**Request**
Adult Passage Improvement in Lower Yakima	Adult Passage at Prosser dam – two new volitional vertical wetted wall (VWW) passage structures, modify existing VVW structures to allow volitional passage	YN, USFWS, BOR, WDFW and NRCS	$40,000
Translocating Adult Lamprey Past lower Snake River Dams	Make improvements (safety and protection) to holding facility for adults.	Nez Perce Tribe, State of Idaho, USFWS, CRITFC, USACE and UI	$30,000
Lower South Fork McKenzie River Floodplain Enhancement Project	Address primary threat for the Willamette RMU (i.e., stream and floodplain degradation). Will also address limiting factors of fine sediment deposition, spawning gravel, off channel habitat and high flow refuge	USFS, OWEB, McKenzie WC, USACE,ODFW, NMFS, USFWS, and EWEB	$150,000
		Subtotal	**$220,000**
		PSMFC Indirect @ 12.82%)	**$28,204**
		Total	**$248,204**

It is important to remember that this project, and the actions outlined above, is a new undertaking in addressing collaboratively identified needs for a species for the Council in addressing an emerging priority of the 2014 Fish and Wildlife Program. That said and with the uncertainty of establishing a funding string for this proposal through time, the staff recommends for Fiscal Year 2018, that a budget, not to exceed $248,204, be secured through the use of identified savings within the current program[3].

This initial contract year should be treated as a pilot program and additional support of this proposal should be based on a performance--based review by the Council at the end of this first implementation season (November 2018) that demonstrates the benefit and value of this project and the types of work implemented under it to Pacific Lamprey in the Columbia and Snake River basins. As part of this review, depending on the availability of funds, a determination will be made on out-year implementation.

Based on the ISRP review and the conditions outlined above the Fish and Wildlife Committee recommends to the Council the implementation of this proposal in Fiscal Year 2018.

[3] The current amount of unspent savings is $354,358 in Fiscal Year 2018.

Attachment 1: Priority restoration needs across RMUs in the Columbia/Snake and reduce overall risk to lamprey populations.

Adult Passage Improvement in Lower Yakima

Requested funds $40,000

Goal: Improve adult Pacific Lamprey passage

Location: Prosser Dam, Yakima Subbasin (second lowest dam on the Yakima River)

Partners: Yakama Nation, USFWS, Bureau of Reclamation, WDFW and NRCS

Problem: Passage rates at Prosser Dam over two seasons of radio telemetry (2012-2013) estimated to be 45-50 percent.

Project: 1) install two additional vertical wetted wall (VWW) passage structures for Pacific Lamprey (on center and left fish ladders) to boost all migration season passage ($20,000); 2) provide the resources and personnel needed to operate and maintain the structures as well as monitor and handle the lamprey ($10,000); and 3) make modification to the existing VWW passage structures (currently three) to allow volitional passage ($10,000). Adults approach all three existing fish ladders based on season, and by adding a VWW structure in a strategic location in each ladder, we expect to see a significant increase in passage rates and a decrease in overall passage time. The operation and maintenance includes the periodic cleaning of the trap box and pump screens as well as the handling of lamprey (trap, handle, tag, transfer, and monitor lamprey post-release). Monitoring includes a security camera system to monitor lamprey counts as well as behavior on the wetted walls, which will be integrated into the existing monitoring for the ladder fish counts. Mechanical counters may also be needed to supplement the data. Finally, improvements will be made by converting existing VWW structures to provide the option for not only trapping and holding the lamprey on site but also to provide volitional passage, using an upstream terminal pump, resting boxes, and a flume or 4 inch flexible plastic hose.

Translocating Adult Lamprey Past Mainstem Dams to Snake Basin

Requested funds $30,000

Goal: Substantially increase numbers of juvenile Pacific lamprey to improve species abundance, maintain emittance of larval pheromones to attract adults, geographic diversity, and ecological function

Location: Headwaters and tributaries of the Snake River basin

Partners: Nez Perce Tribe, State of Idaho, USFWS, CRITFC, USACE and University of Idaho

Problem: Overall average adult passage rates per mainstem dam estimated to be 40-60%, translocation of adults is the only means to expeditiously and effectively reestablish substantive larval and juvenile presence in the upper basins, where many watershed populations are at or near extirpation. For the Snake River, the primary threat identified is small effective population size caused primarily by poor passage at mainstem dams.

Project: 1) upgrade existing facilities used to trap, haul, and overwinter adult lamprey captured in the lower Columbia River ($20,000 – totes and flow alarm system) in a safe and reliable manner so as to decrease potential for mortality or stress; 2) support staff and equipment to allow adult collection, transporting, processing (disease control, genetic sampling, and release group management), inventorying and release of the full target allocation (about 2,000 adult lamprey); 3) support additional trips from the Nez Perce Reservation to lower Columbia River dams required to obtain the full target adult allocation and distribution to widely disbursed targeted Snake Basin watersheds (Clearwater Subbasin - ID, Salmon Subbasin - ID, Asotin Subbasin – WA, Grande Ronde Subbasin – OR) as well as identify additional target adult release streams, in accordance with the number of adults collected ($5,000); 3) staff support in monitoring and contract administration ($5,000).

Lower South Fork McKenzie River Floodplain Enhancement Project

Requested funds $150,000 – Total Project cost of $1,557,724

Goal: Restore and enhance habitat for native fish, including Pacific Lamprey

Location: South Fork McKenzie River (major tributary to the McKenzie River in the Willamette River Basin)

Partners: USFS - Willamette National Forest, OWEB, McKenzie Watershed Alliance, USACE, ODFW, NMFS, USFWS and EWEB

Problem: Construction of Cougar Dam, placement of levees, riprap and fill within the floodplain, riparian tree harvest, and wood removal from river channels has significantly degraded habitat and altered natural process. Stream and floodplain degradation has been identified as a primary threat for Pacific Lamprey in the Willamette Regional Management Unit.

Project: 1) Removal and redistribution of 12.5 acres of floodplain sediment into the incised mainstem channel; 2) placement of approximately 1600 pieces of large wood within the floodplain and river channel. This project has been identified as a high priority project since 2016 in the Willamette RMU Regional Implementation Plan. The project will take place on public lands owned and managed by the U.S. Forest Service within the lower 1-mile and 200 acres of floodplain on the South Fork McKenzie. The project will address limiting factors for lamprey including: lack of spawning gravel, off-channel habitat, high flow refuge, pools, cover, and fine sediment deposition on the floodplain. Remaining funding for other project actions is being provided by OWEB, USFS and Western Native Trout Initiative.