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April 27, 2021

MEMORANDUM

TO: Council Members

FROM: Mark Fritsch

SUBJECT: Update on Pacific lamprey in the Columbia River Basin

BACKGROUND:

Presenter: Christina Wang from the USFWS, Alicia Marrs from the Pacific Lamprey Conservation Initiative (PLCI), Laurie Porter and Jon Hess from the CRITFC

Summary: Christina and Alicia will review the status of Pacific lamprey throughout the U.S. range with an emphasis on the Columbia and also progress made in implementing the Program's PLCI Columbia River Basin Projects. Laurie will provide an update on the current activities of the tribal projects being implemented through the Program, and Jon will describe what is being learned from the extensive genetic work currently being conducted and analyzed.

Relevance: The Fish and Wildlife Program (Program) recognizes Pacific Lamprey as not only an ecologically important species, but also a key cultural species to the Tribes in the Columbia Basin. This effort addresses the Program's emerging priority #5¹. In addition, the Program also addresses several specific measures in the Program's Lamprey strategy regarding lamprey passage and monitoring.

¹ Emerging priority #5 – Implement additional sturgeon and lamprey measures (passage and research).

Workplan: Fish and Wildlife Division preliminary work plan 2020; Program Implementation (2014 Program and 2020 addendum): Other program implementation

Background: Pacific Lamprey, *Entosphenus tridentatus* (formerly *Lampetra tridentata*), 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. They migrate 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, predation and changing marine and climate conditions.

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*) proposed by the Confederated Tribes of the Umatilla Indian Reservation (CTUIR) called for research and restoration of Pacific Lamprey throughout tribal ceded lands. This effort was followed by additional projects in 2002, 2007, 2008 and 2018 (see Table 1). Currently, there are six 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.

Table 1: Projects currently funded through the direct Fish and Wildlife Program.

Project #	Project Title	Sponsors
1994-026-00	Pacific Lamprey Research and Restoration Project	Confederated Tribes of the Umatilla Indian Reservation, NOAA
2008-308-00	Willamette Falls Lamprey Escapement Estimate	Confederated Tribes of the Warm Springs
2008-470-00	Yakama Nation Ceded Lands Lamprey Evaluation and Restoration	Yakama Nation
2008-524-00	Implement Tribal Pacific Lamprey Restoration Plan	Columbia River Inter-Tribal Fish Commission
2011-014-00	Evaluate Status & Limiting Factors of Pacific in the lower Deschutes River, Fifteenmile Creek and Hood River Subbasins	Confederated Tribes Of the Warm Springs
2017-005-00	Pacific Lamprey Conservation Initiative	Pacific States Marine Fisheries Commission, US Fish and Wildlife Service

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 health and tribal cultural use. With the development of the Pacific Lamprey Assessment and Template for Conservation Measures by USFWS in 2011 (and revised by PLCI partners in 2018) 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. On March 14, 2018 the Council approved Project #2017-005-00, *Pacific Lamprey Conservation Initiative* as one of the last new starts to be approved for the direct Program.

In addition, 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 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.