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

December 5, 2017

MEMORANDUM

TO: **Fish and Wildlife Committee members**

FROM: **Staff**

SUBJECT: **Update on identification of Cost Savings and Emerging Priorities Implementation**

BACKGROUND:

Presenters: Fish and Wildlife Division staff

Summary: Staff will update the Committee on significant developments regarding implementation of measures associated with the Fish and Wildlife Program's emerging priorities. No additional cost savings have been identified since the last report in October.

Relevance: This item also addresses implementation of the Council's 2014 Columbia River Basin Fish and Wildlife Program emerging priorities.

Emerging Priorities:

The Council identified seven emerging priority areas in its 2014 Fish and Wildlife Program. These are:

1. *Provide for funding long-term maintenance of the assets that have been created by prior program investments*
2. *Implement adaptive management (including prioritized research on critical uncertainties) throughout the program by assessing the effectiveness of ongoing projects, developing*

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program objectives when appropriate and taking into account the effects of climate change

3. *Preserve program effectiveness by supporting: (1) expanded management of predators; (2) mapping and determining hotspots for toxic contaminants; and (3) aggressively addressing non-native and invasive species*
4. *Investigate blocked area mitigation options through reintroduction, passage and habitat improvement, and implement if warranted*
5. *Implement additional sturgeon and lamprey measures (passage and research)*
6. *Update the subbasin plans most in need of updates*
7. *Continue efforts to improve floodplain habitats*

Staff will update the Fish and Wildlife Committee on the recent activity to implement measures associated with these priorities and provide an opportunity to hear from the Committee members if they have any concerns or questions.

- EP-1: L*ong term maintenance*. Actions to address priority needs of Program hatcheries and fish screens have been initiated through the use of cost savings funds. The next meeting of the O&M Subcommittee will occur on January 8, 2018. M. Fritsch

- EP-2: *Implement adaptive management (including prioritized research on critical uncertainties).* The Council adopted a research plan in June 2017. At the October fish and wildlife committee meeting staff described the anticipated first phases of a multi-phase process to review research conducted under the Council's Fish and Wildlife Program, using the research plan as guidance for that review.

- EP-3: *Preserve program effectiveness.* There was a Northern Pike Discussion and Coordination Meeting at the Council offices on December 11th.

- EP-3: *mapping and determining hotspots for toxic contaminants.* See this committee agenda for a demonstration of the draft story map depicting the known distribution of Polycyclic Aromatic Hydrocarbons (PAHs) in the Columbia Basin, their effects on native fish and wildlife, and strategies for reducing their distribution and impact. L. Bach / T. Grover

- EP-5: *Implement additional sturgeon measures*. L. Palensky. The Council helped sponsor the facilitated *Columbia Basin White Sturgeon Workshop: Our Shared Legacy and Opportunities,* on November 15-16 in Coeur d'Alene, ID.

  Invitations were sent to most of the fisheries professionals who study and manage White Sturgeon within their range between San Joaquin/Sacramento, California; north to the Fraser River system and throughout the Columbia River Basin. Sixty-five people attended the day and a half meeting that focused on early life survival and recruitment failure, stock assessments, conservation aquaculture, and emerging issues. The meeting was intended to be interactive, facilitate discussion, and lead to a better understanding of what research and mitigation actions the region should focus on moving forward. A summary report will be completed and distributed to participants within the next few weeks. Below are highlights from the workshop:

Day 1

The workshop began with twelve “ignite” summary presentations on sturgeon programs from the lower Columbia moving upstream into Canada, including also the Snake, Kootenai/ay, Fraser, Nechako, Sacramento and San Joaquin rivers.

Participants engaged in lively small group discussions building on three questions related to early life survival and recruitment failure in their altered and fragmented mainstem habitat: a) what we do or don’t know, b) what assumptions do we need to test or challenge, and c) what can we begin today that would create new possibilities for the future of white sturgeon conservation? Themes emerging from these discussions included:

- episodic spawning is a natural pattern in sturgeon thus annual recruitment is not a realistic expectation; side-channels and floodplain habitat are important for early life stages;
- sharing information is valuable at a meta-scale to better understand responses to flow, habitat, temperatures, and shared research findings;
- high flow events are important for recruitment and larvae survival; and
- continuing to learn from each other as a sturgeon community is valuable.

Day 2

There were five presentations illustrating different approaches to stock assessments and survival estimates, and a presentation on maturation rates in hatchery-reared white sturgeon. This was followed by a panel discussion on the differences and potential implications of use of different gear types, methodologies and the frequency of data collection across basin. Some take-home conclusions are that stock assessments are critical to understanding populations and the frequency and methodology for surveys may vary depending on the reservoir conditions. Surveys are gear and time intensive, but critical to understanding populations. Without harvest (both retention and non-retention), stock estimates must rely on agency operations versus data from anglers. Information is uneven, we have pretty good data on some populations, but don’t know how others are doing.

Conservation aquaculture presentations described the importance of genetic diversity in conservation aquaculture programs and the question of how much is enough, spontaneous autopolyploidy, and the use of larval collection and rearing in conservation aquaculture. Genetic diversity is key to successful artificial production. Advice: *Use as many parents as possible and don’t let one family dominate.* Polyploidy is an emerging issue and understanding the occurrence both in hatcheries and in the wild is critical. It is something that can be tested for in the hatchery population and managed, it is more difficult to assess in the wild. For conservation hatcheries, collecting larvae vs mature adult sturgeon for broodstock is less invasive and more efficient than collecting and holding adult broodstock. Collection and use of larvae in a hatchery may also help diversify the genetic family structure. However, larval collection is not efficient or feasible to do everywhere.

Participants also engaged in a large group discussion focusing on where the Columbia Basin is going with the various aquaculture programs. What are the

implications of different programs being implemented individually? What are the risks of conventional broodstock collection versus larval collection? How do the various conservation or supplementation programs fit together? What are the risks?

- Three presentations dealt with research questions: a) mercury levels in white sturgeon and how it may effect reproduction, b) a different approach to determining sex in white sturgeon, and c) results of modeling of white sturgeon habitat in the Columbia and Snake Rivers for the Columbia River Treaty.
- Participants identified and ranked a number of emerging issues requiring additional exploration, with the top three identified as: carrying capacity, recruitment failure, and climate change effects. Other high-ranking topics included the need for, and funding for, a basin-wide sturgeon meta-analysis; increased/improved information sharing between entities; and better integration of science with policy.

The group felt this was a valuable forum and appreciated the broad pool of white sturgeon managers and researchers who attended. Managers made important connections with other people working on sturgeon – both in and out of the basin. Some specific next steps were identified to build on the topics discussed at the workshop, and participants identified topics they would like to see incorporated in a future workshop(s) and potential outcomes.

- EP-5: *Implement additional lamprey measures.* M. Fritsch
  - On December 5th, 6th and 7th the Pacific Lamprey Conservation Agreement met at the Oregon Convention Center. December 5th was dedicated to the Policy Committee 5-year review, titled "Advancing Implementation". December 6th and 7th was focused on the Pacific Lamprey Conservation Team and Lamprey Technical Workgroup Information Exchange Workshop.
    - The Policy Committee will receive updates on the conservation team's progress (i.e., risk assessments, regional implementation plans, and high priority projects) national fish habitat partnership, outreach and existing funds. The Policy Committee will also discuss the reaffirmation of the Lamprey Conservation Agreement Regional Implementation Plan, 5 year action plan, multi-level policy involvement and new funding initiatives and approaches.
    - The Information Exchange Workshop has scheduled overviews and updates from the conservations teams workgroups (i.e., ocean, tagging, identification, contaminants, predation, climate change, entrainment and data clearing house), key topic presentations (i.e., passage, eDNA, artificial production, and translocation and genetics) all followed by discussions.

  - On October 26th the Council and Bonneville received Project #2017-005-00, *Pacific Lamprey Conservation Initiative Columbia River Basin Projects.* The intent of this project is to address a critical emerging priority and support the efforts of the Conservation Agreement for Pacific Lamprey as outlined in the 2014 Fish and Wildlife Program. On November 28th the

Council received the ISRP review (ISRP document 2017-13). The ISRP found that the project's criteria that guide the implementation of the priority actions met science review criteria (qualified). The qualifications are intended to strengthen the project as it moves forward to implementation with Bonneville and the Council. Council staff intends on bring the review and a recommendation to the Fish and Wildlife Committee in January.

- On November 16th the Council received the long anticipated report titled *Synthesis of Threats, Critical Uncertainties, and Limiting Factors in Relation to Past, Present and Future Priority Restoration Actions for Pacific Lamprey in the Columbia River Basin* for ISRP review. This report is intended to address Programmatic Issue #8 (i.e., Lamprey) that was placed on the Program's lamprey projects as part of the Research, Monitoring and Evaluation and Artificial Production category project review recommendation of June 2011. In addition, this report is responsive to the ISAB document (ISAB document 2012-3) - since 2011, the managers have invested a significant amount of time in the Lamprey Conservation Agreement Regional Implementation Planning process in an effort to address the issues outlined in the ISAB document.