

COLUMBIA BASIN FISH AND WILDLIFE AUTHORITY

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Coordinating and promoting effective protection and restoration of fish, wildlife, and their habitat in the Columbia River Basin.

The Authority is comprised of the following tribes and fish and wildlife agencies:

Burns Paiute Tribe

Coeur d'Alene Tribe

Confederated Salish and Kootenai Tribes of the Flathead Reservation

Confederated Tribes of the Colville Reservation

Confederated Tribes of the Umatilla Indian Reservation

Confederated Tribes of the Warm Springs Reservation

Confederated Tribes and Bands of the Yakama Nation

Idaho Department of Fish and Game

Kootenai Tribe of Idaho

Montana Department of Fish, Wildlife and Parks

National Marine Fisheries Service

Nez Perce Tribe

Oregon Department of Fish and Wildlife

Shoshone-Bannock Tribes of Fort Hall

Shoshone-Paiute Tribes of Duck Valley

U.S. Fish & Wildlife Service

Washington Department of Fish and Wildlife

Coordinating Agencies

Columbia River Inter-Tribal Fish Commission

Upper Columbia United Tribes

Compact of the Upper Snake River Tribes

August 3, 2007

Colonel Thomas E. O'Donovan
District Engineer and Commander
Portland District Office
U. S. Army Corps of Engineers
P.O. Box 2946
Portland, OR 97208-2946

Dear Colonel O'Donovan:

Enclosed you will find comments by the Columbia Basin Fish and Wildlife Authority (CBFWA) on the draft document titled *Corps of Engineers Plan for Addressing Pacific Lamprey Passage, Draft, 2007-2011*. The CBFWA appreciates the efforts and funding the U.S. Army Corps of Engineers (Corps) has provided for Pacific lamprey passage research and for passage improvements. Results of the Corps efforts to date are encouraging, although we have some questions that are included in the enclosed list of specific comments. Planned activities are also encouraging; however, we have some suggestions we think will enhance the plan.

Important recommendations by CBFWA regarding the draft passage plan include (1) developing lamprey passage objectives and related performance standards and measures, (2) compiling a comprehensive list of passage impediments at each dam, (3) developing an explicit schedule of passage improvements and research activities for each dam, and (4) implementing research to answer fundamental questions regarding juvenile and adult lamprey passage. We have tasked CBFWA's Columbia River Basin Lamprey Technical Workgroup (LTWG) to work with the Corps and other interested parties to implement recommendation (1) above, and have provided specific comments that address (2), (3), and (4). We also suggest that the Corps include the LTWG when developing future plans and strategies. The LTWG's "Critical Uncertainties" document developed in 2005 described a framework for lamprey conservation, management, research, and funding decisions in the Columbia River Basin. The Corps should also work directly with fish managers in the Columbia River Basin to ensure a coordinated and synergistic effort to protect and restore lamprey.

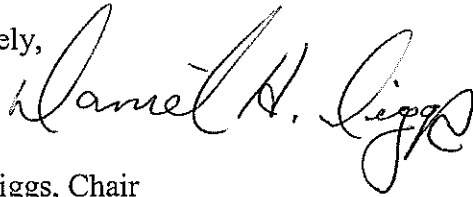
Although much remains to be learned about Pacific lamprey migration in general, and passage at mainstem dams in particular, an urgent need exists to take action based on what we do know. This need is underscored by the 2006 count of only 35 adult Pacific lamprey passing Lower Granite Dam, and the fact that the 2007 counts at Bonneville Dam are currently the lowest on record. The CBFWA supports actions to modify existing fish passage features, as long as they are salmon compatible. We also support creation of new lamprey passage features, using unique technology, to augment lamprey passage.

Colonel Thomas E. O'Donovan
U. S. Army Corps of Engineers
August 3, 2007
Page 2 of 2

Implementation of a passage plan that incorporates CBFWA comments requires increased research and improvements to lamprey passage. The need to improve the status of lamprey in the Columbia River Basin will require an increased funding commitment to complete necessary actions in the 2007-2011 time frame.

Detailed comments, questions, and recommendations regarding the draft passage plan, organized according to sections of the plan, are enclosed. Thank you for considering our comments and recommendations. Please contact Dave Ward of the CBFWA staff (503) 229-0191 with any questions regarding our comments.

Sincerely,



Dan Diggs, Chair
Columbia Basin Fish and Wildlife Authority

Attachment: CBFWA Specific Comments on Corps of Engineers Plan for Addressing Pacific Lamprey Passage Draft 2007-2001 (5 pp.)

cc:

David Clugston, Corps of Engineers, Project Management, Portland District Office
Brigadier General Gregg Martin, Corps of Engineers, Portland Division Office
Lieutenant Colonel Anthony Hofmann, Corps of Engineers, Walla Walla District
CBFWA Members

Attachment
Columbia Basin Fish and Wildlife Authority (CBFWA) - Specific Comments
on Corps of Engineers Plan for Addressing Pacific Lamprey Passage
Draft 2007-2011

Project Information

Goal

- Because so little is known about lamprey populations or “viability”, the term here is assumed to refer in general to overall health of lamprey. Used in this sense, the goal may be too limited, and should instead reflect abundance levels healthy enough to support tribal harvest in Treaty Areas and Usual and Accustomed places.

Species Description and Background

Species

- The basis for the statement that juvenile lamprey migrate low in the water column should be provided. Juvenile lamprey have been observed migrating near the surface in some areas, and have been impinged on screens at Lower Granite Dam at all depths.
- At the end of this section, it would be useful to note that information is limited on how Pacific lamprey identify spawning areas. Some evidence exists to indicate that the related sea lamprey do not home to natal streams, but are instead attracted by pheromones released by juveniles.
- The last sentence, that “. . . Lamprey use the same fish ladders . . .” is misleading. It should state that lamprey attempt to use the existing adult salmonid ladders, which are far from optimal for lamprey, but nevertheless provide some limited passage opportunities.

Background

- Passage at dams should be identified as the primary factor affecting Pacific lamprey in the Columbia River basin. Although habitat loss has occurred, extensive areas of accessible and suitable spawning and rearing habitat are unoccupied by Pacific lamprey. Juvenile mortality at mainstem dams and the inability of adults to pass dams are likely the most important threats.
- In 2006, only 35 adult Pacific lamprey were counted passing Lower Granite Dam during daytime hours.
- Idaho listed Pacific lamprey as endangered in 1993.
- It would be appropriate to finish this section by adding a short paragraph describing the lack of understanding of lamprey population dynamics, and the ramifications to lamprey population health that may occur when management actions are taken in the face of uncertainty.

Adult Lamprey Passage – Assessments, Issues, Improvements

Adult Lamprey Research

- In general, the Corps passage research priorities should be consistent with recommendations from the Columbia River Basin Lamprey Technical Workgroup:
 - Compile a comprehensive list of passage impediments;
 - Assess passage efficiency and direct mortality;
 - Develop aids to passage;
 - Monitor passage to evaluate aids and identify new problems.
- Are all estimates of passage success based on radio telemetry studies? If so, these estimates could be biased because of delayed tagging effects. Are there any passage data from studies using PIT tags, or very small radio or acoustic tags?
- How do lamprey passage efficiencies at each mainstem dam affect the number of adult Pacific lamprey reaching Lower Granite Dam? This relationship illustrates the effect of passage problems on Pacific lamprey status.

Primary Adult Passage Issue

- Passage of a native species such as Pacific lamprey should be a higher priority than passage of non-native fish, such as shad. If flow criteria for shad exist and are implemented at Corps ladders, and these flows hinder passage of Pacific lamprey in any way, then these criteria should be reconsidered.
- Because adult lamprey migrate primarily at night, reduced flows through fish ladders at night is a potential component of a comprehensive approach to improve lamprey passage at dams.
- Changes in nighttime flows may affect passage of sockeye. This change should be made and evaluated on a per project basis.
- A combination of measures, rather than a single “fix”, is likely required to achieve desired passage efficiencies.
- All potential adult lamprey routes over the dams should be assessed for limiting factors, and systematically investigated and improved where feasible. In addition, in locations where lamprey congregate, but there are no, or poor, means of passage, then additional means should be considered, such as the lamprey ramps currently under test at Bonneville.
- Diffuser grating size in fish ladders should be reduced from the current size of 1” to ¾”. These changes should be pursued in a methodical manner at the projects and evaluated as changes are made.

Other Adult Passage Issues

- Pacific lamprey do not necessarily lose girth during migration. Females may actually gain girth late during migration.
- When will gratings be replaced? A schedule should be developed in view of the critically low numbers of adult Pacific lamprey reaching Lower Granite Dam.
- Plates along walls of the adult ladders and over floor diffusers should be added to aid lamprey passage by providing attachment locations.
- A schedule should be developed for rounding corners where appropriate. This modification should be pursued at projects with at least two ladders, one of which should be modified. The effect should be evaluated before proceeding with modifications to all fish ladders.

Adult Lamprey Passage Systems

- Please clarify the efficiency referred to in the final sentence of the first paragraph.
- FY 04 passage numbers should be corrected to 7,490 via the volitional egress at Bradford Island, and 11,971 in the Bradford Island ladder.
- Do the passage numbers indicate that more lamprey passed overall because of the Lamprey Passage System? Is it possible to know this?
- Do lamprey have difficulty finding the entrances to all Lamprey Passage Systems? Are the other "options" for passage successful?
- It is unclear what "DS" means. Please clarify.
- The meaning of the final sentence in this section should be clarified. Will improvements be made in a downstream to upstream order? Must passage be evaluated at upstream dams before improvements are made?
- A comprehensive compilation of known dam passage impediments should be prepared in FY 07. An implementation schedule for passage improvements should be developed.

Juvenile Lamprey Passage – Assessment, Issues, Improvements

Juvenile Passage Research

- Were studies on juvenile lamprey passage field or laboratory-based? Problems with juvenile lamprey passage may be an important factor limiting the health of lamprey in the Columbia River Basin.
- It should be stated that the technology and methodology to adequately study juvenile lamprey passage do not yet exist.
- Do transported juvenile lamprey get retained, and therefore lost, in transportation barges and trucks?

Attachment: CBFWA Comments on
Corps of Engineers Plan Addressing
Pacific Lamprey Passage
August 3, 2007

- Are transported juvenile lamprey vulnerable to predation upon release?
- It is obvious that although adequate technology may not currently exist, further research on juvenile lamprey passage is needed, including, but not limited to:
 - Identification of appropriate tags for macrophthalmia studies;
 - The effects of screens;
 - Passage efficiency at various structures/obstacles;
 - Predation near dams;
 - Effects of various passage routes (turbines, spill, etc.); and
 - Occurrence and effects of transportation.

Juvenile Passage

- What studies document swimming of juvenile lamprey low in the water column?

Juvenile Passage Improvements

- Passage of juvenile lamprey at dams is a major uncertainty; therefore, efforts to learn about and improve passage of juvenile lamprey should be equal to those given adult lamprey.
- Has new spacing criteria for turbine intake screens been tested on juvenile lamprey?
- Please elaborate on the schedule for replacing turbine intake screens. Please also describe the research leading to the conclusion that new spacing criteria are needed. The CBFWA recommends that screen criteria should be modified to 1.75 mm open space for all screens that are encountered by juvenile lamprey.

Major Activities and Tasks

- We support the Corps' plan to continue research on and improvements to lamprey passage. Consistent with the Columbia River Basin Lamprey Technical Workgroup's "Critical Uncertainties" document, we recommend that priorities include:
 - Assessing all potential adult lamprey routes over the dams, and systematically addressing limiting factors where feasible. In addition, in locations where lamprey congregate, but there are no, or poor, means of passage, then additional means should be considered, such as the lamprey ramps currently being evaluated at Bonneville Dam;
 - Developing an explicit schedule of passage improvements and research activities;
 - Ensuring that work on juvenile lamprey is equal in priority to work on adult lamprey.

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Pacific Lamprey Passage
August 3, 2007

- It is difficult to comment on sequence and timing without an explicit schedule.
- Although further refinements are likely necessary to Lamprey Passage Systems at Bonneville Dam, improvements at other dams should move forward.
- Actions involving replacement of screens should include the specific spacing criteria.
- Night counts of adult Pacific lamprey should be implemented at all dams. Video monitoring or other methods should be used, and refined as better techniques become available.
- All studies and monitoring should be coordinated with the Mid-Columbia Public Utility Districts and other FERC license holders in the basin.

Future Activities and Tasks

- Potential missing activities include: (1) potential issues with dissolved gas, (2) depth of travel, and (3) percentage or number of lamprey that do not pass each dam.

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