



COLUMBIA BASIN FISH AND WILDLIFE AUTHORITY

Draft

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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 government 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 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

DATE: October 31, 2008

TO: Lamprey Technical Workgroup

FROM: Ray Hartlerode, Fish Screening Oversight Committee (FSOC) Chair

SUBJECT: Questions Regarding Lamprey and Screening Facilities

The Fish Screening Oversight Committee (FSOC) is aware of the need to protect lamprey as well as salmonids at screening facilities, but realizes that expertise on lamprey passage within the FSOC is minimal. The FSOC therefore requests that the Lamprey Technical Workgroup review the following initial questions and assumptions regarding lamprey, and provide the FSOC with a summary of available and related information.

- The tribal restoration plan seems to address only the macrophthalmia at screen sites and the impact that a cleaning system might have should they reside on the screen. The cleaning system in question typically applies to flat plate screens and consists of a single brush or numerous (gang) brushes. The plan suggests modifications including spray or bubble devices “that would cause lamprey to detach from the screens.” At sites without power this isn’t an option, especially remote sites. What is known about lamprey attachment and detachment from screens?
- At rotary drum and traveling belt screen sites the same issue is present sans the cleaning device issue. If lamprey were to attach to the screen material and were carried vertically, would they detach as soon as they were lifted out of the water?
- Sweeping velocity should be high enough to discourage temporary residency and sweep lamprey directly into the bypass. Currently, the criteria stipulates, “The sweeping velocity shall equal or exceed the maximum allowable approach velocity.” Does this need to be more specific to accommodate the needs of macrophthalmia?
- Of equal if not greater concern is the ammocoete phase. Current criteria mesh size may not be small enough to preclude entrainment of ammocoetes up to age 2.
- Another concern is the potential for ammocoetes to burrow into the canal sediment in front of the screen. Two issues arise. At fall shut-down the canal is typically dewatered, unless stock water is provided throughout the winter. If dewatering of the canal isn’t ramped down over a period of time, up to 7 age

classes of ammocoetes potentially will be stranded and lost. Ammocoetes are susceptible to pressure changes and should emerge during a ramped down dewatering of the canal. What is the ramp down duration necessary to protect ammocoetes? Are two hours adequate, eight hours, a day, a week, or more?

- If water remains in the canal for some reason, electrofishing typically occurs to salvage any remaining juvenile salmonids. Ammocoetes are also susceptible to electrofishing and will emerge. There appears to be one specific model that is used nationally for ammocoete research; model AbP-2™ backpack electrofisher (Engineering Technical Services, University of Wisconsin). Is the strength of common electrofishers used for juvenile salmonids (e.g. Smith-Root model-12) detrimental to ammocoetes?
- Another concern is the periodic dredging of the canal by the irrigator to reduce sediment load in front of the screen. If the dewatering isn't ramped down and/or the canal electrofished prior to dredging activities, ammocoetes will be lost.
- As to passage of adults, we know that some of the diversion structures are currently barriers to salmonids during certain times of the year. Are they barriers to lamprey? During the design of fishways in the future, lamprey passage should be a consideration.