

ROCKY REACH PACIFIC LAMPREY MANAGEMENT PLAN

Distribution, Composition, and Abundance of Juvenile Lampreys (*Lampetra. Spp.*) Within the Observed Operating Range of Rocky Reach Reservoir, 2011

STUDY PLAN

August 2011

FINAL

The goal of the Rocky Reach Pacific Lamprey Management Plan (PLMP) is “to achieve No Net Impact (NNI) on Pacific lamprey by measuring ongoing Project-related impacts, if any, on Pacific lamprey; implementing appropriate and reasonable measures to reduce or eliminate such impacts; and implementing on-site or off-site measures to address unavoidable impacts.” One component of the PLMP for achieving NNI is implementing section 4.3 which is as follows:

4.3 Objective 3: Measure Any Ongoing Project Impacts on the Existing Reservoir Habitat Used Currently by Juvenile Pacific Lamprey, and Eliminate Those Impacts to the Extent Appropriate and Reasonable

Within three years of the effective date of the New License, Chelan PUD shall measure juvenile lamprey presence and relative abundance in habitat areas that may be affected by ongoing Project operations. As part of this measure, Chelan PUD shall use existing aerial photographs, bathymetry, shoreline slope, velocity, and substrate characteristics to segregate habitat types into those areas with high, medium, and low potential for use by juvenile lamprey, and assess presence/absence in areas that may be affected by Project operations using electroshocking sampling (if permitted). If electroshocking is not permitted, alternative measures will be evaluated (Moser and Close, 2003a; 2003b).

Chelan PUD shall, in consultation with the RRFF, develop a plan and implement appropriate and reasonable measures, if any, to address effects determined through evaluations in this subsection. If appropriate and reasonable measures cannot be determined to address such effects, Chelan PUD, in consultation with the RRFF, will identify and implement measures to address unavoidable impacts.

The intent of this study plan is to implement Section 4.3, Objective 3 on the PLMP.

Objectives

- Assess frequency, magnitude, and duration of Rocky Reach Reservoir fluctuations;
- Identify shoreline shallow water habitat that is consistent with desired juvenile lamprey habitat that may be dewatered by ongoing Project operations;

- Document presence or absence of juvenile lamprey within and adjacent to habitat;
- Determine potential impact of Project operations on juvenile lamprey;

Methods

- Identify existing aquatic habitat within the Rocky Reach Reservoir with juvenile lamprey rearing characteristics using aerial photographs, bathymetry, shoreline slope, velocity, and substrate characteristics to segregate habitat types into those areas with high, medium, and low potential for use by juvenile lamprey.
- Assess magnitude, frequency, and duration of reservoir elevations in reference to habitats identified. (**Note:** This task has been completed already for the Bull Trout Stranding Investigation. Additionally, areas of dewatered reservoir habitat have been identified previously for the same study. These areas are good places to start to identify likely juvenile lamprey habitat for surveying.)
- Assess presence in wadeable areas less than 1 meter deep that may be affected by Project operations. Sampling areas will be selected based on habitat types categorized by Hansen et al (2003). Type I is the preferred habitat for juvenile lamprey, comprised of sand, fine organic material, detritus, and/or aquatic vegetation. Type 2 habitat is suitable for juvenile lamprey being composed of shifting sand or gravel with little fine organic material. Type 3 habitat is composed of bedrock or hardpan clay along with larger gravel and is not suitable for juvenile lamprey to bury into. An ABP-2 backpack electro-shocker set at 125 volts (DC), 3 pulses per second, a 25% duty cycle, and a 3:1 pulse train will be used for collection. Sampling will occur at a slow walking pace in wadeable water depths. Total length (mm) for each captured juvenile lamprey will be measured. Captured juveniles will be released to the location of capture.
- Sampling will be conducted during the late summer/early fall months, generally when low Columbia River flows result in low reservoir elevations. Additionally, ESA coverage or potential impacts to other species of importance also need to be considered during sampling times.

Reporting

Chelan PUD will prepare a draft report for submittal to the Rocky Reach Fish Forum (RRFF) for review and comment. The report will include analyses of field survey results and provide conclusions and recommendations regarding achieving the study objectives. Chelan PUD will incorporate comments from the RRFF and prepare a final report.