Yakama Nation Fisheries

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July 28, 2020

Via Electronic Mail - [HYPERLINK "mailto:Christine.M.Budai@usace.army.mil"]

Chris Budai
Project Manager
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RE: Review of two Work Plans with Quality Assurance Project Plans (WP-QAPP) for River Operable Unit, Bradford Island, Cascade Locks Oregon: 1) Clam Sampling; and 2) Smallmouth Bass Acoustic Telemetry and Tissue Sampling and Crayfish Tissue Sampling. Documents prepared by U.S. Army Corps of Engineers (USACE), Portland and Seattle Districts

Dear Ms. Budai

The following provides general comments for the two Work Plans.

General Comments

- Overall, the smallmouth bass, crayfish, and clam studies represent a good effort to understand current conditions at the site and help identify the need for remediation of on-going contamination of biota at Braford Island and the location of sources of that contamination. However, at this point in the process, the focus of this study should primarily be on locating possible source areas. The biota species selected for these studies are appropriate for this effort but the allocation of sampling should be changed.

  Smallmouth bass are principally useful as broad-scale indicators of contamination, as well as useful for monitoring risks to consumers of those fish, but, because of their migratory habits they have more limited use in locating source areas.
  Crayfish and clams both have limited mobility and hence are more useful for source tracking. Clams would be most useful if the site had suitable habitat in all areas of interest, but crayfish may be necessary in areas of gravel-to-boulder substrate. However, other, more focal species such as sculpin, should be considered. These species are better than smallmouth bass for identify source areas. Given the primary focus, more resources should be allocated to crayfish and clams and less to smallmouth bass.
- Because of the potential contaminant source issues in Cascade Locks this area may not provide an ideal reference area. Additionally, there are multiple existing tissue and

sediment studies, spanning decades, for the project area and the Columbia River above Bradford Island. These studies are likely sufficient and appropriate for estimating background and action levels which would allow restricted resources and funding to be used for more sampling near Bradford Island.

Clam Sampling

- As noted above, there are existing data sources available to inform appropriate background and action levels to allow the elimination/reduction of sampling of clams in the Cascade Locks reference area and collecting and analyzing additional clams in the study area.

- Field sampling details such as clam depuration procedures need to be add.

Smallmouth Bass Acoustic Telemetry and Tissue Sampling and Crayfish Tissue Sampling

- Additional information for field sampling efforts, such as a Field Sampling Plan and Standard Operating Procedures should be provided. There are important details of the sampling that are not presented in the draft plans, e.g., size restrictions on the biota samples. It is also not clear how biota samples will be marked and stored in ways that avoid contamination from handling equipment and storage containers or cross-contamination from shared containers.

- Did the U.S. Geological Survey (USGS) participate in the development of the QAPP? The USGS has unique experience in field sampling and study designs. Their specialty should be used to inform this work.

- Please provide additional information on why the complicated time frame, with restrictive boat use areas and required permits, has been chosen for this field work. These restrictions could result in complications of obtaining samples and tagging fish and insufficient use of funds and resources.

- Sample size of 40 fish is too small to make definitive assumptions about the typical home range of smallmouth bass. There are also data available from other areas that are likely as useful for estimating the bass behavior as the limited study proposed. A multiyear study would help to determine site fidelity and duration to nesting/spawning areas for individual tagged fish which could provide additional information on potential source areas of contaminants

- Additional information about the size and age of smallmouth bass that will be targeted for both tissue sampling and telemetry tagging should be provided. Smallmouth bass have a general lifespan of 6 to 15 years. Because accumulation can be strongly affected by age-related changes in behavior, to avoid age-related bias among sampling locations, fish of the a limited age range, using size as a surrogate, should be collected.

- Please explain why stomach content collected from smallmouth bass will not be analyzed at this time, particularly if the stomach contents contain crayfish which is one of the reasons given for selecting crayfish as a receptor.

- In general, smallmouth bass and crayfish may not be the most reliable metric for monitoring sediment contaminant intake on a local scale due to the range of mobility across the population and variability in movement patterns. Additionally, the way in which crayfish accumulate PCBs may result in them not being the ideal receptor. Sampling sessile and small range receptors such as clam and sculpin, which were collected and analyzed in previous studies, would be more appropriate to identify and pinpoint source areas of contamination.

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