

Tribal Science Priorities Template

The purpose of the template is two-fold. First, it is the official format for which the priority issues will be received by the Tribal Science Council. Second, the template serves as the vehicle to highlight the specificity of each tribal science issue. The reviewers are required to provide explanation for each tribal issue submitted in each section and subsection listed below to be considered for final tribal science priorities.

Priority Title:

Characterization of tribal seafood consumption

Issue Statement:

- Why is this important to tribes and/or Alaska Native villages (ANVs)?
- What is the impact on elders and children's environmental health?
- What is the impact on ecologic health of biological populations?
- Does the issue meet TSC criteria for TSPs?

Tribes that do consume seafood do so at rates much higher than the general population. These higher consumption rates result in significantly greater exposure to contaminants than much of the general population. Greater exposure translates to greater risk. More information on tribal seafood consumption is needed to assess seafood consumption risks, support development of regulatory criteria that protect tribes (e.g. water quality standards), and to examine the impacts of climate and other environmental changes on natural resources of importance to tribes. Conversely, seafood consumption information is needed to assess the health benefits of seafood consumption (e.g. protein and beneficial omega 3 fatty acids). Though there have been a number of well conducted tribal seafood consumption surveys, there are still a number of important tribal seafood consumption information needs. These include:

1) Children's seafood consumption needs to be better characterized. Children exposed to environmental contaminants are at disproportionate risk relative to adults because of their greater dose per unit body weight as well as child specific vulnerable developmental processes. There are methodological flaws in current tribal children's seafood consumption estimates (e.g. adults reporting their consumption rather than a child's, multiple children from the same household, inadequate sample size.)

2) Tribal elders are more likely to practice traditional subsistence resource use patterns (e.g. consume larger amounts of harvested seafood). Like children, the elderly are at greater risk from contaminant exposure because of less functional and resilient physiologic and metabolic processes. Existing studies do not present seafood consumption rates for tribal elders.

3) Though seafood consumption surveys have been undertaken in Alaska, the data have not been presented in the form of consumption rates suitable for human health risk assessment and regulatory standards development. Planned revisions of Alaska's Ambient Water Quality Criteria should be supported by well substantiated seafood consumption rates.

4) It is important to gain a better understanding of variations in the types and quantities of seafood consumed by tribes residing in different environments. More seafood consumption information is needed for tribes residing in coastal areas and in Alaska. Knowledge of such variation is important

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in determining whether general consumption rate information is broadly applicable to tribes or whether site and tribe specific seafood consumption information is needed to support risk assessment and regulatory standards development.

5) It is important to characterize what resources tribe's utilize in examining the impacts of climate and environmental change.

Explanation of the issue (specific case studies or stories to illustrate tribal importance/relevancy)

- Include pictures/photographs as relevant

In the Pacific Northwest, a number of seafood consumption surveys have been conducted. These include the Columbia River Intertribal Fish Commission (CRITFC) survey of the Yakima, Nez Perce, Umatilla, and Warm Springs Tribes, the Toy et al. study of the Squaxin Island and Tulalip Tribes in Puget Sound, and the Suquamish Tribe survey. EPA Region 10, EPA's Office of Research and Development/National Health and Environmental Effects Research Laboratory/Environmental Public Health Division, and the Quinault Indian Nation collaborated on a computer assisted personal interview software package utilizing the methodology developed in earlier surveys to facilitate collection of further tribal seafood consumption information. Tribal participation was essential in identifying species consumed, unique tribal seafood preparation techniques that might affect levels of contaminants and exposure, and developing interview techniques that were culturally sensitive. The use of tribal interviewers also facilitated trust between interviewer and interviewee in obtaining accurate information.

The aforementioned completed surveys have had an important impact on environmental regulatory activities affecting tribes. The results of the CRITFC survey have been utilized to support risk assessment activities for Superfund sites in the State of Oregon, most notably Portland Harbor. CRITFC survey results were also instrumental in setting the fish consumption rate used to develop new water quality standards for the State of Oregon. If CRITFC survey results had not been available, Oregon's criteria would have been tenfold less stringent, resulting in much higher risks for tribal seafood consumers. The results of the Tulalip Tribe and Suquamish Tribe surveys have been very important in developing tribal seafood consumption risk assessments for EPA toxic waste cleanup sites in the Puget Sound region. Seafood consumption rates for these tribes are also being considered by the State of Washington as it moves forward in revising Washington's ambient water quality criteria.

The previous examples make it clear that the efforts to date have supported important regulatory activities benefitting tribes. However further work is needed in the area of characterizing children's fish consumption and examining its impact on environmental regulation. Insufficient data exist to characterize variation in tribal seafood consumption patterns and how such variation might affect risk assessment and regulatory practices. Though Alaska has undertaken some efforts to characterize seafood consumption, the data have not been presented in a format that would support risk assessment and water quality standards development.

What specific action(s) may assist the tribes and/or ANVs or what do the tribes and/or ANVs specifically need from EPA to address the issue?

- Examples: training, technical assistance, research, tools, communication (Webinars), specific interventions to protect children and other community members from hazards in home, school, daycare, etc.

Tribes need support from EPA to develop seafood consumption survey methodology, train tribal members in use of survey methodologies, select an appropriate population to be surveyed, implement the survey, conduct statistical analysis of results, and develop reports describing survey development/implementation/results. Outreach will be needed to describe what survey results

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mean to tribes from a public health perspective. In some cases, existing data may need to be re-analyzed to support risk assessment and regulation.

Proposed implementation strategy and potential measures of success at the tribal community level and/or in ANVs

It is expected that surveys would be conducted for individual tribes or groups of tribes in close proximity to each other. Success will be measured in terms of completion of the incremental steps required to implement a survey. In cases involving re-analysis of existing data, measurement of success will be linked to completion of such re-analyses.