



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

PO Box 47600 • Olympia, WA 98504-7600 • 360-407-6000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

May 14, 2012

The Honorable Richard DeBolt
WA State Representative
PO Box 40600
Olympia, WA 98504-0600

**RE: Fish Consumption Rates –
Sediment Management Standards Rulemaking**

Dear Representative DeBolt:

Thank you for providing the table “Select Summary of State Human Health Toxics Water Quality Standards Revisions.” I am offering this letter to provide some context for that information and to respond to concerns that I have heard related to the quality of the studies we have incorporated in our Technical Support Document in support of our Sediment Management Standards rulemaking.

Washington State has one of the highest fish-consuming populations in the nation, but we currently use the lowest fish consumption rate in our water quality standards. Most other states do not have the populations of high fish consumers, or simply have not updated their standards. Ecology has examined and learned from other states’ treatment of fish consumption rates (FCRs) and their use of EPA’s national guidance on human health criteria development. Importantly, we are also learning from other states’ experiences with providing industries with the necessary tools and a compliance pathway for implementing water quality standards under the Clean Water Act.

The table that you provided summarizes fish consumption rates (FCRs) used in some other states’ water quality standards. FCRs vary among states, with the low end at 6.5 g/day and the high end at 175 g/day. Tribes, treated as states under the Clean Water Act, have EPA-approved rates that range from 6.5 g/day to 389 g/day, with the most common rate being 142.4 g/day. These are relevant to our standards because tribes are effectively downstream-and-upstream states under the Clean Water Act. The recent Spokane River TMDL, for instance, had to meet the downstream Spokane Tribe’s EPA-approved water quality standards.

EPA provides states with flexibility and guidance on how to determine human health criteria. EPA’s 2000 guidance hierarchy is: (1) use of local data; (2) use of data reflecting similar geography/populations groups; (3) use of data from national surveys; and (4) use of EPA’s default fish intake rates. The FCR of 6.5 g/day was used by EPA in their original calculations of human health-based criteria in the late 1970s and 1980s, and is based on 1970’s national survey data of consumers and non-consumers. Over the years, several states have used newer data to update their human health-based criteria, driven by the available data and EPA recommendations at the time these human health criteria were adopted.



As we have discussed, data on FCRs in Washington State indicates that rates here are likely to be higher than most other states due to our citizens' recreational and cultural use of our fisheries resources. States with low FCRs likely do not have local data documenting higher rates, do not have high fish-consuming communities, or have chosen to not extend a high level of protection to the populations most at risk from eating contaminated fish. The most sensitive populations in Washington are children and developing fetuses in communities where fish and shellfish are commonly used for subsistence and cultural reasons.

What individual states consider an acceptable level of risk for sensitive populations also varies. States generally choose a risk level of one-in-one-million (10^{-6}) or one-in-one-hundred-thousand (10^{-5}), which provides protection for the most sensitive populations at a risk level of one-in-ten-thousand (10^{-4}). This is consistent with EPA's national guidance for surface water quality criteria for carcinogens. Oregon recently chose to adopt human health-based criteria that use a 95 percentile high-end consumer FCR of 175 grams/day and apply that rate to a cancer risk level of one-in-one-million.

The table that you provided pertains to water quality standards. As you know, we have not yet begun the process of updating the human health criteria in our water quality standards and do not expect to begin that process until 2013, with the rule not finalized until late 2013 or 2014. FCR is one of many factors that will have to be considered when we undertake revising the human health criteria in the Surface Water Quality Standards. Other variables and considerations include: the duration of exposure, body weight assumptions, other sources of exposure, the additive effects of chemicals not addressed in the criteria, highly bio-accumulative chemicals and different calculations for carcinogens and non-carcinogens.

In regard to concerns about the data supporting our fish consumption rate assessment as given in our Technical Support Document, four regionally-specific fish dietary surveys were identified by Ecology as applicable to Washington and scientifically defensible (Enclosure A). These published reports provide the necessary data to support the results presented and are widely accepted as technically sound. For example, the studies are referenced in the U.S. Environmental Protection Agency's Exposure Factors Handbook, which is the primary guidance for human health risk assessment at EPA and in the states. In addition, the Oregon Department of Environmental Quality found that these four fish consumption studies were relevant in establishing water quality standards in Oregon. Considering that three of the four studies surveyed Puget Sound fish consumers, the applicability to Oregon would certainly indicate utility for our process here. Further, the Washington State Department of Health also relies on these and other studies to help determine when fish consumption advice is warranted to limit exposure to contaminants in fish.

The peer-review process for the four studies mentioned included technical advisory and oversight groups and institutional review boards that provide review of design and methodology. For example, the Columbia River Inter-Tribal Fish Commission (CRITFC) Study was developed in collaboration with universities, the Oregon and Washington State Departments of Health and senior epidemiologists from the U.S. Indian Health Service. Technical defensibility is provided by rigorous review of how the survey is designed and how the data is collected. In addition, the process needed to respect tribal rights and privacy, culture, sovereignty and individual religious beliefs for the data collection to be successful.

In regard to questions about access to the underlying or "raw data" in these fish consumption studies, the "raw data" itself (meaning the individual responses to survey questions) is not published. In common practice, individual survey results are often kept confidential by agreement with survey participants. In contrast, it is unusual to need or obtain raw data when using peer-reviewed literature. Reviewers typically rely on the adequacy of the methods described and the analysis provided, along with the added insurance of the peer-review process. Our agency does not have the raw data, and relied on the published reports

The Honorable Richard DeBolt

May 14, 2012

Page 3

that provide detailed descriptions of the survey methodology and results. We inquired with the CRITFC regarding both the availability of their survey data and the details of their peer-review process. Their response is enclosed (Enclosure B). I have also enclosed a letter from Professor Daniell of the University of Washington School of Public Health, addressing the use of raw data (Enclosure C).

We are satisfied with the significant review and validation of the fish consumption studies cited in our assessment. We are also committed to addressing comments provided through our ongoing public process. With respect to the Draft Fish Consumption Report, we have received both formal written comments and good input from our workshops. This input will help shape the final version of our assessment prior to our moving forward with rulemaking.

Ecology is taking a thoughtful approach to our Sediment Management Standards and our Implementation Tools rulemaking, and that will require continuing input from all parties. We understand that end-of-pipe solutions are not the answer to some of our legacy toxics, and that implementation of our updated standards needs new flexibility for compliance. Our goal is to achieve meaningful reductions in toxics that accumulate in fish. We believe this needed and overdue update to our standards moves us towards that goal.

Sincerely,

A handwritten signature in black ink, appearing to read 'Ted Sturdevant', with a stylized, cursive script.

Ted Sturdevant
Director

Enclosures:

- A. Summary of Four Key Fish Consumption Studies in Washington State
- B. CRITFC Study
- C. UW (Professor Daniell) Letter – Use of Raw Data

