



CORPORATE HEADQUARTERS

July 31, 2013

SENT VIA EMAIL TO: paula.wilson@deq.idaho.gov
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RETURN RECEIPT REQUESTED

Ms. Paula Wilson
Idaho Department of Environmental Quality
1410 North Hilton
Boise, ID 83706

Dear Ms. Wilson:

The Department, at the July 10, 2013 rulemaking meeting on Fish Consumption Rates (FCR), asked for comments in regards to presentation by the Public Policy Group at Boise State University. The J.R. Simplot Company (Simplot) retained Arcadis Inc. to review the material presented; attached are comments on the materials presented.

During the July 10, 2013 meeting, some information was given about EPA's proposed fish consumption studies with the Tribes present in Idaho. We recommend that at a future rulemaking meeting that EPA provide a presentation on:

- Specifics on how they plan to perform the studies.
- What is the timeline for these studies and how will that timeline be integrated into the State of Idaho rulemaking process?
- How will the Tribal FCR survey data be incorporated into the Idaho study?
- How will the data gathered by EPA be made available for review by stakeholders involved with the Idaho rulemaking process?

We appreciate the opportunity to provide these comments.

Sincerely,

Alan L. Prouty
Vice President, Sustainability & Regulatory Affairs

Attachment

Cc: Don Essig, Idaho Department of Environmental Quality

Comments on “Idaho Fish Consumption Survey 2013” Boise State University, Public Policy Center

Below are preliminary comments and thoughts on the BSU presentation for submission to the Idaho Department of Environmental Quality (DEQ).

- Target Population(s). The presentation refers to a number of different target populations (consumers versus non-consumers, anglers etc.). The more emphasis that is placed on a single segment of the population, the less the results will represent the overall population at large. Information about specific subpopulations can be used to demonstrate that a particular subpopulation is protected by a state-wide ambient water quality criterion (AWQC), but should not be used to define the fish consumption patterns of the general population. For a state-wide survey to be used to derive a state-wide AWQC, the goal of the survey should be to develop information on the fish consumption rate distribution of the *overall* Idaho population, not just specific subpopulations.
- Definition of Angler. The proposed definition is too limiting and excludes a segment of the population that fishes but is not required to have a license, such as youth. Recommend changing the definition to someone who fishes Idaho waters.
- Distribution of Fish Consumption Rates versus Average Fish Consumption Rate. The presentation states (in several places) that one of the goals of the survey is to determine the mean quantity of fish consumed. However, while the mean consumption rate provides information about the average behavior of the population, or a subpopulation, it is important that the survey be designed in such a way that consumption rates of each of the individuals included in the survey can also be estimated and tabulated so that a distribution of rates across the entire population can be developed. This will allow the variability among consumption rates across the sampled population to be preserved. Developing a distribution of consumption rates is particularly important for the application of probabilistic methods to derive AWQC. Based on the information presented by the BSU researchers, it is not clear such information will be collected.
- Sample Size. The proposed sample size is extremely small. If 500 households are surveyed, with a goal of 25% that consume fish, the survey will yield no more than 125 surveys of fish consumers. The actual sample size is likely to be lower because a 100 percent response rate is unlikely to be achieved. Without a larger sample size, it will be difficult to obtain reliable data on information on even overall behaviors, such as total fish consumption, never mind less common behaviors such as consumption of individual species of fish, or specific cooking methods, or the local sources of fish. In addition, it is important to consider all potential constraining factors that may affect the ability to use the results in the final analysis. For example, if the goal of the survey is to quantify all fish consumption regardless of source, then a smaller sample size may suffice for the purpose of calculating a consumption rate because most individuals responding to the survey are likely to eat some amount of fish. However, if the goal is to specifically quantify consumption of locally-caught freshwater fish, the number of individuals surveyed will need to increase to ensure that a sufficient number of surveys recording consumption local, freshwater fish are received. For example, one of the goals of the Maine angler survey (Ebert et al., 1993, *N. Amer. J. Fish. Manag.*13:737) was to identify differences in consumption rates between fish caught from standing versus flowing waters. Taking

into account all of the constraining factors associated with that distinction (e.g., number of people fishing standing versus flowing waters, preference for coldwater versus warmwater species etc.) it was determined that it would be necessary to receive approximately 1,300 completed surveys to ensure that the desired number of observations for both types of waters would be received to allow for statistical comparisons. To achieve that goal, close to 3,000 licensed anglers were surveyed. Based on these types of considerations, we recommend using a substantially larger sample size to ensure that the survey will provide robust results.

- Developing Information About Long-Term Fish Consumption Rates. The BSU presentation proposes that respondents be asked to provide information about fish consumption behavior for the previous 24-hr period. Short-term recall studies are acceptable for developing general information such as average fish consumption rate, but are not appropriate for developing consumption rate distributions representative of long-term (lifetime) behavior because they do not capture variation over time of an individual. Such variation is critical when extrapolating short-term recall survey data to long-term behaviors. Several methods can be used to gather information about variation over time of fish consumption by an individual. They can consist of asking people to record their behavior for an extended period of time (usually at least a week) or having the same individual fill out the same survey at two (or more) different times. The information presented by the BSU researchers did not indicate such data would be collected.
- Multiple vs. Single Survey Instruments. As previously noted, it is difficult to determine what survey instrument the BSU researchers propose to employ. It appears that they intend to use two, both a phone and a mail survey. Using multiple survey instruments for the same target population further divides the surveyed population and can introduce biases into the responses, particularly if the survey questions differ. The preferred method would be to decide on a target population and then pick the best approach to reach that particular population. Regardless of the approach, developing a strong survey instrument is key to getting a good, complete, and unbiased response.
- Survey Instrument Methodology. When selecting the survey instrument, care must be taken to ensure that the tool itself is not creating bias in the response. For example, requiring a web-based response automatically biases the survey toward a younger, more affluent demographic which is more likely to have access to and knowledge of the internet. Similarly, standard telephone surveys may be biasing the survey toward an older demographic because many younger individuals have only mobile phones. Mobile phone lists can be acquired, but it is much more difficult to connect them to specific geographic locations given that people often keep the same number when they move. One option to consider is using mailed forms that provide the option of completing the form and mailing it back or going online and completing the exact same form.
- Incorporation of Tribal Information. It is not clear from the presentation how the tribes will be addressed in the proposed survey process. Given that EPA is planning to conduct a separate survey specific to the tribes, our recommendation is that the survey include tribal members at the same frequency as they occur within the general Idaho population. [The Idaho DEQ survey should be representative of the overall population of Idaho, which includes groups such as the Tribes.] We assume that questions important to the tribes (e.g., portion size, body parts consumed, cooking method, etc.), but also having some relevance to the general population, will also be included in the survey. It is very important that there is consistent set of data that includes the Native American



populations; information gathered by EPA will likely be different and as such it may be difficult to incorporate into the Idaho DEQ study.

In general, it appears that the survey is designed to develop information about average fish consumption rates rather than about the distribution of consumption rates for the population of Idaho residents. We recommend consulting with a resource economist or a statistician who understands the goals of this survey effort to develop a sampling design that will provide the information needed to develop defensible state-wide AWQC. Critical to this effort will be clearly defining the goals of the study and the target population(s) at the beginning of the process.

A handwritten signature in black ink, appearing to read "Paul D. Anderson".

Paul D. Anderson, Ph.D.
Vice President, Principal Scientist

A handwritten signature in black ink, appearing to read "Nancy L. Bonnevie".

Nancy L. Bonnevie
Resource Manager, Principal Scientist