Paula Wilson

From: RunninIdaho <runninidaho@gmail.com>
Sent: Wednesday, October 03, 2012 10:57 PM
To: Paula Wilson
Subject: Negotiated rulemaking - Water Quality Standards/Human Health Criteria for Toxics, Docket No. 58-0102-1201

Dear Ms. Wilson, I am on vacation and regret I am unable to participate in the October 4, 2012 meeting, but I would like to offer a few thoughts for IDEQ's consideration as they evaluate the complicated questions of appropriate fish consumption rates to use in water quality to protect human health. My thoughts relate to data quality and potential for systemic bias in surveys. Having worked with the aquatic life criteria (ALC) procedures for many years, the contrast between science approaches with human health criteria (HHC) is striking. Where the ALC are based on a fairly objective and transparent reduction of experimental data, the self-reporting nature of estimating fish consumption rates introduces different vulnerabilities for survey bias. Thus while there is an understandable desire to use Idaho-centric fish consumption data, issues of survey objectivity and potential cognizant bias might be worthwhile to consider, such as the issue in self-reporting surveys of social desirability bias in respondents. In reviewing some of the materials provided, the fundamental difference in data sources seemed to be surveys of two types: (1) general nutritional or dietary surveys, and (2) surveys specifically conducted to establish fish consumption rates to feed into water quality criteria. The former would seem to have fewer issues with social desirability bias than surveys for a specific topic where the respondent might guess the preferred answer.

Social desirability bias is the tendency of respondents to answer questions in a manner that they perceive will be viewed favorably by others. It can take the form of over-reporting good behavior or under-reporting bad behavior. The SDB is well known is some fields, internal medicine or business for example, and serious problem with conducting research with self-reported data, especially questionnaires. For instance, respondents tend to inflate their reports of compliance with taking prescribed medicines, over reporting of exercising, under reporting drinking, smoking, or under reporting socially undesirable risky health behaviors. It seems that surveys specific to fish consumption could be more vulnerable to this type of response bias than general nutrition surveys.

For instance, the 1994 CRITFC survey questionaire asked detailed questions about fish consumption for subsistence and ceremonies, preparation, and fishing effort. No similar detail was requested for non-fish portions of the diet. Further, respondents were sent a letter asking them to travel to a community center to be interviewed, advising that *"the information collected will be used to ensure that state and federal governments are adequately protecting the water resources upon which our fisheries and our tribal members depend"* and offered $40 to respondents to compensate for their expenses and time. Thus, it would seem almost certain respondents would surmise what types of answers would be considered socially desirable and would tend toward an unconscious, positive bias in responses.

There are certainly other types of bias to be concerned about, and this example is not a dig at the CRITFC study which has been well regarded in reviews of others, and its transparency and completeness are among its strengths.

My knowledge of such issues is all secondhand, derived mostly from 25 years of periodic discussions with a family member who designs, directs, and interprets surveys professionally, mostly for business clients. He has emphasized the pervasiveness of the SDB problem, with respondents saying what they think the surveyor wants to hear, even though they have no self interest in doing so.

In closing, while obtaining information relevant to local or regional high fish consuming populations is of obvious interest, there is also a case to be made for giving extra consideration to studies that minimize the SDB problem. For instance, the USDA nutritional studies used by EPA's (2002) fish consumption report seemed particularly rigorous and because the USDA was not partial to fish, likely minimized the SDB problem. Some

goals might be mutually exclusive, such as targeting high consuming populations yet obtaining objective, unbiased results. These are certainly complex and difficult questions and good answers may be elusive and not be quickly resolved.

I regret missing the October 4 discussions, and hope these thoughts might be of some use.

Sincerely,

Chris Mebane
Boise