Date: July 18, 2011

To: Dr. Angela Nugent, DFO
EPA Science Advisory Board

From: Dr. Sharan Campleman
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Re: Clarifying Question to SAB Technical Support Document (TSD) Mercury Risk Assessment: Charge Question #6

Did the SAB discuss or otherwise consider for comment under Charge Question #6 the reasoning and/or support for the EPA assumption of subsistence or other high-end consumers utilizing only larger fish (>7 inches)? Particularly as it is not clear and sometimes contradictory in the TSD if the small fish were removed prior to estimation of the 75th percentile fish tissue levels assigned to the HUC12 watersheds (see points and footnotes below).

Did the EPA provide any additional supporting data, background or other support for this exposure assumption that subsistence fishing would focus on smaller fish (<7 inches in length)?[1] The SAB comments to the agency could help elucidate this question.

- Are there any supporting surveys or other studies that EPA relied on from U.S. fishing populations catching and consuming freshwater fish that meet the definition provided in the TSD of subsistence[2] would *not*, or be less likely to, consume fish less than 7 inches in length? Particularly in the subpopulations (low socioeconomic status, specific race/ethnic populations) or geographic regions called out in the TSD risk assessment?

- Also, if the agency excluded mercury samples from smaller fish (< 7 inches) from the Master database as stated in TSD[3], or prior to calculating the 75th percentile by HUC12 watershed, then how does this match the statement supporting the use of the 75th percentile on p. 4, specifically:

  > "Selection of the 75th percentile represents a reasonable assumption that acknowledges the median or mean fish may give too much weight to smaller, less likely to be eaten fish, while avoiding assumptions that consumers would always be able to catch and eat the largest fish with the highest MeHg levels." [Note: Repeated in the TSD on p. 28.]

  If fish mercury tissue samples from fish <7 inches in length were already excluded from the Master database, then how would later use of the HUC12 mean or median tissue values bias the exposure analysis toward 'smaller fish'? Clarification from the EPA would be helpful in understanding how, and when in the process, this exposure assumption was applied.

- What influence does this assumption have on the exposure assessment? Why was the size cut off selected at 7 inches (versus 5 inches, versus 8 inches)? How many fish samples were excluded from the time period 2000-2009? How would inclusion of these samples influenced any summary and HUC watershed specific exposure statistics (sample count, mean/median, 75th percentile, etc)? Unfortunately no descriptive statistics are provided in the TSD narrative or appendices.

- How does this fish size exclusion criteria ultimate risk calculation? In Appendix F, the agency states that the potential for underestimation exists, but no other discussion or quantitative/sensitivity analysis is presented to clarify the influence of this assumption.

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[1] Stated by the EPA several times in the TSD as an primary exposure assumption including p. 2, p. 4, p. 22 (also refers to Appendix B but unclear of specific reference), p.28, p.71.

[2] Stated by the EPA on p. 17, footnote 23: "Subsistence fishers are individuals who rely on noncommercial fish as a major source of protein (US EPA, 2000). For purposes of this risk assessment, we have interpreted this as representing self-caught fish consumption ranging from a fish meal (8 ounce) every few days to a large fish meal (12 ounces or more) every day."

[3] Stated by the EPA on p. 71: "In finalizing the master datasets a number of criteria were used to screen the fish tissue samples (e.g., include only freshwater fish species, exclude estuarine locations, *exclude fish less than 7 inches in length*)."

[4] Stated by the EPA on p. 81: "Note, that if a portion of a fisher population actually distributes their activity between watersheds and/or consumes a mixture of fish species and sizes (reflecting a fish tissue level closer to the median or mean for a watershed), then risks would be lower than those estimated here."