

Memo

To: Don Essig, Idaho Department of Environmental Quality

From: Rebecca Elmore-Yalch

cc: Nathan Wiggin, Jason Pappani

Date: April 21, 2016

Re: Summary of Changes to Final Technical Report Based on Peer Review Comments

We received and reviewed comments from four reviewers—three were retained by IDEQ and the fourth was retained by the EPA. Three of the four reviewers provided general comments noting specific areas to note; one reviewer also provided a marked-up (with comments) version of the .pdf file reviewed. The purpose of this memo is to summarize the approach that NWRG took to incorporating reviewer comments into an updated report.

Clarity and Organization of the Report

Three of the four reviewers provided comments on the clarity and organization of the report. Two indicated that the report is “quite clearly written with easy to understand, clear graphics that help the reader to quickly realize the major results” and “well organized, and results are presented in a logical format.” The third wrote “the report overall is not clear and is poorly organized. . . the results are not presented in a usable format.”

The primary purpose of this report was to provide a detailed description of the Study Methodology and a summary of Key Findings. The report was organized accordingly with the focus on the Methodology. The review of Key Findings is meant to provide support for the validity and use of the data rather than a detailed analysis of all the results.

We left the organization of the report alone and focused our efforts on addressing other comments.

Appropriateness of Methodology

All reviewers agreed that use of a telephone survey using two frames (landline and cell phone) was appropriate. One reviewer pointed out that 2.7 percent of adults in Idaho are without a cell phone and landline; that is now clarified in the methodology.

There was some confusion regarding the use of the term “quotas” as it applied to the sampling methodology. It is correct that “quota sampling” can introduce biases, particularly over-representing those who are easier to reach by telephone. Our methodology set a maximum number of interviews per month with those who are known to be particularly easy to reach by telephone—older adults and women. Every number in a sample replicate continued to be attempted per the specified dialing protocols. Data collection was monitored throughout the month and when the distribution of age within gender indicated that older adults were likely to be over-represented we did not release any additional landline sample for dialing and continued to release cell phone sample as needed to finish up the number of monthly interviews. In addition, we continued to screen all those contacted; however, we did not complete a full interview with older adults after reaching the maximum number of completes. To do so would have significantly increased the cost of the research and as noted would have resulted in greater variation in the weights.

We have clarified the wording in the report.

Consideration of Race and Language Issues

One reviewer discussed the possible implications of not including other languages. In addition, while Hispanics are represented in the final sample proportionate to their incidence in the population, non-Whites are under-represented. Native Americans are the largest segment of non-white resident in Idaho.

As the reviewer pointed out, if the Non-English speakers are Native Americans then it is true that this would have a biasing effect. However, the vast majority of Native Americans speak English well. In addition, a separate tribal survey provides data on fish consumption for this segment.

Ninety-four percent of Idaho adults speak English only. While Hispanics are the largest segment, Asians are also represented. To effectively reach the relatively small percentage of residents (<4%) who do not speak English would be best done in a separate study such as was done for the tribes.

The focus of this research was on the general population, the vast majority of whom are White and speak English.

Re-Weighting to Incorporate Non-Response, Notably Lower Income

Despite significant efforts to ensure representation of lower income households, households with incomes between \$25,000 and \$34,999 were under-represented while those with household incomes greater than \$75,000 are over-represented. After review of all the data and the possible implications of this on fish consumption rates, it was determined that if anything fish consumption would be over-estimated due to higher consumption among higher income households. Discussions were held with IDEQ to determine if we should re-weight the data to account for income variation. And, it was decided any potential high bias was acceptable.

Bootstrapping Approach to Develop Confidence Intervals

As all of the fish consumption data (frequency and portion size as well as anything computed using these variables) are non-parametric, confidence intervals have been recomputed using SPSS bootstrapping. We did not have available SPSS bootstrapping at the time we did this analysis so used SAS; work was done by an outside consultant.

Bootstrapping requires an integer weight so weights were rounded. This resulted in some small changes to the numbers; however, the confidence intervals do reflect true confidence intervals. We have specified in the report the assumptions used for bootstrapping.

The bootstrapping estimates for the average daily fish consumption numbers were noted to be quite small. As we redid this analysis we determined that the expansion weight (i.e., weighted to the population) was used. As a result, the sample size appeared to be very large so resulting confidence intervals were very small; i.e., little error around the estimates. We have redone all confidence intervals using the sample weights.

Summary – Results

Reviewer indicates that lead-in paragraphs are “methods” [of asking questions] and that they should be moved into the methodology section. This would then cause the reader to have to “remember” what questions were used to “glean” the result. We believe it is easier for the reader to see the question and the result, so no change was made.

Reporting Convention

Added a section in the Survey Methodology on reporting conventions.

Eight versus Seven Days

We confirmed that the survey was programmed to collect data for yesterday and then for those who did not consume yesterday for the seven days prior to yesterday. Hence the total number of days in the recall is eight.

Description of Fish Non-Consumer

A reviewer suggested that the focus should be on Fish Consumers rather than Fish Non-Consumers. As Fish Consumers are a significantly larger—hence more heterogeneous segment—the analysis is more meaningful when looking at what differentiates the smaller Non-Consumer segment.

A separate analysis on page 61 looks at the different Fish Consumption Segments.

Base for Tables and Graphs

We reviewed all tables and graphs and where appropriate updated the description of the base for the corresponding table or graph. It should be noted that the original report had bases and base size noted as required by ISO 20252.

Detailed Mark-Up from Patricia Guenther

NWRG went through the detailed mark-up provided by Patricia Guenther and made changes to the document where appropriate.

Specific Page / Line Number Comments

Page	Line Number	Comment	Response
8	3	HHC should be defined	Changed to Human Health Criteria (HHC)
9	4-19	Not clear if these are rates for consumers only, or if they include the 12% non-consumers. This is also true in the results section.	Throughout report, text clearly distinguishes between Idaho Adults and Fish Consumers. Text here clearly states <u>all</u> Idaho adults. Did not change.
10	3-5	This statement needs to be substantiated. How is it clear?	Wording was changed and additional text added about the types of steps taken to address response rates and coverage.
10	15-17	How was it assessed to be “significantly lower”? Did you take into account one asks about 1 year and one asks about 8 days? Did you compare the question on the FFQ that asked about the past 7 days to the recall? I’m afraid a statement like this is just going to confuse people – of course we would expect less consumption for a 1-week period compared to a 1-year period.	Not clear what issue was here. No changes made.
10	19-20	Why is this true? Is there a reason you would assume this?	This is a discussion item; a possible interpretation of the finding rather than a statement of fact. It is written that “it is likely” as opposed to “it is.” No changes made.
11	28	The objective I believe is to assess usual dietary intake of fish. I think calling it a “daily rate” is not quite right – it is a usual rate expressed on a daily basis, but as a long run average.	Wording changed.
14	11-12	Please state what these strengths and weaknesses are.	Summary of EPA article added.
21	17	I do not think it is accurate to say that FFQs are representative of usual intake. This is not cited here.	The list is simply a summary of what appeared in a number of articles. Comment appears to be reviewer’s opinion; possible

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			disagreement with the findings from cited articles. Citations were reorganized so that is clear that we were summarizing the findings; but otherwise did not change.
21	18	I do not think FFQs are a preferable method for foods with day to day variability. It does not state to what they are preferred, and there is no citation for this.	Same comment
21	19	I think this statement is debatable. Even highly literate subjects have trouble estimating year-long averages over multiple types of fish in their head. This is not cited.	Same comment
23	5-7	Not being as dependent on memory as an FFQ is actually a strength of dietary recalls, particularly for 1 day. I would not cite it as a weakness, although there is some evidence of weakness for this multi-day recall used in this study.	Same comment.
46	35	Here and in several other places, reviewer suggested that a default amount should have been assigned for system missing.	The amount of missing data was relatively small (<10% of responses). A common practice is to replace the missing value with the mean. This practice has minimal effect then on the data. Moreover, as the data is not normally distributed, assigning the mean could artificially increase the variance. No changes made.
48	20	Why were the assumptions made that the data were normally distributed when they appear to be so skewed?	We have clarified the types of variables where we assumed normal distributions. Confidence intervals for all non-normal data were re-computed and that is made clear here.
49		Please include a 95% CI for the 88%.	Confidence interval is extremely small <1% either direction due to large sample size and high percentage. The question should be what this means—practical significance. Did not add confidence interval.
51		What are the subscripts? What statistics were used?	Added section on reporting conventions which explains the subscript (weighted sample size)
54		This should specify a time period – annually.	Done but should be noted that supporting tables and graphs

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			clearly specified that this was an annual number.
56		What type of test was used?	Wording was changed. These were actually statistical tests—t-tests. But simplified wording to remove word “significantly.”
71		These CI seem to be way too narrow. How were they computed?	Per note above we found that the weight used was the expansion weight (to the population) rather than sample weight. Hence sample size was “very large” and confidence intervals “very small.” These have been recomputed.
80	5-6	How is it clear?	See comment / response to page 10. This has been changed.
80	17	This seems low, as 50% is the standard for most survey studies. Please cite this. This is not a public opinion study.	No citation from reviewer to indicate source that this is low. However, report updated to indicate source for response rates (there really aren’t any definitive sources that I am aware of as AAPOR no longer does their response rate survey). And wording changed to note that per the Pew Report the response rates are the same as what is common for surveys with intensive efforts to improve response rates.