UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
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OFFICE OF
WATER AND WATERSHEDS

September 30, 2013

Don Essig
Idaho Department of Environmental Quality
1410 N. Hilton
Boise, Idaho 83706

RE: EPA comments on Idaho's draft survey questionnaire

Dear Don:

EPA appreciates the opportunity to comment on the Idaho Department of Environmental Quality's (DEQ) September 11, 2013, draft fish consumption survey questionnaire. EPA has reviewed the draft questionnaire and has attached our comments and suggested changes. These comments include input from both EPA Region 10 and EPA headquarters.

As you know, EPA supports IDEQ's efforts to conduct a quality fish consumption survey and believes that a well designed questionnaire is of key importance.

Given the need for the survey to provide quality data to be used to calculate fish consumption rates it is essential to develop and design a survey instrument that will meet your objectives. As you know, it is important to be clear about what your information needs are and to make sure that the questionnaire is designed to answer those specific information needs. To that end, we believe that the questionnaire requires important modifications. EPA understands that DEQ is in the process of working with Boise State University contractors on modifications and we hope that our comments will be helpful as you make those revisions.

We are available if you would like to discuss our comments, and we look forward to continued work with IDEQ on this effort. Please contact Lon Kissinger (206-553-2115) or myself (206-553-1834) if you have any questions.

Sincerely,

Lisa Macchio
Water Quality Standards Coordinator

Enclosure

Combined EPA Comments on the Idaho DEQ Fish Consumption Survey Questionnaire, 9/30/13

As an overarching concern, and in addition to the comments on the actual instrument, it is critical that other aspects of the study such as sample size, expected response rate, survey mode (e.g. mail, telephone, internet, etc.), data analysis approach, and precision and accuracy needs are considered in order to determine the ability of a study to produce results that will support Idaho's efforts to characterize fish consumption.

A brief review of the Idaho draft Fish Consumption Questionnaire (9/11/2013) resulted in a number of specific comments and suggestions about the instrument itself (below).

These comments include concerns about:

1) Consideration of how the method of survey administration will impact survey design and use of prompts and visual aids
2) Use of ranges or categories as options to answer questions
3) Using a single interviewee within the household to obtain information on others within the household rather than posing these questions directly to other household members (i.e. obtaining information by proxy).
4) Question structure
5) Cognitive issues for interviewees in determining answers to specific questions
6) Methods for determining fish portion sizes

A major function of the survey is to characterize long-term fish consumption from short term dietary data using an approach like the NCI method. The utility of the survey needs to be examined by individuals familiar with how the results will support an NCI type data analysis. The utility of recall results for 24 hour vs. weekly time periods should be evaluated, as well as the utility of information obtained by proxy (i.e. item 3 in the list above).

The data table associated with this survey seems unduly complex and does not match the question structure of the survey. It is suggested that consumption be recorded on a meal specific basis including the following data elements: species, preparation, portion size model, number of portions corresponding to model consumed, parts of fish consumed, source of fish, and whether or not fish were obtained from Idaho waters. Consumption information needs to be associated with appropriate demographic information for all respondents, whether primary or proxy. Information of interest includes body weight, age, ethnicity, and income. Information collected at this level of detail can then be entered into a database from which queries can be conducted to yield desired aggregate information (e.g. amount of fish consumed from Idaho waters per person, consumption of salmon per person, etc.). NOTE: A sample data entry table is provided as an attachment.

Unfortunately, it is not possible to provide a full evaluation of a survey instrument in isolation from a broader understanding of the study's objectives and goals. Ideally, study objectives would be mapped to items in the instrument to confirm that each objective is adequately addressed and that each item in the instrument serves its purpose of capturing information to

answer study questions. This will insure that that all necessary data are collected without collection of resource intensive extraneous information.

The appropriateness of the survey instrument also depends on a number of broader factors, including the following.

1) What is the sample design (e.g., who are the respondents?) Is it intended that this survey be used for both the general population and recreational anglers?
2) What degree of specificity is required with regard to distinction between, or groupings of, fish species?
3) What is the mode of survey administration (e.g., will the instrument be computerized to allow for better edits during administration?)
4) Who is the survey obtaining information about (e.g., what is the population of interest?)
5) How will the survey data be used (e.g., will data be used to compare with national data or data from other surveys?)
6) What are the planned data preparation methods (e.g., would items be better suited for open-ended responses or close-ended response categories?)

In summary, an evaluation of the survey instrument must be done in concert with a thorough understanding of all study objectives and a point-by-point review to determine, at each step of the process, whether the best approach has been chosen. If it is necessary to make compromises for reasons such as budget resources, limited time, or other factors, then the trade-offs must be carefully considered and the developers must ensure that survey objectives are still being met in the best possible way, weighing all factors.

Specific Comments

1) Introduction: What is the basis for assuming that the survey will take 15 minutes. Pilot testing should be done to determine survey time given different possible levels of complexity. Respondent time/effort burden should be evaluated to accurately characterize survey completion time. It is important that interviewees be given an accurate estimate of the time they will be asked to commit to.
2) It is unclear how the first table corresponds to the survey questions. For example, where are questions 1A, 1B, and 1C? Why does a "no" answer to Q2 take you to #4?
3) Q1: Clarify that if the oldest male or female is not available that survey will continue with other family members. This question asks for two data items at once a) Are you over 18 years of age and b) Are you the oldest person in the household. Ask separate questions for each data item.
4) It is unclear whether the survey will be administered via mail, phone, or internet. The structure of data entry tables and instructions will need to be much clearer if an individual is filling out the survey without assistance.
5) Q2: While is important to establish whether the respondent is a fish consumer or non-consumer, it might also be helpful to know if someone is an angling consumer vs a non-angling consumer. Therefore, including a question on whether they fish in Idaho water and consume the fish they catch might be helpful (there is one question at the end about having a fishing license; would this be used to infer that they fished and ate the fish they caught?).
6) Q3: The frequency of fish consumption is a key part of the NCI method. The fixed frequencies specified in this question may unduly limit an accurate description of frequency of fish consumption. Consider a more flexible approach to deriving frequency (e.g. We're interested in finding out how frequently you consume fish on a long term basis. You may specify how frequently you consume fish on either a weekly, monthly, or yearly basis. PICK TIME INTERVAL, PICK FREQUENCY). If categories are retained, then options "a" and "c" will be difficult to quantify unless assumptions are made that will introduce biases.
7) Q4: What are the prompts for this question? Prompts generally should be provided along with each question. It will be very awkward for the interviewer, let alone an untrained and unassisted interviewee, to move back and forth through the survey forms to find prompts.
8) Q5: This may vary based on when it is asked and how people think about meals within the last 24 hours. May want to consider anchoring or asking about last day.
9) Q6: Is there any point at which species ID photos should be used to help the respondent?
10) See typo in Note between Q6 and Q7 (POERTION should be PORTION)
11) Q7 and others: It appears that a prompt will be developed that interviewers can read if necessary. However, better (and more standardized) data will be obtained if these prompts are included within the question read to all respondents.
12) Q7: This question should be subdivided into a question about source and a question about whether or not fish were caught in Idaho waters. It is possible that fish consumed in restaurants or purchased in grocery stores could have been caught in Idaho waters.
13) Q7/Q12/Q19/Q24: Consider use of the simplest vocabulary possible to obtain information (e.g. get versus acquire). Depending upon education, some respondents may not understand acquire.

14) Q6/Q11/Q18: Bracketed text – why does this only ask about first of these meals? Again this may vary depending upon when it is asked if fish consumption is related to meals.
15) Table on pg. 9: # of portions eaten – are each of these time periods meant to be mutually exclusive (e.g., week not inc. last 24 hours, month not inc. last week, etc.)? The series of questions starting with Q24 leads one to think that. Difficult concept for the respondent.
16) Q9: Asking the respondent to recall meals over the past week is a difficult cognitive task. Asking for detailed information about fish eaten at each meal will likely lead to recall bias.
17) There need to be better links associating specific questions and points where information should be entered in the data tables. It will be very awkward for the interviewer, let alone an untrained and unassisted interviewee, to move back and forth through the survey forms to find prompts.
18) The frequency of consumption categories in the data tables are incongruent with the nature of the survey. The survey collects information for the past 24 hours and preceding week of consumption. Frequencies such as portions per month and number of portions per year don't make sense, though they might be frequency categories for reports derived from the survey.
19) Q13: Characterization of portion size remains an issue. Further work needs to be done to describe the utility of various household objects to characterize portion size. Questions about portion size – the size codes (e.g., cards, checkbook) do not include thickness. Checkbook is not typically used. Again, there are standardized ways of obtaining portion sizes.
20) Q14: What are "other members" and "other individuals"? This is unclear and inconsistent. Suggest using 'household members', or simpler 'people living at this address'. Respondents tend to forget about non-family members living at the same address.
21) Q15: It is unclear that for information collected by proxy, that fish consumption information can be associated with specific aspects of the respondent (e.g. age, gender, and body weight). How will consumption information be linked to specific household members? Would recording the first name be of utility? Body weight, gender, and age information should also be recorded for each individual in a household for which consumption information is obtained.
22) Q16 to 21 don't seem to clearly identify the amount of food consumed on a per person basis.
23) Q17: Should this exclude the last 24 hours like question 9? Or should this be more like Q5? Q17 should be deleted here because it is repeated as Q22. Q16 through Q20 cover the 24 hour period prior to the survey (thus, Q17 is out of place). Q22 covers the week prior to the survey.
24) If using the primary respondent to obtain information about others in the household is retained, then it should be determined whether or not that individual is generally responsible for food preparation in the household. It would be preferable if individuals knowledgeable about household food preparation were queried about consumption by others in the household. Asking the respondent to report fish consumption for other household members will result in reporting bias. It's unlikely for someone other than perhaps a parent of a very young child to know everything that another HH member consumed during the past week - particularly since this also would include food

consumed outside of the home. It is advocated that proxy information only be recorded for young children residing in the household and that adults answer for themselves.

25) Q20 is unclear. Asking another individual to report on another's fish consumption greatly reduces the accuracy of the data acquired.
26) Q25 is unclear. Asking another individual to report on another's fish consumption greatly reduces the accuracy of the data acquired.
27) Q26-28, clarify that individuals can select more than one item from each list.
28) Comment on the weekly recall portion: It seems to me that data should be recorded using a meal as the unit of interest.
29) Q27: Additional suggested response categories: 1) I don't like fish; 2) I am limiting consumption because I am pregnant and am concerned about chemical contamination.
30) Q30: Ethnicity questions should consider how to address mixed race. Consider allowing multiple codes to allow individuals to more completely characterize their ethnicity. This question does not conform to approved OMB race/ethnicity questions. Hispanic should be a separate question.
31) Q31: Assuming that an individual may provide multiple answers for ethnicity, Change this question to: "If you have answered that you are of Native American ancestry, are you a member of any of the following Idaho tribes:"
32) Q32: If income categories are obtained, consider how the match income categories used by other surveys?
33) Q32 and Q33: What is the basis for the ranges used to characterize age and body weight? Why not ask for specific values for age and body weight? Specific data will allow survey information to be binned appropriately for comparison with other survey results.
34) Consider simply asking what species of fish were consumed on a meal specific basis, prompting the interviewee with species names and potentially species photos. Once the species is recorded using a standardized identifier, consumption of particular groups can be derived from the species level data.
35) Again, for each fish meal, identify where the fish were obtained. Consumption of fish by source can be derived from aggregated individual source data.
36) Consumption of tuna should be clarified.
37) Are there any fish preparations (e.g. clam chowder, etc.) that should be recorded? By identifying an approximate weight of seafood per unit volume, it is possible to record the amount of seafood consumed in these preparations. What will be your portion size descriptors for crab, squid, shrimp, and clams?
38) For the data tables, if you are determining the parts of fish consumed and ascertain this on a group basis (e.g. All Other Idaho pan fish), it does not allow for variation in parts consumed across species. This could be eliminated by simply inquiring about the parts consumed on a meal specific basis. Also, we didn't see questions asking about the parts of the fish eaten to support obtaining this information for the table.

Modified Data Entry Table:

Primary Respondent	Age:	Gender:	Weight:	Income:

24 Hour Recall

Eating Event (meal or snack) #	Species or Preparation	Portion Model	# of Portions	Cooking Method	Source (grocery, restaurant, gift, personally harvested	Fish resident in Idaho? (Yes/No)
1						
2						
3						

Six Days Preceding 24 Hour Recall

Meal #	Species or Preparation	Portion Model	# of Portions	Cooking Method	Source (grocery, restaurant, gift, personally harvested)	Fish resident in Idaho? (Yes/No)
1						
2						
3						
4						
5						
6						

Meal #	Species or Preparation	Portion Model	# of Portions	Cooking Method	Source (grocery, restaurant, gift, personally harvested)	Fish resident in Idaho? (Yes/No)
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						

Modified Data Entry Table:

Note: Multiple copies of this sheet would be used depending on the number of individuals in the family

Household Member #	Age:	Gender:	Weight:	Income:

24 Hour Recall

Eating Event (meal or snack) #	Species or Preparation	Portion Model	# of Portions	Cooking Method	Source (grocery, restaurant, gift, personally harvested	Fish resident in Idaho? (Yes/No/Unknown)
1						
2						
3						

Six Days Preceding 24 Hour Recall

Meal #	Species or Preparation	Portion Model	# of Portions	Cooking Method	Source (grocery, restaurant, gift, personally harvested)	Fish resident in Idaho? (Yes/No/Unknown)
1						
2						
3						
4						
5						

Meal #	Species or Preparation	Portion Model	# of Portions	Cooking Method	Source (grocery, restaurant, gift, personally harvested)	Fish resident in Idaho? (Yes/No/Unknown)
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						
16						