

# **Recommended Study Design for a Survey to Evaluate the Effectiveness of Mississippi Delta Fish Advisories**

**Final Report**

**June 29, 2007**

Prepared for

**The Office of Water, Office of Science and Technology  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460**

# 2

## Methodology Used to Develop the Survey Instrument

This section describes the methodology used to develop the survey instrument. The final survey instrument is included as Appendix A.

---

### 2.1 SURVEY INSTRUMENT DESIGN

RTI led the development of the draft survey instrument and survey methodology with assistance from Dr. Joanna Burger, Rutgers State University, and Dr. Steven Bradbard, FDA. The workgroup that was developed and organized as part of this study also contributed to the development of the draft survey instrument and survey methodology by reviewing drafts of the survey instrument and survey approach. Table 2-1 provides a list of the workgroup members, their affiliation, their areas of expertise, and their role on the study. Jeff Bigler, the EPA WAM and EPA's National Advisory Program Manager, and Henry Folmer, Advisory Program Manager from MDEQ, served as co-chairs of the workgroup. Teleconferences were conducted with the workgroup approximately every 2 weeks during the 3-month project to obtain their comments and feedback on drafts of the survey instrument and survey methodology.

**Table 2-1. Description of Workgroup Members**

<b>Workgroup Member</b>	<b>Area of Expertise and Role</b>
Jeff Bigler, EPA WAM and National Program Manager for the Fish and Wildlife Contamination Program	Served as co-chair of the workgroup and overall EPA Work Assignment Manager for the project. Also National Program Manager for EPA's National Fish and Wildlife Contamination Program and national technical expert on matters related to assessing health risks and benefits of fish consumption.
Henry Folmer, Mississippi Department of Environmental Quality	Served as co-chair of the workgroup and is the Advisory Program Manager.
William Gross, EPA	Over 25 years of experience working for EPA. Worked with State and university personnel in the South in recruiting and mentoring students.
Steve Goff, Mississippi Department of Environmental Quality	Yazoo River Basin Coordinator with many connections in the Mississippi Delta. Arranged the Indianola meeting and recruited locals for the cognitive interviews.
Steven Bradbard, FDA Center for Food Safety and Applied Nutrition	Consumer studies specialist and psychologist, including experience with focus group testing and survey research. Assisted in developing the survey instrument and methodology and led the cognitive interview testing of the draft instrument.
Pat Cunningham, RTI	Authored national guidance on protocols for creating fish advisories; authored report on advisories in Puerto Rico; active in fish advisory community for 10 years. Provided expertise on fish consumption advisories.
Joanna Burger, Rutgers State University	Survey specialist with experience developing questionnaires and conducting interviews related to fish advisory effectiveness. Has published several articles on the topic. Served as expert consultant and assisted in developing the survey instrument and methodology.
Sheryl Cates, RTI	Specializes in consumer behavior research, risk communication, and survey research. Has published several articles on consumer behavior related to food safety. Led the development of the survey instrument and methodology for review by the workgroup.
Catherine Viator, RTI	Assisted in developing the survey instrument and methodology for review by the workgroup.
Joan Wesley, Jackson State University	Professor of urban and regional planning with recent research experience on environmental justice related to landfills in Mississippi. Provided expertise on culture and socioeconomic conditions in the Mississippi Delta to improve the survey instrument.
Ralph Brown, Brigham Young University	Sociologist with survey and analysis experience related to subsistence fishing in the Mississippi Delta. Has published articles on subsistence economies in rural Mississippi Delta communities. Provided information on best methods for engaging the Delta fisher community.
Barbara Brooks, Mayor of Leland, Mississippi	Community leader in Mississippi Delta who helped recruit volunteers for the cognitive interviews.
Glen Donald, Reverend of Mississippi Delta church	Community leader in Mississippi Delta.
Gary Lucas, Mississippi Department of Wildlife and Fisheries	Community leader in the Mississippi Delta area who helped identify lakes and streams in the advisory area for the survey.
Camille Heaton, RTI	Served as the RTI Work Assignment Leader (WAL) for the study.
Jenn Schimek, RTI	Provided workgroup support including preparation of meeting minutes and reminders.

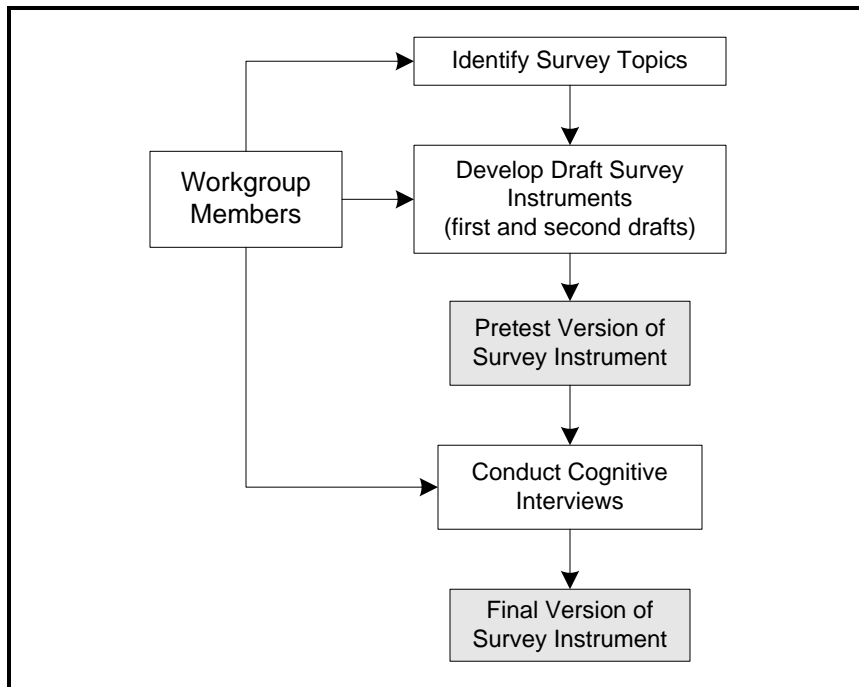
Before developing the survey instrument, RTI conducted a literature review, which included

- research conducted by Dr. Burger and other researchers who have experience conducting fish consumption and fish advisory surveys;
- research on risk communication presented at the EPA Fish Forums; and
- sociological research conducted in the Mississippi Delta by Dr. Ralph Brown, Brigham Young University.

Appendix B summarizes the findings from the literature review.

Figure 2-1 illustrates the methodology RTI used to develop the survey instrument. With input from workgroup members, RTI initially developed a list of topics or data needs for the survey. Table 2-2 identifies the types of information collected in the survey. Using these data needs as a guideline, RTI developed appropriate survey questions and response items to address each data need.

**Figure 2-1. Methodology Used to Develop the Survey Instrument**



RTI developed a first draft of the survey instrument that was reviewed by the workgroup and subsequently revised based on comments provided during a teleconference with the

**Table 2-2. Types of Information Collected in the Survey**

---

- A. Fishing Practices
    - Frequency and reasons for fishing
    - Dependency on fishing for food source
    - Result of fishing (give away, sell, consume)
  - B. Fish Consumption Practices
    - Frequency of wild-caught fish consumption
    - Quantity of fish consumed per meal
    - Method of fish preparation and cooking
  - C. Determine Awareness of the Advisory
    - Perception of safety of wild-caught fish from the Mississippi Delta
    - Awareness of advisory
  - D. Attitudes toward Advisory—Respondents Not Aware of Advisory
    - Importance and likelihood of following advisory
    - Preferences for best sources of information for advisory
  - E. Awareness of and Attitudes toward Advisory—Respondents Aware of Advisory
    - Source of information on advisory
    - Usefulness of brochure, toll-free hotline, and Web site
    - Importance of following advisory
  - F. Self-Reported Changes in Fishing Practices—Respondents Aware of Advisory
    - Changes in frequency and location of fishing in the Mississippi Delta
    - Changes in species of fish that are caught
  - G. Self-Reported Changes in Fishing Consumption—Respondents Aware of Advisory
    - Changes in amount or size of wild-caught fish consumed from the Mississippi Delta
    - Substitutes for fish consumption
    - Changes in method of preparing and cooking wild-caught fish
    - Changes in fish consumption practices for pregnant women and children
    - Frequency of following advisory recommendations
  - H. Demographics
    - Education, race, marital status, level of education, and household income
    - Possession of Mississippi sport fishing license
  - I. Awareness of National Advisory on Mercury in Fish and Shellfish
    - Perceptions of health benefits and risks of seafood consumption
    - Awareness of types of seafood with mercury risks
    - Awareness of population groups included in mercury advisory
- 

workgroup. RTI then revised the second draft of the survey instrument based on comments provided by the workgroup during a teleconference. As described in the following section, this version of the survey instrument was tested by conducting cognitive interviews with nine individuals who live in the advisory area.

## 2.2 COGNITIVE INTERVIEWS

The workgroup conducted nine cognitive interviews with individuals from the Mississippi Delta to test the draft survey instrument.

The purpose of the cognitive interviews was to identify any questions that were difficult or confusing to respondents, to identify any terminology that was unclear to respondents, and to assess whether respondents interpreted the questions as intended. Members of the workgroup who live in the advisory area identified and recruited individuals to participate in the cognitive interviews. The interviews were conducted at the Capps Center in Indianola, Mississippi. Respondents were served snacks and brunch as a token of appreciation for their participation.

Five members of the workgroup conducted the cognitive interviews. Other workgroup members observed the interviews and took notes. Dr. Steven Bradbard conducted a short training session to provide information on how to conduct the cognitive interviews. Nine cognitive interviews were conducted, each lasting about an hour. The interviewees included five male and four female respondents and two white and seven African American respondents.

Key findings from the cognitive interviews include the following:

- Overall, most respondents found the survey interesting and relatively easy to complete.
- Respondents had difficulty answering a few questions. Based on feedback from respondents, these questions were clarified in the final survey instrument.
- Some of the questions were redundant and thus deleted from the final survey instrument.
- The wording of some questions was not very conversational in tone, so these questions were revised in the final survey instrument. Additionally, the language was simplified where appropriate; for example, changing “consumed” to “eat.”
- Some questions on attitudes and perceptions of the advisory were not properly worded if the respondent was not aware of the advisory. Thus, the survey instrument was revised to include separate sections for respondents who were aware and not aware of the advisory and tailored the wording of the questions as appropriate.
- The survey instrument was revised to instruct the interviewer to show a picture of the advisory to the

interviewee after his or her awareness of the advisory has been determined.

Additionally, RTI conducted two mock interviews with RTI staff to estimate respondent burden. For these interviews, an interviewer read the questions as if conducting a real interview, and an RTI staff person pretended to answer the questions. Based on these mock interviews, respondent burden is estimated at an average of 30 minutes per response.

RTI revised the survey instrument to incorporate the findings from the cognitive interviews. A copy of the final survey instrument is included as Appendix A. Appendix C provides a copy of additional materials used during the cognitive interviews, including (1) pictures of the fish species included in the advisory, (2) cards that respondents were instructed to refer to during the interview, and (3) a map of the Mississippi Delta indicating the advisory area.