NEWSCAST
The Newsletter of the Marine Recreational Information Program
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MARINE RECREATIONAL INFORMATION PROGRAM

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IN THIS ISSUE

The Marine Recreational Information Program, or MRIP, is the way NOAA Fisheries is counting and reporting marine recreational catch and effort. It is a customer-driven initiative that not only produces better estimates, but does so through a process grounded in the principles of transparency, accountability and engagement.

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Effort Surveys: Using License and Registration Data in Sample Frames

This is the second in a series of articles looking at improvements we're making to our surveys of recreational fishing effort (the number of trips anglers take during a reporting period) for the Atlantic and Gulf coasts.

Overview

Along with improvements we have implemented to our catch surveys, MRIP has been conducting a series of studies to evaluate and make improvements to our complementary effort surveys. As we discussed in our last issue, we are seeking to reduce the potential for bias, while improving the efficiency and the timeliness of effort surveys. Potential sources of bias in surveys include:

- **Undercoverage**, which occurs when some members of a population - in this case recreational fisherman - are not included in a survey sample frame (the pool of people we select for surveying). Undercoverage is an increasing concern for Random Digit Dialing (RDD) telephone surveys, which generally include only landline telephone numbers.
- **Nonresponse**, which occurs when people who are included in a survey sample do not respond. This is an increasing concern for telephone surveys, regardless of the topic or target audience.
- **Measurement error**, which occurs when individuals who respond to a survey provide inaccurate answers to survey questions.

In this issue, we look at the role of recreational saltwater license and registration programs in helping to improve the targeting of anglers for our surveys.

Using License and Registration Data as a Sample Frame

In an ideal world, once mandatory licensing and registration were in place, surveying anglers would be a simple matter of randomly selecting names from a database of current registrants and contacting them to collect information about recreational fishing activity. Through the following series of studies, however, we learned that in reality the process is much more complex:

- **Angler License Directory Telephone Survey:** Working collaboratively with the Gulf States Marine Fisheries Commission, the

Gulf Coast states, and the North Carolina Division of Marine Fisheries, we designed and tested telephone surveys that selected anglers directly from state databases of licensed anglers. We conducted the tests in North Carolina, Florida, Alabama, Mississippi, and Louisiana and found it was far more efficient reaching anglers by using the licensed angler databases. We were also able to contact anglers who lived outside of coastal counties. However, exemptions to state licensing requirements and unlicensed fishing activity, as well as incomplete and inaccurate contact information for individuals included on the license databases, created gaps in the coverage of the survey resulting in poor response rates.

- ***Conclusion:*** *Although more efficient, a telephone survey that relies exclusively on an angler license directory as a sample frame does not adequately cover the recreational angling population due to unlicensed fishing activity.*

- **Dual-Frame Telephone Survey:** Since neither RDD nor a license directory provided complete coverage of the total population of recreational fishermen when used exclusively, MRIP developed an estimation design that used both methods. This is called a "dual-frame design" and was able to reach:
  - Unlicensed anglers with landline phones who reside in coastal counties, AND
  - All licensed anglers, regardless of where they live.

  We found that although this design increases the coverage, it still cannot reach unlicensed anglers who do not have landline telephones, nor can it reach unlicensed anglers who live outside of coastal counties. A second challenge with the design is that it is difficult to identify respondents who could be selected from both sample frames. Misidentifying respondents who overlap with both frames results in inaccurate sample weighting, and can bias survey estimates. Finally, response rates to the telephone surveys remained low.

  - ***Conclusion:*** *A telephone survey that uses both an angler license database and a coastal county RDD sample frame does not adequately cover the angling population and is susceptible to both non-response bias and bias resulting from inaccurate weighting of sample data.*

- **Dual-Frame Mail Survey.** Given the growing challenges associated with telephone surveys, we began testing the feasibility of mail survey designs. Again, by using a dual-frame approach, we sampled anglers from state license databases and residential address frames maintained and made commercially available by the U.S. Postal Service.

  We found that sampling from the address frame provides nearly complete coverage of the entire U.S. population. We also found that response rates to the mail survey were considerably higher than any of the telephone surveys we conducted.

- ***Conclusion:*** *A dual-frame mail survey provides many benefits over the telephone survey approach, including better coverage and higher response rates.*

Results from the dual-frame mail survey were promising; the design resulted in greater coverage and higher response rates than telephone survey designs, thus reducing the potential for bias. In our next issue, we will discuss how we followed up on these findings.

In the Next Newscast:

What's the best way to reach anglers in the digital age?

Ask MRIP

Do you have questions about MRIP or our surveys? Ask us and we'll answer your question in an upcoming newsletter. If you've got a question about MRIP that you'd like answered, please e-mail Leah Sharpe at Leah.Sharpe@noaa.gov.