



NEWSCAST

The Newsletter of the Marine Recreational Information Program

**NOAA
FISHERIES**



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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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Our New Catch Survey - Balancing the Tradeoffs

MRIP was built on the mutual understanding that there would be numerous tradeoffs to consider as we improved our data collection, estimation and reporting methods. Since the beginning of the program, the MRIP team of NOAA scientists, state partners, independent experts and stakeholders within the recreational fishing community has worked to make sure the science behind our survey designs is as sound as possible. Achieving this goal diverts resources from other compelling needs - such as implementing steps to increase timeliness, or increasing sample sizes to improve precision, of catch estimates - but it is a necessary step in producing high-quality, trusted catch estimates that can be used to effectively manage our ocean resources.

At the same time, the management of our nation's fisheries is an ongoing process that requires a constant stream of data. A case study in working together to balance all of the competing interests at play occurred this summer with the rollout of our new angler catch survey.

The Improved Catch Survey Design

This year, the Marine Recreational Information Program rolled out an improved angler catch survey on the Atlantic and Gulf coasts. The survey includes key improvements that will eliminate sources of potential bias that could affect estimates of total catch. With the new survey design:

- Samplers conduct interviews during all parts of the day, including at night.
- Samplers are given assignments to stay at a specified location, regardless of the amount of fishing activity; they no longer have the flexibility to visit alternate sites or vary the amount of time spent at an assigned site.
- Each scientifically selected sampling assignment includes:
 - A "cluster" of one to three specific fishing sites for samplers to visit;
 - the order in which to visit the sites in that cluster;
 - a single fishing mode (such as boat, shore or for-hire) to sample; and
 - a specified six-hour time interval during which to conduct the assignment.

Implications of the Improved Design

These improved survey protocols are built around the recognition that the *primary sampling unit* for which we need to collect data is a specific

fishing location during a specified time block, or a "site-day." Our new survey design maximizes the number of randomly selected site-days we sample with available resources. This means that the estimates we produce are of a significantly *higher quality* than previous estimates. However, on the ground it also means that there's a good chance we will sample *fewer anglers per hour* than we did under the old design.

For our partners who use these numbers to manage fisheries, this creates two challenges:

- The first is one of perception. Because a sampler is required to stay at a site regardless of the amount of fishing activity, and can only sample in an assigned mode, it can give the appearance of a sampler "doing nothing" or "ignoring" trips that come in. For instance, if one of our highly trained samplers is at a marina assigned to sampling private boats, they *cannot* opportunistically choose to collect data from anglers who fished on any charter boats that come in, even if there is virtually no private boat activity. Only catch data collected on charter boat mode assignments can be used for accurate estimates of average charter boat angler catch rates. Use of any data obtained opportunistically on assignments selected specifically for private boat angler interviewing would introduce potential for bias.
- The second challenge relates to changes in the number of interviews we conduct. Because the primary objective under the new sampling design is to maximize *the number of sampled site-days that yield at least one angler trip interview*, there is no guarantee that we will be able to match the total numbers of anglers intercepted or fish measured under the old sampling design. The bottom line is that the new sampling design ensures higher quality data (i.e. there is less potential for bias) but can result in smaller total quantity of data collected, while the old sampling design emphasized quantity at the expense of quality. However, as we work toward optimizing the probabilities with which sites and time blocks of different activity levels will be selected for sampling, we should be able to significantly increase both the proportion of successful assignments and the average productivity of those assignments (as measured by the average number of trip interviews and fish measurements per assignment).

Balancing the Tradeoffs

Obviously, both of these concerns are valid. Working together over the summer, the various parts of the MRIP team have been able to develop solutions that addressed the issues raised while still ensuring the integrity of the data. Currently, two key needs for data users are being addressed:

- **We've updated the way sampling assignments are created** to increase the probabilities that both higher activity sites and higher activity time intervals will be selected for any given site assignment. Because we know the probability of any particular site being selected, these changes do not introduce bias into the design. Clusters of lower

activity sites and lower activity time intervals are still included in the sampling with lower probabilities of selection. As a result of these changes, our state partners are seeing an increase in the number of completed interviews per sampling assignment, particularly in the shore and private boat modes.

- **Based on the experience of samplers on the ground, we are honing the ratings that indicate the level of fishing activity at each site.** More accurate "pressure ratings" will further ensure that the new model we are using to make sampling assignments - which has a higher probability of selecting a high-activity site - will more frequently select sites where more interviews can take place. As always, there will be a certain amount of sampling at low-activity sites or time period. Again, this will not introduce bias because we know the probability of any given cluster being selected, which means we can appropriately weight the data we gather.

For the future, the MRIP team is also exploring such changes as altering time blocks used as the basis for sampling assignments to better reflect the changes in fishing activity that take place at a site over the course of the day.

A Constantly Evolving Program

Fishing habits, technology, management needs and all other factors that affect fishing activity are constantly evolving. Through a flexible approach that can meet the demands of fishery management as well as the rigors of scientific scrutiny, MRIP will continue to evolve as well.

In the Next Newscast:

Release of the 2013 MRIP Implementation Plan

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.