

MRIP FAQ

Introduction

This document is intended to serve as a living resource for Marine Recreational Information Program staff, team members, and partners. It answers questions raised at field interviews, listening sessions, and recreational fishing roundtables, as well as questions suggested by members of the program's Communications and Education Team. Most of these topics are discussed in more detail on [the program's website](#). Where necessary, "Learn More" links are included with each answer.

This document will be updated as information changes or new questions arise. NOAA Fisheries staff may access the file through [Google Drive](#). Please contact Catherine Krikstan (catherine.krikstan@noaa.gov) with questions, comments, or concerns.

Table of Contents

[Introduction](#)

[Table of Contents](#)

[Private Angler Reporting \(APAIS + FES\)](#)

[How does NOAA Fisheries collect private angler catch and effort data?](#)

[How do the Access Point Angler Intercept Survey and Fishing Effort Survey work together to produce private angler catch and effort estimates?](#)

[What happened to the Coastal Household Telephone Survey?](#)

[Are your new effort estimates reliable?](#)

[Has the transition to the Fishing Effort Survey impacted our understanding of fishing effort?](#)

[How long will the intercept survey take?](#)

[How do interviewers decide where to go?](#)

[What is an interviewer's daily assignment like?](#)

[Will the information I share be traced back to me? Will my responses be shared with law enforcement? Will I get a ticket based on the information I provide?](#)

[Why do interviewers survey anglers who didn't catch any fish?](#)

[Why do interviewers survey anglers who are visiting from out of town?](#)

[Why do interviewers work at sites where fishing activity is low?](#)

[Why does it matter what one angler reports?](#)

[Why should an angler participate more than once?](#)

[Why haven't I ever been interviewed or surveyed by the Fishing Effort Survey?](#)

[Why are you collecting demographic information?](#)

[How do these surveys benefit me?](#)

[What can I do to help?](#)

[For-Hire Reporting \(Captains and Crew\)](#)

[How does NOAA Fisheries collect for-hire catch and effort data?](#)

[How do each of these for-hire data collection programs work together to produce for-hire catch and effort estimates? Why should I participate in them all?](#)

[Do you collect data from both state and federally permitted vessels?](#)

[Why are my customers being interviewed when I know more about the fish they caught?](#)

[I have to participate in a lot of surveys. How do I know my catch or effort information isn't counted more than once?](#)

[Data Collection](#)

[Why are you collecting this data?](#)

[How does a field interviewer decide where to go?](#)

[Why do field interviewers survey anglers who didn't catch any fish?](#)

[Why do field interviewers work at sites where fishing activity is low?](#)

[How do you collect information from anglers at sites field interviewers can't access?](#)

[How do you measure effort from anglers that don't live in coastal states?](#)

[What sample size is needed to produce accurate estimates?](#)

[How can a small number of interviews reflect the catch of the entire recreational fishery?](#)

[How many angler trips do you intercept in \[state or region\] each year?](#)

[How many mail surveys are returned from \[state or region\] each year? How does this compare to historical Coastal Household Telephone Survey response rates?](#)

[Why aren't you collecting fishing data the same way other government agencies collect hunting data?](#)

[Why aren't you asking anglers to report their fishing data through a mobile app?](#)

[Why do you keep changing your data collection methods? When are these changes going to stop?](#)

[How are state-collected data \(e.g., through LA Creel, Tails n' Scales, Snapper Check, and the StateReef Fish Survey\) incorporated into your estimates?](#)

Data Management

[Who manages the data?](#)

Data Quality

[What are the credentials of your field interviewers?](#)

Estimation

[How do you turn raw data into estimates of total recreational catch?](#)

[How do you produce reliable catch estimates of rarely encountered species, or species with short seasons?](#)

[What is calibration, and why is it necessary?](#)

Understanding the Estimates

[How can we access your estimates?](#)

[Are your estimates reliable?](#)

[What is a PSE? Why are PSEs greater than 50% a concern?](#)

Fisheries Management

[How will the information I share impact recreational fishing regulations?](#)

[Doesn't commercial fishing have a greater impact on fish stocks?](#)

Misc.

[What do your estimates say about recreational fishing in the United States?](#)

Private Angler Reporting (APAIS + FES)

How does NOAA Fisheries collect private angler catch and effort data?

The Access Point Angler Intercept Survey collects catch data from anglers returning from shore, private boat, and for-hire fishing trips. Specially trained field interviewers conduct the APAIS at marinas, boat ramps, beaches, piers, and other public fishing access sites from Maine to Mississippi. Field interviewers, also known as samplers, collect information about the number and species of fish caught, kept, and released; the length and weight of individual fish kept; and other details about the fishing trip (e.g., mode fished, area fished, gear used, etc.).

From Maine to Virginia, anglers fishing from both private and for-hire boats targeting tuna, sharks, billfishes, swordfish, and other offshore recreational species may also be asked to report catch information to the Large Pelagics Survey.

The self-administered mail Fishing Effort Survey collects effort data from residential households in Hawaii and along the Atlantic and Gulf coasts. It is designed as a weather and outdoor activity survey in order to improve response rates. It collects information about the number of shore and private boat fishing trips taken by each member (up to five) of the sampled household, regardless of whether they fished during the period of time the survey asks about.

How do the Access Point Angler Intercept Survey and Fishing Effort Survey work together to produce private angler catch and effort estimates?

Generally speaking, our estimation process involves expanding catch rate by effort to determine total recreational catch. The Access Point Angler Intercept Survey and Fishing Effort Survey produce different components of this equation. Information collected through the APAIS also allows us to account for fishing effort from anglers who live in non-coastal states, and therefore don't receive the FES, as well as the for-hire vessels that are not in our directory, and therefore can't be contacted by the For-Hire Survey.

What happened to the Coastal Household Telephone Survey?

The Coastal Household Telephone Survey suffered from gaps in survey coverage and errors in participant screening. As households abandoned landlines for mobile phones, these [shortcomings](#) grew worse, and the survey began to underestimate fishing effort. The Fishing Effort Survey replaced the CHTS in 2018 and provides a more accurate and efficient way of estimating recreational fishing activity. The FES reduces the potential for reporting and recall errors, provides nearly complete coverage of coastal state residents, and achieves a more representative sample than the telephone survey.

Are your new effort estimates reliable?

Our data collection and estimation methods are statistically rigorous, scientifically sound, and subject to peer review. When we compare estimates produced by the Fishing Effort Survey with external data—such as rod and reel imports, outboard engine sales, registered boats, and other organizations' estimates of fishing participation—we see similar trends.

Has the transition to the Fishing Effort Survey impacted our understanding of fishing effort?

While Fishing Effort Survey estimates are much higher than Coastal Household Telephone Survey estimates, this does not mean there are more people fishing. Instead, our research shows our new survey better measures the amount of fishing already taking place.

Transitioning to the Fishing Effort Survey required us to convert historical catch estimates to match the new survey's design. Because the Coastal Household Telephone Survey underestimated fishing effort, [calibrating historical effort estimates](#) raised them across the time series. For fish stocks assessed to date, this increase has generally resulted in higher estimates of past abundance. Regional fishery management councils and interstate marine fisheries commissions are working to determine whether and how these increases will change resource allocations between sectors or among states.

How long will the intercept survey take?

Field interviewers are trained to make the Access Point Angler Intercept Survey quick and easy to complete. Most angler interviews only last a few minutes.

How do interviewers decide where to go?

Field interviewers are assigned to visit [public fishing access sites](#) during specific times of day. We use standard statistical methods to select sites that will produce a representative sample of fishing trips.

What is an interviewer's daily assignment like?

Field interviewers conduct surveys during all times of day, and work the entire length of their six-hour assignment. This means you may see an interviewer at night, or working at a site where fishing activity is low.

Each sampling assignment includes a date, a time interval, one or two sites that should be sampled, and the order in which these sites should be visited.

Will the information I share be traced back to me? Will my responses be shared with law enforcement? Will I get a ticket based on the information I provide?

All interviews are strictly confidential, and none of the information anglers provide will be linked to their personal identities. Field interviewers are employed by state marine fisheries agencies, and play no role in law enforcement.

Why do interviewers survey anglers who didn't catch any fish?

Our sample of recreational anglers needs to be representative of all saltwater fishing trips, regardless of how many fish, if any, were caught. If we only sampled trips where anglers caught fish, our catch estimates would be biased (and likely, too high).

Why do interviewers survey anglers who are visiting from out of town?

You may not live here, but you are fishing here, and impacting local fish stocks. Interviewing both resident and visiting anglers ensures our sample is representative of all saltwater fishing trips. It also gives us the information we need to adjust the effort data we collect through our mail survey of coastal households. In other words, if we didn't use the Access Point Angler Intercept Survey to gather information from out-of-state residents, we wouldn't be able to account for the fish those anglers catch or the trips they take.

Why do interviewers work at sites where fishing activity is low?

Strict adherence to survey design is critical to collecting statistically sound data. This means field interviewers must follow their predetermined schedule until their work for the day is complete.

While field interviewers do not work when the weather poses a threat to their safety, they do work when the weather is bad or when fishing activity is low. Documenting low-activity sites gives us a complete picture of what's happening—or not—on the water.

Why does it matter what one angler reports?

The success of our surveys relies on the participation of the people we sample. Because it's not practical or possible for us to intercept the millions of recreational anglers fishing along the coast, each angler trip we do sample may represent dozens, hundreds, or even thousands of trips.

Why should an angler participate more than once?

Even if you've been intercepted before, the unique characteristics of your most recent fishing trip haven't been incorporated into our data. Just like the weather changes from day to day, no two fishing trips are alike, and our survey is designed to capture those differences.

Why haven't I ever been interviewed or surveyed by the Fishing Effort Survey?

With millions of fishing trips taking place each year, it's not possible to intercept every trip that occurs or to gather information from every angler who fishes. But because we take steps to ensure our statistically rigorous samples are representative¹, we don't have to survey each of the millions of saltwater anglers in the nation to accurately estimate recreational catch or effort.

Why are you collecting demographic information?

Questions about age, gender, race, and ethnicity help us determine whether our survey sample is representative of the population from which we're collecting data. By comparing our data to population benchmarks provided by the U.S. Census Bureau, we can determine whether our samples are over- or under-representing any major population group and apply statistical adjustments, where necessary. Including questions about demographic characteristics is a common survey practice, and all federal surveys are required, by law, to be reviewed and approved to ensure demographic questions are appropriately asked.

How do these surveys benefit me?

When you share information about your fishing activity, you're making a vital contribution to fisheries science and management. Your participation in our surveys helps us produce more accurate estimates of recreational catch. These estimates help scientists and managers monitor the health of fish stocks and support sustainable fishing opportunities now and for generations to come. Choosing not to answer questions about your fishing activity is like choosing not to vote: you're removing your voice from a process that directly affects you.

What can I do to help?

If you're asked to participate in a fishing survey, we encourage you to report complete and accurate information. This will help us produce more accurate estimates of marine recreational catch, which will in turn help scientists and managers monitor the health of fish stocks and support sustainable fishing opportunities now and for generations to come. You can also encourage other anglers to participate in recreational fishing surveys, voice your support for state, regional, and national data collection programs, or get involved in fisheries management through your state marine fisheries agency, interstate marine fisheries commission, or regional fishery management council.

¹ "Like what?" Constructing comprehensive sample frames, using probability sampling methods.

For-Hire Reporting (Captains and Crew)

How does NOAA Fisheries collect for-hire catch and effort data?

The Access Point Angler Intercept Survey collects catch data from anglers returning from charter, private boat, and shore fishing trips along the Atlantic and Gulf coasts. (In the Northeast, at-sea APAIS samplers also collect information from headboats. In the Southeast, equivalent data are collected through the Southeast Region Headboat Survey. For more information about the APAIS, see, “How does NOAA Fisheries collect private angler catch and effort data?” above.)

In the same region, the For-Hire Survey collects effort data from for-hire vessels. Respondents—who are the listed points of contact for the charter and headboats on our sample frame²—are asked to report their vessel’s fishing activity for the previous week, and to recount details about each trip (e.g., area fished, hours fished, number of anglers who fished, target species, etc.).

In some cases, for-hire vessels may be asked to participate in additional data collection programs, including:

- The Large Pelagics Survey, which collects effort information from for-hire vessels targeting tuna, sharks, billfishes, swordfish, and other offshore recreational species from Maine to Virginia.
- The Greater Atlantic Vessel Trip Reporting Program, which collects catch and effort information from federally permitted vessels from Maine to North Carolina.
- The Southeast Region For-Hire Electronic Reporting Program, which collects catch, effort, and, in some cases, economic information from federally permitted charter boats from North Carolina to Texas.
- The Southeast Region Headboat Survey, which collects catch and effort information from federally permitted headboats from North Carolina to Texas.

How do each of these for-hire data collection programs work together to produce for-hire catch and effort estimates? Why should I participate in them all?

The Access Point Angler Intercept Survey, For-Hire Survey, Large Pelagics Survey, and Southeast Region Headboat Survey are the primary sources of our for-hire catch and effort information. Data from the Greater Atlantic Vessel Trip Reporting program also inform our

² To be included on the For-Hire Survey sample frame, a vessel must be active, with a known county and state of operation and complete contact information for the vessel representative (i.e., a known vessel identifier and at least one telephone number). On the Atlantic coast, vessels with HMS permits are considered active from June through October, regardless of whether they make for-hire fishing trips.

for-hire effort estimates; when a vessel has participated in both programs, only the vessel's VTR data are included in our statistics³.

Data from the Southeast Region For-Hire Electronic Reporting Program will not inform our recreational fisheries statistics until NOAA Fisheries and our partners have developed a transition plan that includes a method of converting historical estimates to the new reporting program's design. The side-by-side conduct of both data collection programs will give experts time to compare the data collected by each and to develop a calibration model to support this conversion. Full participation in both data collection programs during this benchmarking period will be critical to producing a stable calibration of the historic time series, which will inform stock assessments and management actions.

Do you collect data from both state and federally permitted vessels?

Yes. The For-Hire Survey collects information from all for-hire vessels (i.e., federally permitted vessels).

Why are my customers being interviewed when I know more about the fish they caught?

Even if you've fished alongside your customers, you can't be interviewed with them, because captains and crew are not considered "recreational anglers." However, field interviewers conducting the Access Point Angler Intercept Survey may ask you for permission to speak to your clients, or for assistance determining the area fished.

I have to participate in a lot of surveys. How do I know my catch or effort information isn't counted more than once?

Different surveys collect different pieces of information about your fishing activity, which are used together to estimate for-hire catch and effort. Surveys that collect the same pieces of information use vessel identification numbers to ensure your reports aren't duplicated and your data aren't counted more than once.

Data Collection

Why are you collecting this data?

Collecting information about the number of trips saltwater anglers take and the number of fish they catch, keep, and release helps NOAA Fisheries evaluate the impacts of recreational fishing

³ Because the Greater Atlantic Vessel Trip Reporting program does not collect data from the entire for-hire sector or validate self-reported data through independent observation, the integration of both the VTR program and the FHS is necessary to produce a more complete dataset from which to estimate total recreational catch.

on fish populations and the effectiveness of fisheries management measures. Our estimates of recreational catch are combined with commercial catch data, biological research, and information collected from direct observations of fisheries to help scientists and managers assess and maintain sustainable fish stocks. High-quality catch estimates are fundamental to the health of our ocean resources, the future of recreational fishing, and the millions of lives and livelihoods connected to the sport.

How does a field interviewer decide where to go?

Field interviewers are assigned to visit one or more public fishing access sites during a specific time of day. We use proven, peer-reviewed statistical methods to select sites that will efficiently produce a representative sample of anglers.

Why do field interviewers survey anglers who didn't catch any fish?

Our sample of recreational anglers needs to be representative of all fishing trips, regardless of how many fish were caught. If we only sampled anglers who returned with fish, our catch estimates would be biased (and likely, too high). By interviewing as many eligible anglers as possible, we can gather information that more accurately reflects the fishing taking place.

Why do field interviewers work at sites where fishing activity is low?

If field interviewers only worked during the busiest time of the day at sites with very high fishing activity, our samples would not represent all types of fishing trips. Instead, we need to send interviewers to low-activity and high-activity sites at different times of day to produce a representative sample and a more complete picture of what's happening—or not—on the water. However, we make every effort to optimize our interviewers' time by sampling low-activity sites and low-activity times of day less often than high-activity sites and times.

How do you collect information from anglers at sites field interviewers can't access?

While private fishing access sites are not sampled by field interviewers, fishing trips taken from these sites should be reported by households that respond to the Fishing Effort Survey. This mail survey samples residential households throughout the states in which the Access Point Angler Intercept Survey is conducted, and gathers effort information from anglers regardless of where they fish.

How do you measure effort from anglers that don't live in coastal states?

While the Fishing Effort Survey is only distributed to households in coastal states, the Access Point Angler Intercept Survey is conducted with recreational anglers regardless of where they reside. Because the APAIS asks anglers to report their state and county of residence, its data can be used to calculate a coverage adjustment that can be applied to the effort survey's base

estimates to account for out-of-frame angler trips. (It would be expensive and inefficient to conduct the FES in non-coastal states, where the likelihood of reaching households whose residents participated in marine recreational fishing is low.)

What sample size is needed to produce accurate estimates?

Different factors can inform the “ideal” sample size, from the size of your target population to the margin of error you’re willing to allow. Actual sample size ultimately depends on the resources available to fund your survey. We use standard, proven, peer-reviewed statistical methods to use resources efficiently, ensure our samples are representative, and maximize the precision of the estimates we produce.

How can a small number of interviews reflect the catch of the entire recreational fishery?

These interviews are part of a survey that is carefully designed to estimate the catch of an entire population using information from a representative sample of that population. Probability-based sample surveys have to be used to estimate recreational catch because it wouldn’t be practical or possible for us to intercept the millions of recreational anglers fishing along the coast (and census surveys, wherein all anglers report every fish caught on every trip taken, would be too expensive to implement and too burdensome to participate in). Because this statistical approach produces unbiased estimates, it is the standard for conducting large-scale government surveys like this one.

How many angler trips do you intercept in [state or region] each year?

Region	Intercepted Angler Trips (2019)
New England	Regional Total: 18,255 <ul style="list-style-type: none"> ● Maine: 1,589 ● New Hampshire: 2,089 ● Massachusetts: 6,711 ● Rhode Island: 4,051 ● Connecticut: 3,815
Mid-Atlantic	Regional Total: 26,810 <ul style="list-style-type: none"> ● New York: 6,203 ● New Jersey: 5,437 ● Delaware: 4,114 ● Maryland: 5,542 ● Virginia: 5,514
South Atlantic	Regional Total: 29,627 <ul style="list-style-type: none"> ● North Carolina: 15,870 ● South Carolina: 5,090

	<ul style="list-style-type: none"> • Georgia: 2,664 • East Coast/Florida: 6,003
Gulf	Regional Total: 20,460 <ul style="list-style-type: none"> • Mississippi: 2,532 • Alabama: 3,767 • West Coast/Florida: 14,161
Puerto Rico	Our data collection efforts in this region have been suspended.
Hawaii	2,843
TOTAL	97,995 intercepted angler trips (2019)

How many mail surveys are returned from [state or region] each year? How does this compare to historical Coastal Household Telephone Survey response rates?

Region	FES Sample Sizes and Response Rates (2019)
New England <i>Maine, New Hampshire, Massachusetts, Rhode Island, Connecticut</i>	Sample Size: 81,206 Responses: 26,731
Mid-Atlantic <i>New York, New Jersey, Delaware, Maryland, Virginia</i>	Sample Size: 104,975 Responses: 30,616
South Atlantic <i>North Carolina, South Carolina, Georgia, Florida</i>	Sample Size: 88,169 Responses: 26,880
Gulf <i>Mississippi, Alabama, Florida</i>	Sample Size: 54,191 Responses: 16,984
Hawaii	Sample Size: 10,800 Responses: 3,994
TOTAL	Sample Size: 324,729 (2019) Responses: 100,783 (2019) Weighted Response Rate: 31.18% (2019) In 2017 (its final year), Coastal Household Telephone Survey response rates were less than 10%. <i>Learn more, and access</i>

<p>information from previous years: Annual Report for the Fishing Effort Survey</p>

Why aren't you collecting fishing data the same way other government agencies collect hunting data?

Different government agencies use different tools to collect hunting data, from check stations to harvest logs to surveys. Some of these programs are mandatory, while others rely on volunteers to provide information. Unlike some hunting surveys, we can't limit our surveys to license holders, or distribute them just once per year. The extent of fishing license exemptions and of fishing without a license mean we have to survey non-license holders to accurately estimate total recreational catch. And while a long reference period (e.g., 12 months) may serve the collection of hunting data well, research suggests it may be difficult for anglers to recall the details of their fishing trips over long periods of time, due to the potentially high variety of species encountered and large number of trips taken. (A duck hunter in North Carolina, for example, can bag up to six of a possible 12 species on a single trip⁴, while recreational anglers fishing from private boats in North Carolina waters bagged more than 31 species of finfish in a single year.) Our effort survey uses a two-month reference period to optimize angler recall and survey cost.

Why aren't you asking anglers to report their fishing data through a mobile app?

In some regions, mobile apps are used to collect information about local fishing activity⁵. But even with extensive outreach and education, voluntary angler reporting apps suffer from low recruitment and retention rates. Data voluntarily reported through angler apps are also susceptible to extreme selection bias, to the extent that anglers who are using them fish differently than anglers who are not. Program statisticians recommend that data collected from these apps cannot be used to produce recreational catch estimates unless they are part of a statistically valid, probability-based survey design, wherein a sampling survey is also used to validate self-reported data, monitor the extent of reporting, and account for unreported trips.

Learn more: [NOAA Fisheries Evaluates Role of Opt-in Angler Reporting Apps in Recreational Fisheries](#).

⁴ Source:

<https://www.carolinasportsman.com/hunting/waterfowl-duck-hunting/north-carolinas-2019-20-waterfowl-seasons-are-set/>

⁵ Statistically valid survey designs that employ electronic reporting have been used to produce population-level estimates of recreational catch. In 2018, for example, NOAA Fisheries certified Alabama's Snapper Check and Mississippi's Tails n' Scales "capture-recapture" survey designs. Both surveys use a mobile app as the primary mode of collecting recreational red snapper fishing data during the "capture" phase. A mandatory, probability-based dockside intercept survey qualifies angler reporting during the "recapture" phase.

Why do you keep changing your data collection methods? When are these changes going to stop?

Collecting accurate recreational fishing data to support fisheries management is a process that requires ongoing improvement. In 2018, for example, we transitioned to a mail survey of fishing effort to address the growing limitations of sampling landline telephones. To ensure our program is using the best available science, teams of partners and stakeholders regularly evaluate our existing methods of data collection, recommend new or improved survey designs, and use a formalized transition process to anticipate and minimize statistical and programmatic disruptions before new designs are put in place. Periodic peer reviews can also produce recommendations to update and improve our work. *Learn more: [How the Marine Recreational Information Program Has Improved.](#)*

How are state-collected data (e.g., through LA Creel, Tails n' Scales, Snapper Check, and the StateReef Fish Survey) incorporated into your estimates?

While the LA Creel, Tails n' Scales, Snapper Check, and Gulf Reef Fish Survey designs have been certified as capable of producing the best scientific information available, we can't immediately incorporate data from these surveys into our catch statistics. This is because different surveys—even when they're conducted side-by-side—produce different estimates. Calibration can account for these differences, and adjust one set of estimates to match another. In the Gulf of Mexico, ratio-based approaches will be used to calibrate the estimates produced by state surveys to the general Marine Recreational Information Program survey designs. (The Louisiana Department of Wildlife and Fisheries has already developed a simple ratio-based calibration that allows for such a conversion of LA Creel estimates.) This will allow estimates set in our general survey "currency" to be used in assessing stocks and setting ACLs; catch limits set for particular stocks (e.g., red snapper) could then be partitioned among states, and state-specific calibration methods could be used to convert these state-specific catch limits into the currency of each state-specific survey approach.

Data Management

Who manages the data?

The Marine Recreational Information Program operates as a partnership among state, regional, and federal agencies and organizations. State agencies coordinate in-person, on-site data collection efforts, and regional partners like the Atlantic Coastal Cooperative Statistics Program and the Gulf of Mexico Recreational Fisheries Information Network coordinate and support survey operations. (In some cases, data collection also occurs through contract support with statistical analysis and survey research companies.)

Data Quality

What are the credentials of your field interviewers?

Both field interviewers and field supervisors are employed by our state partners, and are knowledgeable of their local recreational fisheries. Field interviewers are trained and tested in survey protocols and fish identification; field supervisors provide ongoing guidance and conduct quality control visits throughout the sampling season.

Estimation

How do you turn raw data into estimates of total recreational catch?

It takes several steps to estimate total recreational catch. First, we calculate catch rate, or the average number of fish caught per angler trip. Then, we calculate fishing effort, or the total number of angler trips taken by residents of sampled states. Finally, we multiply catch rate by effort to estimate total recreational catch. Weighting the data that contribute to our catch estimates ensures each sampled unit is properly represented, and allows us to account for the fact that some fishing sites are more likely to be selected as a sample location and some anglers are more likely to participate in a fishing survey. We produce estimates for all modes of fishing (including shore, private boat, and charter boat), all species caught, and three types of catch: fish that are caught, brought back to the dock, and observed and identified by samplers; angler-reported fish that are caught, released dead, used for bait, filleted, or otherwise unobservable by field interviewers; and angler-reported fish that are released alive. *Learn more: [Estimation Methods](#).*

How do you produce reliable catch estimates of rarely encountered species, or species with short seasons?

It can be difficult to produce precise catch estimates for species that field interviewers rarely encounter. By collecting more data at fishing sites that see higher levels of offshore fishing activity, we are addressing the need for more precise estimates of rare event species. Developing specialized methods of monitoring red snapper catch in the Gulf of Mexico has helped address the need for more precise estimates of a short-season species.

What is calibration, and why is it necessary?

Calibration is a statistical process that accounts for the sources of variation and/or bias that may be contributing to differences between the estimates produced by two different survey designs. Calibration models are used to place one set of estimates into the “currency” of another survey design, allowing for “apples to apples” comparisons between the two. Calibration is a critical step in transitioning from one recreational fishing survey to another: Assessing fish stocks

requires a consistent, long-term time series of recreational catch estimates, and adopting new survey methods without calibrating the legacy estimates to the currency of the new survey design would disrupt the cycle of science and management.

Understanding the Estimates

How can we access your estimates?

Preliminary estimates of total recreational catch are published about 45 days after the end of each two-month sampling period, or wave. Final estimates are published each April. Our website allows the public to access preliminary estimates, final estimates, and raw trip, catch, and fish length and weight data.

Are your estimates reliable?

Our data collection and estimation methods are statistically rigorous, scientifically sound, and subject to periodic peer review⁶ and [certification](#). While the “pulse” nature of some fisheries makes it hard to produce precise catch estimates, we alert data users whenever an estimate is highly imprecise and should therefore be used with caution. (Ultimately, it is up to stock assessment scientists, fisheries managers, and other data users to determine whether and how to incorporate “outlier estimates” in the analyses they perform.) We also practice extensive quality control measures before our estimates are published: Program staff check for errors in data entry, review data for reasonableness within an expected range of response, and investigate any unusual changes in trends in catch rates for [high-interest, rare-event](#) and managed species. State agencies participate in the QA/QC process as it relates to the data their staff collect through the Access Point Angler Intercept Survey.

What is a PSE? Why are PSEs greater than 50% a concern?

All point estimates are published with a measure of their precision, expressed as “percent standard error,” or PSE. The higher the PSE, the less precise the estimate. As a general rule, larger sample sizes produce more precise estimates; for this reason, our estimates are best viewed annually at the state or regional scale, rather than by an individual wave or single fishing mode. We urge caution when using point estimates with PSEs over 30%, and consider estimates with PSEs over 50% to be highly imprecise.

⁶ In 2017, the National Academies of Sciences, Engineering, and Medicine completed a comprehensive, independent review of MRIP. This review affirmed the strength of our survey designs and recommended several potential ways to further improve these surveys. We have already taken a number of actions to implement these recommendations.

Fisheries Management

How will the information I share impact recreational fishing regulations?

Recreational catch estimates are just one of the many pieces of information fisheries managers must consider during their science-based decision-making process. Sometimes, these estimates inform decisions to limit or restrict fishing; other times, they inform decisions to provide greater access to the resource. Reporting complete and accurate information about your fishing activity will help scientists accurately assess the size and health of fish populations, so managers can pass only those regulations that are necessary for the long-term sustainability of stocks. *Learn more:* [Fisheries Management and the Marine Recreational Information Program](#).

Doesn't commercial fishing have a greater impact on fish stocks?

For some stocks, the collective catch of marine recreational anglers outweighs the catch of commercial fishermen. Recreational anglers consistently harvest higher proportions of striped bass, bluefish, and spotted seatrout, for example. *Learn more:* [Fisheries of the United States](#) (Figure: *Selected Recreational Species-Harvest vs. Commercial Harvest*).

Misc.

What do your estimates say about recreational fishing in the United States?

In 2018, recreational anglers took 194 million saltwater fishing trips in the United States (not including Alaska). Of the 956 million fish anglers caught, almost 64% were released alive. The Atlantic coast accounted for 67% of trips and 60% of catch; the Gulf coast accounted for 29% of trips and 37% of catch; the Pacific coast accounted for 3% of trips and 2% of catch; and Hawaii accounted for 2% of trips and 1% of catch. *Learn more:* [Fisheries of the United States](#).