

*Science, Service, Stewardship*



# More Accurate Recreational Catch Information

**New MRIP method improves  
catch estimates**

*Winter 2013*

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## What's Inside

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# The Science Side



## What NOAA Estimates

NOAA Fisheries provides two estimates of recreational fishing activity:

- **Catch**, or the number, species and size of fish caught.
  - Generally determined through shore-side intercepts.
- **Effort**, or the number of fishing trips taken during a particular reporting period.
  - Generally determined through telephone surveys.

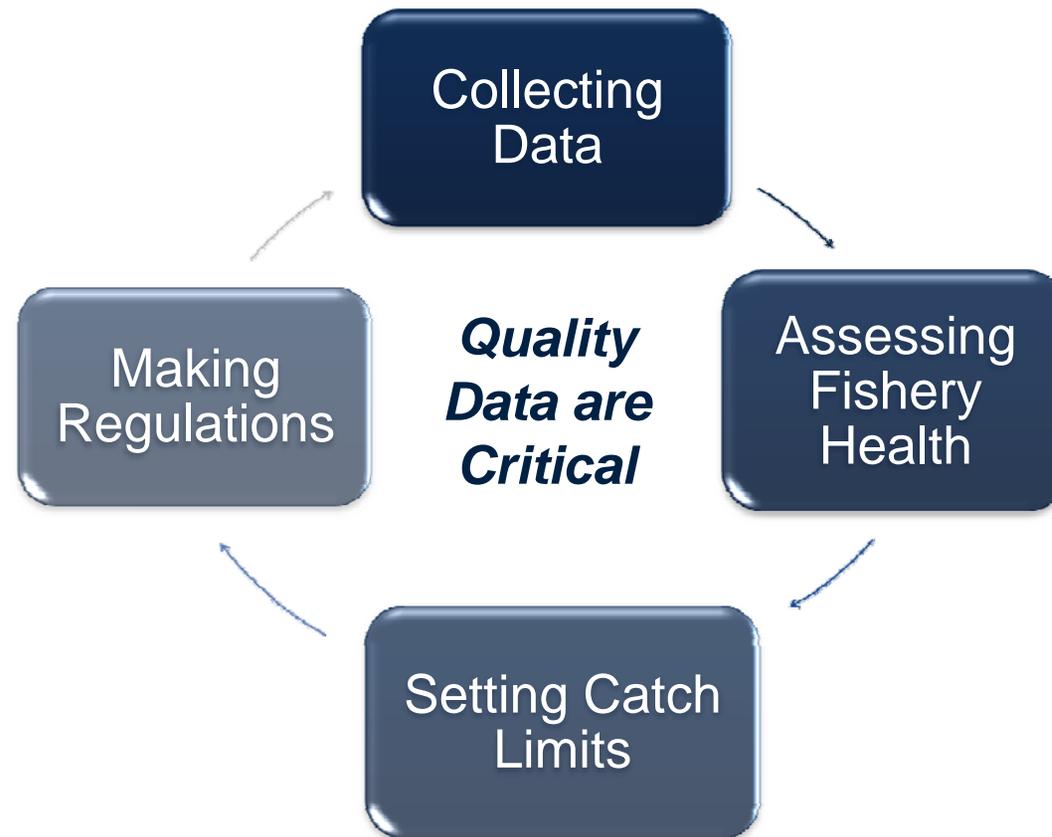
*Learn more about how we count catch at [www.CountMyFish.noaa.gov](http://www.CountMyFish.noaa.gov).*



## How Data Are Used

Fishery management decisions are based on a continuous cycle.

Our goal is to ensure fisheries remain productive – now and for generations to come.





# The Marine Recreational Information Program

Created in 2007 to address:

- Recommendations of the National Research Council's *Review of Recreational Fisheries Survey Methods*.
- New requirements of the 2006 Magnuson-Stevens Act.
- Stakeholder confidence in catch and effort estimates.



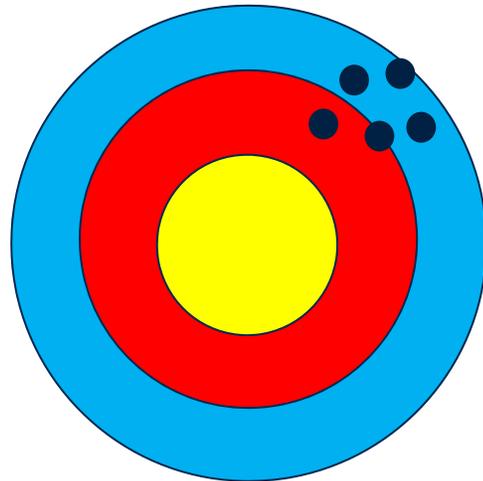
## Our Top Priority

# The potential for bias was the NRC's chief concern about MRFSS

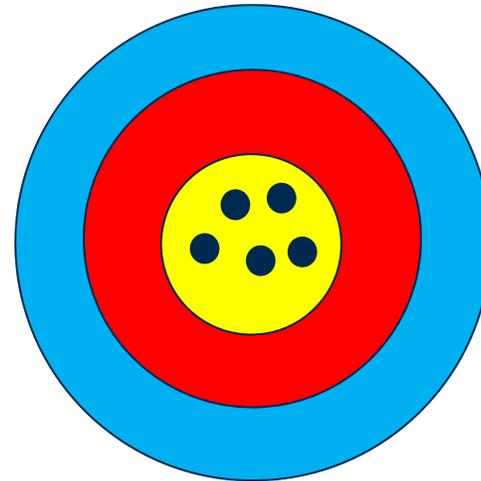
**potential for bias** is the result of unaccounted factors or untested assumptions that can skew survey results higher or lower



## Bias affects accuracy



**Precise, but  
inaccurate**



**Precise and  
accurate**

By correcting your aim (or in our case, eliminating assumptions from our survey design), the shots become more accurate, or closer to the true value.



# National Research Council *Findings*

- There is a mismatch between how we gather information and how those data are used to generate catch estimates.
- Results in a series of untested assumptions that introduces potential for bias which can skew the catch estimates higher or lower.
  - For example, we assumed catch rates at different fishing sites and the amount of fishing activity occurring at different times of day were the same.



## National Research Council *NOAA's Response*

- A new peer-reviewed method for estimating catch developed in partnership with leading experts in the field.
- Method corrects these assumptions about how different factors might affect catch rates.
- The result is more accurate estimates of catch.



## Results

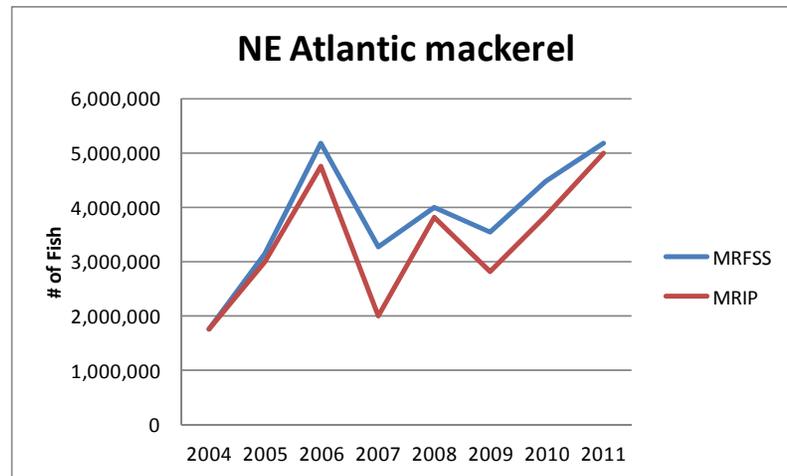
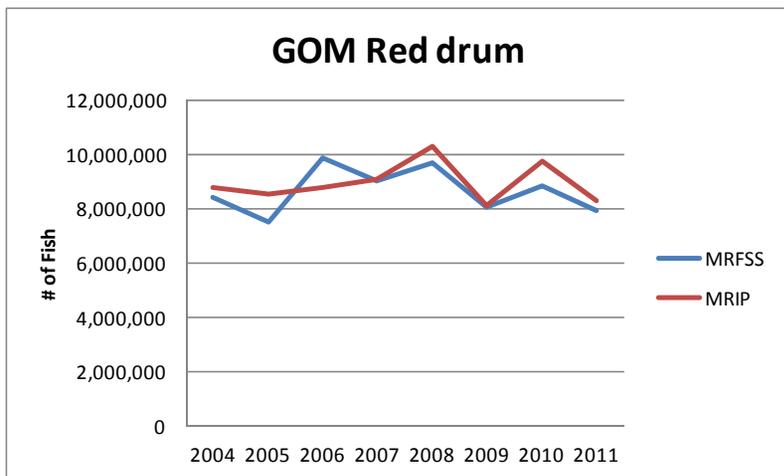
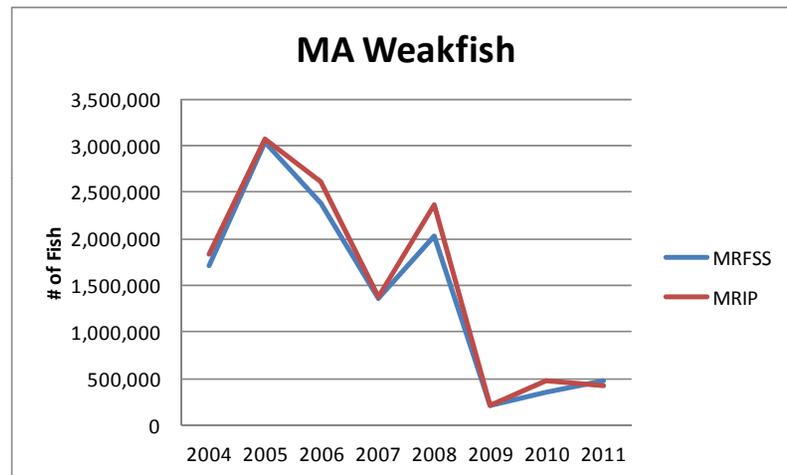
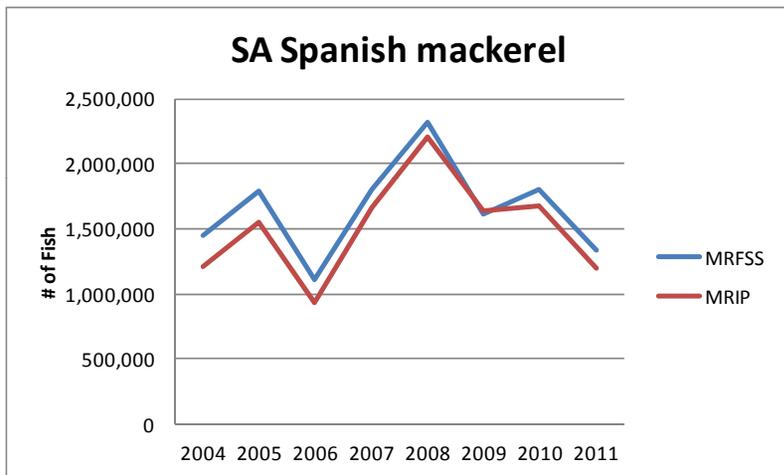
**The improved MRIP method allows NOAA to re-calculate catch estimates going back to 2004 for the Atlantic and Gulf coasts.**

***Two key results:***

1. Removing bias creates no specific trends in direction or size of changes. Some estimates go up, some go down, and some stay about the same.
2. While the precision appears lower than what we previously reported, the new MRIP estimates are more accurate and our understanding of the actual uncertainty is significantly improved.

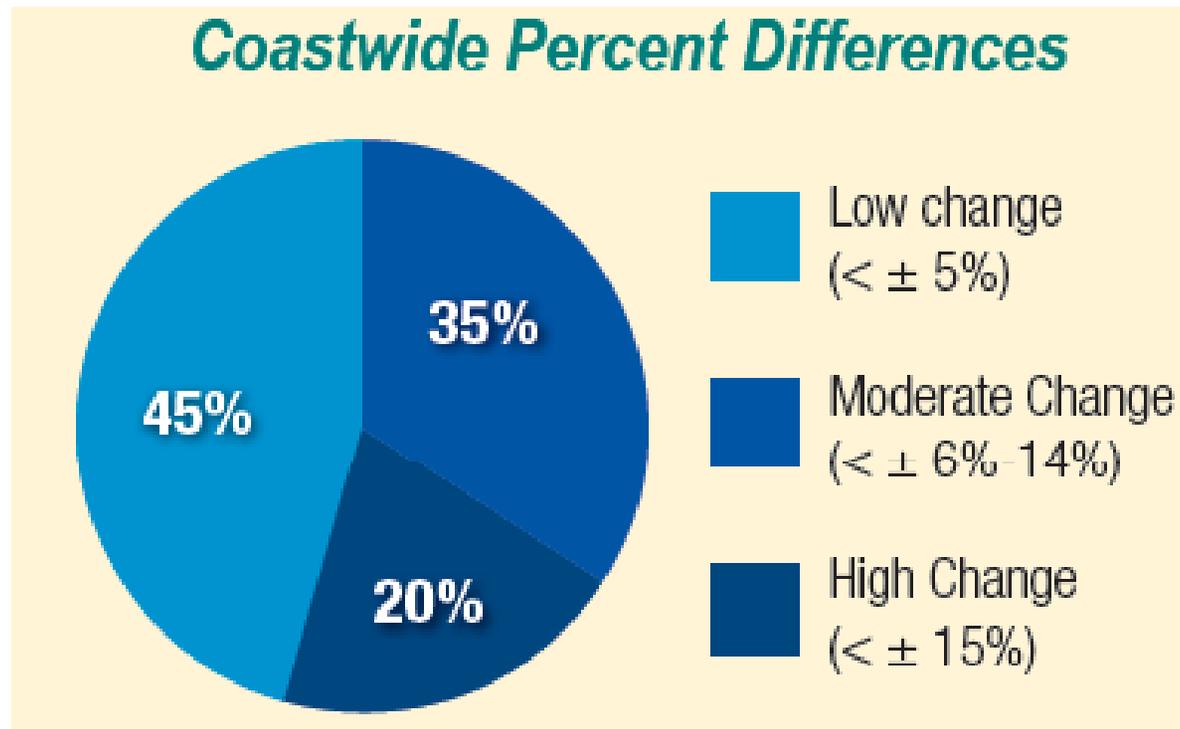


# Representative Results





## Most Estimates Don't Change Substantially



Note: Differences vary on a species-by-species basis and by state.



# Key Recreational Species

Region	Key Regional Fishery Species	Difference between MRIP and MRFSS*	Percentage of Quota Allocated to Recreational
Atlantic HMS	Atlantic yellowfin tuna	+9%	n/a
New England	Gulf of Maine Atlantic cod**	-25%	34%
	Gulf of Maine haddock**	-20%	28%
Mid-Atlantic	Summer flounder***	-1%	40%
	Scup***	+18%	22%
	Black sea bass (northern stock)	+8%	51%
South Atlantic	Red grouper	+27%	55%
	Gag grouper	+8%	49%
	Vermillion snapper	+1%	32%
	Greater amberjack	No change	59%
	Black sea bass**	-7%	57%
Gulf	Red Snapper	-13%	72%
	Greater amberjack	+11%	73%
	Red grouper	+11%	24%
	Gray triggerfish	+9%	79%
	Gag grouper	+6%	61%
	Red snapper	+2%	49%
	King mackerel**	No change	68%

These figures are based on landings (in weight) and calendar year unless otherwise noted. Percentages note differences between the annual average landings between MRIP and MRFSS estimates. For example, the MRIP estimate for Atlantic yellowfin tuna is 9 percent higher than the previously published MRFSS estimate.



## Key Observations

1. Each estimate is impacted by the removal of multiple potential sources of bias.
2. MRIP estimates are more accurate, even if some are similar to the original MRFSS numbers.
3. The majority of stocks managed using Annual Catch Limits *will not be affected* by the transition to MRIP estimates.

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# The Management Side



# Potential Impact of Changes

Changes in catch estimates can affect:

- **Stock assessment results**
  - Are we overfishing now? What's the biomass?
- **Management actions**
  - What's the appropriate catch limit? Are we under or over the catch limit? Do we need to change allocations?

Where there are significant changes in the estimates, revisions to fishing regulations may be necessary.



## Key Steps in the Transition Strategy

1. Coordinate with the Councils' Scientific and Statistical Committees to review all available information.
2. Begin discussions with Councils and Commissions on reviewing the stock assessment schedule (which is usually set 2 years in advance), to understand if any changes are needed for those stocks most affected by the transition to MRIP.
3. Host a Calibration Workshop to develop a process for incorporating MRIP-based estimates into stock assessments.
4. Based on those findings, Councils and their Scientific and Statistical Committees can begin reviewing their management measures and if necessary making changes through regulatory amendments, which take 6-9 months, or plan amendments, which take 18-24 months.



# Transition Strategy Key Takeaways

- Transition from MRFSS to MRIP estimates has implications on managers, scientists, stock assessors and fishermen.
- Calibration workshop will provide method for integrating MRIP data into usual processes in 2012 and beyond.
- Transition will be transparent and inclusive of the Councils, Commissions, States, and other stakeholders.

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# Conclusion



## Creates a Solid Foundation

**The new MRIP estimation methodology is one of a series of improvements over the current MRFFS.**

The estimation method is a beginning, not an end.

The improved methodology fixes a fundamental design issue and sets the stage to invest resources in future improvements – such as enhanced angler intercept surveys, improved precision, and more frequent reporting – to meet customer and stakeholder needs.



## Building on the Foundation

In 2012, the MRIP team will be evaluating results from a number of pilot projects including:

- A new electronic logbook reporting system for charter boats and headboats,
- An enhanced angler dockside survey to complement the improved catch estimation methodology,
- An improved survey utilizing the National Saltwater Angler Registry which gathers angler trip data,
- Ways to support more frequent reporting and posting of estimates.



## Building on the Foundation

Beginning in 2013, MRIP expects to implement these improvements:

- An enhanced angler dockside survey,
- An improved survey to gather angler trip data,
- Increased sampling to improve precision and timeliness.

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## MRIP Questions

Query the data and find other helpful resources online at:

[www.CountMyFish.noaa.gov](http://www.CountMyFish.noaa.gov).

Contact us with questions at:

[Russell.Dunn@noaa.gov](mailto:Russell.Dunn@noaa.gov) or

(301) 727-5740