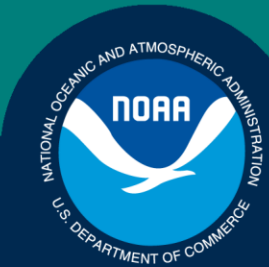


Science, Service, Stewardship



NOAA

Marine Recreational Information Program

Southeast Regional Office
St. Petersburg, Florida

February 21, 2012

**NOAA
FISHERIES
SERVICE**



OUTLINE

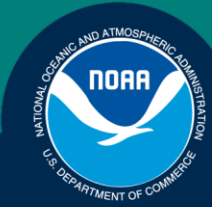
- Background and Overview
- Findings, Responses, & Results
- Implications for Management and Stock Assessments
- MRFSS vs. MRIP Comparisons
- Transition Strategy
- Next Steps for MRIP



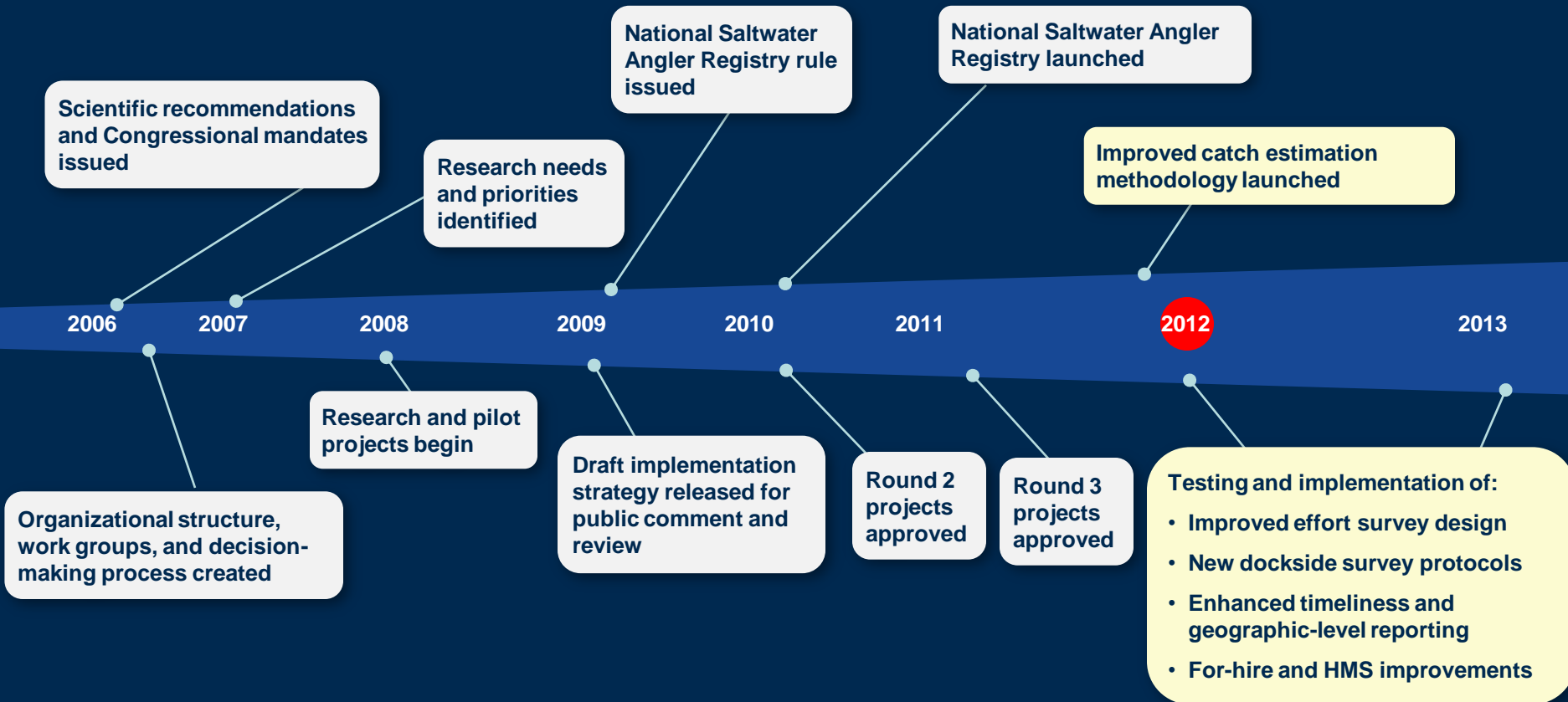
THE MARINE RECREATIONAL INFORMATION PROGRAM (MRIP)

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.



Implementation Milestones

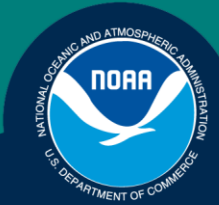




NRC FINDINGS ON CATCH ESTIMATION METHOD

- Estimation process is not matched to how we gather data.
- Shore-side sampling methods emphasize maximizing angler intercepts at the expense of statistical rigor.
- These two factors inserted potential for bias into the point estimates and their precision.

*NRC recommended we fix both
the way we estimate catch and the way we gather data.*



What's Different

What We've Done Previously

Estimation ignored fact that sampling over-represented fishing at high activity sites

Estimation ignored the angler trips missed in the site-day sampling

Sampler discretion to sample alternate fishing modes

Sampler discretion to move to alternate sites; probabilities unknown

What We Do Now

- How we collect data correctly matched to how we use that data to generate estimates; down-weighted data from high activity sites

- Data weighted to account for both intercepted and non-intercepted trips within sampled site-days

- Data collected for alternate modes not used in new estimates

- Selection probabilities of alternate sites estimated; estimates re-weighted



RESULTS OF RE-ESTIMATION

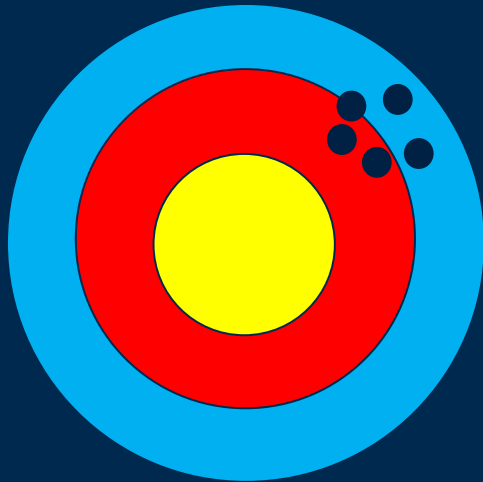
The improved MRIP method allows us to re-calculate catch estimates going back to 2004

Two key results:

1. For most species there are no specific trends in direction or size of changes. Some estimates go up, some go down, and some stay about the same.
2. The precision of estimates is lower than MRFSS. The new MRIP estimates more accurately reflect the actual uncertainty in estimates.

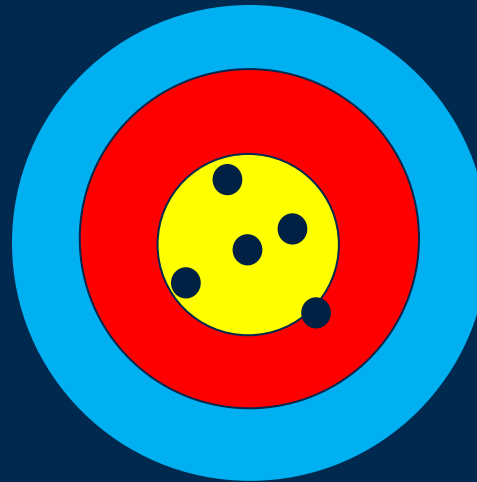


What We've Done Previously



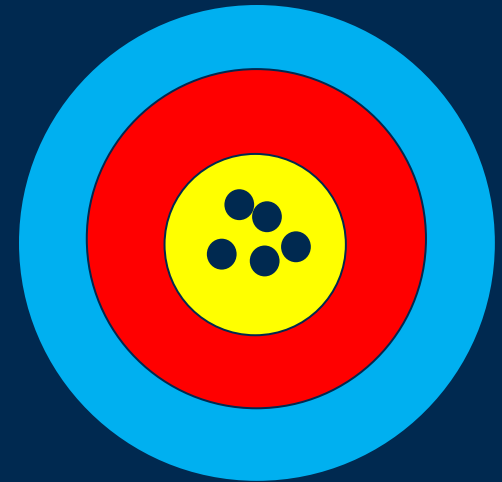
**Precise, but
inaccurate**

What We Do Now

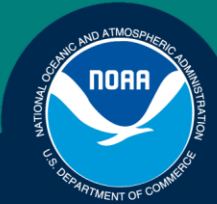


**Accurate, but
less precise**

What We're Moving Toward

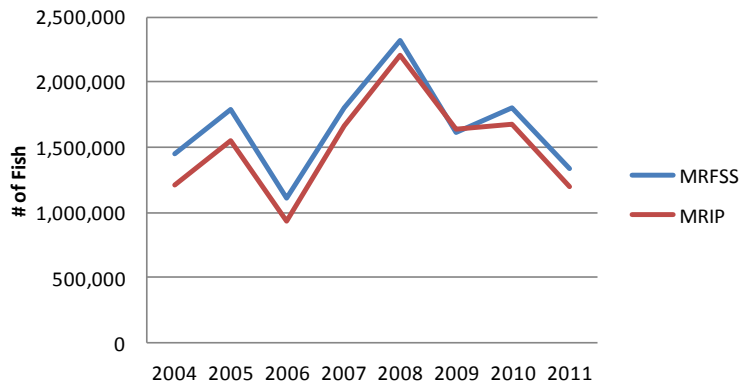


**Precise and
accurate**



REPRESENTATIVE RESULTS

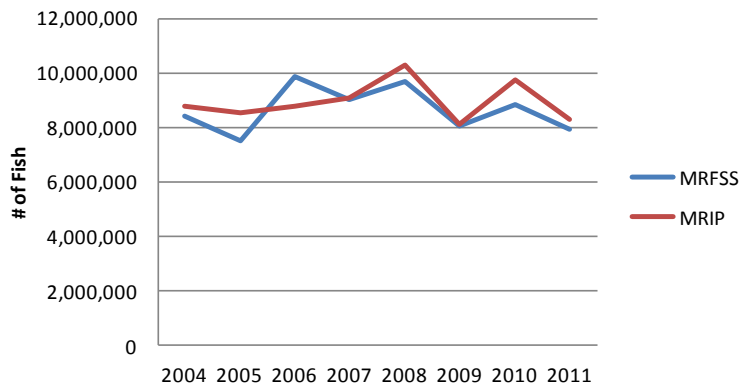
SA Spanish mackerel



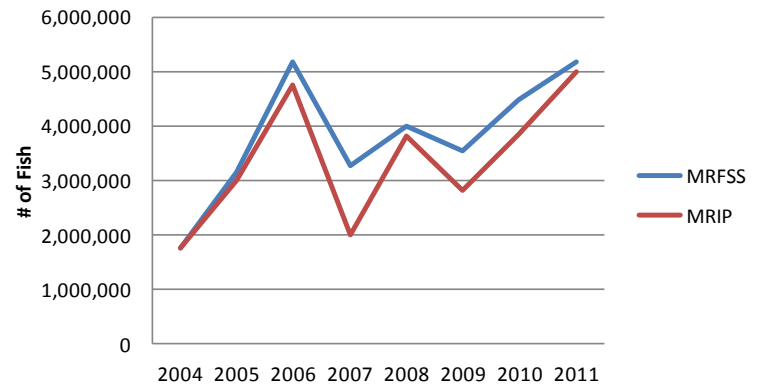
MA Weakfish



GOM Red drum



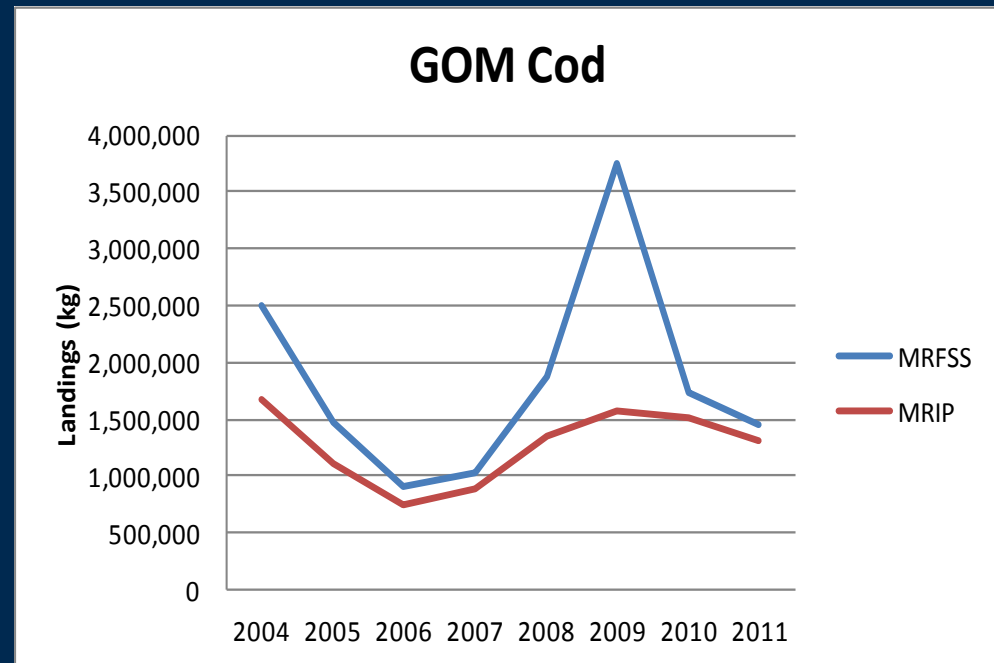
NE Atlantic mackerel





GULF OF MAINE ATLANTIC COD

- Catches 25% lower
- Benchmark assessment completed in Dec 2011.
- Preliminary analyses indicate that a reduction in recreational landings would not change stock status.



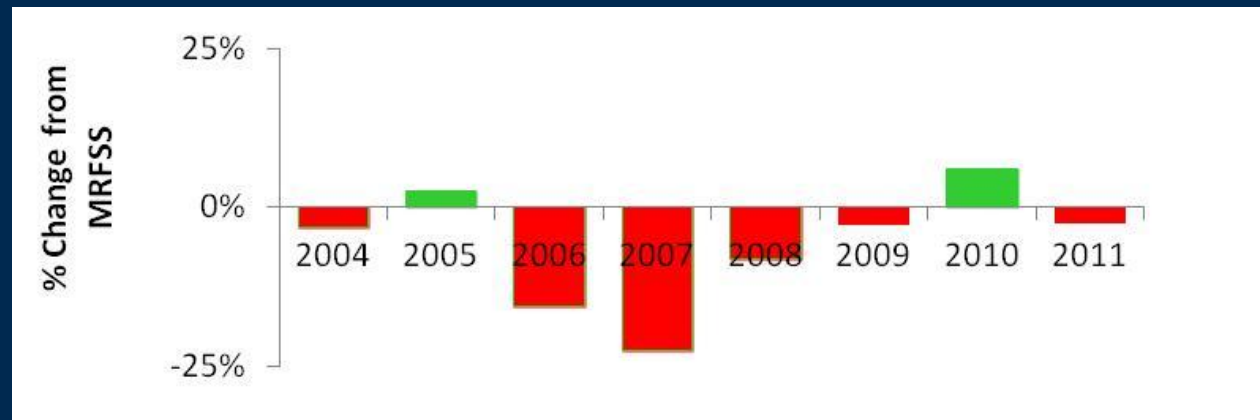
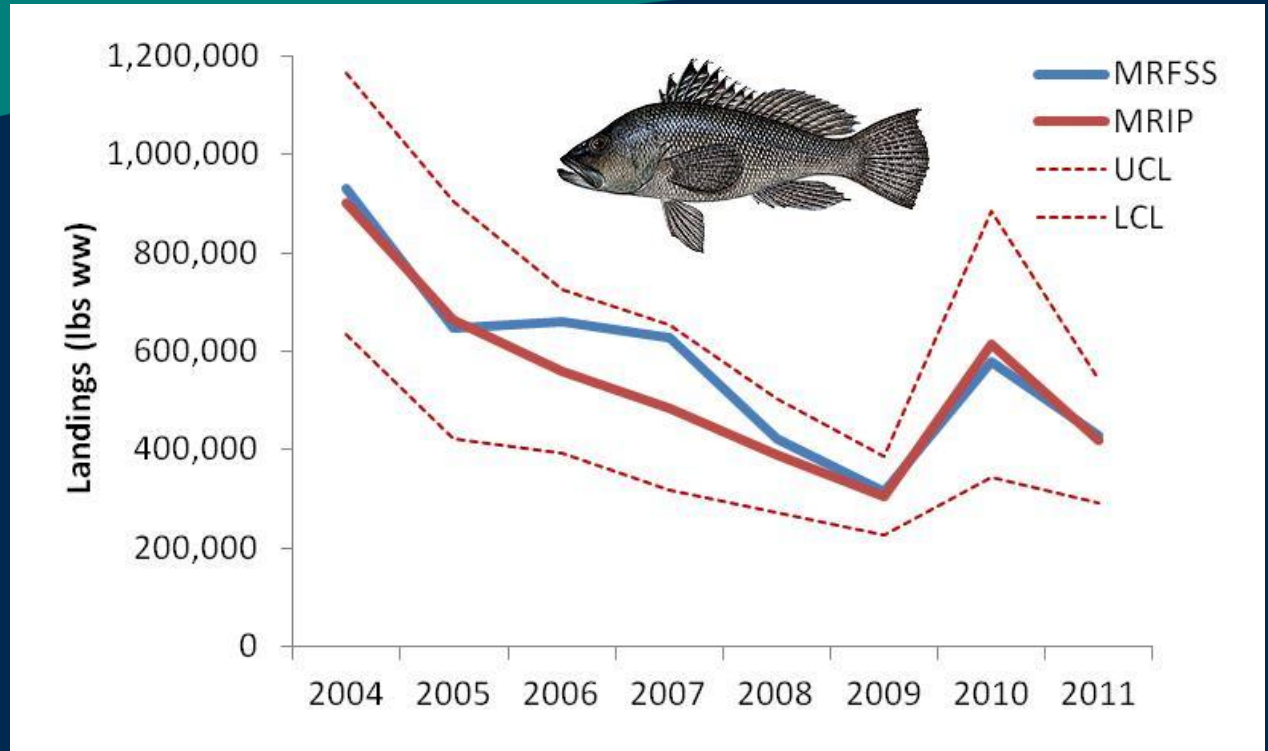
KEY RECREATIONAL SPECIES

| 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% |
| | Red Snapper | -13% | 72% |
| Gulf | 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% |

* Average difference 2004-2011



BLACK SEA BASS

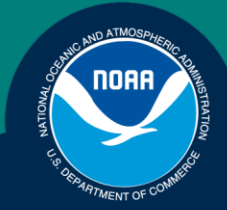


• Estimates based on Jan 1-Dec 31 calendar year rather than Jun 1-May 31 fishing year

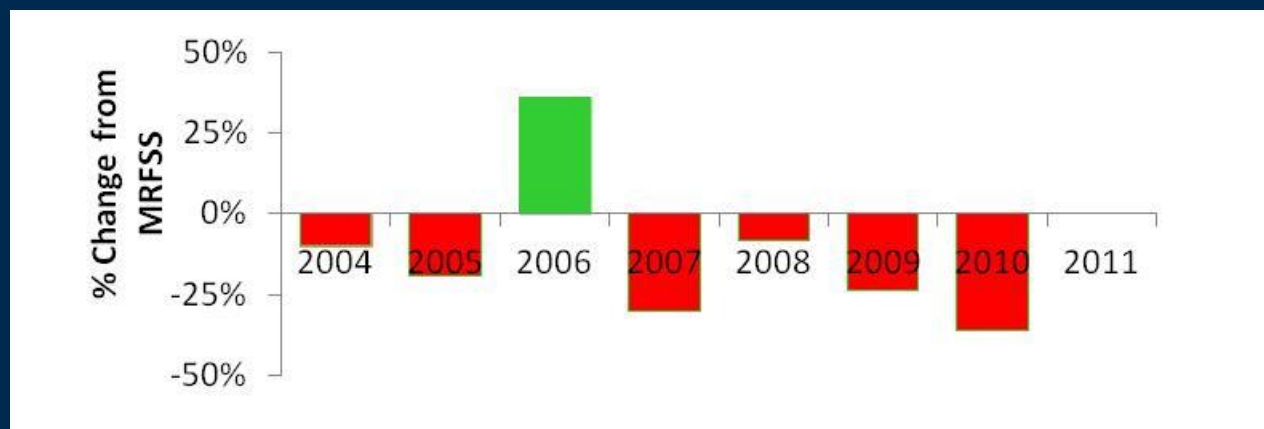
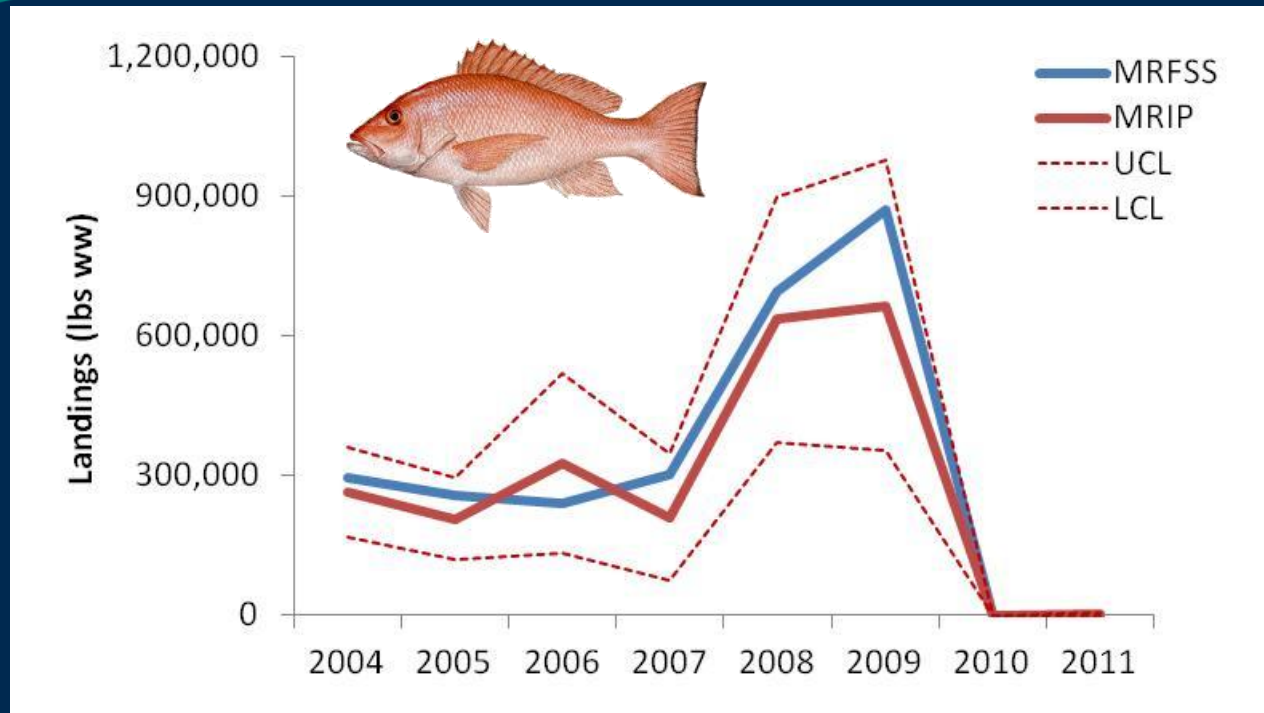


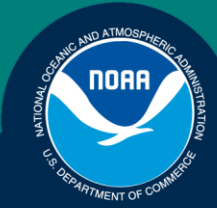
BLACK SEA BASS CASE STUDY

- MRIP landings greater than MRFSS for NC, but less for other SA states
- Large reduction in private landings from SC
 - Differences due to oversampling of angler fishing trips at high-activity fishing sites
 - “Zero-catch” trips were undercounted, biasing the MRFSS estimate of angler average catch high

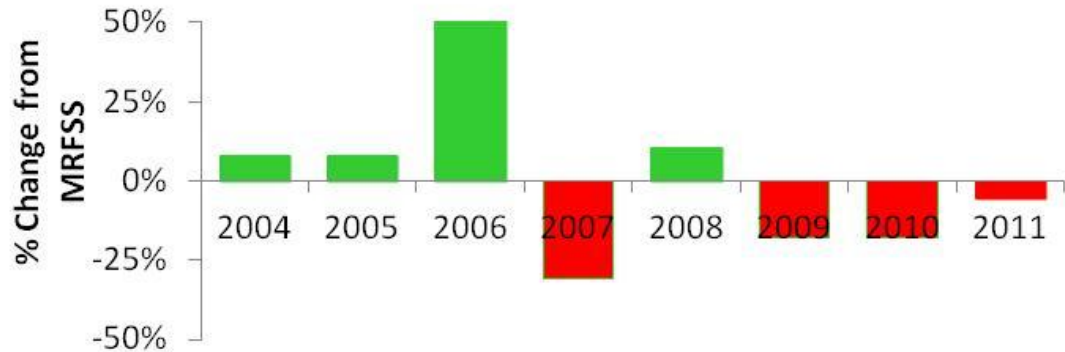
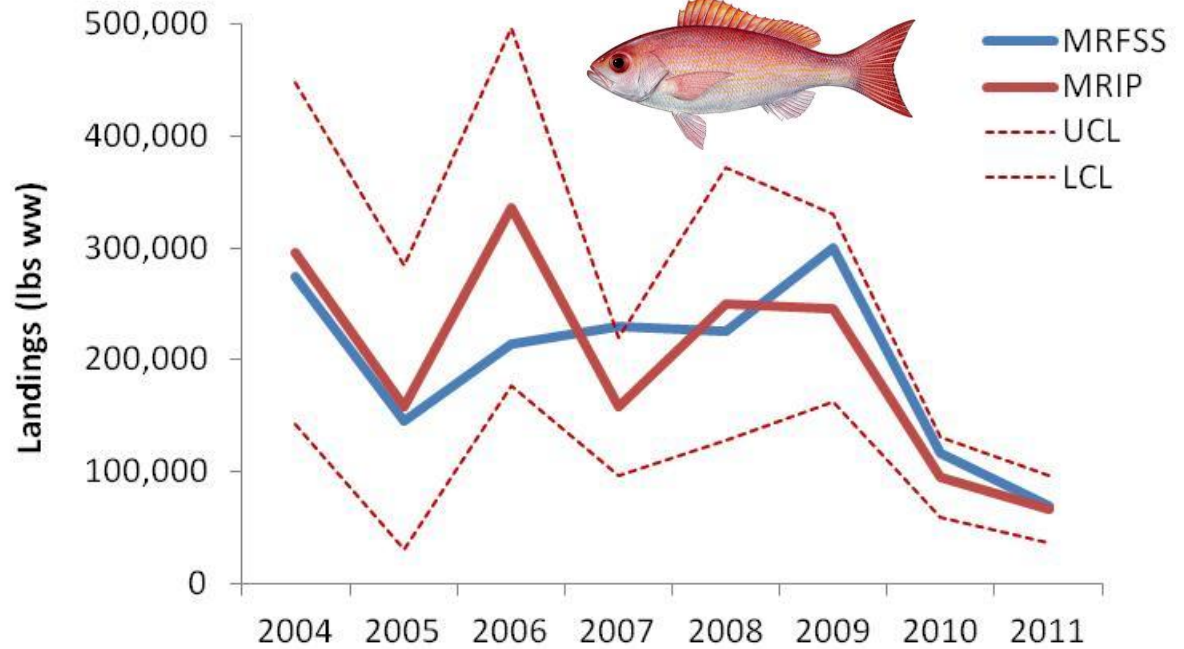


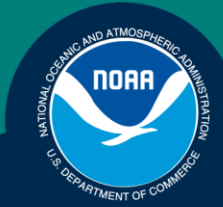
RED SNAPPER



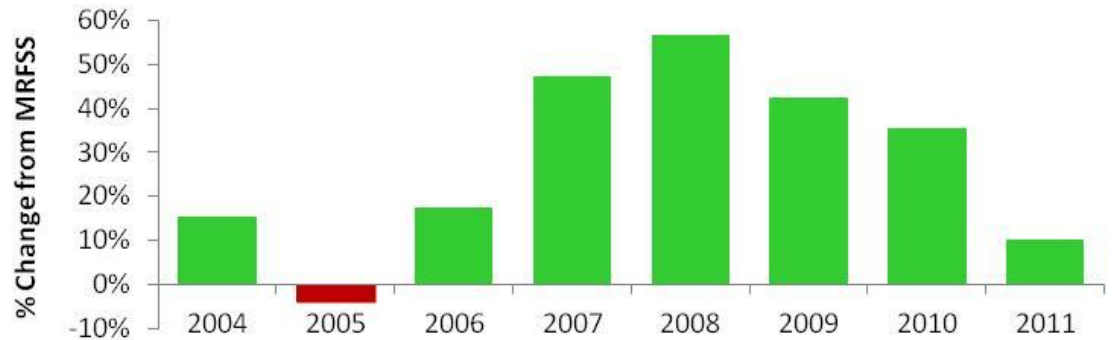
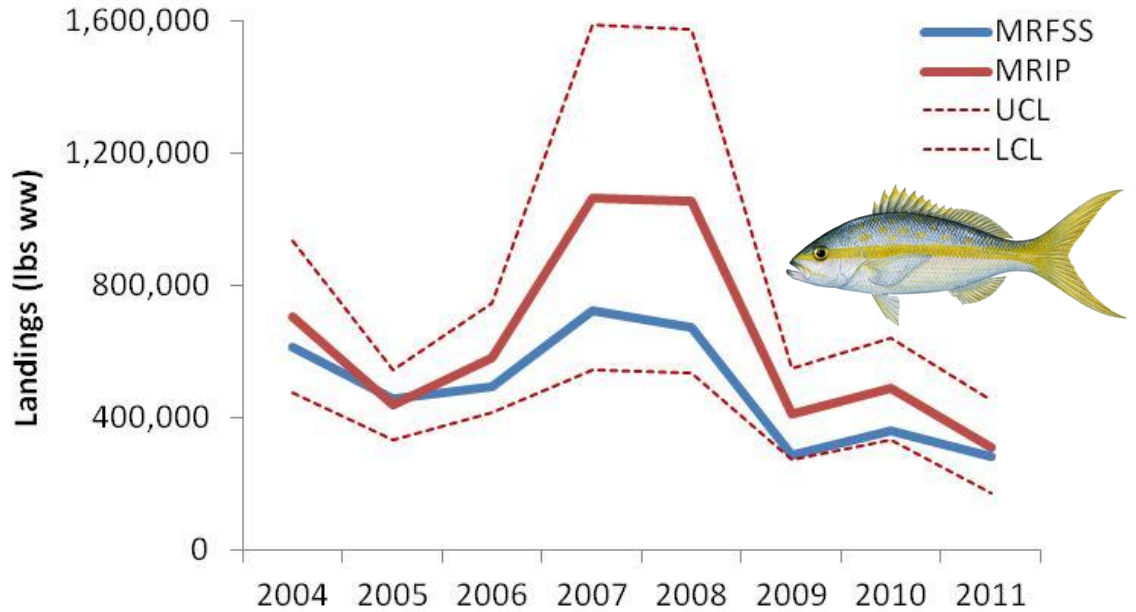


VERMILION SNAPPER



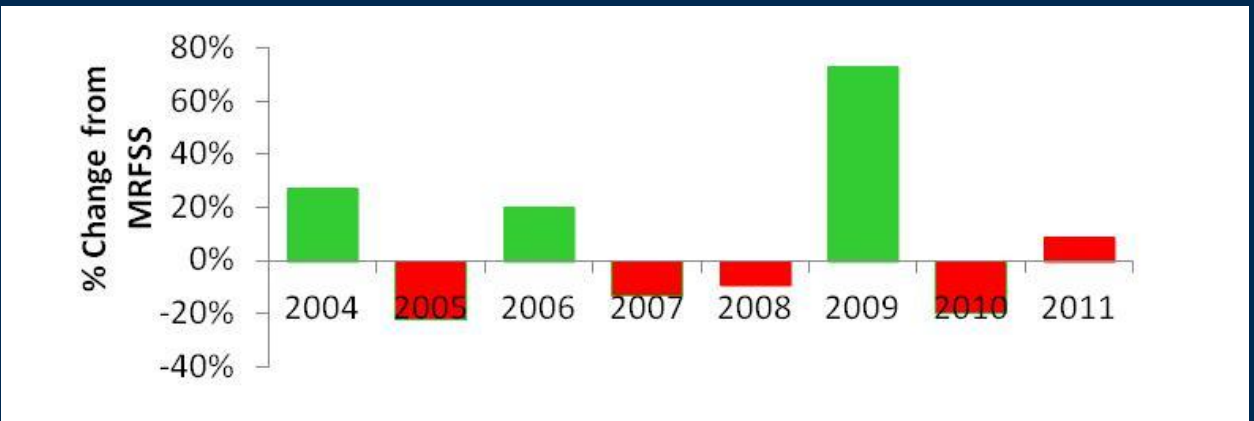
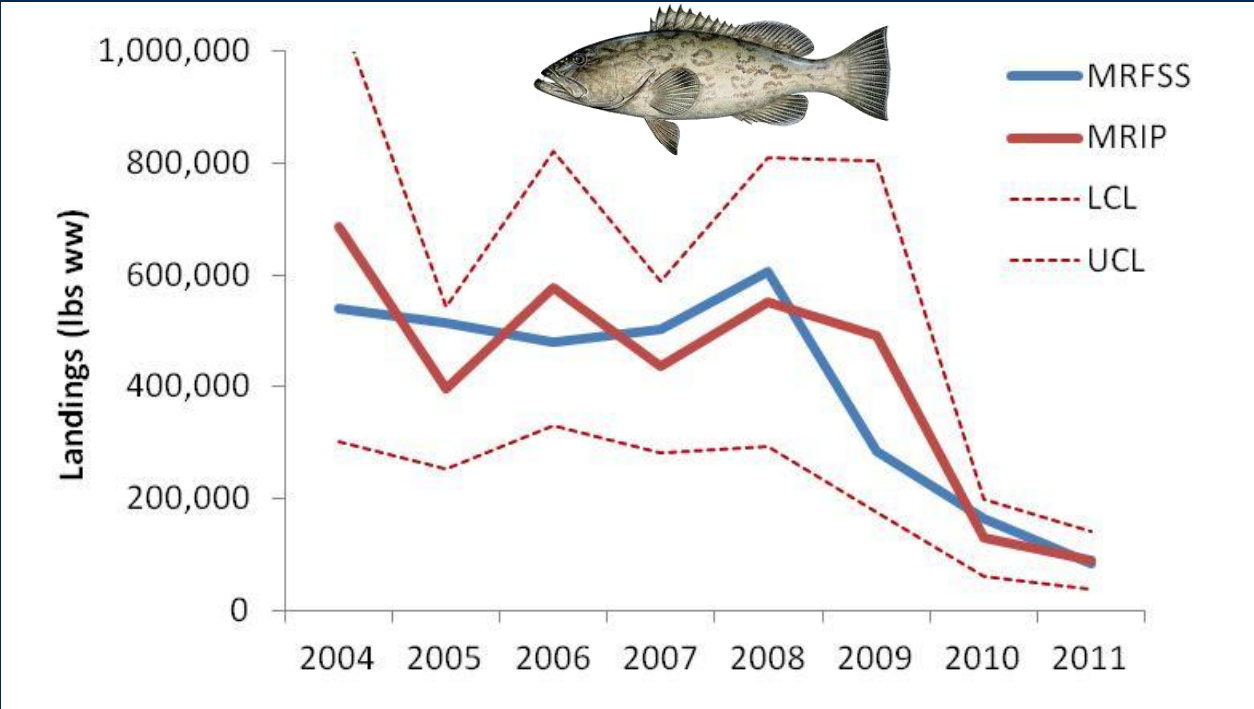


YELLOWTAIL SNAPPER



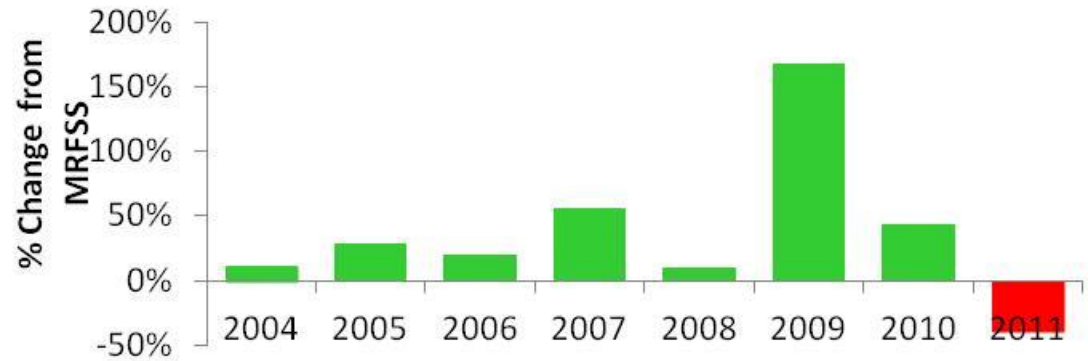
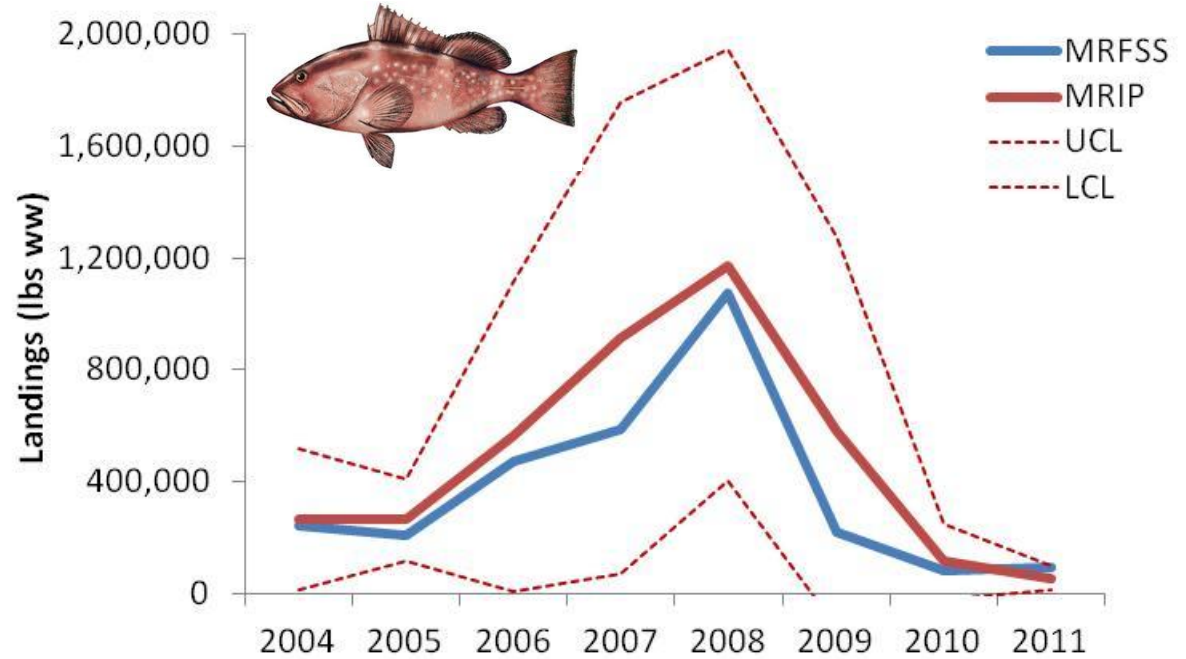


GAG



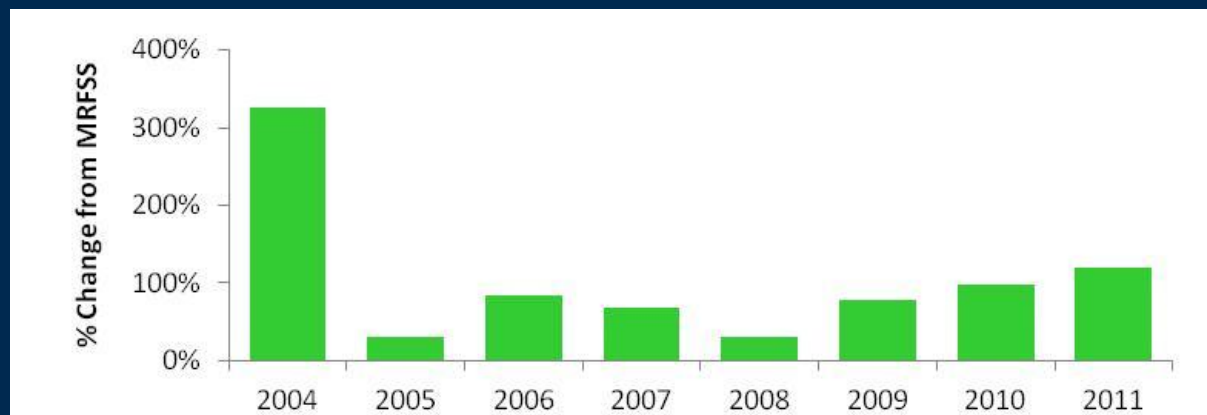
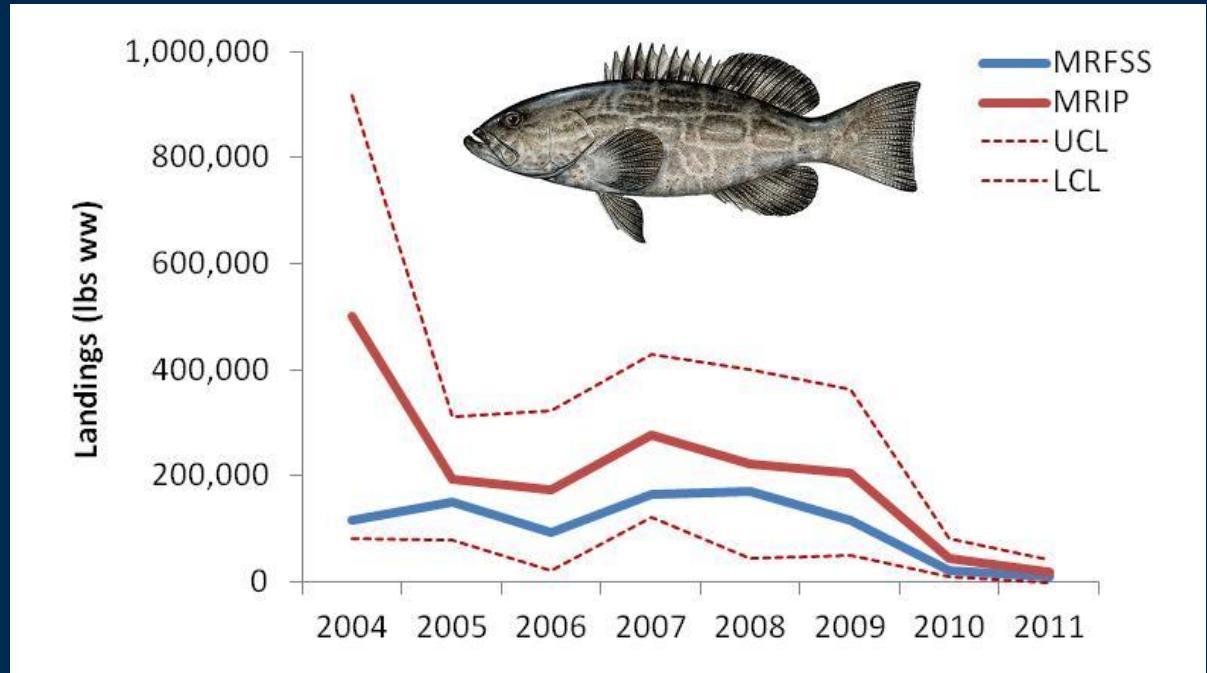


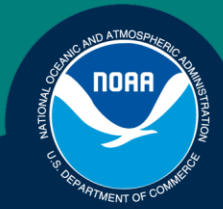
RED GROUPEL



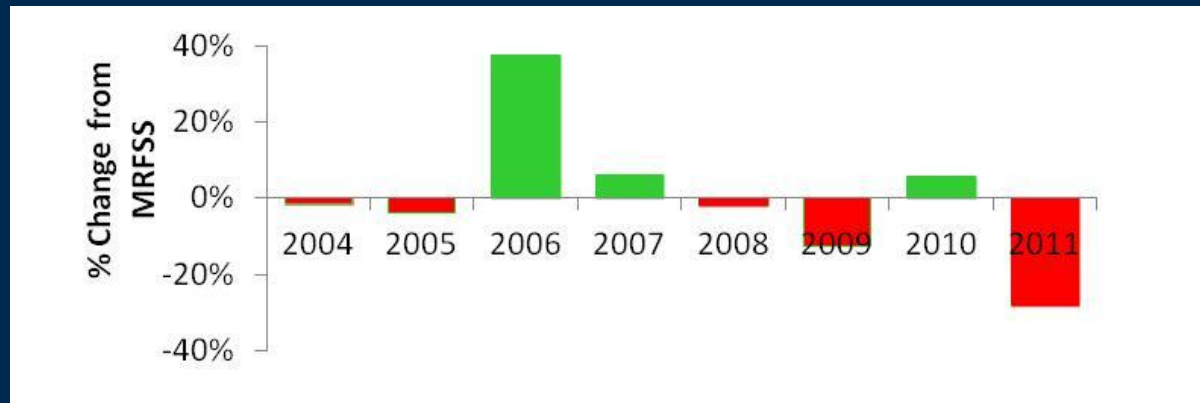
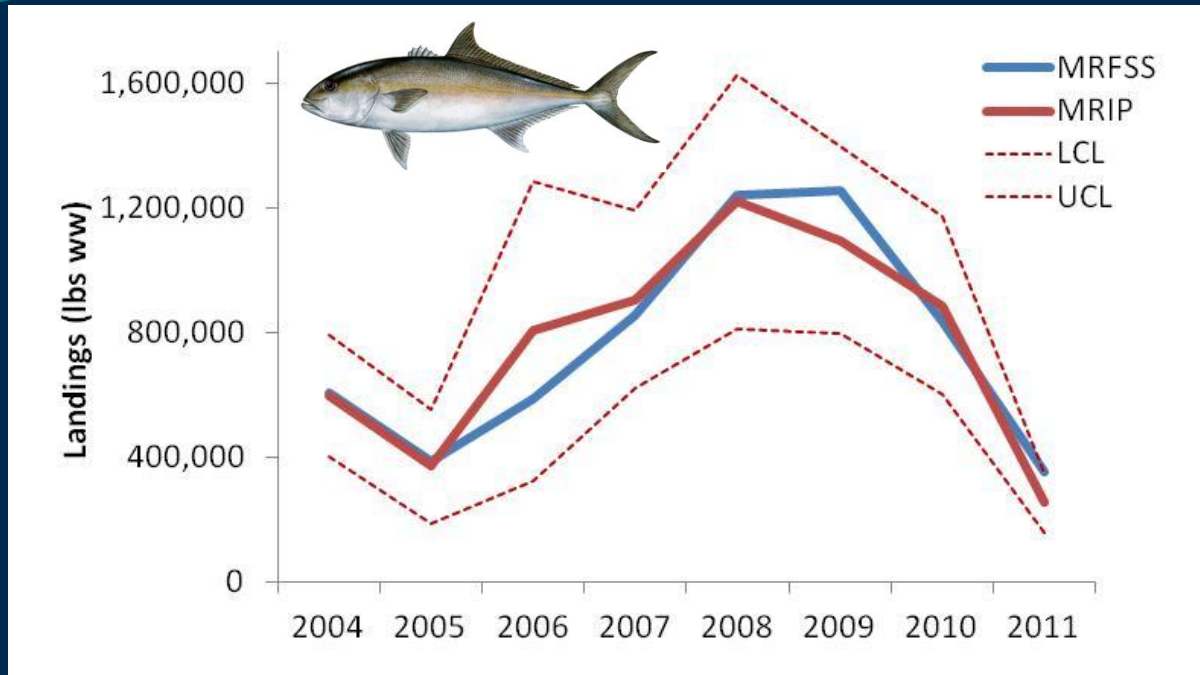


BLACK GROUPE



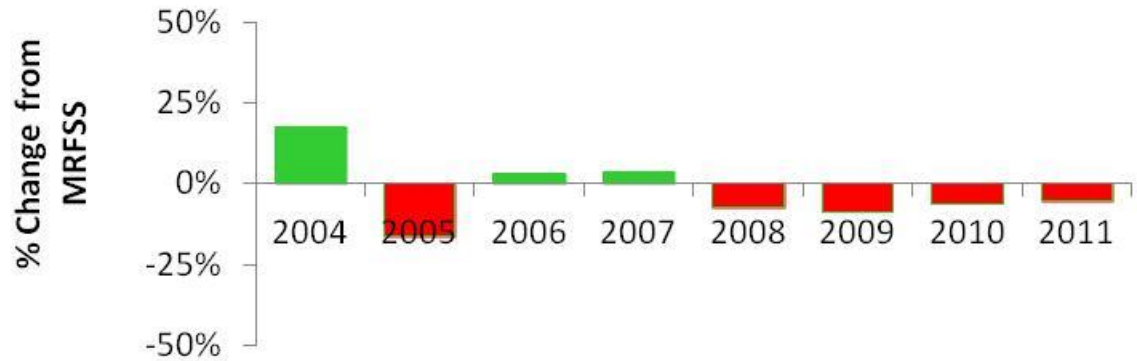
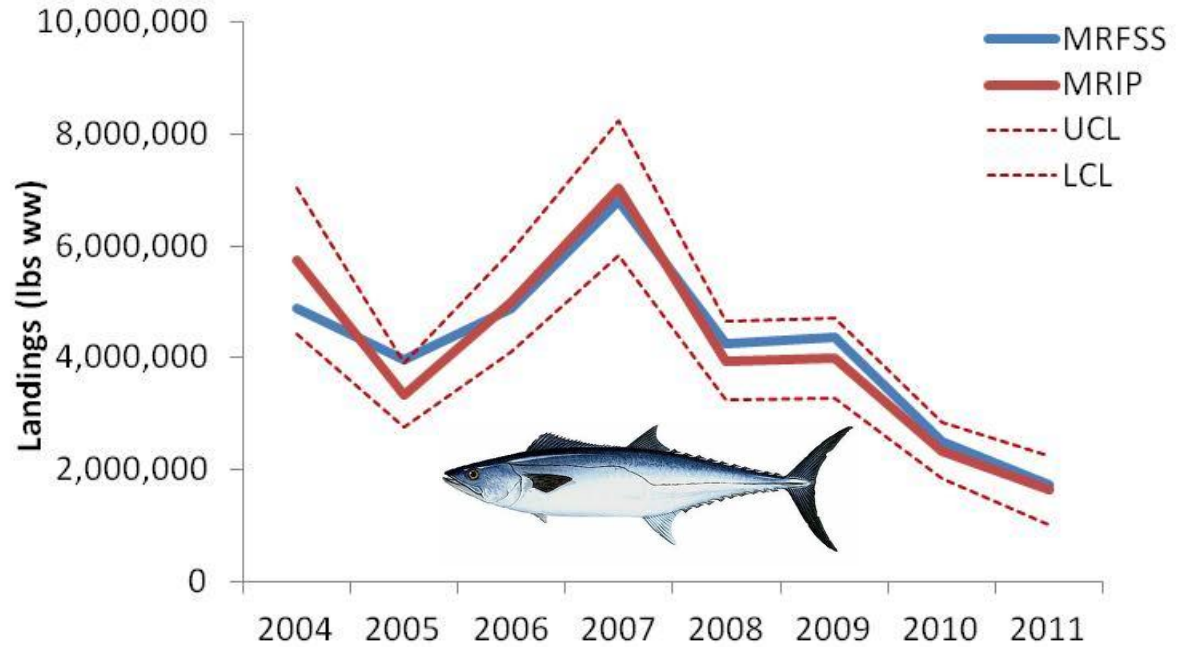


GREATER AMBERJACK



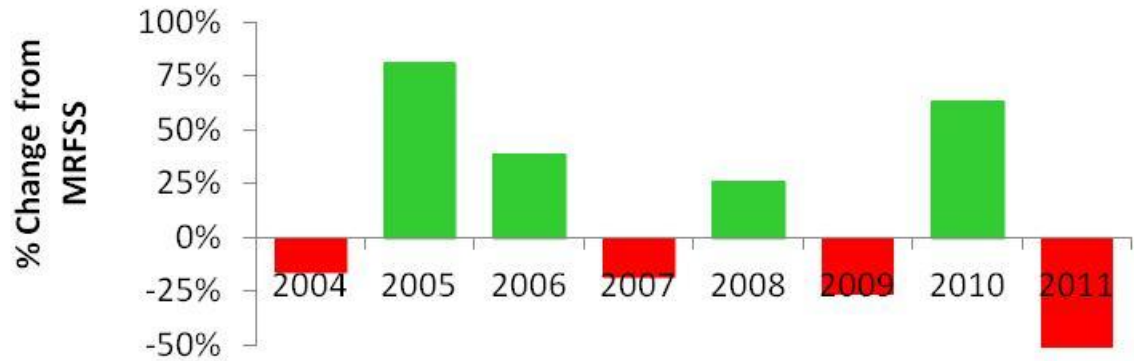
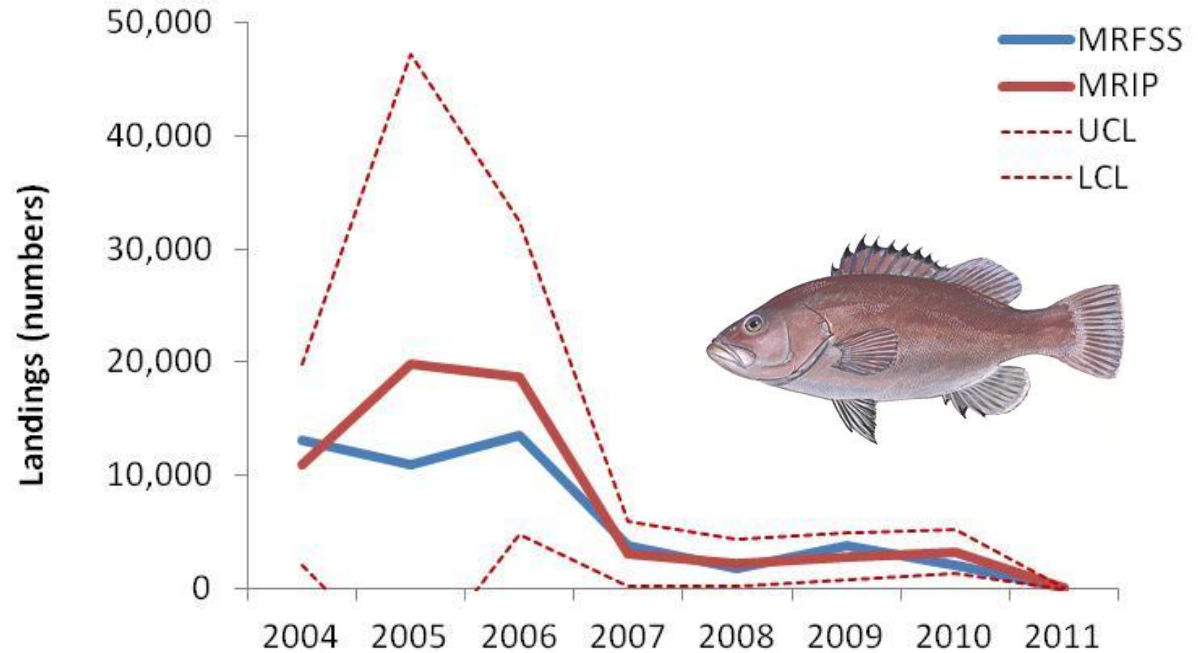


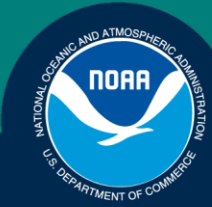
KING MACKEREL



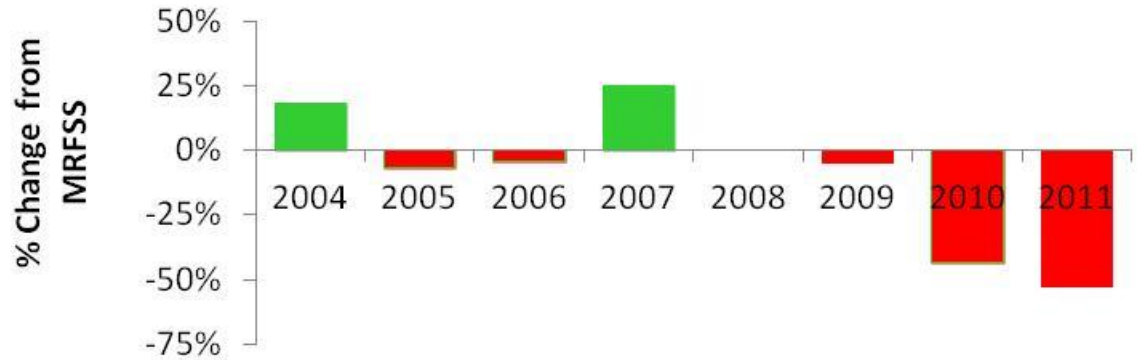
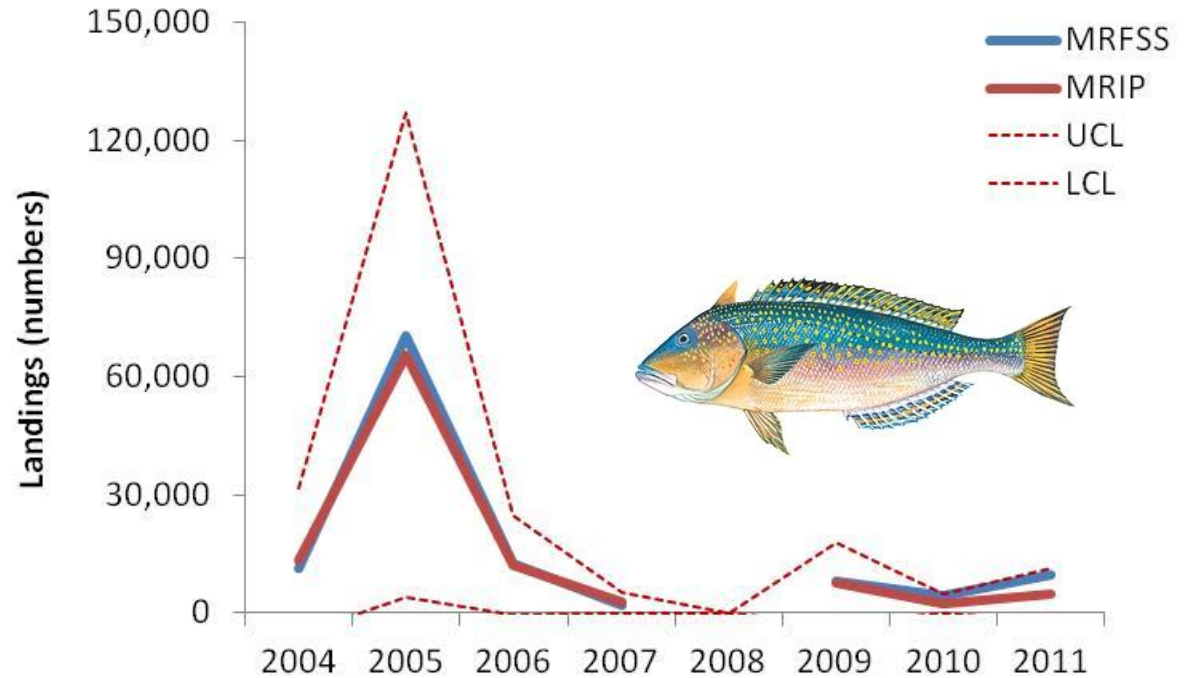


SNOWY GROUPE





GOLDEN TILEFISH





POTENTIAL IMPLICATIONS

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.



MANAGEMENT IMPLICATIONS: ACLS AND ALLOCATIONS

- 67 ACLs (33 comm., 29 rec., 5 agg.)
- 5 ACLs would not require modification:

| | | | |
|-------------|------------|-----------|---------------|
| Golden crab | Octocorals | Sargassum | Wreckfish (2) |
|-------------|------------|-----------|---------------|

- ACLs based on landings data could be modified via a regulatory amendment
- 58 species/complexes have allocations; most include landings data through 2008 and may require modification.



MANAGEMENT IMPLICATIONS: ACLS AND QUOTAS

- Numerous ACLs may require modification after stock assessments, including:

| | | | |
|--------------------|-------------------|-----------------|----------------|
| Black sea bass | Snowy grouper | Golden tilefish | Black grouper |
| Gag | Red grouper | Red porgy | Greater AJ |
| King mackerel | Vermilion snapper | Red snapper | Mutton snapper |
| Yellowtail snapper | | | |

- Jurisdictional apportionment of three species may be affected by MRIP-MRFSS changes

Yellowtail snapper

Black grouper

Mutton snapper



TRANSITION STRATEGY

1. Coordinate with the SSC to review all available information.
2. Review the stock assessment schedule to understand if any changes are needed for those stocks most affected by the transition to MRIP.





TRANSITION STRATEGY

3. Host a Calibration Workshop to develop a process for adjusting catch estimates pre-2004 and incorporating MRIP-based estimates into stock assessments.
4. Based on those findings, begin reviewing management measures and if necessary make changes through regulatory or plan amendments



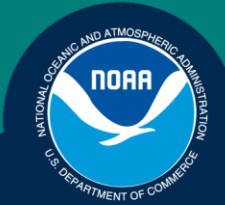
MRIP NEXT STEPS

Implement improved catch estimation methodology

Continued pilot testing of enhanced catch and effort surveys

Implement Survey Design Improvements

Enhanced timeliness and geographic-level reporting



PILOT PROJECTS

Pilot Projects

- Electronic logbooks for charter and headboats.
- Enhanced angler dockside survey to complement the improved catch estimation methodology.
- An improved effort survey utilizing the National Saltwater Angler Registry.
- Ways to support more frequent reporting and posting of estimates.



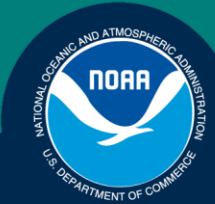
MRIP IMPROVEMENTS IN 2013

Beginning in 2013, MRIP expects to implement these improvements:

- Enhanced angler dockside survey.
- Improved survey to gather angler trip data.
- Increased sampling to improve precision and timeliness.



NOAA FISHERIES SERVICE



QUESTIONS?

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Marine Recreational Information Program

You are here: Home

Marine Recreational Information Program

The Marine Recreational Information Program, or MRIP, is changing the way NOAA and anglers work together to help ensure the long-term sustainability of America's recreational fisheries... [more](#).

- [Query Catch and Trip Statistics](#)
- [Information for Anglers](#)
- [Information for Management and Science Partners](#)
- [Frequently Asked Questions about MRIP](#)

New Catch Estimation Resources

As part of MRIP's work to improve recreational fishing statistics, NOAA Fisheries has implemented a new statistical method for calculating recreational catch estimates. New estimates for the Atlantic and Gulf Coasts will be released soon.

- [MRIP TV - Addressing Bias video](#)
- [MRIP Brochure](#)
- [How Surveys Work Fact Sheet](#)
- [New Estimation Methodology Presentation](#)

Latest News

- [Release of Revised MRIP Catch Estimates Pending](#)
- [Tracking Discards the Subject of New Video](#)
- [NOAA Testing Angler Logbooks](#)
- [2011/2012 MRIP Implementation Plan Update Released](#)

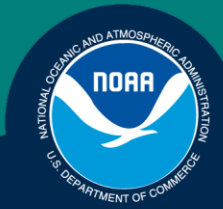
What People Are Saying

"Let the numbers fall where they may. The important thing is to get the best system in place, use that system, and continue it into the future."

*Bruce Freeman,
Jersey Coast Anglers Association*

MRIP Homepage: www.countmyfish.noaa.gov/

MRIP-MRFSS Comparison Query:
www.st.nmfs.noaa.gov/st1/recreational/queries/



MRIP INTEGRATED TRANSITION STRATEGY

Science Has Lead

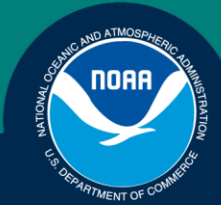
Management Has Lead

| Transition Issue | Jan 12 | Feb 12 | Mar 12 | Apr 12 | May 12 | Jun 12 | Jul 12 | Aug 12 | Sep 12 | Oct 12 | Nov 12 | Dec 12 | Jan 13 | Feb 13 | Mar 13 | Apr 13 | May 13 | ➔ |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---|
| Work with Councils and Commissions to re-prioritize stock assessments given the new landings data | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | | | | | | | | |
| Ongoing intercept and effort survey pilot projects | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | | | | | |
| Monitor landings using MRFSS and MRIP estimates; Where estimates differ, determine AMs at end of season | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | | | | | |
| NMFS calibration workshop and peer review process | | | ◆ | ◆ | ◆ | ◆ | ◆ | | | | | | | | | | | |
| Stock assessment updates/data-poor analysis to estimate new biological reference points and ACLs | | | | | | | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ |
| Possible ACL Amendments for data-poor stocks | | | | | | | | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ |
| Monitor landings using MRIP only; Determine AMs at end of season or adjust per calibration methodology | | | | | | | | | | | | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ |
| Implement improved intercept survey, estimation, and effort survey designs | | | | | | | | | | | | | ◆ | ◆ | | | | |
| Possible ACL Amendments for newly assessed stocks | | | | | | | | | | | | | | ◆ | ◆ | ◆ | ◆ | ◆ |



CALIBRATION WORKSHOP

- Review ongoing and completed studies comparing MRFSS to MRIP, and propose any additional work to further facilitate MRFSS/MRIP calibration.
- Propose a methodology for calibrating MRFSS data to MRIP data and demonstrate how it would work in hind-casting catch and effort for select data sets
- Recommend a plan for implementing the calibration methodology into updated and benchmark stock assessments.



BLACK SEA BASS

(NUMBERS OF FISH)

| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|----------------|---------------------------------------|-------------------------------------|--------------------------|---------------------|--|
| 2004 | BLACK SEA BASS | 892,345 | 917,650 | 25,305 | 3% | 16.3 |
| 2005 | BLACK SEA BASS | 712,882 | 623,142 | -89,740 | -12.60% | 14.3 |
| 2006 | BLACK SEA BASS | 694,360 | 580,078 | -114,283 | -16.50% | 15.4 |
| 2007 | BLACK SEA BASS | 571,283 | 434,680 | -136,603 | -23.90% | 17 |
| 2008 | BLACK SEA BASS | 352,551 | 347,343 | -5,208 | -1.48% | 15.5 |
| 2009 | BLACK SEA BASS | 276,043 | 271,090 | -4,953 | -1.79% | 14.3 |
| 2010 | BLACK SEA BASS | 502,018 | 508,524 | 6,506 | 1.30% | 21.3 |
| 2011 | BLACK SEA BASS | 350,512 | 340,009 | -10,503 | -3.00% | 15.2 |

* Estimates based on Jan 1-Dec 31 calendar year rather than Jun 1-May 31 fishing year

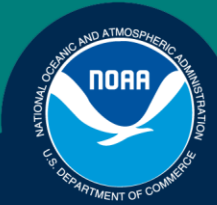
**NOAA
FISHERIES
SERVICE**



RED SNAPPER

(NUMBERS OF FISH)

| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|-------------|--|--|-----------------------------|------------------------|--|
| 2004 | RED SNAPPER | 39,477 | 33,858 | -5,619 | -14.20% | 18 |
| 2005 | RED SNAPPER | 35,349 | 29,256 | -6,093 | -17.20% | 21.1 |
| 2006 | RED SNAPPER | 25,918 | 28,482 | 2,564 | 9.89% | 23.4 |
| 2007 | RED SNAPPER | 41,252 | 23,972 | -17,280 | -41.90% | 26.3 |
| 2008 | RED SNAPPER | 110,782 | 99,210 | -11,573 | -10.40% | 22 |
| 2009 | RED SNAPPER | 122,174 | 97,184 | -24,990 | -20.50% | 24.3 |
| 2010 | RED SNAPPER | 97 | 62 | -35 | -35.90% | 111.3 |
| 2011 | RED SNAPPER | 1,243 | 1,048 | -195 | -15.70% | 96.6 |



VERMILION SNAPPER

(NUMBERS OF FISH)

| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|-------------------|--|--|-----------------------------|------------------------|--|
| 2004 | VERMILION SNAPPER | 232,526 | 237,865 | 5,340 | 2.30% | 19.8 |
| 2005 | VERMILION SNAPPER | 150,439 | 154,037 | 3,598 | 2.39% | 36.2 |
| 2006 | VERMILION SNAPPER | 176,030 | 254,878 | 78,848 | 44.80% | 22.9 |
| 2007 | VERMILION SNAPPER | 214,263 | 151,752 | -62,511 | -29.20% | 19.7 |
| 2008 | VERMILION SNAPPER | 187,924 | 187,293 | -631 | -0.34% | 20 |
| 2009 | VERMILION SNAPPER | 229,497 | 188,061 | -41,436 | -18.10% | 17.6 |
| 2010 | VERMILION SNAPPER | 86,638 | 70,952 | -15,686 | -18.10% | 19.1 |
| 2011 | VERMILION SNAPPER | 66,996 | 58,003 | -8,993 | -13.40% | 22.8 |

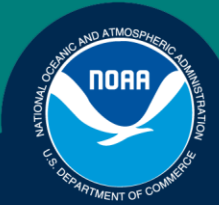


YELLOWTAIL SNAPPER

(NUMBERS OF FISH)

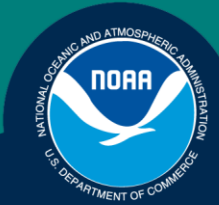
| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|--------------------|--|--|-----------------------------|------------------------|--|
| 2004 | YELLOWTAIL SNAPPER | 496,779 | 663,846 | 167,067 | 33.60% | 18.6 |
| 2005 | YELLOWTAIL SNAPPER | 453,368 | 403,195 | -50,173 | -11.10% | 11.5 |
| 2006 | YELLOWTAIL SNAPPER | 514,286 | 610,478 | 96,192 | 18.70% | 13.7 |
| 2007 | YELLOWTAIL SNAPPER | 665,868 | 917,580 | 251,712 | 37.80% | 21 |
| 2008 | YELLOWTAIL SNAPPER | 585,815 | 970,467 | 384,653 | 65.70% | 25.7 |
| 2009 | YELLOWTAIL SNAPPER | 268,260 | 394,819 | 126,559 | 47.20% | 17.6 |
| 2010 | YELLOWTAIL SNAPPER | 323,551 | 423,233 | 99,682 | 30.80% | 14.6 |
| 2011 | YELLOWTAIL SNAPPER | 229,827 | 240,365 | 10538 | 4.59% | 20.2 |

**NOAA
FISHERIES
SERVICE**



**GAG
(NUMBERS OF FISH)**

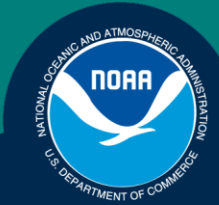
| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|---------|--|--|-----------------------------|------------------------|--|
| 2004 | GAG | 44,412 | 49,758 | 5,346 | 12% | 23.9 |
| 2005 | GAG | 37,657 | 32,843 | -4814 | -12.80% | 18.7 |
| 2006 | GAG | 35,227 | 41,090 | 5,863 | 16.60% | 19.1 |
| 2007 | GAG | 44,423 | 38,538 | -5,885 | -13.20% | 17.7 |
| 2008 | GAG | 43,432 | 45,741 | 2,309 | 5.32% | 23.2 |
| 2009 | GAG | 22,168 | 34,249 | 12,081 | 54.50% | 28.5 |
| 2010 | GAG | 17,650 | 14,810 | -2840 | -16.10% | 26.2 |
| 2011 | GAG | 10,330 | 8,782 | -1,548 | -15.00% | 30.1 |



RED GROUPER

(NUMBERS OF FISH)

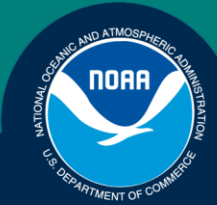
| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|-------------|--|--|-----------------------------|------------------------|--|
| 2004 | RED GROUPER | 24,006 | 36,104 | 12,097 | 50% | 44.6 |
| 2005 | RED GROUPER | 30,239 | 37,490 | 7250 | 24.00% | 26.8 |
| 2006 | RED GROUPER | 40,202 | 56,588 | 16,386 | 40.80% | 36 |
| 2007 | RED GROUPER | 73,642 | 91,848 | 18,206 | 24.70% | 37.4 |
| 2008 | RED GROUPER | 85,035 | 90,329 | 5,294 | 6.23% | 29.6 |
| 2009 | RED GROUPER | 23,724 | 54,790 | 31,066 | 131.00% | 58 |
| 2010 | RED GROUPER | 7,183 | 9,614 | 2431 | 33.80% | 54.6 |
| 2011 | RED GROUPER | 7,708 | 6,546 | -1,163 | -15.10% | 35.4 |



BLACK GROUPER

(NUMBERS OF FISH)

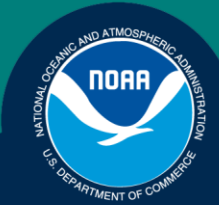
| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|---------------|--|--|-----------------------------|------------------------|--|
| 2004 | BLACK GROUPER | 15,696 | 35,686 | 19,990 | 127% | 33.3 |
| 2005 | BLACK GROUPER | 12,915 | 13,001 | 86 | 0.67% | 29.6 |
| 2006 | BLACK GROUPER | 7,723 | 12,174 | 4,451 | 57.60% | 42.1 |
| 2007 | BLACK GROUPER | 14,798 | 22,540 | 7,742 | 52.30% | 27.6 |
| 2008 | BLACK GROUPER | 14,708 | 16,284 | 1,576 | 10.70% | 34.2 |
| 2009 | BLACK GROUPER | 13,934 | 16,822 | 2,888 | 20.70% | 33.1 |
| 2010 | BLACK GROUPER | 3,418 | 3,731 | 313 | 9.16% | 44.5 |
| 2011 | BLACK GROUPER | 2,843 | 1,624 | -1,218 | -42.90% | 62 |



GREATER AMBERJACK

(NUMBERS OF FISH)

| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|------|-------------------|--|--|-----------------------------|------------------------|--|
| 2004 | GREATER AMBERJACK | 24,276 | 21,549 | -2,728 | -11% | 16.6 |
| 2005 | GREATER AMBERJACK | 15,397 | 13,039 | -2359 | -15.30% | 24 |
| 2006 | GREATER AMBERJACK | 23,491 | 28,629 | 5,138 | 21.90% | 29.6 |
| 2007 | GREATER AMBERJACK | 41,269 | 44,757 | 3,488 | 8.45% | 15.1 |
| 2008 | GREATER AMBERJACK | 60,743 | 55,830 | -4,914 | -8.09% | 16.2 |
| 2009 | GREATER AMBERJACK | 50,497 | 45,703 | -4,794 | -9.49% | 13.4 |
| 2010 | GREATER AMBERJACK | 40,719 | 39,942 | -777 | -1.91% | 17.4 |
| 2011 | GREATER AMBERJACK | 16,719 | 14,938 | -1,780 | -10.60% | 23.4 |



KING MACKEREL

(NUMBERS OF FISH)

| Year | Species | MRFSS Unweighted Total (Harvest A+B1) | MRFSS Weighted Total (Harvest A+B1) | Difference: MRIP - MRFSS | % Change from MRFSS | PSE for MRIP Weighted Total (Harvest A+B1) |
|-------------|----------------|--|--|-------------------------------------|--------------------------------|---|
| 2004 | KING MACKEREL | 397,509 | 460,276 | 62,766 | 15.80% | 9.9 |
| 2005 | KING MACKEREL | 427,498 | 391,901 | -35,597 | -8.33% | 8.8 |
| 2006 | KING MACKEREL | 508,232 | 489,966 | -18,266 | -3.59% | 8.2 |
| 2007 | KING MACKEREL | 805,441 | 818,467 | 13,026 | 1.62% | 8.9 |
| 2008 | KING MACKEREL | 489,031 | 483,730 | -5,301 | -1.08% | 9.5 |
| 2009 | KING MACKEREL | 440,568 | 420,087 | -20,480 | -4.65% | 8.4 |
| 2010 | KING MACKEREL | 243,966 | 233,726 | -10,240 | -4.20% | 10.4 |
| 2011 | KING MACKEREL | 137,622 | 137,108 | -514 | -0.37% | 19.4 |