UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

APR 30 2013

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act, an environmental review has been performed on the following action.

TITLE: Clearance of Proposed Rule for Regulatory Amendment 13 to the Fishery Management Plan for the Snapper-Grouper Fishery of the South Atlantic Region with Environmental Assessment (Regulatory Amendment 13) (RIN 0648-BC41)

LOCATION: Exclusive economic zone off the Southeast coast

SUMMARY: At their December 2012 meeting, the South Atlantic Fishery Management Council approved Regulatory Amendment 13 for review by the Secretary of Commerce by a unanimous vote. The purpose of Regulatory Amendment 13 is to revise the acceptable biological catch estimates, annual catch limits (ACLs, including sector ACLs), and recreational annual catch targets for 37 un-assessed species in the snapper-grouper fishery management unit. The revisions incorporate updates to the recreational data as per the new Marine Recreational Information Program (MRIP), as well as updates to commercial and for-hire landings.

The revisions are necessary to avoid triggering accountability measures for snapper-grouper species based on ACLs that were established by the Comprehensive ACL Amendment using recreational data under the Marine Recreational Fisheries Statistics Survey (MRFSS) system. National Marine Fisheries Service (NMFS) no longer uses the MRFSS and now estimates recreational landings using the MRIP. The intent of Regulatory Amendment 13 is to ensure the use of best available science as per National Standard 2, and prevent unnecessary negative socio-economic impacts that may otherwise be realized by participants in the snapper-grouper fishery and fishing community, in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act.

RESPONSIBLE OFFICIAL: Roy E. Crabtree, Ph.D.
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The environmental review process led us to conclude that this action will not have a significant impact on the environment. Therefore, an environmental impact statement was not prepared. A copy of the finding of no significant impact (FONSI), including the environmental assessment, is enclosed for your information.

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Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the Responsible Official named above.

Sincerely,

Patricia A. Montanio
NOAA NEPA Coordinator

Enclosure

Regulatory Amendment 13

to the Fishery Management Plan for the
Snapper Grouper Fishery of the South Atlantic Region

Revision of Acceptable Biological Catches, Annual Catch Limits (ACLs, including Sector ACLs), and Annual Catch Targets

December 2012

Environmental Assessment

A publication of the South Atlantic Fishery Management Council pursuant to National Oceanic and Atmospheric Administration Award Number FNA10NMF4410012

Abbreviations and Acronyms Used in the FMP

ABC	acceptable biological catch
ACL	annual catch limits
AM	accountability measures
ACT	annual catch target
B	a measure of stock biomass in either weight or other appropriate unit
B_{MSY}	the stock biomass expected to exist under equilibrium conditions when fishing at F_{MSY}
B_{OY}	the stock biomass expected to exist under equilibrium conditions when fishing at F_{OY}
B_{CURR}	The current stock biomass
CPUE	catch per unit effort
DEIS	draft environmental impact statement
EA	environmental assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
F	a measure of the instantaneous rate of fishing mortality
$F_{30\%SPR}$	fishing mortality that will produce a static SPR = 30%
F_{CURR}	the current instantaneous rate of fishing mortality
F_{MSY}	the rate of fishing mortality expected to achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}
F_{OY}	the rate of fishing mortality expected to achieve OY under equilibrium conditions and a corresponding biomass of B_{OY}
FEIS	final environmental impact statement
FMP	fishery management plan
FMU	fishery management unit
M	natural mortality rate
MARMAP	Marine Resources Monitoring Assessment and Prediction Program
MFMT	maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act
MRFSS	Marine Recreational Fisheries Statistics Survey
MRIP	Marine Recreational Information Program
MSFCMA	Magnuson-Stevens Fishery Conservation and Management Act
MSST	minimum stock size threshold
MSY	maximum sustainable yield
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
OY	optimum yield
RIR	regulatory impact review
SAMFC	South Atlantic Fishery Management Council
SEDAR	Southeast Data Assessment and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SIA	social impact assessment
SPR	spawning potential ratio
SSC	Scientific and Statistical Committee

Regulatory Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region with Environmental Assessment

Proposed action:	Revise acceptable biological catches, annual catch limits (ACLs, including sector ACLs), and annual catch targets for select un-assessed species in the snapper grouper fishery management unit.
Lead agency:	FMP Amendment – South Atlantic Fishery Management Council Environmental Assessment – National Marine Fisheries Service (NMFS) Southeast Regional Office
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Summary

The Comprehensive Annual Catch Limit (ACL) Amendment included Amendment 25 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP). The South Atlantic Fishery Management Council (South Atlantic Council) approved the amendment at the September 2011 meeting, and the final rule for the Comprehensive ACL Amendment published on March 16, 2012 (77 FR 15916), and was implemented on April 16, 2012. As part of this final rule, acceptable biological catches (ABCs), ACLs (including sector ACLs), annual catch targets (ACTs), and accountability measures (AMs) were established for species in the snapper grouper fishery management unit (FMU). Recreational catch estimates in the Comprehensive ACL Amendment were computed using data generated by the Marine Recreational Fisheries Statistics Survey (MRFSS). Following an independent review by the National Research Council and a mandate from Congress, the National Marine Fisheries Service (NMFS) has overhauled MRFSS. The Marine Recreational Information Program (MRIP) was developed to provide more accurate recreational catch estimates by accounting for potential biases such as possible differences in catch rates at high-activity and low-activity fishing sites, as well as the amount of fishing occurring at different parts of the day. MRIP methods have been used to recalculate previous MRFSS estimates dating back to 2004, and will be the basis for all new recreational catch estimates moving forward. The NMFS Southeast Regional Office and NMFS Southeast Fisheries Science Center have used ratio estimators to further revise the MRFSS estimates back to 1986. In addition to MRIP data, ACLs will be updated to include revisions to commercial and for-hire landings. The changes in data impact the allocations to the commercial and recreational sectors because the underlying formula used to establish the allocations remains unchanged from what was implemented previously in the Comprehensive ACL Amendment. In the near future, NMFS Office of Science and Technology will attempt to use MRFSS data to develop MRIP re-estimates for the years 1998-2003; however, it is not expected these re-estimates would be completed in 2013.

The South Atlantic Council stated in **Section 1.4** of the Comprehensive ACL Amendment that necessary changes to the ABCs, ACLs, ACTs, and AMs for snapper grouper species would be made through the framework procedure modified in Amendment 17B to the Snapper Grouper FMP, which is a more rapid process than a plan amendment. If the ABC, ACL, and ACT values are not updated with the new MRIP estimates, the result would be ACLs set using MRFSS data while the landings being used to track the ACLS will be estimated using MRIP data. This would result in a disconnect in how ACLs are calculated versus how they are monitored. Furthermore, correction of estimates for earlier years will also be considered in the future. In June 2012, the South Atlantic Council passed a motion to update the ACLs (including sector ACLs) and ACTs in a framework action.

Regulatory Amendment 13 to the Snapper Grouper FMP (Regulatory Amendment 13) revises the ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed

species in the snapper grouper FMU, and reflects the intent of the South Atlantic Council. Updates will include data through 2008 since that was the last year used in the Comprehensive ACL Amendment to establish ACLs. Additionally, species in the snapper grouper FMU with stock assessments (including those in Amendments 17A and 17B to the Snapper Grouper FMP); species with ABC=0 landings; and those species not utilizing a formula to calculate their ABC in the Comprehensive ACL Amendment are excluded from Regulatory Amendment 13.

The intent of Regulatory Amendment 13 is to prevent unnecessary negative socio-economic impacts that may otherwise be realized in the snapper grouper fishery and fishing community, in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act, and to ensure the use of best available science as required by National Standard 2.

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Chapter 1.
Introduction

1.1 What Actions Are Being Proposed?

Revisions to acceptable biological catches (ABCs), annual catch limits (ACLs) (including sector ACLs), and annual catch targets (ACTs) implemented through the Comprehensive ACL Amendment (SAFMC 2011c) for select un-assessed species in the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) are being proposed.

1.2 Who is Proposing the Actions?

The South Atlantic Fishery Management Council (South Atlantic Council) is proposing the actions. The South Atlantic Council develops the plans/amendments/regulations and submits them to the National Marine Fisheries Service (NMFS) who ultimately approves, disapproves, or partially approves the actions in the amendment on behalf of the Secretary of Commerce. NMFS is an agency in the National Oceanic and Atmospheric Administration.

South Atlantic Fishery Management Council

- Responsible for conservation and management of fish stocks
- Consists of 13 voting members who are appointed by the Secretary of Commerce and 4 non-voting members
- Management area is from 3 to 200 miles off the coasts of North Carolina, South Carolina, Georgia, and Florida through the Atlantic side of Key West
- Develops management plans/amendments and recommends regulations to NMFS for implementation

1.3 Why is the South Atlantic Council Considering Action?

Recreational catch estimates in the Comprehensive ACL Amendment (SAFMC 2011c) were computed using data generated by the Marine Recreational Fisheries Statistics Survey (MRFSS). Following an independent review by the National Research Council and a mandate from Congress, NMFS has overhauled MRFSS. The Marine Recreational Information Program (MRIP) was developed to provide more accurate recreational catch estimates. The South Atlantic Council stated in the Comprehensive ACL Amendment that they would take action as needed, via plan amendment or framework amendment, to revise the appropriate values, in 2012 and beyond. MRIP methods have been used to recalculate previous MRFSS estimates dating back to 1986, and will be the basis for all new estimates moving forward.

The revisions are necessary because if the ABC, ACL, and ACT values are not updated with the new MRIP estimates, ACLs would be set using MRFSS data while the landings being used to track the ACLs would be estimated using MRIP data. This would result in a disconnect in how ACLs are calculated versus how they are monitored. In addition to MRIP data, ACLs would be updated to include revisions to commercial and for-hire landings. The changes in data impact the allocations to the commercial and recreational sectors because the underlying formula used to establish the allocations remains unchanged from what was implemented previously in the Comprehensive ACL Amendment. Additionally, using MRIP values to estimate recreational landings, as well as updates to headboat and commercial landings represent the best available data and are therefore, in accordance with National Standard 2 of the Magnuson-Stevens Act.

Purpose for Action

The purpose of Regulatory Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13) is to revise the ABCs, ACLs (including sector ACLs), and ACTs implemented by the Comprehensive ACL Amendment (SAFMC 2011c). The revisions may prevent a disjunction between the established ACLs and the landings used to determine if AMs are triggered. Regulatory Amendment 13 would also ensure that the best available science is utilized, as per National Standard 2.

Need for Action

To prevent unnecessary negative socio-economic impacts that may otherwise be realized in the snapper grouper fishery and fishing community, in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act.

1.4 Which species are affected by this action?

Thirty-seven species in the snapper grouper fishery management unit (FMU), including 31 species in 6 species complexes, and 6 individual species are included in Regulatory Amendment 13 to the Snapper Grouper FMP (Regulatory Amendment 13) (**Table 1-1**). These species do not have stock assessments; ABC > 0; and their ABC was specified using a formula (3rd highest landings 1999-2008 or median landings 1999-2008). This formula is a component of the ABC control rule established in the Comprehensive ACL Amendment.

Table 1-1. List of 37 un-assessed snapper grouper species for which ABC, ACLs (including sector ACLs), and ACTs would be revised.

Deepwater Complex
Yellowedge grouper
Blueline tilefish
Silk snapper
Misty grouper
Sand tilefish
Queen snapper
Black snapper
Blackfin snapper
Jacks Complex
Almaco jack
Banded rudderfish
Lesser amberjack
Snappers Complex
Gray snapper
Lane snapper
Cubera snapper
Dog snapper
Mahogany snapper
Grunts Complex
White grunt*
Sailors choice
Tomtate
Margate
Shallow-Water Groupers Complex
Red hind
Rock hind
Yellowmouth grouper
Yellowfin grouper
Coney
Graysby
Porgies Complex
Jolthead porgy
Knobbed porgy
Saucereye porgy
Scup
Whitebone porgy
Individual Species
Atlantic spadefish
Blue runner
Bar jack
Gray triggerfish**
Scamp
Hogfish

*White grunt includes unclassified grunts because only one state identifies grunts to the species level. **Includes unclassified triggerfishes because commercial landings of triggerfish are not identified to the species level.
Note: Nassau grouper, goliath grouper, speckled hind, and warsaw grouper are not included since their ABC = 0 landings.

Seventeen species in the snapper grouper FMU with stock assessments (including those addressed in Amendments 17A and 17B to the Snapper Grouper FMP); species with ABC=0 landings; and those species not utilizing a formula to calculate their ABC in the Comprehensive ACL Amendment are excluded from Regulatory Amendment 13 (**Table 1-2**). The MRIP calibration workshop (**Appendices C** and **D**) recommended that assessed species be handled separately, and that the adjustments to the landings data be made during assessment updates/revisions. ABCs, ACLs (including sector ACLs), and ACTs for the 17 species in **Table 1-2** will be revised in future amendments (or regulatory notices) to the Snapper Grouper FMP. Also excluded are six ecosystem component species (EC), which were exempt from the requirement of establishing ACLs in the Comprehensive ACL Amendment. The EC species are: Schoolmaster; cottonwick; longspine porgy; ocean triggerfish; bank sea bass; and rock sea bass.

Table 1-2. List of the 17 species for which ABCs, ACLs (including sector ACLs), and ACTs would ***not*** be revised in Regulatory Amendment 13.

Species
Red snapper
Black sea bass
Gag
Golden tilefish
Snowy grouper
Red porgy
Vermilion snapper
Greater amberjack
Yellowtail snapper
Mutton snapper
Black grouper
Red grouper
Nassau grouper
Goliath grouper
Speckled hind
Warsaw grouper
Wreckfish

1.5 What are the data sources considered in this amendment?

The Comprehensive ACL Amendment (SAFMC 2011c) established preferred methods for the computation of ABC, allocations of ABC to sectors for the establishment of sector ACLs, and recreational ACTs. The Comprehensive ACL Amendment contained computations of these values using datasets from 15 September 2010 (Recreational ACL Data) and 8 October 2010 (Commercial ACL Data), both provided by the Southeast Fisheries Science Center (SEFSC). The commercial ACL dataset provided additional quality assurance and quality control (QA/QC) on commercial data obtained from the Accumulated Landings System, which assimilates landings data obtained from dealer-reporting and assigns catch to region based on fisher-reported catch area. The recreational ACL dataset provided additional QA/QC on recreational catch data reported by the SEFSC Headboat Survey (HBS) and MRFSS. One of the major features of this QA/QC is that the MRFSS survey periodically provides no poundage for landings estimates for fish if there is insufficient biological sampling; whereas, the SEFSC methodology backfills these gaps using statistically-robust weight estimation methods.

Since the implementation of the Comprehensive ACL Amendment, there have been substantial improvements in the data collection and catch estimation methodologies that are used to generate the data for the computation of ABCs, ACLs, and ACTs.

Regulatory Amendment 13 presents ABCs, ACLs, and ACTs computed using methods identical to those used in the Comprehensive ACL Amendment to update these management parameters with the data that will be used to monitor ACLs in the future. The same computational methodologies are used so that the new values reflect the South Atlantic Council and Scientific and Statistical Committee's (SSC) intent as specified in the Comprehensive ACL Amendment. All changes are due to improvements in the underlying data only.

The first updated dataset referred to as the "New MRFSS & Commercial" data contains updated HBS and MRFSS data (1986-2008) and updated commercial data (1986-2008). The 30 August 2012 recreational ACL and the 3 July 2012 commercial datasets were used to generate these combined data. In addition to minor revisions of historical catch data generated by removal of duplicate records and other QA/QC activities, these data feature two major differences from the datasets used in the Comprehensive ACL Amendment: (1) A more statistically robust MRFSS weight backfill procedure and (2) an improved charter calibration method for MRFSS (1986-2004) data (see SEDAR25 Data Workshop Report in SEDAR25 (2011), for details). The updated ABCs, ACLs, and ACTs computed from these data are shown simply to facilitate a more direct comparison with the impacts of switching from MRFSS-based to MRIP-based recreational data.

The final dataset, referred to herein as the "MRIP & New Commercial" data, replaces the MRFSS-based recreational data with MRIP-based recreational data. These are the data that are used in Regulatory Amendment 13 under Alternative 2 to generate the final ABC, allocation, ACL, and ACT values. These data are based upon the 3 July 2012 commercial ACL and the 1 October 2012 recreational ACL datasets. The updated recreational ACL dataset contains MRIP official re-estimates (2004-2008) and recalibrated MRFSS data (1986-2003). The MRIP process was begun in 2004 to address issues identified by the National Research Council (NRC) in the existing MRFSS program. The goal of MRIP is to provide more detailed, timely, and reliable estimates of marine recreational fishing catch and effort. One step in this process was to take

old MRFSS data (2004-2011) and re-estimate it using MRIP methods that remove sources of bias identified by the NRC. Using these official MRIP estimates, the Southeast Regional MRIP Recalibration Working Group developed recalibration methods to address regional needs, following the procedures recommended by the MRIP Ad-Hoc Working Group (**Appendix D**). The MRFSS data (1986-2003) are recalibrated to be more appropriately scaled to MRIP using a ratio of mean landings in numbers at the stock, sub-region, and mode level (when available), based upon the MRFSS (2004-2011) and MRIP (2004-2011) data. These ratios were then applied at each stratum (stock, sub-region, year, wave, state, mode, and area) to the catches to develop the recalibrated MRFSS dataset. Average weights were then assigned to strata using the SEFSC's statistically robust weight estimation procedure, and total landings in pounds were computed.

Chapter 2. Proposed Action

2.1 List of Alternatives

2.1.1 Action: Revise the acceptable biological catches (ABCs), annual catch limits (ACLs, including sector ACLs), and annual catch targets (ACTs) for select un-assessed species in the snapper grouper fishery management unit (FMU).

Alternative 1. No action. Do not revise ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed species in the snapper grouper FMU. Data would not be updated with data from Marine Recreational Information Program (MRIP), commercial, and for-hire landings.

Alternative 2 (Preferred). Revise the ABCs, ACL (including sector ACLs), and ACTs for select un-assessed species in the snapper grouper FMU. Data will be updated with data from MRIP, commercial, and for-hire landings.

Comparison of Alternatives

Alternative 1 (No Action) would retain the ABCs, ACLs (including sector ACLs), and ACTs that were analyzed and implemented by the Comprehensive ACL Amendment (SAFMC 2011c); whereas, **Alternative 2 (Preferred)** would update these parameters based on new information from the Marine Recreational Information Program. Greater biological benefits are expected under **Alternative 2 (Preferred)** as opposed to **Alternative 1** (**No Action**), however, these benefits are expected to be negligible. While the percent differences in the revised ABCs and ACLs in Regulatory Amendment 13 may be relatively small from the status quo levels, the data revealed by new and updated methodology more accurately represent the fishing effort for these species, and would be more likely to trigger accountability measures (AMs) when needed. In contrast, **Alternative 1 (No Action)** could either result in triggering an AM when it is not needed, or not trigger an AM when it is needed. Therefore, both direct and indirect biological effects to the fishery resource could be expected.

Alternative 2 (Preferred), which would update commercial landing data as well as replace MRFSS data with MRIP data, would make adjustments to ACLs for the 37 un-assessed stocks affected by this regulatory amendment. As a result of the ACLs changing, there would be expected to be economic effects for those species depending on when the new ACL is met and an AM is triggered. However, other stocks not affected based on 2012 landings, the first year the **Alternative 1 (No Action)** values were in place, could be affected in future years should fishing behavior change from what has been observed thus far.

The social effects of potential changes in the ACLs for the 37 species (**Preferred Alternative 2**) are expected to occur in the short and long term, and are closely associated with biological and economic impacts of these actions. Overall, adjustments in ACLs based on improved information would be beneficial to the species and would likely produce long-term benefits to the fishermen, coastal communities, and fishing businesses by contributing to sustainable harvest of these fish in the present and future. Negative social impacts would result from expected economic impacts on the fishermen and communities through lower quotas relative to recent catch history, and associated AMs. The negative effects of AMs such as early closures and paybacks (which in turn increase the likelihood of an earlier closure in the following year) are usually short-term, but they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects. Some of those effects are similar to other thresholds being met and may involve switching to other species or discontinuing fishing altogether.

The mechanisms for monitoring and documentation of ABCs, ACLs (including sector ACLs), ACTs, and AMs are already in place with the implementation of the Comprehensive ACL Amendment (SAFMC 2011c), and reflects **Alternative 1** (**No Action**). Regulatory Amendment 13 would not implement any new mechanisms. Therefore, the administrative impacts of **Alternative 2 (Preferred)** would be minimal, and not differ much when compared with **Alternative 1** (**No Action**).

Changes to the ABCs from the values in the Comprehensive ACL Amendment (SAFMC 2011c) resulting from the new datasets are shown in **Table 2-1**. Changes to the allocations from the values in the Comprehensive ACL Amendment (SAFMC 2011c) resulting from the new datasets are shown in **Table 2-2**. Changes to the ACLs from the values in the Comprehensive ACL Amendment (SAFMC 2011c) resulting from the new datasets are shown in **Table 2-3**. Changes to the recreational ACTs from the values in the Comprehensive ACL Amendment (SAFMC 2011c) resulting from the new datasets are shown in **Table 2-4**. New ABCs, ACLs (including sector ACLs), and recreational ACTs are shown in **Table 2-5**.

Table 2-1. Acceptable biological catch (ABC) in pounds (lbs) whole weight (ww), for 37 un-assessed snapper grouper species implemented by the Comprehensive ACL Amendment (SAFMC 2011c) **(Alternative 1, No Action)**. Also shown are ABC values following identical computational methods using two updated data sources: (1) "New MRFSS & Commercial"- updated MRFSS data (1986-2008) and updated commercial data (1986-2008) and (2) "MRIP & New Commercial"- MRIP official re-estimates (2004-2008), recalibrated MRFSS data (1986-2003), and updated commercial data (1986-2008) **(Preferred Alternative 2)**.

STOCK OR STOCK COMPLEX NAME	ABC (lbs ww)			DIFFERENCE FROM COMP ACL AM (lbs ww (%))	
	Comprehensive ACL Amendment (Alt. 1)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)
DEEPWATER	**675,908**	**707,030**	**711,025**	**31,123 (4.60%)**	**35,118 (5.20%)**
Yellowedge grouper	30,221	30,221	30,221	0 (0.00%)	0 (0.00%)
Blueline tilefish	592,602	624,028	631,341	31,426 (5.30%)	38,739 (6.54%)
Silk Snapper	27,519	27,529	25,104	10 (0.04%)	-2,415 (-8.77%)
Misty grouper	2,863	2,863	2,863	0 (0.00%)	0 (0.00%)
Sand tilefish	8,823	8,521	7,983	-302 (-3.43%)	-840 (-9.52%)
Queen snapper	9,344	9,306	9,466	-37 (-0.40%)	123 (1.31%)
Black snapper	382	382	382	0 (0.00%)	0 (0.00%)
Blackfin snapper	4,154	4,181	3,665	27 (0.65%)	-489 (-11.77%)
JACKS	**455,489**	**449,739**	**457,221**	**-5,750 (-1.26%)**	**1,732 (0.38%)**
Almaco jack	291,922	286,196	302,517	-5,726 (-1.96%)	10,595 (3.63%)
Banded rudderfish	152,999	152,966	145,434	-33 (-0.02%)	-7,565 (-4.94%)
Lesser amberjack	10,568	10,577	9,270	9 (0.09%)	-1,298 (-12.28%)
SNAPPERS	**1,086,940**	**1,085,914**	**944,239**	**-1,026 (-0.09%)**	**-142,700 (-13.13%)**
Gray snapper	894,019	893,161	795,743	-858 (-0.10%)	-98,276 (-10.99%)
Lane snapper	153,466	153,466	119,984	0 (0.00%)	-33,482 (-21.82%)
Cubera snapper	31,772	31,602	24,680	-170 (-0.53%)	-7,092 (-22.32%)
Dog snapper	7,523	7,525	3,285	2 (0.03%)	-4,237 (-56.33%)
Mahogany snapper	160	160	548	0 (0.00%)	388 (242.43%)

STOCK OR STOCK COMPLEX NAME	ABC (lbs ww)			DIFFERENCE FROM COMP ACL AM (lbs ww (%))	
	Comprehensive ACL Amendment (Alt. 1)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)
GRUNTS	**776,774**	**805,874**	**806,652**	**29,099 (3.75%)**	**29,878 (3.85%)**
White grunt	635,899	663,390	674,033	27,491 (4.32%)	38,134 (6.00%)
Sailors choice	35,266	36,920	22,674	1,655 (4.69%)	-12,592 (-35.71%)
Tomtate	70,948	70,948	80,056	0 (0.00%)	9,109 (12.84%)
Margate	34,662	34,616	29,889	-46 (-0.13%)	-4,773 (-13.77%)
SHALLOW WATER GROUPERS	**97,817**	**97,745**	**96,432**	**-73 (-0.07%)**	**-1,386 (-1.42%)**
Red hind	25,885	25,875	24,867	-10 (-0.04%)	-1,018 (-3.93%)
Rock hind	37,569	37,577	37,953	8 (0.02%)	384 (1.02%)
Yellowmouth grouper	4,661	4,692	4,040	31 (0.66%)	-621 (-13.33%)
Yellowfin grouper	9,258	9,258	9,258	0 (0.00%)	0 (0.00%)
Coney	2,589	2,584	2,718	-4 (-0.16%)	129 (4.98%)
Graysby	17,856	17,757	17,597	-98 (-0.55%)	-258 (-1.45%)
PORGIES	**147,614**	**150,041**	**143,263**	**2,428 (1.64%)**	**-4,351 (-2.95%)**
Jolthead porgy	42,533	42,533	37,885	0 (0.00%)	-4,647 (-10.93%)
Knobbed porgy	61,194	64,130	67,441	2,936 (4.80%)	6,248 (10.21%)
Saucereye porgy	4,205	3,710	3,606	-495 (-11.78%)	-599 (-14.25%)
Scup	8,999	8,999	9,306	0 (0.00%)	308 (3.42%)
Whitebone porgy	30,684	30,671	25,024	-13 (-0.04%)	-5,660 (-18.45%)
INDIVIDUAL STOCKS					
Atlantic spadefish	282,841	283,177	189,460	336 (0.12%)	-93,381 (-33.02%)
Blue runner	1,289,941	1,288,716	1,125,729	-1,225 (-0.09%)	-164,212 (-12.73%)
Bar jack	20,520	19,684	24,780	-836 (-4.07%)	4,260 (20.76%)

STOCK OR STOCK COMPLEX NAME	ABC (lbs ww)			DIFFERENCE FROM COMP ACL AM (lbs ww (%))	
	Comprehensive ACL Amendment (Alt. 1)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)
Gray triggerfish	672,565	672,565	626,518	0 (0.00%)	-46,047 (-6.85%)
Scamp	492,572	499,255	509,788	6,683 (1.36%)	17,216 (3.50%)
Hogfish	147,638	147,971	134,824	333 (0.23%)	-12,814 (-8.68%)

Note: Updated MRFSS data incorporate changes in SEFSC's weight back-fill procedure and changes in charter mode calibration approaches presented in SEDAR-25 DW. Recalibrated MRFSS landings are scaled to MRIP as described by SEDAR31 DW. ACLs listed for each complex group are determined by summing the individual ACLs for each species in the complex. In some cases, the summed complex ACL value does not add up exactly to the sum of the values of the individual species. In each case the discrepancy is due to the rounding of values to whole pounds for the table. All ACLs for each complex will be based on the summed complex values shown in the table.

Table 2-2. Percent allocations for 37 un-assessed snapper grouper species implemented by the Comprehensive ACL Amendment (SAFMC 2011c) **(Alternative 1, No Action)**. Also shown are percent allocation values following identical computational methods using two updated data sources: (1) "New MRFSS & Commercial"- updated MRFSS data (1986-2008) and updated commercial data (1986-2008) and (2) "MRIP & New Commercial"- MRIP official re-estimates (2004-2008), recalibrated MRFSS data (1986-2003), and updated commercial data (1986-2008) **(Preferred Alternative 2)**. Differences from Comprehensive ACL Amendment values are also shown.

STOCK OR STOCK COMPLEX NAME	COMMERCIAL ALLOCATIONS			RECREATIONAL ALLOCATIONS			DIFFERENCE: COMMERCIAL		DIFFERENCE: RECREATIONAL	
	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)
DEEPWATER										
Yellowedge grouper	96.19%	96.49%	90.77%	3.81%	3.51%	9.23%	0.30%	-5.42%	-0.30%	5.42%
Blueline tilefish	47.39%	47.30%	50.07%	52.61%	52.70%	49.93%	-0.09%	2.68%	0.09%	-2.68%
Silk Snapper	73.14%	73.13%	73.95%	26.86%	26.87%	26.05%	-0.02%	0.80%	0.02%	-0.80%
Misty grouper	70.91%	70.89%	83.42%	29.09%	29.11%	16.58%	-0.02%	12.51%	0.02%	-12.51%
Sand tilefish	16.22%	16.63%	22.17%	83.78%	83.37%	77.83%	0.41%	5.95%	-0.41%	-5.95%
Queen snapper	93.12%	93.75%	92.50%	6.88%	6.25%	7.50%	0.64%	-0.62%	-0.64%	0.62%
Black snapper	91.52%	93.01%	95.92%	8.48%	6.99%	4.08%	1.49%	4.40%	-1.49%	-4.40%
Blackfin snapper	31.68%	31.11%	29.91%	68.32%	68.89%	70.09%	-0.57%	-1.77%	0.57%	1.77%
JACKS										
Almaco jack	51.53%	51.54%	48.70%	48.47%	48.46%	51.30%	0.01%	-2.84%	-0.01%	2.84%
Banded rudderfish	25.25%	25.36%	26.01%	74.75%	74.64%	73.99%	0.11%	0.76%	-0.11%	-0.76%
Lesser amberjack	46.62%	46.94%	46.07%	53.38%	53.06%	53.93%	0.32%	-0.55%	-0.32%	0.55%
SNAPPERS										
Gray snapper	20.00%	19.99%	24.23%	80.00%	80.01%	75.77%	-0.01%	4.23%	0.01%	-4.23%
Lane snapper	12.21%	12.23%	14.75%	87.79%	87.77%	85.25%	0.01%	2.53%	-0.01%	-2.53%
Cubera snapper	19.75%	19.87%	19.57%	80.25%	80.13%	80.43%	0.12%	-0.18%	-0.12%	0.18%

STOCK OR STOCK COMPLEX NAME	COMMERCIAL ALLOCATIONS			RECREATIONAL ALLOCATIONS			DIFFERENCE: COMMERCIAL		DIFFERENCE: RECREATIONAL	
	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)
Dog snapper	9.41%	9.40%	8.31%	90.59%	90.60%	91.69%	-0.01%	-1.10%	0.01%	1.10%
Mahogany snapper	5.05%	7.73%	6.49%	94.95%	92.27%	93.51%	2.69%	1.44%	-2.69%	-1.44%
GRUNTS										
White grunt	32.67%	32.29%	31.59%	67.33%	67.71%	68.41%	-0.38%	-1.08%	0.38%	1.08%
Sailors choice	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Tomtate	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Margate	19.83%	18.82%	18.88%	80.17%	81.18%	81.12%	-1.01%	-0.95%	1.01%	0.95%
SHALLOW WATER GROUPERS										
Red hind	73.28%	73.19%	73.60%	26.72%	26.81%	26.40%	-0.10%	0.32%	0.10%	-0.32%
Rock hind	62.54%	62.23%	60.90%	37.46%	37.77%	39.10%	-0.30%	-1.63%	0.30%	1.63%
Yellowmouth grouper	1.35%	1.34%	1.10%	98.65%	98.66%	98.90%	-0.01%	-0.25%	0.01%	0.25%
Yellowfin grouper	40.78%	40.84%	52.70%	59.22%	59.16%	47.30%	0.06%	11.92%	-0.06%	-11.92%
Coney	23.26%	23.25%	24.45%	76.74%	76.75%	75.55%	0.00%	1.20%	0.00%	-1.20%
Graysby	14.48%	14.54%	15.74%	85.52%	85.46%	84.26%	0.06%	1.27%	-0.06%	-1.27%
PORGIES										
Jolthead porgy	4.05%	4.04%	4.15%	95.95%	95.96%	95.85%	0.00%	0.10%	0.00%	-0.10%
Knobbed porgy	54.12%	53.27%	51.18%	45.88%	46.73%	48.82%	-0.84%	-2.94%	0.84%	2.94%
Saucereye porgy	0.01%	0.01%	0.01%	99.99%	99.99%	99.99%	0.00%	0.00%	0.00%	0.00%
Scup	0.00%	0.00%	0.00%	100.00%	100.00%	100.00%	0.00%	0.00%	0.00%	0.00%
Whitebone porgy	0.96%	0.95%	1.05%	99.04%	99.05%	98.95%	-0.01%	0.09%	0.01%	-0.09%
INDIVIDUAL										

STOCK OR STOCK COMPLEX NAME	COMMERCIAL ALLOCATIONS			RECREATIONAL ALLOCATIONS			DIFFERENCE: COMMERCIAL		DIFFERENCE: RECREATIONAL	
	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)
STOCKS										
Atlantic spadefish	12.90%	12.90%	18.53%	87.10%	87.10%	81.47%	0.00%	5.63%	0.00%	-5.63%
Blue runner	14.60%	14.60%	15.77%	85.40%	85.40%	84.23%	0.00%	1.17%	0.00%	-1.17%
Bar jack	32.58%	31.89%	21.25%	67.42%	68.11%	78.75%	-0.69%	-11.34%	0.69%	11.34%
Gray triggerfish	45.39%	45.24%	43.56%	54.61%	54.76%	56.44%	-0.15%	-1.83%	0.15%	1.83%
Scamp	69.36%	69.25%	65.34%	30.64%	30.75%	34.66%	-0.11%	-4.02%	0.11%	4.02%
Hogfish	33.03%	32.87%	36.69%	66.97%	67.13%	63.31%	-0.17%	3.66%	0.17%	-3.66%

Table 2-3. Sector annual catch limits (ACLs) in pounds whole weight (lbs ww) for 37 un-assessed snapper grouper species implemented by the Comprehensive ACL Amendment (SAFMC 2011c) **(Alternative 1, No Action)**. Also shown are sector ACLs following identical computational methods using two updated data sources: (1) "New MRFSS & Commercial"- updated MRFSS data (1986-2008) and updated commercial data (1986-2008) and (2) "MRIP & New Commercial"- MRIP official re-estimates (2004-2008), recalibrated MRFSS data (1986-2003), and updated commercial data (1986-2008) (**Preferred Alternative 2**). Differences (and percent differences) from Comprehensive ACL Amendment values are also shown.

STOCK OR STOCK COMPLEX NAME	COMMERCIAL ACL (lbs ww)			RECREATIONAL ACL (lbs ww)			DIFFERENCE: COMMERCIAL (lbs ww (%))		DIFFERENCE: RECREATIONAL (lbs ww (%))	
	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)
DEEPWATER	**343,869**	**358,285**	**376,469**	**332,039**	**348,745**	**334,556**	**14,417 (4.19%)**	**32,601 (9.48%)**	**16,706 (5.03%)**	**2,517 (0.76%)**
Yellowedge grouper	29,070	29,160	27,431	1,151	1,061	2,790	90 (0.31%)	-1,639 (-5.64%)	-90 (-7.82%)	1,639 (142.42%)
Blueline tilefish	280,842	295,167	316,098	311,760	328,861	315,243	14,325 (5.10%)	35,256 (12.55%)	17,102 (5.49%)	3,483 (1.12%)
Silk Snapper	20,129	20,132	18,564	7,390	7,397	6,541	3 (0.01%)	-1,565 (-7.78%)	7 (0.09%)	-850 (-11.50%)
Misty grouper	2,030	2,030	2,388	833	833	475	-1 (-0.03%)	358 (17.64%)	1 (0.08%)	-358 (-43.00%)
Sand tilefish	1,431	1,417	1,770	7,392	7,104	6,213	-15 (-1.01%)	338 (23.65%)	-288 (-3.89%)	-1,178 (-15.94%)
Queen snapper	8,700	8,725	8,756	643	581	710	24 (0.28%)	56 (0.64%)	-62 (-9.59%)	67 (10.46%)
Black snapper	350	355	366	32	27	16	6 (1.63%)	17 (4.80%)	-6 (-17.60%)	-17 (-51.86%)
Blackfin snapper	1,316	1,301	1,096	2,838	2,880	2,569	-15 (-1.15%)	-220 (-16.69%)	42 (1.48%)	-269 (-9.49%)
JACKS	**193,999**	**191,275**	**189,422**	**261,490**	**258,464**	**267,799**	**-2,724 (-1.40%)**	**-4,577 (-2.36%)**	**-3,026 (-1.16%)**	**6,309 (2.41%)**
Almaco jack	150,439	147,518	147,322	141,483	138,678	155,195	-2,922 (-1.94%)	-3,117 (-2.07%)	-2,805 (-1.98%)	13,712 (9.69%)
Banded rudderfish	38,633	38,792	37,829	114,366	114,173	107,605	159 (0.41%)	-804 (-2.08%)	-193 (-0.17%)	-6,761 (-5.91%)
Lesser amberjack	4,927	4,965	4,270	5,641	5,613	5,000	38 (0.77%)	-656 (-13.32%)	-29 (-0.51%)	-641 (-11.37%)
SNAPPERS	**204,552**	**204,278**	**215,662**	**882,388**	**881,636**	**728,577**	**-274 (-0.13%)**	**11,111 (5.43%)**	**-752 (-0.09%)**	**-153,811 (-17.43%)**
Gray snapper	178,818	178,517	192,830	715,201	714,644	602,913	-301 (-0.17%)	14,012 (7.84%)	-557 (-0.08%)	-112,288 (-15.70%)
Lane snapper	18,744	18,762	17,695	134,722	134,704	102,289	18 (0.10%)	-1,049 (-5.60%)	-18 (-0.01%)	-32,433 (-24.07%)
Cubera snapper	6,274	6,279	4,829	25,498	25,323	19,851	5 (0.08%)	-1,445 (-23.03%)	-175 (-0.69%)	-5,647 (-22.15%)
Dog snapper	708	707	273	6,815	6,818	3,012	0 (0.00%)	-435 (-61.42%)	3 (0.04%)	-3,803 (-55.80%)

STOCK OR STOCK COMPLEX NAME	COMMERCIAL ACL (lbs ww)			RECREATIONAL ACL (lbs ww)			DIFFERENCE: COMMERCIAL (lbs ww (%))		DIFFERENCE: RECREATIONAL (lbs ww (%))	
	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)
Mahogany snapper	8	12	36	152	148	512	4 (53.22%)	27 (340.06%)	-4 (-2.83%)	360 (237.24%)
GRUNTS	**214,624**	**220,742**	**218,539**	**562,151**	**585,132**	**588,113**	**6,118 (2.85%)**	**3,916 (1.82%)**	**22,981 (4.09%)**	**25,962 (4.62%)**
White grunt	207,751	214,227	212,896	428,148	449,163	461,136	6,476 (3.12%)	5,146 (2.48%)	21,014 (4.91%)	32,988 (7.70%)
Sailors choice	0	0	0	35,266	36,920	22,674	0 (0.00%)	0 (0.00%)	1,655 (4.69%)	-12,592 (-35.71%)
Tomtate	0	0	0	70,948	70,948	80,056	0 (0.00%)	0 (0.00%)	0 (0.00%)	9,109 (12.84%)
Margate	6,873	6,515	5,643	27,789	28,101	24,246	-358 (-5.21%)	-1,230 (-17.90%)	312 (1.12%)	-3,543 (-12.75%)
SHALLOW WATER GROUPERS	**49,488**	**49,349**	**49,776**	**48,329**	**48,395**	**46,656**	**-139 (-0.28%)**	**288 (0.58%)**	**66 (0.14%)**	**-1,673 (-3.46%)**
Red hind	18,969	18,937	18,303	6,916	6,938	6,564	-32 (-0.17%)	-666 (-3.51%)	22 (0.32%)	-352 (-5.10%)
Rock hind	23,494	23,386	23,115	14,075	14,192	14,838	-108 (-0.46%)	-379 (-1.61%)	117 (0.83%)	763 (5.42%)
Yellowmouth grouper	63	63	44	4,598	4,629	3,995	0 (0.00%)	-19 (-29.50%)	31 (0.67%)	-603 (-13.11%)
Yellowfin grouper	3,776	3,781	4,879	5,483	5,477	4,379	6 (0.15%)	1,104 (29.23%)	-6 (-0.10%)	-1,104 (-20.13%)
Coney	602	601	665	1,987	1,983	2,053	-1 (-0.16%)	63 (10.39%)	-3 (-0.16%)	66 (3.34%)
Graysby	2,585	2,582	2,771	15,270	15,176	14,827	-3 (-0.13%)	185 (7.16%)	-95 (-0.62%)	-444 (-2.91%)
PORGIES	**35,129**	**36,172**	**36,348**	**112,485**	**113,869**	**106,914**	**1,043 (2.97%)**	**1,219 (3.47%)**	**1,384 (1.23%)**	**-5,570 (-4.95%)**
Jolthead porgy	1,720	1,718	1,571	40,812	40,814	36,315	-2 (-0.12%)	-150 (-8.70%)	2 (0.01%)	-4,497 (-11.02%)
Knobbed porgy	33,115	34,162	34,515	28,079	29,967	32,926	1,047 (3.16%)	1,400 (4.23%)	1,889 (6.73%)	4,847 (17.26%)
Saucereye porgy	0	0	0	4,205	3,710	3,606	0 (0.00%)	0 (0.00%)	-495 (-11.78%)	-599 (-14.25%)
Scup	0	0	0	8,999	8,999	9,306	0 (0.00%)	0 (0.00%)	(0.00%)	308 (3.42%)
Whitebone porgy	293	291	262	30,390	30,379	24,762	-2 (-0.63%)	-31 (-10.71%)	-11 (-0.04%)	-5,629 (-18.52%)
INDIVIDUAL STOCKS										
Atlantic spadefish	36,476	36,524	35,108	246,365	246,653	154,352	48 (0.13%)	-1,368 (-3.75%)	288 (0.12%)	-92,013 (-37.35%)
Blue runner	188,329	188,135	177,506	1,101,612	1,100,581	948,223	-194 (-0.10%)	-10,823 (-5.75%)	-1,031 (-0.09%)	-153,388 (-13.92%)

STOCK OR STOCK COMPLEX NAME	COMMERCIAL ACL (lbs ww)			RECREATIONAL ACL (lbs ww)			DIFFERENCE: COMMERCIAL (lbs ww (%))		DIFFERENCE: RECREATIONAL (lbs ww (%))	
	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	Comp ACL Am (Alt. 1)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)	New MRFSS & Comm	MRIP & New Comm (Alt. 2)
Bar jack	6,686	6,277	5,265	13,834	13,407	19,515	-408 (-6.10%)	-1,421 (-21.25%)	-428 (-3.09%)	5,681 (41.07%)
Gray triggerfish	305,262	304,284	272,880	367,303	368,281	353,638	-978 (-0.32%)	-32,381 (-10.61%)	978 (0.27%)	-13,666 (-3.72%)
Scamp	341,636	345,731	333,100	150,936	153,524	176,688	4,095 (1.20%)	-8,536 (-2.50%)	2,587 (1.71%)	25,752 (17.06%)
Hogfish	48,772	48,637	49,469	98,866	99,333	85,355	-135 (-0.28%)	697 (1.43%)	467 (0.47%)	-13,511 (-13.67%)

Note: ACLs listed for each complex group are determined by summing the individual ACLs for each species in the complex. In some cases, the summed complex ACL value does not add up exactly to the sum of the values of the individual species. In each case the discrepancy is due to the rounding of values to whole pounds for the table. All ACLs for each complex will be based on the summed complex values shown in the table.

Table 2-4. Recreational annual catch targets (ACTs) in pounds whole weight (lbs ww) for 37 un-assessed snapper grouper species implemented by the Comprehensive ACL Amendment (SAFMC 2011c) **(Alternative 1, No Action)**. Also shown are ACT values following identical computational methods using two updated data sources: (1) "New MRFSS & Commercial"- updated MRFSS data (1986-2008) and updated commercial data (1986-2008) and (2) "MRIP & New Commercial"- MRIP official re-estimates (2004-2008), recalibrated MRFSS data (1986-2003), and updated commercial data (1986-2008) **(Preferred Alternative 2)**. Differences from Comprehensive ACL Amendment values are also shown.

STOCK OR STOCK COMPLEX NAME	RECREATIONAL ACT (lbs ww)			DIFFERENCE: RECREATIONAL (lbs ww (%))	
	Comprehensive ACL Amendment (Alt. 1)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)
DEEPWATER	**205,516**	**215,225**	**197,100**	**9,709 (4.72%)**	**-8,416 (-4.09%)**
Yellowedge grouper	921	849	1,395	-72 (-7.82%)	474 (51.51%)
Blueline tilefish	190,173	200,605	187,443	10,432 (5.49%)	-2,730 (-1.44%)
Silk Snapper	5,543	5,548	3,270	5 (0.09%)	-2,272 (-41.00%)
Misty grouper	833	417	237	-416 (-49.96%)	-595 (-71.50%)
Sand tilefish	4,989	4,795	3,107	-194 (-3.89%)	-1,883 (-37.74%)
Queen snapper	643	581	355	-62 (-9.59%)	-288 (-44.77%)
Black snapper	32	13	8	-19 (-58.80%)	-25 (-75.93%)
Blackfin snapper	2,381	2,416	1,284	35 (1.48%)	-1,097 (-46.06%)
JACKS	**186,972**	**184,698**	**165,590**	**-2,275 (-1.22%)**	**-21,382 (-11.44%)**
Almaco jack	107,527	105,395	109,288	-2,131 (-1.98%)	1,761 (1.64%)
Banded rudderfish	76,625	76,496	53,802	-129 (-0.17%)	-22,823 (-29.78%)
Lesser amberjack	2,821	2,806	2,500	-14 (-0.51%)	-321 (-11.37%)
SNAPPERS	**775,001**	**774,371**	**624,197**	**-630 (-0.08%)**	**-150,804 (-19.46%)**
Gray snapper	643,681	643,179	534,422	-501 (-0.08%)	-109,259 (-16.97%)
Lane snapper	109,125	109,110	78,087	-15 (-0.01%)	-31,037 (-28.44%)
Cubera snapper	16,319	16,207	9,925	-112 (-0.69%)	-6,393 (-39.18%)
Dog snapper	5,725	5,727	1,506	2 (0.04%)	-4,219 (-73.69%)

STOCK OR STOCK COMPLEX NAME	RECREATIONAL ACT (lbs ww)			DIFFERENCE: RECREATIONAL (lbs ww (%))	
	Comprehensive ACL Amendment (Alt. 1)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)
Mahogany snapper	152	148	256	-4 (-2.83%)	104 (68.62%)
GRUNTS	**466,864**	**486,168**	**442,970**	**19,304 (4.13%)**	**-23,894 (-5.12%)**
White grunt	368,208	386,280	363,283	18,072 (4.91%)	-4,924 (-1.34%)
Sailors choice	20,659	21,628	11,663	969 (4.69%)	-8,995 (-43.54%)
Tomtate	54,644	54,644	54,887	0 (0.00%)	243 (0.44%)
Margate	23,354	23,616	13,137	262 (1.12%)	-10,217 (-43.75%)
SHALLOW WATER GROUPERS	**33,082**	**33,126**	**23,595**	**44 (0.13%)**	**-9,487 (-28.68%)**
Red hind	4,150	4,163	3,282	13 (0.32%)	-868 (-20.91%)
Rock hind	8,164	8,231	7,419	68 (0.83%)	-745 (-9.12%)
Yellowmouth grouper	4,338	4,367	1,998	29 (0.67%)	-2,340 (-53.95%)
Yellowfin grouper	5,483	5,477	2,190	-6 (-0.10%)	-3,293 (-60.07%)
Coney	1,568	1,566	1,026	-3 (-0.16%)	-542 (-34.55%)
Graysby	9,379	9,321	7,680	-58 (-0.62%)	-1,699 (-18.11%)
PORGIES	**74,933**	**75,707**	**59,319**	**774 (1.03%)**	**-15,614 (-20.84%)**
Jolthead porgy	26,781	26,782	22,537	1 (0.01%)	-4,244 (-15.85%)
Knobbed porgy	18,386	19,623	16,509	1,237 (6.73%)	-1,877 (-10.21%)
Saucereye porgy	3,881	3,424	1,803	-457 (-11.78%)	-2,078 (-53.55%)
Scup	5,955	5,955	4,653	0 (0.00%)	-1,302 (-21.86%)
Whitebone porgy	19,930	19,923	13,817	-7 (-0.04%)	-6,113 (-30.67%)
INDIVIDUAL STOCKS					
Atlantic spadefish	177,382	177,590	96,470	208 (0.12%)	-80,913 (-45.61%)
Blue runner	892,305	891,470	723,684	-835 (-0.09%)	-168,621 (-18.90%)

STOCK OR STOCK COMPLEX NAME	RECREATIONAL ACT (lbs ww)			DIFFERENCE: RECREATIONAL (lbs ww (%))	
	Comprehensive ACL Amendment (Alt. 1)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)	New MRFSS & Commercial	MRIP & New Commercial (Alt. 2)
Bar jack	9,936	9,629	9,758	-307 (-3.09%)	-178 (-1.79%)
Gray triggerfish	312,208	313,039	284,325	831 (0.27%)	-27,883 (-8.93%)
Scamp	96,599	98,255	94,316	1,656 (1.71%)	-2,283 (-2.36%)
Hogfish	71,184	71,520	59,390	336 (0.47%)	-11,793 (-16.57%)

Table 2-5. New ABCs, ACLs (including sector ACLs), allocations, and recreational ACTs for 37 un-assessed snapper grouper species as per **Preferred Alternative 2** in Regulatory Amendment 13. "MRIP & New Commercial" reflect data from MRIP official re-estimates (2004-2008), recalibrated MRFSS data (1986-2003), and updated commercial data (1986-2008). ABCs, ACLs, and recreational ACTs are in pounds whole weight (lbs ww); allocations are in percent (%).

STOCK OR STOCK COMPLEX NAME	MRIP & NEW COMMERCIAL					
	ABC (lbs ww)	COMM ALLOCATIONS	COMM ACL (lbs ww)	REC ALLOCATIONS	REC ACL (lbs ww)	REC ACT (lbs ww)
DEEPWATER	**711,025**		**376,469**		**334,556**	**197,100**
Yellowedge grouper	30,221	90.77%	27,431	9.23%	2,790	1,395
Blueline tilefish	631,341	50.07%	316,098	49.93%	315,243	187,443
Silk Snapper	25,104	73.95%	18,564	26.05%	6,541	3,270
Misty grouper	2,863	83.42%	2,388	16.58%	475	237
Sand tilefish	7,983	22.17%	1,770	77.83%	6,213	3,107
Queen snapper	9,466	92.50%	8,756	7.50%	710	355
Black snapper	382	95.92%	366	4.08%	16	8
Blackfin snapper	3,665	29.91%	1,096	70.09%	2,569	1,284
JACKS	**457,221**		**189,422**		**267,799**	**165,590**
Almaco jack	302,517	48.70%	147,322	51.30%	155,195	109,288
Banded rudderfish	145,434	26.01%	37,829	73.99%	107,605	53,802
Lesser amberjack	9,270	46.07%	4,270	53.93%	5,000	2,500
SNAPPERS	**944,239**		**215,662**		**728,577**	**624,197**
Gray snapper	795,743	24.23%	192,830	75.77%	602,913	534,422
Lane snapper	119,984	14.75%	17,695	85.25%	102,289	78,087
Cubera snapper	24,680	19.57%	4,829	80.43%	19,851	9,925
Dog snapper	3,285	8.31%	273	91.69%	3,012	1,506
Mahogany snapper	548	6.49%	36	93.51%	512	256
GRUNTS	**806,652**		**218,539**		**588,113**	**442,970**
White grunt	674,033	31.59%	212,896	68.41%	461,136	363,283

STOCK OR STOCK COMPLEX NAME	MRIP & NEW COMMERCIAL					
	ABC (lbs ww)	COMM ALLOCATIONS	COMM ACL (lbs ww)	REC ALLOCATIONS	REC ACL (lbs ww)	REC ACT (lbs ww)
Sailors choice	22,674	0.00%	0	100.00%	22,674	11,663
Tomtate	80,056	0.00%	0	100.00%	80,056	54,887
Margate	29,889	18.88%	5,643	81.12%	24,246	13,137
SHALLOW WATER GROUPERS	**96,432**		**49,776**		**46,656**	**23,595**
Red hind	24,867	73.60%	18,303	26.40%	6,564	3,282
Rock hind	37,953	60.90%	23,115	39.10%	14,838	7,419
Yellowmouth grouper	4,040	1.10%	44	98.90%	3,995	1,998
Yellowfin grouper	9,258	52.70%	4,879	47.30%	4,379	2,190
Coney	2,718	24.45%	665	75.55%	2,053	1,026
Graysby	17,597	15.74%	2,771	84.26%	14,827	7,680
PORGIES	**143,263**		**36,348**		**106,914**	**59,319**
Jolthead porgy	37,885	4.15%	1,571	95.85%	36,315	22,537
Knobbed porgy	67,441	51.18%	34,515	48.82%	32,926	16,509
Saucereye porgy	3,606	0.01%	0	99.99%	3,606	1,803
Scup	9,306	0.00%	0	100.00%	9,306	4,653
Whitebone porgy	25,024	1.05%	262	98.95%	24,762	13,817
INDIVIDUAL STOCKS						
Atlantic spadefish	189,460	18.53%	35,108	81.47%	154,352	96,470
Blue runner	1,125,729	15.77%	177,506	84.23%	948,223	723,684
Bar jack	24,780	21.25%	5,265	78.75%	19,515	9,758
Gray triggerfish	626,518	43.56%	272,880	56.44%	353,638	284,325
Scamp	509,788	65.34%	333,100	34.66%	176,688	94,316
Hogfish	134,824	36.69%	49,469	63.31%	85,355	59,390

Chapter 3. Affected Environment

This section describes the affected environment in the proposed project area. The affected environment is divided into four major components:

- **Habitat environment** (Section 3.1)
- **Biological and ecological environment** (Section 3.2)
- **Human environment** (Sections 3.3)
- **Administrative environment** (Section 3.4)

3.1 Habitat Environment

3.1.1 Inshore/Estuarine Habitat

Many snapper grouper species utilize both pelagic and benthic habitats during several stages of their life histories; larval stages of these species live in the water column and feed on plankton. Most juveniles and adults are demersal (bottom dwellers) and associate with hard structures on the continental shelf that have moderate to high relief (e.g., coral reef systems and artificial reef structures, rocky hard-bottom substrates, ledges and caves, sloping soft-bottom areas, and limestone outcroppings). Juvenile stages of some snapper grouper species also utilize inshore seagrass beds, mangrove estuaries, lagoons, oyster reefs, and embayment systems. In many species, various combinations of these habitats may be utilized during daytime feeding migrations or seasonal shifts in cross-shelf distributions. Additional information on the habitat utilized by species in the Snapper Grouper Complex is included in Volume II of the Fishery Ecosystem Plan (FEP, SAFMC 2009b) and incorporated here by reference. The FEP can be found at: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx.

3.1.2 Offshore Habitat

Predominant snapper grouper offshore fishing areas are located in live bottom and shelf-edge habitats where water temperatures range from 11º to 27º C (52º to 81º F) due to the proximity of the Gulf Stream, with lower shelf habitat temperatures varying from 11º to 14º C (52º to 57º F). Water depths range from 16 to 27 meters (54 to 90 ft) or greater for live-bottom habitats, 55 to 110 meters (180 to 360 ft) for the shelf-edge habitat, and from 110 to 183 meters (360 to 600 ft) for lower-shelf habitat areas.

The exact extent and distribution of productive snapper grouper habitat on the continental shelf north of Cape Canaveral, Florida is unknown. Current data suggest from 3 to 30% of the shelf is suitable habitat for these species. These live-bottom habitats may include low relief areas, supporting sparse to moderate growth of sessile (permanently attached) invertebrates, moderate relief reefs from 0.5 to 2 meters (1.6 to 6.6 ft), or high relief ridges at or near the shelf break consisting of outcrops of rock that are heavily encrusted with sessile invertebrates such as sponges and sea fan species. Live-bottom habitat is scattered irregularly over most of the shelf north of Cape Canaveral, Florida, but is most abundant offshore from northeastern Florida. South of Cape Canaveral, Florida the continental shelf narrows from 56 to 16 kilometers (35 to 10 mi) wide off the southeast coast of Florida and the Florida Keys. The lack of a large shelf area, presence of extensive, rugged living fossil coral reefs, and dominance of a tropical Caribbean fauna are distinctive benthic characteristics of this area.

Rock outcroppings occur throughout the continental shelf from Cape Hatteras, North Carolina to Key West, Florida (MacIntyre and Milliman 1970; Miller and Richards 1979; Parker et al. 1983), which are principally composed of limestone and carbonate sandstone (Newton et al. 1971), and exhibit vertical relief ranging from less than 0.5 to over 10 meters (33 ft). Ledge systems formed by rock outcrops and piles of irregularly sized boulders are also common. Parker et al. (1983) estimated that 24% (9,443 km^2) of the area between the 27 and 101 meter (89 and 331 ft) depth contours from Cape Hatteras, North Carolina to Cape Canaveral, Florida is reef habitat. Although the bottom communities found in water depths between 100 and 300 meters (328 and 984 ft) from Cape Hatteras, North Carolina to Key West, Florida is relatively small compared to the whole shelf, this area, based upon landing information of fishers, constitutes prime reef fish habitat and probably significantly contributes to the total amount of reef habitat in this region.

Artificial reef structures are also utilized to attract fish and increase fish harvests; however, research on artificial reefs is limited and opinions differ as to whether or not these structures promote an increase of ecological biomass or merely concentrate fishes by attracting them from nearby, natural un-vegetated areas of little or no relief.

The distribution of coral and live hard bottom habitat as presented in the Southeast Marine Assessment and Prediction Program (SEAMAP) bottom mapping project is a proxy for the distribution of the species within the snapper grouper complex. The method used to determine hard bottom habitat relied on the identification of reef obligate species including members of the snapper grouper complex. The Florida Fish and Wildlife Research Institute (FWRI), using the

best available information on the distribution of hard bottom habitat in the South Atlantic region, prepared ArcView maps for the four-state project. These maps, which consolidate known distribution of coral, hard/live bottom, and artificial reefs as hard bottom, are available on the South Atlantic Fishery Management Council's (South Atlantic Council) Internet Mapping System website: http://ocean.floridamarine.org/efh_coral/ims/viewer.htm.

Plots of the spatial distribution of offshore species were generated from the Marine Resources Monitoring, Assessment, and Prediction Program (MARMAP) data. The plots serve as point confirmation of the presence of each species within the scope of the sampling program. These plots, in combination with the hard bottom habitat distributions previously mentioned, can be employed as proxies for offshore snapper grouper complex distributions in the south Atlantic region. Maps of the distribution of snapper grouper species by gear type based on MARMAP data can also be generated through the South Atlantic Council's Internet Mapping System at the above address.

3.1.3 Essential Fish Habitat

Essential fish habitat (EFH) is defined in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act) as "those waters and substrates necessary to fish for spawning, breeding, feeding, or growth to maturity" (16 U.S. C. 1802(10)). Specific categories of EFH identified in the South Atlantic Bight, which are utilized by federally managed fish and invertebrate species, include both estuarine/inshore and marine/offshore areas. Specifically, estuarine/inshore EFH includes: Estuarine emergent and mangrove wetlands, submerged aquatic vegetation, oyster reefs and shell banks, intertidal flats, palustrine emergent and forested systems, aquatic beds, and estuarine water column. Additionally, marine/offshore EFH includes: live/hard bottom habitats, coral and coral reefs, artificial and manmade reefs, *Sargassum* species, and marine water column.

EFH utilized by snapper grouper species in this region includes coral reefs, live/hard bottom, submerged aquatic vegetation, artificial reefs and medium to high profile outcroppings on and around the shelf break zone from shore to at least 183 meters [600 ft (but to at least 2,000 ft for wreckfish)] where the annual water temperature range is sufficiently warm to maintain adult populations of members of this largely tropical fish complex. EFH includes the spawning area in the water column above the adult habitat and the additional pelagic environment, including *Sargassum*, required for survival of larvae and growth up to and including settlement. In addition, the Gulf Stream is also EFH because it provides a mechanism to disperse snapper grouper larvae.

For specific life stages of estuarine- dependent and near shore snapper grouper species, EFH includes areas inshore of the 30 meter (100-ft) contour, such as attached macroalgae; submerged rooted vascular plants (seagrasses); estuarine emergent vegetated wetlands (saltmarshes, brackish marsh); tidal creeks; estuarine scrub/shrub (mangrove fringe); oyster reefs and shell banks;

unconsolidated bottom (soft sediments); artificial reefs; and coral reefs and live/hard bottom habitats.

3.1.4 Habitat Areas of Particular Concern

Areas which meet the criteria for Essential Fish Habitat-Habitat Areas of Particular Concern (EFH-HAPCs) for species in the snapper grouper management unit include medium to high profile offshore hard bottoms where spawning normally occurs; localities of known or likely periodic spawning aggregations; near shore hard bottom areas; The Point, The Ten Fathom Ledge, and Big Rock (North Carolina); The Charleston Bump (South Carolina); mangrove habitat; seagrass habitat; oyster/shell habitat; all coastal inlets; all state-designated nursery habitats of particular importance to snapper grouper (e.g., Primary and Secondary Nursery Areas designated in North Carolina); pelagic and benthic *Sargassum*; Hoyt Hills for wreckfish; the Oculina Bank Habitat Area of Particular Concern; all hermatypic coral habitats and reefs; manganese outcroppings on the Blake Plateau; and South Atlantic Council-designated Artificial Reef Special Management Zones (SMZs).

Areas that meet the criteria for EFH-HAPCs include habitats required during each life stage (including egg, larval, postlarval, juvenile, and adult stages).

In addition to protecting habitat from fishing related degradation though fishery management plan regulations, the South Atlantic Council, in cooperation with NMFS, actively comments on non-fishing projects or policies that may impact essential fish habitat. With guidance from the Habitat Advisory Panel, the South Atlantic Council has developed and approved policies on: energy exploration, development, transportation and hydropower re-licensing; beach dredging and filling and large-scale coastal engineering; protection and enhancement of submerged aquatic vegetation; alterations to riverine, estuarine and near shore flows; offshore aquaculture; and marine invasive species and estuarine invasive species.

3.2 Biological and Ecological Environment

3.2.1 Fish Populations Affected by this Amendment

An expanded discussion of life history traits, population characteristics, and stock status of snapper grouper species covered in Regulatory Amendment 13 to the FMP for the Snapper Grouper Fishery of the South Atlantic Region can be found in **Sections 3.2.1** and **3.3** of the Comprehensive Annual Catch Limit (ACL) Amendment (SAFMC 2011c), which are hereby incorporated by reference and may be found at www.safmc.net/Library/SnapperGrouper/tabid/415/Default.aspx. Descriptions of other South Atlantic Council-managed species may be found in Volume II of the Fishery Ecosystem Plan (SAFMC 2009b) or at the following web address: http://www.safmc.net/ecosystem/Home/EcosystemHome/tabid/435/Default.aspx.

3.2.2 Protected Species

There are 31 different species of marine mammals that may occur in the exclusive economic zone (EEZ) of the South Atlantic region. All 31 species are protected under the Marine Mammal Protection Act of 1972 (MMPA) and six are also listed as endangered under the ESA (i.e., sperm, sei, fin, blue, humpback, and North Atlantic right whales). Other species protected under the ESA occurring in the South Atlantic include five species of sea turtle (green, hawksbill, Kemp's ridley, leatherback, and loggerhead); the smalltooth sawfish; five distinct population segments (DPSs) of Atlantic sturgeon (*Acipenser oxyrhincus*), and two *Acropora* coral species (elkhorn [*Acropora palmata*] and staghorn [*A. cervicornis*]). Designated critical habitat for the *Acropora* corals also occurs within the South Atlantic region. **Section 3.5** of the Comprehensive ACL Amendment (SAFMC 2011c) discusses the life history characteristics of all these species in detail, other than Atlantic sturgeon. **Section 3.5** of the Comprehensive ACL Amendment is hereby incorporated by reference and may be found at: www.safmc.net/Library/SnapperGrouper/tabid/415/Default.aspx.

Below is a brief description of the life history characteristics for the DPSs of Atlantic sturgeon. The potential impacts from the continued authorization of the South Atlantic snapper grouper fishery on all ESA-listed species have been considered in previous ESA Section 7 consultations. Summaries of those consultations and their determination are in **Appendix H**.

Five separate DPSs of the **Atlantic sturgeon** (*Acipenser oxyrinchus oxyrinchus*) were listed under the ESA effective April 6, 2012 (76 FR 5914; February 12, 2012). From north to south, the DPSs are the Gulf of Maine, New York Bight, Chesapeake Bay, Carolina, and South Atlantic (**Figure 3-1**). The New York Bight, Chesapeake Bay, Carolina, and South Atlantic DPSs are listed as endangered, and the Gulf of Maine DPS is listed as threatened. The five DPSs were listed under the ESA as a result of threats from a combination of habitat curtailment and modification, overutilization (i.e., being taken as bycatch) in commercial fisheries, and the inadequacy of regulatory mechanisms in ameliorating these impacts and threats.

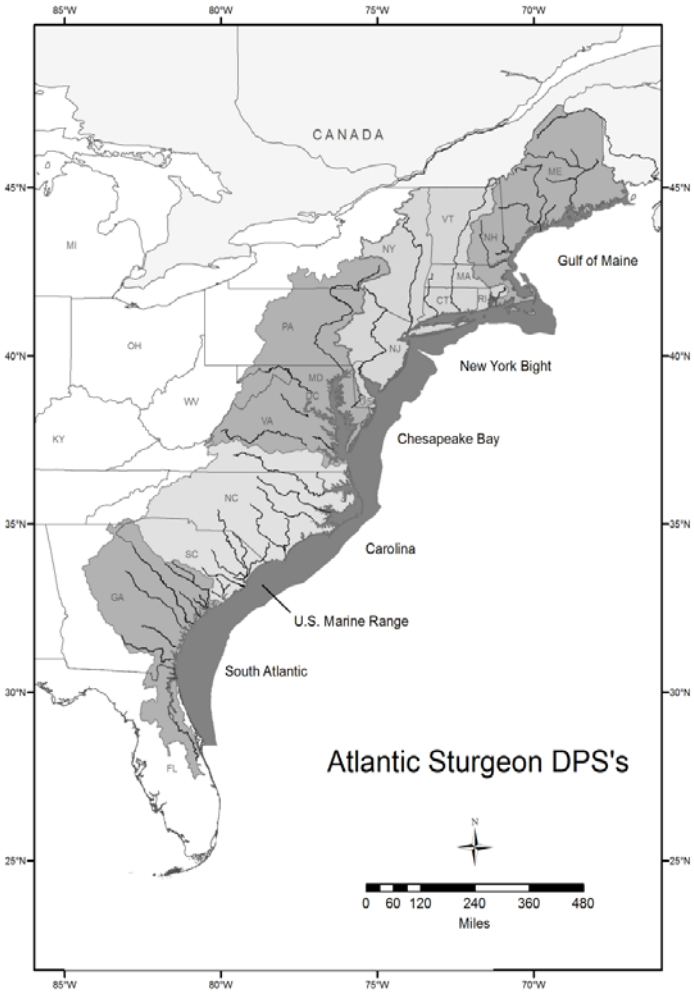

Figure 3-1. Map Depicting the Five DPSs of Atlantic sturgeon.

Atlantic sturgeon are long-lived, estuarine dependent, anadromous[1] fish (Bigelow and Schroeder 1953, Vladykov and Greeley 1963, Mangin 1964, Pikitch et al. 2005, Dadswell 2006, ASSRT 2007), that historically occurred from Labrador south to the St. Johns River, Florida. Generally, Atlantic sturgeon use coastal bays, sounds, and ocean waters in depths less than 132 ft (Vladykov and Greeley 1963, Murawski and Pacheco 1977, Dovel and Berggren 1983, Smith 1985, Collins and Smith 1997, Welsh et al. 2002, Savoy and Pacileo 2003, Stein et al. 2004, Laney et al. 2007, Dunton et al. 2010, Erickson et al. 2011, Wirgin and King 2011), where they feed on a variety of benthic invertebrates and fish (Bigelow and Schroeder 1953, ASSRT 2007, Guilbard et al. 2007, Savoy 2007). Mature Atlantic sturgeon make spawning migrations from estuarine waters to rivers as water temperatures reach 43ºF for males (Smith et al. 1982, Dovel and Berggren 1983, Smith 1985, ASMFC 2009) and 54ºF for females (Dovel and Berggren 1983, Smith 1985, Collins et al. 2000), typically between February (southern systems) and July (northern systems). Individuals spawn at intervals of once every 1-5 years for males and once

[1] Anadromous refers to a fish that is born in freshwater, spends most of its life in the sea, and returns to freshwater to spawn (NEFSC FAQ's, available at http://www.nefsc.noaa.gov/faq/fishfaq1a.html, modified June 16, 2011)

every 2-5 years for females. Spawning is believed to occur in flowing water between the salt front of estuaries and the fall line of large rivers, when and where optimal flows are 18-30 in/s and depths are 36-89 ft (Borodin 1925, Dees 1961, Leland 1968, Scott and Crossman 1973, Crance, 1987, Shirey et al. 1999, Bain et al. 2000, Collins et al. 2000, Caron et al. 2002, Hatin et al. 2002, ASMFC 2009). Females may produce 400,000 to 4 million eggs per spawning year (Vladykov and Greeley 1963, Smith et al. 1982, Van Eenennaam et al. 1996, Van Eenennaam and Doroshov 1998, Stevenson and Secor 1999, Dadswell 2006) and deposit eggs on hard bottom substrate such as cobble, coarse sand, and bedrock (Dees 1961, Scott and Crossman 1973, Gilbert 1989, Smith and Clugston 1997, Bain et al. 2000, Collins et al. 2000, Caron et al. 2002, Hatin et al. 2002, Mohler 2003, ASMFC 2009). Upon hatching, studies suggest that early juvenile Atlantic sturgeon (age-0 [i.e., YOY], age-1, and age-2) remain in low salinity waters of their natal estuaries (Haley 1999, Hatin et al. 2002, McCord et al. 2007, Munro et al. 2007) for months to years before emigrating to open ocean as subadults (Holland and Yelverton 1973, Dovel and Berggen 1983, Waldman et al. 1996, Dadswell 2006, ASSRT 2007). Growth rates and age at maturity are both influenced by water temperature, as Atlantic sturgeon grow larger and mature faster in warmer waters. Atlantic sturgeon may live up to 60 years, reach lengths up to 14 feet and weigh over 800 lbs. Tagging studies and genetic analyses (Wirgin et al. 2000, King et al. 2001, Waldman et al. 2002, ASSRT 2007, Grunwald et al. 2008) indicate that Atlantic sturgeon exhibit ecological separation during spawning throughout their range that has resulted in multiple, genetically distinct, interbreeding population segments.

The construction of dams, dredging, and modification of water flows have reduced the amount and quality of habitat available for Atlantic sturgeon spawning and foraging. Water quality (temperature, salinity, and dissolved oxygen) has also been reduced by terrestrial activities, leading to further declines in available spawning and nursery habitat. Although spawning historically occurred within many Atlantic coast rivers, only 16 U.S. rivers are known to currently support spawning based on available evidence (i.e., presence of YOY or gravid Atlantic sturgeon documented within the past 15 years) (ASSRT 2007).

Overutilization of Atlantic sturgeon from directed fishing caused initial severe declines in Atlantic sturgeon populations in the Southeast, from which they have never recovered. Although directed harvest of this species has ceased, Atlantic sturgeon continue to be incidentally caught as bycatch in other commercial fisheries. Because Atlantic sturgeon mix extensively in marine waters and may utilize multiple river systems for nursery and foraging habitat in addition to their natal spawning river, they are subject to being caught in multiple fisheries throughout their range. Additionally, Atlantic sturgeon are more sensitive to bycatch mortality because they are a long-lived species, have an older age at maturity, have lower maximum fecundity values, and a large percentage of egg production occurs later in life. Based on these life history traits, Boreman (1997) calculated that Atlantic sturgeon can only withstand the annual loss of up to five percent of their population to bycatch mortality without suffering population declines. Mortality rates of Atlantic sturgeon taken as bycatch in various types of fishing gear range between 0-51 percent, with the greatest mortality occurring in sturgeon caught by sink gillnets. While many of the threats to Atlantic sturgeon have been ameliorated or reduced due to existing regulatory

mechanisms such as the moratorium on directed fisheries for Atlantic sturgeon, bycatch is currently not being addressed through existing mechanisms.

The recovery of Atlantic sturgeon along the Atlantic Coast, especially in areas where habitat is limited and water quality is severely degraded, will require improvements in the following areas: (1) elimination of barriers to spawning habitat either through dam removal, breaching, or installation of successful fish passage facilities; (2) operation of water control structures to provide appropriate flows, especially during spawning season; (3) imposition of dredging restrictions including seasonal moratoriums and avoidance of spawning/nursery habitat; and (4) mitigation of water quality parameters that are restricting sturgeon's use of a river (i.e., DO). Stronger regulatory mechanisms may likely aid in achieving these improvements. These regulatory mechanisms may also aid in reducing bycatch mortality in commercial fisheries, again assisting in the recovery of the species.
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3.3 Human Environment

3.3.1 Economic Description of the Fishery

A full discussion of economic activity and harvest in the commercial and recreational sectors for the South Atlantic snapper grouper fishery are contained in **Section 3.8.1** and **3.8.2** and subsequent subsection of the Comprehensive ACL Amendment for the South Atlantic Region (SAFMC 2011c), which is hereby incorporated by reference and may be found at www.safmc.net/Library/SnapperGrouper/tabid/415/Default.aspx.

The incorporated sections of the Comprehensive ACL Amendment (SAFMC 2011c) summarizes the fishing characteristics of the commercial and recreational sectors for the snapper grouper fisheries, landings, revenue, economic activity including dealers, effort, ex-vessel price, gears used, mode of fishing (recreational), permits and imports for the species affected by the action of this amendment.

3.3.2 Social and Cultural Environment

This section includes a description of the commercial and recreational components of the snapper grouper complexes including the deepwater complex, jacks complex, snappers complex, grunts complex, shallow-water groupers complex, porgies complex, and individual species (Atlantic spadefish, blue runner, bar jack, gray triggerfish, scamp, and hogfish). The description is based on the geographical distribution of landings and the relative importance of the species for commercial and recreational communities. A spatial approach enables the consideration of fishing communities and consideration of the importance of fishery resources to those communities, as required by National Standard 8.

Because so many communities in the South Atlantic benefit from snapper grouper fishing, a discussion of the communities most involved in South Atlantic fishing, is included in **Section 3.8.3.3** of the Comprehensive ACL Amendment (SAFMC 2011c), which is hereby incorporated by reference. Detailed information is included on the importance of individual commercial species to each community and can be partnered with the following narrative to provide an understanding of the dependence by communities on the included snapper grouper species. A description of the social environment of the snapper grouper fishery is included in **Section 3.8.4** of the Comprehensive ACL Amendment (SAFMC 2011c) and is also incorporated by reference. The Comprehensive ACL Amendment may be found at: www.safmc.net/Library/SnapperGrouper/tabid/415/Default.aspx.

Social Importance of Fishing

Socio-cultural values are qualitative in nature making it difficult to measure social valuation of marine resources and fishing activity. The following description includes multiple approaches to examining fishing importance. These spatial approaches focus on the community level (based on the address of dealers or permit holders) and identify importance by "community", defined according to geo-political boundaries (cities). A single county may thus have several communities identified as reliant on fishing and the boundaries of these communities are not discrete in terms of residence, vessel homeport, and dealer address. For example, a fisherman may reside in one community, homeport his vessel in another, and land his catch in yet another. Furthermore, while commercial fishing data are available at the species level, these data are not available for recreational fishing which must be addressed more generally. Despite these caveats, the analysis identifies where most fishing activity takes place.

To identify the communities of greatest engagement in recreational fishing, a factor analysis was run on a set of predictor variables including the number of federal charter permits, number of vessels designated recreational by owner address, number of vessels designated recreational by homeport (SERO permit office 2008), and recreational fishing infrastructure (Marine Information Program (MRIP) site survey 2010). The communities with the highest factor scores are identified as the communities of greatest recreational fishing engagement. However, this measure does not adjust for population size meaning that larger communities are given more weight over smaller communities. The ranking addresses recreational fishing generally and is not specific to an individual species. Ideally, additional variables quantifying the importance of recreational fishing to a community would be included (such as the amount of recreational landings in a community, number of recreational fishing related businesses, etc); however, these data are not available at the community level.

Another approach utilizes measures called the regional quotient (rq) to identify commercial reliance. The rq is a way to measure the relative importance of a given species across all communities in the region and represents the proportional distribution of commercial landings of a particular species. This proportional measure does not provide the number of pounds or the value of the catch, data which might be confidential at the community level for many places.

The rq is calculated by dividing the total pounds (or value) of a species landed in a given community, by the total pounds (or value) for that species for all communities in the region.

These measures are an attempt to quantify the importance of the components of the included fisheries to communities around South Atlantic coast and suggest where impacts from management actions are more likely to be experienced.

Deepwater Complex

The deepwater complex of the snapper grouper fishery includes yellowedge grouper, blueline tilefish, silk snapper, misty grouper, sand tilefish, queen snapper, black snapper, and blackfin snapper. The current commercial and recreational sector allocations and current commercial and recreational ACLs for these species were designated by the Comprehensive ACL Amendment and are presented in **Table 2-2** and **Table 2-3**. The most important species in this complex is blueline tilefish (current commercial ACL is 280,842 pounds whole weight (ww) and current recreational ACL is 311,760 pounds ww). The ACLs for the other species in this complex range from a high of 30,221 pounds ww (combined pounds for commercial and recreational ACLs for yellowedge grouper) to a low of 382 pounds ww (combined pounds for commercial and recreational ACLs for black snapper).

Commercial landings are greatest for these species in North Carolina (73.5%), although deepwater complex species are also landed in Florida (23.2%, with a large portion of these landings in the Keys), and South Carolina (3.3%) (Source: ALS 2011). **Figure 3-2** shows the spatial distribution of commercial landings of these deepwater complex species around the South Atlantic. **Figure 3-3** identifies the communities with the most commercial landings of deepwater complex species. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located in Dare County, North Carolina (Wanchese and Hatteras); Carteret County, North Carolina (Beaufort and Morehead City); the Florida Keys; and along the northern coast of South Carolina.

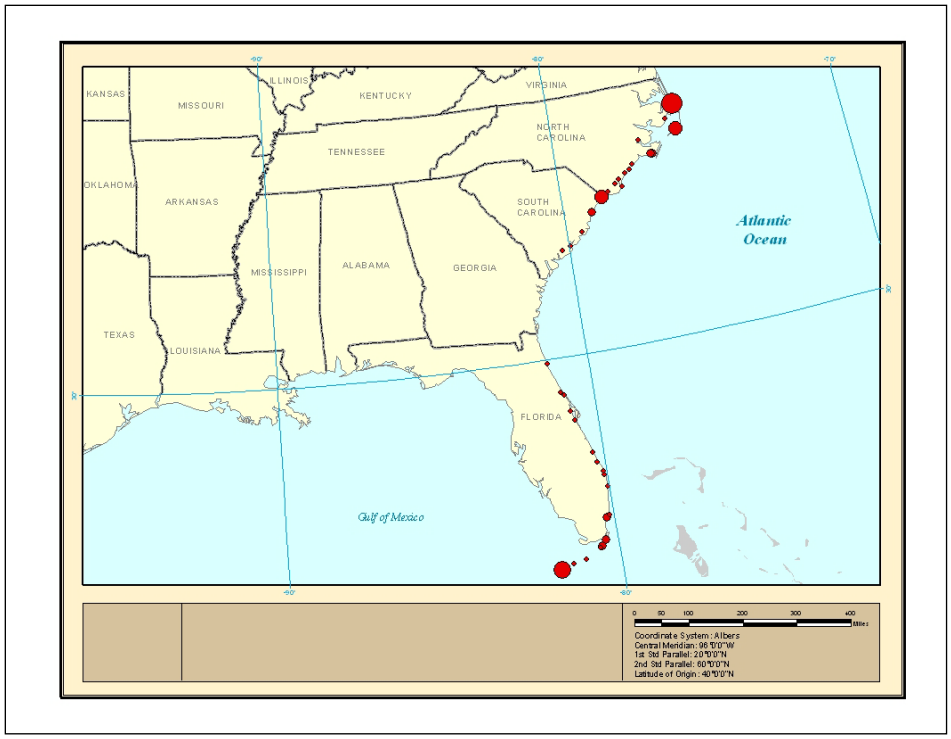

Figure 3-2. Distribution of commercial deepwater complex species landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

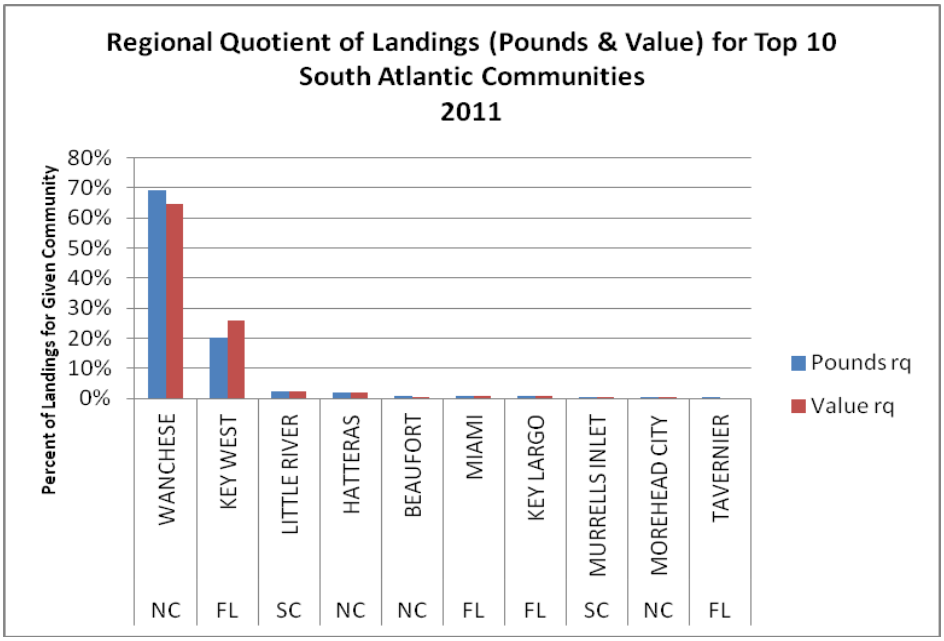

Figure 3-3. Proportion (rq) of deepwater complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of jacks complex.
Source: ALS dealer reports 2011.

Landings for the recreational sector are not available by species at the community level; therefore, it is difficult to identify communities as dependent on recreational fishing for any complexes or individual species in the snapper grouper fishery. Recreational fishing communities in the South Atlantic are listed in **Table 3-1**. These communities were selected by their ranking on a number of criteria including number of charter permits per thousand population and recreational fishing infrastructure identified within each community as listed within the MRIP site survey.

Table 3-1. South Atlantic recreational fishing communities.

Community	State	Community	State
Jekyll Island	GA	Cape Carteret	NC
Hatteras	NC	Kill Devil Hill	NC
Manns Harbor	NC	Murrells Inlet	SC
Manteo	NC	Little River	SC
Atlantic Beach	NC	Georgetown	SC
Wanchese	NC	Islamorada	FL
Salter Path	NC	Cudjoe Key	FL
Holden Beach	NC	Key West	FL
Ocean Isle	NC	Tavernier	FL
Southport	NC	Little Torch Key	FL
Wrightsville Beach	NC	Ponce Inlet	FL
Marshallberg	NC	Marathon	FL
Carolina Beach	NC	Sugarloaf Key	FL
Oriental	NC	Palm Beach Shores	FL
Topsail Beach	NC	Big Pine Key	FL
Swansboro	NC	Saint Augustine	FL
Nags Head	NC	Key Largo	FL
Harkers Island	NC	Summerland Key	FL
Calabash	NC	Sebastian	FL
Morehead City	NC	Cape Canaveral	FL

Source: SERO permit office 2008, MRIP site survey 2010.

Jacks Complex

The jacks complex of the snapper grouper fishery includes almaco jack, banded rudderfish, and lesser amberjack. The current commercial and recreational sector allocations and current commercial and recreational ACLs for these species were designated by the Comprehensive ACL Amendment and are presented in **Table 2-2** and **Table 2-3.** The ACLs for the species in the complex range from a high of 291,992 pounds ww (combined pounds for commercial and recreational ACLs for almaco jack) to a low of 10,568 pounds ww (combined pounds for commercial and recreational ACLs for lesser amberjack).

Commercial landings are greatest for these species in Florida (60.4%), although jacks complex species are also landed in South Carolina (31.3%) and North Carolina (8.3%, Source: ALS 2011). **Figure 3-4** shows the spatial distribution of commercial landings of these jacks complex species around the South Atlantic. **Figure 3-5** identifies the communities with the most commercial landings of jacks complex species. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located along the east coast of Florida (especially in Brevard, Volusia, and Palm Beach counties), the northern coast of South Carolina (Horry and Georgetown counties), and southern coast of North Carolina.

As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

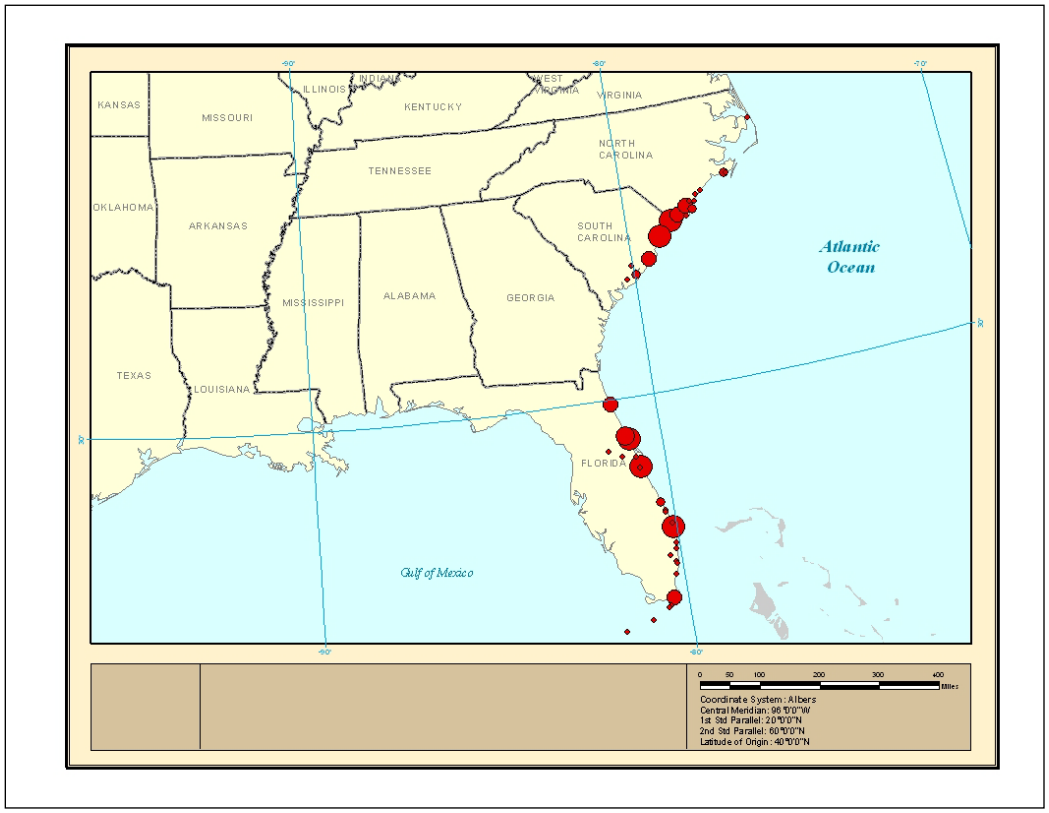

Figure 3-4. Distribution of commercial jacks complex species landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

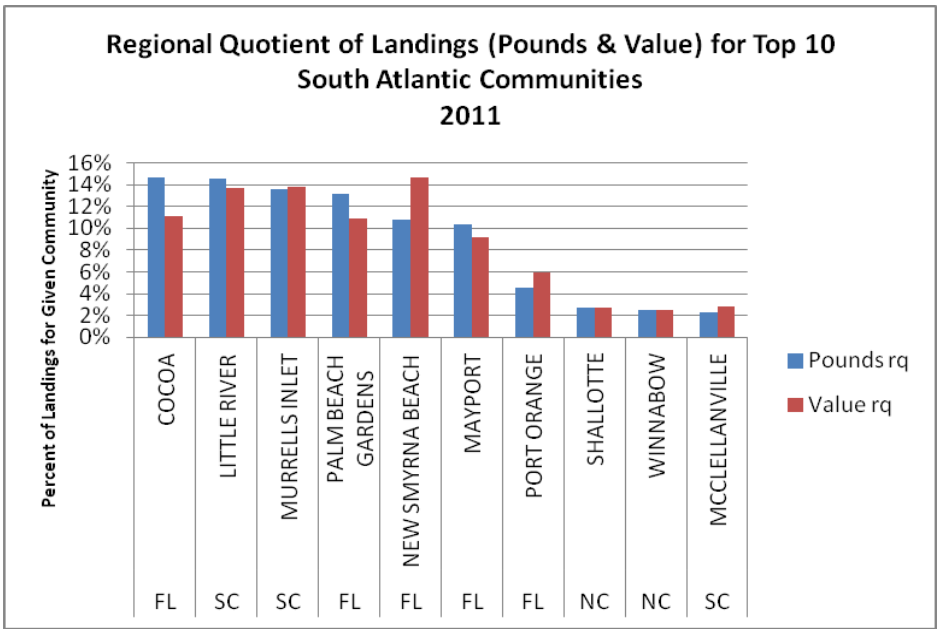

Figure 3-5. Proportion (rq) of jacks complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of jacks complex.
Source: ALS dealer reports 2011.

Snappers Complex

The snappers complex of the snapper grouper fishery includes gray snapper, lane snapper, cubera snapper, dog snapper, and mahogany snapper. The current commercial and recreational sector allocations and current commercial and recreational ACLs for these species were designated by the Comprehensive ACL Amendment and are presented in **Table 2-2** and **Table 2-3.** The ACLs for the species in the complex range from a high of 894,019 pounds ww (combined pounds for commercial and recreational ACLs for gray snapper) to a low of 160 pounds ww (combined pounds for commercial and recreational ACLs for mahogany snapper).

Commercial landings are greatest for snappers complex species in Florida (97.1%); however snapper complex species are also landed in South Carolina (2.1%) and North Carolina (0.7%) (Source: ALS 2011). **Figure 3-6** shows the spatial distribution of commercial landings of these snappers complex species around the South Atlantic. **Figure 3-7** identifies the communities with the most commercial landings of snappers complex species. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located in the Florida Keys (Key West, Marathon, Islamorada, Summerland Key, and Key Largo make up over 56.3% of dealer reported landings in 2011) and along the coast of Florida.

As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

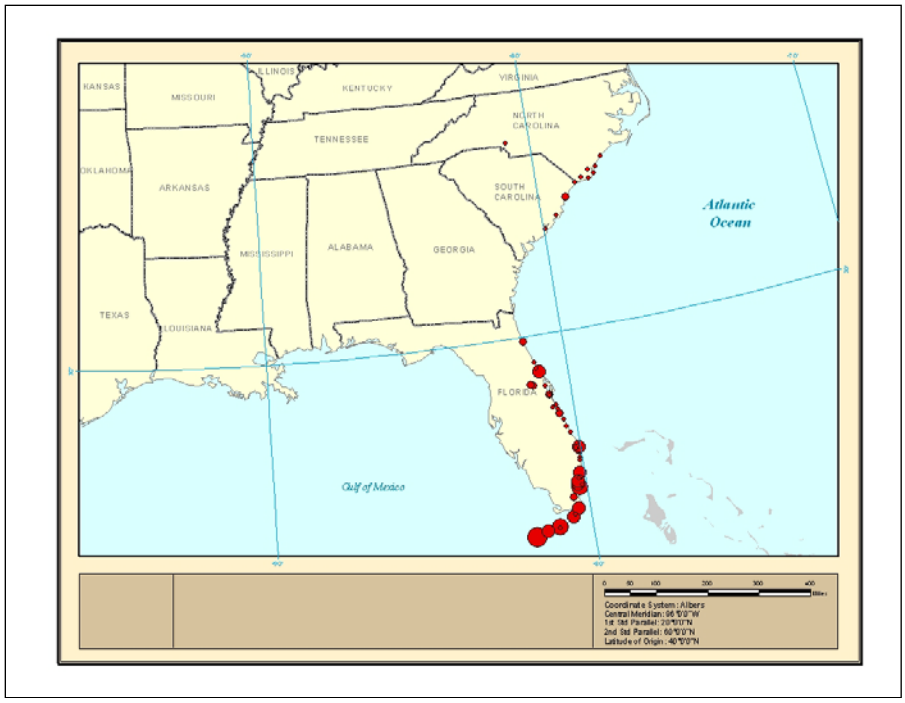

Figure 3-6. Distribution of commercial snappers complex species landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

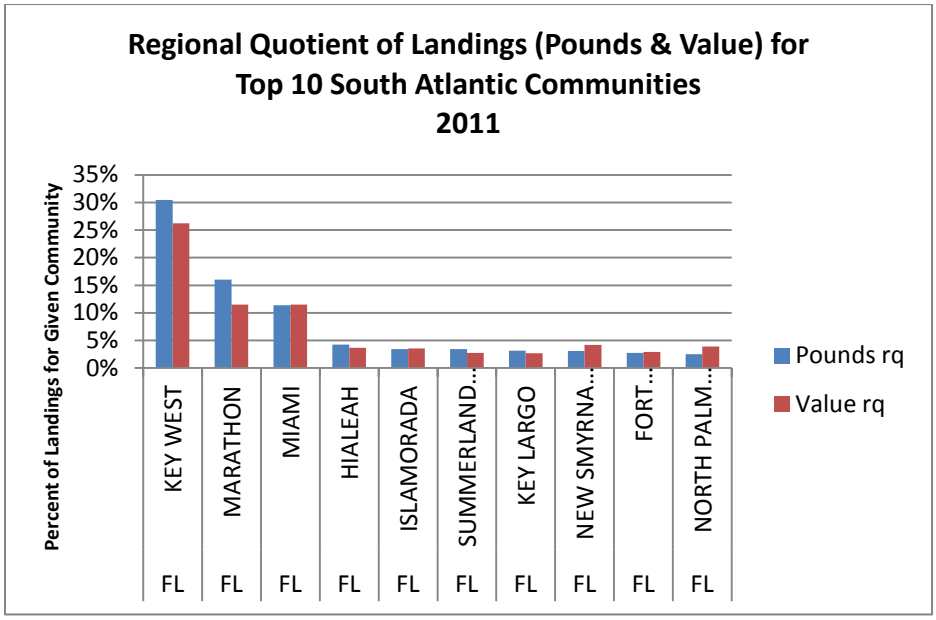

Figure 3-7. Proportion (rq) of snappers complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of snappers complex.
Source: ALS dealer reports 2011.

Grunts Complex

The grunts complex of the snapper grouper fishery includes white grunt, sailors choice, tomtate, and margate. The current commercial and recreational sector allocations and current commercial and recreational ACLs for these species were designated by the Comprehensive ACL Amendment and are presented in **Table 2-2** and **Table 2-3.** The ACLs for the species in the complex range from a high of 635,899 pounds ww (combined pounds for commercial and recreational ACLs for white grunt) to a low of 34,662 pounds ww (pounds for recreational ACL for margate).

Commercial landings are greatest for these species in Florida (52.4%), although grunts complex species are also landed in North Carolina (33.6%) and South Carolina (14%) (Source: ALS 2011). **Figure 3-8** shows the spatial distribution of commercial landings of these grunts complex species around the South Atlantic. **Figure 3-9** identifies the communities with the most commercial landings of grunts complex species. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located in the Florida Keys (Key West and Key Largo make up 22.4% of landings in the year 2011), the southern coast of North Carolina, and the northern coast of South Carolina. Unclassified grunts were included in this analysis in order to incorporate all species in the complex.

As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

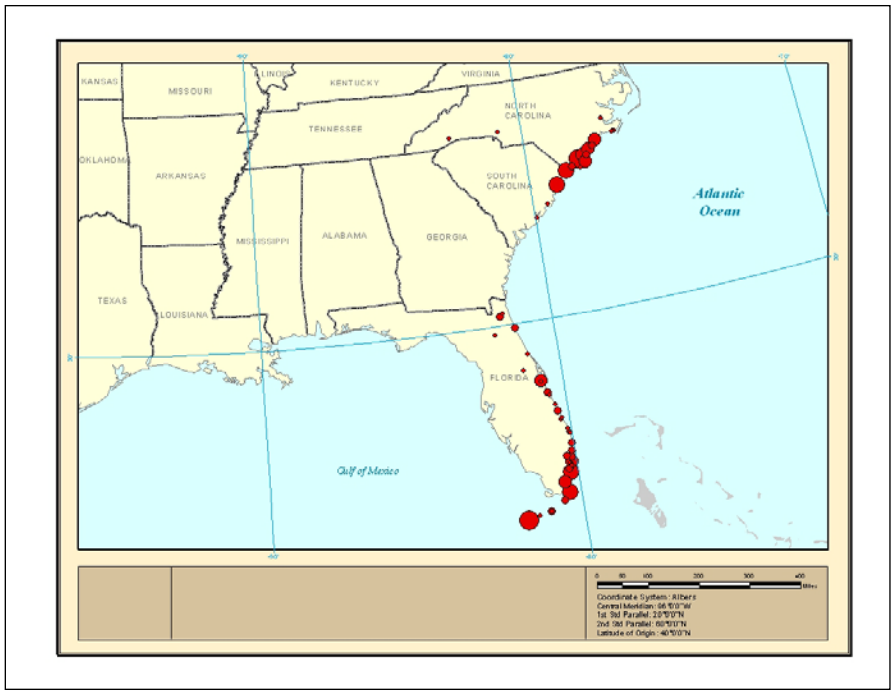

Figure 3-8. Distribution of commercial grunts complex species landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

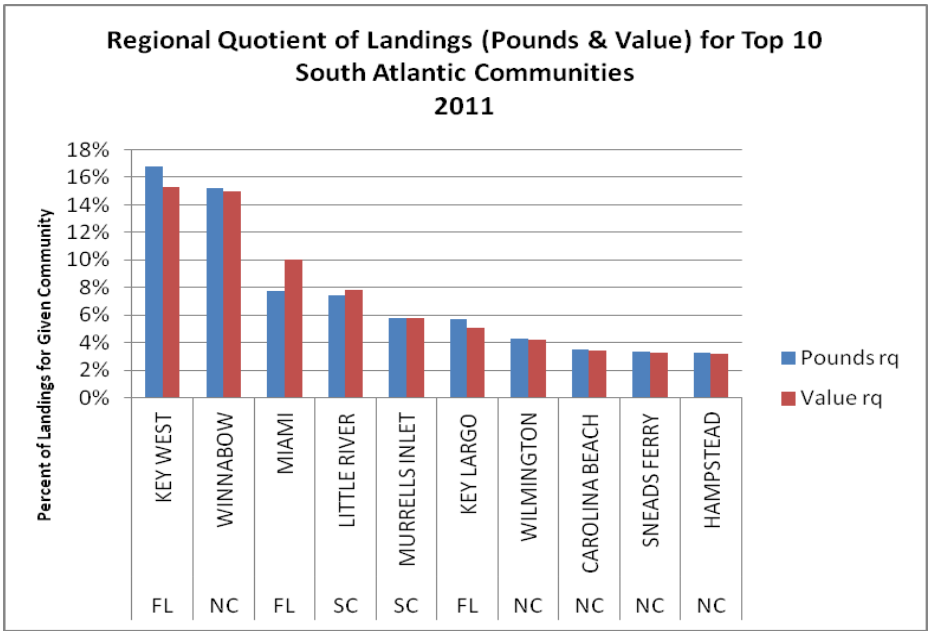

Figure 3-9. Proportion (rq) of grunts complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of grunts complex.
Source: ALS dealer reports 2011.

Shallow-Water Groupers Complex

The shallow-water groupers complex of the snapper grouper fishery includes red hind, rock hind, yellowmouth grouper, yellowfin grouper, coney, and graysby. The current commercial and recreational sector allocations and current commercial and recreational ACLs for these species were designated by the Comprehensive ACL Amendment and are presented in **Table 2-2** and **Table 2-3.** The ACLs for the species in the complex range from a high of 37,569 pounds ww (combined pounds for commercial and recreational ACLs for rock hind) to a low of 2,589 pounds ww (combined pounds for commercial and recreational ACLs for coney).

Commercial landings are greatest for these species in South Carolina (70.5%), although shallow-water groupers complex species are also landed in North Carolina (25.6%) and Florida (3.8%) (Source: ALS 2011). **Figure 3-10** shows the spatial distribution of commercial landings of these shallow-water species around the South Atlantic. **Figure 3-11** identifies the communities with the most commercial landings of shallow-water complex species. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located along the the northern South Carolina coast (Murrells Inlet and Little River make up about 65.5% of landings in 2011) and the southern North Carolina coast.

As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

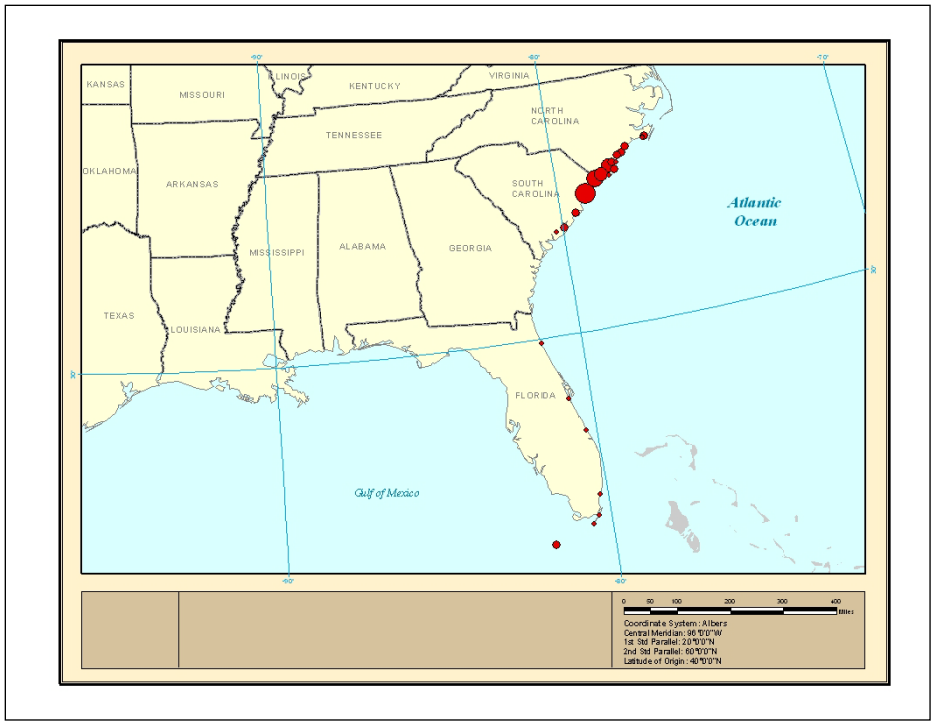

Figure 3-10. Distribution of commercial shallow-water groupers complex species landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

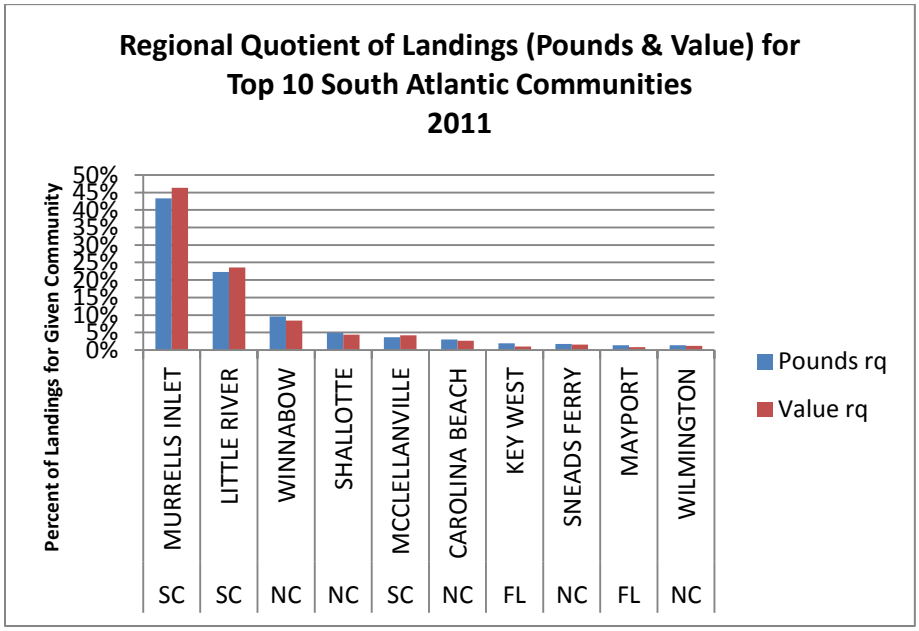

Figure 3-11. Proportion (rq) of shallow-water grouper complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of shallow-water grouper complex.
Source: ALS dealer reports 2011.

Porgies Complex

The porgies complex of the snapper grouper fishery includes jolthead porgy, knobbed porgy, saucereye porgy, scup, and whitebone porgy. The current commercial and recreational sector allocations and current commercial and recreational ACLs for these species were designated by the Comprehensive ACL Amendment and are presented in **Table 2-2** and **Table 2-3.** The ACLs for the species in the complex range from a high of 61,194 pounds ww (combined pounds for commercial and recreational ACLs for knobbed porgy) to a low of 4,205 pounds ww (recreational ACL for saucereye porgy).

Commercial landings are greatest for these species in North Carolina (90.4%), although porgies complex species are also landed in South Carolina (4.9%) and Florida (4.6%) (Source: ALS 2011). **Figure 3-12** shows the spatial distribution of commercial landings of these porgy species around the South Atlantic. **Figure 3-13** identifies the communities with the most commercial landings of porgies complex species. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located North Carolina (Wanchese, Engelhard, Lowland, Beaufort, and Winnabow make up 88.8% of landings in 2011), the northern coast of South Carolina, and the Florida Keys. Unclassified porgies were included in this analysis in order to incorporate all species in the complex.

As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

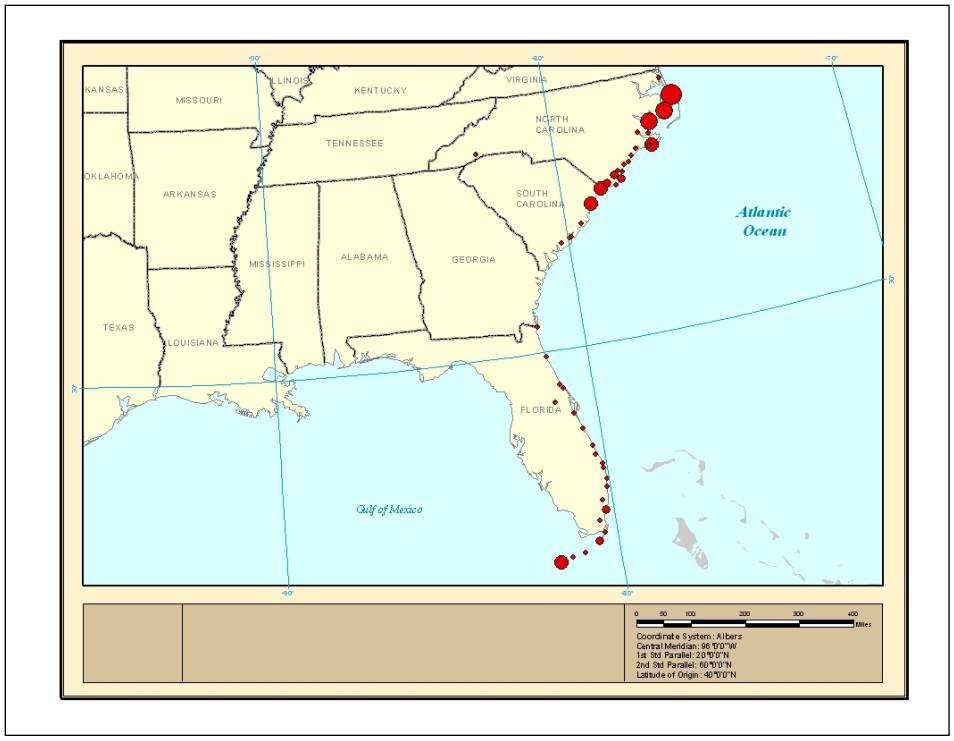

Figure 3-12. Distribution of commercial porgies complex species landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

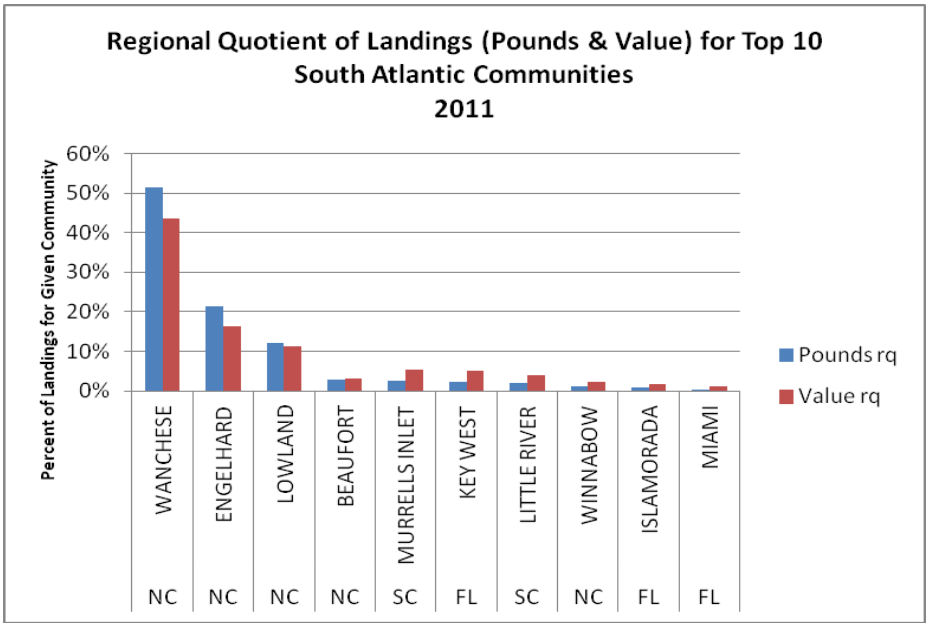

Figure 3-13. Proportion (rq) of porgies complex commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of porgies complex.
Source: ALS dealer reports 2011.

Individual Species

Atlantic Spadefish

The current commercial ACL for Atlantic spadefish is 36,476 pounds ww and the current recreational ACL is 246,365 pounds ww. Commercial landings are greatest for Atlantic spadefish in Florida, although this species is also landed in South Carolina. **Figure 3-14** shows the spatial distribution of commercial landings of Atlantic spadefish around the South Atlantic. **Table 3-2** identifies the communities with commercial landings of Atlantic spadefish (the regional quotient is not displayed for Atlantic spadefish for confidentiality reasons). The pattern of commercial landings is evident in the figures with the dealer reported landings located along the mid Florida coast and in South Carolina. As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

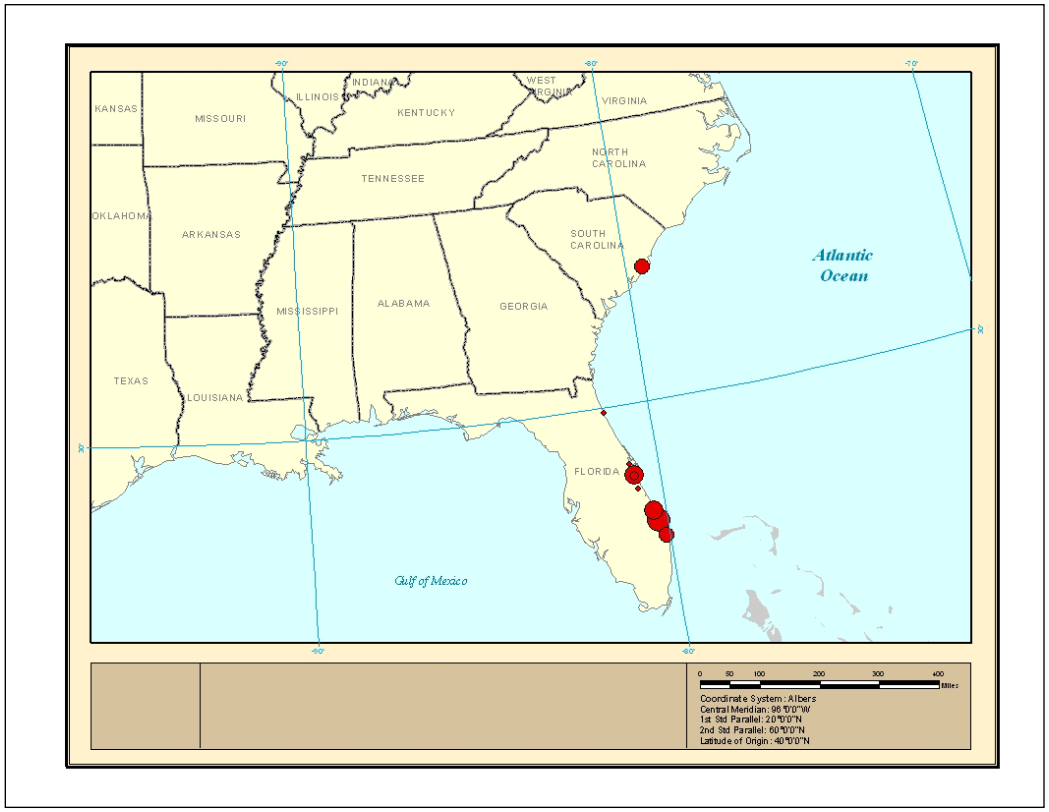

Figure 3-14. Distribution of commercial Atlantic spadefish landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

Table 3-2. Communities with commercial atlantic spadefish landings in descending order based on pounds landed.

STATE	CITY
FL	STUART
FL	FORT PIERCE
FL	COCOA
SC	MCCLELLANVILLE
FL	PALM BEACH GARDENS
FL	ROCKLEDGE
FL	PALM BAY
FL	MAYPORT
FL	SAINT AUGUSTINE
FL	TITUSVILLE

Source: ALS dealer reports 2011.

Blue Runner

The current commercial ACL for blue runner is 188,329 pounds ww and the current recreational ACL is 1,101,612 pounds ww. Commercial landings are greatest for blue runner in Florida, although this species is also landed in North Carolina (Source: ALS 2011). **Figure 3-15** shows the spatial distribution of commercial landings of blue runner around the South Atlantic. **Figure 3-16** identifies the communities with the most commercial landings of blue runner. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located along the central and lower east coast of Florida and in the Florida Keys. As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

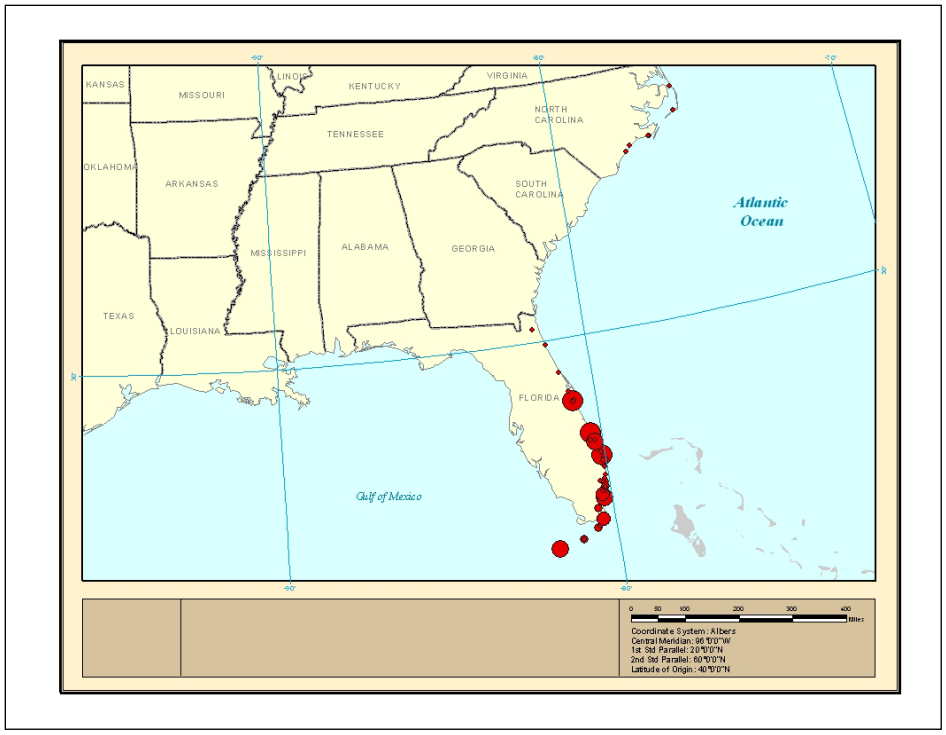

Figure 3-15. Distribution of commercial blue runner landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

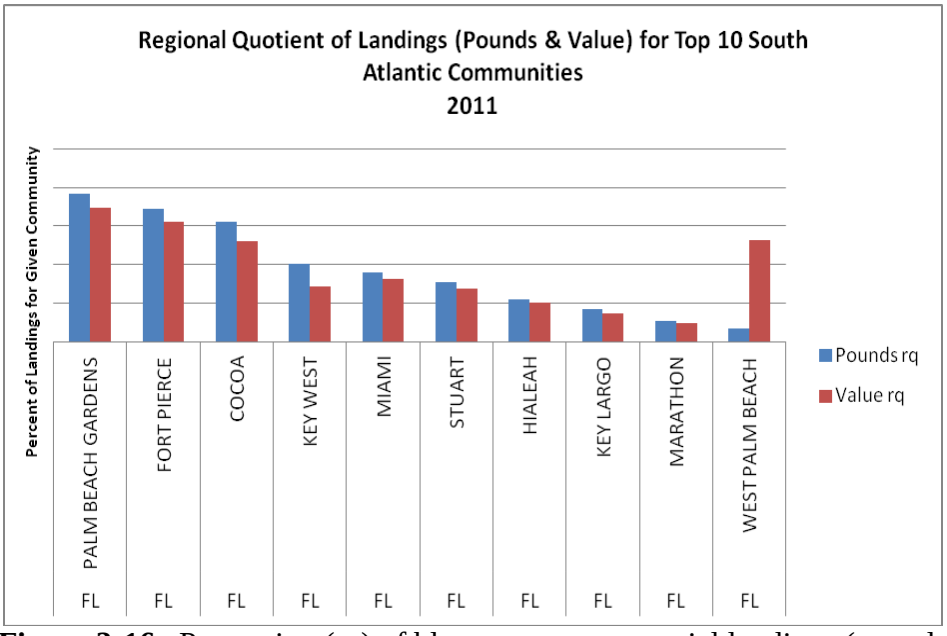

Figure 3-16. Proportion (rq) of blue runner commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of blue runner. Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

Bar Jack

The current commercial ACL for bar jack is 6,686 pounds ww and the current recreational ACL is 13,834 pounds ww. Bar jack is landed commercially in Florida (source: ALS 2011). **Figure 3-17** shows the spatial distribution of commercial landings of bar jack around the South Atlantic. **Table 3-3** identifies the communities with commercial landings of bar jack (the regional quotient is not displayed for bar jack for confidentiality reasons). The pattern of commercial landings is evident in the figures with the dealer reported landings located in the Florida Keys, Miami, and in a few communities located on the mid Florida coast. As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

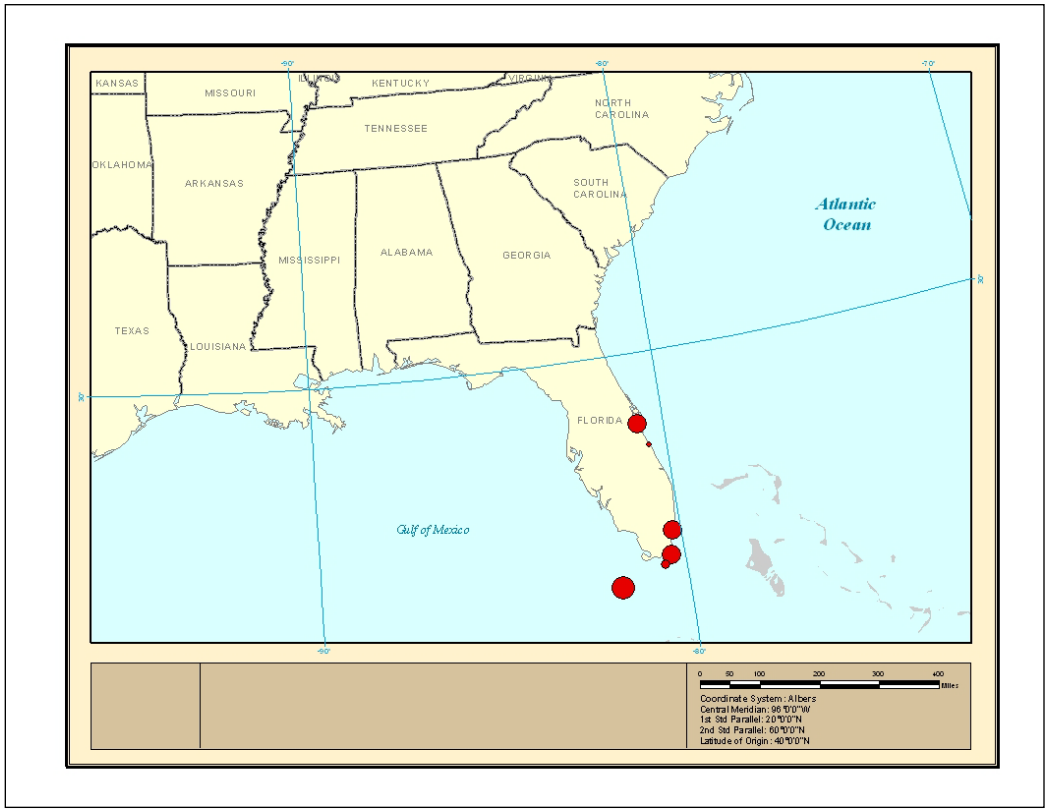

Figure 3-17. Distribution of commercial bar jack landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

Table 3-3. Communities with commercial bar jack landings in descending order based on pounds landed.

STATE	CITY
FL	KEY WEST
FL	KEY LARGO
FL	COCOA
FL	MIAMI
FL	MAYPORT
FL	ISLAMORADA
FL	SEBASTIAN

Source: ALS dealer reports 2011.

Gray Triggerfish

The current commercial ACL for gray triggerfish is 305,262 pounds ww and the current recreational ACL is 367,303 pounds ww. Triggerfish are landed commercially in North Carolina, South Carolina, and Florida (Source: ALS 2011). **Figure 3-18** shows the spatial distribution of commercial landings of triggerfish around the South Atlantic. **Figure 3-19** identifies the communities with the most commercial landings of triggerfish. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located along the southern North Carolina coast, in South Carolina, and along the north coast of Florida (Mayport and St. Augustine). Unclassified triggerfishes were included in this analysis because gray triggerfish are not identified to the species level. As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

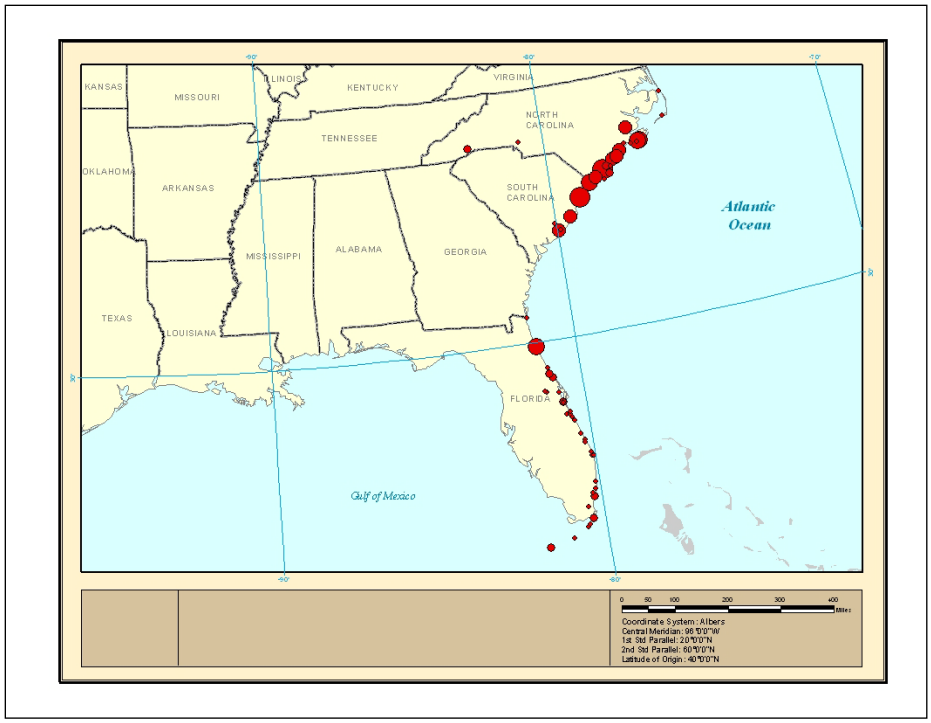

Figure 3-18. Distribution of commercial gray triggerfish landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

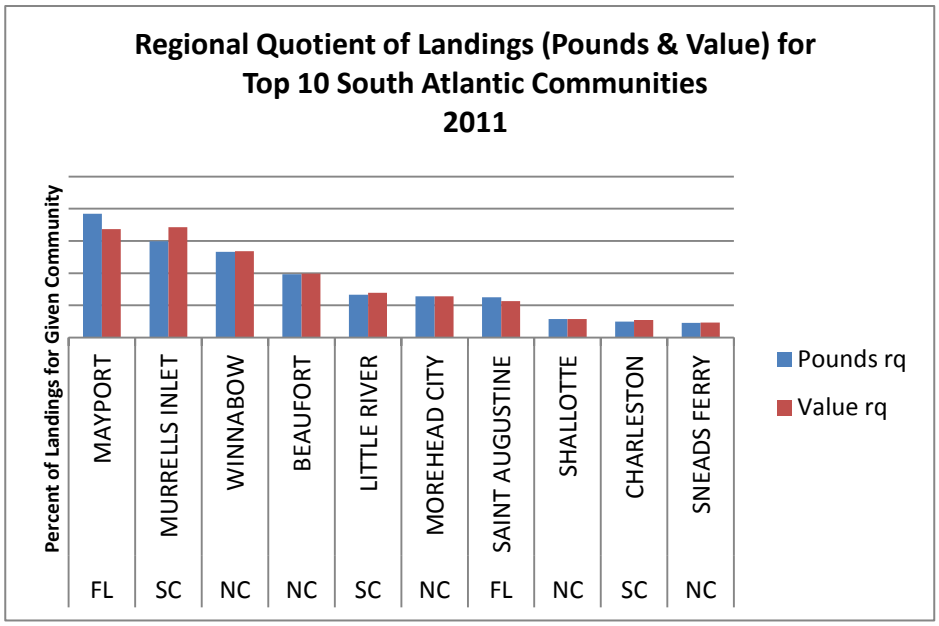

Figure 3-19. Proportion (rq) of triggerfish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of gray triggerfish. Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

Scamp

The current commercial ACL for scamp is 341,636 pounds ww and the current recreational ACL is 150,936 pounds ww. Commercial landings are greatest for scamp in South Carolina, although this species is also landed in North Carolina and Florida (Source: ALS 2011). **Figure 3-20** shows the spatial distribution of commercial landings of scamp around the South Atlantic. **Figure 3-21** identifies the communities with the most commercial landings of scamp. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located in South Carolina (Murrells Inlet, Little River, Charelston, and McClellanville make up over 65% of landings in 2011) and North Carolina. As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

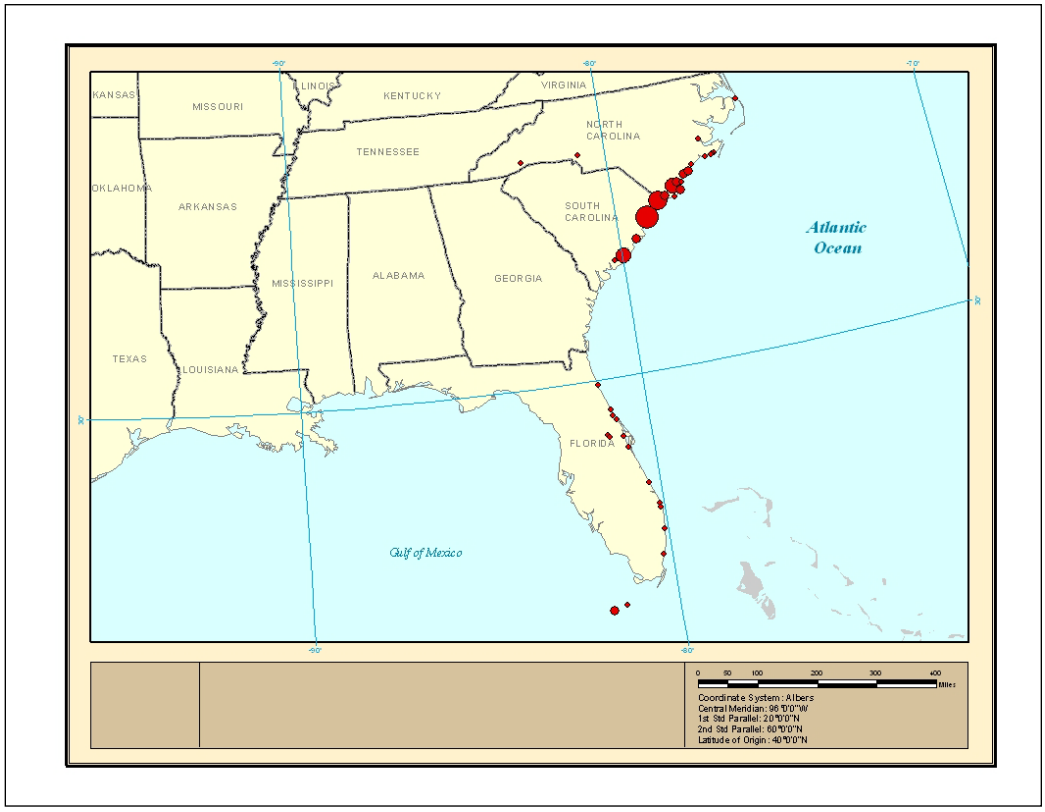

Figure 3-20. Distribution of commercial scamp landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

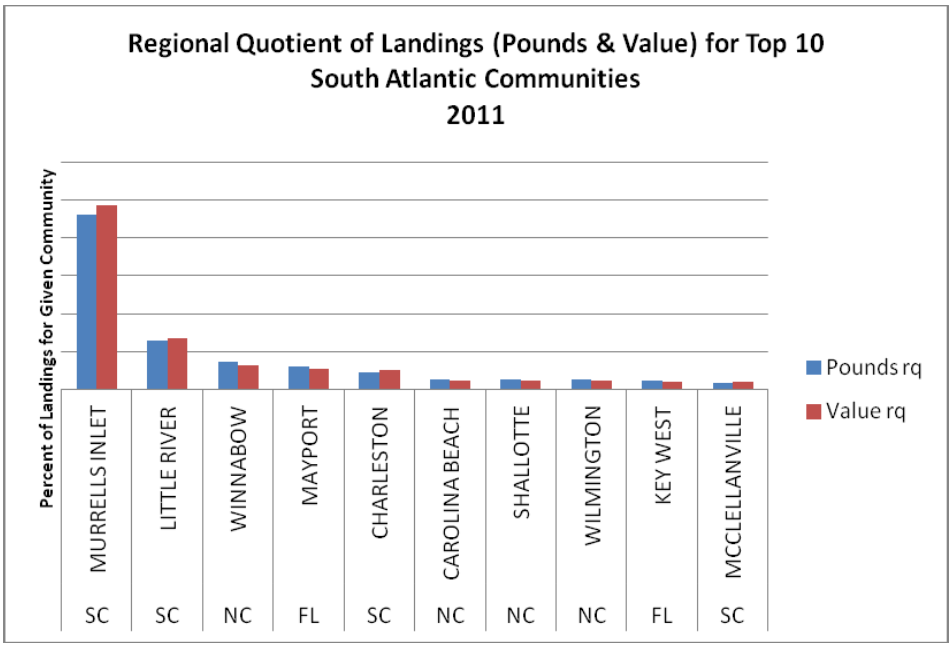

Figure 3-21. Proportion (rq) of scamp commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of scamp. Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

Hogfish

The current commercial ACL for hogfish is 48,772 pounds ww and the current recreational ACL is 98,866 pounds ww. Commercial landings are greatest for hogfish in South Carolina, although this species is also landed in North Carolina and Florida (Source: ALS 2011). **Figure 3-22** shows the spatial distribution of commercial landings of hogfish around the South Atlantic. **Figure 3-23** identifies the communities with the most commercial landings of hogfish. The pattern of commercial landings is evident in the figures with the majority of dealer reported landings located in South Carolina (Murrells Inlet), North Carolina, and the Florida Keys (Key West, Key Largo, Islamorada, and Summerland Key make up about 17.8% of landings in 2011). As mentioned above, landings for the recreational sector are not available at the community level; however recreational fishing communities in the South Atlantic have been identified and are listed **Table 3-1**.

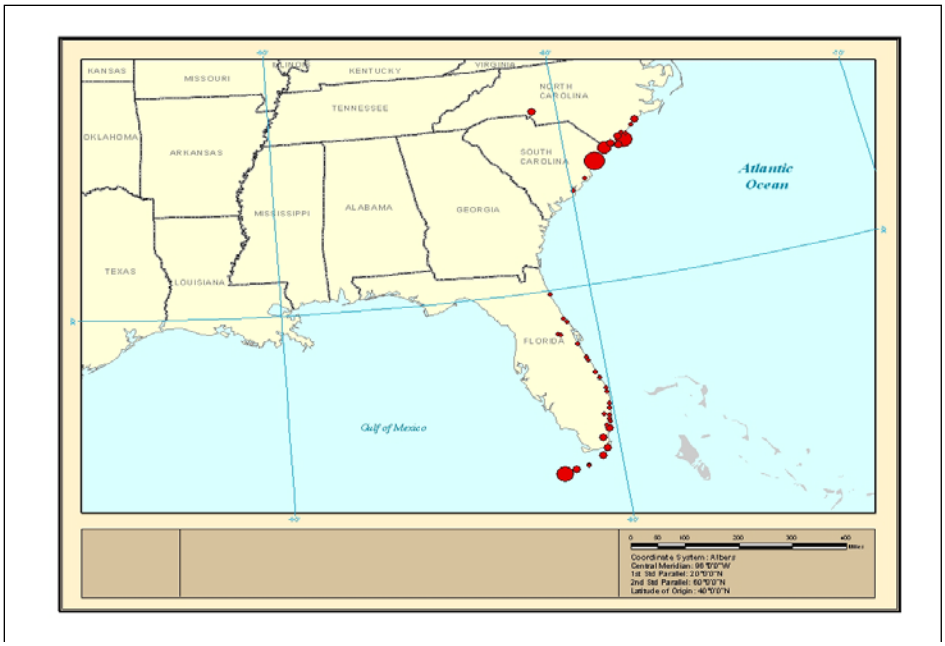

Figure 3-22. Distribution of commercial hogfish landings with the size of the point proportional to landings, based on dealer reports.
Source: ALS dealer reports 2011.

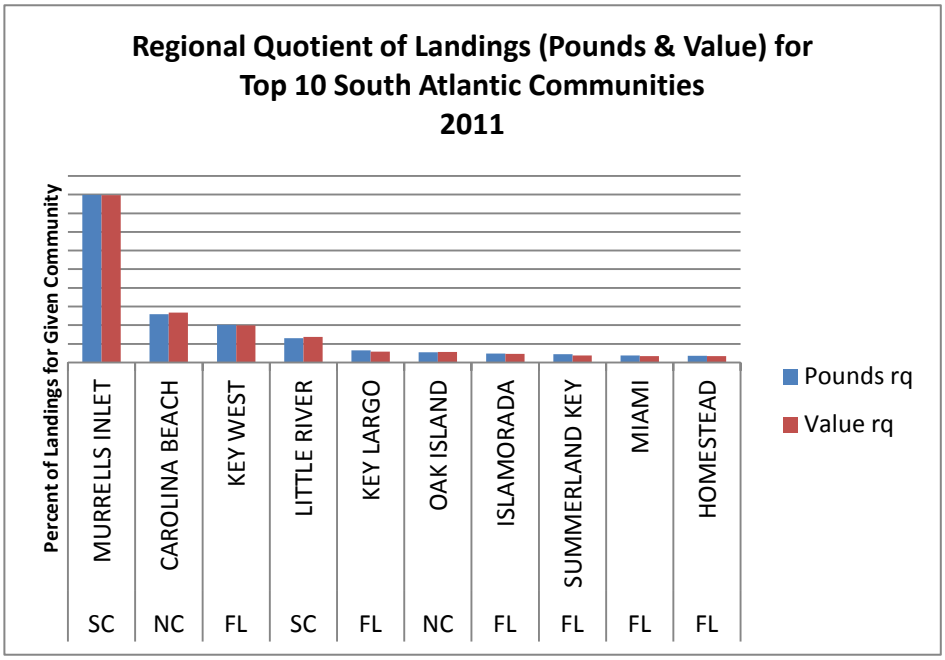

Figure 3-23. Proportion (rq) of hogfish commercial landings (pounds and value) for top 10 South Atlantic communities out of total landings and value of hogfish. Values have been omitted because of confidentiality issues.
Source: ALS dealer reports 2011.

3.3.3 Environmental Justice (EJ)

Executive Order 12898 requires federal agencies conduct their programs, policies, and activities in a manner to ensure individuals or populations are not excluded from participation in, or denied the benefits of, or subjected to discrimination because of their race, color, or national origin. In addition, and specifically with respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. The main focus of Executive Order 12898 is to consider "the disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories…" This executive order is generally referred to as environmental justice (EJ).

Commercial fishermen, recreational fishermen, and coastal communities would be expected to be impacted by the proposed action in the South Atlantic. However, information on the race and income status for these individuals is not available. Because the proposed action could be expected to impact fishermen and community members in numerous communities in the South Atlantic, census data (available at the county level, only) have been assessed to examine whether any coastal counties have poverty or minority rates that exceed thresholds for raising EJ concerns.

The threshold for comparison used was 1.2 times the state average for the proportion of minorities and population living in poverty (EPA 1999). If the value for the county was greater than or equal to 1.2 times this average, then the county was considered an area of potential EJ concern. Census data for the year 2010 were used.

For Florida, the estimate of the minority (interpreted as non-white, including Hispanic) population was 39.5%, while 13.2% of the total population was estimated to be below the poverty line. These values translate to EJ thresholds of 47.4% and 15.8%, respectively (**Table 3-4**).

In Florida, Broward (4.6%) and Miami-Dade (34.5%) counties exceed the minority threshold by the percentage noted. In regard to poverty, Miami-Dade (1.1%) county exceeds the threshold by the percentage noted. No potential EJ concern is evident for the remaining counties which have values less than the poverty and minority thresholds. The same method was applied to the remaining South Atlantic states.

Table 3-4. Average proportion of minorities and population living in poverty by state, and the corresponding threshold used to consider an area of potential EJ concern.

	Minorities		Poverty	
State	% Population	EJ Threshold	% Population	EJ Threshold
FL	39.5	47.4	13.2	15.8
GA	41.7	50	15	18
NC	32.6	39.1	15.1	18.1
SC	34.9	41.9	15.8	19

Source: U.S. Census Bureau 2010

In North Carolina, the counties of Chowan (0.1%), Tyrrell (4.2%), Pasquotank (4.3%), Washington (15.6%), and Bertie (25.5%) exceed the minority threshold for potential EJ concern. The North Carolina counties of Chowan (0.5%), Perquimans (0.5%), Tyrrell (1.8%), Bertie (4.4%), and Washington (7.7%) exceed the poverty threshold. Chowan, Tyrrell, and Washington counties exceed both the minority and poverty thresholds and are the North Carolina communities identified as most likely to be vulnerable to EJ concerns.

In South Carolina, the counties of Colleton (2.5%) and Jasper (19.9%) exceed the minority threshold by the percentage noted. The South Carolina counties of Georgetown (0.3%), Jasper (0.9%), and Colleton (2.4%) exceed the poverty threshold. Colleton and Jasper counties exceed both the minority and poverty thresholds and are the South Carolina communities identified as most likely to be vulnerable to EJ concerns.

In Georgia, Liberty was the only coastal county to exceed the minority threshold (by 3.2%). None of Georgia's coastal counties exceeded the poverty threshold for potential EJ concern.

While some communities expected to be affected by this proposed amendment may have minority or economic profiles that exceed the EJ thresholds and, therefore, may constitute areas of concern, significant EJ issues are not expected to arise as a result of this proposed amendment. It is anticipated that the impacts from the proposed regulations may impact minorities or the poor, but not through discriminatory application of these regulations.

3.4 Administrative Environment

3.4.1 The Fishery Management Process and Applicable Laws

3.4.1.1 Federal Fishery Management

Federal fishery management is conducted under the authority of the Magnuson-Stevens Act (16 U.S.C. 1801 et seq.), originally enacted in 1976 as the Fishery Conservation and Management Act. The Magnuson-Stevens Act claims sovereign rights and exclusive fishery management

authority over most fishery resources within the Exclusive Economic Zone (EEZ), an area extending 200 nm from the seaward boundary of each of the coastal states, and authority over U.S. anadromous species and continental shelf resources that occur beyond the U.S. EEZ.

Responsibility for federal fishery management decision-making is divided between the U.S. Secretary of Commerce (Secretary) and eight regional fishery management councils that represent the expertise and interests of constituent states. Regional councils are responsible for preparing, monitoring, and revising management plans for fisheries needing management within their jurisdiction. The Secretary is responsible for collecting and providing the data necessary for the councils to prepare fishery management plans and for promulgating regulations to implement proposed plans and amendments after ensuring that management measures are consistent with the Magnuson-Stevens Act and with other applicable laws. In most cases, the Secretary has delegated this authority to NMFS.

The South Atlantic Council is responsible for conservation and management of fishery resources in federal waters of the U.S. South Atlantic. These waters extend from 3 to 200 miles offshore from the seaward boundary of North Carolina, South Carolina, Georgia, and east Florida to Key West. The South Atlantic Council has thirteen voting members: one from NMFS; one each from the state fishery agencies of North Carolina, South Carolina, Georgia, and Florida; and eight public members appointed by the Secretary. On the South Atlantic Council, there are two public members from each of the four South Atlantic States. Non-voting members include representatives of the U.S. Fish and Wildlife Service, U.S. Coast Guard, State Department, and Atlantic States Marine Fisheries Commission (ASMFC). The South Atlantic Council has adopted procedures whereby the non-voting members serving on the South Atlantic Council Committees have full voting rights at the Committee level but not at the full South Atlantic Council level. South Atlantic Council members serve three-year terms and are recommended by state governors and appointed by the Secretary from lists of nominees submitted by state governors. Appointed members may serve a maximum of three consecutive terms.

Public interests also are involved in the fishery management process through participation on Advisory Panels and through council meetings, which, with few exceptions for discussing personnel matters, are open to the public. The South Atlantic Council uses its Scientific and Statistical Committee (SSC) to review the data and science being used in assessments and fishery management plans/amendments. In addition, the regulatory process is in accordance with the Administrative Procedure Act, in the form of "notice and comment" rulemaking.

3.4.1.2 State Fishery Management

The state governments of North Carolina, South Carolina, Georgia, and Florida have the authority to manage fisheries that occur in waters extending three nautical miles from their respective shorelines. North Carolina's marine fisheries are managed by the Marine Fisheries Division of the North Carolina Department of Environment and Natural Resources. The Marine Resources Division of the South Carolina Department of Natural Resources regulates South Carolina's marine fisheries. Georgia's marine fisheries are managed by the Coastal Resources

Division of the Department of Natural Resources. The Marine Fisheries Division of the Florida Fish and Wildlife Conservation Commission is responsible for managing Florida's marine fisheries. Each state fishery management agency has a designated seat on the South Atlantic Council. The purpose of state representation at the South Atlantic Council level is to ensure state participation in federal fishery management decision-making and to promote the development of compatible regulations in state and federal waters.

The South Atlantic States are also involved through the ASMFC in management of marine fisheries. This commission was created to coordinate state regulations and develop management plans for interstate fisheries. It has significant authority, through the Atlantic Striped Bass Conservation Act and the Atlantic Coastal Fisheries Cooperative Management Act, to compel adoption of consistent state regulations to conserve coastal species. The ASFMC is also represented at the South Atlantic Council level, but does not have voting authority at the South Atlantic Council level.

NMFS's State-Federal Fisheries Division is responsible for building cooperative partnerships to strengthen marine fisheries management and conservation at the state, inter-regional, and national levels. This division implements and oversees the distribution of grants for two national (Inter-jurisdictional Fisheries Act and Anadromous Fish Conservation Act) and two regional (Atlantic Coastal Fisheries Cooperative Management Act and Atlantic Striped Bass Conservation Act) programs. Additionally, it works with the ASMFC to develop and implement cooperative State-Federal fisheries regulations.

3.4.1.3 Enforcement

Both the NMFS Office for Law Enforcement (NOAA/OLE) and the United States Coast Guard (USCG) have the authority and the responsibility to enforce South Atlantic Council regulations. NOAA/OLE agents, who specialize in living marine resource violations, provide fisheries expertise and investigative support for the overall fisheries mission. The USCG is a multi mission agency, which provides at-sea patrol services for the fisheries mission.

Neither NOAA/OLE nor the USCG can provide a continuous law enforcement presence in all areas due to the limited resources of NOAA/OLE and the priority tasking of the USCG. To supplement at-sea and dockside inspections of fishing vessels, NOAA entered into Cooperative Enforcement Agreements with all but one of the states in the Southeast Region (North Carolina), which granted authority to state officers to enforce the laws for which NOAA/OLE has jurisdiction. In recent years, the level of involvement by the states has increased through Joint Enforcement Agreements, whereby states conduct patrols that focus on federal priorities and, in some circumstances, prosecute resultant violators through the state when a state violation has occurred.

NOAA General Counsel issued a revised Southeast Region Magnuson-Stevens Act Penalty Schedule in June 2003, which addresses all Magnuson-Stevens Act violations in the Southeast

Region. In general, this penalty schedule increases the amount of civil administrative penalties that a violator may be subject to up to the current statutory maximum of $120,000 per violation. The Final Penalty Policy was issued and announced on April 14, 2011 (76 FR 20959).

Chapter 4. Environmental Consequences and Comparison of Alternatives

4.1 Action: Revise the acceptable biological catches (ABCs), annual catch limits (ACLs, including sector ACLs), and annual catch targets (ACTs) for select un-assessed species in the snapper grouper fishery management unit (FMU).

Alternative 1. No action. Do not revise ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed species in the snapper grouper FMU. Data would not be updated with data from Marine Recreational Information Program (MRIP), commercial, and for-hire landings.

Alternative 2 (Preferred). Revise the ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed species in the snapper grouper FMU. Data will be updated with data from MRIP, commercial, and for-hire landings.

4.1.1 Biological Effects

Alternative 1 (No Action) would retain the ABCs, ACLs (including sector ACLs), and ACTs that were analyzed and implemented by the Comprehensive ACL Amendment (SAFMC 2011c) and its integrated Final Environmental Impact Statement. ABCs established for species in the Comprehensive ACL Amendment (SAFMC 2011c) included the 37 snapper grouper species considered in Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13). The Comprehensive ACL Amendment (SAFMC 2011c) followed the South Atlantic Council Scientific and Statistical Committee's (SSC) recommendations for the specification of ABCs based on the Council's approved ABC Control Rule. The ABC Control Rule involved a systematic inspection of all sources of uncertainty, including variables such as susceptibility, vulnerability, bycatch, and discard information. ACLs were set equal to the ABCs since the South Atlantic Fishery Management Council (South Atlantic Council) decided that the ABC Control Rule was conservative enough to render a buffer between the ABC and ACL un-necessary. The Comprehensive ACL Amendment (SAFMC 2011c) also allocated between the recreational and commercial sectors based on landings information from 1986-2008 and 2006-2008; thereby, combining past and present participation. The South Atlantic Council established allocations by balancing long-term catch history with recent catch history, and concluded inclusion of a transparent formula to specify allocations was the most fair and equitable way to allocate fishery resources. The Comprehensive ACL Amendment (SAFMC 2011c) further established recreational annual catch targets (ACTs) for species in the snapper grouper FMU, including the 37 species in Regulatory Amendment 13. The ACTs adjust the ACLs by 50% or by one minus the proportional standard error (PSE) from the recreational fishery, whichever is greater, to be the recreational ACT. The South Atlantic Council concluded including the PSE for the catch

estimates into a formula to establish ACT adds a buffer for species that are not commonly landed, further accounting for uncertainty. For the commercial snapper grouper fishery, the South Atlantic Council concluded that quota monitoring and the accountability measures (AMs) specified in the Comprehensive ACL Amendment (SAFMC 2011c) were sufficient to account for management uncertainty. Therefore, the South Atlantic Council did not establish commercial ACTs.

Alternative 2 (Preferred) would update ABCs, ACLs (including sector ACLs), and ACTs using the data described in **Section 1.5** of Regulatory Amendment 13 based on the best available data. The final data, titled "MRIP & New Commercial" in **Tables 2-1** through **Table 2-5** replaces the Marine Recreational Fisheries Statistical Survey (MRFSS)-based recreational data with Marine Recreational Information Program (MRIP)-based recreational data. Additionally, new commercial data (based upon the 3 July 2012 commercial ACL dataset) and updated recreational data (1 October 2012 recreational ACL dataset) are also used to update the values. The updated recreational ACL dataset contains MRIP official re-estimates from 2004 to 2008, as well as recalibrated MRFSS data from 1986 to 2003. The new values that would be implemented by Regulatory Amendment 13 are listed in **Table 2-5**. **Appendix I** summarizes the revised values for ABCs, ACLs (including sector ACLs), and ACTs as per **Alternative 2 (Preferred)**, and compares them with the current values that were implemented by the Comprehensive ACL Amendment (SAFMC 2011c).

Due to the absence of stock assessments for the species considered in Regulatory Amendment 13, the discussion of biological effects is mostly qualitative. Landings data are graphically presented in **Appendix J**. Intuitively, a decrease in the ABC would be expected to yield an increase in biological benefits to a stock (and vice-versa). The biological effects of the new ABC values from **Alternative 2 (Preferred)** would be negligible compared to **Alternative 1 (No Action)** for the six stock complexes, with a maximum increase in ABC of 5.20% for the deepwater complex and a maximum decrease of 13.13% to the snappers complex (**Table 2-1**). For the six individual stocks, the highest increase in ABC would be for bar jack (20.76%), with the largest decreases for Atlantic spadefish (33.02%) and blue runner (12.73%) (**Table 2-1**).

Biological effects of allocations are qualitative in nature; overall fishing mortality and its consequences to a certain stock determines the health of that stock. Regulatory Amendment 13 would not change the methodology used in the Comprehensive ACL Amendment (SAFMC 2011c) to allocate the ACLs to commercial and recreational sectors. However, changes in data used to determine allocations would result in modifications to ACLs allocated to the commercial and recreational sectors. As shown in **Table 2-2**, percent differences in sector allocations are less than 10%, with the exception of misty grouper with a decrease of 12.51% for the recreational sector and bar jack with a decrease of 11.34% for the commercial sector.

Similar to the ABCs, the revised ACLs under **Alternative 2 (Preferred)** would have negligible biological effects when compared with **Alternative 1 (No Action)**. The ACL for the commercial sector would increase 9.48% for the deepwater complex, while the ACL for the recreational sector would increase 0.76% (**Table 2-3**). The ACL for the commercial sector for the snappers complex would increase by 5.43%, with a decrease of 17.43% for the recreational sector (**Table 2-3**). The largest increase in ACLs would be for the recreational sector for bar

jack (41.07%), and the largest decrease in ACLs for individual stocks would be for the recreational sector for Atlantic spadefish (37.35%) and blue runner (13.92%) (**Table 2-3**).

Recreational ACTs would decrease for all stock complexes and individual stocks under **Alternative 2 (Preferred)** in Regulatory Amendment 13 (**Table 2-4**). Decreases in percent differences for recreational ACTs range from a low of 4.09% for the deepwater complex to a high of 28.68 % for the shallow water grouper complex (**Table 2-4**). The recreational ACT for Atlantic spadefish would decrease by 45.61% (**Table 2-4**). The current ACT functions as a performance standard, and does not trigger an AM. If an evaluation concludes that the ACT and ACL are being chronically exceeded for a species, and post-season AMs are repeatedly needed to correct for ACL overages, adjustments to management measures would be made. Therefore, biological benefits of **Alternative 2 (Preferred)** would be negligible.

Although negligible, greater biological benefits are expected under **Alternative 2 (Preferred)** as opposed to **Alternative 1** (**No Action**). While the percent differences in the revised ABCs and ACLs in Regulatory Amendment 13 may be relatively small from the status quo levels, the data revealed by the new and updated methodology more accurately represent the fishing effort for these species, and would be more likely to trigger AMs when needed. In contrast, **Alternative 1 (No Action)** could either result in triggering an AM when it is not needed, or not triggering an AM when it is needed. Therefore, both direct and indirect biological effects to the fishery resource could be expected.

There is likely to be no additional biological benefit to protected species from **Alternative 1 (No Action)** because it would perpetuate the existing level of risk for interactions between Endangered Species Act (ESA)-listed species and the fishery. Previous ESA consultations determined the snapper grouper fishery was not likely to adversely affect marine mammals, Atlantic sturgeon, or *Acropora* species (See **Appendix H** for discussion of most recent ESA Section 7 consultations). The impacts from **Alternatives 2 (Preferred)** on sea turtles and smalltooth sawfish are unclear. If these ABCs, ACLs (including sector ACLs), and ACTs perpetuate the existing amount of fishing effort, they are unlikely to change the level of interaction between sea turtles and smalltooth sawfish and the fishery as a whole. This scenario is likely to provide little additional biological benefits to protected species, if any. However, if these alternatives cause reductions in the overall amount of effort in the fishery, and do not simply shift effort elsewhere, the risk of interaction between sea turtles and smalltooth sawfish may decrease.

4.1.2 Economic Effects

Alternative 1 (No Action) would not revise the ABCs, ACLs (including sector ACLs), and ACTs that were established in 2012 for 37 un-assessed species, despite more recent improvements in landings data. Thus, the status quo alternative would retain biological standards (and management measures) that are no longer based on the best available data. As of October 2012, the federal fishing seasons for the following species or stock complexes closed early for the commercial sector because landings met or exceeded their respective ACL: the deepwater complex; gray triggerfish; the jacks complex; the porgies complex; gag; and the shallow water groupers complex. In the long run, **Alternative 1 (no action)** could yield smaller

net economic benefits than **Preferred Alternative 2** because the former is not based on the best available data.

Alternative 2 (Preferred) would use MRIP and more recent commercial data to revise the ABCs, ACLs (including sector ACLs), and ACTs for the 37 un-assessed species. These revisions, especially the revised ACLs, could affect annual commercial and/or recreational landings of these species and the net economic benefits that derive from these landings. Several species or stock complexes have already exceeded their sector ACL in 2012. These expected changes are more fully described in the subsequent sub-sections.

4.1.2.1 Alternative 2 Economic Effects for the Eight Species of the Deepwater Complex

Alternative 2 (Preferred) would revise the commercial and recreational ACLs (pounds whole weight (ww)) for the following eight species of the deepwater stock complex: Yellowedge grouper; blueline tilefish; silk snapper; misty grouper; sand tilefish; queen snapper; black snapper; and blackfin snapper. The combined changes would allow for increases in annual commercial landings of 32,601 pounds and recreational landings of 2,517 pounds (**Table 4-1**); however, there would not be increases across the eight species. **Alternative 2 (Preferred)** would allow for increases in annual commercial landings of blueline tilefish, misty grouper, sand tilefish, queen snapper, and black snapper, but would decrease commercial landings of the other three species.

Table 4-1. Current and proposed ACLs (pounds ww) for species in the deepwater complex.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
Yellowedge grouper	29,070	27,431	-1,639	1,151	2,790	1,639
Blueline tilefish	280,842	316,098	35,256	311,760	315,243	3,483
Silk snapper	20,129	18,564	-1,565	7,390	6,541	-850
Misty grouper	2,030	2,388	358	833	475	-358
Sand tilefish	1,431	1,770	338	7,392	6,213	-1,178
Queen snapper	8,700	8,756	56	643	710	67
Black snapper	350	366	17	32	16	-17
Blackfin snapper	1,316	1,096	-220	2,838	2,569	-269
Total	343,869	376,469	32,601	332,039	334,556	2,517

In 2012, the commercial sector of the deepwater complex closed on September 8th (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 10/11/2012). **Alternative 2 (Preferred)** would increase the ACL for the complex by approximately 9.5%, which would allow an increase in commercial landings of the deepwater stock complex of 32,600 pounds. This increase would represent an increase in annual ex-vessel gross revenue of $71,252 based on average per pound values from 2011 assuming the entire complex commercial ACL is caught, less the costs to harvest and land those additional pounds.

The recreational sector as of the third MRIP wave for 2012 had only caught 5% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual landings of deepwater complex species would represent less than 7% of the current ACL for the complex. **Alternative 2 (Preferred)** would increase the recreational ACL for the complex. Therefore, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of the deepwater stock complex or associated economic benefits or costs of those landings.

4.1.2.2 Alternative 2 Economic Effects for the Three Species of the Jacks Complex

Alternative 2 (Preferred) would revise the commercial and recreational ACLs for the following three species of the jacks complex: Almaco jack; banded rudderfish; and lesser amberjack. The combined changes may reduce annual commercial landings by 4,577 pounds, but would allow for an increase of recreational landings by 6,309 pounds (**Table 4-2**). The commercial sector could expect to see a potential overall decrease of $3,943 in ex-vessel values for the jacks complex based on average per pound values from 2011 assuming the entire complex commercial ACL is caught.

Table 4-2. Current and proposed ACLs (pounds ww) for species of the jacks complex.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
Almaco Jack	150,439	147,322	-3,117	141,483	155,195	13,712
Banded rudderfish	38,633	37,829	-804	114,366	107,605	-6,761
Lesser amberjack	4,927	4,270	-656	5,641	5,000	-641
Total	193,999	189,421	-4,577	261,490	267,799	6,309

In 2012, the commercial sector closed on July 2nd (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 10/11/2012). **Alternative 2 (Preferred)** would decrease the commercial ACL for the jacks complex by 4,577 pounds. The recreational sector as of the third MRIP wave for 2012 had caught 47% of their ACL, roughly half of the current ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of the jacks complex would represent 63% of the current recreational ACL for the complex. **Alternative 2 (Preferred)** would increase the ACL. Hence, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of the jacks complex or economic benefits or costs of those recreational landings.

4.1.2.3 Alternative 2 Economic Effects for the Five Species of the Snappers Complex

Alternative 2 (Preferred) would revise the commercial and recreational ACLs for the following five species of the snappers complex: Gray snapper; lane snapper; cubera snapper; dog snapper; and mahogany snapper. The combined changes would allow for an increase of annual commercial landings of 11,111 pounds, but could decrease recreational landings by as much as 153,811 pounds (**Table 4-3**). **Alternative 2 (Preferred)** would allow for increases of commercial landings of gray snapper and mahogany snapper, but could decrease commercial landings of the other species. Recreational landings could decrease for all of the species, except mahogany snapper. The commercial sector could expect to see a potential overall increase of $28,991 in ex-vessel values for the snapper complex based on average per pound values from 2011 assuming the entire complex commercial ACL is caught.

Table 4-3. Current and proposed ACLs (pounds ww) for species of snappers complex.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
Gray snapper	178,818	192,830	14,012	715,201	602,913	-112,288
Lane snapper	18,744	17,695	-1,049	134,722	102,289	-32,433
Cubera snapper	6,274	4,829	-1,445	25,498	19,851	-5,647
Dog snapper	708	273	-435	6,815	3,012	-3,803
Mahogany snapper	8	36	27	152	512	360
Total	204,552	215,663	11,111	882,388	728,577	-153,811

As of September 30, 2012, the commercial sector had landed 58.44% of its overall ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 11/08/2012). At that rate, total commercial landings of snappers would be approximately 78% of the current commercial ACL. The proposed ACL for the stock complex would be greater than the current ACL. Hence, it is expected that, **Alternative 2 (Preferred)** would not affect commercial landings of the snappers complex or economic benefits or costs of those landings.

The recreational sector as of the third MRIP wave for 2012 had only caught 10% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 10/11/2012). At that rate, total recreational landings of snappers would be approximately 14% of the current recreational ACL. The proposed revised recreational ACL is approximately 17.4% less than the current recreational ACL. Consequently, **Alternative 2 (Preferred)** is not expected to reduce recreational landings of snappers beyond the status quo or associated economic benefits or costs of the status quo landings.

4.1.2.4 Alternative 2 Economic Effects for the Four Species of the Grunts Complex

Alternative 2 (Preferred) would revise the commercial and recreational ACLs for the four species of the grunts complex: White grunt; sailors choice; tomtate; and margate. The combined changes would allow for increases of annual commercial and recreational landings of 3,916 pounds and 25,962 pounds, respectively (**Table 4-4**). Note, that there would be no changes in the commercial ACLs for sailors choice and tomtate. Therefore, **Alternative 2 (Preferred)**

would generate no additional economic impacts beyond the status quo in the commercial sector that lands sailors choice and tomtate. The commercial sector could expect to see a potential overall increase of $4,325 in ex-vessel values for the grunts complex based on average per pound values from 2011 assuming the entire complex commercial ACL is caught.

Table 4-4. Current and proposed ACLs (pounds ww) for species of grunts complex.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
White grunt	207,751	212,896	5,146	428,148	461,136	32,988
Sailors choice	0	0	0	35,266	22,674	-12,592
Tomtate	0	0	0	70,948	80,056	9,109
Margate	6,873	5,643	-1,230	27,789	24,246	-3,543
Total	214,624	218,539	3,916	562,151	588,113	25,962

As of October 24, 2012, the commercial sector had landed 43.38% of its grunts complex ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 11/08/2012). At that rate, the commercial sector's annual landings would be approximately 58% of its current ACL. **Alternative 2 (Preferred)** would increase the commercial ACL of the grunts stock complex. It is expected that **Alternative 2 (Preferred)** would not affect commercial landings of grunts and would have no economic impacts beyond the status quo.

Even though the ACT for the recreational sector of the grunts complex decreases as a result of **Alternative 2 (Preferred)**, the recreational sector as of the third MRIP wave for 2012 had only caught 19% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At that rate, it is expected that annual recreational landings of grunts would represent slightly more than 25% of the current ACL. Although **Alternative 2 (Preferred)** would increase the recreational ACL of the grunts complex, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of grunts. Hence, there would be no economic impacts beyond the status quo.

4.1.2.5 Alternative 2 Economic Effects for the Six Species of the Shallow Water Groupers Complex

Alternative 2 (Preferred) would revise the commercial and recreational ACLs for the following six species of the shallow water groupers complex: Red hind; rock hind; yellowmouth grouper; yellowfin grouper; coney; and graysby. The combined changes would allow for an increase of annual commercial landings of 288 pounds, but could reduce annual recreational landings by as much as 1,673 pounds (**Table 4-5**). The commercial sector could expect to see a potential overall increase of $1,203 in ex-vessel values for the shallow water groupers complex based on average per pound values from 2011 assuming the entire complex commercial ACL is caught.

Table 4-5. Current and proposed ACLs (pounds ww) for species of shallow water groupers complex.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
Red hind	18,969	18,303	-666	6,916	6,564	-352
Rock hind	23,494	23,115	-379	14,075	14,838	763
Yellowmouth grouper	63	44	-19	4,598	3,995	-603
Yellowfin grouper	3,776	4,879	1,104	5,483	4,379	-1,104
Coney	602	665	63	1,987	2,053	66
Graysby	2,585	2,771	185	15,270	14,827	-444
Total	49,489	49,777	288	48,329	46,656	-1,673

As of October 24, 2012, the commercial sector had landed 45.68% of its ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 11/08/2012). At that rate, annual commercial landings would represent approximately 59.9% of the current ACL. However, the sector was closed on October 20, 2012 because the ACL for gag was met. The current AM for gag is that harvest for all shallow water groupers is prohibited when the gag quota is met or projected to be met. Commercial harvest of the shallow water grouper complex reopened for 8 days beginning November 13, 2012. Although **Alternative 2 (Preferred)** would increase the commercial ACL for the complex, it is expected that there would be no increases in commercial landings of the shallow water grouper complex beyond the status quo and no economic impacts to the commercial sector beyond the status quo.

Even though the ACT for the recreational sector of the shallow water groupers complex decreases as a result of **Alternative 2 (Preferred)**, the recreational sector as of the third MRIP wave for 2012 had only caught 29% of their ACL(http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012) . At that rate, the recreational sector will land approximately 39% of the current ACL. Therefore, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of the shallow water grouper complex and would not affect economic benefits or costs of those landings.

4.1.2.6 Alternative 2 Economic Effects for the Five Species of the Porgies Complex

Alternative 2 (Preferred) would revise the commercial and recreational ACLs for the following five species of the porgies complex: Jolthead porgy; knobbed porgy; saucereye porgy; scup; and whitebone porgy. The combined changes would allow for an increase of annual commercial landings of 1,219 pounds, but could reduce annual recreational landings by as much as 5,570 pounds (**Table 4-6**). The commercial sector could expect to see a potential overall increase of $964 in ex-vessel values for the porgies complex based on average per pound values from 2011 assuming the entire complex commercial ACL is caught.

Table 4-6. Current and proposed ACLs (pounds ww) for species of Porgies Stock Complex.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
Jolthead porgy	1,720	1,571	-150	40,812	36,315	-4,497
Knobbed porgy	33,115	34,515	1,400	28,079	32,926	4,847
Saucereye porgy	0	0	0	4,205	3,606	-599
Scup	0	0	0	8,999	9,306	308
Whitebone porgy	293	262	-31	30,390	24,762	-5,629
Total	35,128	36,348	1,219	112,485	106,915	-5,570

In 2012, the commercial sector closed on September 8th. (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 11/08/2012). The recreational sector as of the third MRIP wave for 2012 had caught 43% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, it is expected that annual recreational landings would represent approximately 57% of the current ACL. **Alternative 2 (Preferred)** would decrease the ACL to approximately 94% of its current value. Hence, it is expected that **Alternative 2 (Preferred)** would have no effects on either recreational landings of the porgies stock complex or associated economic benefits and costs of those landings.

4.1.2.7 Alternative 2 Economic Effects for Six Individual Species

Alternative 2 (Preferred) would also revise the commercial and recreational ACLs for six individual stocks: Atlantic spadefish; blue runner; bar jack; gray triggerfish; scamp; and hogfish. Five of the proposed commercial ACLs are less than their current values and four of the proposed recreational ACLs are less than their present values (**Table 4-7**). The commercial sectors for the five stocks could expect to see potential decreases of $459 (Atlantic spadefish), $1,626 (bar jack), $11,826 (blue runner), $63,146 (gray triggerfish), and $48,537 (scamp) in ex-vessel values based on average per pound values from 2011 assuming the entire commercial ACL is caught. The commercial sector for hogfish could expect to see a potential increase of $2,360 in ex-vessel values based on average per pound values from 2011 assuming the entire commercial ACL is caught.

Table 4-7. Current and proposed ACLs (pounds ww) for individual stocks.

Species	Commercial Sector			Recreational Sector		
	Current ACL	Proposed ACL	Change ACL	Current ACL	Proposed ACL	Change ACL
Atlantic spadefish	36,476	35,108	-1,368	246,365	154,352	-92,013
Blue runner	188,329	177,506	-10,823	1,101,612	948,223	-153,388
Bar jack	6,686	5,265	-1,421	13,834	19,515	5,681
Gray triggerfish	305,262	272,880	-32,381	367,303	353,638	-13,666
Scamp	341,636	333,100	-8,536	150,936	176,688	25,752
Hogfish	48,772	49,469	697	98,866	85,355	-13,511

As of October 24, 2012, the commercial sector had landed 5.53% of its Atlantic spadefish ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 11/08/2012). At this rate, annual commercial landings of Atlantic spadefish would be approximately 7.3% of the current commercial ACL for the species. **Alternative 2 (Preferred)** would reduce the current commercial ACL for Atlantic spadefish by less than 4%. Therefore, it is expected that **Alternative 2 (Preferred)** would have no effect on either commercial landings of Atlantic spadefish or associated economic benefits or costs of those landings.

The recreational sector of the Atlantic spadefish portion of the snapper grouper fishery, as of the third MRIP wave for 2012, had caught 76% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of Atlantic spadefish would represent approximately 101% of the current ACL, assuming the recreational fishing season is not reduced. **Alternative 2 (Preferred)** would decrease the recreational ACL for Atlantic spadefish and recreational landings of Atlantic spadefish by 37%. This 37% reduction would result in losses of both producer surplus and consumer surplus.

As of October 24, 2012, the commercial sector had landed 84.2% of its ACL for blue runner (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 10/11/2012). Commercial harvest of blue runner was closed on December 10, 2012. **Alternative 2 (Preferred)** would decrease the commercial ACL for blue runner by 5.8%. The losses of landings would be accompanied by a reduction in the cost of harvesting and landings those 10,823 pounds.

The recreational sector of the blue runner portion of the snapper grouper fishery as of the third MRIP wave for 2012 had caught 16% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of blue runner would represent 21.3% of the current ACL. **Alternative 2 (Preferred)** would reduce the recreational ACL for blue runner to approximately 80% of its current value. Given that annual recreational landings of blue runner are not expected to meet or exceed 80% of the current ACL, is it

concluded that **Alternative 2 (Preferred)** would not affect recreational landings of blue runner or associated economic benefits or costs of those landings.

As of October 24, 2012, the commercial sector had landed 36.72% of its ACL for bar jack (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 10/11/2012). At this rate, annual commercial landings of bar jack would represent approximately 49% of the current ACL. **Alternative 2 (Preferred)** would revise the bar jack commercial ACL to 79% of its current value. Thus, it is expected that **Alternative 2 (Preferred)** would not affect commercial landings or economic benefits or costs of those landings.

The recreational sector of the bar jack portion of the snapper grouper fishery, as of the third MRIP wave for 2012, had caught 12% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of bar jack would represent 16% of the current recreational ACL. **Alternative 2 (Preferred)** would increase the recreational ACL for bar jack. Because status quo landings are less than the current ACL and would be less than the proposed revised ACL, it is expected that **Alternative 2 (Preferred)** would affect neither recreational landings of bar jack nor associated economic benefits or costs of those landings.

In 2012, the commercial sector for gray triggerfish closed on September 11th (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 11/08/2012). Gray triggerfish reopened on December 12, 2012, and closed on December 19, 2012. **Alternative 2 (Preferred)** would reduce the commercial ACL for gray triggerfish to 89.4% of its current value, by 32,381 pounds. The loss of landings would be accompanied by a reduction in the cost of harvesting and landings the 32,381 pounds.

The recreational sector of the gray triggerfish portion of the snapper grouper fishery, as of the third MRIP wave for 2012, had caught 25% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of gray triggerfish would represent 33.3% of the current recreational ACL. **Alternative 2 (Preferred)** would decrease the recreational ACL of gray triggerfish to approximately 96% of its current value. Hence, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of gray triggerfish or economic benefits or costs of those landings.

As of October 24, 2012, the commercial sector had landed 50.89% of its ACL for scamp (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 10/11/2012). At this rate, annual commercial landings of scamp would represent 67.8% of the current ACL. Commercial fishing for scamp closed on October 20, 2012 as the ACL for the gag was projected to be met. As mentioned previously, the current AM for gag is to prohibit harvest of all shallow water groupers when the gag quota is met or projected to be met. Commercial harvest of scamp and other shallow water grouper species reopened on November 13, 2012, for 8 days. **Alternative 2 (Preferred)** would reduce the commercial ACL for scamp to 97.5% of its current value. Thus, it is expected that **Alternative 2 (Preferred)** would not affect commercial landings or the economic impacts of those landings.

The recreational sector of the scamp portion of the snapper grouper fishery, as of the third MRIP wave for 2012, had caught 25% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of scamp would represent 33.3% of the current recreational ACL. **Alternative 2 (Preferred)** would increase the recreational ACL for scamp. Thus, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of scamp or associated economic impacts of those landings.

As of October 24, 2012, the commercial sector had landed 50.75% of its ACL for hogfish (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/commercial_sa/index.html, accessed on 10/11/2012). At this rate, annual commercial landings of hogfish would represent approximately 67.9% of the current commercial ACL. **Alternative 2 (Preferred)** would increase the commercial ACL for hogfish. Because current commercial landings of hogfish are less than the current ACL and proposed revised ACL, it is expected that **Alternative 2 (Preferred)** would not affect commercial landings of hogfish or economic benefits or costs of those landings.

The recreational sector as of the third MRIP wave for 2012 had caught 57% of their ACL (http://sero.nmfs.noaa.gov/sustainable_fisheries/acl_monitoring/recreational_sa/index.html, accessed on 11/08/2012). At this rate, annual recreational landings of hogfish would represent approximately 76% of the current ACL. **Alternative 2 (Preferred)** would reduce the recreational ACL for hogfish to approximately 86% of its current value. Hence, it is expected that **Alternative 2 (Preferred)** would not affect recreational landings of hogfish and economic impacts of those landings.

4.1.2.8 Economic Conclusions

Alternative 2 (Preferred), which would update commercial and headboat landing data, as well as incorporate MRIP data in place of MRFSS, would make adjustments to ACLs for the 37 un-assessed stocks affected by this regulatory amendment. As a result of the ACLs changing, there are expected to be economic effects for those species depending on when the new ACL is met and an AM is triggered. However, other stocks not affected based on 2012 landings, the first year the **Alternative 1 (No Action)** was in place, could be affected in future years should fishing behavior change from what has been observed thus far. **Table 4-8** summarizes the direction of the ACL change for selection of **Alternative 2 (Preferred)** as the preferred alternative.

Based on 2012 landings reported in the sections above, the deepwater and porgies complexes, which closed before the end of the 2012 fishing year, potentially could have remained open longer for the commercial sector had these revised ACLs been in place. The additional pounds allocated to the commercial sector for the deepwater complex would have added modestly to the overall economic effect of the commercial deepwater complex. However, the size of the ACL increase for the commercial sector of the porgies complex was small. Therefore, the expected positive economic effects would have been negligible.

The revised ACL for the jacks complex would have resulted in the commercial sector closing sooner had the revised ACLs from this amendment been in place for the 2012 season. However, the size of the decrease was quite small resulting in a less than $4,000 drop in ex-vessel value for commercial fishermen.

The revised ACLs for the commercial sectors for blue runner and gray triggerfish would be revised downward under **Alternative 2 (Preferred)**. Blue runner closed on December 10, 2012. With the lower ACL it could close sooner in future years, thus resulting in a small reduction of overall ex-vessel values of approximately $11,000. Gray triggerfish closed on September 11, 2012. The commercial sector would have closed sooner had the ACL from **Alternative 2 (Preferred)** of this amendment been in place. The estimated reduction in ex-vessel value for gray triggerfish resulting from **Alternative 2 (Preferred)** is approximately $63,000.

The recreational sector for Atlantic spadefish is the only one in this amendment that would be expected in the future to exceed its recreational ACL because of the changes imposed through **Alternative 2 (Preferred)**. The economic effects of the reduction of 37% (92,013 pounds ww) cannot be specifically quantified, it would be expected to have negative economic effects on both consumer and producer surplus.

Table 4-8. Summary of the direction of expected economic effects for **Preferred Alternative 2**.

Species	Expected Economic Impacts	
	Commercial	Recreational
Deepwater Complex	+	+/-
Yellowedge grouper	-	+/-
Blueline tilefish	+	+/-
Silk snapper	-	+/-
Misty grouper	+	+/-
Sand tilefish	+	+/-
Queen snapper	+	+/-
Black snapper	+	+/-
Blackfin snapper	-	+/-
Jacks Complex	-	+/-
Almaco jack	-	+/-
Banded rudderfish	-	+/-
Lesser amberjack	-	+/-
Snappers Complex	+/-	+/-
Gray snapper	+/-	+/-
Lane snapper	+/-	+/-
Cubera snapper	+/-	+/-
Dog snapper	+/-	+/-
Mahogany snapper	+/-	+/-
Grunts Complex	+/-	+/-
White grunt	+/-	+/-

Species	Expected Economic Impacts	
	Commercial	Recreational
Sailors choice	0[1]	+/-
Tomtate	0	+/-
Margate	+/-	+/-
Shallow Water Groupers Complex	+	+/-
Red hind	-	+/-
Rock hind	-	+/-
Yellowmouth grouper	-	+/-
Yellowfin grouper	+	+/-
Coney	+	+/-
Graysby	+	+/-
Porgies Complex	+/-	+/-
Jolthead porgy	+/-	+/-
Knobbed porgy	+/-	+/-
Saucereye porgy	0	+/-
Scup	0	+/-
Whitebone porgy	+/-	+/-
Individual species		
Atlantic spadefish	+/-	-
Blue runner	-	-
Bar jack	+/-	+/-
Gray triggerfish	-	-
Scamp	-	+/-
Hogfish	+/-	-

[1]Cells marked '0' for species in the commercial sector indicate that this species does not have a separate allocation. Allocations are included with another species in that complex.

4.1.3 Social Effects

The social effects of potential changes in the ACLs for the 37 species (**Alternative 2 Preferred**) are expected to occur in the short and long term, and are closely associated with biological and economic impacts of these actions. Overall, adjustments in ACLs based on improved information would be beneficial to the species and would likely produce long-term benefits to the fishermen, coastal communities, and fishing businesses by contributing to sustainable harvest of these fish in the present and future. Negative social impacts would result from expected economic impacts on the fishermen and communities where there are lower quotas relative to recent catch history, and associated accountability measures particularly in a few commercial fisheries. The negative effects of AMs such as early closures and paybacks (which in turn increase the likelihood of an earlier closure in the following year) are usually short-term, they may at times induce other indirect effects through changes in fishing behavior or business operations that could have long-term social effects. Some of those effects are similar to other

thresholds being met and may involve switching to other species or discontinuing fishing altogether.

Incorporation of the best available data into the ABC/ACL calculations (**Alternative 2 Preferred**) is expected to more accurately estimate recreational and commercial landings and better reflect actual fishing behavior than not updating catch limits under **Alternative 1 (No Action)** because MRFSS landing estimates will no longer be calculated. Future recreational landings would be estimated using MRIP. **Alternative 2 (Preferred)** would result in future MRIP estimates being compared to ACLs determined using previous MRIP estimates. Although the proposed updated ACLs are considered to be based on the best available information, the proposed changes may not prevent AMs from being triggered or minimize impacts but the proposed changes under **Alternative 2 (Preferred)** would still be expected to improve management of the snapper grouper fishery and possibly minimize negative social impacts on AMs more than under **Alternative 1 (No Action)**. Some social impacts associated with changes in ACLs for specific species may be linked to the expected economic impacts on the commercial and recreational sectors (see **Section 4.1.2**), and some impacts may not occur immediately but could be expected in the future. This is particularly significant for the recreational sector because ACLs may constrain growth in recreational effort, which is tied to the increasing pattern of coastal population growth, and national population growth in general. Therefore even if recent recreational catch of a particular species does not meet or even come close to the adjusted recreational ACLs under **Alternative 2 (Preferred)**, there may still be future impacts on private recreational anglers because there will a limited number of fish available to a continually increasing number of people.

Deepwater Complex---Blueline tilefish is the most important commercial and recreational species in the deepwater complex. The ~13% increase in the commercial ACL for blueline tilefish under **Alternative 2** (**Preferred)** (**Section 4.1.2.1**) would be beneficial for the entire region, but particularly for Dare County in North Carolina, the area of almost all of the commercial landings in 2011 for blueline tilefish (Source: 2011 ALS). The overall increase in pounds for the commercial and recreational ACLs for the deepwater complex is expected to be beneficial for the fishermen and associated communities and businesses. Commercial harvest of the deepwater species closed on September 8, 2012, when the complex ACL had been met, and an increase in the commercial quota may help lengthen the season. Recreational harvest would have a net increase overall, but there would likely be minimal or no social effects on the recreational sector at this time. However, if the recreational sector grows and effort increases, the proposed deepwater recreational ACL under **Alternative 2 (Preferred)** would be beneficial in minimizing constraint on recreational effort.

Jacks---Overall the lower proposed commercial ACL for almaco jack, banded rudderfish and lesser amberjack under **Alternative 2 (Preferred)** would be expected to have some negative impact on the commercial fleet. Although the difference in the current and proposed ACLs for the complex is small (<3%), the jacks complex closed on July 2, 2012, and exceeded the ACL with a 87% overage in 2012, and even a small decrease would not benefit commercial fishermen targeting the jacks complex. The primary areas with the highest levels of commercial landings for the jacks complex and increased likelihood of negative impacts are in Charleston, Georgetown, and Horry Counties (South Carolina); Volusia and Palm Beach Counties (Florida);

and Brunswick County (North Carolina). The recreational ACL proposed under **Alternative 2 (Preferred)** is a net increase and would not be expected to result in negative impacts on recreational fishermen and for-hire businesses that target species in the jacks complex.

Snappers---The most important species in the complex is the gray (mangrove) snapper for both the recreational and commercial sectors, and this is a particularly significant targeted species in the Florida Keys. The proposed increase in the commercial ACL for gray snapper under **Alternative 2 (Preferred)** would be beneficial for the commercial fleet in the Keys, and may help reduce impacts of closures in other species by allowing a higher level of gray snapper landings. The small decreases for the other snapper species would not be expected to affect the commercial fleet.

The considerable decrease in the recreational ACL for gray snapper under **Alternative 2 (Preferred)** may have some negative impact on anglers who target any of the fish in the snappers complex, since the overall recreational ACL would also decrease. However, MRIP estimates for gray snapper catch indicate a decline in recreational catch, a trend that may lead to problems with the stock over time. A lower ACL for gray snapper would help reduce the risk of overfishing, and contribute to the long-term health of the stock and recreational fishery.

Grunts---Overall, the proposed ACLs under **Alternative 2 (Preferred)** would increase, particularly for white grunt. The grunts complex is an important part of the recreational portion of the snapper grouper fishery, particularly in the Florida Keys ('grits and grunts' is a traditional Key West dish). MRIP estimates indicate that most white grunts are caught on private boats and an increase in the recreational ACL would be beneficial to private anglers. The lower proposed ACL for sailor's choice reflects the reduced targeting by recreational fishermen and would not be expected to result in negative impacts. The proposed changes to the commercial ACL are minimal and are not expected to affect the commercial fleet.

Shallow Water Groupers---The proposed changes in ACLs for the shallow water groupers complex under **Alternative 2 (Preferred)** are relatively small, and would not be expected to impact the commercial or recreational sector. The ACLs for this complex are not expected to be exceeded in 2012, in part because of the current AM to close the shallow water groupers complex when the gag ACL is projected to be met to minimize gag bycatch. In 2012, this AM was triggered on October 20th although the shallow water groupers complex far from reaching its overall complex ACL. These minimal proposed changes to the ACLs will likely not affect the fishermen or communities.

Porgies---The proposed small increase in the commercial ACL for the porgies complex under **Alternative 2 (Preferred)** would not be expected to significantly impact the commercial sector. The proposed changes for the recreational ACLs would result in a net decrease in the recreational ACL, but because the recreational ACL is not expected to be met or exceeded, there are no or few impacts or benefits on the recreational sector expected from these changes.

Individual Species---Several species with proposed changes in ACLs under **Alternative 2 (Preferred)** are important commercial and recreational species, and decreases in ACLs may have negative impacts on fishermen. The lower proposed commercial ACL for Atlantic

spadefish is small and would not be expected to affect commercial fishermen who catch Atlantic Spadefish. However, the lower proposed recreational ACL may have negative impact on recreational anglers, since MRIP indicates that most recreational catch is from private boats or shore.

Blue runner is a relatively less important commercial species overall in the snapper grouper fishery, but some communities in Florida have small fleets dependent on blue runner catch during part of the year. The proposed lower ACL under **Alternative 2 (Preferred)** may have some impact on the commercial harvesters, particularly because the current commercial ACL was met on December 10, 2012, and a decrease in the quota may cause an AM to be triggered or another management measure. The proposed change in the recreational ACL for blue runner may have some impact on recreational anglers targeting the species.

Gray triggerfish is an increasingly important commercial and recreational species, with growing effort and market demand associated with closures for other species. Commercial fishermen who harvest gray triggerfish would be impacted by the lower commercial ACL proposed under **Alternative 2 (Preferred)**, especially because the commercial sector for gray triggerfish closed on September 9, 2012. The impact on the commercial fleet may be significant in the next few years, but also in the future as AMs such as early closures and paybacks are triggered for other species, and gray triggerfish is also not available. Gray triggerfish is an important commercial species in Georgetown and Horry Counties in South Carolina, Duval County in north Florida, and Brunswick and Carteret Counties in North Carolina, and these communities would be expected to experience negative impacts by the lower proposed commercial ACL. The lower proposed recreational ACL would likely have less negative impact on the recreational sector since MRIP indicates that recreational catch is not growing over the past few years, and recreational harvest of gray triggerfish would likely not be closed early due to meeting the ACL.

The proposed lower commercial ACL for scamp would likely have little impact on the communities with high levels of commercial landings, most notably Georgetown and Horry Counties in South Carolina. The proposed increase in the recreational ACL for scamp will be beneficial for the recreational sector if recreational effort and harvest of scamp grows in the future.

The proposed changes to the bar jack recreational and commercial ACLs would not be expected to impact the fishermen due to low landings for bar jack in recent years.

4.1.4 Administrative Effects

The mechanisms for monitoring and documentation of ABCs, ACLs (including sector ACLs), ACTs, and AMs are already in place with implementation of the Comprehensive ACL Amendment (SAFMC 2011c), and reflects **Alternative 1** (**No Action**). Regulatory Amendment 13 would not implement any new mechanisms. Therefore, the administrative impacts of **Alternative 2 (Preferred)** would to be minimal, and not differ much when compared with **Alternative 1** (**No Action**). Other administrative burdens that may result from revising the values under **Alternative 2 (Preferred)** would take the form of development and dissemination of outreach and education materials for fishery participants and law enforcement.

Chapter 5. Council's Choice for the Preferred Alternative

5.1 *Revise the acceptable biological catches (ABCs), annual catch limits (ACLs, including sector ACLs), and annual catch targets (ACTs) for select un-assessed species in the snapper grouper fishery management unit. Data will be updated with data from the Marine Recreational Information Program (MRIP), commercial, and for-hire landings.*

5.1.1 Snapper Grouper Advisory Panel Comments and Recommendations

The Snapper Grouper Advisory Panel (SGAP) met in November of 2012. The SGAP received a presentation from South Atlantic Fishery Management Council (South Atlantic Council) staff on the ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed species. The SGAP discussed the implications of the action and did not disagree with the South Atlantic Council's decision to revise the ABCs, ACLs (including sector ACLs), and ACTs using MRIP estimates of recreational landings, as well as updated commercial and headboat landings.

5.1.2 Law Enforcement Advisory Panel Comments and Recommendations

The Law Enforcement Advisory Panel (LEAP) did not have a scheduled meeting from the time Regulatory Amendment 13 to the Fishery Management Plan (FMP) for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13) began development at the South Atlantic Council meeting in September 2012 until it received its final review by the South Atlantic Council in December 2012. South Atlantic Council staff sent a copy of Regulatory Amendment 13 to the LEAP via email to solicit their comments. The South Atlantic Council did not receive any comments expressing concerns regarding Regulatory Amendment 13 from LEAP members.

5.1.3 Scientific and Statistical Committee Comments and Recommendations

The Scientific and Statistical Committee (SSC) met in October 2012. The SSC received a presentation from the National Marine Fisheries Service Southeast Regional Office on how the

ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed species were calculated. The SSC concluded that **Alternative 2 (Preferred)** represented the best available science.

5.1.4 Public Comments and Recommendations

The South Atlantic Council accepted written public comments from October 31, 2012 through November 30, 2012, for Regulatory Amendment 13. Two written public comments specific to Regulatory Amendment 13 were submitted in writing by recreational anglers. Both comments endorsed alternatives that would not allow any commercial allocation until a year round recreational fishery could be assured.

The South Atlantic Council afforded the public an opportunity to comment on Regulatory Amendment 13 in person on December 6, 2012, at their regularly scheduled meeting in Wilmington, North Carolina. Several speakers spoke in favor of adopting the revised ABCs, ACLs (including sector ACLs), and ACTs. No one spoke against adoption of the revisions.

5.1.5 South Atlantic Council Choice for Preferred Alternative

The South Atlantic Council chose **Alternative 2** as its **preferred alternative**. The South Atlantic Council determined that **Alternative 1** would not be the best alternative as MRFSS estimates for recreational landings will not be available in the future. The ABCs, ACLs (including sector ACLs), and ACTs for the un-assessed species addressed in this amendment were all originally determined using MRFSS estimates (SAFMC 2011c). **Alternative 2 (Preferred)** revised the original MRFSS estimates using MRIP estimates for the years where conversion factors are available. Additionally, **Alternative 2 (Preferred)** updated commercial and headboat landings for the same periods.

The South Atlantic Council concluded **Preferred Alternative 2** is based on the best available science, and best meets the purpose and need, the objectives of the FMP for the Snapper Grouper Fishery of the South Atlantic Region, as amended, and other applicable law.

Chapter 6. Cumulative Effects

6.1 Biological

As directed by the National Environmental Policy Act (NEPA), federal agencies are mandated to assess not only the indirect and direct impacts, but the cumulative impacts of proposed actions as well. NEPA defines a cumulative impact as *"the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time"* (40 C.F.R. 1508.7). Cumulative effects can either be additive or synergistic. A synergistic effect is when the combined effects are greater than the sum of the individual effects.

Various approaches for assessing cumulative effects have been identified, including checklists, matrices, indices, and detailed models (MacDonald 2000). The Council on Environmental Quality (CEQ) offers guidance on conducting a Cumulative Effects Analysis (CEA) in a report titled "Considering Cumulative Effects under the National Environmental Policy Act". The report outlines 11 items for consideration in drafting a CEA for a proposed action.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.
2. Establish the geographic scope of the analysis.
3. Establish the timeframe for the analysis.
4. Identify the other actions affecting the resources, ecosystems, and human communities of concern.
5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.
6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.
7. Define a baseline condition for the resources, ecosystems, and human communities.
8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.
9. Determine the magnitude and significance of cumulative effects.
10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.
11. Monitor the cumulative effects of the selected alternative and adapt management.

This CEA for the biophysical environment will follow a modified version of the 11 steps. Cumulative effects for the socio-economic environment will be analyzed separately.

1. Identify the significant cumulative effects issues associated with the proposed action and define the assessment goals.

CEQ cumulative effects guidance states that this step is done through three activities. The three activities and the location in the document are as follows:

I. The direct and indirect effects of the proposed actions **(Chapter 4.0)**;
II. Which resources, ecosystems, and human communities are affected **(Chapter 3.0)**; and
III. Which effects are important from a cumulative effects perspective **(information revealed in this CEA**.

2. Establish the geographic scope of the analysis.

The immediate impact area would be the federal 200-mile limit of the Atlantic off the coasts of North Carolina, South Carolina, Georgia, and east Florida to Key West, which is also the South Atlantic Fishery Management Council's (South Atlantic Council) area of jurisdiction. In light of the available information, the extent of the boundaries would depend upon the degree of fish immigration/emigration and larval transport, whichever has the greatest geographical range. Therefore, the proper geographical boundary to consider effects on the biophysical environment is larger than the entire South Atlantic exclusive economic zone (EEZ). The ranges of affected species are described in **Section 3.2**. The most measurable and substantial effects would be limited to the South Atlantic region.

3. Establish the timeframe for the analysis.

Establishing a timeframe for the CEA is important when the past, present, and reasonably foreseeable future actions are discussed. It would be advantageous to go back to a time when there was a natural, or some modified (but ecologically sustainable) condition. However, data collection for many fisheries began when species were already fully exploited. Therefore, the timeframe for analyses should be initiated when data collection began for the various fisheries. For the species addressed in Regulatory Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13; Snapper Grouper FMP), landings data through 2008 were used in the subject biological analysis. Long-term evaluation is needed to determine if management measures have the intended effect of improving stock status. Monitoring should continue indefinitely for all species to ensure that management measures are adequate for preventing overfishing in the future.

4. Identify the other actions affecting the resources, ecosystems, and human communities of concern (the cumulative effects to the human communities are discussed in Section 4).

Listed are other past, present, and reasonably foreseeable actions occurring in the South Atlantic region. These actions, when added to the proposed management measures, may result in cumulative effects on the biophysical environment.

I. Fishery-related actions affecting the snapper grouper species addressed in this amendment

A. Past

The reader is referred to **Appendix B** for past regulatory activity for the species addressed in Regulatory Amendment 13. Past regulatory activity for the relevant snapper grouper species includes bag and size limits, spawning season closures, commercial quotas, gear prohibitions and limitations, area closures, and a commercial limited access system.

Amendment 13C to the Snapper Grouper FMP (Amendment 13C; SAFMC 2006) was implemented on October 23, 2006. Amendment 13C established quotas, trip limits, and bag limits to end overfishing of snowy grouper, golden tilefish, vermilion snapper, and black sea bass. It also increased harvest of red porgy consistent with the rebuilding program.

Amendment 14 to the Snapper Grouper FMP (Amendment 14; SAFMC 2007) was implemented on February 12, 2009. Amendment 14 established eight Type II marine protected areas (MPAs) where fishing for and retention of snapper-grouper species was prohibited (as was the use of shark bottom longlines), but trolling for pelagic species such as tuna, dolphin, and billfish would be allowed. The intent was to achieve a more natural sex ratio, age, and size structure of all species within the MPAs, while minimizing adverse social and economic effects. The MPAs are being used as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper species (speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Studies to assess the effectiveness of the deepwater MPAs have been conducted annually by the Southeast Fisheries Science Center (SEFSC) since 2004.

Amendment 15B to the Snapper Grouper FMP (Amendment 15B; SAFMC 2008b) became effective on December 16, 2009. Management measures in Amendment 15B included prohibition of the sale of bag limit caught snapper grouper species for fishermen not holding a federal commercial permit for South Atlantic snapper grouper; an action to adopt, when implemented, the Atlantic Coastal Cooperative Statistics Program release, discard, and protected species module to assess and monitor bycatch; allocations for snowy grouper; and management reference points for golden tilefish.

Amendment 16 to Snapper Grouper FMP (Amendment 16; SAFMC 2009a), was partially approved by the Secretary of Commerce, and the final rule published on June 29, 2009. Amendment 16 included provisions to extend the shallow water grouper spawning season closure, created a five month seasonal closure for vermilion snapper, required the use of dehooking gear if needed, reduced the aggregate bag limit from five to three grouper, and reduced the bag limit for black grouper and gag to one gag or black grouper combined within the aggregate bag limit. The expected effects of these measures include significant reductions in landings and overall mortality of several shallow water snapper grouper species including, gag, black grouper, red grouper, and vermilion snapper.

Amendment 17A to the Snapper Grouper FMP (Amendment 17A; SAFMC 2010a) included a rebuilding plan and management measures that would end overfishing of red snapper. Amendment 17A specified an annual catch limit (ACL) and accountability measures (AMs) for red snapper as required by the Magnuson-Stevens Fishery Conservation and Management (Magnuson-Stevens Act). One of several management measures the South Atlantic Fishery Management Council (South Atlantic Council) considered in Amendment 17A was a large area closure for all snapper grouper fishing off the coasts of Georgia and Northern Florida. This closure would have enhanced the expected biological benefits of the spawning season closure for shallow water grouper in Amendment 16. The final rule for Amendment 17A, issued on December 3, 2010, extended the prohibition of red snapper in federal waters throughout the South Atlantic EEZ effective immediately. The implementation of the area closure, however, was delayed. The South Atlantic Council approved Regulatory Amendment 10 to the Snapper Grouper FMP (Regulatory Amendment 10; SAFMC 2011a) for submission to the Secretary during its December 2010 meeting in order to eliminate the area closure based on updated stock assessment information for red snapper (SEDAR 24 2010).

Amendment 17B to the Snapper Grouper FMP (Amendment 17B; SAFMC 2010b), which was implemented on January 31, 2011, established ACLs, annual catch targets (ACTs), and AMs for 8 species experiencing overfishing; modified management measures to limit total mortality to the ACL; and updated the framework procedure for specification of total allowable catch. Amendment 17B also prohibited the harvest and possession of deepwater snapper grouper species (snowy grouper, blueline tilefish, yellowedge grouper, misty grouper, queen snapper, and silk snapper) at depths greater than 240 feet. The intent of this measure was to reduce bycatch of speckled hind and warsaw grouper.

Amendment 18A to the Snapper Grouper FMP (Amendment 18A; SAFMC 2012a) was implemented on July 1, 2012. The amendment is expected to limit effort in the black sea bass portion of the snapper grouper fishery, reduce bycatch in the black sea bass pot sector, and improve the accuracy and timing of fisheries statistics. In addition, the amendment changed the constant-catch rebuilding strategy for black sea bass and changed the recreational AMs put in place for black sea bass through Amendment 17B.

Comprehensive Ecosystem-Based Amendment 1 (CE-BA 1; SAFMC 2009c), included Amendment 19 to the Snapper Grouper FMP. CE-BA 1 was implemented in July 2010 and consisted of regulatory actions that focused on deepwater coral ecosystem conservation and non-regulatory actions that update existing essential fish habitat (EFH) information. Management actions in CE-BA 1 included establishment of deepwater Coral HAPCs (CHAPCs) to protect what is currently thought to be the largest contiguous distribution (>23,000 square miles) of pristine deepwater coral ecosystems in the world. Actions in CE-BA 1 prohibited the use of bottom damaging fishing gear and allowed for the creation of allowable fishing zones within the CHAPCs in the historical fishing grounds of the golden crab and deepwater shrimp fisheries. CE-BA 1 also provided spatial information on designated EFH in the SAFMC Habitat Plan (SAFMC 1998).

Regulatory Amendment 9 to the Snapper Grouper FMP (Regulatory Amendment 9; SAFMC 2011b) was approved by the South Atlantic Council in March 2011 and the final rule published

on June 15, 2011. Regulatory Amendment 9 reduced the bag limit for black sea bass from 15 fish per person to 5 fish per person (effective June 22, 2011), established trip limits on vermilion snapper and gag (effective July 15, 2011), and increased the trip limit for greater amberjack (effective July 15, 2011).

Regulatory Amendment 11 to the Snapper Grouper FMP (Regulatory Amendment 11; SAFMC 2012b) was implemented on May 10, 2012. Regulatory Amendment 11 removed the closure implemented by Amendment 17B for snowy grouper, blueline tilefish, yellowedge grouper, misty grouper, queen snapper, and silk snapper, at depths greater than 240 feet.

Amendment 23 to the Snapper Grouper FMP was included in CE-BA 2 (SAFMC 2011e), and was implemented on January 30, 2012. CE-BA 2 limited the harvest of snapper grouper species in special management zones off South Carolina to the bag limit.

Amendment 24 to the Snapper Grouper FMP (Amendment 24; SAFMC 2011d) was developed to address overfishing of red grouper with actions for: Maximum sustainable yield; minimum stock size threshold; a rebuilding schedule and rebuilding strategy; acceptable biological catch (ABC); sector allocations; and sector ACLs, optimum yield, and AMs. Amendment 24 was implemented on July 11, 2012.

Amendment 25 to the Snapper Grouper FMP was included in the Comprehensive ACL Amendment (SAFMC 2011c). Actions contained within the Comprehensive ACL Amendment included: (1) Removal of species from the snapper grouper fishery management unit; (2) designation of ecosystem component species; (3) allocations; (4) management measures to limit recreational and commercial sectors to their ACLs; (5) AMs; and (6) any necessary modifications to the range of regulations. The South Atlantic Council approved the Comprehensive ACL Amendment in September 2011. Regulations for the Comprehensive ACL Amendment were implemented on April 16, 2012.

Amendment 20A to the Snapper Grouper FMP (Amendment 20A; SAFMC 2012d) distributes shares from inactive participants in the wreckfish individual transferable quota (ITQ) to active shareholders. The South Atlantic Council approved Amendment 20A in December 2011. The proposed rule for Amendment 20A published in the *Federal Register* on March 20, 2012, and the comment period ended on April 30, 2012. The final rule published in the *Federal Register* on September 26, 2012, and regulations were implemented on October 26, 2012.

Regulatory Amendment 12 to the Snapper Grouper FMP (Regulatory Amendment 12; SAFMC 2012c) adjusted the golden tilefish ACL based on the results of a new assessment, which indicates golden tilefish are no longer experiencing overfishing and are not overfished. Regulatory Amendment 12 adjusted the recreational AM. Regulatory Amendment 12 was approved for submission to the Secretary of Commerce by the South Atlantic Council at their March 2012 meeting. The final rule published in the *Federal Register* on October 3, 2012, and regulations were effective October 9, 2012.

B. Present

In addition to snapper grouper fishery management issues being addressed in this amendment, other snapper grouper amendments have been developed concurrently and are in the process of approval and implementation.

In a letter dated June 19, 2012, the South Atlantic Council requested NMFS to allow harvest and possession of red snapper in 2012 through emergency regulations. At their June 11-15, 2012, meeting, the South Atlantic Council reviewed new information in the form of red snapper rebuilding projections, 2012 acceptable biological catch levels, and 2012 discard mortality levels. After accounting for the 2012 discard mortalities, the South Atlantic Council determined that directed harvest could be allowed without compromising the rebuilding of the stock to target levels. On August 28, 2012, the final temporary rule was published for the emergency action to reopen the red snapper fishery for a limited duration in 2012.

The South Atlantic Council has recently completed and is developing amendments for coastal migratory pelagic species, golden crab, dolphin-wahoo, shrimp, and coral hard bottom. See the South Atlantic Council's Web site at http://www.safmc.net/ for further information on South Atlantic Council managed species.

C. Reasonably Foreseeable Future

Amendment 18B (SAFMC 2012e) to the Snapper Grouper FMP is currently under development and contains actions addressing golden tilefish. Actions would include limiting participation in the golden tilefish commercial sector, allocating commercial quota between gear groups, changing the golden tilefish fishing year, and changing the commercial trip limit. The Council approved this amendment in June 2012. Regulations are expected to be in place in early 2013.

Amendment 20B to the Snapper Grouper FMP is currently under development. The amendment will include a formal review of the current wreckfish individual transferable quota (ITQ) program, and will update/modify that program according to recommendations gleaned from the review. The amendments will also update the wreckfish ITQ program to comply with the requirements of the Magnuson-Stevens Act.

At their June 2012 meeting, the South Atlantic Council began development of Amendment 22 to the Snapper Grouper FMP to consider measures such as a tag program for red snapper. Scoping of Amendment 22 was conducted during January and February 2011. At their September 2012 meeting, the South Atlantic Council requested a tag program to track recreational catches for red snapper, golden tilefish, snowy grouper, and wreckfish.

At their June 2012 meeting the South Atlantic Council requested development of a regulatory amendment to adjust management measures for greater amberjack, black sea bass, gray triggerfish, and vermilion snapper. An options paper for Regulatory Amendment 14 to the Snapper Grouper FMP (Regulatory Amendment 14) was presented to the South Atlantic Council in September 2012, and the South Atlantic Council added red porgy, hogfish, and additional

management measures in this amendment. Regulatory Amendment 14 will be approved for public hearings at June 2013 Council meeting.

Regulatory Amendment 15 to the Snapper Grouper FMP (Regulatory Amendment 15) would implementing a revised ACL for yellowtail snapper based on the latest stock assessment for the species and remove the commercial gag AM that closes shallow water groupers when the gag ACL is met or expected to be met. The South Atlantic Council approved Regulatory Amendment 15 for review by the Secretary of Commerce at their December 2012 meeting.

Regulatory Amendment 16 to the Snapper Grouper FMP would examine management measures for golden tilefish to slow commercial harvest (e.g., 2 weeks on and 2 weeks off). The South Atlantic Council is expected to begin development of this amendment in 2013.

Regulatory Amendment 17 to the Snapper Grouper FMP would examine ways to reduce bycatch of warsaw and speckled hind by reconfiguring existing marine protected areas. The South Atlantic Council will identify alternatives for this amendment in March 2013.

Regulatory Amendment 18 to the Snapper Grouper FMP (Regulatory Amendment 18) would adjust ACLs and management measures for vermilion snapper and red porgy based on update assessments completed in 2012. The South Atlantic Council is expected to take final action on Regulatory Amendment 18 in March 2013.

Amendment 27 to the Snapper Grouper FMP would designate the South Atlantic Council as the managing entity for Nassau grouper in the Southeast U.S., modify the snapper grouper framework procedure, modify management measures for blue runner, revaluate the harvest prohibition for vermilion snapper, groupers, and tilefish by captain and crew on for-hire vessels, and consider an increase in the number of crew members allowed on a commercial snapper grouper fishing trip.

Amendment 28 to the Snapper Grouper FMP (Amendment 28) would modify management measures for red snapper, including the establishment of a process to determine future ACLs and fishing seasons. The South Atlantic Council approved Amendment 28 for review by the Secretary of Commerce at their December 2012 meeting.

Amendment 29 to the Snapper Grouper FMP would modify the ABCs and ACLs for snapper grouper species based on the SSC's completion of the ABC control rule using the Only Reliable Catch Stocks (ORCS) approach.

Amendment 30 to the Snapper Grouper FMP would consider a requirement for vessel monitoring system on commercial snapper grouper vessels. The South Atlantic Council is expected to begin development of this amendment in 2013.

II. Non-Council and other non-fishery related actions, including natural events affecting snapper grouper species in this amendment.

A. Past
B. Present
C. Reasonably foreseeable future

In terms of natural disturbances, it is difficult to determine the effect of non-Council and non-fishery related actions on stocks of snapper grouper species. Annual variability in natural conditions such as water temperature, currents, food availability, predator abundance, etc. can affect the abundance of young fish which survive the egg and larval stages each year to become juveniles (i.e., recruitment). This natural variability in year class strength is difficult to predict as it is a function of many interactive and synergistic factors that cannot all be measured (Rothschild 1986). Furthermore, natural factors such as storms, red tide, cold water upwelling, etc. can affect the survival of juvenile and adult fishes; however, it is very difficult to quantify the magnitude of mortality these factors may have on a stock. Alteration of preferred habitats for snapper grouper species could affect survival of fish at any stage in their life cycles. However, estimates of the abundance of fish, which utilize any number of preferred habitats, as well as, determining the impact habitat alteration may have on snapper grouper species, is problematic.

The snapper grouper ecosystem includes many species which occupy the same habitat at the same time. For example, red snapper co-occur with vermilion snapper, tomtate, scup, red porgy, white grunt, black sea bass, red grouper, scamp, gag, and others. Therefore, red snapper are likely to be caught and suffer some mortality even though no retention is allowed since they will be incidentally caught when fishermen target other co-occurring species. Other natural events such as spawning seasons and aggregations of fish in spawning condition can make some species especially vulnerable to targeted fishing pressure. Such natural behaviors are discussed in further detail in **Chapter 3** of this document, which is hereby incorporated by reference.

How global climate changes will affect the snapper grouper fishery is unclear. Climate change can impact marine ecosystems through ocean warming by increased thermal stratification, reduced upwelling, sea level rise, increases in wave height and frequency, loss of sea ice, and increased risk of diseases in marine biota. Decreases in surface ocean pH due to absorption of anthropogenic CO_2 emissions may impact a wide range of organisms and ecosystems, particularly organism that absorb calcium from surface waters, such as corals and crustaceans (IPCC 2007, and references therein).

The BP/Deepwater Horizon oil spill event, which occurred in the Gulf of Mexico on April 20, 2010, did not impact fisheries operating the South Atlantic. Oil from the spill site has not been detected in the South Atlantic region, and did not likely to pose a threat to the South Atlantic snapper grouper species.

5. Characterize the resources, ecosystems, and human communities identified in scoping in terms of their response to change and capacity to withstand stress.

In terms of the biophysical environment, the resources/ecosystems identified in earlier steps of the CEA are the fish populations directly or indirectly affected by the regulations. This step should identify the trends, existing conditions, and the ability to withstand stresses of the environmental components. Information on species most affected by this amendment are provided in **Section 3.2.1** of this document.

6. Characterize the stresses affecting these resources, ecosystems, and human communities and their relation to regulatory thresholds.

This step is important in outlining the current and probable stress factors on species identified in the previous steps. The goal is to determine whether these species are approaching conditions where additional stresses could have an important cumulative effect beyond any current plan, regulatory, or sustainability threshold (CEQ 1997). Sustainability thresholds can be identified for some resources, which are levels of impact beyond which the resources cannot be sustained in a stable state. Other thresholds are established through numerical standards, qualitative standards, or management goals. The CEA should address whether thresholds could be exceeded because of the contribution of the proposed action to other cumulative activities affecting resources.

Fish populations

The Comprehensive ACL Amendment (SAFMC 2011c) addressed species included in this amendment. This document updates thresholds already specified for these species to ensure future overfishing does not occur, and to ensure these stocks can be maintained at sustainable levels.

Climate change

Global climate changes could have significant effects on South Atlantic fisheries. However, the extent of these effects is not known at this time. Possible impacts include temperature changes in coastal and marine ecosystems that can influence organism metabolism and alter ecological processes such as productivity and species interactions; changes in precipitation patterns and a rise in sea level which could change the water balance of coastal ecosystems; altering patterns of wind and water circulation in the ocean environment; and influencing the productivity of critical coastal ecosystems such as wetlands, estuaries, and coral reefs (IPCC 2007; Kennedy et al. 2002).

It is unclear how climate change would affect snapper grouper species in the South Atlantic. Climate change can affect factors such as migration, range, larval and juvenile survival, prey availability, and susceptibility to predators. In addition, the distribution of native and exotic species may change with increased water temperature, as may the prevalence of disease in keystone animals such as corals and the occurrence and intensity of toxic algae blooms. Climate change may significantly impact snapper grouper species in the future, but the level of impacts cannot be quantified at this time, nor is the time frame known in which these impacts will occur.

7. Define a baseline condition for the resources, ecosystems, and human communities.

The purpose of defining a baseline condition for the resource and ecosystems in the area of the proposed action is to establish a point of reference for evaluating the extent and significance of expected cumulative effects. Southeast Data, Assessment, and Review (SEDAR) assessments show trends in biomass, fishing mortality, fish weight, and fish length going back to the earliest periods of data collection. However, the species addressed by this amendment have not been assessed through the SEDAR process. For a detailed discussion of the baseline conditions of species addressed in this document the reader is referred to **Section 3.2** and **Appendix B** (history of management).

8. Identify the important cause-and-effect relationships between human activities and resources, ecosystems, and human communities.

The cause and effect relationship of fishing and regulatory actions is shown in **Table 6-1.**

Table 6-1. The cause and effect relationship of fishing and regulatory actions within the time period of the Cumulative Effects Analysis (CEA).

Time period/dates	Cause	Observed and/or Expected Effects
Pre-January 12, 1989	Habitat destruction, growth overfishing of vermilion snapper.	Damage to snapper grouper habitat, decreased yield per recruit of vermilion snapper.
January 1989	Trawl prohibition to harvest fish (SAFMC 1988).	Increase yield per recruit of vermilion snapper; eliminate trawl damage to live bottom habitat.
Pre-January 1, 1992	Overfishing of many snapper grouper species.	Spawning stock ratio of these species is estimated to be less than 30% indicating that they are overfished.
January 1992	Prohibited gear: fish traps south of Cape Canaveral, FL; entanglement nets; longline gear inside of 50 fathoms; powerheads and bangsticks in designated SMZs off SC. Size/Bag limits: 10" TL vermilion snapper (recreational only); 12" TL vermilion snapper (commercial only); 10 vermilion snapper/person/day; aggregate grouper bag limit of 5/person/day; and 20" TL gag, red, black, scamp, yellowfin, and yellowmouth grouper size limit (SAFMC 1991).	Reduce mortality of snapper grouper species.
Pre-June 27, 1994	Damage to *Oculina* habitat.	Noticeable decrease in numbers and species diversity in areas of *Oculina* off FL
July 1994	Prohibition of fishing for and retention of snapper grouper species (HAPC renamed OECA; SAFMC 1993)	Initiated the recovery of snapper grouper species in OECA.
1992-1999	Declining trends in biomass and overfishing continue for a number of	Spawning potential ratio for golden tilefish is less than 30% indicating that

Time period/dates	Cause	Observed and/or Expected Effects
	snapper grouper species including golden tilefish.	they are overfished.
July 1994	Commercial quota for golden tilefish; commercial trip limits for golden tilefish; include golden tilefish in grouper recreational aggregate bag limits.	
February 24, 1999	All S-G without a bag limit: aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners. Vessels with longline gear aboard may only possess snowy, Warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish.	
Effective October 23, 2006	Snapper grouper FMP Amendment 13C (SAFMC 2006)	Commercial vermilion snapper quota set at 1.1 million lbs gw; recreational vermilion snapper size limit increased to 12" TL to prevent vermilion snapper overfishing.
Effective February 12, 2009	Snapper grouper FMP Amendment 14 (SAFMC 2007)	Use marine protected areas (MPAs) as a management tool to promote the optimum size, age, and genetic structure of slow growing, long-lived deepwater snapper grouper species (e.g., speckled hind, snowy grouper, warsaw grouper, yellowedge grouper, misty grouper, golden tilefish, blueline tilefish, and sand tilefish). Gag and vermilion snapper occur in some of these areas.
Effective March 20, 2008	Snapper grouper FMP Amendment 15A (SAFMC 2008a)	Establish rebuilding plans and SFA parameters for snowy grouper, black sea bass, and red porgy.
Effective Dates Dec 16, 2009, to Feb 16, 2010.	Snapper grouper FMP Amendment 15B (SAFMC 2008b)	End double counting in the commercial and recreational reporting systems by prohibiting the sale of bag-limit caught snapper grouper, and minimize impacts on sea turtles and smalltooth sawfish.
Effective Date July 29, 2009	Snapper grouper FMP Amendment 16 (SAFMC 2009a)	Protect spawning aggregations and snapper grouper in spawning condition by increasing the length of the spawning season closure, decrease discard mortality by requiring the use of dehooking tools, reduce overall harvest of gag and vermilion snapper to end overfishing.
Effective Date January 4, 2010	Red Snapper Interim Rule	Prohibit commercial and recreational harvest of red snapper from January 4, 2010, to June 2, 2010 with a possible 186-day extension. Reduce overfishing of red snapper while long-term

Time period/dates	Cause	Observed and/or Expected Effects
		measures to end overfishing are addressed in Amendment 17A.
Effective Dates June 3, 2010, to Dec 5, 2010	Extension of Red Snapper Interim Rule	Extended the prohibition of red snapper to reduce overfishing of red snapper while long-term measures to end overfishing are addressed in Amendment 17A.
Effective Date December 4, 2010	Snapper Grouper FMP Amendment 17A (SAFMC 2010a).	Specified SFA parameters for red snapper; ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; accountability measures. Establish rebuilding plan for red snapper. Large snapper grouper area closure inn EEZ of NE Florida. Emergency rule delayed the effective date of the snapper grouper closure.
Effective Date January 31, 2011	Snapper Grouper Amendment 17B (SAFMC 2010b)	Specified ACLs and ACTs; management measures to limit recreational and commercial sectors to their ACTs; AMs, for species undergoing overfishing. Established a harvest prohibition of six snapper grouper species in depths greater than 240 feet.
Effective Date June 1, 2011	Regulatory Amendment 10 (SAFMC 2011a)	Removed of snapper grouper area closure approved in Amendment 17A.
Effective Date July 15, 2011	Regulatory Amendment 9 (SAFMC 2011b)	Harvest management measures for black sea bass; commercial trip limits for gag, vermilion and greater amberjack
Effective Date May 10, 2012	Regulatory Amendment 11 (SAFMC 2012b)	Removed the harvest prohibition of six deepwater snapper grouper species implemented in Amendment 17B.
Effective Date April 16, 2012	Comprehensive ACL Amendment (SAFMC 2011c)	ACLs ACTs, and AMs for species not experiencing overfishing; accountability measures; an action to remove species from the fishery management unit as appropriate; and management measures to limit recreational and commercial sectors to their ACTs.
July 11, 2012	Amendment 24 (Red Grouper) (SAFMC 2011d)	Established a rebuilding plan for red grouper, specified ABC, and established ACL, ACT and revised AMs for the commercial and recreational sectors.

Time period/dates	Cause	Observed and/or Expected Effects
Effective Date July 1, 2012	Amendment 18A (SAFMC 2012a)	Established an endorsement program for black sea bass commercial fishery; established a trip limit; specified requirements for deployment and retrieval of pots; made improvements to data reporting for commercial and for-hire sectors
Effective Dates: September 17, 2012 (commercial); September 14, 2012 (recreational)	Temporary Rule through Emergency Action (Red snapper)	Established limited red snapper fishing seasons (commercial and recreational) in 2012.
Effective Date January 7, 2013	Amendment 18A Transferability Amendment	Reconsidered action to allow for transfer of black sea bass pot endorsements that was disapproved in Amendment 18A.
Effective Date October 26, 2012	Amendment 20A (Wreckfish) (SAFMC 2012d)	Redistributed inactive wreckfish shares.
Effective Date October 9, 2012	Regulatory Amendment 12 (SAFMC 2012c)	Adjusted the golden tilefish ACL based on the results of a new stock assessment and modified the recreational golden tilefish AM.
Target 2013	Snapper Grouper Amendment 18B (SAFMC 2012e)	Establish a commercial longline endorsement program for golden tilefish; establish an appeals process; allocate the commercial ACL by gear; establish trip limit for the hook and line sector
Target 2013	Snapper Grouper Amendment 22 (under development)	Develop a recreational tag program for red snapper, snowy grouper, golden tilefish, and wreckfish in the South Atlantic.
Target 2013	Regulatory Amendment 13 (under development)	Adjust ACLs and allocations for unassessed snapper grouper species with MRIP recreational estimates
Target 2013	Snapper Grouper Amendment 27 (under development)	Establish the SAFMC as the managing entity for Nassau grouper in the Southeast U.S., modify the SG framework; modify management measures for blue runner, reevaluate captain and crew possession prohibition for vermilion snapper, groupers, and tilefish, increase crew of commercial snapper grouper fishing trip.
Target 2013	Snapper Grouper Amendment 28 (under development)	Modify red snapper management measures, including the establishment of a process to determine future annual catch limits and fishing seasons.

Time period/dates	Cause	Observed and/or Expected Effects
Target 2013	Snapper Grouper Amendment 29 (under development)	Update ABCs, ACLs, and ACTs for snapper grouper species based on recommendations from SSC.
Target 2013	Regulatory Amendment 15 (under development)	Implement a revised ACL for yellowtail snapper based on the latest stock assessment, modify gag AM.
Target 2013	Regulatory Amendment 16 (under development)	Implement a revised ACL for yellowtail snapper based on the latest stock assessment, modify gag AM.
Target 2013	Regulatory Amendment 17 (under development)	Adjustments to MPAs to enhance protection of speckled hind and warsaw grouper.
Target 2013	Regulatory Amendment 18	Adjust ACLs and management measure for vermilion snapper and red porgy based on results from new update assessment.
Target 2013	Amendment 30	VMS for commercial sector of snapper grouper fishery.

9. Determine the magnitude and significance of cumulative effects.

The proposed management action, as summarized in **Section 2** of this document, would revise the ABCs, ACLs (including sector ACLs), and ACTs for select un-assessed species in the snapper grouper FMU. None of the species included in Regulatory Amendment 13 are overfished or undergoing overfishing. Detailed discussions of the magnitude and significance of the preferred alternative appear in **Section 4** of this document.

10. Modify or add alternatives to avoid, minimize, or mitigate significant cumulative effects.

The cumulative effects on the biophysical environment are expected to be negligible. Avoidance, minimization, and mitigation are not applicable.

11. Monitor the cumulative effects of the selected alternative and adopt management.

The effects of the proposed action are, and will continue to be, monitored through collection of data by NMFS, states, stock assessments and stock assessment updates, life history studies, and other scientific observations.

6.2 Socioeconomic

Participation in and the economic performance of the snapper grouper fishery, which includes the 37 species included in this amendment, has been affected by a combination of regulatory, biological, social, and external economic factors. Regulatory measures have obviously affected the quantity and composition of harvests, through the various size limits, seasonal restrictions, trip or bag limits, and quotas. Gear restrictions, notably fish trap and longline restrictions, have also affected harvests and economic performance. The limited access program implemented in 1998/1999 substantially affected the number of participants in the fishery. Biological forces that either motivate certain regulations or simply influence the natural variability in fish stocks have played a role in determining the changing composition of the fishery. Additional factors, such as changing career or lifestyle preferences, stagnant to declining ex-vessel fish prices due to imports, increased operating costs (e.g., gas, ice, insurance, dockage fees, etc.), and increased waterfront/coastal value leading to development pressure for non-fishery uses have impacted both the commercial and recreational fishing sectors.

Given the variety of factors that affect fisheries, persistent data issues, and the complexity of trying to identify cause-and-effect relationships, it is not possible to differentiate actual or cumulative regulatory effects from external cause-induced effects. In general, it can be stated, however, that the regulatory environment for all fisheries has become progressively more complex and burdensome, increasing, in tandem with other adverse influences, the likelihood of economic losses, business failure, occupational changes, and associated adverse pressures on associated families, communities, and industries. Some reverse of this trend is possible and expected. The establishment of ACLs and AMs for species undergoing overfishing is expected to help protect and sustain harvest at the optimum yield level. However, certain pressures would remain, such as total effort and total harvest considerations, increasing input costs, import induced price pressure, and competition for coastal access. A detailed description of the expected social and economic impacts of the actions in this amendment is contained in **Chapter 4**.

Amendment 15B (SAFMC 2008b) prohibited the sale of bag-limit caught snapper grouper species for those who do not hold a federal commercial permit for snapper grouper. This eliminated the ability of the recreational angler to subsidize the cost of a fishing trip through the sales of snapper grouper and may, therefore, decrease recreational demand. This action has a more pronounced effect on the for-hire sector, which often uses the sale of bag-limit caught fish to pay crewmembers.

Amendment 16 (SAFMC 2009a) addressed overfishing of gag and vermilion snapper. The corrective action in response to overfishing always requires harvest reductions and more restrictive regulation. Thus, additional short-term adverse social and economic effects would be expected. These restrictions will hopefully prevent the stocks from becoming overfished, which would require recovery plans, further harvest restrictions, and additional social and economic losses.

Amendment 17A (SAFMC 2010a) addressed the overfishing and overfished status of red snapper. Red snapper is, in general and compared to other snapper grouper species, not a significant commercial species; it has greater importance as a target species to the recreational sector, especially the for-hire sector in certain areas of the South Atlantic.

Amendment 17B (SAFMC 2010b) specified harvest controls (ACLs and/or ACTs) and AMs for several snapper grouper species, and modified the framework to allow more efficient modification of these measures in the future, where necessary. While some final specifications of these measures may result in additional short-term reductions in social and economic benefits to participants in the fisheries, these measures would be expected to support more stable management and sustainable social and economic benefits from enhanced resource protection, larger and/or more consistent harvests, and long-term stable stocks.

The cumulative impact of Amendments 16 (SAFMC 2009a), 17A (SAFMC 2010a), and 17B (SAFMC 2010b) are expected to be significant for commercial and recreational fisheries participants and those indirectly impacted by the actions contained in those amendments. The cumulative impact of Amendments 17A (SAFMC 2010a) and 17B (SAFMC 2010b) have been estimated and are contained in Amendment 17A (SAFMC 2010a). The impacts from the three amendments will likely result in commercial and for-hire vessel exit and loss of fishery infrastructure as a result.

Other amendments are expected to or have been implemented during 2012, which could further affect harvest of snapper grouper species. The Comprehensive ACL Amendment (SAFMC 2011c), implemented on April 16, 2012, specified ACLs for snapper grouper species not undergoing overfishing. Amendment 18A (SAFMC 2012a), which was implemented on July 1, 2012, contained measures to limit participation and effort in the black sea bass fishery, reduce bycatch in the black sea bass pot sector, changes to the rebuilding strategy, and other necessary changes to the management of black sea bass as a result of the 2011 stock assessment. Regulatory Amendment 11 (SAFMC 2012b) to the Snapper Grouper FMP became effective on May 10, 2012 and removed the deepwater closure beyond 240 ft for six deepwater snapper grouper species. Amendment 20A (SAFMC 2012d), which was implemented on October 26, 2012, distributed shares from inactive participants in the wreckfish individual transferable quota system to active shareholders. Amendment 24 (SAFMC 2011d), which became effective on July 11, 2012, implemented a rebuilding plan for red grouper, which is overfished and undergoing overfishing. Regulatory Amendment 12 (SAFMC 2012c, effective October 9, 2012) included alternatives to increase the ACL for golden tilefish based on the results of a new stock assessment.

Finally, the space industry in Florida centered on Cape Canaveral is experiencing severe difficulties due to the ramping down and cancellation of the Space Shuttle Program. This program's loss, coupled with additional fishery closures, will negatively impact this region. However, declining economic conditions due to declines in the space industry may lessen the pace of waterfront development and associated adverse social and economic pressures on fishery infrastructure.

Chapter 7. List of Preparers

Table 7-1. List of Regulatory Amendment 13 preparers.

Name	Agency/Division	Area of Amendment Responsibility
Brian Cheuvront	SAFMC	Interdisciplinary plan team (IPT) Lead/Fishery Economist
Nikhil Mehta	NMFS/SF	IPT Lead/Fishery Biologist
Nick Farmer	NMFS/SF	Fishery Biologist
Myra Brouwer	SAFMC	Fishery Biologist
David Dale	NMFS/HC	EFH Specialist
Jennifer Lee	NMFS/PR	Biologist
Stephen Holiman	NMFS/SF	Economist
Denise Johnson	NMFS/SF	Economist
Kari MacLauchlin	SAFMC	Fishery Social Scientist
Christina Package	NMFS/SF	Anthropologist
Jack McGovern	NMFS/SF	Fishery Scientist
Rick DeVictor	NMFS/SF	Fishery Biologist
Juan Agar	SEFSC	Social Scientist
Kyle Shertzer	SEFSC	Fishery Biologist
Gregg Waugh	SAFMC	Deputy Executive Director

NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, Eco=Economics

Table 7-2. List of Regulatory Amendment 13 interdisciplinary plan team members.

Name	Organization	Title
Brian Cheuvront	SAFMC	IPT Lead/Fishery Economist
Myra Brouwer	SAFMC	Fishery Biologist
Anne Marie Eich	NMFS/SF	Technical Writer & Editor
David Dale	NMFS/HC	EFH Specialist
Nikhil Mehta	NMFS/SF	IPT Lead/Fishery Biologist
Nick Farmer	NMFS/SF	Fishery Biologist
Jeff Radonski	NMFS/LE	Supervisory Criminal Investigator
Michael Larkin	NMFS/SF	Data Analyst
Jennifer Lee	NMFS/PR	Fishery Biologist (Protected Resources)
Denise Johnson	NMFS/SF	Economist
David Keys	NMFS/SER	Regional NEPA Coordinator
Jennifer Lee	NMFS/PR	Fishery Biologist (Protected Resources)
Juan Agar	SEFSC	Social Scientist
Kyle Shertzer	SEFSC	Fishery Biologist
Anna Martin	SAFMC	Coral Biologist
Kari MacLauchlin	SAFMC	Fishery Social Scientist
Jack McGovern	NMFS/SF	Fishery Biologist
Rick DeVictor	NMFS/SF	Fishery Biologist
Roger Pugliese	SAFMC	Fishery Biologist
Monica Smit-Brunello	NOAA/GC	Attorney
Mike Errigo	SAFMC	Data Analyst
Gregg Waugh	SAFMC	Deputy Executive Director

NMFS = National Marine Fisheries Service, SAFMC = South Atlantic Fishery Management Council, SF = Sustainable Fisheries Division, PR = Protected Resources Division, SERO = Southeast Regional Office, HC = Habitat Conservation Division, GC = General Counsel, Eco=Economics

Chapter 8. Agencies and Persons Consulted

Responsible Agency

Regulatory Amendment 13:
South Atlantic Fishery Management Council
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(843) 571-4366 (TEL)
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Environmental Assessment:
NMFS, Southeast Region
263 13th Avenue South
St. Petersburg, Florida 33701
(727) 824-5301 (TEL)
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List of Agencies, Organizations, and Persons Consulted

SAFMC Law Enforcement Advisory Panel
SAFMC Snapper Grouper Advisory Panel
SAFMC Scientific and Statistical Committee
SAFMC Information and Education Advisory Panel
North Carolina Coastal Zone Management Program
South Carolina Coastal Zone Management Program
Georgia Coastal Zone Management Program
Florida Coastal Zone Management Program
Florida Fish and Wildlife Conservation Commission
Georgia Department of Natural Resources
South Carolina Department of Natural Resources
North Carolina Division of Marine Fisheries
North Carolina Sea Grant
South Carolina Sea Grant
Georgia Sea Grant
Florida Sea Grant
Atlantic States Marine Fisheries Commission
Gulf and South Atlantic Fisheries Development Foundation
Gulf of Mexico Fishery Management Council
National Marine Fisheries Service
- Washington Office
- Office of Ecology and Conservation
- Southeast Regional Office
- Southeast Fisheries Science Center

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Appendix A. Glossary

Acceptable Biological Catch (ABC): Maximum amount of fish stock than can be harvested without adversely affecting recruitment of other components of the stock. The ABC level is typically higher than the total allowable catch, leaving a buffer between the two.

ALS: Accumulative Landings System. NMFS database which contains commercial landings reported by dealers.

Biomass: Amount or mass of some organism, such as fish.

B_{MSY}: Biomass of population achieved in long-term by fishing at F_{MSY}.

Bycatch: Fish harvested in a fishery, but not sold or kept for personal use. Bycatch includes economic discards and regulatory discards, but not fish released alive under a recreational catch and release fishery management program.

Caribbean Fishery Management Council (CFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The CFMC develops fishery management plans for fisheries off the coast of the U.S. Virgin Islands and the Commonwealth of Puerto Rico.

Catch Per Unit Effort (CPUE): The amount of fish captured with an amount of effort. CPUE can be expressed as weight of fish captured per fishing trip, per hour spent at sea, or through other standardized measures.

Charter Boat: A fishing boat available for hire by recreational anglers, normally by a group of anglers for a short time period.

Cohort: Fish born in a given year. (See year class.)

Control Date: Date established for defining the pool of potential participants in a given management program. Control dates can establish a range of years during which a potential participant must have been active in a fishery to qualify for a quota share.

Constant Catch Rebuilding Strategy: A rebuilding strategy where the allowable biological catch of an overfished species is held constant until stock biomass reaches B_{MSY} at the end of the rebuilding period.

Constant F Rebuilding Strategy: A rebuilding strategy where the fishing mortality of an overfished species is held constant until stock biomass reached BMSY at the end of the rebuilding period.

Directed Fishery: Fishing directed at a certain species or species group.

Discards: Fish captured, but released at sea.

Discard Mortality Rate: The percent of total fish discarded that do not survive being captured and released at sea.

Derby: Fishery in which the TAC is fixed and participants in the fishery do not have individual quotas. The fishery is closed once the TAC is reached, and participants attempt to maximize their harvests as quickly as possible. Derby fisheries can result in capital stuffing and a race for fish.

Effort: The amount of time and fishing power (i.e., gear size, boat size, horsepower) used to harvest fish.

Exclusive Economic Zone (EEZ): Zone extending from the shoreline out to 200 nautical miles in which the country owning the shoreline has the exclusive right to conduct certain activities such as fishing. In the United States, the EEZ is split into state waters (typically from the shoreline out to 3 nautical miles) and federal waters (typically from 3 to 200 nautical miles).

Exploitation Rate: Amount of fish harvested from a stock relative to the size of the stock, often expressed as a percentage.

F: Fishing mortality.

Fecundity: A measurement of the egg-producing ability of fish at certain sizes and ages.

Fishery Dependent Data: Fishery data collected and reported by fishermen and dealers.

Fishery Independent Data: Fishery data collected and reported by scientists who catch the fish themselves.

Fishery Management Plan: Management plan for fisheries operating in the federal produced by regional fishery management councils and submitted to the Secretary of Commerce for approval.

Fishing Effort: Usually refers to the amount of fishing. May refer to the number of fishing vessels, amount of fishing gear (nets, traps, hooks), or total amount of time vessels and gear are actively engaged in fishing.

Fishing Mortality: A measurement of the rate at which fish are removed from a population by fishing. Fishing mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Fishing Power: Measure of the relative ability of a fishing vessel, its gear, and its crew to catch fishes, in reference to some standard vessel, given both vessels are under identical conditions.

$F_{30\%SPR}$: Fishing mortality that will produce a static SPR = 30%.

$F_{45\%SPR}$: Fishing mortality that will produce a static SPR = 45%.

F_{OY}: Fishing mortality that will produce OY under equilibrium conditions and a corresponding biomass of B_{OY}. Usually expressed as the yield at 85% of F_{MSY}, yield at 75% of F_{MSY}, or yield at 65% of F_{MSY}.

F_{MSY}: Fishing mortality that if applied constantly, would achieve MSY under equilibrium conditions and a corresponding biomass of B_{MSY}

Fork Length (FL): The length of a fish as measured from the tip of its snout to the fork in its tail.

Gear restrictions: Limits placed on the type, amount, number, or techniques allowed for a given type of fishing gear.

Growth Overfishing: When fishing pressure on small fish prevents the fishery from producing the maximum poundage. Condition in which the total weight of the harvest from a fishery is improved when fishing effort is reduced, due to an increase in the average weight of fishes.

Gulf of Mexico Fishery Management Council (GFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The GFMC develops fishery management plans for fisheries off the coast of Texas, Louisiana, Mississippi, Alabama, and the west coast of Florida.

Head Boat: A fishing boat that charges individual fees per recreational angler onboard.

Highgrading: Form of selective sorting of fishes in which higher value, more marketable fishes are retained, and less marketable fishes, which could legally be retained are discarded.

Individual Fishing Quota (IFQ): Fishery management tool that allocates a certain portion of the TAC to individual vessels, fishermen, or other eligible recipients.

Longline: Fishing method using a horizontal mainline to which weights and baited hooks are attached at regular intervals. Gear is either fished on the bottom or in the water column.

Magnuson-Stevens Fishery Conservation and Management Act: Federal legislation responsible for establishing the fishery management councils and the mandatory and discretionary guidelines for federal fishery management plans.

Marine Recreational Fisheries Statistics Survey (MRFSS): Survey operated by NMFS in cooperation with states that collects marine recreational data.

Maximum Fishing Mortality Threshold (MFMT): The rate of fishing mortality above which a stock's capacity to produce MSY would be jeopardized.

Maximum Sustainable Yield (MSY): The largest long-term average catch that can be taken continuously (sustained) from a stock or stock complex under average environmental conditions.

Minimum Stock Size Threshold (MSST): The biomass level below which a stock would be considered overfished.

Modified F Rebuilding Strategy: A rebuilding strategy where fishing mortality is changed as stock biomass increases during the rebuilding period.

Multispecies fishery: Fishery in which more than one species is caught at the same time and location with a particular gear type.

National Marine Fisheries Service (NMFS): Federal agency within NOAA responsible for overseeing fisheries science and regulation.

National Oceanic and Atmospheric Administration: Agency within the Department of Commerce responsible for ocean and coastal management.

Natural Mortality (M): A measurement of the rate at which fish are removed from a population by natural causes. Natural mortality can be reported as either annual or instantaneous. Annual mortality is the percentage of fish dying in one year. Instantaneous is that percentage of fish dying at any one time.

Optimum Yield (OY): The amount of catch that will provide the greatest overall benefit to the nation, particularly with respect to food production and recreational opportunities and taking into account the protection of marine ecosystems.

Overfished: A stock or stock complex is considered overfished when stock biomass falls below the minimum stock size threshold (MSST) (e.g., current biomass < MSST = overfished).

Overfishing: Overfishing occurs when a stock or stock complex is subjected to a rate of fishing mortality that exceeds the maximum fishing mortality threshold (e.g., current fishing mortality rate > MFMT = overfishing).

Quota: Percent or annual amount of fish that can be harvested.

Recruitment (R): Number or percentage of fish that survives from hatching to a specific size or age.

Recruitment Overfishing: The rate of fishing above which the recruitment to the exploitable stock becomes significantly reduced. This is characterized by a greatly reduced spawning stock, a decreasing proportion of older fish in the catch, and generally very low recruitment year after year.

Scientific and Statistical Committee (SSC): Fishery management advisory body composed of federal, state, and academic scientists, which provides scientific advise to a fishery management council.

Selectivity: The ability of a type of gear to catch a certain size or species of fish.

South Atlantic Fisheries Management Council (SAFMC): One of eight regional councils mandated in the Magnuson-Stevens Fishery Conservation and Management Act to develop management plans for fisheries in federal waters. The SAFMC develops fishery management plans for fisheries off North Carolina, South Carolina, Georgia, and the east coast of Florida.

Spawning Potential Ratio (Transitional SPR): Formerly used in overfished definition. The number of eggs that could be produced by an average recruit in a fished stock divided by the number of eggs that could be produced by an average recruit in an unfished stock. SPR can also be expressed as the spawning stock biomass per recruit (SSBR) of a fished stock divided by the SSBR of the stock before it was fished.

% Spawning Per Recruit (Static SPR): Formerly used in overfishing determination. The maximum spawning per recruit produced in a fished stock divided by the maximum spawning per recruit, which occurs under the conditions of no fishing. Commonly abbreviated as %SPR.

Spawning Stock Biomass (SSB): The total weight of those fish in a stock which are old enough to spawn.

Spawning Stock Biomass Per Recruit (SSBR): The spawning stock biomass divided by the number of recruits to the stock or how much spawning biomass an average recruit would be expected to produce.

Total Allowable Catch (TAC): The total amount of fish to be taken annually from a stock or stock complex. This may be a portion of the Allowable Biological Catch (ABC) that takes into consideration factors such as bycatch.

Total Length (TL): The length of a fish as measured from the tip of the snout to the tip of the tail.

Appendix B. History of Management.

History of Management of the South Atlantic Snapper Grouper Fishery

The snapper grouper fishery is highly regulated; some of the species included in this amendment have been regulated since 1983. **Table 1** summarizes actions in each of the amendments to the original FMP, as well as some events not covered in amendment actions.

Table 1. History of management for the Snapper Grouper Fishery of the South Atlantic region.

Document	All Actions Effective By:	Proposed Rule (PR) Final Rule (FR)	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
FMP (1983)	08/31/83	PR: 48 FR 26843 FR: 48 FR 39463	- 12" total length (TL) size limit – red snapper, yellowtail snapper, red grouper, Nassau grouper. - 8" TL size limit – black sea bass. - 4" **t**rawl mesh size. - Gear limitations – poisons, explosives, fish traps, and trawls. - Designated modified habitats or artificial reefs as special management zones (SMZs).
Regulatory Amendment #1 (1987)	03/27/87	PR: 51 FR 43937 FR: 52 FR 9864	- Prohibited fishing in SMZs except with hand-held hook-and-line and spearfishing gear. - Prohibited harvest of goliath grouper in SMZs.
Amendment #1 (1988a)	01/12/89	PR: 53 FR 42985 FR: 54 FR 1720	- Prohibited trawl gear to harvest fish south of Cape Hatteras, NC and north of Cape Canaveral, Florida. - Directed fishery defined as vessel with trawl gear and ≥200 pounds (lbs) snapper grouper on board. - Established rebuttable assumption that vessel with snapper grouper on board had harvested such fish in the exclusive economic zone (EEZ).
Regulatory Amendment #2 (1988b)	03/30/89	PR: 53 FR 32412 FR: 54 FR 8342	- Established 2 artificial reefs off Ft. Pierce, Florida as SMZs.
Notice of Control Date	09/24/90	55 FR 39039	- Anyone entering federal wreckfish fishery in the EEZ off South Atlantic states after 09/24/90 was not assured of future access if limited entry program developed.
Regulatory Amendment #3 (1989)	11/02/90	PR: 55 FR 28066 FR: 55 FR 40394	- Established artificial reef at Key Biscayne, Florida as SMZ. Fish trapping, bottom longlining, spear fishing, and harvesting of goliath grouper prohibited in SMZ.
Amendment #2 (1990)	10/30/90	PR: 55 FR 31406 FR: 55 FR 46213	- Prohibited harvest/possession of goliath grouper in or from the EEZ. - Defined overfishing for goliath grouper and other species.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Emergency Rule	8/3/90	55 FR 32257	- Added wreckfish to the fishery management unit (FMU). - Fishing year beginning 4/16/90. - Commercial quota of 2 million lbs. - Commercial trip limit of 10,000 lbs per trip.
Fishery Closure Notice	8/8/90	55 FR 32635	- Fishery closed because the commercial quota of 2 million lbs was reached.
Emergency Rule Extension	11/1/90	55 FR 40181	- Extended the measures implemented via emergency rule on 8/3/90.
Amendment #3 (1990b)	01/31/91	PR: 55 FR 39023 FR: 56 FR 2443	- Added wreckfish to the FMU. - Defined optimum yield (OY) and overfishing. - Required permit to fish for, land or sell wreckfish. - Required catch and effort reports from selected, permitted vessels. - Established control date of 03/28/90. - Established a fishing year for wreckfish starting April 16. - Established a process to set annual quota, with initial quota of 2 million lbs; provisions for closure. - Established 10,000 lb trip limit. - Established a spawning season closure for wreckfish from January 15 to April 15. - Provided for annual adjustments of wreckfish management measures.
Notice of Control Date	07/30/91	56 FR 36052	- Anyone entering federal snapper grouper fishery (other than for wreckfish) in the EEZ off S. Atlantic states after 07/30/91 was not assured of future access if limited entry program developed.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #4 (1991)	01/01/92	PR: 56 FR 29922 FR: 56 FR 56016	- Prohibited gear: fish traps except black sea bass traps north of Cape Canaveral, Florida; entanglement nets; longline gear inside 50 fathoms; bottom longlines to harvest wreckfish**; powerheads and bangsticks in designated SMZs off South Carolina. - Defined overfishing/overfished and established rebuilding timeframe: Red snapper and groupers ≤ 15 years (year 1 = 1991); other snappers, greater amberjack, black sea bass, red porgy ≤ 10 years (year 1 = 1991). - Required permits (commercial & for-hire) and specified data collection regulations. - Established an assessment group and annual adjustment procedure (framework). - Permit, gear, and vessel id requirements specified for black sea bass traps. - No retention of snapper grouper spp. caught in other fisheries with gear prohibited in snapper grouper fishery if captured snapper grouper had no bag limit or harvest was prohibited. If had a bag limit, could retain only the bag limit. - 8" TL size limit – lane snapper. - 10" TL size limit – vermilion snapper (recreational only). - 12" TL size limit – red porgy, vermilion snapper (commercial only), gray, yellowtail, mutton, schoolmaster, queen, blackfin, cubera, dog, mahogany, and silk snappers. - 20" TL size limit – red snapper, gag, and red, black, scamp, yellowfin, and yellowmouth groupers. - 28" fork length (FL) size limit – greater amberjack (recreational only). - 36" FL or 28" core length – greater amberjack (commercial only) - Bag limits – 10 vermilion snapper, 3 greater amberjack. - Aggregate snapper bag limit – 10/person/day, excluding vermilion snapper and allowing no more than 2 red snappers. - Aggregate grouper bag limit – 5/person/day, excluding Nassau and goliath grouper, for which no retention (recreational & commercial) is allowed. - Spawning season closure – commercial harvest greater amberjack > 3 fish bag prohibited in April south of Cape Canaveral, Florida. - Spawning season closure – commercial harvest mutton snapper >snapper aggregate prohibited during May and June. - Charter/headboats and excursion boat possession limits extended.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #5 (1992a)	04/06/92	PR: 56 FR 57302 FR: 57 FR 7886	- Wreckfish: Established limited entry system with individual transferable quotas (ITQs); required dealer to have permit; rescinded 10,000 lb trip limit; required off-loading between 8 am and 5 pm; reduced occasions when 24-hour advance notice of offloading required for off-loading; established procedure for initial distribution of percentage shares of total allowable catch.
Emergency Rule	8/31/92	57 FR 39365	- Black Sea Bass: modified definition of black sea bass pot; allowed multi-gear trips; allowed retention of incidentally-caught fish on black sea bass trips.
Emergency Rule Extension	11/30/92	57 FR 56522	- Black Sea Bass: modified definition of black sea bass pot; allowed multi-gear trips; allowed retention of incidentally-caught fish on black sea bass trips.
Regulatory Amendment #4 (1992b)	07/06/93	FR: 58 FR 36155	- Black Sea Bass: modified definition of black sea bass pot; allowed multi-gear trips; allowed retention of incidentally-caught fish on black sea bass trips.
Regulatory Amendment #5 (1992c)	07/31/93	PR: 58 FR 13732 FR: 58 FR 35895	- Established 8 SMZs off South Carolina, where only hand-held, hook-and-line gear and spearfishing (excluding powerheads) was allowed.
Amendment #6 (1993)	07/27/94	PR: 59 FR 9721 FR: 59 FR 27242	- Commercial quotas for snowy grouper and golden tilefish. - Commercial trip limits for snowy grouper, golden tilefish, speckled hind, and warsaw grouper. - Include golden tilefish in grouper recreational aggregate bag limits. - Prohibited sale of warsaw grouper and speckled hind. - 100% logbook coverage upon renewal of permit. - Creation of the *Oculina* experimental closed area. - Data collection needs specified for evaluation of possible future individual fishing quota system.
Amendment #7 (1994a)	01/23/95	PR: 59 FR 47833 FR: 59 FR 66270	- 12” FL – hogfish. - 16” total length (TL) – mutton snapper. - Required dealer, charter and headboat federal permits. - Allowed sale under specified conditions. - Specified allowable gear and made allowance for experimental gear. - Allowed multi-gear trips in North Carolina. - Added localized overfishing to list of problems and objectives. - Adjusted bag limit and crew specifications for charter and head boats. - Modified management unit for scup to apply south of Cape Hatteras, North Carolina. - Modified framework procedure.
Regulatory Amendment #6 (1994)	05/22/95	PR: 60 FR 8620 FR: 60 FR 19683	- Established actions which applied only to EEZ off Atlantic coast of Florida: Bag limits – 5 hogfish/person/day (recreational only), 2 cubera snapper/person/day > 30” TL; 12” TL – gray triggerfish.
Notice of	04/23/97	62 FR 22995	- Anyone entering federal black sea bass pot sector off

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Control Date			South Atlantic states after 04/23/97 was not assured of future access if limited entry program developed.
Amendment #8 (1997a)	12/14/98	PR: 63 FR 1813 FR: 63 FR 38298	- Established program to limit initial eligibility for snapper grouper fishery: Must demonstrate landings of any species in snapper grouper FMU in 1993, 1994, 1995 or 1996; and have held valid snapper grouper permit between 02/11/96 and 02/11/97. - Granted transferable permit with unlimited landings if vessel landed ≥ 1,000 lbs. of snapper grouper spp. in any of the years. - Granted non-transferable permit with 225 lb trip limit to all other vessels. - Modified problems, objectives, OY, and overfishing definitions. - Expanded South Atlantic Fishery Management Council's (South Atlantic Council) habitat responsibility. - Allowed retention of snapper grouper spp. in excess of bag limit on permitted vessel with a single bait net or cast nets on board. - Allowed permitted vessels to possess filleted fish harvested in the Bahamas under certain conditions.
Regulatory Amendment #7 (1998)	01/29/99	PR: 63 FR 43656 FR: 63 FR 71793	- Established 10 SMZs at artificial reefs off South Carolina.
Interim Rule Request	1/16/98		- South Atlantic Council requested all Amendment 9 measures except black sea bass pot construction changes be implemented as an interim request under the Magnuson-Stevens Fisheries Conservation and Management Act (Magnuson-Stevens Act).
Action Suspended	5/14/98		- NOAA Fisheries informed the South Atlantic Council that action on the interim rule request was suspended.
Emergency Rule Request	9/24/98		- South Atlantic Council requested Amendment 9 be implemented via emergency rule.
Request not Implemented	1/22/99		- NOAA Fisheries informed the South Atlantic Council that the final rule for Amendment 9 would be effective 2/24/99; therefore they did not implement the emergency rule.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #9 (1998b)	2/24/99	PR: 63 FR 63276 FR: 64 FR 3624	- Red porgy: 14" TL (recreational and commercial); 5 fish recreational bag limit; no harvest or possession > bag limit, and no purchase or sale, in March and April. - Black sea bass: 10" TL (recreational and commercial); 20 fish recreational bag limit; required escape vents and escape panels with degradable fasteners in black sea bass pots. - Greater amberjack: 1 fish rec. bag limit; no harvest or possession > bag limit, and no purchase or sale, during April; quota = 1,169,931 lbs; began fishing year May 1; prohibited coring. - Vermilion snapper: 11" TL (recreational) Gag: 24" TL (recreational); no commercial harvest or possession > bag limit, and no purchase or sale, during March and April - Black grouper: 24" TL (recreational and commercial); no harvest or possession > bag limit, and no purchase or sale, during March and April. - Gag and Black grouper: Within 5 fish aggregate grouper bag limit, no more than 2 fish may be gag or black grouper (individually or in combination). - All snapper grouper without a bag limit: Aggregate recreational bag limit 20 fish/person/day, excluding tomtate and blue runners - Vessels with longline gear aboard may only possess snowy, Warsaw, yellowedge, and misty grouper, and golden, blueline and sand tilefish.
Amendment #9 (1998b) resubmitted	10/13/00	PR: 63 FR 63276 FR: 65 FR 55203	- Commercial trip limit for greater amberjack.
Regulatory Amendment #8 (2000a)	11/15/00	PR: 65 FR 41041 FR: 65 FR 61114	- Established 12 SMZs at artificial reefs off Georgia; revised boundaries of 7 existing SMZs off Georgia to meet Coast Guard permit specs; restricted fishing in new and revised SMZs.
Emergency Interim Rule	09/08/99, expired 08/28/00	64 FR 48324 and 65 FR 10040	- Prohibited harvest or possession of red porgy.
Emergency Action	9/3/99	64 FR 48326	- Reopened the Amendment 8 permit application process.
Amendment #10 (1998d)	07/14/00	PR: 64 FR 37082 and 64 FR 59152 FR: 65 FR 37292	- Identified essential fish habitat (EFH) and established habitat areas of particular concern (HAPCs) for species in the snapper grouper FMU.

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
Amendment #11 (1998e)	12/02/99	PR: 64 FR 27952 FR: 64 FR 59126	- Maximum sustainable yield (MSY) proxy: Goliath and Nassau grouper = 40% static spawning potential ration (SPR); all other species = 30% static SPR. - OY: Hermaphroditic groupers = 45% static SPR; goliath and Nassau grouper = 50% static SPR; all other species = 40% static SPR. - Overfished/overfishing evaluations: Black sea bass: overfished (minimum stock size threshold (MSST)=3.72 million pounds, 1995 biomass=1.33 million pounds); undergoing overfishing (maximum fishing mortality threshold (MFMT)=0.72, fishing mortality (F)1991-1995=0.95). Vermilion snapper: Overfished (static SPR = 21-27%). Red porgy: Overfished (static SPR = 14-19%). Red snapper: overfished (static SPR = 24-32%). Gag: Overfished (static SPR = 27%). Scamp: No longer overfished (static SPR = 35%). Speckled hind: Overfished (static SPR = 8-13%). Warsaw grouper: Overfished (static SPR = 6-14%). Snowy grouper: Overfished (static SPR = 5=15%). White grunt: No longer overfished (static SPR = 29-39%). Golden tilefish: Overfished (couldn't estimate static SPR.) Nassau grouper: Overfished (couldn't estimate static SPR) Goliath grouper: Overfished (couldn't estimate static SPR). - Overfishing level (OFL): Goliath and Nassau grouper = F>F40% static SPR; all other species: = F>F30% static SPR. - Approved definitions for overfished and overfishing. MSST = [(1-natural mortality (M)) or 0.5 whichever is greater]*B_{MSY}. MFMT = F_{MSY}
Amendment #12 (2000c)	09/22/00	PR: 65 FR 35877 FR: 65 FR 51248	- Red porgy: MSY=4.38 mp; OY=45% static SPR; MFMT=0.43; MSST=7.34 mp; rebuilding timeframe=18 years (1999=year 1); no sale during January-April; 1 fish bag limit; 50 lb. bycatch commercial trip limit May-December; modified management options and list of possible framework actions.
Amendment #13A (2003b)	04/26/04	PR: 68 FR 66069 FR: 69 FR 15731	- Extended for an indefinite period the regulation prohibiting fishing for and possessing snapper grouper spp. within the *Oculina* experimental closed area.
Notice of Control Date	10/14/05	70 FR 60058	- The South Atlantic Council is considering management measures to further limit participation or effort in the commercial fishery for snapper grouper species (excluding wreckfish).
Amendment #13C (2006)	10/23/06	PR: 71 FR 28841 FR: 71 FR 55096	- End overfishing of snowy grouper, vermilion snapper, black sea bass, and golden tilefish. Increase allowable catch of red porgy. Year 1 = 2006. - Snowy Grouper commercial: quota (gutted weight,

Document	All Actions Effective By:	Proposed Rule Final Rule	Major Actions. Note that not all details are provided here. Please refer to Proposed and Final Rules for all impacts of listed documents.
			gw) = 151,000 lbs gw in year 1, 118,000 lbs gw in year 2, and 84,000 lbs gw in year 3 onwards. Trip limit = 275 lbs gw in year 1, 175 lbs gw in year 2, and 100 lbs gw in year 3 onwards. Recreational: Limit possession to one snowy grouper in 5 grouper per person/day aggregate bag limit. - Golden Tilefish Commercial: Quota of 295,000 lbs gw, 4,000 lbs gw trip limit until 75% of the quota is taken when the trip limit is reduced to 300 lbs gw. Do not adjust the trip limit downwards unless 75% is captured on or before September 1. Recreational: limit possession to 1 golden tilefish in 5 grouper per person/day aggregate bag limit. - Vermilion Snapper Commercial: Quota of 1,100,000 lbs gw. Recreational: 12" TL size limit. - Black sea bass commercial: Commercial quota (gutted weight) of 477,000 lbs gw in year 1, 423,000 lbs gw in year 2, and 309,000 lbs gw in year 3 onwards. Require use of at least 2" mesh for the entire back panel of black sea bass pots effective 6 months after publication of the final rule. Require black sea bass pots be removed from the water when the quota is met. Change fishing year from calendar year to June 1 – May 31. Recreational: Recreational allocation of 633,000 lbs gw in year 1, 560,000 lbs gw in year 2, and 409,000 lbs gw in year 3 onwards. Increase minimum size limit from 10" TL to 11" TL in year 1 and to 12" TL in year 2. Reduce recreational bag limit from 20 to 15 per person per day. Change fishing year from the calendar year to June 1 through May 31. - Red porgy commercial and recreational. - Retain 14" TL size limit and seasonal closure (retention limited to the bag limit). - Specify a commercial quota of 127,000 lbs gw and prohibit sale/purchase and prohibit harvest and/or possession beyond the bag limit when quota is taken and/or during January through April. - Increase commercial trip limit from 50 lbs ww to 120 red porgy (210 lbs gw) during May through December. - Increase recreational bag limit from one to three red porgy per person per day.
Notice of Control Date	3/8/07	72 FR 60794	- The South Atlantic Council may consider measures to limit participation in the snapper grouper for-hire fishery.
Amendment #14 (2007) Sent to NOAA Fisheries 7/18/07	2/12/09	PR: 73 FR 32281 FR: 74 FR 1621	- Establish eight deepwater Type II marine protected areas (MPAs) to protect a portion of the population and habitat of long-lived deepwater snapper grouper species.
Amendment	3/14/08	73 FR 14942	- Establish rebuilding plans and Sustainable Fisheries

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#15A (2008a)			Act (SFA) parameters for snowy grouper, black sea bass, and red porgy.
Amendment #15B (2008b)	2/15/10	PR: 74 FR 30569 FR: 74 FR 58902	- Prohibit the sale of bag-limit caught snapper grouper species. - Reduce the effects of incidental hooking on sea turtles and smalltooth sawfish. - Adjust commercial renewal periods and transferability requirements. - Implement plan to monitor and assess bycatch. - Establish reference points for golden tilefish. - Establish allocations for snowy grouper (95% commercial & 5% recreational) and red porgy (50% commercial & 50% recreational).
Amendment #16 (SAFMC 2009a)	7/29/09	PR: 74 FR 6297 FR: 74 FR 30964	- Specify SFA parameters for gag and vermilion snapper. - Recreational and commercial spawning closure January through April for all shallow water groupers. - For gag: Specify interim allocations 51% commercial and 49% recreational; directed commercial quota=352,940 lbs gw; reduce 5-grouper aggregate to 3-grouper and 2 gag/black to 1 gag/black. - Exclude captain & crew from possessing bag limit for vermilion snapper and grouper aggregate (including tilefish species). - For vermilion snapper: The final rule specified interim allocations 68% commercial & 32% recreational; directed commercial quota split January-June equal to 315,523 lbs gw and 302,523 lbs gw July-December; reduce bag limit from 10 to 5 and a recreational closed season November through March. - Require dehooking tools.
Amendment #17A (SAFMC 2010a)	12/3/10 red snapper closure; circle hooks March 3, 2011	PR: 75 FR 49447 FR: 75 FR 76874	- Specify an annual catch limit (ACL) and an accountability measure (AM) for red snapper with management measures to reduce the probability that catches will exceed the stocks' ACL. - Specify a rebuilding plan for red snapper. - Specify status determination criteria for red snapper. - Specify a monitoring program for red snapper.
Emergency Rule	12/3/10	75 FR 76890	- Delay the effective date of the area closure for snapper grouper species implemented through Amendment 17A.

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Amendment #17B (SAFMC 2010b)	January 31, 2011	PR: 75 FR 62488 FR: 75 FR 82280	- Specify ACLs, annual catch targets (ACTs), and AMs, where necessary, for 9 species undergoing overfishing. - Modify management measures as needed to limit harvest to the ACL or ACT. - Update the framework procedure for specification of total allowable catch. - Prohibit harvest of six snapper-grouper species in depths greater than 240 feet to help reduce bycatch of speckled hind and warsaw grouper. - Prohibit all harvest and possession of speckled hind and warsaw grouper by setting the ACL = 0 (landings only).
Notice of Control Date	12/4/08	74 FR 7849	- Establishes a control date for the golden tilefish fishery of the South Atlantic.
Notice of Control Date	12/4/08	74 FR 7849	- Establishes control date for black sea bass pot fishery of the South Atlantic
Amendment #19 (Comprehensive Ecosystem-based Amendment 1) (SAFMC 2010c)	7/22/10	PR: 75 FR 14548 FR: 75 FR 35330	-Provide presentation of spatial information for EFH and EFH-HAPC designations under the Snapper Grouper FMP. - Designation of deepwater coral HAPCs.
Regulatory Amendment 10 (SAFMC 2011a)	5/31/11	PR: 76 FR 9530 FR: 76 FR 23728	Eliminate closed area for snapper grouper species approved in Amendment 17A.
Regulatory Amendment 9 (SAFMC 2011b)	Bag limit: 6/22/11 Trip limits: 7/15/11	PR: 76 FR 23930 FR: 76 FR 34892	- Establish trip limit for vermilion snapper and gag, increase trip limit for greater amberjack, and reduce bag limit for black sea bass.
Regulatory Amendment 11 (SAFMC 2011c)	May 10, 2012	PR: 76 FR 78879 FR: 77 FR 27374	- Eliminate harvest prohibition in depth greater than 240 ft for six deepwater species.

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Amendment #18A (SAFMC 2012a)	July 1, 2012	PR: 77 FR 16991 FR: 77 FR 32408	- Limit participation and effort in the black sea bass portion of the snapper grouper fishery. - Modifications to management of the black sea bass pot sector. - Improve the accuracy, timing, and quantity of fisheries statistics.
Amendment 18B (TBD)	TBD	TBD	- Limit participation in the golden tilefish portion of the Snapper Grouper Fishery. - Establish initial eligibility requirements for a golden tilefish longline endorsement. - Establish an appeals process. - Allocate commercial golden tilefish quota among gear groups. - Allow for transferability of golden tilefish endorsements. - Adjust golden tilefish fishing year. - Modify trip limits for fishermen who receive a golden tilefish longline endorsement. - Establish trip limits for fishermen who do not receive a golden tilefish longline endorsement.
Amendment #20A	TBD	PR: 77 FR 19165 FR: 77 FR 59129	- Define and redistribute latent shares in the wreckfish ITQ program. - Establish a share cap. - Establish an appeals process.
Amendment #20B	October 26, 2012	TBD	-Update wreckfish ITQ according to Reauthorized Magnuson-Stevens Act.
Amendment #23 (Comprehensive Ecosystem-Based Amendment 2) (SAFMC 2011d)	January 30, 2012	PR: 76 FR 69230 FR: 76 FR 82183	- Designate the deepwater MPAs as EFH-HAPCs. - Limit harvest of snapper grouper species in South Carolina SMZs to the bag limit. - Modify sea turtle release gear.
Amendment #25 (Comprehensive ACL Amendment) (SAFMC 2011e)	April 16, 2012	PR: 76 FR 74757 Amended PR: 76 FR 82264 FR: 77 FR 15916	- Establish acceptable biological catch (ABC) control rules, ABCs, ACLs, ACTs, and AMs for species not undergoing overfishing. - Remove some species from snapper grouper FMU. - Specify ecosystem component species. - Specify allocations among the commercial and recreational sectors for species not undergoing overfishing. - Limit the total mortality for federally managed species in the South Atlantic to the ACLs.

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Supplemental rule (Comprehensive ACL Amendment)	August 17, 2012	PR: 77 FR 23652 FR: 77 FR 42192	- Revise the commercial quota for greater amberjack in the regulations, from 1,169,931 lbs gutted weight to 769,388 lbs gutted weight.
Amendment #24 (SAFMC 2011f)	July 11, 2012	PR: 77 FR 19169 FR: 77 FR 34254	- Specify MSY, rebuilding plan (including ACLs, AMs, and OY), and allocations for red grouper.
Amendment #22	TBD	TBD	- Tagging program to allow harvest of red snapper as stock rebuilds. - Recreational tag program for golden tilefish, snowy grouper, and wreckfish.
Temporary rule for red snapper through emergency action	TBD	TBD	- Allow limited harvest of red snapper in 2012.
Resubmitted Amendment 18A Action Amendment	TBD	PR: 77 FR 55448 FR: 77 FR 72991	- Black sea bass pot endorsement transferability.
Regulatory Amendment 13	TBD	TBD	- Adjust ACLs and allocations for unassessed snapper grouper species with MRIP recreational estimates
Regulatory Amendment 14	TBD	TBD	- Modify the fishing year and reduce the trip limit for greater amberjack. - Implement additional regulations to protect mutton snapper during the spawning season. - Modify the minimum size limit for gray triggerfish. - Modify the commercial and recreational fishing years for black sea bass.
Regulatory Amendment 15	TBD	TBD	- Implement a revised ACL for yellowtail snapper based on the latest stock assessment, modify gag AM.
Regulatory Amendment 16	TBD	TBD	- Golden tilefish management measures.
Regulatory Amendment 17	TBD	TBD	- Adjustments to MPAs to enhance protection of speckled hind and warsaw grouper.
Regulatory Amendment 18	TBD	TBD	- ACLs and management measures for vermilion snapper and red porgy based on results of new assessment.
Amendment 27	TBD	TBD	- Establish the South Atlantic Council as the managing entity for Nassau grouper in the Southeast U.S. - Modify the SG framework. - Modify management measures for blue runner.

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			- Reevaluate captain and crew possession prohibition for vermilion snapper, groupers, and tilefish. - Increase crew of commercial snapper grouper fishing trip.
Amendment 28	TBD	TBD	- Modify red snapper management measures, including the establishment of a process to determine future annual catch limits and fishing seasons.
Amendment 29	TBD	TBD	- Update ABCs, ACLs, and ACTs for snapper grouper species based on recommendations from SSC.
Amendment 30	TBD	TBD	- VMS for commercial sector of snapper grouper fishery.

Appendix C.

15 May 2012

Consultant's Report: Summary of the MRFSS/MRIP Calibration Workshop

27-29 March 2012
Raleigh, NC

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KEY WORKSHOP RECOMMENDATIONS

The following recommendations related to matching MRFSS-derived catch estimates with estimates derived from the new MRIP methodology were agreed-upon by a consensus of the workshop participants:

1. There is a need to re-estimate the marine recreational catch for years prior to 2004.
2. Officially re-estimated catch data for 2004 to 2011 represent the best available data and should be used, to the extent available, in stock assessments.
3. Updated and benchmark stock assessments should increase coefficients of variation (CVs) for hind-casted recreational catch estimates, based on 2004-2011 relationships. The methodology for increasing the CVs is still to be determined, but a first order approximation would be to use the ratio of the CVs generated by the MRFSS vs MRIP estimation methodologies for 2004-2011.
4. Prior to 2004 (or whichever year is the first year for which direct re-estimates are available, since the NMFS Office of Science and Technology (ST) is still working on re-estimation for years prior to 2004), hind-casted catch data should use a ratio (MRFSS/MRIP) estimator, either constant throughout the hind-casted time series or trended, based on ancillary information. This approach would not preclude more extensive species-specific approaches, but would be a default "acceptable" approach if other procedures were not available. For species that are rare in the catch and have high variance in the estimate of this ratio, then using the ratio for other related species may be prudent.
5. Until there is a new (updated or benchmark) stock assessment, the new MRIP-derived catch numbers should be adjusted to be in the same scale as catch numbers used for calculating the current recreational annual catch limits (ACLs). When these stocks are re-assessed, landings relative to ACLs would be tracked by using non-adjusted MRIP

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estimates.

6. For data poor stocks that have developed ACLs on the basis of historical catch, the same methodology should be used to recalculate these ACLs, but with MRIP re-estimated numbers where available, and adjusted MRFSS numbers for earlier years.
7. Caution is urged regarding applying MRFSS/MRIP ratios on a scale smaller than the spatial scale of the stock. Uncertainty in the estimates will increase in direct relation to the diminution of scale.
8. Integration of new numbers should not require a full benchmark stock assessment. An update should be sufficient if the magnitude of the "bias" is relatively small, recreational catches do not dominate the overall catch, and major changes in the age composition (induced by re-weighting of the intercept biological samples) do not occur. If re-weighting occurs, then there is the potential for changes in the selectivity pattern for the fishery, which may have implications for biological reference points (BRPs) and may then require a new benchmark assessment.
9. The above recommendations are based on the re-estimation of the MRFSS intercept data and represent the current state of the best science information available. Ongoing work on revision to the effort data collection procedures could result in future recommendations for revision of historical effort estimates. Implementation of the current set of revisions based on the intercept data should not be delayed to wait for possible revisions based on the effort data. The potential effects of revisions to the biological data could be important if the age or size structure of the recreational landings and discards change.
10. At the end of the workshop, participants agreed that a working group should be formed to: (1) identify a list of species whose catch estimates are the most affected by the transition to MRIP, and present this list to the regional stock assessment steering committees for their consideration when scheduling upcoming stock assessments; and (2) develop a technical approach (or approaches) to hind-casting and forecasting catch estimates. Work on both tasks should be completed by May 1st.

Since the new MRIP methodology for catch estimation has already undergone independent peer review, and the applications proposed at the workshop only involve applying ratio estimators to adjust the MRFSS time series to match the MRIP time series (and vice versa), the workshop attendees saw no need to subject the consensus recommendations listed above to further independent peer review. A peer review may be needed, however, if a methodology is developed to expand the variance estimates for catch in hind-casted years.

The sequential release of MRIP data may cause some inconsistencies in the provision of scientific advice. These inconsistencies may arise if adjustment factors derived from the 2004-2011 data are different than estimators derived from the 1998-2011 data (assuming ST can successfully develop re-estimates for 1998-2003). If the entire data set is ultimately available, then we can compare hind-casted values with the revised estimates as a check for consistency. Similarly, changes in selectivity could occur when the length samples are revised. As noted previously, changes in selectivity could result in some changes to the BRPs, which could then require new benchmark assessments.

BACKGROUND

Early in 2012 the NOAA Fisheries Marine Recreational Information Program (MRIP) released re-estimates of catch statistics for the marine recreational fisheries of the US, 2004-2011, based on raw data collected under the Marine Recreational Survey Statistics (MRFSS) program and a newly-created methodology[2] developed under the MRIP program. By the time the numbers were released, MRIP staff had already begun planning a workshop that would develop a methodology for matching catch estimates derived by using the old MRFSS methodology with estimates derived by using the new MRIP methodology.

This objective for the workshop was important for two reasons. First, stock assessment scientists prefer to have time series of catch (and effort) data for the marine recreational fisheries that are as long as possible, uninterrupted by changes in data collection or estimation methodologies. By using a side-by-side comparison (calibration) of the original catch statistics, obtained with the MRFSS estimation methodology, to the re-estimated MRIP-based statistics for 2004 to 2011, it may be possible to hind-cast the time series based on the MRIP methodology to years prior to 2004; i.e., what would have been the likely catch estimates and their associated variances for years prior to 2004 had the MRIP estimation methodology been in place? Second, matching MRFSS-derived and MRIP-derived catch estimates would help fishery managers carry forward regional catch allocations (state-by-state, commercial vs recreational) based on the MRFSS-derived catch statistics to years when only the MRIP-based statistics will be available (beginning in 2013), thus providing as smooth a transition as possible within the management process.

PREPARATIONS FOR THE WORKSHOP

A workshop steering committee was formed in August 2011 to develop terms of reference and, eventually, an agenda and speakers list for the so-called MRFSS/MRIP Calibration Workshop. Committee members initially included representatives from your office (Ron Salz), the Northeast

[2] Breidt, F. J., Lai, H.-L., J. D. Opsomer, and D. A. Van Voorhees. 2012. A Report of the MRIP Sampling and Estimation Project: Improved Estimation Methods for the Access Point Angler Intercept Survey Component of the Marine Recreational Fishery Statistics Survey. NOAA Fisheries, MRIP Program, Silver Spring, MD. 83 pp. (http://www.countmyfish.noaa.gov/projects/index.html)

Fisheries Science Center (Jim Weinberg), the Northeast Regional Office (Sarah Heil), the Southeast Fisheries Science Center (Steve Turner), the Southeast Regional Office (Andy Strelcheck), and the NOAA Fisheries Office of Sustainable Fisheries (Wes Patrick). The committee developed the following three terms of reference for the workshop:

1. Review ongoing and completed studies comparing MRFSS methodologies to those slated for use in MRIP, and propose any additional work that would further facilitate MRFSS/MRIP calibration.
2. Propose a methodology for calibrating MRFSS data to MRIP data, based on the years in which paired estimates are available (currently expected to be 2004-2011), and demonstrate how it would work in hind-casting catch and effort for select data sets (pre-2004).
3. Recommend a plan for implementing the calibration methodology into updated and benchmark stock assessments.

The committee also developed a list of presentation topics associated with the terms of reference, as well as additional topics that would provide background information to help facilitate discussions at the workshop, in close coordination with the potential presenters of those topics (Attachment 1). The committee anticipated that some working papers associated with the presentation topics could be prepared and distributed ahead of the workshop, while others could be prepared following the workshop, based on agreements reached by the workshop participants on their contents.

At this point, the committee agreed (with permission from NOAA Fisheries leadership) to invite the Southeast Data, Assessment, and Review (SEDAR) program to co-sponsor the workshop and have a staff member (John Carmichael) join the steering committee. The SEDAR program is a cooperative Fishery Management Council process initiated in 2002 to improve the quality and reliability of fishery stock assessments in the South Atlantic, Gulf of Mexico, and US Caribbean. The Caribbean, Gulf of Mexico, and South Atlantic regional fishery management councils manage the SEDAR program in close coordination with NOAA Fisheries and the Atlantic and Gulf States Marine Fisheries Commissions. Furthermore, most of the stock assessments for

federally-managed species potentially affected by the switch from MRFSS to MRIP are in the southeast region. In addition to SEDAR staff actively participating in the workshop, the program handled travel arrangements for non-federal attendees, the venue for the meeting, and the meeting room and catering logistics. The Mid-Atlantic Fishery Management Council was asked to handle the web broadcast.

WORKSHOP AGENDA AND WORKING PAPERS

The workshop agenda was designed to address the three terms of reference and allow time for presentation of the background working papers. The finalized workshop agenda, including speakers, is attached (Attachment 2). Each session (Tuesday PM, all day Wednesday, and Thursday AM) was devoted to addressing one of the workshop's terms of reference, in order. The presentations in each session were based on the final list of working paper topics developed by the steering committee (Attachment 1), with additional time slots allotted on the agenda for extended discussions, especially in the second session (addressing the second term of reference – development of a methodology for matching catch estimates from MRFSS to those from MRIP, and vice versa).

All working papers prepared prior to the workshop, as well as presentations made at the workshop, are posted on the SEDAR website:

http://www.sefsc.noaa.gov/sedar/Sedar_Documents.jsp?WorkshopNum=002&FolderType=Data

WORKSHOP ATTENDANCE AND RECORDINGS

A total of 39 people attended the meeting in person (Attachment 3), while another 48 individuals participated via the web (Attachment 4). Besides NOAA Fisheries, participants also represented the regional fishery management councils and interstate commissions, state agencies, recreational fishing groups, and environmental organizations, as well as the public in general. All the sessions were also recorded (audio and what was being projected on the meeting room screen); the recordings are also accessible on the SEDAR website.

SESSION 1 SUMMARY

The purpose of the first workshop session (and the first term of reference) was to provide the workshop participants with background information and context. Presenters reviewed the differences in recreational catch estimates based on the MRFSS and MRIP methodologies in 2004-2011 for federally-managed species along the Atlantic and Gulf coasts, discussed lessons learned from earlier efforts to switch from one survey methodology to another, introduced the workshop participants to changes to the recreational fishing survey that will occur when the survey switches over to become 100% MRIP-based in 2013, and presented findings of MRIP-funded projects that have addressed or are currently addressing calibration of the MRFSS-based survey to the MRIP-based survey.

A number of important points were made during the Session 1 question and answer follow-ups to the presentations (Q&As) and subsequent discussions that were related to all three terms of reference for the workshop:

1. The participants were cautioned to be precise in use of terms such as calibration, avidity, and variance; for instance, calibration can take on many forms and should not be used to characterize hind-casting catch estimates for years when side-by-side MRFSS and MRIP surveys were not conducted.
2. Participants were encouraged to incorporate public outreach through the entire process of matching and combining MRFSS and MRIP catch time series. Difficulty in explaining to the public the statistical basis underlying the process is a good reason to develop effective communication about the changes.
3. Although it is highly desirable to account for multiple design changes simultaneously, it is often not possible to wait until an entire set of changes has been made. Scientists and managers have a mandated responsibility to use the best scientific information. However, incremental transition without sufficient planning and resources could result in significant disruptions to stock assessments and management systems. Coordination among scientists, managers, and the fishing public is essential throughout the transition process.

4. Expect larger differences between the MRFSS and MRIP catch estimates as the scale (spatial, temporal) becomes finer, but recognize that the variance of these finer scale differences is larger and their significance is less.
5. MRIP must anticipate future uses well beyond those envisioned at its inception. This was a principal drawback to the design of the MRFSS-based survey. Flexibility in design and the ability to accommodate regional differences in fishery characteristics should be maintained as MRIP matures.
6. In matching MRFSS- and MRIP-derived catch estimates recognize that the data collection programs under MRFSS have not been static. The MRFSS survey evolved over time; MRFSS in the 1980s was not the same as MRFSS in the 1990s, and the survey continued to evolve during the 2004 to 2011 overlap period.

SESSION 2 SUMMARY – FIRST HALF

The first half of Session 2 (the morning) began with a presentation of the stock assessment ramifications of changes to the time series of marine recreational catch. Key points of the presentation and comments made during the follow-up Q&As were:

1. Biological reference points that are based on indices (proxies) are generally insensitive to catch. Catch helps scale the size of the population, whereas an index, such as CPUE, provides the trend. A constant bias in the catch over the time series may not change the estimate of relative stock status. Additionally, the bias needs to overcome the "noise" already present in the variance of parameters used in the stock assessment; for the northeast surveys, the coefficients of variation are about 30%.
2. When catch is over/under-estimated during a time period in which the abundance index indicates substantial decline, biomass is also over/under-estimated, respectively. When catch is overestimated at the beginning or end of a time series when indexes are not indicating substantial trends, biomass may be underestimated, but the effect is less pronounced.
3. Biases in catch will have more influence on assessments of short-lived species, which have more inter-annual variability in abundance.

4. Adjusting for bias over a catch time series may just be a matter of scaling (multiplying individual values in the time series by a constant or trended coefficient that adjusts for the bias).

Following the discussion on ramifications of bias in catch for stock assessments, scientists from the Northeast Fisheries Science Center (NEFSC) and Southeast Fisheries Science Center (SEFSC) provided their preliminary analyses of the impacts of the re-estimated recreational catch for 2004 to 2011 on assessed species. The total recreational catch for recreationally important species in the New England and Mid-Atlantic regions shows very little difference between the original MRFSS-based estimates and the MRIP-based re-estimates; bigger differences exist when examining recreational catch on a species-by-species basis. For the SEFSC, the original MRFSS-based catch estimates are within the MRIP confidence intervals; some species (e.g., red and black grouper, yellowtail snapper, and amberjack) show a systematic bias, but most do not. Most of the SEFSC assessments use an index based on MRFSS catch estimates, but it is usually not the most influential index in the stock assessment model. The greatest systematic bias for SEFSC-assessed species appears to occur in the southern Florida region, and is likely caused by sites in that region having a higher catch rate but lower probability of being sampled.

Several alternative, statistically-based methodologies that could be used to hind-cast prior to the years of side-by-side MRFSS- and MRIP-based estimates were then presented and discussed. The principal problem related to using a hind-casting methodology is changes (documented or undocumented) in the sampling design that occurred during the earlier years; significant effort is needed to find, process, and re-create old design information. Furthermore, the effort needs to be undertaken for all survey variables. Because of inadequate record keeping, re-calibrating catch estimates for the earliest years may not ever be possible. Also, developing methodologies to calibrate the MRFSS-based estimates of catch in earlier years goes beyond the catch value itself – changes to fishery selectivity, which affects the size-frequency patterns in the catch, also needs attention, since the changes may also affect derivation of biological reference points in stock assessments.

SESSION 2 SUMMARY – SECOND HALF

The second half (afternoon) of Session 2 was devoted entirely to a discussion of how MRFSS-based and MRIP-based catch estimates can be matched, and how the match-ups should be used in stock assessments and fisheries management. In 2013, the new MRIP-based intercept portion of the survey will be fully implemented and no MRFSS estimates will be available. The workshop participants decided that MRIP catch estimates should be adjusted to be on the same scale as that used to develop ACLs (i.e., the same scale as MRFSS-based estimates) for the purposes of quota monitoring for species until those ACLs can be re-calculated with an assessment that uses MRIP data. This adjustment would be for species where the ACL is set based on the results of a formal stock assessment model and those where the ACL is set based on historical data. For species where the ACL is set based on historical data, the ACL should be recalculated when the MRFSS re-estimates are available for the time period used to set the ACL. The uncertainty in the catch estimates increases as the spatial scale becomes finer; e.g., estimates of state catch are more uncertain than estimates of regional catch. Caution should be used when converting MRIP numbers on a spatial scale smaller than the scale of the stock ACL.

The group agreed that the calibration method eventually chosen does not need to be peer reviewed, as MRIP and its methodologies have already been thoroughly peer reviewed, and the benchmark assessment framework will provide another chance. However, there was concern about having the calibration method or methods second-guessed by multiple peer review panels going forward. To counter possible second-guessing, stock assessment scientists may want to undertake sensitivity analysis of the hind-casted recreational catch estimates (e.g., varying them by 5, 10, 20%) in order to determine the overall impact of changes in the estimates on biological reference points.

The workshop participants recognized the importance of strong, clear guidelines regarding calibration methods and how and when the methods should be used. Stock assessment scientists do not want to be in the position of developing *ad hoc* calibration methods on a species-by-species and region-by-region basis. There was a discussion of who should be responsible for developing the calibrated numbers for each species: the regional Science Centers and state

Technical Committees or NMFS ST. The ST personnel associated with MRIP clearly have the statistical expertise and the best understanding of the data, but effort that they expend in developing and implementing the calibrations is effort that is redirected from other MRIP tasks. Transparency and repeatability of the calibration process is also important, so that people outside the stock assessment process (anglers, environmental organizations, etc.) know the source and scientific basis for the recreational survey numbers that will be used in the assessment models.

After considerable discussion on the pros and cons of various methodologies that could be used to match MRFSS-based catch estimates with those based on MRIP, the workshop participants agreed that updated and benchmark stock assessments should increase coefficients of variation (CVs) for hind-casted recreational catch estimates, based on 2004-2011 relationships. The methodology for increasing the CVs is still to be determined, but a first order approximation would be to use the ratio of the CVs generated by the MRFSS vs MRIP estimation methodologies for 2004-2011. The participants also agreed that, prior to 2004 (or whichever year is the first year for which direct re-estimates are available, since ST is still working on re-estimation for years prior to 2004), hind-casted catch data should use a ratio (MRFSS/MRIP) estimator, either constant throughout hind-casted time series or trended, based on ancillary information. This approach would not preclude more extensive species-specific approaches, but would be a default "acceptable" approach if other procedures were not available. For species that are rare in the catch and have high variance in the estimate of this ratio, using the ratio for other related species may be prudent. Furthermore, until there is a new (updated or benchmark) stock assessment, the new MRIP-derived catch numbers should be adjusted to be in the same scale as catch numbers used for calculating the current recreational annual catch limits (ACLs). When these stocks are re-assessed, then ACLs and catch tracking would be monitored by using un-adjusted MRIP estimates.

For data-poor stocks that have ACLs based on historical catch, the same methodology should be used to recalculate these ACLs, but with MRIP re-estimated numbers where available, and adjusted MRFSS numbers for earlier years. Until these recalculations can be completed, the procedure described in the preceding paragraph can be used.

The participants also agreed that the re-estimated recreational catch for 2004 to 2011 based on the new MRIP methodology represents the current state of the best science information available. Ongoing work on revision to the effort data collection procedures that will be incorporated into MRIP in the near future could result in future recommendations for revision of historical effort estimates. However, implementation of the current set of revisions based on the intercept data should not be delayed to wait for possible revisions based on the effort data.

In addition to the effect of new MRIP data-weighting procedures on estimated recreational catch, the group acknowledged that this re-weighting (e.g., data from some sample sites becomes more or less influential in the overall catch estimate) will also have some effect on the estimated size composition of the catch and on catch per effort statistics that are sometimes used as an index of abundance. These additional effects were not explored in this workshop, but are worthy of future investigation.

The above recommendations by the workshop participants for matching the MRFSS and MRIP catch estimates represent a consensus opinion. No minority opinions to the contrary were offered.

SESSION 3 SUMMARY

The purpose of this session was to go into further depth of discussion about how and when the time series of MRFSS and MRIP catch estimates would be integrated into stock assessments, especially following the 100% switchover to MRIP in 2013. The session began with an overview of the current SEDAR and Northeast region procedures for scheduling, undertaking, and reviewing stock assessment updates and benchmarks. A benchmark assessment conducted under the SEDAR process takes approximately 15 months to complete, which is added to the time it takes for the assessment to be used by an SSC to develop an ABC recommendation, review of the ABC and action by the fishery management council or interstate commission, development of a specifications package and submittal to NMFS, NMFS review and development of a proposed rule, the public comment period on the proposed rule, publication of a final rule, then implementation at the beginning of the next fishing season. The Northeast has a

similar timeline.

However, integration of new MRIP-derived numbers should not require a full benchmark stock assessment, which would shorten the timeline considerably. An update should be sufficient if the magnitude of the "bias" is relatively small, recreational catches do not dominate the overall catch, and major changes in the age composition (induced by re-weighting of the intercept biological samples) do not occur. If re-weighting occurs, then there is the potential for changes in the selectivity pattern for the fishery, which may have implications for biological reference points (BRPs) and may then require a new benchmark assessment.

The workshop participants then discussed how priorities for conducting updated and benchmark assessments might be changed based on the results of re-estimation of 2004 to 2011 recreational catches for species managed by the councils and commissions. The participants recommended that MRIP numbers be incorporated into the technical updates rather than wait for peer-reviewed benchmark assessments. Although benchmark and updated assessment schedules are already set for 2012 and 2013, decisions have to be made on how to prioritize future assessments that will use the new MRIP numbers. A screening tool should be developed to rank recreational species that need updated assessments and reference points, which includes criteria such as information on the magnitude (absolute and proportional) and statistical significance of the MRFSS-MRIP differences, the proportion of catch that is recreational, the proportion of recreational catch that is released alive, the extent to which management is based on recreational catch estimates, the socio-economic importance of the species, and the current status of the stock. These are just the ranking criteria associated with recreational species affected by the MRFSS to MRIP conversion; the participants recognized that the SEDAR Steering Committee and Northeast Region Coordinating Committee may have other criteria that will also affect scheduling species for updated and benchmark assessments, such as commercial importance and political considerations. Nevertheless, having an objective and understandable set of metrics will increase the transparency of the stock assessment prioritization process.

The sequential release of MRIP data may cause some inconsistencies in the provision of scientific advice. These inconsistencies may arise if adjustment factors derived from the 2004-

2011 data are different than estimators derived from the 1998-2011 data (assuming ST can successfully develop re-estimates for 1998-2003). If the entire data set is ultimately available, then we can compare hind-casted values with the revised estimates as a check for consistency. Similarly, changes in selectivity could occur when the length samples are revised. As noted previously, changes in selectivity could result in some changes to the BRPs, which could then require new benchmark assessments.

FOLLOW-UP ACTIONS

At the end of the workshop participants agreed that a working group should be formed to: (1) identify and prioritize a list of species whose catch estimates are the most affected by the transition to MRIP, and present this list to the SEDAR Steering Committee and Northeast Region Coordinating Committee for their consideration in prioritizing when scheduling upcoming stock assessments; and (2) develop a technical approach (or approaches) to hind-casting and forecasting catch estimates. Members of the working group should be representatives from the two NMFS science centers, the two interstate management commissions, and NMFS headquarters (ST). Work on both tasks should be completed by May 1st to accommodate the timetable for pending updated and benchmark assessments. Subsequent to the workshop, the following people have been named to the working group: Katie Drew (ASMFC), Gregg Bray (GSMFC), Tim Miller (NEFSC), Erik Williams and John Walter (SEFSC), and Ron Salz (ST).

ACKNOWLEDGEMENTS

The workshop and this report would not have been possible without the cooperation and supports from the Workshop Steering Committee (Steve Turner, Jim Weinberg, Wes Patrick, Sarah Heil, John Carmichael, Andy Strelcheck, and Ron Salz) and the workshop rapporteurs (Kari Fenske, John Froeschke, Mike Errigo, Jason Didden, and Katie Drew). Special thanks go to Katie Drew for allowing me to use some of her narrative for the summary of the Session 2 discussion, and to Jason Didden for overseeing the web link-ups. Overall guidance from Gordon Colvin and Dave Van Voorhees is also greatly appreciated.

Attachment 1

MRFSS/MRIP Calibration Workshop: Presentation and Working Paper Topics

Topics Providing Background:

1. How the transition from the MRFSS-based survey to the for-hire survey undertaken in 2003 was handled. Although this transition only involved effort, some lessons may be gained in learning how the transition methodology was handled, and its subsequent impact on stock assessments.
2. Issues associated with how changes to historical recreational catch and effort data influence derivation of biological reference points in benchmark stock assessments.
3. Lessons learned from the calibration of ALBATROSS IV to BIGELOW trawl survey data. This paper should focus on the process, including how the peer review was used, and how the calibration methodology is being integrated into updated and benchmark stock assessments.
4. The switch from MRFSS to the new RecFin methodology in 2003-2004.

Topics Addressing the TORs:

1. Descriptions of the completed and ongoing MRIP-funded projects that address MRFSS/MRIP calibration issues (TOR #1).
2. Changes to the sampling design and estimation methodologies that are anticipated when MRIP is fully implemented in 2013.
3. Each Center should prepare a working paper on how the re-estimated recreational catch statistics for 2004-2010 affects the conclusions (i.e., provide a broad-brush examination of how complicated it would be to do the revised assessments) of the most recent stock assessments for species managed under the purview of the five councils (NEFMC, MAFMC, SAFMC, GFMC, and CFMC) (TOR #2).
4. Working paper(s) on proposed methodology or methodologies that could hind-cast MRIP-based estimates prior to 2004 (TOR #2). The proposed methodologies should also consider how to incorporate additional side-by-side estimates dating back to the late 1990s that will be released around June 2012.
5. Proposed process for incorporating MRIP-based estimates into stock assessments (TOR #3). This paper should focus on generating discussion at the workshop on criteria for determining whether assessment updates or benchmarks are needed, and how stocks/species should be ranked in terms of timing.

Attachment 2

MRFSS/MRIP Calibration Workshop: Agenda

Day 1

1300 – 1320 Welcome and Introductions (J. Boreman)

1320 – 1340 Overview of MRFSS/MRIP comparisons of 2004-2011 estimated catch and effort (J. Foster)

1340 – 1400 Discussion

1400 – 1420 How the transition from the MRFSS-based survey to the for-hire survey undertaken in 2003 was handled (V. Matter)

1420 – 1430 Q and A

1430 – 1450 Lessons learned from the calibration of ALBATROSS IV to BIGELOW trawl survey data (R. Brown and P. Rago)

1450 – 1500 Q and A

1500 – 1520 The switch from MRFSS to the new RecFin methodology in 2003-2004 (D. Van Voorhees and H. Lai)

1520 – 1530 Q and A

1530 – 1550 Refreshment Break

1550 – 1630 Changes to the sampling design and estimation methodologies that are anticipated when MRIP is fully implemented in 2013, including descriptions of the completed and ongoing MRIP-funded projects that could potentially impact MRFSS/MRIP calibration efforts (R. Andrews and R. Salz)

1630 – 1640 Q and A

1640 – 1700 Open Discussion of Day 1 Topics

1700 – 1730 MRIP data sets and analysis methods (J. Foster)

Day 2

0830 – 0850 Recap of Day 1 presentations and discussion (J. Boreman)

0850 – 0910 Issues associated with how changes to historical recreational catch and effort data influence derivation of biological reference points in benchmark stock assessments (R. Methot)

0910 – 0920 Q and A

0920 – 0940 Impacts of re-estimates on NEFSC stock assessments (NEFSC staff)

0940 – 0950 Q and A

0950 – 1010 Impacts of re-estimates on SEFSC stock assessments (SEFSC staff)

1010 – 1020 Q and A

1020 – 1040 Refreshment Break

1040 – 1120 Proposed methodology or methodologies that could be used to hind-cast MRIP-based estimates prior to 2004 (J. Foster, J. Breidt, J. Opsomer)

1120 – 1130 Q and A

1130 – 1220 Open Discussion of proposed methodologies and agreement on approach

1220 – 1330 Lunch Break

1330 – 1700 Continue discussion

1700 – 1730 Wrap-up Day 2

Day 3

0830 – 0850 Recap of Day 2 presentations and discussion (J. Boreman)

0850 – 0920 Proposed process and constraints to incorporating MRIP-based estimates into stock assessments (J. Carmichael, J. Weinberg, J. Coakley)

0920 – 0930 Q and A

0930 – 1030 Open discussion and agreement on approach

1030 – 1050 Refreshment Break

1050 – 1200 Workshop wrap-up (second thoughts, writing assignments, timeline for completion of workshop report, procedure for peer review and updates for its terms of reference, etc.) (J. Boreman)

Attachment 3

MRFSS/MRIP Calibration Workshop: In-Person Attendance

Alexi Sharov, DNR, MD
Carolyn Belcher, DNR, GA
Cynthia M. Jones, ODU, VA
Dave Van Voorhees, NMFS, MD
Erik Williams, NMFS, NC
John Foster, NMFS, MD
Gary Shepherd, NMFS, MA
Greg Stunz, TX A&M, TX
John Carmichael, SEDAR, SC
Jason T. Didden, MAFMC, DE
John Boreman, MRIP, NCSU, NC
John Froeschke, GMFMC, FL
John Walter, NMFS, FL
Kari Fenske, SEDAR, SC
Katie Drew, ASMFC, VA
Laura Lee, DENR, NC
Mike Errigo, SAFMC, SC
Mike Murphy, FWC, FL
Paul Rago, NMFS, MA
Nick Farmer, NMFS, FL
Phil Haring, NEFMC, MA
Pres Pate, MRIP, NC
Rick Methot, NMFS, WA
Rob Andrews, NMFS, MD
Ron Salz, NMFS, MD
Steve Turner, NMFS, FL
Timothy Miller, NMFS, MA
Tom Sminkey, NMFS, MD
Vivian Matter, NMFS, FL
Wes Patrick, NMFS, MD
Ben Hartig, SAFMC, FL
Matt Cieri, DNR, ME
David Cupka, SAFMC, SC
Jeffrey Brust, DEP, NJ
Kathy Knowlton, DNR, GA
Ryan Rindone, GMFMC, FL
Mac Currin, SAFMC, NC
Dick Brame, CCA, NC
Ken Pollock, NCSU, NC
Gregg Bray, GSMFC, MS

Attachment 4

MRFSS/MRIP Calibration Workshop: Web Attendance

Gordon Colvin, NMFS, MD
Scott Ward, Fifth Estate, DC
Tony Kratowicz, PA
Dick Brame, CCA, NC
Beverly Sauls, FWCC, FL
Lewis Gillingham, VMRC, VA
Moira Kelly, NMFS, MA
Andrew Cox, Billfish Foundation, FL
Chris Wilson, NCDMF, NC
Ed Bracken, NJ
Ray Mroch, NCDMF, NC
Sonya Davis, VMRC, VA
Ed Zlokovitz, MDDNR, MD
John Depersenaire, RFA, NJ
Forbes Darby, NMFS, MD
Doug Mumford, NCDMF, NC
Shizhen Wang, NOAA, MD
Geoff White, ACCSP, VA
Russell Porter, PSMFC, OR
Kevin Sullivan, NHFG, NH
Rob Swit, TU, NJ
Patrick Lyman, Envirotactics, NJ
Claudia Friess, Ocean Conservancy, TX
Roy Crabtree, NMFS, FL
Lauren Anderson, Fifth Estate, DC
Ed Hibsch, PSMFC, OR
Julia Byrd, SCDNR, SC
Hongguang Ma, HI
Joe Weinstein, CDFG, CA
Todd Phillips, Ocean Conservancy, TX
David Heil, FWCC, FL
Toby Carpenter, CDFG, CA
Lauren Dolinger-Few, NMFS, MD
Dustin Addis, FWCC, FL
Helen Takade-Heumacher, NC
Han-Lin Lai, NMFS, WA
Lou Arangio, Fortescue Anglers, NJ
Allison Watts, VMRC, VA
Michael Burton, NMFS, NC
Kyle Shertzer, NMFS, NC
Ed Schweitzer, JCSA, NJ
Mike Collins, SAFMC, SC
Stewart Caldwell, NJ
Doug Vaughan, NC
Scott Baker, NC Sea Grant, NC
Amy Didden, DE
William Heitzman, NJ
Joe Cimino, VMRC, VA

Appendix D.

MRFSS/MRIP Calibration Workshop
Ad-hoc Working Group Report

May 16, 2012

Ron Salz (Chair) – NOAA Fisheries, ST1
Tim Miller – NOAA Fisheries, NEFSC
Erik Williams – NOAA Fisheries, SEFSC
John Walter – NOAA Fisheries, SEFSC
Katie Drew – ASMFC
Greg Bray - GSMFC

One outcome of the MRFSS/MRIP Calibration Workshop was the formation of an ad-hoc working group charged with the following: 1) Establish a priority list in each region for which species assessments should be updated to incorporate the new MRIP-derived catch estimates; and, 2) Provide a technical approach (or approaches) to hind-casting and forecasting catch estimates, including examples. The ad-hoc working group included representatives from the NEFSC, SEFSC, GSMFC, ASMFC, and S&T Headquarters.

Species Prioritization

At the workshop participants discussed how priorities for conducting updated and benchmark assessments might be changed based on the results of re-estimation of 2004 to 2011 recreational catches for managed species. Although benchmark and updated assessment schedules are already set for 2012 and 2013, decisions have to be made on how to prioritize future assessments that will use the new MRIP numbers. The ad-hoc committee was asked to develop a metric that could be used to rank species based on the potential impact the switch from MRFSS to MRIP estimates could have on assessment outcomes. The metric was based on criteria related to the magnitude and significance of differences between MRFSS and MRIP catch estimates and the relative importance of the recreational catch time series in the overall assessment model. It was noted during the workshop that many other criteria, unrelated to the re-estimation of MRFSS numbers, will likely also affect scheduling species for updated and benchmark assessments (e.g., socio-economic importance, stock status, and political considerations). Nevertheless, workshop participants did see value in having an objective and understandable set of recreational data metrics that could be used as part of the stock assessment prioritization process.

Six criteria were used to rank species:

1. Total MRIP A and B1 in numbers
2. Mean percent difference between MRFSS and MRIP AB1 numbers calculated as:

3. Mean percent difference between MRFSS and MRIP B2 numbers calculated as:

4. Fraction of discards to total catch

5. Multiple R^2 (Pearson correlation squared) between the annual MRIP AB1 and MRFSS AB1 values calculated from a linear regression of one versus the other or, equivalently:

6. Percent of total landings attributed to the recreational sector

The six criteria were chosen to represent a combination of factors that would be important in prioritization of species. First the total A plus B1 numbers give an idea of the magnitude of the recreational fishing mortality associated with landings. Next the percent difference between both AB1 and B2 (released alive) numbers provide an idea of the average difference between MRFSS and MRIP estimates; while noting that the average can be low if positive and negative differences cancel each other out. The fraction of discards provides a measure of the importance of discards which can be quite influential in many assessments. The correlation between the annual AB1 numbers provides an estimate of how well the estimates track each other, noting that the estimates could differ in magnitude but might still have the same trend. Finally, the percent of landings attributed to the recreational sector provide an idea of how influential the recreational landings may be in the assessment model, compared to commercial landings, and how sensitive the results may be to changes in recreational inputs.

For each of the six criterion species were initially assigned categorical ranks ranging from one through the total number of species. For example, 16 species were compared for Northeast region with one representing the lowest priority species for that criterion and 16 the highest priority. Ranks were then scaled back to a 10 point scale to provide relative ranks which could be compared across regions as follows:

Rank 10-point scale = 10 * Initial Rank/Number of Species

The overall priority rank score was calculated as the average of the categorical ranks across the six criteria. Tables 1, 2 and 3 give rankings for the Northeast, South Atlantic and Gulf of Mexico species, respectively. It should be noted that regional separations were based upon MRIP subregions (Northeast

= 4 & 5, South Atlantic = 6, and Gulf of Mexico = 7) which do not necessarily reflect the regional partitions used in all stock assessments.

Table 1. Metrics and rankings for Northeast species prioritization based on projected impact of changes in recreational time series data on stock assessments.

Northeast Region	MRIP AB1 (Number of Fish) Sum 2004-2011		Mean % Difference AB1 Catch		Mean % Difference B2 Catch		Relative Importance of Discards (B2 catch)		R2 Correlation Coefficient MRFSS and MRIP AB1		Avg % Recreational Landings (2004 - 2011)		
Species	Value (1,000s)	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Overall Priority Rank (higher values indicate greater priority)
tautog	6,508	4.4	0.083	5.6	0.085	6.9	0.092	7.5	0.883	7.5	91%	10.0	**7.0**
scup	28,205	7.5	-0.157	9.4	-0.136	9.4	0.076	3.8	0.818	6.9	32%	4.4	**6.9**
spot	69,387	8.8	0.096	6.9	0.042	5.0	0.043	0.6	0.982	9.4	43%	5.6	**6.0**
spotted seatrout	104,875	10.0	-0.022	2.5	-0.024	3.1	0.080	4.4	0.770	5.0	87%	8.8	**5.6**
striped bass	18,350	5.6	-0.060	4.4	0.011	0.6	0.108	8.8	0.802	6.3	80%	8.1	**5.6**
weakfish	4,268	3.8	0.089	6.3	-0.014	1.9	0.090	6.9	0.991	10.0	41%	5.0	**5.6**
bluefish	52,848	8.1	0.020	1.9	0.011	1.3	0.081	5.0	0.956	8.1	71%	7.5	**5.3**
red drum	26,154	6.9	0.012	1.3	-0.041	4.4	0.089	6.3	0.748	3.8	89%	9.4	**5.3**
atlantic cod	2,908	3.1	0.242	10.0	0.313	10.0	0.086	5.6	0.516	0.6	18%	2.5	**5.3**
summer flounder	482	1.3	0.048	3.8	0.098	7.5	0.119	9.4	0.732	3.1	45%	6.3	**5.2**
atlantic croaker	82,482	9.4	-0.036	3.1	-0.048	5.6	0.074	3.1	0.796	5.6	26%	3.1	**5.0**
spiny dogfish	156	0.6	0.107	7.5	0.103	8.1	0.122	10.0	0.588	1.3	3%	0.6	**4.7**
pollock	1,348	1.9	0.121	8.1	0.064	6.3	0.054	1.3	0.968	8.8	8%	1.9	**4.7**
black sea bass	14,738	5.0	0.008	0.6	0.036	3.8	0.105	8.1	0.595	1.9	51%	6.9	**4.4**
winter flounder	1,736	2.5	0.148	8.8	0.129	8.8	0.055	1.9	0.611	2.5	5%	1.3	**4.3**
spanish mackerel	20,804	6.3	0.077	5.0	0.020	2.5	0.061	2.5	0.757	4.4	30%	3.8	**4.1**

Table 2. Metrics and rankings for South Atlantic species prioritization based on projected impact of changes in recreational time series data on stock assessments.

South Atlantic Region	MRIP AB1 (Number of Fish) Sum 2004-2011		Mean % Difference AB1 Catch		Mean % Difference B2 Catch		Relative Importance of Discards (B2 catch)		R2 Correlation Coefficient MRFSS and MRIP AB1		Avg % Recreational Landings (2004 - 2011)		Overall Priority Rank (higher values indicate greater priority)
Species	Value (1,000s)	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	
red snapper	313	3.6	0.185	8.6	0.123	6.8	0.102	9.5	0.978	8.6	74%	7.7	**7.5**
gray snapper	2,781	7.3	0.164	8.2	0.071	3.6	0.097	7.7	0.986	9.1	71%	6.8	**7.1**
mutton snapper	940	5.0	0.055	4.1	0.127	7.3	0.073	6.8	0.971	8.2	78%	8.2	**6.6**
black sea bass	4,023	8.2	0.083	5.0	0.074	4.1	0.104	10.0	0.958	7.7	36%	2.3	**6.2**
sheepshead	4,599	8.6	0.119	6.4	0.082	4.5	0.055	3.6	0.851	4.5	81%	8.6	**6.1**
wahoo	340	4.1	-0.088	5.5	-0.320	9.5	0.008	0.5	0.947	6.4	95%	9.1	**5.8**
blue runner	5,581	9.1	0.049	3.2	0.070	3.2	0.065	5.5	0.894	5.5	72%	7.3	**5.6**
red porgy	297	3.2	-0.288	9.1	-0.525	10.0	0.055	4.1	0.840	4.1	37%	2.7	**5.5**
red grouper	383	4.5	-0.369	10.0	0.028	0.9	0.087	7.3	0.900	5.9	40%	4.1	**5.5**
cero	132	1.8	0.162	7.7	-0.090	5.0	0.026	1.4	0.955	7.3	100%	9.5	**5.5**
yellow jack	60	0.9	0.123	7.3	0.052	2.3	0.049	2.7	0.988	10.0	100%	9.5	**5.5**
black grouper	29	0.5	-0.119	6.8	0.162	8.2	0.098	8.2	0.430	0.5	69%	6.4	**5.1**
greater amberjack	264	2.3	0.039	2.3	0.093	5.5	0.065	5.9	0.949	6.8	64%	5.5	**4.7**
gray triggerfish	1,072	5.5	0.045	2.7	0.095	5.9	0.066	6.4	0.748	1.8	58%	5.0	**4.5**
scamp	124	1.4	-0.319	9.5	-0.216	9.1	0.051	3.2	0.760	2.3	27%	1.4	**4.5**
spanish mackerel	7,741	10.0	0.103	5.9	0.069	2.7	0.044	2.3	0.839	3.6	34%	1.8	**4.4**
yellowtail snapper	2,005	6.4	-0.054	3.6	-0.129	7.7	0.064	5.0	0.825	2.7	16%	0.9	**4.4**
crevalle jack	2,596	6.8	-0.030	1.8	0.050	1.8	0.099	8.6	0.531	0.9	67%	5.9	**4.3**
vermilion snapper	1,303	5.9	0.067	4.5	0.099	6.4	0.057	4.5	0.651	1.4	38%	3.2	**4.3**
king mackerel	3,435	7.7	0.013	0.5	-0.032	1.4	0.034	1.8	0.987	9.5	52%	4.5	**4.2**
dolphin	7,454	9.5	0.026	0.9	-0.187	8.6	0.019	0.9	0.882	5.0	14%	0.5	**4.2**
gag	266	2.7	-0.027	1.4	0.004	0.5	0.099	9.1	0.832	3.2	38%	3.2	**3.3**

Table 3. Metrics and rankings for the Gulf of Mexico species prioritization based on projected impact of changes in recreational time series data on stock assessments.

Gulf of Mexico Region	MRIP AB1 (Number of Fish) Sum 2004-2011		Mean % Difference AB1 Catch		Mean % Difference B2 Catch		Relative Importance of Discards (B2 catch)		R2 Correlation Coefficient MRFSS and MRIP AB1		Avg % Recreational Landings (2004 - 2011)		Overall Priority Rank (higher values indicate greater priority)
Species	Value (1,000s)	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	Value	Rank	
gray snapper	8,189	9.4	-0.088	5.0	-0.047	3.1	0.099	8.8	0.904	6.9	91%	8.8	**7.0**
gray triggerfish	1,824	5.6	-0.105	6.3	-0.306	7.5	0.049	3.1	0.978	9.4	96%	9.4	**6.9**
greater amberjack	615	3.8	-0.111	6.9	-0.212	6.9	0.089	6.3	0.905	7.5	73%	6.9	**6.4**
mutton snapper	238	2.5	-0.398	8.1	-0.851	10.0	0.069	4.4	0.865	5.6	78%	7.5	**6.4**
red grouper	1,651	5.0	-0.118	7.5	0.025	2.5	0.115	10.0	0.983	10.0	20%	1.9	**6.1**
gag	2,862	7.5	-0.055	3.8	0.013	1.9	0.111	9.4	0.968	8.8	69%	5.6	**6.1**
red snapper	6,629	8.8	-0.046	2.5	-0.100	4.4	0.090	6.9	0.957	8.1	65%	5.0	**5.9**
cero	211	1.3	-0.466	10.0	-0.540	8.8	0.022	1.3	0.809	3.8	100%	10.0	**5.8**
bluefish	1,588	4.4	0.092	5.6	0.119	5.0	0.096	8.1	0.815	4.4	63%	4.4	**5.3**
black grouper	93	0.6	-0.453	9.4	-0.508	8.1	0.096	7.5	0.652	1.9	60%	3.8	**5.2**
dolphin	2,525	6.9	-0.415	8.8	-0.646	9.4	0.033	1.9	0.562	1.3	14%	0.6	**4.8**
spanish mackerel	12,780	10.0	0.055	4.4	0.003	0.6	0.069	3.8	0.714	2.5	69%	5.6	**4.5**
cobia	298	3.1	0.047	3.1	0.062	3.8	0.081	5.6	0.763	3.1	90%	8.1	**4.5**
vermilion snapper	2,937	8.1	-0.004	0.6	-0.176	5.6	0.020	0.6	0.831	5.0	14%	0.6	**3.4**
king mackerel	2,355	6.3	0.010	1.3	-0.003	1.3	0.047	2.5	0.895	6.3	41%	3.1	**3.4**
scamp	229	1.9	-0.026	1.9	0.204	6.3	0.080	5.0	0.534	0.6	28%	2.5	**3.0**

Technical Calibration Approach

Workshop participants recognized the importance of strong, clear guidelines regarding calibration methods and how and when the methods should be used. Stock assessment scientists do not want to be in the position of developing ad hoc calibration methods on a species-by-species and region-by-region basis. While more sophisticated and time-consuming calibration approaches were discussed, workshop participants reached consensus that, prior to 2004 (or whichever year is the first year for which direct re-estimates are available, since ST is still working on re-estimation for years prior to 2004), hind-casted catch data should use a straight-forward ratio estimator (i.e., MRFSS/MRIP), either constant throughout time hind-casted time series or trended based on ancillary information. A MRFSS/MRIP ratio estimator was also suggested to approximate adjusted variances associated with the revised catch estimates.

Use of a ratio estimator approach for calibrating from MFRSS to MRIP should not preclude development of more extensive species-specific approaches as warranted. However, for many assessed species the use of a simple ratio estimator may be sufficient considering the relatively small differences found between MRFSS and MRIP numbers, and more importantly the anticipated small impact the revised recreational time series will have on assessment outcomes. The reliability and confidence in using a ratio estimator will increase considerably as more years of re-estimated MRIP numbers become available. At present, only eight years of side-by-side MRFSS-MRIP estimates (2004-2011) are available to develop ratio estimators that for some species will be applied to 23 years of data (1981-2003). ST is currently working on revised estimates for 1998-2003 and may eventually go back even further depending on the availability and quality of original data sources.

The ad-hoc working group recommends the ratio estimator be based on the “ratio of means” (across all comparison years included) rather than based on the “mean of ratios” for individual years. Based on sampling theory, the ratio of means should be less biased and more stable than the "mean of ratios" (Cochran 1977)and it also represents the least-squares estimator for a slope in a zero-intercept model when the variance of y (the MRIP estimate in this case) is proportional to x (the MRFSS estimates in this case). The estimate of the calibration factor that is a ratio of mean catches is calculated as:

Formula A

$$\hat{R}_{RM} = \frac{\bar{C}_{\text{MRIP}}}{\bar{C}_{\text{MRFSS}}} = \frac{\sum_{y=1}^{n} \hat{C}_{y,\text{MRIP}}}{\sum_{y=1}^{n} \hat{C}_{y,\text{MRFSS}}}$$

Calibrated catch estimates for 1982-2003 are then calculated as:

Formula B

$$\hat{C}_{y,\hat{R}} = \hat{R}\hat{C}_{y,MRFSS}$$

The same formulas can also be applied for calibrating variances associated with MRFSS catch estimates.

Variances of the adjusted catch estimates should include two components: 1) calibrated variance of the catch estimate, and 2) variance associated with the ratio estimator used for calibrating the catch estimate. The variance estimator for the ratio of means derived from the formula above can be approximated as:

Formula C

$$\hat{V}\left(\hat{R}_{RM}\right) = \hat{R}_{RM}^2 \left[\frac{\hat{V}\left(\bar{C}_{MRIP}\right)}{\bar{C}_{MRIP}^2} + \frac{\hat{V}\left(\bar{C}_{MRFS}\right)}{\bar{C}_{MRFS}^2} - 2\frac{\hat{C}ov\left(\bar{C}_{MRFS}, \bar{C}_{MRIP}\right)}{\bar{C}_{MRFS}\bar{C}_{MRIP}} \right]$$

Where

$$\hat{V}\left(\bar{C}\right) = \frac{1}{n} \frac{\sum_{y=1}^{n} \left(\hat{C}_y - \bar{C}\right)^2}{n-1}$$

An estimate of the variance of the calibrated estimate of catch that accounts for uncertainty in the estimate of the calibration factor is calculated as:

Formula D

$$\hat{V}\left(\hat{C}_{y,\hat{R}}\right) = \hat{C}_{y,MRFSS}^2 \hat{V}\left(\hat{R}\right) + \hat{R}^2 \hat{V}\left(\hat{C}_{y,MRFSS}\right) - \hat{V}\left(\hat{R}\right)\hat{V}\left(\hat{C}_{y,MRFSS}\right)$$

This assumes the estimate of the ratio is independent of the estimate of the catch that is to be calibrated. The variances of the catches in the above equation, $\hat{V}\left(\hat{C}_{y,MRFSS}\right)$ are the values after being calibrated.

Ratio Estimator Approach Example – Summer Flounder

To show an example of the approach suggested above we will hind-casted summer flounder landings numbers (A+B1) estimates and variances for 2003 based on a comparison of 2004-2011 MRFSS and MRIP estimates. Table 4 shows summer flounder AB1 numbers estimates and associated variances for the eight years of MRFSS and MRIP side-by-side estimates.

Table 4. Virginia through Maine MRFSS and MRIP 2004-2011 summer flounder AB1 numbers estimates, variances, variance of means, and co-variances of means.

Year	MRFSS AB1 Numbers (in 1,000s)	MRFSS Variance (in 1,000s)	MRIP AB1 Numbers (in 1,000s)	MRIP Variance (in 1,000s)
2004	4,557	33,226	4,316	67,076
2005	4,110	42,230	4,028	58,396
2006	4,052	41,047	3,951	76,508
2007	3,393	18,420	3,109	34,795
2008	2,295	13,168	2,350	44,728
2009	1,910	9,120	1,807	16,001
2010	1,484	10,791	1,502	14,433
2011	1,782	25,722	1,830	21,439
Mean 2004-2011	2,948	24,215	2,862	41,672
Variance of the Mean	185,048	22,410,864	160,925	71,527,726
Co-variance of MRFSS and MRIP Means			150,486	28,832,853

Using the "ratio of means" approach (Formula A) the ratio estimator for landings numbers is calculated as:

= 2,862 / 2,948 = 0.970756

When this ratio is applied to the MRFSS 2003 estimate of 4,559 (X 1,000) the calibrated MRIP estimate is 4,425.7 (X 1,000).

Similarly, the ratio estimator for the landings estimate variance is calculated as:

= 41,672 / 24,215 = 1.7209

When this ratio is applied to the MRFSS 2003 variance of 33,255.2 (X 1,000) the calibrated MRIP variance is 57,228.4 (X 1,000).

The next step is to calculate the variance and PSE associated with the ratio estimator.
Using the Formula C provided above, the variance is approximated as:

= 0.9708^2 * (185,048 / 2,948^2 + 160,925 / 2,862^2 – 2 * 150,486 / (2,948 / 2,862))
= 0.004964

The PSE is calculated as:

= 100 * Sqrt (Variance) / (Mean)
= 100 * Sqrt (0.004964) / (0.9708)
= 7.3 %

Finally we calculate the variance and PSE associated with the calibrated landings estimates for each year (Formula D) as:

= (4,559^2 * 0.004964) + (0.9708^2 * 57,228.4) – (0.004964 * 57,228)
= 156,821.9

The PSE for the calibrated estimate is calculated as:

= 100 * Sqrt (Variance) / (Mean)
= 100 * Sqrt (156,821.9) / (4,425.7)
= 8.95 %

Table 5. Original MRFSS AB1 landings estimates, variances and PSEs alongside hind-casted MRIP AB1 landings estimates, variances, and PSEs for summer flounder from 1982-2003.

Year	MRFSS AB1 Numbers of Fish (in 1,000s)	MRFSS Variance (in 1,000s)	MRFSS PSEs	MRFSS AB1 Numbers (in 1,000s) with Ratio Adjustment	MRFSS Variance (in 1,000s) with Ratio Adjustment	Adjusted Variance with Ratio Estimator Variance Factor	Adjusted PSE with Ratio Estimator Variance Factor
1982	15,473	16,184,368	26	15,021	27,851,679	27,296,703	34.8
1983	20,996	2,160,077	7	20,383	3,717,276	5,672,877	11.7
1984	17,475	1,954,404	8	16,965	3,363,334	4,668,685	12.7
1985	11,066	1,763,372	12	10,743	3,034,586	3,452,504	17.3
1986	11,621	661,733	7	11,282	1,138,777	1,737,870	11.7
1987	7,865	154,646	5	7,635	266,130	556,535	9.8
1988	9,960	158,723	4	9,669	273,146	748,484	8.9
1989	1,717	10,613	6	1,667	18,264	31,755	10.7
1990	3,794	23,031	4	3,683	39,634	108,607	8.9
1991	6,068	58,913	4	5,891	101,383	277,815	8.9
1992	5,002	40,032	4	4,856	68,891	188,778	8.9
1993	6,494	67,475	4	6,304	116,118	318,192	8.9
1994	6,703	71,888	4	6,507	123,713	339,002	8.9
1995	3,326	17,700	4	3,229	30,459	83,466	8.9
1996	6,997	44,062	3	6,793	75,827	314,108	8.3
1997	7,167	82,185	4	6,958	141,433	387,560	8.9
1998	6,979	77,930	4	6,775	134,110	367,494	8.9
1999	4,107	26,988	4	3,987	46,444	127,266	8.9
2000	7,801	54,770	3	7,573	94,254	390,441	8.3
2001	5,294	44,842	4	5,139	77,169	211,462	8.9
2002	3,262	17,025	4	3,167	29,298	80,285	8.9
2003	4,559	33,255	4	4,426	57,229	156,821	8.9

Guidelines for Applying Ratio Estimator Approach

The ad-hoc working group recommends the following generally guidelines for applying a ratio estimator to calibrate recreational catch and variance estimates. These guidelines may not apply, or be practical, in all cases as the impact of changes in the recreational time series data will vary by assessment or particular management need:

- Ratio estimators should be calculated using stock level aggregate data to the extent possible. Caution should be used when calculating ratio estimates at finer geographic levels or by fishing mode.
- Ratio estimators can be based on either estimated numbers of fish or weights depending on which units are used directly in the assessment model. The exception may be if ratios based on weights appear unstable due to small sample sizes of weighed fish. In such cases it may be better to calculate a ratio estimator based on numbers and apply it to the weights.
- To the extent practicable, all years for which both MRFSS and MRIP estimates are available should be used to calculate ratios. If one or two years have ratios that are different enough from the other years so as to noticeably impact the overall ratio of means, a balanced trimmed mean approach which removes both the highest and lowest ratios is preferred over simply removing just the highest or lowest year.
- Trended ratio estimators are generally not recommended at present since only eight years are available for comparison. The basic ratio estimator itself could behave poorly with very few years of paired MRFSS and MRIP observations. As additional years of side-by-side estimates are made available bias in the ratio estimator will become negligible and it may be possible to develop trended ratio estimators that better reflect different MRFSS/MRIP ratios at different parts of the time series.
- It is recommended that stock assessment scientists conduct sensitivity analyses of the hind-casted recreational catch estimates (e.g., varying them by 5, 10, 20%) and length frequencies, as available, in order to gauge the overall impact of changes in the estimates on biological reference points. If the assessment results are sensitive to changes in the recreational time series there may be justification for developing more sophisticated models for hind-casting estimates than the ratio estimator approach suggested here.
- The ad-hoc working group did not fully evaluate a ratio estimator approach for calibrating length

frequencies as data were not available at the time of this report. The group did come up with two possible options but also recognized that other options may exist: 1) Adjust the numbers at length using the same ratio as used for total numbers, or 2) Estimate length-class specific ratios and adjust by length class, then sum the adjusted length classes for an alternative adjusted total number.

References

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Appendix E.

1 Bycatch Practicability Analysis (BPA)

1.1 Population Effects for the Bycatch Species

Background

Regulatory Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13) revises the acceptable biological catch estimates (ABCs), annual catch limits (ACLs, including sector ACLs), and annual catch targets (ACTs) implemented through the Comprehensive ACL Amendment (SAFMC 2011c), for 37 un-assessed species in the snapper grouper fishery management unit (FMU). There are 60 species in the snapper grouper FMU, many of which co-exist with each other, and are encountered by fishers. Therefore, this BPA includes landings and discard information for species in addition to the 37 species considered in Regulatory Amendment 13 (see **Table 1**).

Most of the species in the snapper grouper FMU are taken with hook and line gear (see **Chapter 3**). Black sea bass are predominantly taken with pots; whereas, longline gear has been the predominant gear type used to capture golden tilefish. **Appendix B** contains the history of management for species in the Snapper Grouper FMP, including changes in gear, size limits, trip limits, seasonal closures, etc.

During 2007-2011, total landings and discards for the 37 un-assessed snapper grouper species in Regulatory Amendment 13 were lower than those for the snapper grouper species not included in the amendment, for both the commercial and recreational sectors (**Table 1**). For all species in the snapper grouper FMU, total number of discards for the commercial sector were lower than the recreational sector (both "private" and "for-hire" headboat/charterboat categories) (**Table 1**).

Commercial Sector

During 2007-2011, regulations (50 C.F.R. § 622.5) required participants in the South Atlantic snapper grouper fishery who were selected by the Science and Research Director (SRD) to maintain and submit a fishing record on forms provided by the SRD. Fishermen in the snapper grouper fishery were also required to submit logbooks with trip and effort information. In the Snapper Grouper FMP, landings (pounds whole weight, lbs ww) during 2007-2011 were dominated by vermilion snapper (1,086,090), yellowtail snapper (949,257), greater amberjack (796,063), gag (592,108), black sea bass (489,471), red grouper (480,195), gray triggerfish (427,642), and golden tilefish (372,466) (**Table 1**). Commercial discards during 2007-2011 were highest for yellowtail snapper (128,323), followed by gray snapper (74,887), vermilion snapper (36,825), red porgy (27,671), and black sea bass (20,132) (**Table 1**).

Currently, discard data are collected using a supplemental form that is sent to a 20% stratified random sample of the active permit holders in the snapper grouper fishery. However, in the absence of any observer data, there are concerns about the accuracy of logbook data in collecting bycatch information. Biases associated with logbooks primarily result from inaccuracy in reporting of species that are caught in large numbers or are of little economic interest (particularly of bycatch species), and from low compliance rates. Actions that could help resolve

some of these issues are currently being considered in amendments being developed by the South Atlantic Fishery Management Council (South Atlantic Council).

Recreational Sector

For the recreational sector during 2007-2011, estimates of the number of recreational discards were available from Marine Recreational Fisheries Statistical Survey (MRFSS) and the NMFS headboat survey. The MRFSS system classified recreational catch into three categories:

- Type A - Fishes that were caught, landed whole, and available for identification and enumeration by the interviewers.

- Type B - Fishes that were caught but were either not kept or not available for identification:

    - Type B1 - Fishes that were caught and filleted, released dead, given away, or disposed of in some way other than Types A or B2.

    - Type B2 - Fishes that were caught and released alive.

During 2007-2011, "for-hire" vessels for the snapper grouper fishery were selected to report by the SRD to maintain a fishing record for each trip, or a portion of such trips as specified by the SRD, and on forms provided by the SRD. Furthermore, the owner or operator of a vessel for which a charter vessel/headboat permit for South Atlantic snapper-grouper has been issued, who was selected to report by the SRD must participate in the NMFS-sponsored electronic logbook and/or video monitoring reporting program as directed by the SRD. Harvest and bycatch information was monitored by MRFSS. Since 2000, a 10% sample of charter vessel captains were called weekly to obtain trip level information. In addition, the standard dockside intercept data were collected from charter vessels and charter vessel clients were sampled through the standard random digital dialing of coastal households. Precision of charter vessel effort estimates has improved by more than 50% due to these changes (Van Voorhees *et al.* 2000).

Following an independent review by the National Research Council and a mandate from Congress, NMFS has overhauled MRFSS. The Marine Recreational Information Program (MRIP) was developed to provide more accurate recreational catch estimates. Samples under MRIP are drawn from a known universe of fishermen rather than randomly dialing coastal households. Other improvements have been and will be made that should result in better estimating recreational catches and the variances around those catch estimates. For this BPA, recreational data from 2007 to 2011 is obtained from MRIP data from Southeast Fisheries Science Center (SEFSC) Recreational ACL Dataset (October 2012) Recreational MRIP data includes official MRIP 2004-2011 re-estimates and ratio-estimated MRIP catches (1986-2003).

Harvest from headboats was monitored by NMFS at the SEFSC Beaufort Laboratory. Collection of discard data began in 2004. Daily catch records (trip records) were filled out by the headboat operators, or in some cases by NMFS approved headboat samplers based on personal communication with the captain or crew. Headboat trips were subsampled for data on species lengths and weights. Biological samples (scales, otoliths, spines, reproductive tissues, and

stomachs) were obtained as time allowed. Lengths of discarded fish were occasionally obtained but these data were not part of the headboat database.

The recreational sector can be further categorized into "private" and "for-hire" (headboat/charterboat) categories. During 2007-2011, private recreational landings (numbers of fish) for species in the Snapper Grouper FMP were dominated by blue runner (648,272), followed by gray snapper (320,071), black sea bass (303,905), white grunt (249,451), yellowtail snapper (197,021), and gray triggerfish/Atlantic spadefish (119,986/119,977) (**Table 1**). During 2007-2011, discards (numbers of fish) for snapper grouper species in the private recreational sector were highest for black sea bass (2,414,933), followed by gray snapper (1,303,945), blue runner (751,315), white grunt (638,048), tomtate (302,173), yellowtail snapper (230,731), and mutton snapper (177,604) (**Table 1**). For the same time period, the "for-hire" category (headboat/charterboat) targeted slightly different species in the snapper grouper FMU. Landings (headboat/charterboat) were highest for vermilion snapper/black sea bass (253,588/75,763), followed by white grunt (163,893/40,649), and yellowtail snapper/gray triggerfish (95,882/40,356) (**Table 1**). Discards in the headboat/charterboat categories were highest for black sea bass (333,521/177,846), followed by vermilion snapper (114,683/32,708), tomtate/white grunt (73,439/19,002), and yellowtail snapper/blue runner (32,646/15,444) (**Table 1**).

Table 1. Mean headboat, MRIP charter and private, and commercial estimates of landings and discards for species in the snapper grouper (S-G) fishery management unit in the U.S. southern Atlantic Ocean from 2007 to 2011. Headboat, MRIP charter and private landings are in numbers of fish (N); commercial landings are in pounds whole weight (lbs ww).

Name of stock or stock complex	Headboat				MRIP Charter				MRIP Private				Commercial	
	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Landings (lbs ww)	Discards (N)
Deepwater complex														
Yellowedge grouper	12	9	3	24%	45	45	0	0%	221	221	0	0%	19,438	0
Blueline tilefish	1,732	1,709	23	1%	34,611	27,729	6,881	20%	10,809	9,851	958	9%	309,825	2
Silk Snapper	1,187	1,080	107	9%	1,646	1,475	171	10%	868	255	613	71%	12,559	1
Misty grouper	1	1	0	0%	0	0	0	0%	0	0	0	0%	1,765	0
Sand tilefish	1,348	903	444	33%	6,163	525	5,638	91%	24,397	5,769	18,628	76%	813	227
Queen snapper	0	0	0	0%	5	5	0	0%	0	0	0	0%	5,080	2
Black snapper	0	0	0	0%	0	0	0	0%	0	0	0	0%	147	32
Blackfin snapper	124	60	63	51%	259	259	0	0%	5,625	5,625	0	0%	1,567	1
Jacks complex														
Almaco jack	4,162	3,806	356	9%	3,788	2,660	1,128	30%	8,814	4,329	4,485	51%	204,945	106
Banded rudderfish	18,992	16,771	2,221	12%	5,559	3,829	1,729	31%	14,929	4,604	10,325	69%	53,262	739
Lesser amberjack	216	211	5	2%	62	62	0	0%	1,965	1,965	0	0%	15,268	110
Snappers complex														
Gray snapper	43,494	38,141	5,353	12%	7,291	6,142	1,149	16%	1,624,017	320,071	1,303,945	80%	109,225	74,887
Lane snapper	22,610	19,297	3,313	15%	4,988	3,661	1,327	27%	204,274	55,511	148,762	73%	4,105	697
Cubera snapper	452	425	28	6%	21	21	0	0%	4,178	3,904	275	7%	5,774	0
Dog snapper	89	60	29	32%	196	196	0	0%	3,954	3,575	379	10%	431	0
Mahogany snapper	32	31	2	6%	0	0	0	0%	853	853	0	0%	38	819
Grunts complex														
White grunt*	194,234	163,893	30,341	16%	59,651	40,649	19,002	32%	887,499	249,451	638,048	72%	149,521	564
Sailors choice	89	84	5	6%	1,249	69	1,180	94%	50,916	20,391	30,525	60%	0	0
Tomtate	122,805	49,366	73,439	60%	21,934	16,652	5,283	24%	420,317	118,144	302,173	72%	511	2,622
Margate	1,240	822	419	34%	129	30	99	77%	20,936	13,080	7,856	38%	3,494	29

Name of stock or stock complex	Headboat				MRIP Charter				MRIP Private				Commercial	
	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Landings (lbs ww)	Discards (N)
Shallow water groupers complex														
Red hind	667	600	67	10%	210	51	158	76%	4,239	1,985	2,254	53%	11,883	147
Rock hind	2,820	2,312	508	18%	122	94	27	23%	5,127	2,072	3,055	60%	20,289	7
Yellowmouth grouper	69	62	7	10%	167	167	0	0%	1,792	1,792	0	0%	54	0
Yellowfin grouper	72	59	13	18%	0	0	0	0%	0	0	0	0%	5,701	6
Coney	172	102	70	41%	98	57	41	42%	2,634	1,789	845	32%	48	4
Graysby	4,414	3,642	772	17%	843	737	106	13%	8,336	3,137	5,200	62%	239	13
Porgies complex														
Jolthead porgy	7,739	7,577	161	2%	1,936	1,936	0	0%	11,444	11,066	378	3%	2,586	4
Knobbed porgy	6,280	6,193	87	1%	992	992	0	0%	5,209	2,717	2,493	48%	26,042	0
Saucereye porgy	324	323	1	0%	95	95	0	0%	424	424	0	0%	0	0
Scup	12,284	10,176	2,109	17%	125	90	35	28%	1,485	1,003	482	32%	0	0
Whitebone porgy	5,064	4,809	256	5%	1,830	1,782	49	3%	10,039	9,085	954	10%	18	17
Individual stocks														
Atlantic spadefish	162	133	29	18%	298	227	71	24%	271,647	119,977	151,670	56%	27,280	0
Blue runner	15,984	13,091	2,893	18%	28,139	12,695	15,444	55%	1,399,587	648,272	751,315	54%	208,772	1,155
Bar jack	235	188	47	20%	601	189	412	69%	11,961	2,933	9,028	75%	4,661	9
Gray triggerfish*	68,648	58,654	9,995	15%	48,945	40,356	8,588	18%	255,833	119,986	135,847	53%	427,642	2,091
Scamp	9,333	6,084	3,249	35%	6,432	4,393	2,038	32%	15,179	7,123	8,056	53%	281,807	2,723
Hogfish	354	264	91	26%	41	37	4	9%	33,770	30,221	3,549	11%	50,396	265
Total (species in Reg. Am. 13)	**547,442**	**410,937**	**136,505**		**238,471**	**167,910**	**70,560**		**5,323,276**	**1,781,181**	**3,542,095**		**1,965,183**	**87,281**
S-G species not in Reg. Am. 13	**Headboat**				**MRIP Charter**				**MRIP Private**				**Commercial**	
	Catch (N)	**Landings (N)**	**Discards (N)**	**Discards (%)**	**Catch (N)**	**Landings (N)**	**Discards (N)**	**Discards (%)**	**Catch (N)**	**Landings (N)**	**Discards (N)**	**Discards (%)**	**Landings (lbs ww)**	**Discards (N)**
Bank sea bass	6,009	6,009	0	0%	2,728	550	2,178	80%	11,322	2,651	8,672	77%	431	0

Name of stock or stock complex	Headboat				MRIP Charter				MRIP Private				Commercial	
	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Catch (N)	Landings (N)	Discards (N)	Discards (%)	Landings (lbs ww)	Discards (N)
Black grouper	1,551	464	1,086	70%	501	389	112	22%	15,115	2,962	12,153	80%	59,427	3,031
Black sea bass	511,148	177,627	333,521	65%	253,609	75,763	177,846	70%	2,718,839	303,905	2,414,933	89%	489,471	20,132
Cottonwick	22	22	0	0%	0	0	0	0%	0	0	0	0%	0	0
Gag	8,633	3,736	4,897	57%	8,085	3,787	4,298	53%	150,501	25,430	125,072	83%	592,108	9,185
Golden tilefish	0	0	0	0%	932	932	0	0%	3,522	3,522	0	0%	372,466	16
Greater amberjack	6,232	4,239	1,994	32%	24,150	19,259	4,891	20%	56,083	20,988	35,095	63%	796,063	3,692
Longspine porgy	18	18	0	0%	11,423	11,423	0	0%	389	389	0	0%	13	0
Mutton snapper	17,572	13,984	3,588	20%	19,038	10,757	8,280	43%	291,123	113,519	177,604	61%	77,400	4,089
Ocean triggerfish	202	202	0	0%	382	300	82	22%	7,428	3,418	4,011	54%	0	0
Red grouper	11,109	2,374	8,735	79%	14,415	6,766	7,649	53%	93,235	44,063	49,171	53%	480,195	6,793
Red porgy	56,191	34,003	22,189	39%	24,792	14,996	9,796	40%	38,511	22,964	15,546	40%	179,256	27,671
Rock sea bass	0	0	0	0%	592	295	297	50%	9,190	2,945	6,245	68%	648	0
Schoolmaster	326	326	0	0%	8	8	0	0%	13,527	7,971	5,555	41%	231	0
Snowy grouper	139	95	44	32%	1,843	1,574	269	15%	1,080	893	187	17%	93,418	270
Vermilion snapper	368,271	253,588	114,683	31%	79,351	46,643	32,708	41%	205,807	85,100	120,707	59%	1,086,090	36,825
Yellowtail snapper	128,528	95,882	32,646	25%	31,652	25,573	6,079	19%	427,752	197,021	230,731	54%	949,257	128,323
Total (S-G species not in Reg. Am. 13)	**1,115,952**	**592,567**	**523,384**		**473,500**	**219,014**	**254,486**		**4,043,423**	**837,741**	**3,205,682**		**5,176,473**	**240,028**
Total (all S-G species)	**1,663,393**	**1,003,504**	**659,889**		**711,971**	**386,924**	**325,047**		**9,366,700**	**2,618,922**	**6,747,778**		**7,141,657**	**327,308**

Sources: MRIP data from SEFSC Recreational ACL Dataset (October 2012), Headboat data from SEFSC Headboat Logbook CRNF files (expanded; July 2012), Commercial landings data from SEFSC Commercial ACL Dataset (July 2012), with discard estimates from expanded SEFSC Commercial Discard Logbook (July 2012).

Note: Commercial discard estimates are for vertical line gear only. Recreational MRIP data includes official MRIP 2004-2011 re-estimates and ratio-estimated MRIP catches (1986-2003).

*Commercial gray triggerfish includes "triggerfishes, unclassified" category; commercial white grunt includes "grunts, unclassified" category.

Goliath grouper, Nassau grouper, Warsaw grouper, Speckled hind, and Red snapper are excluded from **Table 1** since they are prohibited species, and landings records are not available for all the years 2007-2011. Wreckfish landings are confidential.

Finfish Bycatch Mortality

Release mortality rates are unknown for most managed species, and as of this writing, there are no stock assessments for the 37 species in Regulatory Amendment 13. Recent Southeast Data, Assessment, and Review (SEDAR) assessments include estimates of release mortality rates based on published studies. Stock assessment reports can be found at http://www.sefsc.noaa.gov/sedar/.

SEDAR 17 (2008) recommended a release mortality rate for vermilion snapper of 38% for both the commercial and recreational sectors. An update to the stock assessment for vermilion snapper in 2012 recommended a release mortality rate of 41% for the commercial and 38% for the headboat and private recreational sectors (SEDAR Update Assessment 2012a). Release mortality of black sea bass is considered to be low (7% for the recreational sector and 1% for the commercial sector) (SEDAR 25; 2011) indicating minimum size limits are probably an effective management tool for black sea bass. Collins et al. (1999) reported venting of the swim bladder yielded reductions in release mortality of black sea bass, and the benefits of venting increased with capture depth. The same study was analyzed by Wilde (2009) to suggest that venting increased the survival of black sea bass, although this was an exception to the general findings of Wilde's (2009) study. SEDAR 15 (2008) estimated a 20% release mortality rate for greater amberjack. In the Gulf of Mexico, SEDAR 9 (2006) assumes a 0% release mortality rate for gray triggerfish. An update to the stock assessment for red porgy in 2012 used a release mortality rate of 35% for the commercial and headboat sectors, and 8% for the private recreational sector (SEDAR Update Assessment 2012b). The most recent stock assessment for yellowtail snapper in the South Atlantic used a release mortality of 11.5% for the commercial sector and 10% for the recreational sector (O'Hop et al. 2012). SEDAR 10 (2006) estimated release mortality rates of 40% and 25% for gag taken by commercial and recreational fishermen, respectively. SEDAR 24 (2010) used release mortality rates of 48% commercial; 41% for-hire, and 39% private recreational for red snapper. Release mortality rates were estimated as 20% for black grouper and red grouper in SEDAR 19 (2010). Snowy grouper are primarily caught in water deeper than 300 feet and golden tilefish are taken at depths greater than 540 feet; therefore, release mortality of the species are probably near 100% (SEDAR 4; 2004).

Practicability of Management Measures in Directed Fisheries Relative to their Impact on Bycatch and Bycatch Mortality

The snapper grouper fishery represents many species occupying the same location at the same time. Fishermen could harvest one of these species when targeting others and may return them to the water as "regulatory discards" (e.g., if the fish is under the size limit) or if undesirable. Consequently, a portion of the population would not survive. Discards for species in the snapper grouper FMU are shown in **Table 1** for both the commercial and recreational sectors, and release mortality of species with stock assessments are discussed in the section above.

Although fishery management actions can adversely impact non-target species, the proposed action in Regulatory Amendment 13 is not anticipated to increase bycatch of snapper-grouper species. As shown in **Tables 2-1** through **2-5** and discussed in detail in **Chapter 4** of Regulatory

Amendment 13, the biological, economic, social, and administrative impacts of **Alternative 2** would not differ much from **Alternative 1 (No Action)**. **Alternative 1 (no action)** would retain the ABCs, ACLs (including sector ACLs), and ACTs that were analyzed and implemented by the Comprehensive ACL Amendment (SAFMC 2011c). **Alternative 2 (Preferred)** would simply update ABCs, ACLs (including sector ACLs), and ACTs using the data described in **Section 1.5** of Regulatory Amendment 13.

Other actions have been taken in recently implemented amendments that could reduce the magnitudes of species addressed in Regulatory Amendment 13. Amendment 13C to the Snapper Grouper FMP (SAFMC 2006) required the use of 2" mesh in the back panel of black sea bass pots, which has likely reduced the magnitude of regulatory discards. Amendment 14 to the Snapper Grouper FMP (SAFMC 2007) established 8 marine protected areas for snapper grouper species where harvest and possession of snapper grouper species is prohibited. Amendment 15B to the Snapper Grouper FMP (SAFMC 2008b) implemented an action that could reduce the impacts from incidental bycatch of sea turtles and smalltooth sawfish. Seasonal closures of both commercial and recreational fisheries implemented by Amendment 16 to the Snapper Grouper FMP (Amendment 16; SAFMC 2009a) could also reduce bycatch mortality of snapper grouper species. Other actions in Amendment 16, which could reduce bycatch of snapper grouper species, include a reduction in the recreational bag limit to 1 gag or black grouper (combined) per day within a grouper aggregate bag limit of 3 fish and the establishment of a commercial quota for gag. When the commercial quota is met, all fishing for or possession of shallow water grouper species will be prohibited. Unobserved mortality due to predation or trauma associated with capture could be substantial (Burns *et al.* 2002; Rummer and Bennett 2005; St. John and Syers 2005; Parker *et al*. 2006; Rudershausen *et al.* 2007; Hannah *et al.* 2008; Diamond and Campbell 2009). Amendment 16 also included actions that required the use of dehooking devices, which could help reduce bycatch of vermilion snapper, black sea bass, gag, red grouper, black grouper, and red snapper. Dehooking devices can allow fishermen to remove hooks with greater ease and more quickly from snapper grouper species without removing the fish from the water. If a fish does need to be removed from the water, dehookers could still reduce handling time in removing hooks, thus increasing survival (Cooke *et al.* 2001).

Amendment 17A to the Snapper Grouper FMP (Amendment 17A; SAFMC 2010a) implemented regulations requiring the use of non-stainless circle hooks north of 28 degrees N. latitude, effective March 2, 2011**.** Circle hooks are generally thought to reduce discard mortality rate for red snapper (SEDAR 7 2005; Rummer 2007); however, Burns *et al*. (2004) did not observe decreased discard mortality rate when comparing recapture rates of red snapper caught on circle and J-hooks. Rummer (2007), and Diamond and Campbell (2009) found that a greater differential between the surface and bottom temperature caused a higher discard mortality rate for red snapper. Amendment 17B to the Snapper Grouper FMP (Amendment 17B; SAFMC 2010b) established ACLs and accountability measures (AMs) and address overfishing for eight species in the snapper grouper management complex currently listed as undergoing overfishing: golden tilefish, snowy grouper, speckled hind, warsaw grouper, black sea bass, gag, red grouper, and vermilion snapper, in addition to black grouper. ACLs and management measures implemented by Amendments 17A and 17B limited harvest of ten snapper grouper species and could help reduce discard mortality of co-occurring species.

The Comprehensive ACL Amendment (SAFMC 2011c) implemented ACLs and AMs for species not undergoing overfishing in four fishery management plans, in addition to other actions such as allocations and establishing annual catch targets for the recreational sector. The Comprehensive ACL Amendment also established additional measures to reduce bycatch in the snapper grouper fishery with the establishment of species complexes based on biological, geographic, economic, taxonomic, technical, social, and ecological factors. ACLs were assigned to these species complexes, and when the ACL for the complex is met or projected to be met, fishing for species included in the entire species complex is prohibited for the fishing year. ACLs and AMs will likely reduce bycatch of target species and species complexes as well as incidentally caught species.

Amendment 18A to the Snapper Grouper FMP (Amendment 18A; SAFMC 2012a) contained measures to limit participation and effort for black sea bass. As shown in **Table 1** of this BPA, discards for black sea bass were very high for both the commercial and recreational sectors. Amendment 18A established an endorsement program than enables snapper grouper fishermen with a certain catch history to harvest black sea bass with pots. In addition, Amendment 18A included measures to reduce bycatch in the black sea bass pot fishery, modified the rebuilding strategy, and other necessary changes to management of black sea bass as a result of a 2011 stock assessment (SEDAR-25). Amendment 24 to the Snapper Grouper FMP (Amendment 24; SAFMC 2011d) established a rebuilding plan for red grouper, which is overfished and undergoing overfishing. Amendment 24 also established ACLs and AMs for red grouper, which could help to reduce bycatch of red grouper and co-occurring species.

Additional information on fishery related actions from the past, present, and future considerations can be found in **Chapter 5** (Cumulative effects) of this document.

1.2 Ecological Effects Due to Changes in the Bycatch

The ecological effects of bycatch mortality are the same as fishing mortality from directed fishing efforts. If not properly managed and accounted for, either form of mortality could potentially reduce stock biomass to an unsustainable level. Regulatory Amendment 13 would update the existing ABCs, ACLs (including sector ACLs), and ACTs for 37 un-assessed snapper grouper species. Management measures that affect gear and effort for a target species can influence fishing mortality in other species. Ecological effects due to changes in the bycatch resulting from the action in Regulatory Amendment 13 would likely be small.

1.3 Changes in the Bycatch of Other Fish Species and Resulting Population and Ecosystem Effects

Regulatory Amendment 13 is not expected to affect major changes in bycatch of other fish species. Regulatory Amendment 13 incorporates MRIP landings rather than MRFSS into the ABCs and ACLs. The percent differences in the revised ABCs and ACLs in Regulatory Amendment 13 are relatively small compared to status quo levels. The primary effect of the preferred alternative in Regulatory Amendment 13 is to more accurately represent fishing effort

for the snapper grouper species addressed by the amendment. As a result, AMs are more likely to be triggered when needed, and the chances of triggering an AM when it is not needed would be reduced relative to the status quo. Furthermore, negligible biological or ecosystem effects are expected under the preferred alternative for Regulatory Amendment 13.

The intent of Regulatory Amendment 13 is to include the best scientific information available, and to prevent unnecessary negative socio-economic impacts that may otherwise be realized in the snapper grouper fishery and fishing community, in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act), and to ensure the use of best available science as per National Standard 2.

1.4 Effects on Marine Mammals and Birds

Under Section 118 of the Marine Mammal Protection Act (MMPA), NMFS must publish, at least annually, a List of Fisheries (LOF) that places all U.S. commercial fisheries into one of three categories based on the level of incidental serious injury and mortality of marine mammals that occurs in each fishery. Of the gear utilized within the snapper grouper fishery, only the black sea bass pot is considered to pose an entanglement risk to marine mammals. The southeast U.S. Atlantic black sea bass pot sector is included in the grouping of the Atlantic mixed species trap/pot sectors, which the 2012 LOF classifies as a Category II (76 FR 73912; November 26, 2011). Gear types used in these fisheries are determined to have occasional incidental mortality and serious injury of marine mammals. For the South Atlantic snapper grouper fishery, the best available data on protected species interactions are from the SEFSC Supplementary Discard Data Program (SDDP) initiated in July of 200. The SDDP sub-samples 20% of the vessels with an active permit. Since August 2001, only three interactions with marine mammals have been documented; each was taken by handline gear and each released alive (McCarthy SEFSC database). The longline and hook-and-line gear components of the snapper-grouper in the South Atlantic are classified in the 2012 LOF (76 FR 73912; November 26, 2011) as Category III fisheries.

Although the black sea bass pot sector can pose an entanglement risk to large whales due to their distribution and occurrence, sperm, fin, sei, and blue whales are unlikely to overlap with the black sea bass pot fishery operated within the snapper grouper fishery since it is executed primarily off North Carolina and South Carolina in waters ranging from 70-120 feet deep (21.3-36.6 meters). There are no known interactions between the black sea bass pot fishery and large whales. NMFS's biological opinion on the continued operation of the South Atlantic snapper grouper fishery determined the possible adverse effects resulting from the fishery are extremely unlikely. Thus, the continued operation of the snapper grouper fishery in the southeast U.S. Atlantic exclusive economic zone is not likely to adversely affect sperm, fin, sei, and blue whales (NMFS 2006).

North Atlantic right and humpback whales may overlap both spatially and temporally with the black sea bass pot sector. Revisions to the Atlantic Large Whale Take Reduction Plan have folded the Atlantic mixed species trap/pot sectors into the plan (72 FR 193; October 5, 2007).

The requirements will help further reduce the likelihood of North Atlantic right and humpback whale entanglement in black sea bass pot gear.

Observer data and vessel logbooks indicate that pelagic longline fishing for Atlantic swordfish and tunas results in catch of non-target finfish species such as bluefin tuna, billfish, and undersized swordfish, and of protected species, including threatened and endangered sea turtles. Also, this fishing gear incidentally hooks marine mammals and sea birds during tuna and swordfish operations.

The Bermuda petrel and roseate tern occur within the action area. Bermuda petrels are occasionally seen in the waters of the Gulf Stream off the coasts of North Carolina and South Carolina during the summer. Sightings are considered rare and only occurring in low numbers (Alsop 2001). Roseate terns occur widely along the Atlantic coast during the summer but in the southeast region, they are found mainly off the Florida Keys (unpublished USFWS data). Interaction with fisheries has not been reported as a concern for either of these species.

Fishing effort reductions have the potential to reduce the amount of interactions between the fishery and marine mammals and birds. Although, the Bermuda petrel and roseate tern occur within the action area, these species are not commonly found and neither has been described as associating with vessels or having had interactions with the snapper grouper fishery. Thus, it is believed that the snapper grouper or coastal migratory pelagic fisheries are not likely to negatively affect the Bermuda petrel and the roseate tern.

Additionally, the establishment of commercial and recreational ACLs for species in the Snapper Grouper FMP in April 2012, through the Comprehensive ACL Amendment (SAFMC 2011c) could reduce or cap bycatch mortality on protected species, including marine mammals and birds.

1.5 Changes in Fishing, Processing, Disposal, and Marketing Costs

The action in Regulatory Amendment 13 is not expected to change existing procedures and mechanisms that were implemented by the Comprehensive ACL Amendment (SAFMC 2011c). Therefore, additional costs related to fishing, processing, disposal, and marketing of the species affected by Regulatory Amendment 13 are not expected (see economic effects in **Chapter 4** and **Appendix F** for the Regulatory Impact Review). Economic effects of the action proposed in Regulatory Amendment 13 are addressed in **Chapter 4**, as well as the Regulatory Flexibility Act Analysis (**Appendix G**).

1.6 Changes in Fishing Practices and Behavior of Fishermen

The implementation of Regulatory Amendment 13 would not result in a modification of fishing practices by commercial and recreational fishermen, and are likely to have little effect on the magnitude of discards. Social effects of actions proposed in Regulatory Amendment 13 are

addressed in **Chapter 4** of this document. **Section 3.3.3** includes information on environmental justice.

1.7 Changes in Research, Administration, and Enforcement Costs and Management Effectiveness

Research and monitoring is ongoing to update data in Regulatory Amendment 13 and other recently implemented amendments to reduce bycatch. As data are collected, the effectiveness of measures in recently implemented amendments, and by future actions being proposed by the South Atlantic Council to reduce bycatch can be evaluated. Some observer information has recently been provided by MARFIN and Cooperative Research Programs, but more is desired. In 1990, the SEFSC initiated a logbook program for vessels with federal permits in the snapper grouper fishery from the Gulf of Mexico and South Atlantic. Approximately 20% of commercial fishermen are asked to fill out discard information in logbooks; however, a greater percentage of fishermen could be selected with emphasis on individuals that dominate landings. The SEFSC is developing electronic logbooks, which could be used to enable fishery managers to obtain information on species composition, size distribution, geographic range, disposition, and depth of fishes that are released. Electronic logbook reporting is in place for headboats in the southeast, which is expected to improve the quality of data in that sector. Further, the South Atlantic Council is developing an amendment that could require vessel monitoring systems for snapper grouper vessels, which would be expected to improve data quality.

Cooperative research projects between science and industry are being used to a limited extent to collect bycatch information on the snapper grouper fishery in the South Atlantic. For example, Stephen and Harris (2010) characterized the entire (retained and discarded) catch of reef fishes from a selected commercial fisherman in the South Atlantic including total catch composition and disposition of fishes that were released. The Gulf and South Atlantic Fisheries Foundation, Inc. conducted a fishery observer program within the snapper grouper vertical hook-and-line (bandit rig) fishery of the South Atlantic United States. Through contractors they randomly placed observers on cooperating vessels to collect a variety of data quantifying the participation, gear, effort, catch, and discards within the fishery.

In the spring 2010, Archipelago Marine Research Ltd. worked with North Carolina Sea Grant and several South Atlantic Unlimited Snapper Grouper Permit holders to test the effectiveness of electronic video monitoring to measure catch and bycatch. A total of 93 trips were monitored with video monitoring, 34 by self-reported fishing logbooks, and 5 by observers. Comparisons between electronic video monitoring data and observer data showed that video monitoring was a reliable source of catch and bycatch data.

Research funds for observer programs, as well as gear testing and testing of electronic devices are also available each year in the form of grants from the Foundation, Marine Fisheries Initiative (MARFIN), Saltonstall-Kennedy (S-K) program, and the CRP. Efforts are made to emphasize the need for observer and logbook data in requests for proposals issued by granting agencies. A condition of funding for these projects is that data are made available to the Councils and NMFS upon completion of a study.

Additional administrative and enforcement efforts would help to implement and enforce fishery regulations. NMFS established the South East Fishery-Independent Survey in 2010 to strengthen fishery-independent sampling efforts in southeast US waters, addressing both immediate and long-term fishery-independent data needs, with an overarching goal of improving fishery-independent data utility for stock assessments. Meeting these data needs is critical to improving scientific advice to the management process, ensuring overfishing does not occur, and successfully rebuilding overfished stocks on schedule.

1.8 Changes in the Economic, Social, or Cultural Value of Fishing Activities and Non-Consumptive Uses of Fishery Resources

The preferred management measure, and any changes in economic, social, or cultural values are discussed in **Chapter 4** of Regulatory Amendment 13.

1.9 Changes in the Distribution of Benefits and Costs

The distribution of benefits and costs expected from the action in Regulatory Amendment 13 are expected to be negligible and discussed in **Chapter 3**. Economic and social effects of the action proposed in Regulatory Amendment 13 are addressed in **Chapter 4**.

1.10 Social Effects

The social effects of all the measures are described in **Chapter 4** of Regulatory Amendment 13.

1.11 Conclusion

This section evaluates the practicability of taking additional action to minimize bycatch and bycatch mortality using the ten factors provided at 50 CFR 600.350(d)(3)(i). In summary, measures proposed in Regulatory Amendment 13 are intended to revise the ABCs, ACLs (including sector ACLs), and annual catch targets implemented by the Comprehensive ACL Amendment (SAFMC 2011 c) for 37 un-assessed snapper-grouper species using the best scientific information available. Relative to the status quo, very little change in bycatch of snapper grouper species is expected from the implementation of Regulatory Amendment 13.

Recreational landings are now based on the new MRIP survey rather than MRFSS. However, the Comprehensive ACL Amendment used information from MRFSS in the determination of the ACLs. The revisions in Regulatory Amendment 13 update ACLs using MRIP data to prevent a disjunction between the ACLs and on landings data to determine if AMs are triggered. The primary effect of the preferred alternative in Regulatory Amendment 13 is more accurately represent the fishing effort for the snapper grouper species addressed by the amendment. As a result, AMs are more likely to be triggered when needed, and the chances of triggering an AM when it is not needed would be reduced relative to the status quo. Furthermore, negligible

biological or ecosystem effects are expected under the preferred alternative for Regulatory Amendment 13.

The intent of Regulatory Amendment 13 is to use the best scientific information available and to prevent unnecessary negative socio-economic impacts that may otherwise be realized in the snapper-grouper fishery and fishing community, in accordance with the provisions set forth in the Magnuson-Stevens Act.

Management measures have been put into place through many amendments to reduce bycatch and efforts are ongoing to collect information on nature and magnitude of bycatch. Further, future actions are planned to improve the quality of data collected, which could serve to enhance information in bycatch. Better bycatch and discard data would provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, provide better estimates of interactions with protected species, and lead to better decisions regarding additional measures to reduce bycatch.

Appendix F. Regulatory Impact Review

The National Marine Fisheries Service (NMFS) requires a Regulatory Impact Review (RIR) for all regulatory actions that are of public interest. The RIR does three things: (1) It provides a comprehensive review of the level and incidence of impacts associated with a regulatory action; (2) it provides a review of the problems and policy objectives prompting the regulatory proposals and an evaluation of the major alternatives which could be used to solve the problem; and (3) it ensures that the regulatory agency systematically and comprehensively considers all available alternatives so that the public welfare can be enhanced in the most efficient and cost effective way.

The RIR also serves as the basis for determining whether any proposed regulations are a "significant regulatory action" under certain criteria provided in Executive Order 12866 (E.O. 12866) and whether the approved regulations will have a "significant economic impact on a substantial number of small business entities" in compliance with the Regulatory Flexibility Act of 1980 (RFA).

1.1 Problems and Objectives

The purpose and need, issues, problems, and objectives of this action are presented in **Chapter 1** of Regulatory Amendment 13 to the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13), and are incorporated herein by reference.

1.2 Methodology and Framework for Analysis

This RIR assesses management measures from the standpoint of determining the resulting changes in costs and benefits to society. To the extent practicable, the net effects of the proposed measures for an existing fishery should be stated in terms of producer and consumer surplus, changes in profits, and employment in the direct and support industries. Where figures are available, they are incorporated into the analysis of the economic impacts of the different actions and alternatives.

1.3 Description of the Fishery

A description of the South Atlantic snapper grouper fishery is contained in **Chapter 3** of Regulatory Amendment 13 and is incorporated herein by reference.

1.4 Effects of the Management Measure

1.4.1. Commercial Landings

Alternative 2 (Preferred) would change the commercial ACLs for five stock complexes and six individual stocks, which are expected to increase annual commercial landings of deepwater stock complex and porgies, but decrease annual commercial landings of the jacks stock complex, blue runner, and gray triggerfish. There are expected to be no changes in annual landings of three stock complexes and four individual stocks because expected landings are expected to remain under the current and proposed ACLs.

Alternative 2 (Preferred) would increase annual commercial landings by 33,821 lbs whole weight (lbs ww) and $78,259 and, at the same time, decrease annual commercial landings by 46,527 lbs ww and $74,520, resulting in a net loss of 12,706 lbs but a net gain of $3,769 (**Table 1.1**). There would be a net gain of ex-vessel revenue because the average ex-vessel price of a pound of deepwater stock complex species gained is substantially greater than the average ex-vessel price of a pound of gray triggerfish lost.

Table 1.1. Expected annual changes of commercial landings.

Stock Complex/Species	Commercial Landings					
	Lbs ww					Dollars
	Current ACL	Proposed ACL	Potential Landings Change	Expected 2012 Landings	Expected Landings Change	Expected Change of Ex-Vessel Revenue
Deepwater	343,869	376,469	32,601	343,869	32,601	76,612
Jacks	193,999	189,421	-4,578	193,999	-4,578	-3,250
Snappers	204,552	215,663	11,111	151,205	0	0
Shallow Water Groupers	49,489	49,777	288	27,932	0	0
Grunts	214,624	218,539	3,915	111,862	0	0
Porgies	35,128	36,348	1,220	35,128	1,220	1,647
Atlantic spadefish	36,476	35,108	-1,368	2,568	0	0
Blue runner	188,329	177,506	-10,823	187,073	-9,567	-10,716
Bar jack	6,686	5,265	-1,421	2,881	0	0
Gray triggerfish	305,262	272,880	-32,382	305,262	-32,382	-60,554
Scamp	341,636	333,100	-8,536	220,378	0	0
Hogfish	48,772	49,469	697	28,210	0	0
Total	1,968,822	1,959,545	-9,276	1,610,367	-12,706	3,739

1.4.2. Recreational Landings

Alternative 2 (Preferred) would increase the recreational ACLs of three stock complexes and two individual stocks, while decreasing the recreational ACLs of three stock complexes and four individual stocks. However, annual recreational landings are expected not to change in all six stock complexes and five of the six individual stocks (**Table1.2**). **Alternative 2 (Preferred)** would yield a loss of Atlantic spadefish landings of 92,013 lbs and a decrease in associated economic benefits.

Table 1.2. Expected annual changes of recreational landings.

Stock Complex/Species	Recreational Landings				
	Lbs ww				
	Current ACL	Proposed ACL	Potential Landings Change	Expected 2012 Landings	Expected Landings Change
Deepwater	332,081	334,556	2,475	22,139	0
Jacks	261,490	267,800	6,310	163,867	0
Snappers	882,388	728,577	-153,811	117,651	0
Shallow Water Groupers	48,329	46,656	-1,673	18,687	0
Grunts	562,151	588,112	25,961	142,412	0
Porgies	113,869	106,915	-6,954	65,285	0
Atlantic spadefish	246,365	154,352	-92,013	246,365	-92,013
Blue runner	1,101,612	948,223	-153,389	235,011	0
Bar jack	13,834	19,515	5,681	2,213	0
Gray triggerfish	367,303	353,638	-13,665	122,434	0
Scamp	150,936	176,688	25,752	50,312	0
Hogfish	98,866	85,355	-13,511	75,138	0
Total	4,179,224	3,810,387	-368,837	1,261,514	-92,013

From 2006 to 2011 approximately 97% of Atlantic spadefish landings in the South Atlantic states were by private anglers (http://www.st.nmfs.noaa.gov/st1/recreational/queries/catch/time_series.html query on October 24, 2012). It is assumed that this percent would apply to expected annual losses of Atlantic spadefish landings to private anglers. Consequently, **Alternative 2 (Preferred)** is expected to reduce private anglers' annual landings of Atlantic spadefish by 89,253 lbs and for-hire operations by 2,760 lbs.

1.4.3. Total Landings

Alternative 2 (Preferred) would reduce total landings of the South Atlantic Snapper Grouper Fishery by 104,719 lbs. Approximately 88% of this total loss would be losses of recreational landings. The dollar value of the total loss would be equivalent to the combined losses of consumer surplus and producer surplus less the gain of ex-vessel revenue.

1.5 Public and Private Costs of Regulations

The preparation, implementation, enforcement, and monitoring of this or any Federal action involves the expenditure of public and private resources, which can be expressed as costs associated with the regulations. Costs associated with this emergency action include, but are not limited to Council costs of document preparation, meeting, and other costs; NMFS administration costs of document preparation, meetings and review, and annual law enforcement costs. A preliminary estimate is up to $150,000 before annual law enforcement costs.

1.6 Determination of Significant Regulatory Action

Pursuant to E.O. 12866, a regulation is considered a "significant regulatory action" if it is expected to result in: (1) An annual effect of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities; (2) create a serious inconsistency or otherwise interfere with an action taken or planned by another agency; (3) materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; or (4) raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in this executive order. Based on the information provided above, this regulatory action would not meet the first criterion. Therefore, this regulatory action is determined to not be economically significant for the purposes of E.O. 12866.

APPENDIX G. REGULATORY FLEXIBILITY ANALYSIS

G.1 Introduction

The purpose of the Regulatory Flexibility Act (RFA) is to establish a principle of regulatory issuance that agencies shall endeavor, consistent with the objectives of the rule and applicable statutes, to fit regulatory and informational requirements to the scale of businesses, organizations, and governmental jurisdictions subject to regulation. To achieve this principle, agencies are required to solicit and consider flexible regulatory proposals and to explain the rationale for their actions to assure that such proposals are given serious consideration. The RFA does not contain any decision criteria; instead, the purpose of the RFA is to inform the agency, as well as the public, of the expected economic impacts of the alternatives contained in the FMP or amendment (including framework management measures and other regulatory actions) and to ensure that the agency considers alternatives that minimize the expected impacts while meeting the goals and objectives of the FMP and applicable statutes.

With certain exceptions, the RFA requires agencies to conduct a regulatory flexibility analysis for each proposed rule. The regulatory flexibility analysis is designed to assess the impacts various regulatory alternatives would have on small entities, including small businesses, and to determine ways to minimize those impacts. In addition to analyses conducted for the Regulatory Impact Review (RIR), the initial regulatory flexibility analysis (IRFA) provides: (1) A description of the reasons why action by the agency is being considered; (2) a succinct statement of the objectives of, and legal basis for the proposed rule; (3) an identification, to the extent practicable, of all relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule; (4) a description and, where feasible, an estimate of the number of small entities to which the proposed rule will apply; (5) a description of the projected reporting, record-keeping, and other compliance requirements of the final rule, including an estimate of the classes of small entities which will be subject to the requirements of the report or record; and (6) a description of significant alternatives to the proposed rule which accomplish the stated objectives of applicable statues and which minimize any significant economic impact of the proposed rule on small entities.

G.2 Statement of need for, objectives of, and legal basis for the proposed rule

The purpose and need, issues, problems, and objectives of the action are presented in **Chapter 1** of Regulatory Amendment 13 to the Snapper Grouper Fishery of the South Atlantic Region, and are incorporated herein by reference.

G.3 Identification of federal rules which may duplicate, overlap or conflict with the proposed rule.

No federal rules have been identified that duplicate, overlap or conflict with the proposed rule.

G.4 Description and estimate of the number of small entities to which the proposed rule will apply.

This rule would apply to licensed commercial fishermen in the Finfish Fishing Industry (NAICS 114111) and for-hire operations in the Charter Fishing Industry (NAICS 487210) that harvest six stock complexes and six individual stocks of the South Atlantic Snapper Grouper Fishery. According to SBA Size Standards, a business in the Finfish Fishing Industry is small if its annual receipts are less than $4 million, and a business in the Charter Fishing Industry is small if it has annual receipts less than $7 million. An estimated 890 to 944 small businesses in the Finfish Fishing Industry and up to 1,754 small businesses in the Charter Fishing Industry participate in the Snapper Grouper Fishery and may be affected.

G.5 Description of the projected reporting, record-keeping and other compliance requirements of the proposed rule, including an estimate of the classes of small entities which will be subject to the requirement and the type of professional skills necessary for the preparation of the report or records.

Alternative 2 (Preferred) would increase the commercial ACLs for five stock complexes and one individual stock and the recreational ACLs for three stock complexes and two individual stocks. These increases represent potential increases in the numbers of days these fisheries remain open and potential gains in annual landings of these complexes and species. Conversely, **Alternative 2 (Preferred)** would decrease six commercial ACLs and seven recreational ACLs, which represent potential decreases in the numbers of days these fisheries remain open and potential reductions in annual landings. Actual increases and decreases in landings, however, depend on if the length of a fishing season changes or not. For example, an ACL could double or triple, but such a change would have no effect on landings if the length of the fishing season remains the same. See the RIR (**Appendix F**) for a more detailed description of the potential and expected changes in annual landings.

G.6 Economic impacts of management measures

Alternative 2 is expected to change the lengths of five commercial fishing seasons and one recreational fishing season and, in turn, the annual commercial landings of five commercial fisheries and one recreational fishery. Specifically, **Alternative 2 (Preferred)** is expected to increase the lengths of commercial fishing seasons for the deepwater and porgies stock complexes, which is expected to collectively increase annual landings by 33,821 pounds (lbs) and $78,250 (**Table G.1**). **Alternative 2 (Preferred)** is also expected to decrease the lengths of commercial fishing seasons for the jacks complex, blue runner and gray triggerfish, which is expected to collectively decrease annual landings by 46,527 lbs and $74,520. The collective net change to small businesses in the Finfish Fishing Industry would be a loss of annual landings of 12,706 lbs and $3,739. With an estimated 890 to 944 small businesses potentially affected, the average annual loss per small business would be approximately 13 to 14 lbs and $3.96 to $4.20.

Alternative 2 (Preferred) is expected to decrease the length of the recreational fishing season for Atlantic spadefish and, subsequently, reduce annual recreational landings of the species by 92,013 lbs. It is unknown what percent of these recreational landings are by for-hire vessels; however, from 2006 to 2010, an average of 3% was landed by for-hire vessels. Nonetheless, the

following analysis of adverse impacts on small businesses in the Charter Fishing Industry considers for-hire landings ranging from less than 1% to 10%.

If small businesses account for less than 1% of the annual landings of Atlantic spadefish, they would collectively lose less than 920 lbs of their combined annual landings and if they account for 10%, they would collectively lose 9,201 lbs. With up to 1,754 small businesses in the Charter Fishing Industry that could be affected, 1% and 10% losses would represent approximately 0.5 lbs and 5.2 lbs per small business, assuming all are affected.

Table G.1. Potential and expected total impacts on small businesses in Finfish Fishing Industry.

Stock Complex/Species	Lbs whole weight		Dollars
	Potential Landings Change	Expected Landings Change	Expected Change in Ex-Vessel Revenue
Deepwater	32,601	32,601	76,612
Jacks	-4,578	-4,578	-3,250
Snappers	11,111	0	0
Shallow Water Groupers	288	0	0
Grunts	3,915	0	0
Porgies	1,220	1,220	1,647
Atlantic spadefish	-1,368	0	0
Blue runner	-10,823	-9,567	-10,716
Bar jack	-1,421	0	0
Gray triggerfish	-32,382	-32,382	-60,554
Scamp	-8,536	0	0
Hogfish	697	0	0
Total	-9,276	-12,706	3,739

G.7 Substantial number of small entities and significant economic impact criteria

Most to all of the businesses in the Snapper Grouper Fishery are assumed to be small businesses and could be affected by the rule. This rule is not expected to disproportionately affect small businesses or significantly reduce their profitability.

G.9 Description of significant alternatives

Alternative 1 (No Action) would retain the current ACLs, resulting in no gains or losses of annual landings and associated net economic benefits. **Alternative 2 (Preferred)** would have an adverse net economic impact in the short run; however, it is expected to have a larger beneficial net economic impact in the long run because it would implement ACLs that are based on better data.

Appendix H. Other Applicable Laws

1 Other Applicable Laws

1.1 Administrative Procedure Act (APA)

All federal rulemaking is governed under the provisions of the APA (5 U.S.C. Subchapter II), which establishes a "notice and comment" procedure to enable public participation in the rulemaking process. Under the APA, National Marine Fisheries Service (NMFS) is required to publish notification of proposed rules in the *Federal Register* and to solicit, consider and respond to public comment on those rules before they are finalized. The APA also establishes a 30-day wait period from the time a final rule is published until it takes effect, with some exceptions. Regulatory Amendment 13 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Regulatory Amendment 13) complies with the provisions of the APA through the South Atlantic Fishery Management Council's (South Atlantic Council) extensive use of public meetings, requests for comments and consideration of comments. The proposed rule associated with this amendment will have a request for public comments which complies with the APA, and upon publication of the final rule, there will be a 30-day wait period before the regulations are effective.

1.2 Information Quality Act (IQA)

The IQA (Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-443)) which took effect October 1, 2002, directed the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidelines to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by federal agencies." OMB directed each federal agency to issue its own guidelines, establish administrative mechanisms allowing affected persons to seek and obtain correction of information that does not comply with OMB guidelines, and report periodically to OMB on the number and nature of complaints.

The NOAA Section 515 Information Quality Guidelines require a series of actions for each new information product subject to the IQA. Regulatory Amendment 13 has used the best available information and made a broad presentation thereof. The process of public review of this document provides an opportunity for comment and challenge to this information, as well as for the provision of additional information.

The information contained in this document was developed using best available scientific information. Therefore, Regulatory Amendment 13 and its Environmental Assessment (EA) are in compliance with the IQA.

1.3 Coastal Zone Management Act (CZMA)

Section 307(c)(1) of the federal CZMA of 1972 requires that all federal activities that directly affect the coastal zone be consistent with approved state coastal zone management programs to the maximum extent practicable. While it is the goal of the South Atlantic Council to have

management measures that complement those of the states, federal and state administrative procedures vary and regulatory changes are unlikely to be fully instituted at the same time. The South Atlantic Council believes Regulatory Amendment 13 is consistent to the maximum extent practicable with the Coastal Zone Management Plans of Florida, Georgia, South Carolina, and North Carolina. This determination will be submitted to the responsible state agencies under Section 307 of the CZMA administering approved Coastal Zone Management Programs in the States of Florida, South Carolina, Georgia, and North Carolina.

1.4 Endangered Species Act (ESA)

The ESA of 1973 (16 U.S.C. Section 1531 et seq.) requires that federal agencies must ensure actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or the habitat designated as critical to their survival and recovery. The ESA requires NMFS Service to consult with the appropriate administrative agency (itself for most marine species, and the U.S. Fish and Wildlife Service for all remaining species) when proposing an action that may affect threatened or endangered species or adversely modify critical habitat. Consultations are necessary to determine the potential impacts of the proposed action. They are concluded informally when proposed actions may affect but are "not likely to adversely affect" threatened or endangered species or designated critical habitat. Formal consultations, resulting in a biological opinion, are required when proposed actions may affect and are "likely to adversely affect" threatened or endangered species or adversely modify designated critical habitat. NMFS completed a biological opinion (NMFS 2006) in 2006 evaluating the impacts of the continued authorization of the South Atlantic snapper grouper fishery under the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) and Amendment 13C to the Snapper Grouper FMP on ESA-listed species (see **Section 3.0**). The opinion stated the fishery was not likely to adversely affect northern right whale critical habitat, seabirds, or marine mammals (see NMFS 2006 for discussion on these species). However, the opinion did state that the snapper grouper fishery would adversely affect sea turtles and smalltooth sawfish, but would not jeopardize their continued existence. An incidental take statement was issued for green, hawksbill, Kemp's ridley, leatherback, and loggerhead sea turtles, as well as smalltooth sawfish. Reasonable and prudent measures to minimize the impact of these incidental takes were specified, along with terms and conditions to implement them. See NMFS (2006) for a full discussion of impacts to smalltooth sawfish.

Sea turtles are vulnerable to capture by bottom longline and vertical hook-and-line gear. The magnitude of the interactions between sea turtles and the South Atlantic snapper grouper fishery was evaluated in NMFS (2006) using data from the Supplementary Discard Data Program (SDDP). Three loggerheads and three unidentified sea turtles were caught on vertical lines; one leatherback and one loggerhead were caught on bottom longlines, all were released alive. The effort reported in the program represented between approximately 5% and 14% of all South Atlantic snapper grouper fishing effort. These data were extrapolated in NMFS (2006) to better estimate the number of interactions between the entire snapper-grouper fishery and ESA-listed sea turtles. The extrapolated estimate was used to project future interactions (**Table 1-1**).

The SDDP does not provide data on recreational fishing interactions with ESA-listed sea turtle

species. However, anecdotal information indicates that recreational fishermen occasionally take sea turtles with hook-and-line gear. The biological opinion also used the extrapolated data from the SDDP to estimate the magnitude of recreational fishing on sea turtles (**Table 1-1**).

Regulations implemented through snapper-grouper Amendment 15B (74 FR 31225; June 30, 2009) required all commercial or charter/headboat vessels with a South Atlantic snapper grouper permit, carrying hook-and-line gear on board, to possess required literature and release gear to aid in the safe release of incidentally caught sea turtles and smalltooth sawfish. These regulations are thought to decrease the mortality associated with accidental interactions with sea turtles and smalltooth sawfish.

Subsequent to the June 7, 2006, biological opinion, elkhorn and staghorn coral (*Acropora cervicornis* and *Acropora palmata*) were listed as threatened. In a consultation memorandum dated July 9, 2007, NMFS concluded the continued authorization of the South Atlantic snapper-grouper fishery is not likely to adversely affect these *Acropora* species. On November 26, 2008, an *Acropora* critical habitat was designated. In a consultation memorandum dated December 2, 2008, NMFS concluded the continued authorization of the snapper-grouper fishery is not likely to adversely affect *Acropora* critical habitat.

Additionally, on September 22, 2011, NMFS and the U.S. Fish and Wildlife Service determined the loggerhead sea turtle population consists of nine distinct population segments (DPSs) (76 FR 58868). Previously, loggerhead sea turtles were listed as threatened species throughout their global range. The snapper grouper fishery interacts with loggerhead sea turtles from what is now considered the Northwest Atlantic (NWA) DPS, which remains listed as threatened. Five DPSs of Atlantic sturgeon were also listed since the completion of the 2006 biological opinion. In a consultation memorandum dated February 15, 2012, NMFS concluded the continued authorization of the South Atlantic snapper grouper fishery is not likely to adversely affect the Atlantic sturgeon. The February 15, 2012, memorandum also stated that because the 2006 biological opinion had evaluated the impacts of the fishery on the loggerhead subpopulations now wholly contained within the NWA DPS, the opinion's conclusion that the fishery is not likely to jeopardize the continued existence of loggerhead sea turtles remains valid.

Table 1-1. Three-year South Atlantic anticipated takes sea turtles by the snapper grouper fishery.

Species	**Amount of Take**	**Total**
Green	Total Take	39
	Lethal Take	14
Hawksbill	Total Take	4
	Lethal Take	3
Kemp's Ridley	Total Take	19
	Lethal Take	8
Leatherback	Total Take	25
	Lethal Take	15
Loggerhead	Total Take	202
	Lethal Take	67

Source: NMFS 2006.

1.5 Executive Order 12612: Federalism

E.O. 12612 requires agencies to be guided by the fundamental federalism principles when formulating and implementing policies that have federalism implications. The purpose of the Order is to guarantee the division of governmental responsibilities between the federal government and the states, as intended by the framers of the Constitution. No federalism issues have been identified relative to the actions proposed in this amendment and associated regulations. Therefore, preparation of a federalism assessment under E.O. 13132 is not necessary.

1.6 Executive Order 12866: Regulatory Planning and Review

E.O. 12866, signed in 1993, requires federal agencies to assess the costs and benefits of their proposed regulations, including distributional impacts, and to select alternatives that maximize net benefits to society. To comply with E.O. 12866, NMFS prepares a Regulatory Impact Review (RIR) for all fishery regulatory actions that implement a new FMP or that significantly amend an existing plan. RIRs provide a comprehensive analysis of the costs and benefits to society associated with proposed regulatory actions, the problems and policy objectives prompting the regulatory proposals, and the major alternatives that could be used to solve the problems. The reviews also serve as the basis for the agency's determinations as to whether proposed regulations are a "significant regulatory action" under the criteria provided in E.O. 12866 and whether proposed regulations will have a significant economic impact on a substantial number of small entities in compliance with the Regulatory Flexibility Act. A regulation is significant if it is likely to result in an annual effect on the economy of at least $100,000,000 or if it has other major economic effects.

In accordance with E.O. 12866, the following is set forth by the South Atlantic Council: (1) this rule is not likely to have an annual effect on the economy of more than $100 million or to adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or state, local, or tribal governments or communities; (2) this rule is not likely to create any serious inconsistencies or otherwise interfere with any action take or planned by another agency; (3) this rule is not likely to materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights or obligations of recipients thereof; (4) this rule is not likely to raise novel or policy issues arising out of legal mandates, or the principles set forth in the Executive Order; (5) this rule is not controversial.

1.7 Executive Order 12898: Environmental Justice

E.O. 12898 requires that "to the greatest extent practicable and permitted by law…each federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations in the United States and its territories and possessions…"

The alternatives being considered in this amendment are not expected to result in any disproportionate adverse human health or environmental effects to minority populations or low-income populations of Florida, North Carolina, South Carolina or Georgia, rather the impacts would be spread across all participants in the black sea bass and golden tilefish fisheries regardless of race or income. A detailed description of the communities impacted by the actions

contained in this amendment and potential socioeconomic impacts of those actions are contained in **Sections 3.0** and **4.0** of this amendment.

1.8 Executive Order 12962: Recreational Fisheries

E.O. 12962 requires Federal agencies, in cooperation with States and Tribes, to improve the quantity, function, sustainable productivity, and distribution of U.S. aquatic resources for increased recreational fishing opportunities through a variety of methods. Additionally, the order establishes a seven-member National Recreational Fisheries Coordination Council responsible for, among other things, ensuring that social and economic values of healthy aquatic systems that support recreational fisheries are considered by federal agencies in the course of their actions, sharing the latest resource information and management technologies, and reducing duplicative and cost-inefficient programs among federal agencies involved in conserving or managing recreational fisheries. The South Atlantic Council also is responsible for developing, in cooperation with federal agencies, states and tribes, a Recreational Fishery Resource Conservation Plan - to include a five-year agenda. Finally, the Order requires NMFS and the U.S. Fish and Wildlife Service to develop a joint agency policy for administering the ESA.

The alternatives considered in this amendment are consistent with the directives of E.O. 12962.

1.9 Executive Order 13089: Coral Reef Protection

E.O. 13089, signed by President William Clinton on June 11, 1998, recognizes the ecological, social, and economic values provided by the Nation's coral reefs and ensures that Federal agencies are protecting these ecosystems. More specifically, the Order requires federal agencies to identify actions that may harm U.S. coral reef ecosystems, to utilize their program and authorities to protect and enhance the conditions of such ecosystems, and to ensure that their actions do not degrade the condition of the coral reef ecosystem.

The alternatives considered in this amendment are consistent with the directives of E.O. 13089.

1.10 Executive Order 13158: Marine Protected Areas (MPAs)

E. O. 13158 was signed on May 26, 2000 to strengthen the protection of U.S. ocean and coastal resources through the use of MPAs. The E.O. defined MPAs as "any area of the marine environment that has been reserved by Federal, State, territorial, tribal, or local laws or regulations to provide lasting protection for part or all of the natural and cultural resources therein." It directs federal agencies to work closely with state, local and non-governmental partners to create a comprehensive network of MPAs "representing diverse U.S. marine ecosystems, and the Nation's natural and cultural resources".

The alternatives considered in this amendment are consistent with the directives of E.O. 13158.

1.11 Marine Mammal Protection Act (MMPA)

The MMPA established a moratorium, with certain exceptions, on the taking of marine mammals in U.S. waters and by U.S. citizens on the high seas. It also prohibits the importing of marine mammals and marine mammal products into the United States. Under the MMPA, the Secretary of Commerce (authority delegated to NMFS) is responsible for the conservation and management of cetaceans and pinnipeds (other than walruses). The Secretary of the Interior is

responsible for walruses, sea otters, polar bears, manatees, and dugongs. Part of the responsibility that NMFS has under the MMPA involves monitoring populations of marine mammals to make sure that they stay at optimum levels. If a population falls below its optimum level, it is designated as "depleted." A conservation plan is then developed to guide research and management actions to restore the population to healthy levels.

In 1994, Congress amended the MMPA, to govern the taking of marine mammals incidental to commercial fishing operations. This amendment required the preparation of stock assessments for all marine mammal stocks in waters under U.S. jurisdiction; development and implementation of take-reduction plans for stocks that may be reduced or are being maintained below their optimum sustainable population levels due to interactions with commercial fisheries; and studies of pinniped-fishery interactions. The MMPA requires a commercial fishery to be placed in one of three categories, based on the relative frequency of incidental serious injuries and mortalities of marine mammals. Category I designates fisheries with frequent serious injuries and mortalities incidental to commercial fishing; Category II designates fisheries with occasional serious injuries and mortalities; Category III designates fisheries with a remote likelihood or no known serious injuries or mortalities.

Under the MMPA, to legally fish in a Category I and/or II fishery, a fisherman must take certain steps. For example, owners of vessels or gear engaging in a Category I or II fishery, are required to obtain a marine mammal authorization by registering with the Marine Mammal Authorization Program (50 CFR 229.4). They are also required to accommodate an observer if requested (50 CFR 229.7(c)) and they must comply with any applicable take reduction plans. The commercial hook-and-line components of the South Atlantic snapper grouper fishery (i.e., bottom longline, bandit gear, and handline), which targets red snapper are listed as part of a Category III fishery (76 FR 73912, November 29, 2011) because there have been no documented interactions between these gear and marine mammals. The black sea bass pot component of the South Atlantic snapper grouper fishery is part of the Atlantic mixed species trap/pot fishery, a Category II fishery, in the 2012 LOF (76 FR 73912, November 29, 2011). The Atlantic mixed species trap/pot fishery designation was created in 2003 (68 FR 41725, July 15, 2003), by combining several separately listed trap/pot fisheries into a single group. This group was designated Category II as a precaution because of known interactions between marine mammals and gears similar to those included in this group. Prior to this consolidation, the black sea bass pot fishery in the South Atlantic was a part of the "U.S. Mid-Atlantic and Southeast U.S. Atlantic Black Sea Bass Trap/Pot" fishery (Category III). There has never been a documented interaction between marine mammals and black sea bass trap/pot gear in the South Atlantic. The actions in this EA are not expected to negatively impact the provisions of the MMPA.

1.12 National Environmental Policy Act (NEPA)

Regulatory Amendment 13 has been written and organized in a manner that meets NEPA requirements, and thus is a consolidated NEPA document, including a draft EA, as described in NOAA Administrative Order (NAO) 216-6, Section 6.03.a.2.

Purpose and Need for Action

The purpose and need for this action are described in **Section 1.3.**

Alternatives
The alternatives for this action are described in **Section 2.0.**

Affected Environment
The affected environment is described in **Section 3.0**.

Impacts of the Alternatives
The impacts of the alternatives on the environment are described in **Section 4.0.**

1.13 National Marine Sanctuaries Act (NMSA)

Under the NMSA (also known as Title III of the Marine Protection, Research and Sanctuaries Act of 1972), as amended, the U.S. Secretary of Commerce is authorized to designate National Marine Sanctuaries to protect distinctive natural and cultural resources whose protection and beneficial use requires comprehensive planning and management. The National Marine Sanctuary Program is administered by the Sanctuaries and Reserves Division of NOAA. The NMSA provides authority for comprehensive and coordinated conservation and management of these marine areas. The National Marine Sanctuary Program currently comprises 13 sanctuaries around the country, including sites in American Samoa and Hawaii. These sites include significant coral reef and kelp forest habitats, and breeding and feeding grounds of whales, sea lions, sharks, and sea turtles. The two main sanctuaries in the South Atlantic exclusive economic zone are Gray's Reef and Florida Keys National Marine Sanctuaries.

The alternatives considered in this document are not expected to have any adverse impacts on the resources managed by the Gray's Reef and Florida Keys National Marine Sanctuaries.

1.14 Paperwork Reduction Act (PRA)

The purpose of the PRA is to minimize the burden on the public. The PRA is intended to ensure that the information collected under the proposed action is needed and is collected in an efficient manner (44 U.S.C. 3501 (1)). The authority to manage information collection and record keeping requirements is vested with the Director of the Office of Management and Budget (OMB). This authority encompasses establishment of guidelines and policies, approval of information collection requests, and reduction of paperwork burdens and duplications. The PRA requires NMFS Service to obtain approval from the OMB before requesting most types of fishery information from the public. Actions in this document are not expected to affect PRA.

1.15 Regulatory Flexibility Act (RFA)

The RFA of 1980 (5 U.S.C. 601 et seq.) requires federal agencies to assess the impacts of regulatory actions implemented through notice and comment rulemaking procedures on small businesses, small organizations, and small governmental entities, with the goal of minimizing adverse impacts of burdensome regulations and record-keeping requirements on those entities. Under the RFA, NMFS must determine whether a proposed fishery regulation would have a significant economic impact on a substantial number of small entities. If not, a certification to

this effect must be prepared and submitted to the Chief Counsel for Advocacy of the Small Business Administration. Alternatively, if a regulation is determined to significantly impact a substantial number of small entities, the RFA requires the agency to prepare an initial and final Regulatory Flexibility Analysis to accompany the proposed and final rule, respectively. These analyses, which describe the type and number of small businesses, affected, the nature and size of the impacts, and alternatives that minimize these impacts while accomplishing stated objectives, must be published in the *Federal Register* in full or in summary for public comment and submitted to the chief counsel for advocacy of the Small Business Administration. Changes to the RFA in June 1996 enable small entities to seek court review of an agency's compliance with the RFA's provisions.

Since NMFS has determined whether a proposed fishery regulation would have a significant economic impact on a substantial number of small entities, a certification to this effect will be prepared and submitted to the Chief Counsel for Advocacy of the Small Business Administration.

This amendment includes the RFA in **Appendix G**.

1.16 Small Business Act (SBA)

Enacted in 1953, the SBA requires that agencies assist and protect small-business interests to the extent possible to preserve free competitive enterprise. The objectives of the SBA are to foster business ownership by individuals who are both socially and economically disadvantaged; and to promote the competitive viability of such firms by providing business development assistance including, but not limited to, management and technical assistance, access to capital and other forms of financial assistance, business training, and counseling, and access to sole source and limited competition federal contract opportunities, to help firms achieve competitive viability. Because most businesses associated with fishing are considered small businesses, NMFS Service, in implementing regulations, must make an assessment of how those regulations will affect small businesses.

1.17 Public Law 99-659: Vessel Safety

Public Law 99-659 amended the MSFCMA to require that a FMP or FMP amendment must consider, and may provide for, temporary adjustments (after consultation with the U.S. Coast Guard and persons utilizing the fishery) regarding access to a fishery for vessels that would be otherwise prevented from participating in the fishery because of safety concerns related to weather or to other ocean conditions. No vessel would be forced to participate in South Atlantic fisheries under adverse weather or ocean conditions as a result of the imposition of management regulations proposed in this amendment. No concerns have been raised by South Atlantic fishermen or by the U.S. Coast Guard that the proposed management measures directly or indirectly pose a hazard to crew or vessel safety under adverse weather or ocean conditions.

species	dataset	1986	1987	1988	1989	1990
Almaco Jack	CompACL	4910	13753	13923	3818	2767
	newMRFSS+newComm	4910	13753	13923	3818	2767
	newMRIP+newComm	4910	13490	13923	3818	2767
Atlantic Spadefish	CompACL	321550	69842	123207	129434	82567
	newMRFSS+newComm	321270	69785	122566	129434	82587
	newMRIP+newComm	188741	62042	120531	113658	55862
Banded Rudderfish	CompACL	376326	188	42335	219	60
	newMRFSS+newComm	355524	188	42335	219	60
	newMRIP+newComm	165152	1015	287532	219	60
Bar Jack	CompACL	65469	13546	2624	39961	8175
	newMRFSS+newComm	76859	16400	4751	37733	8175
	newMRIP+newComm	243407	13890	4784	85195	15808
Black Snapper	CompACL	0	0	0	0	0
	newMRFSS+newComm	0	0	0	0	0
	newMRIP+newComm	0	0	0	0	0
Blackfin Snapper	CompACL	3541	3236	1418	1269	888
	newMRFSS+newComm	3541	3236	1418	1269	888
	newMRIP+newComm	3541	3236	1418	1269	888
Blue Runner	CompACL	620019	290931	760223	586503	483985
	newMRFSS+newComm	619994	291032	758612	586308	484044
	newMRIP+newComm	522797	388311	642206	541251	445915
Blueline Tilefish	CompACL	118260	93235	51610	55994	102927
	newMRFSS+newComm	118260	93235	51610	55994	102927
	newMRIP+newComm	118260	93235	51610	55994	102927
Coney	CompACL	113	287	308	1658	925
	newMRFSS+newComm	113	287	308	1658	925
	newMRIP+newComm	113	287	308	1658	942
Cubera Snapper	CompACL	65669	3059	87901	14209	23003
	newMRFSS+newComm	65352	3059	87026	13801	22854
	newMRIP+newComm	76194	3059	83065	13554	22178
Dog Snapper	CompACL	6216	125	46	84	165
	newMRFSS+newComm	6266	125	46	84	165
	newMRIP+newComm	5493	125	46	84	165
Gray Snapper	CompACL	538487	670945	675940	562042	588020
	newMRFSS+newComm	538461	673300	675971	563289	596420
	newMRIP+newComm	536585	639926	604147	568808	557290
Gray Triggerfish	CompACL	205727	219992	251712	456182	593000
	newMRFSS+newComm	204688	221564	251651	456008	594717
	newMRIP+newComm	214068	226503	277250	568574	638644
Graysby	CompACL	676	362	573	524	912
	newMRFSS+newComm	676	362	604	524	912
	newMRIP+newComm	676	362	655	524	912
Hogfish	CompACL	280153	175820	131799	91150	93670
	newMRFSS+newComm	280188	173607	132171	89906	93670
	newMRIP+newComm	185316	149762	122239	84015	86792

Jolthead Porgy	CompACL	197512	29776	18523	26382	20734
	newMRFSS+newComm	197539	29776	18752	26678	20727
	newMRIP+newComm	233087	31407	18923	26817	20827
Knobbed Porgy	CompACL	69400	100001	182806	65144	95747
	newMRFSS+newComm	69400	104533	182958	65177	97984
	newMRIP+newComm	69400	106083	189565	70433	100051
Lane Snapper	CompACL	67661	190064	192869	249063	105369
	newMRFSS+newComm	67638	190036	192442	247272	105332
	newMRIP+newComm	65462	155795	170801	197940	96313
Lesser Amberjack	CompACL	0	11	1689	0	0
	newMRFSS+newComm	0	22	1464	0	0
	newMRIP+newComm	0	60	1483	0	0
Mahogany Snapper	CompACL	23	17	45	0	6
	newMRFSS+newComm	23	17	45	0	6
	newMRIP+newComm	23	17	45	0	6
Margate	CompACL	14543	12118	28036	11450	16674
	newMRFSS+newComm	14541	12118	28039	11480	16715
	newMRIP+newComm	14537	12118	63907	11211	26711
Misty Grouper	CompACL	9	30244	0	0	0
	newMRFSS+newComm	9	30244	0	0	0
	newMRIP+newComm	9	14495	0	0	0
Queen Snapper	CompACL	0	0	0	16539	32
	newMRFSS+newComm	0	0	0	14740	32
	newMRIP+newComm	0	0	0	17925	32
Red Hind	CompACL	8703	13723	9625	12702	33084
	newMRFSS+newComm	7553	13723	9666	12730	33224
	newMRIP+newComm	5577	14627	8168	12705	32675
Rock Hind	CompACL	4986	7187	6345	2959	8206
	newMRFSS+newComm	4986	7187	6434	2998	8291
	newMRIP+newComm	4986	7187	6627	3100	9503
Sailors Choice	CompACL	2334	34012	76483	46965	12546
	newMRFSS+newComm	2334	34051	76483	46965	12546
	newMRIP+newComm	1709	49392	59695	40986	11592
Sand Tilefish	CompACL	5941	6666	2707	2984	2474
	newMRFSS+newComm	5941	6702	2857	3008	2470
	newMRIP+newComm	5941	5301	2634	2989	2462
Saucereye Porgy	CompACL	762	396	1141	219	2617
	newMRFSS+newComm	762	396	1141	219	1674
	newMRIP+newComm	762	396	1141	219	1733
Scamp	CompACL	328435	387776	423107	453901	588855
	newMRFSS+newComm	324355	388137	438358	455501	590934
	newMRIP+newComm	328563	392707	475038	503311	604696
Scup	CompACL	6890	3278	3175	3704	2149
	newMRFSS+newComm	6890	3545	3175	3703	2149
	newMRIP+newComm	3847	3607	3860	7951	2236
Silk Snapper	CompACL	36388	41974	27888	18695	36827
	newMRFSS+newComm	36388	42539	29367	18695	36827

	newMRIP+newComm	36388	43045	30403	19086	36827
Tomtate	CompACL	115283	159199	185810	125693	89090
	newMRFSS+newComm	115283	158692	185584	124850	89313
	newMRIP+newComm	114964	159192	185775	128166	89335
White Grunt	CompACL	528260	800248	704972	799545	1218440
	newMRFSS+newComm	528260	810621	719803	812098	1237840
	newMRIP+newComm	519361	861935	746329	845913	1221481
Whitebone Porgy	CompACL	23908	43867	41693	31766	22110
	newMRFSS+newComm	23908	45215	41688	32126	22156
	newMRIP+newComm	23838	43273	45352	30673	24516
Yellowedge Grouper	CompACL	34823	27254	19904	15160	17300
	newMRFSS+newComm	34823	27254	19904	15160	17300
	newMRIP+newComm	34823	27254	39397	15160	17300
Yellowfin Grouper	CompACL	27323	4467	45132	40369	4434
	newMRFSS+newComm	27323	4467	44213	40369	4434
	newMRIP+newComm	27323	4467	54254	24361	4434
Yellowmouth Grouper	CompACL	214	262	469	631	1021
	newMRFSS+newComm	214	262	526	686	1021
	newMRIP+newComm	214	262	934	1201	1021

1991	1992	1993	1994	1995	1996	1997	1998	1999
17189	27611	58234	69603	84081	52638	60915	65403	291922
19988	27421	58287	68250	84551	52638	62512	63840	286196
19988	46965	60035	102913	88660	52638	64970	60458	303598
239078	281448	353773	226778	265855	403789	304433	228844	227484
239078	282282	353773	226778	265855	403855	304433	228844	227440
172329	295256	238825	164688	207172	206247	215183	150735	186619
79	9298	29334	26232	32012	40449	74787	71718	152821
196	9298	29334	26232	32006	37961	74452	71654	149388
196	9298	32079	26232	32789	37936	74572	71847	145434
2533	3869	15555	12939	5811	12672	14855	15893	6840
2533	4027	15899	12372	5811	12700	15611	15777	6881
7321	5901	30040	19624	5811	7547	44099	11308	21670
87	121	4917	1702	100	29	7	8	3
87	121	4917	1469	100	29	7	8	3
87	121	4917	1037	100	29	7	8	3
4767	501	576	625	1271	3128	2901	688	1780
4767	501	576	625	1271	3128	2901	688	1713
4767	501	576	625	1271	3128	2901	688	1422
650065	443274	530083	573717	734446	406971	740628	810911	763967
650178	445109	530131	575366	735255	407205	739949	813416	762770
540474	435872	450114	447121	477528	382093	700575	795058	734497
143202	290564	223026	192001	207663	182719	296301	113066	121891
143202	290564	222957	192001	215165	183107	312014	113065	121892
143202	290564	224800	192001	205690	184891	315670	113065	121892
411	886	3398	618	101	28514	309	734	744
411	886	3474	668	101	28514	309	692	738
411	886	4320	535	101	28614	309	567	621
114774	12406	43957	21901	156254	9485	14840	15934	9605
113645	12406	43957	21703	154782	9540	14774	15740	9605
105535	12406	89134	20531	164034	19755	14475	16589	11430
588	775	2219	796	704	3377	1906	3184	1765
588	775	2229	796	704	3385	1906	3184	1770
588	775	2574	796	704	3426	1906	3809	1879
714837	693915	564562	676233	802708	670860	751631	568950	667777
732921	694056	562587	676132	804474	670178	751846	568246	667452
627098	667140	539240	614434	726296	653962	699559	554117	550312
664083	758214	834277	766434	805341	842484	984172	704405	530840
662546	766354	820340	790314	811444	860545	998564	702844	536166
683717	699426	793312	807345	826787	865570	988543	694529	530826
7494	13606	18675	9164	4602	10835	10563	11414	8274
7494	13665	18927	9314	4602	10835	10151	11484	8231
7494	13195	20038	10512	4602	11394	10652	8502	8275
141958	166525	170880	144112	262165	138051	123596	93294	138023
142070	167624	172538	144140	285771	138053	124130	93246	137985
120332	157666	210707	188712	249554	128223	124598	106859	135864

20303	21875	39648	33012	13207	27952	18155	27630	23173
20338	21903	39629	33156	13207	27705	18195	27464	22639
18893	23581	49319	41360	13321	29084	17941	17553	20139
81142	82010	91825	84036	92953	78660	62734	62374	70104
81273	83581	98253	91304	99857	78492	64196	62435	70024
83197	91327	103749	98223	117683	74131	65498	62774	74712
136640	111888	117083	110262	93276	89034	126670	88730	111184
136006	111777	116992	110004	93319	88987	126481	88755	110809
117672	104000	109486	99749	80612	74449	131314	79288	97752
11	21763	9556	11208	5111	7201	18383	9488	12035
7383	20968	10003	10430	5111	7201	18383	9488	11862
7383	21035	13226	8837	5111	8619	18383	7265	11246
40	8	51	122	40	211	114	38	3731
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40	8	51	122	40	211	114	38	3347
1030	15463	19769	45456	42401	46486	16479	43587	65120
1030	15494	19837	45456	42425	46486	15930	42864	63993
1030	14283	19225	47177	38887	46020	15930	32255	29889
224	0	284	677	548	941	2229	504	2360
224	0	284	677	548	941	2229	504	2360
224	0	284	677	548	941	2229	504	2360
140	1	2973	317	18489	20109	12979	6396	9344
140	1	2973	317	18489	20109	12979	6396	9306
140	1	2973	317	18489	21081	12979	6396	9466
18512	24623	44046	30554	51750	39451	30126	34119	24058
18710	24868	44864	31092	52257	39635	30024	34093	24056
18702	24033	51650	34344	55079	39149	30191	37925	24842
4094	12764	30707	19451	18818	24894	40487	38381	34308
4231	13252	32246	20412	19531	25016	40385	38676	34288
4382	15796	35134	22928	23478	27029	46145	42477	34928
32898	38989	13114	14741	8708	6371	10441	25672	16711
33732	42139	13157	14837	9064	6401	10663	25909	16801
23690	29772	8309	10024	6417	3866	6595	13808	9223
5333	2668	3348	3150	11992	3936	5607	8028	3058
5343	2610	3270	3172	11458	3801	5405	7765	3304
4406	2525	3674	2940	10835	3944	5194	6852	3117
1439	7697	7897	11735	16271	3819	2739	2615	5047
1439	6779	7800	11424	16271	3819	2739	2585	5047
1439	7207	5904	9549	4193	3819	2739	2327	4493
623710	404731	392001	428282	453916	388072	432874	418328	555256
617937	406858	397322	432966	454231	389198	423334	412498	552979
648796	430430	411586	445991	455621	410836	432394	446162	560308
13615	11664	12671	19472	6367	6974	14486	3489	383
13720	11664	14249	21554	6775	7866	15636	4214	383
15999	7972	17211	39694	7837	8643	13498	5768	383
10404	10548	20560	66525	61681	63509	78112	61789	18664
10687	10548	20140	62052	65033	61929	77023	61800	18609

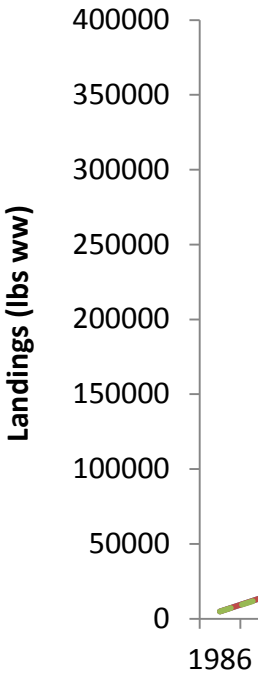
10831	10548	19595	42608	71218	64427	80297	61481	18644
107718	105906	95371	72261	74643	40402	54705	35675	54302
107724	105724	95805	72917	75690	40834	54819	36049	54478
107383	105949	94943	72987	74787	41416	53903	35387	51472
1289392	1121497	809795	914097	708049	720885	813359	689291	642662
1300271	1173238	849906	946589	730512	747752	835197	692369	660825
1398067	1205353	917001	1030802	765080	784719	892183	690989	666462
76380	34328	33664	29490	36536	21419	75664	17347	14612
75610	35723	33989	29777	36929	21342	76437	18232	15626
77025	40866	33477	26984	37317	24575	59639	20192	14079
33344	44621	34051	16164	25980	43905	36569	33450	30774
33344	44621	34051	16164	25980	43905	36661	33450	30774
33344	44621	34051	16164	25980	43905	37324	33450	30774
3264	11286	8610	4447	5353	13056	4126	1627	3831
3264	11286	8500	4447	5353	13056	4126	1627	3832
3264	11286	9700	4447	5353	14298	4126	1627	3832
786	3495	377	867	667	409	489	1154	2940
786	3766	377	867	667	409	489	1154	2913
1799	3184	377	867	667	409	489	1154	3122

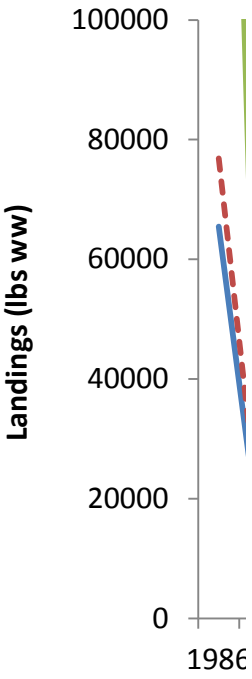
2000	2001	2002	2003	2004	2005	2006	2007	2008
158662	186014	128423	200513	298821	151112	257960	311989	285321
156345	183114	128526	206351	302681	150957	257960	311989	285321
153794	172583	134113	247618	297191	141525	302517	324728	282594
234628	677000	132089	205618	282841	144526	309978	211354	276546
234628	677065	132069	203936	283177	144526	309978	211354	276546
189460	272128	114777	251205	115450	140370	186789	180081	185314
165646	115312	55978	87960	202653	96931	152999	124519	104349
164067	116095	55771	88314	208914	96931	152966	124519	104349
134289	109112	56106	81175	178697	89625	161277	103632	105368
20646	26845	8047	3958	12739	20520	4909	8259	11759
19684	26886	8029	3939	12483	19855	4904	8190	11665
24780	34583	9258	5160	12045	31256	5326	9222	6058
11	521	410	171	286	0	309	16	382
11	521	410	171	286	0	309	16	382
11	521	410	171	286	0	309	16	382
4775	3665	1870	1987	4154	1305	2320	5618	501
4759	3665	1861	1987	4181	1323	2342	5834	516
3954	3665	1855	1987	2758	1256	2615	6357	572
981803	1289941	642108	1326457	696231	648012	1328230	1032437	1061642
981707	1288716	642385	1327840	695772	648012	1328230	1032437	1061642
913282	952356	563709	1125729	551878	747787	1129654	970113	1136597
116598	168095	264972	114428	81075	124173	482973	458152	805665
116537	179359	264913	115972	79920	124173	482973	458152	805665
116617	151040	264679	132156	86600	114149	418951	477834	735757
2422	135	23	1156	2624	1685	2589	2264	3299
2422	127	23	1156	2620	1683	2584	2262	3298
2572	93	23	1385	2718	3860	2892	1865	2352
53192	29925	28075	31772	9424	5018	9379	16649	38087
52721	29953	28040	31602	9380	5018	9379	16649	37790
51239	24680	15387	23445	9525	3597	8909	16649	36551
5170	2223	1027	7523	9148	2949	2179	17964	1236
5170	2202	1027	7525	9157	2967	2185	17973	1236
7755	2133	1074	2658	1878	3285	1907	22839	1236
894019	746220	870620	1007195	560053	715023	792731	1039230	703980
893161	746322	868960	1007195	560053	715023	792731	1039230	703980
699054	795743	669694	861562	521179	647684	621978	798360	531156
367662	408207	461951	443366	648350	672565	527777	819428	766115
368173	407199	475617	454860	659001	672565	527777	819428	766115
358285	400553	476180	460048	626518	547814	520269	836634	894185
4706	11323	15498	30780	17033	19541	17571	17856	12549
4706	11242	15942	31571	16923	19541	17494	17757	12297
4706	11424	15277	31225	22177	17597	14295	16257	11326
93087	108365	138831	128249	147638	170572	95744	214451	107681
93119	108505	141057	129655	147971	171017	95786	214874	107736
91142	115527	106079	134824	123492	91238	77274	184444	106692

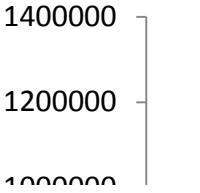
21850	28290	28691	40608	53670	42533	29715	35943	62319
21705	28378	28615	40691	54793	42533	29809	35952	62366
20754	23509	28878	37309	50130	37885	27211	33456	58997
57737	67854	61194	40543	51280	38033	36168	38698	39429
57187	69693	64130	45430	51513	38033	36174	38700	39440
60856	74650	67441	46637	53015	50389	36461	39427	40796
170232	168863	108610	153466	128075	114327	80561	103526	114463
169457	168738	108477	153466	128075	114327	80561	103526	114463
124034	133090	94397	119984	99376	112893	66094	80451	91074
9168	7309	7671	5461	5867	10568	6159	19496	5894
8958	6914	7731	5100	5242	10577	6159	19496	5894
9268	6948	6406	4192	3458	9270	6917	19496	6654
17	25	123	25	160	2	0	1670	81
17	25	123	25	160	2	0	870	81
17	25	548	25	160	2	0	1154	81
38236	22019	14316	17183	23164	34662	27661	28982	8556
38197	21041	13577	16292	21590	34616	27661	28284	8449
20823	19434	12406	13899	25415	53956	22002	34653	7646
1925	2520	3623	2333	2863	651	491	4029	1649
1925	2520	3623	2367	2863	651	491	4029	1649
1925	2520	3623	2277	2863	651	491	4029	1649
18913	10384	7865	3989	3608	8290	3178	7303	4760
18913	10373	7865	3989	3608	8290	3178	7303	4760
18913	10372	7865	3989	3608	7649	3178	7303	4760
24843	18577	27652	20171	26566	18532	18704	24753	25885
24721	18574	27536	20281	26837	18518	18704	24753	25875
23500	20157	27947	20324	24867	17894	18398	25371	23518
32420	21305	22290	22009	42300	33163	37569	42668	31143
32420	21530	22818	22872	42829	33165	37577	42668	31165
32918	21207	24776	23353	51114	33224	37953	41780	30964
17986	8532	35266	46745	18930	37021	3815	21243	16298
18564	8747	36920	50551	19454	37039	4003	22046	16463
14324	5066	24201	31484	16672	7326	3470	22674	11405
4912	5809	6898	8704	8823	9014	4720	4278	22223
4588	5607	6572	8521	8159	8777	4595	4167	21696
4321	5459	6094	6493	7997	7983	4071	3282	13281
3036	3710	2843	4205	2748	4799	2869	1210	685
3036	3710	2197	4205	2748	3520	2604	1187	685
2732	3831	2245	3606	2623	2890	2778	980	685
557611	364544	436915	505158	479987	419610	528994	596879	377944
551189	366391	457226	509668	488841	419610	528994	596879	377944
582336	384921	499369	520207	494254	466996	608536	612819	386959
782	12756	3297	5202	8191	11846	8999	7442	5716
820	14054	3400	5441	8365	11846	8999	7442	5716
868	14544	3543	5661	8167	12304	9306	7380	5716
75310	42716	51341	25727	31137	29310	23909	15799	24627
75269	42782	51309	25747	31293	29310	23950	15816	24804

74577	42855	51274	25948	23961	29952	24261	16358	23755
106236	81773	53311	63518	65435	52024	52393	70948	65390
106005	81805	53297	63546	65678	51946	52377	70948	65023
98865	80056	53523	63005	64139	53584	64533	97919	69829
511427	629137	655749	625476	669482	616711	609056	769863	691798
510883	653420	700750	666181	665954	616711	609056	769863	691798
493498	645243	641687	681603	708015	693837	622756	734503	737305
27500	28593	35294	20089	18247	21931	12560	30684	31928
28016	29551	35179	20654	18196	21931	12560	30671	31928
25024	24000	32506	17585	11236	15931	9930	23902	31327
46145	43806	29667	18414	37466	36532	13748	20583	22222
46330	43045	29667	18724	37466	33615	13748	20583	22222
46150	51342	29667	18633	37466	72295	13748	20583	22598
2906	4622	5795	2223	9258	3777	43530	9853	4206
2906	4625	5795	2223	9258	3777	43530	9853	4206
2906	4733	5087	2223	9258	3777	25722	9853	4206
3662	312	265	1354	4661	4970	1105	11009	341
3876	312	265	1476	4692	4970	1105	11009	341
3947	312	265	1704	4768	4040	1105	14434	341

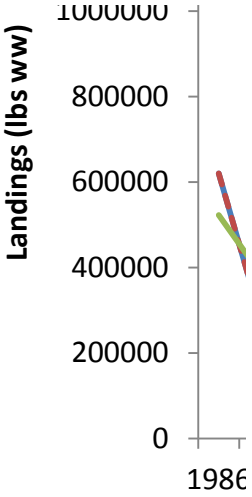
2009	2010	2011	ABC	ABC basis
239310			291922	3rd Highest 99-08
239337	252984	370294	286196	3rd Highest 99-08
256367	250635	366829	302517	3rd Highest 99-08
482136			282841	3rd Highest 99-08
482136	397180	78773	283177	3rd Highest 99-08
251006	471969	123247	189460	3rd Highest 99-08
110849			152999	3rd Highest 99-08
110739	132386	237820	152966	3rd Highest 99-08
112847	130209	199990	145434	3rd Highest 99-08
8183			20520	3rd Highest 99-08
8014	3790	15795	19684	3rd Highest 99-08
10445	3790	25990	24780	3rd Highest 99-08
0			382	3rd Highest 99-08
0	44	0	382	3rd Highest 99-08
0	44	0	382	3rd Highest 99-08
692			4154	3rd Highest 99-08
692	963	28726	4181	3rd Highest 99-08
692	842	22616	3665	3rd Highest 99-08
925306			1289941	3rd Highest 99-08
925306	608180	888947	1288716	3rd Highest 99-08
1331905	507788	946716	1125729	3rd Highest 99-08
595534			592603	2X high land (86-05)
595491	519787	190526	624028	2X high land (86-05)
600204	503744	192977	631341	2X high land (86-05)
2427			2589	3rd Highest 99-08
2424	544	227	2584	3rd Highest 99-08
3119	459	227	2718	3rd Highest 99-08
24498			31772	3rd Highest 99-08
24420	8257	22755	31602	3rd Highest 99-08
17747	8257	61519	24680	3rd Highest 99-08
7963			7523	3rd Highest 99-08
7963	3852	1344	7525	3rd Highest 99-08
5314	2044	820	3285	3rd Highest 99-08
448815			894019	3rd Highest 99-08
448878	386358	417312	893161	3rd Highest 99-08
403486	344472	361082	795743	3rd Highest 99-08
895069			672565	3rd Highest 99-08
895130	978802	1061656	672565	3rd Highest 99-08
901498	923990	983175	626518	3rd Highest 99-08
5725			17856	3rd Highest 99-08
5661	2511	4190	17757	3rd Highest 99-08
6484	2499	6855	17597	3rd Highest 99-08
127244			147638	3rd Highest 99-08
130278	105601	122801	147971	3rd Highest 99-08
137821	113085	121880	134824	3rd Highest 99-08

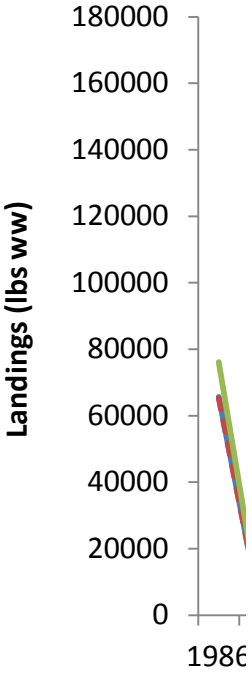


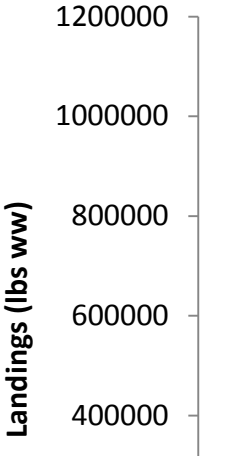




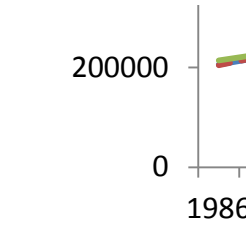
34323			42533	3rd Highest 99-08
34323	43727	33180	42533	3rd Highest 99-08
42196	41500	27948	37885	3rd Highest 99-08
35762			61194	3rd Highest 99-08
35774	32251	48417	64130	3rd Highest 99-08
35663	36726	48299	67441	3rd Highest 99-08
62712			153466	3rd Highest 99-08
62720	37056	44481	153466	3rd Highest 99-08
54972	31286	33504	119984	3rd Highest 99-08
8443			10568	3rd Highest 99-08
8481	13857	49125	10577	3rd Highest 99-08
8481	13857	49072	9270	3rd Highest 99-08
581			160	3rd Highest 99-08
313	61	34	160	3rd Highest 99-08
155	61	34	548	3rd Highest 99-08
11849			34662	3rd Highest 99-08
11830	5708	9819	34616	3rd Highest 99-08
13043	5322	8170	29889	3rd Highest 99-08
2349			2863	3rd Highest 99-08
2349	589	211	2863	3rd Highest 99-08
2349	589	211	2863	3rd Highest 99-08
1898			9344	3rd Highest 99-08
1898	5803	5644	9306	3rd Highest 99-08
1898	5803	5644	9466	3rd Highest 99-08
15783			25885	3rd Highest 99-08
15782	8881	5503	25875	3rd Highest 99-08
15434	8881	5503	24867	3rd Highest 99-08
27729			37569	3rd Highest 99-08
27800	19848	23630	37577	3rd Highest 99-08
30066	19837	23625	37953	3rd Highest 99-08
17816			35266	3rd Highest 99-08
18120	6699	2500	36920	3rd Highest 99-08
5818	5149	1463	22674	3rd Highest 99-08
15607			8823	3rd Highest 99-08
15192	2236	3847	8521	3rd Highest 99-08
15772	2066	4279	7983	3rd Highest 99-08
312			4205	3rd Highest 99-08
312	972	437	3710	3rd Highest 99-08
395	832	437	3606	3rd Highest 99-08
387215			492572	Median 99-08
390990	258512	324104	499255	Median 99-08
396682	276209	314978	509788	Median 99-08
8551			8999	3rd Highest 99-08
8551	11682	8841	8999	3rd Highest 99-08
8551	11808	8515	9306	3rd Highest 99-08
15996			27519	Median 99-08
16014	6613	28088	27529	Median 99-08

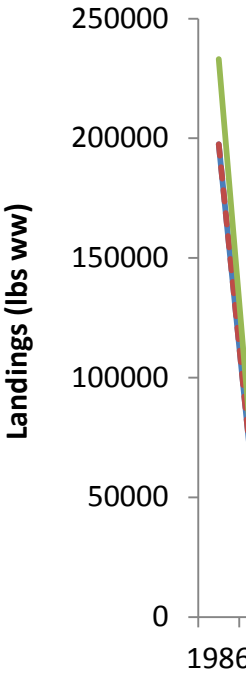


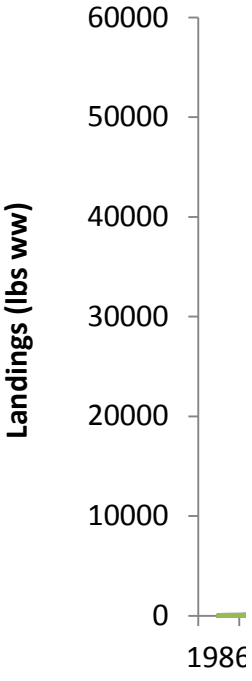




17296	6552	26048	25104	Median 99-08
92601			70948	3rd Highest 99-08
92025	33894	36957	70948	3rd Highest 99-08
95138	28485	32679	80056	3rd Highest 99-08
536840			635899	Median 99-08
536850	343218	371407	663390	Median 99-08
558227	366974	366340	674033	Median 99-08
8218			30684	3rd Highest 99-08
8219	28003	21273	30671	3rd Highest 99-08
12089	24729	23441	25024	3rd Highest 99-08
28402			30221	Median 99-08
28402	28516	2600	30221	Median 99-08
28024	26487	2600	30221	Median 99-08
3284			9258	3rd Highest 99-08
3284	3774	9549	9258	3rd Highest 99-08
3284	3774	9549	9258	3rd Highest 99-08
95			4661	3rd Highest 99-08
95	414	36	4692	3rd Highest 99-08
95	622	36	4040	3rd Highest 99-08







35000
30000
25000
20000
15000
10000
5000
0
Landings (lbs ww)
1986

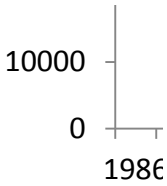
60000
50000
40000
30000
20000
10000
0
Landings (lbs ww)
1986

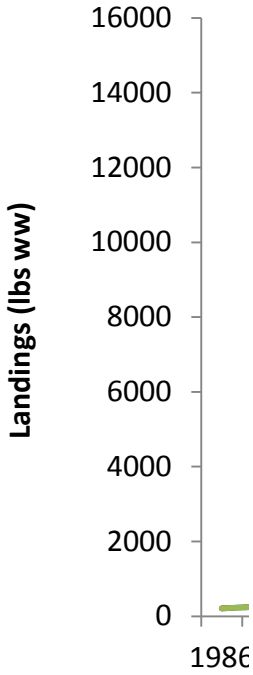
18000
16000
14000
12000

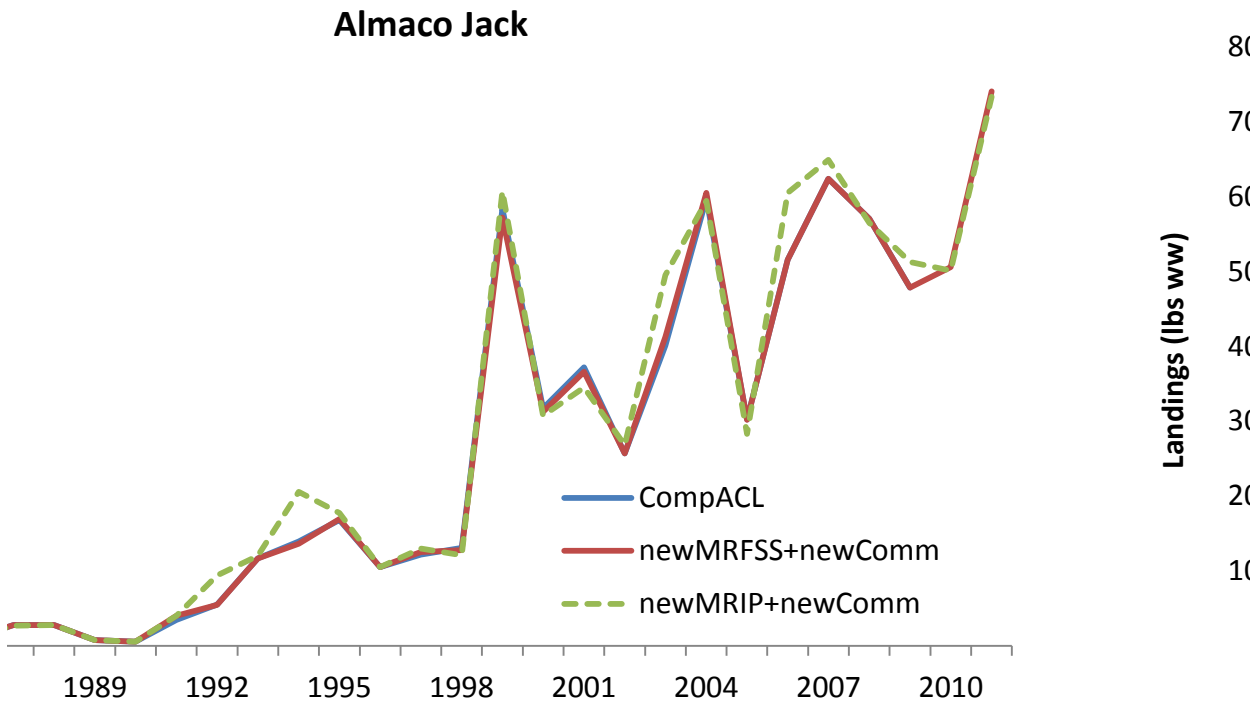
Landings (lbs ww
10000
8000
6000
4000
2000
0
1986

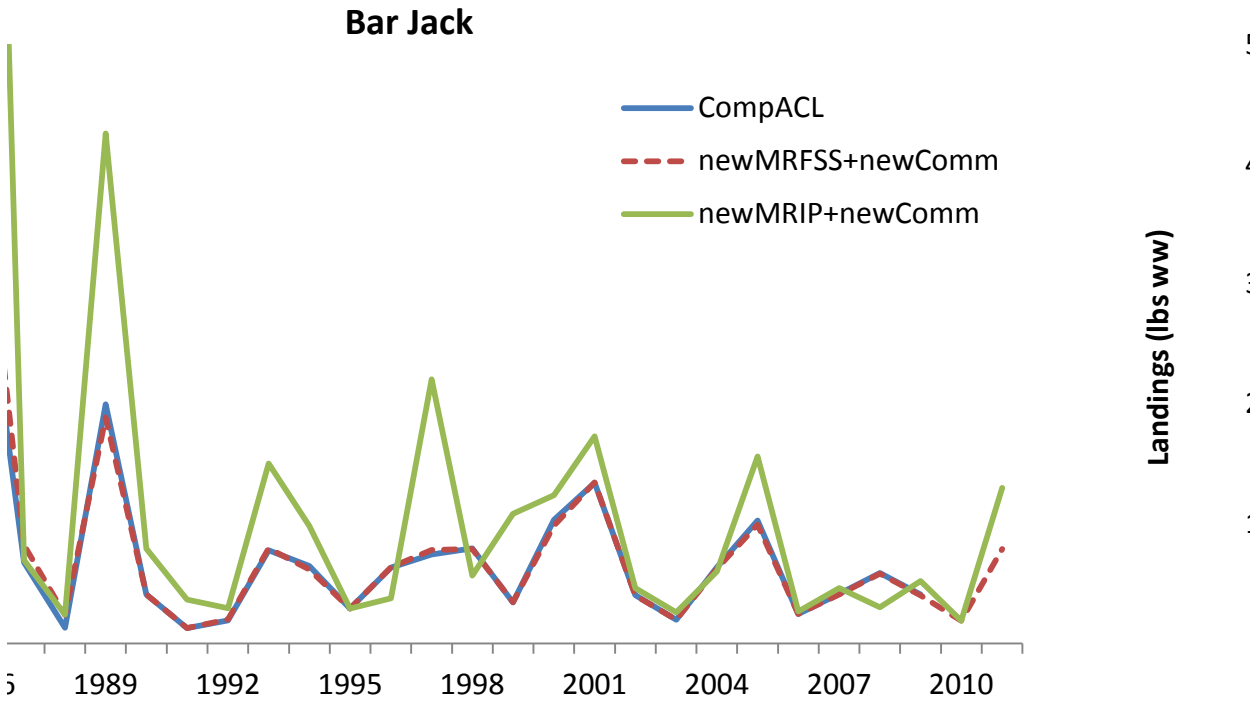
Landings (lbs ww)
90000
80000
70000
60000
50000
40000
30000
20000
10000
0
1986

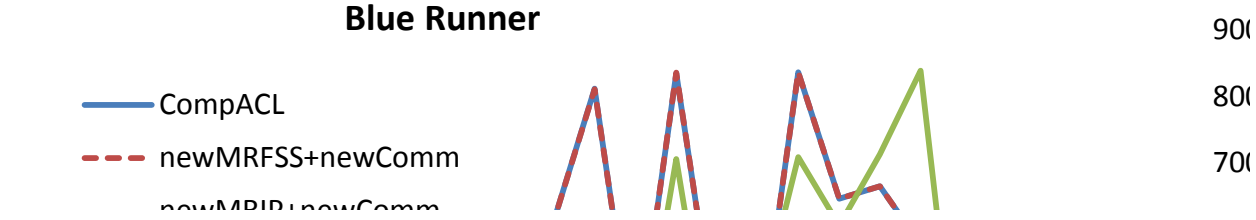
Landings (lbs ww)
90000
80000
70000
60000
50000
40000
30000
20000

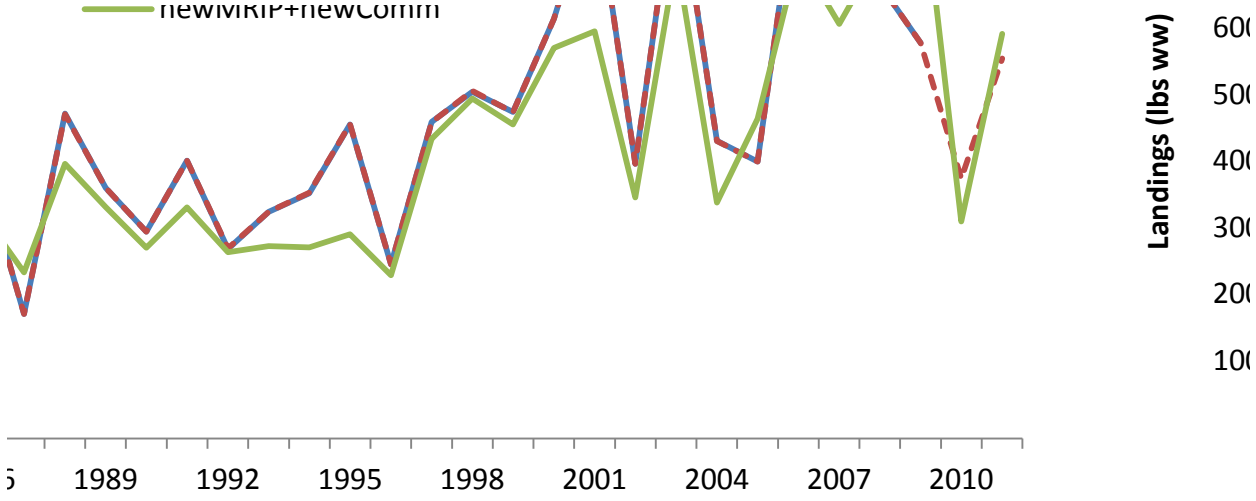

10000
0
1986


Landings (lbs ww)
16000
14000
12000
10000
8000
6000
4000
2000
0
1986

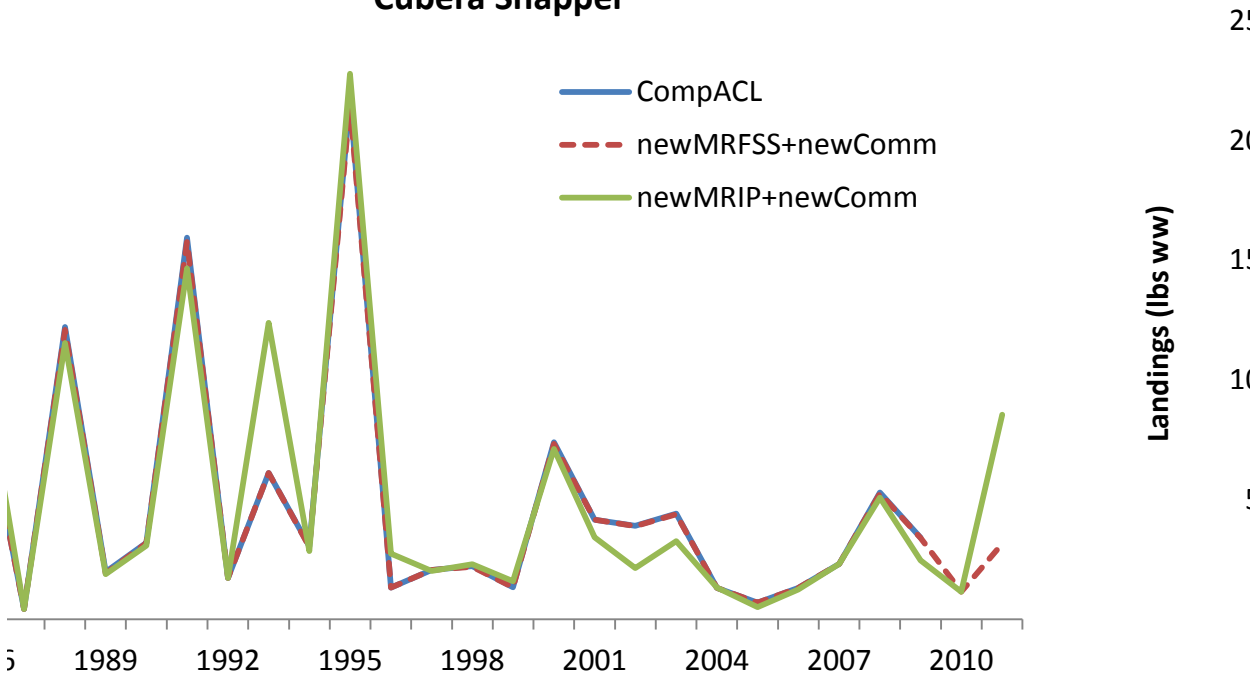

Almaco Jack
Landings (lbs ww)
CompACL
newMRFSS+newComm
newMRIP+newComm
1989
1992
1995
1998
2001
2004
2007
2010


Bar Jack
Landings (lbs ww)
CompACL
newMRFSS+newComm
newMRIP+newComm
1989
1992
1995
1998
2001
2004
2007
2010

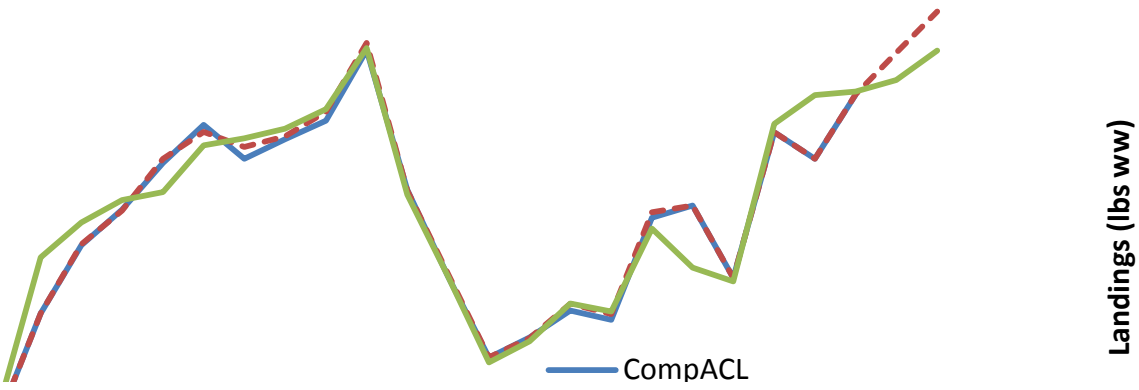

Blue Runner
CompACL
newMRFSS+newComm

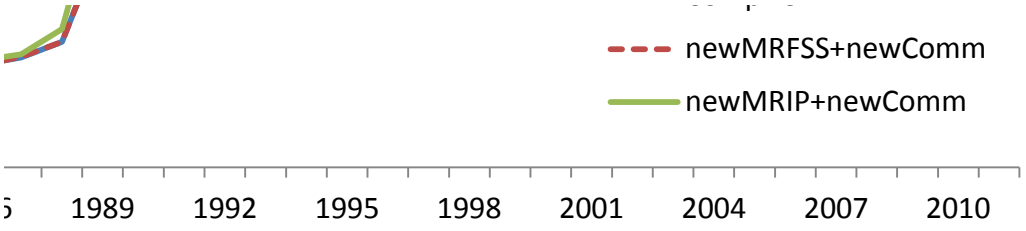


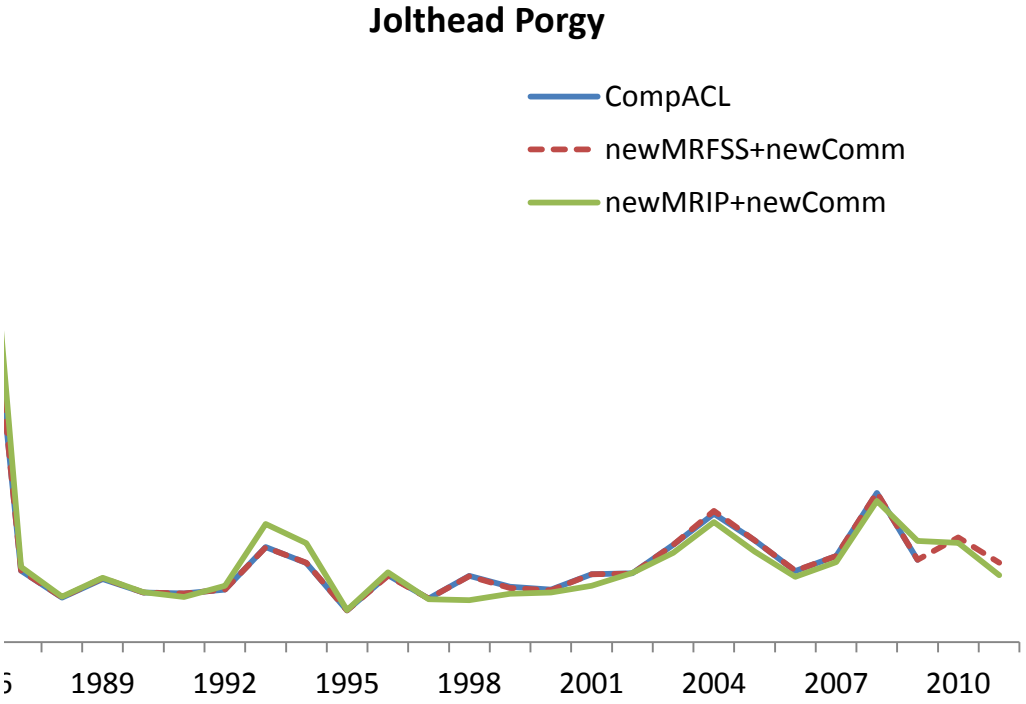
Cubera Snapper

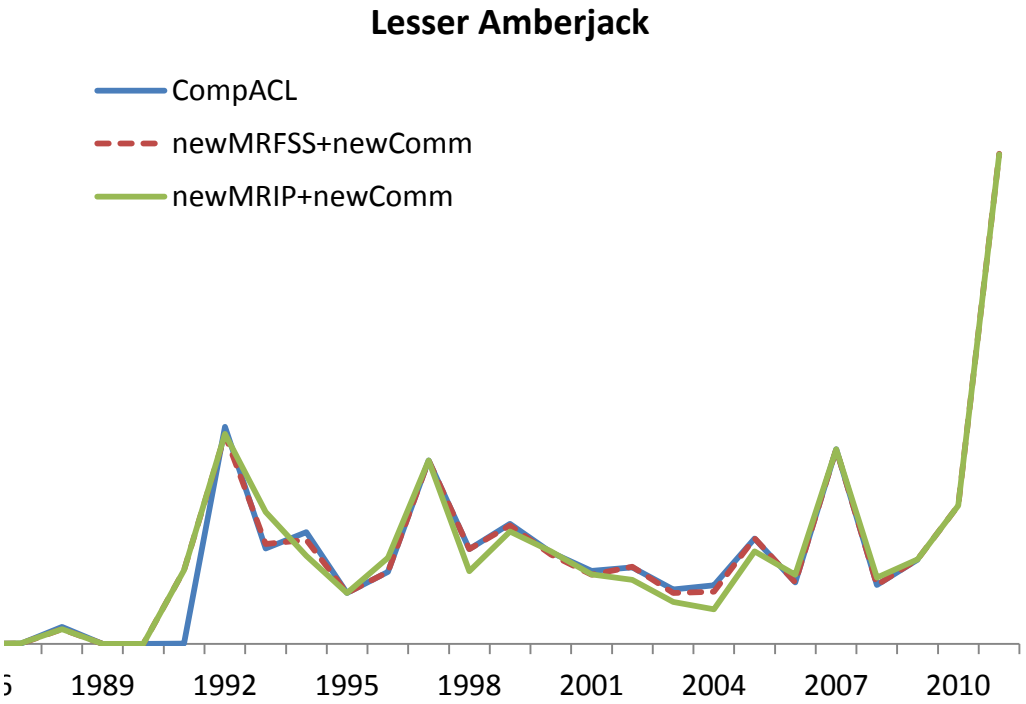


Gray Triggerfish

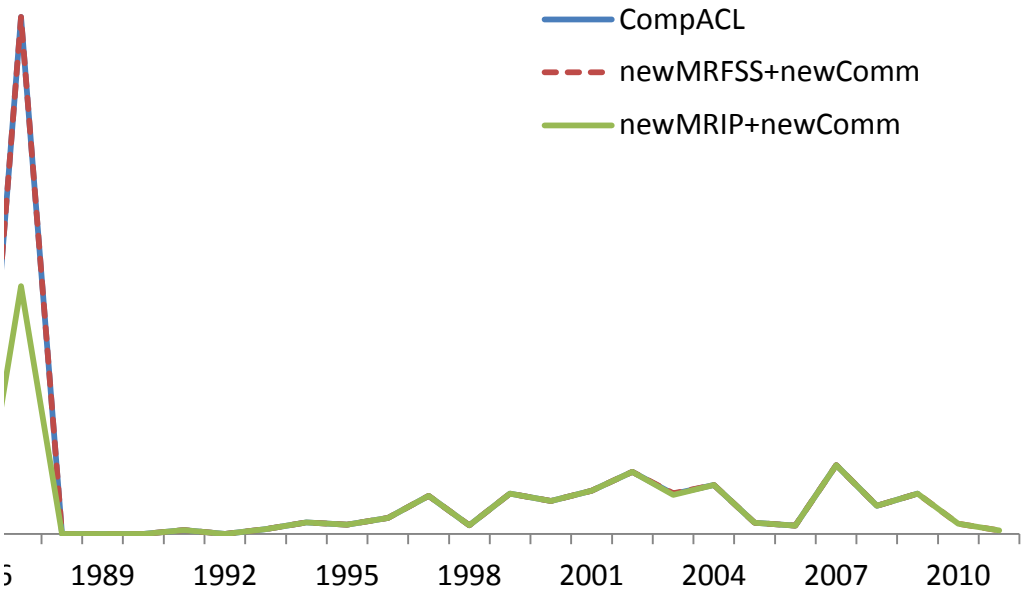



newMRFSS+newComm
newMRIP+newComm
1989
1992
1995
1998
2001
2004
2007
2010

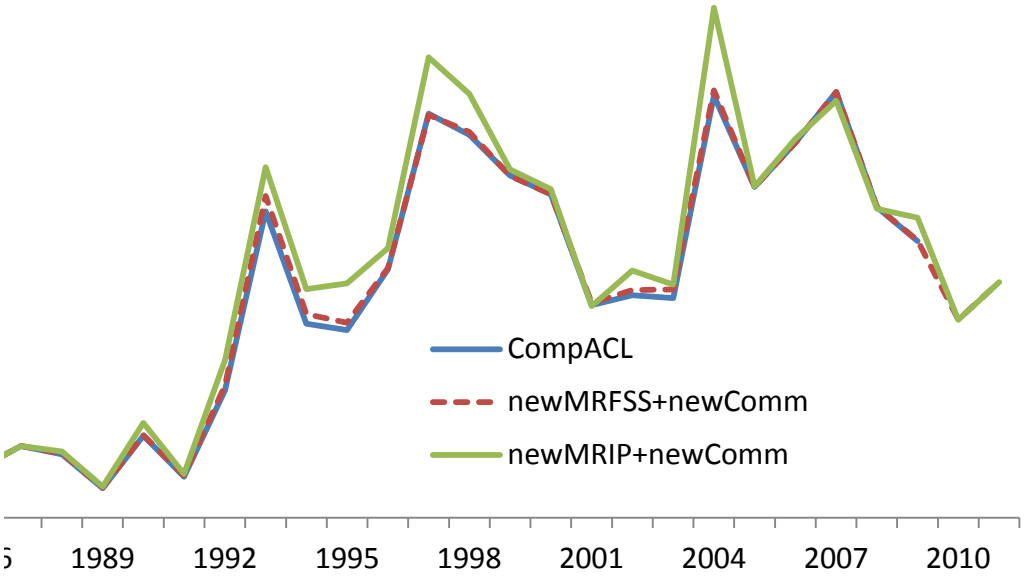

Jolthead Porgy
CompACL
newMRFSS+newComm
newMRIP+newComm
Landings (lbs ww)
1989
1992
1995
1998
2001
2004
2007
2010


Lesser Amberjack
CompACL
newMRFSS+newComm
newMRIP+newComm
Landings (lbs ww)
1989
1992
1995
1998
2001
2004
2007
2010

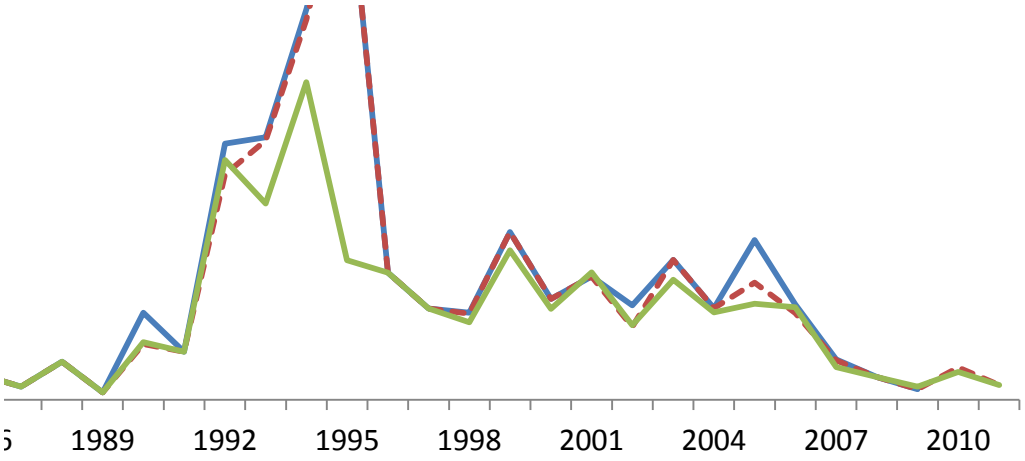
Misty Grouper



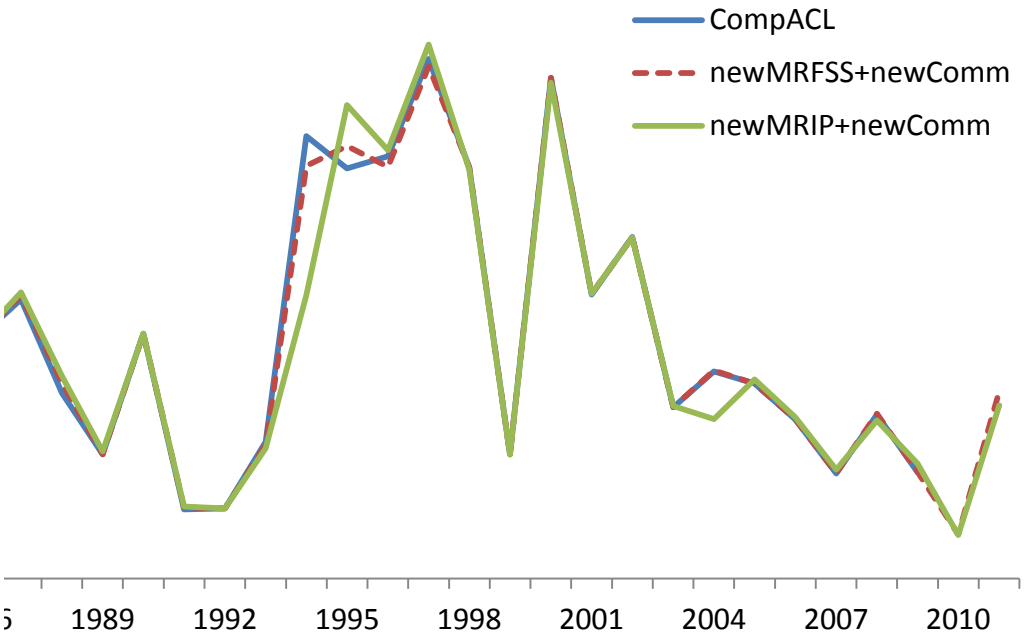
Rock Hind



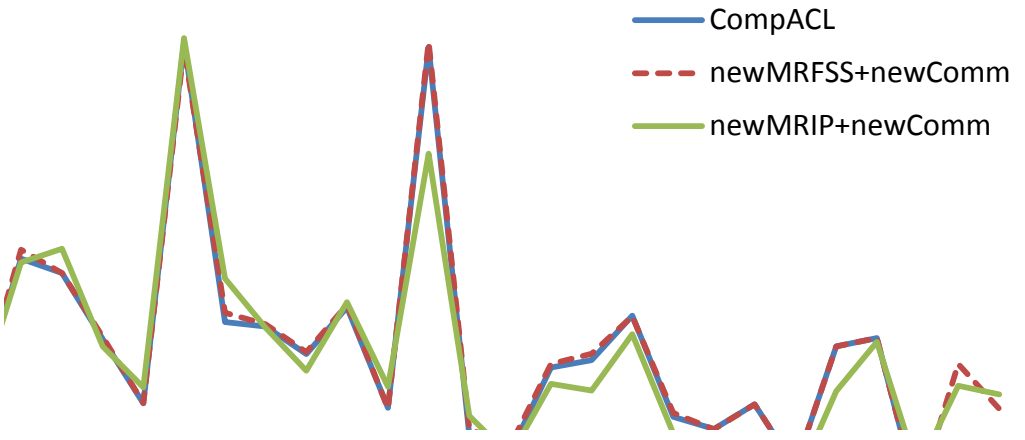
Saucereye Porgy

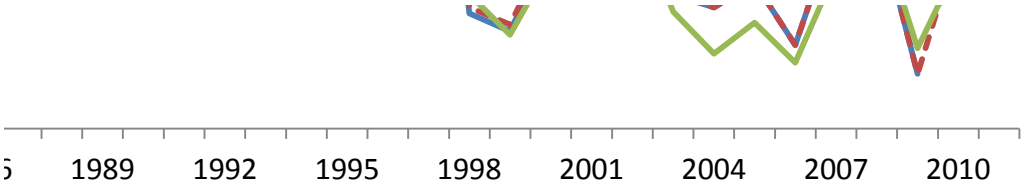


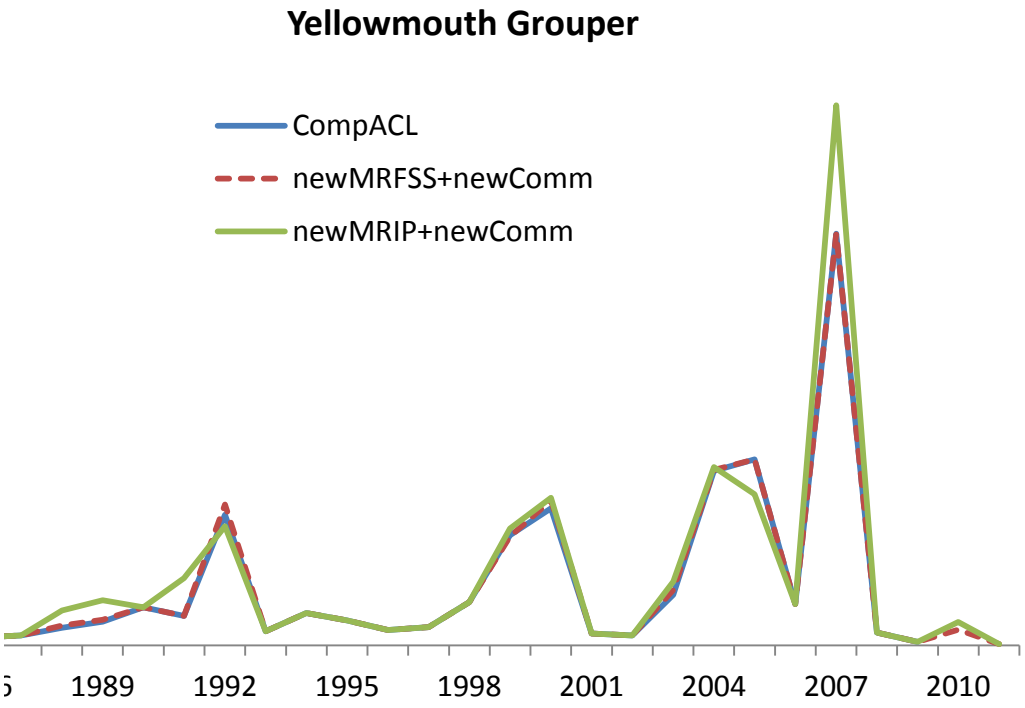
Silk Snapper

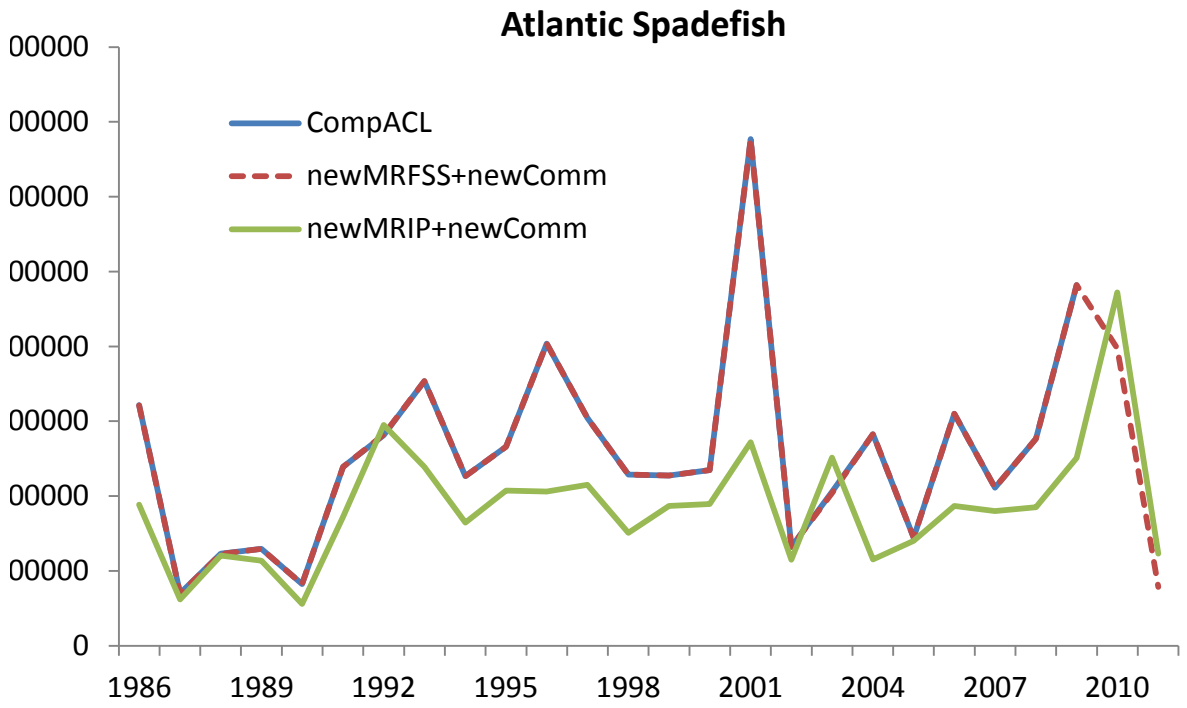


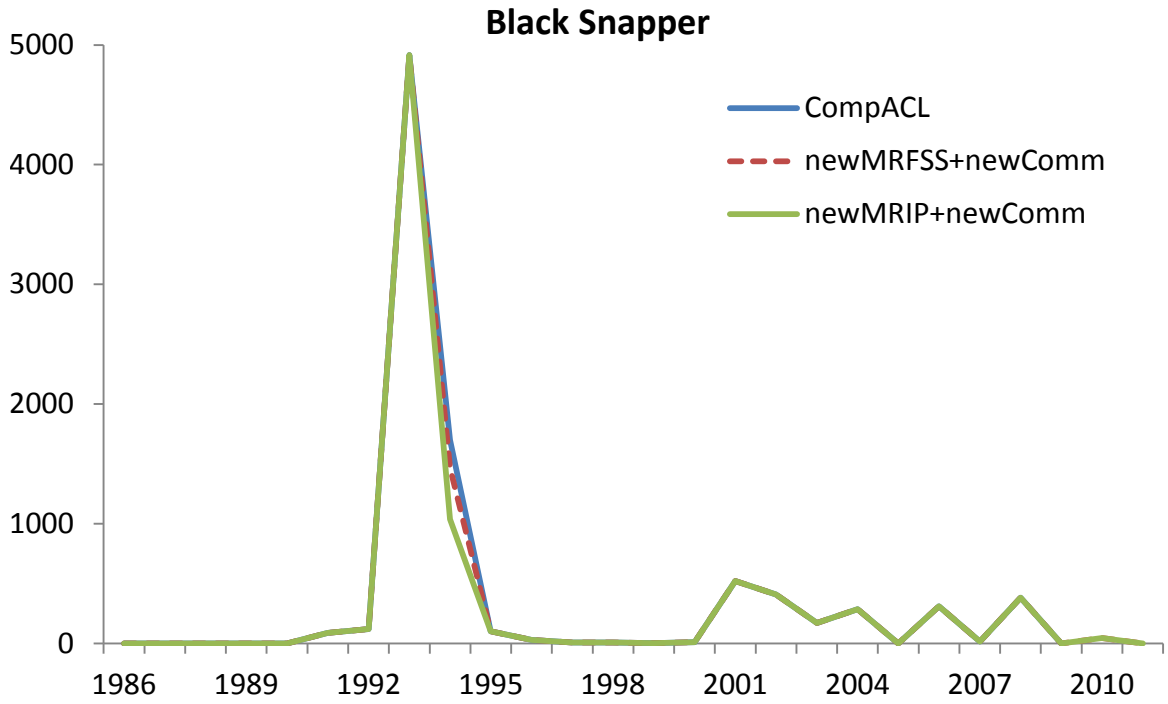
Whitebone Porgy

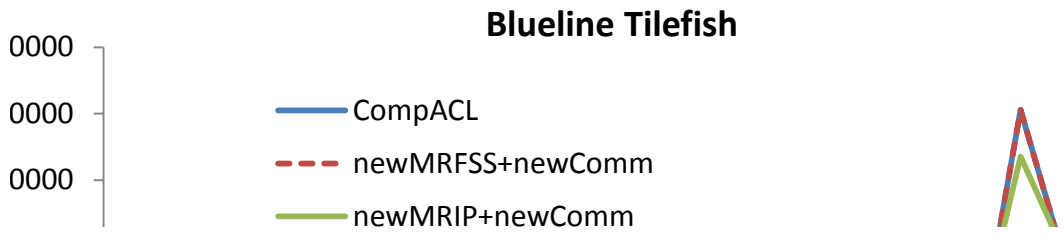


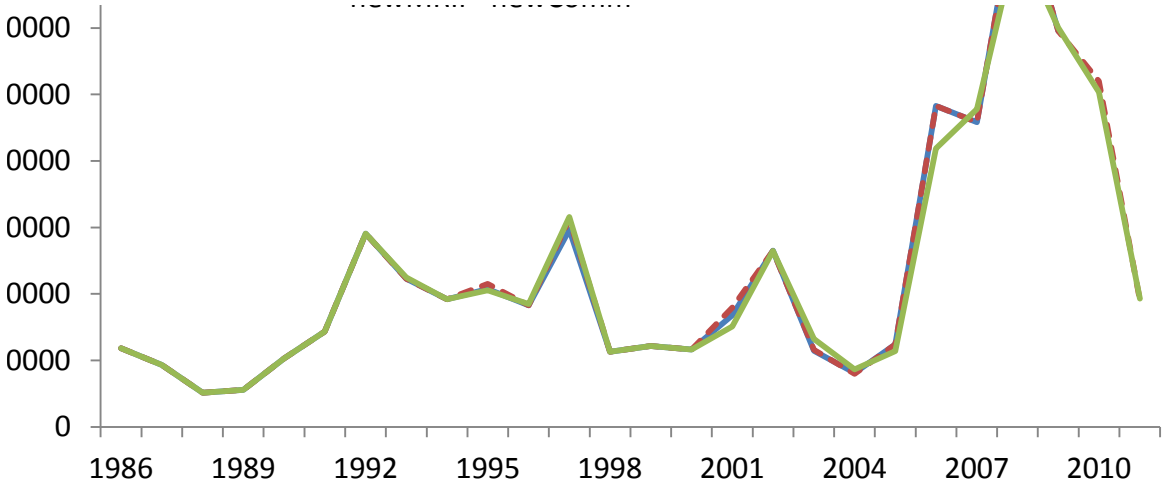

1989
1992
1995
1998
2001
2004
2007
2010

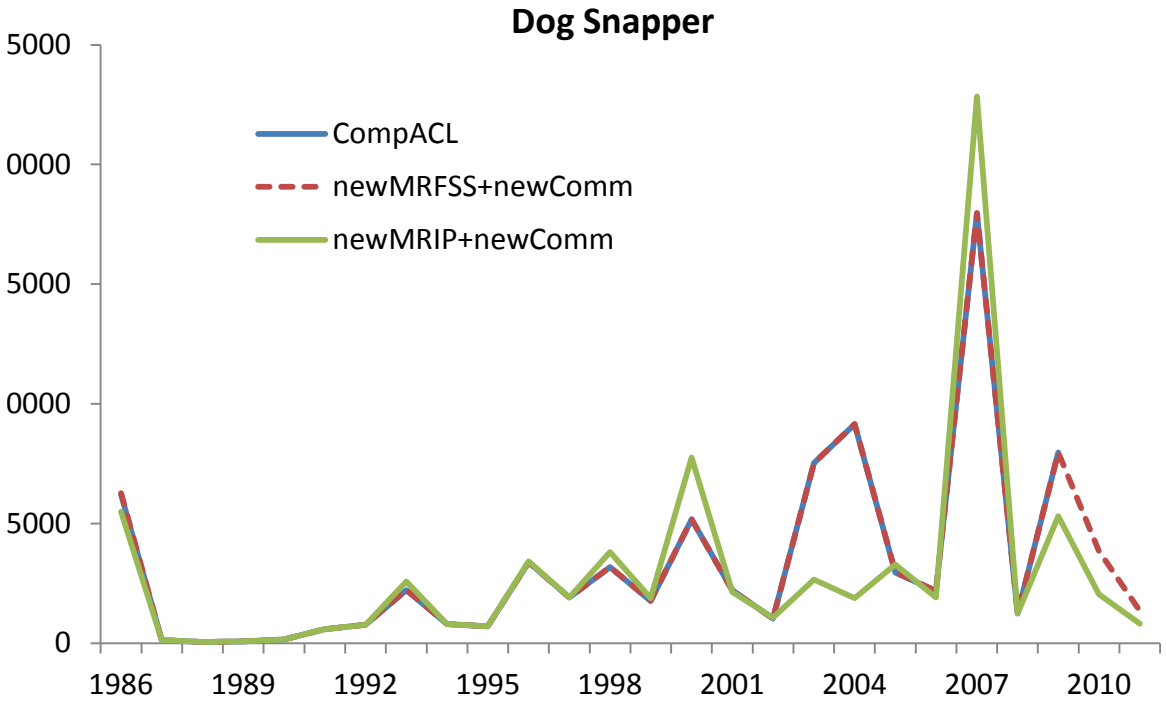

Yellowmouth Grouper
CompACL
newMRFSS+newComm
newMRIP+newComm
1989
1992
1995
1998
2001
2004
2007
2010

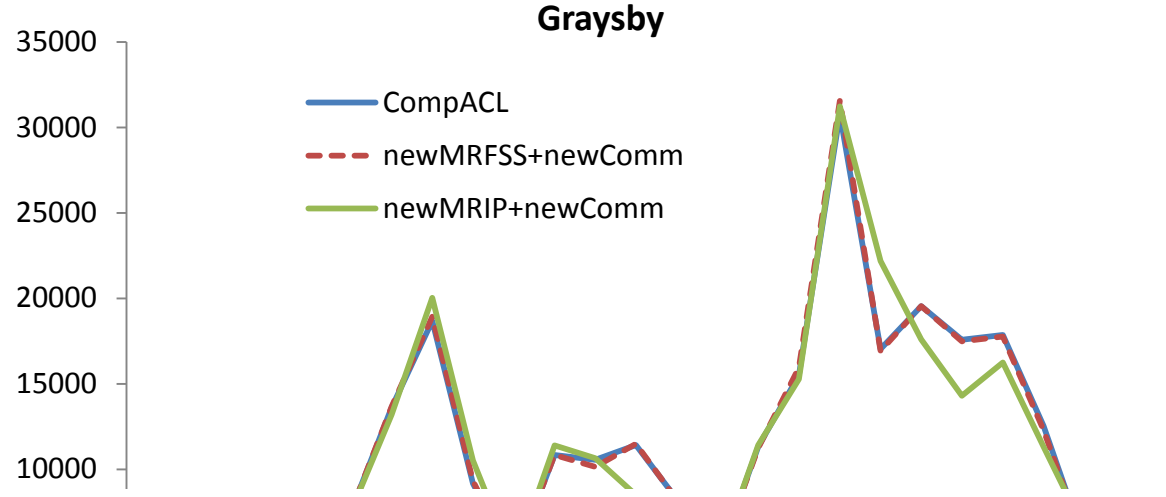

Atlantic Spadefish
00000
00000
00000
00000
00000
00000
00000
0
CompACL
newMRFSS+newComm
newMRIP+newComm
1986
1989
1992
1995
1998
2001
2004
2007
2010


Black Snapper
5000
4000
3000
2000
1000
0
CompACL
newMRFSS+newComm
newMRIP+newComm
1986
1989
1992
1995
1998
2001
2004
2007
2010


Blueline Tilefish
0000
0000
0000
CompACL
newMRFSS+newComm
newMRIP+newComm


0000
0000
0000
0000
0000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010


Dog Snapper
5000
0000
5000
0000
5000
0
CompACL
newMRFSS+newComm
newMRIP+newComm
1986
1989
1992
1995
1998
2001
2004
2007
2010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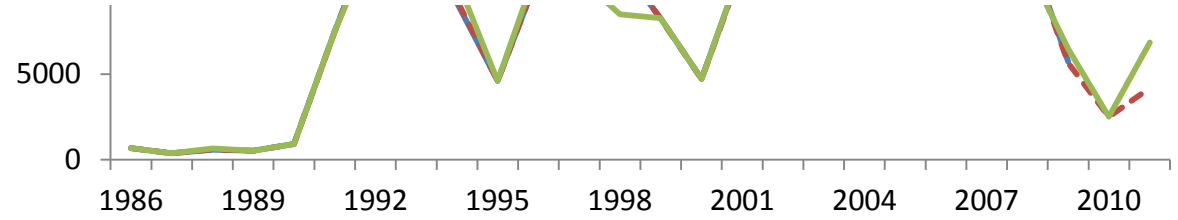
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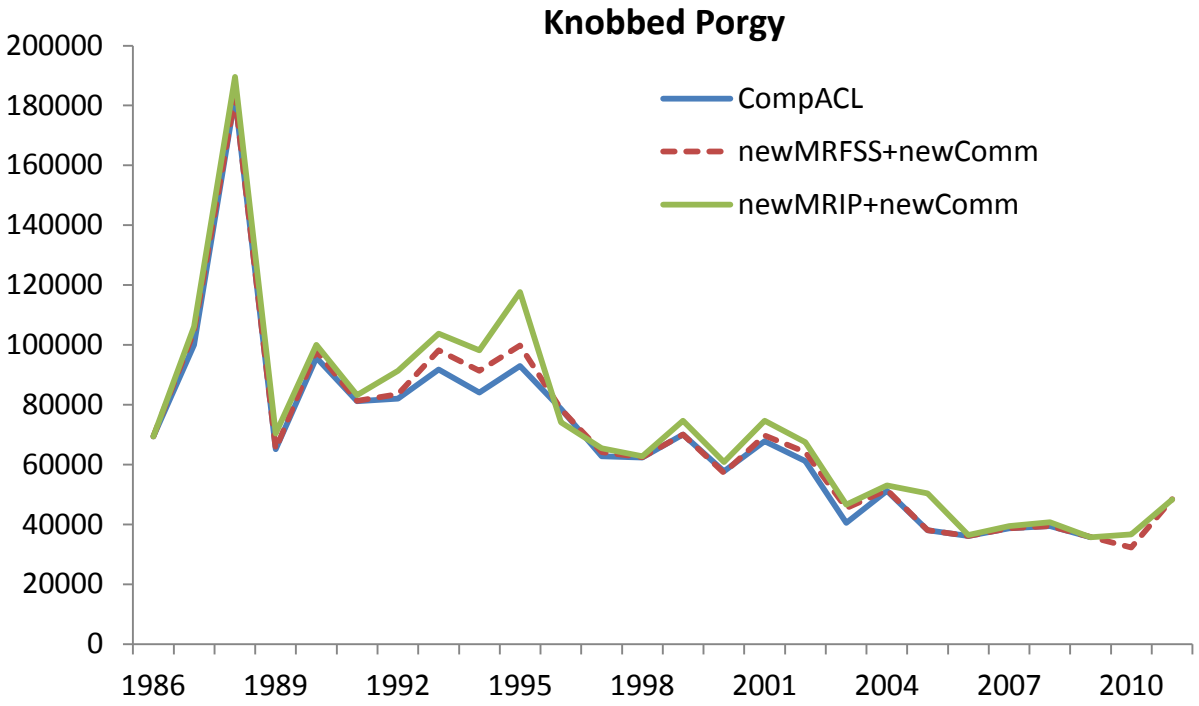
Knobbed Porgy
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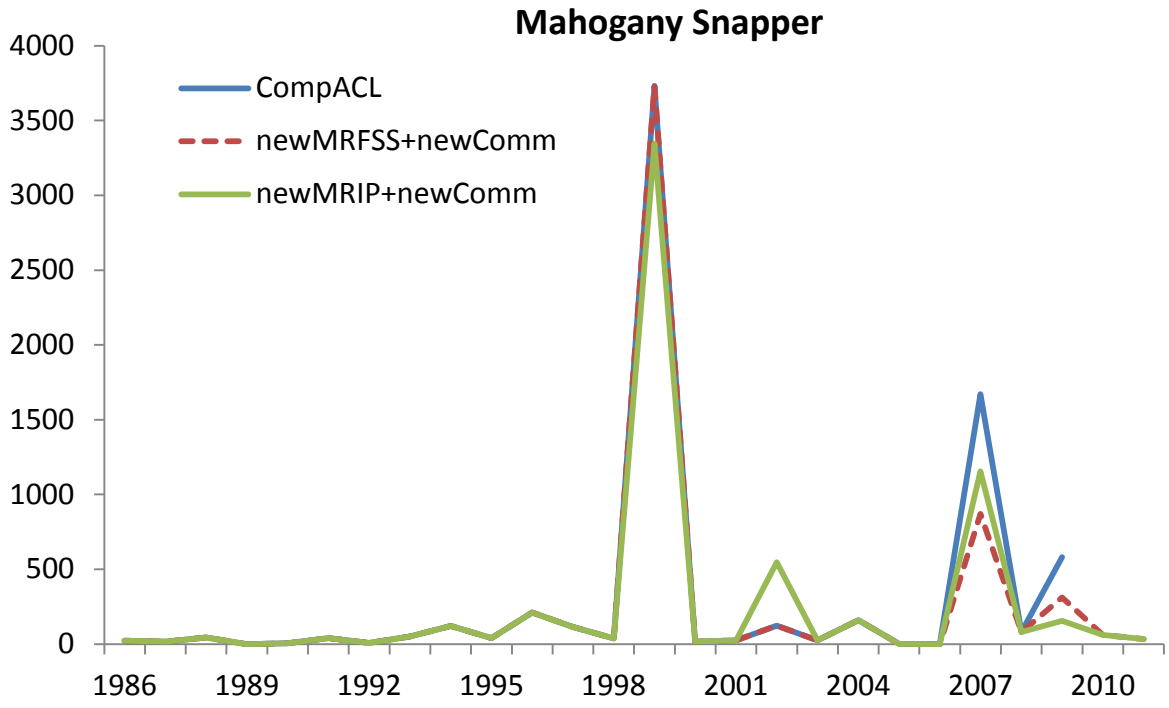
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newMRIP+newComm
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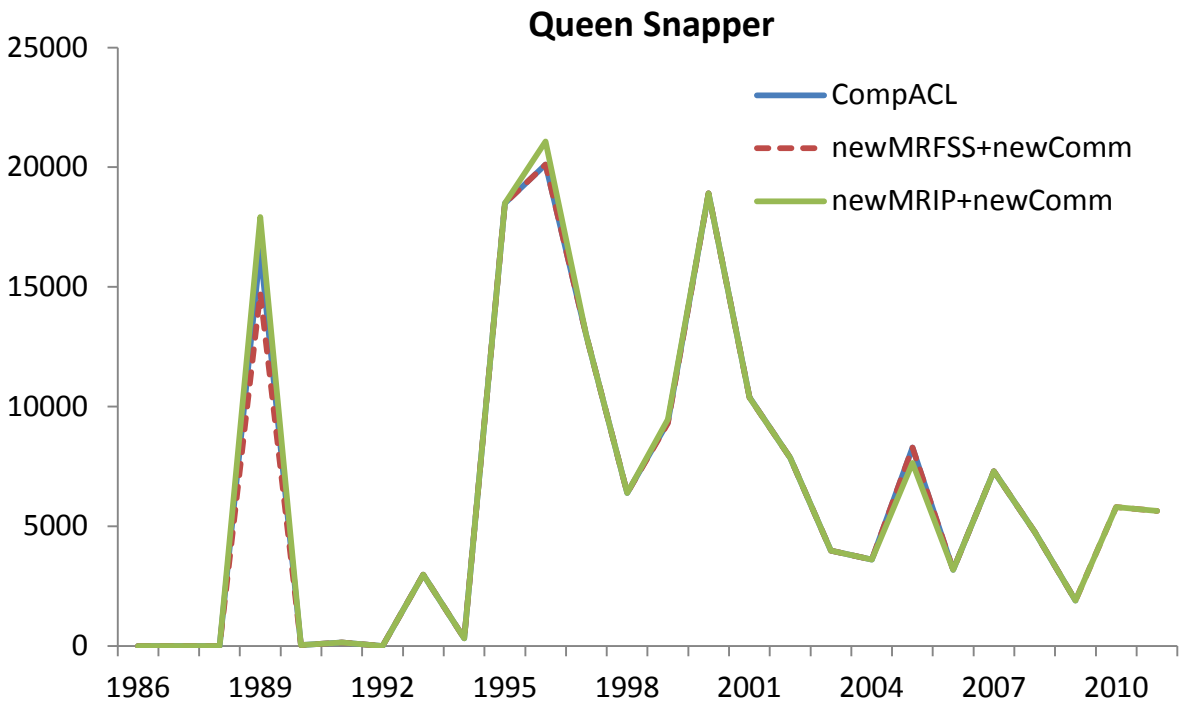
Queen Snapper
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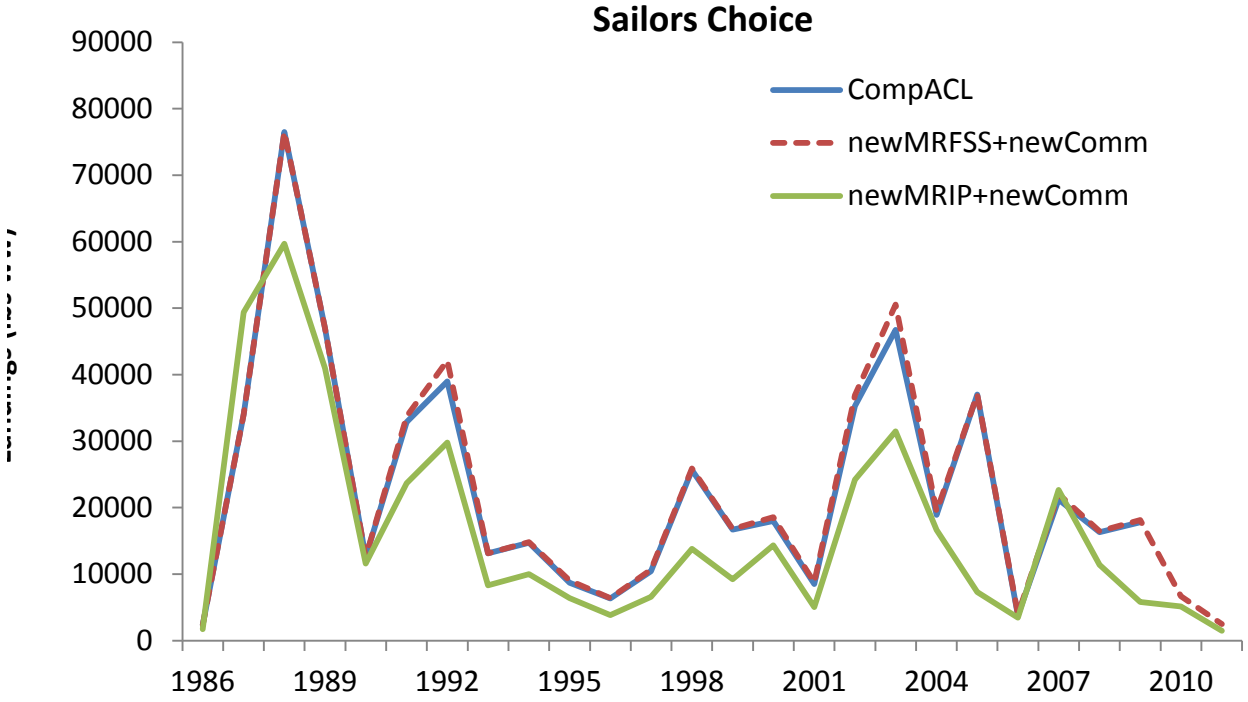
Sailors Choice
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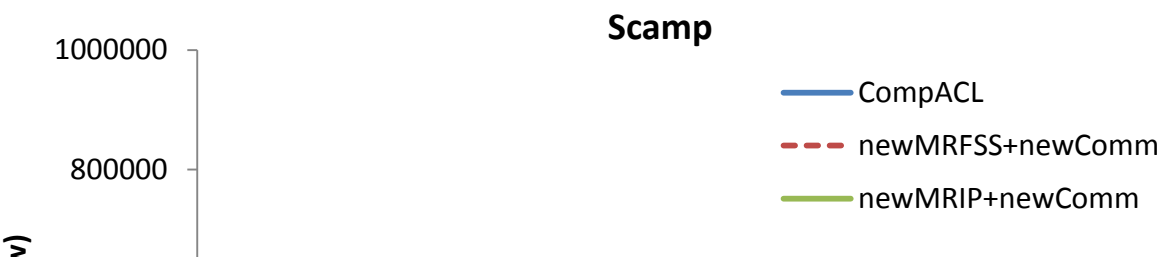
newMRFSS+newComm
newMRIP+newComm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CompACL
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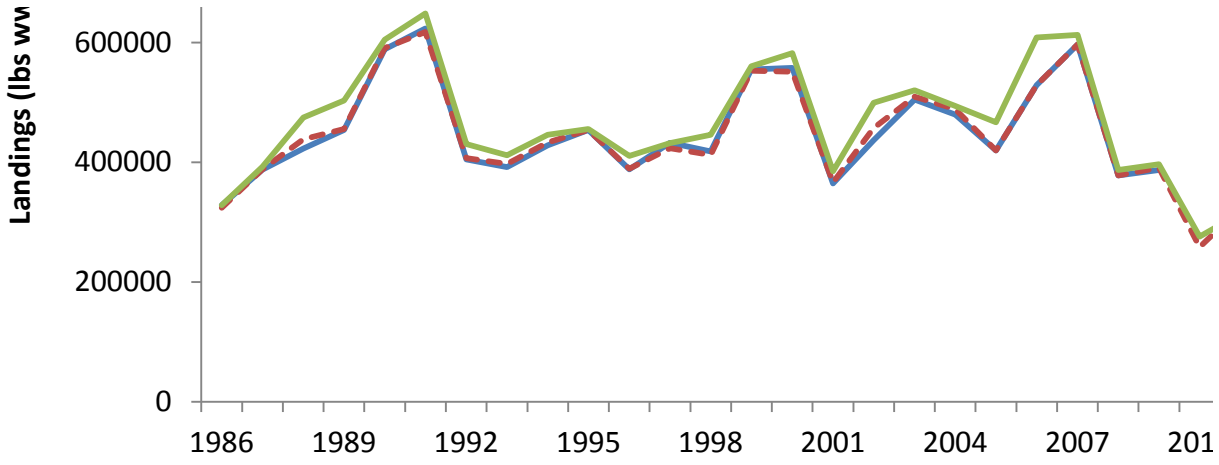
Landings (lbs ww
600000
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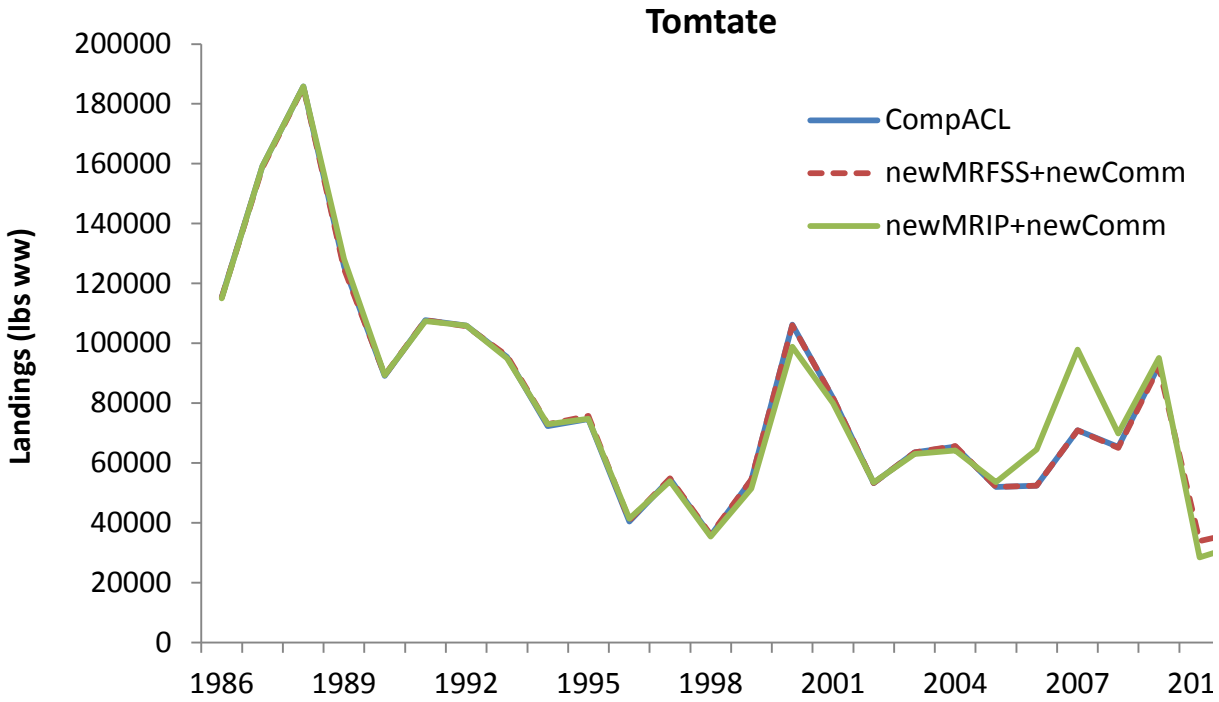
Tomtate
Landings (lbs ww)
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newMRIP+newComm
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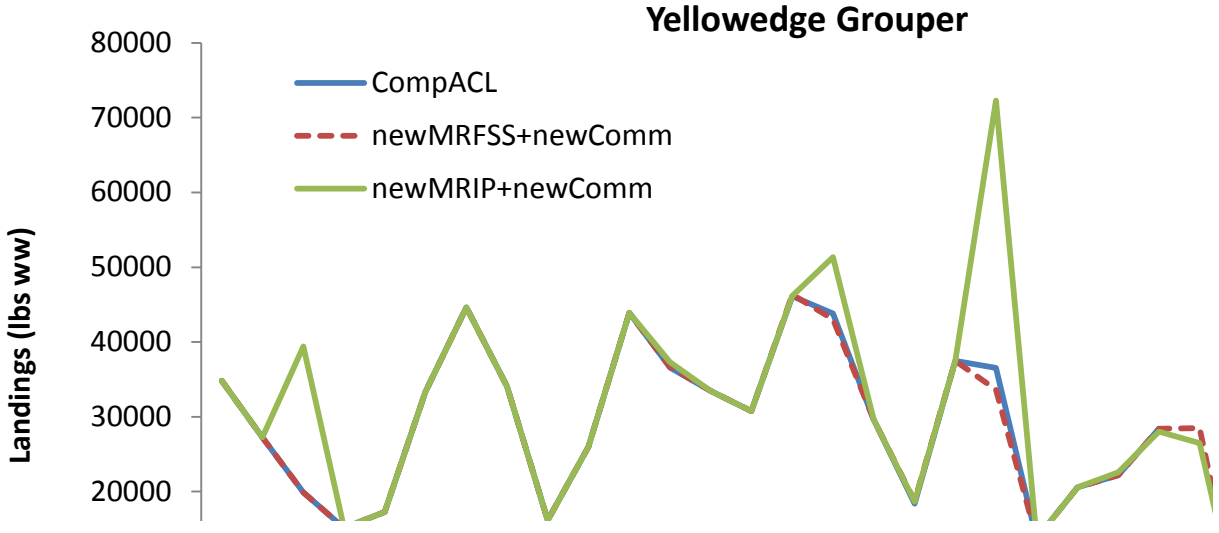
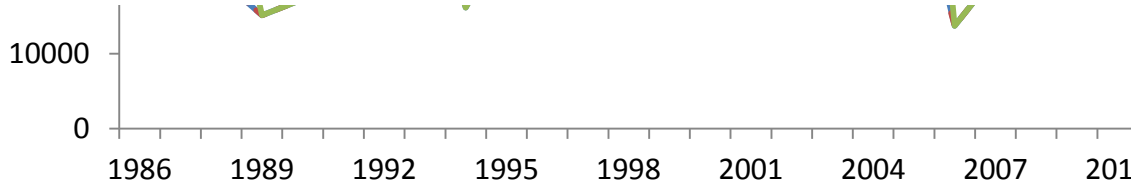

Yellowedge Grouper
Landings (lbs ww)
80000
70000
60000
50000
40000
30000
20000
CompACL
newMRFSS+newComm
newMRIP+newComm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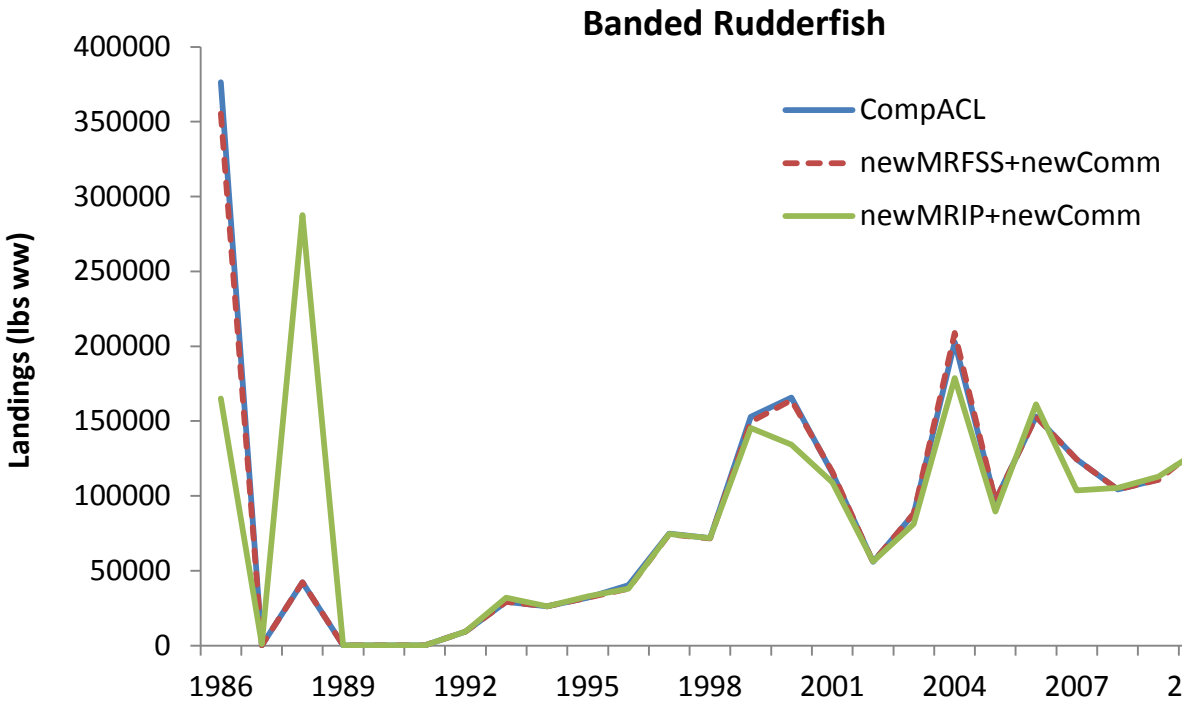
Banded Rudderfish
Landings (lbs ww)
400000
350000
300000
250000
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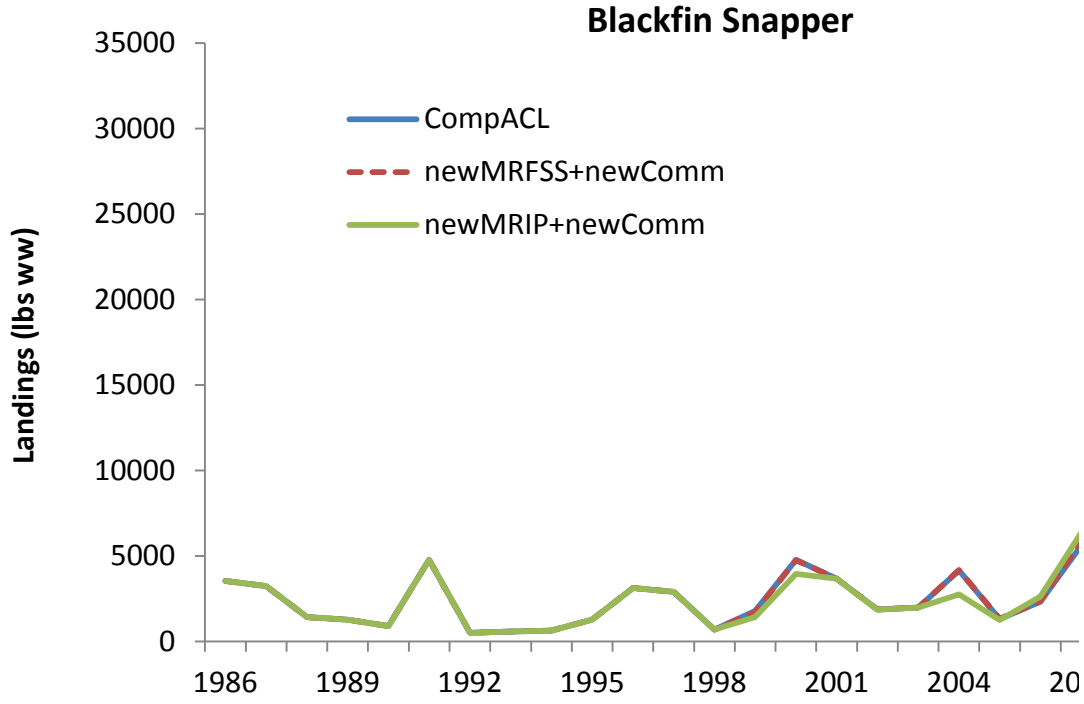
CompACL
newMRFSS+newComm
newMRIP+newComm


Blackfin Snapper
Landings (lbs ww)
35000
30000
25000
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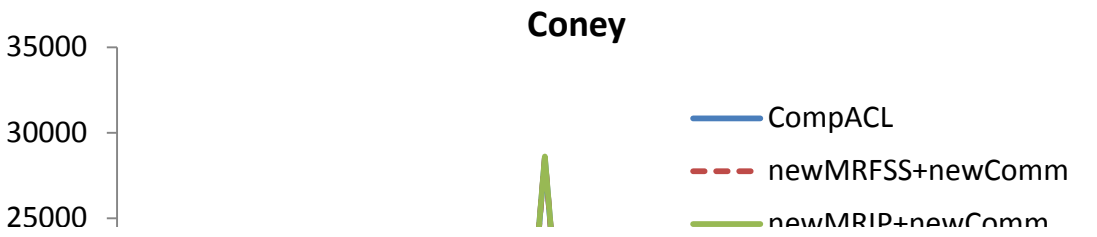
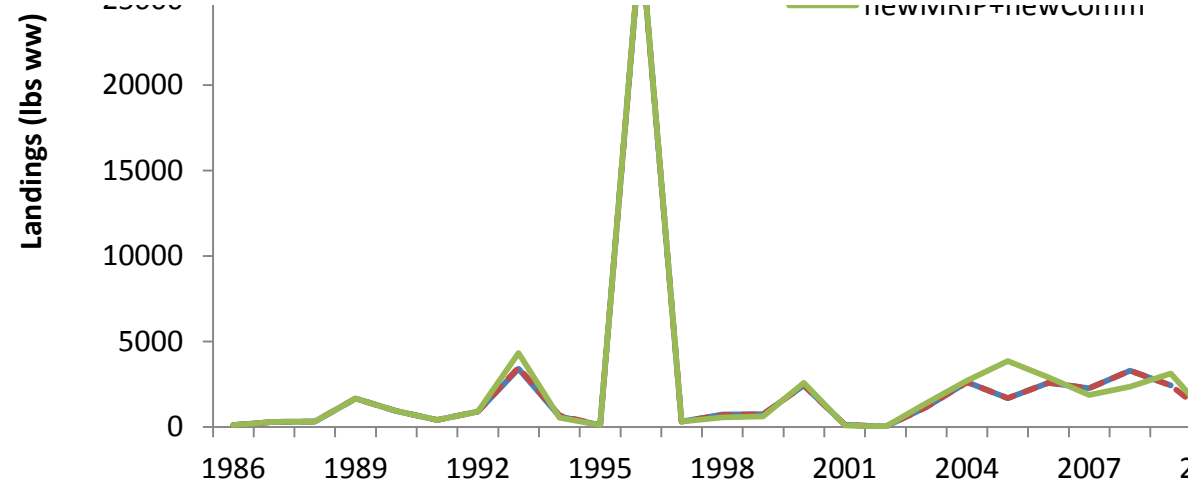
1998
2001
2004
CompACL
newMRFSS+newComm
newMRIP+newComm


Coney
35000
30000
25000
CompACL
newMRFSS+newComm


Landings (lbs ww)
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15000
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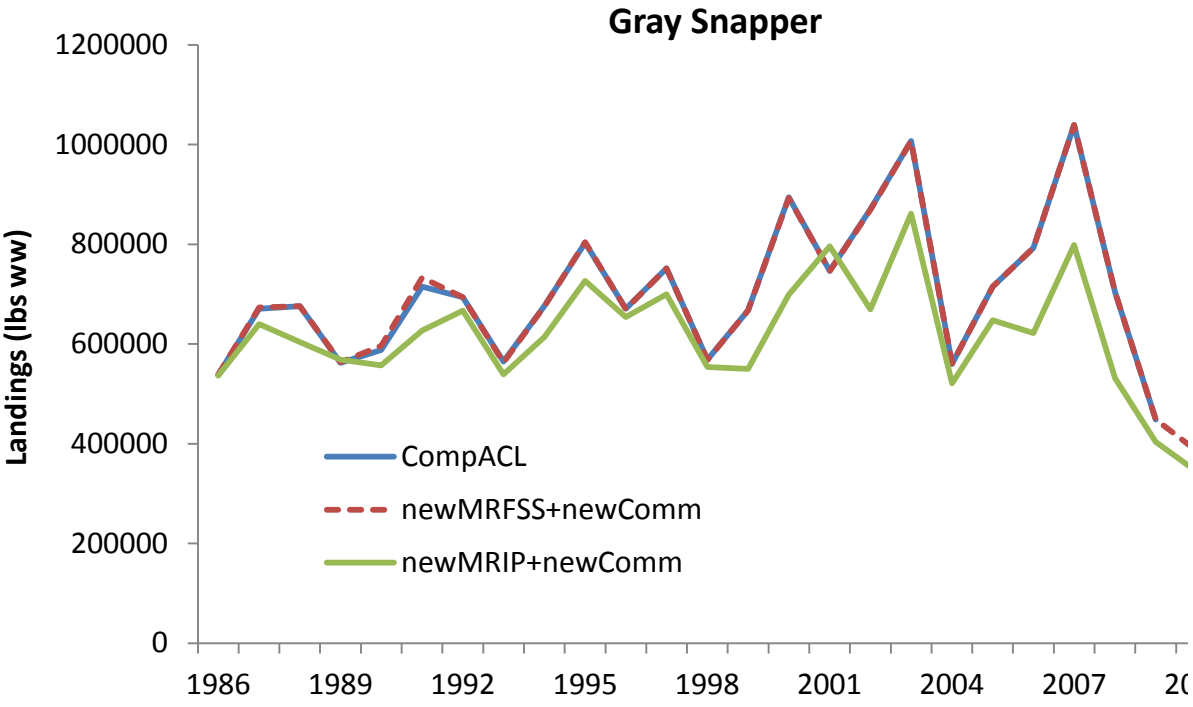
Gray Snapper
Landings (lbs ww)
1200000
1000000
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400000
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CompACL
newMRFSS+newComm
newMRIP+newComm
1986
1989
1992
1995
1998
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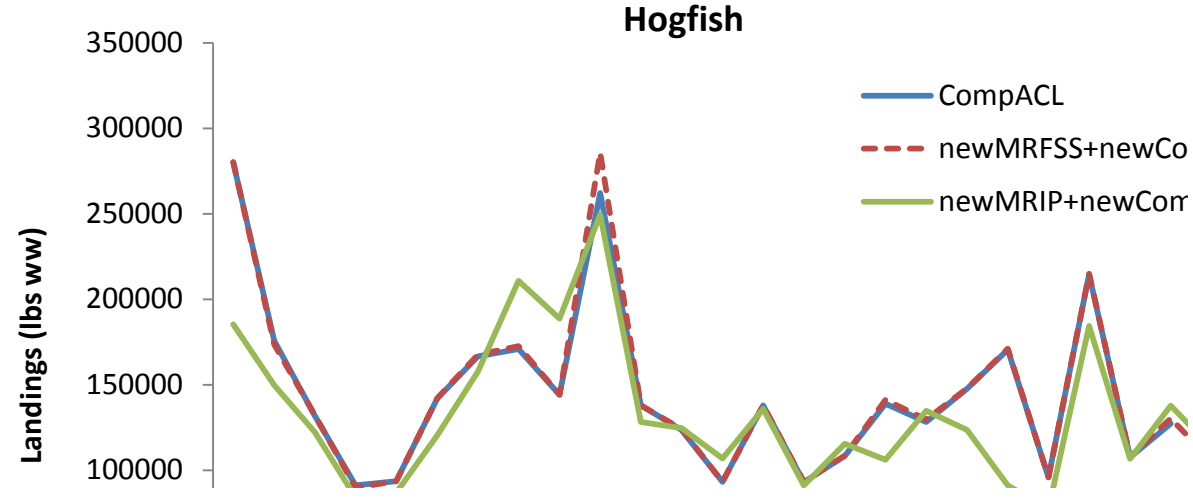
2007


Hogfish
Landings (lbs ww)
350000
300000
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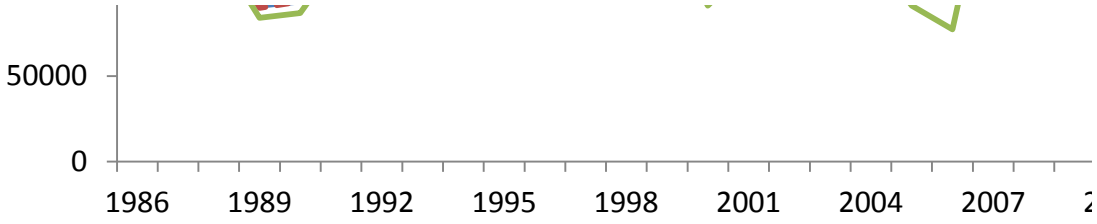
200000
150000
100000
CompACL
newMRFSS+newCo
newMRIP+newCom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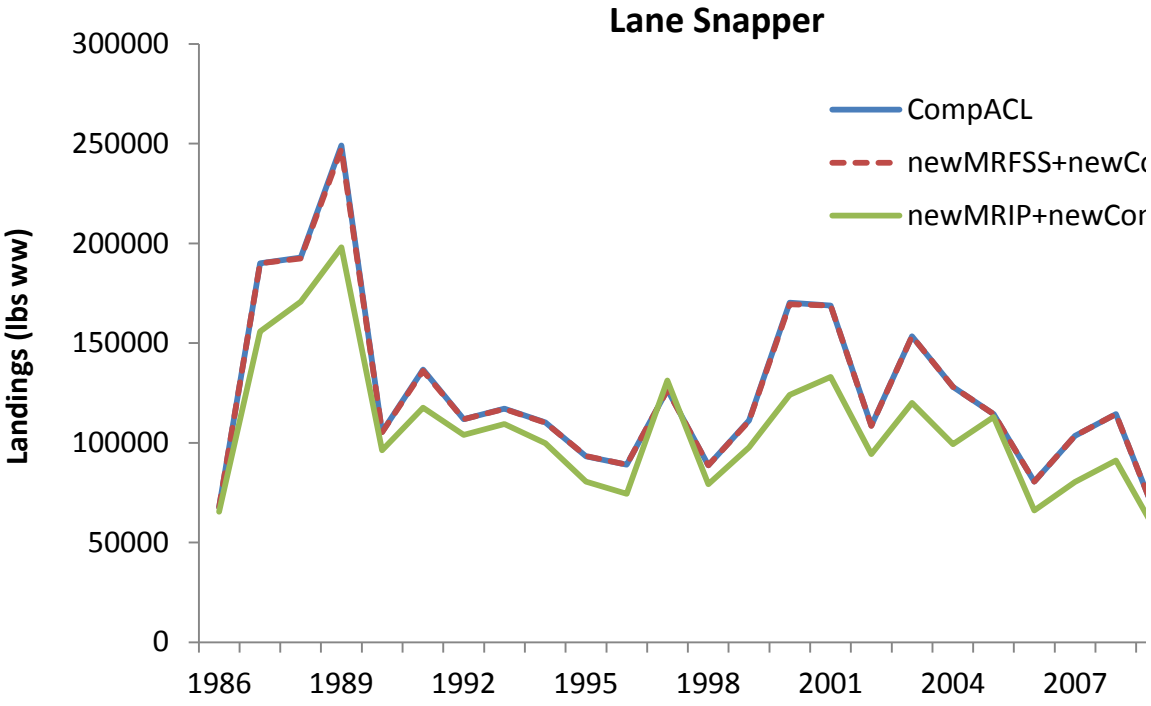
Lane Snapper
Landings (lbs ww)
300000
250000
200000
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100000
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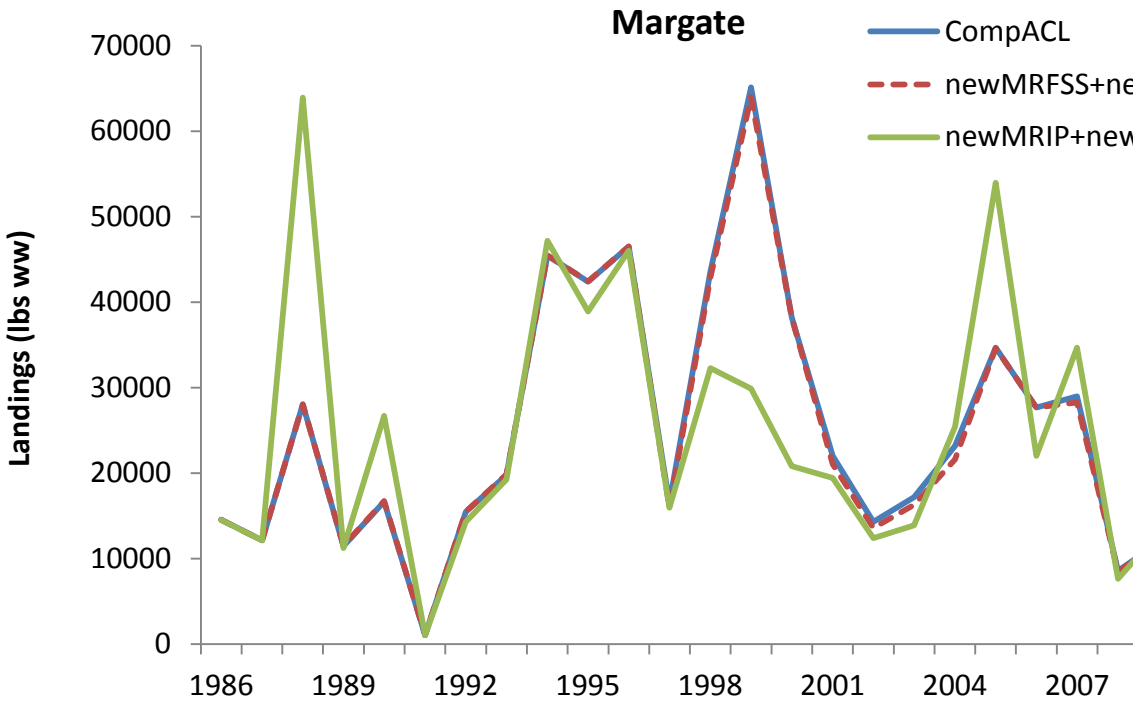
CompACL
newMRFSS+newC
newMRIP+newCor


Margate
Landings (lbs ww)
70000
60000
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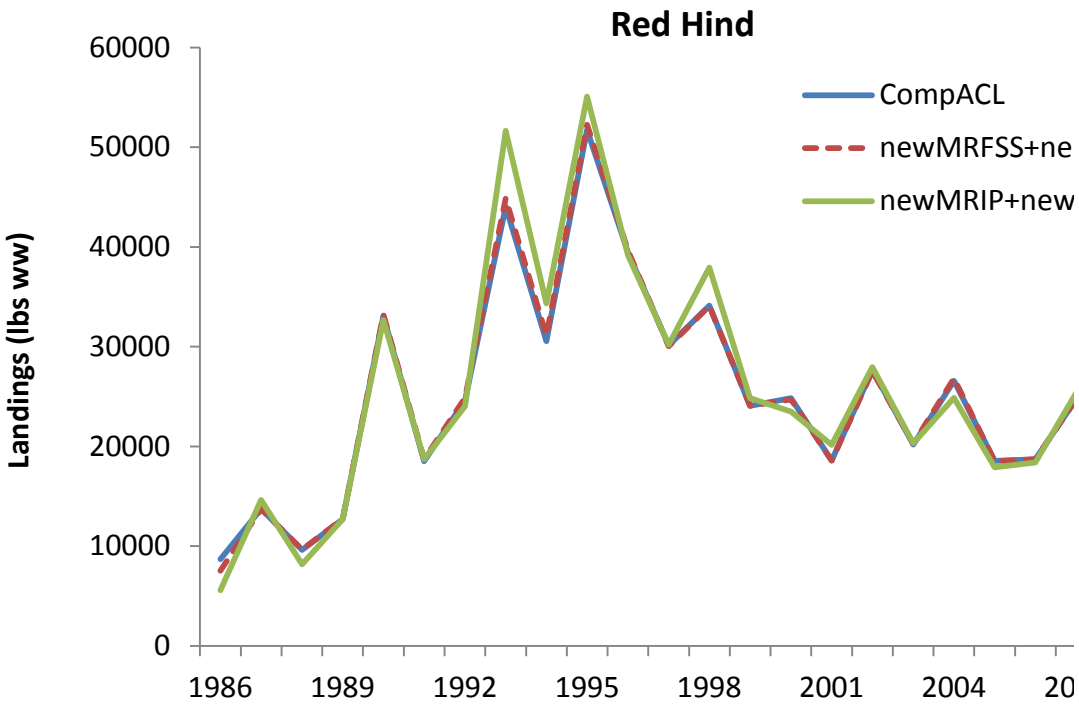
2004
2007
CompACL
newMRFSS+ne
newMRIP+new


Red Hind
Landings (lbs ww)
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CompACL
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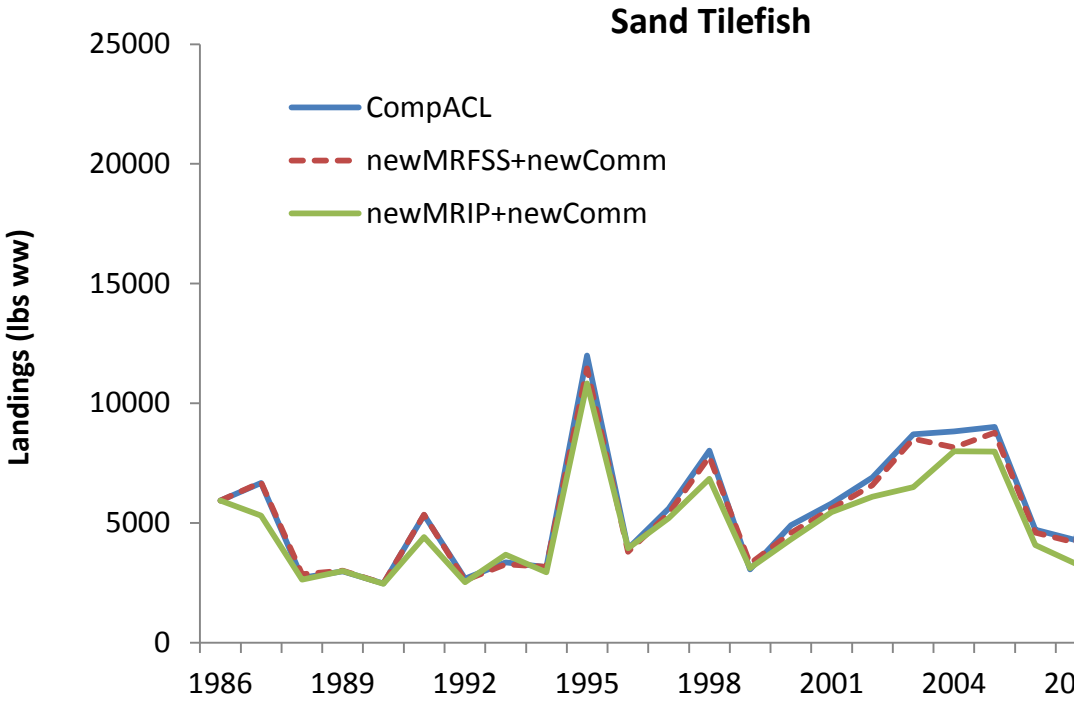
Sand Tilefish
Landings (lbs ww)
25000
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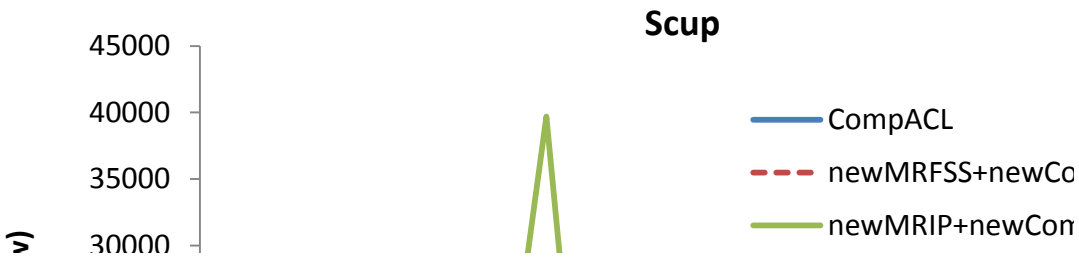
CompACL
newMRFSS+newComm
newMRIP+newComm


Scup
45000
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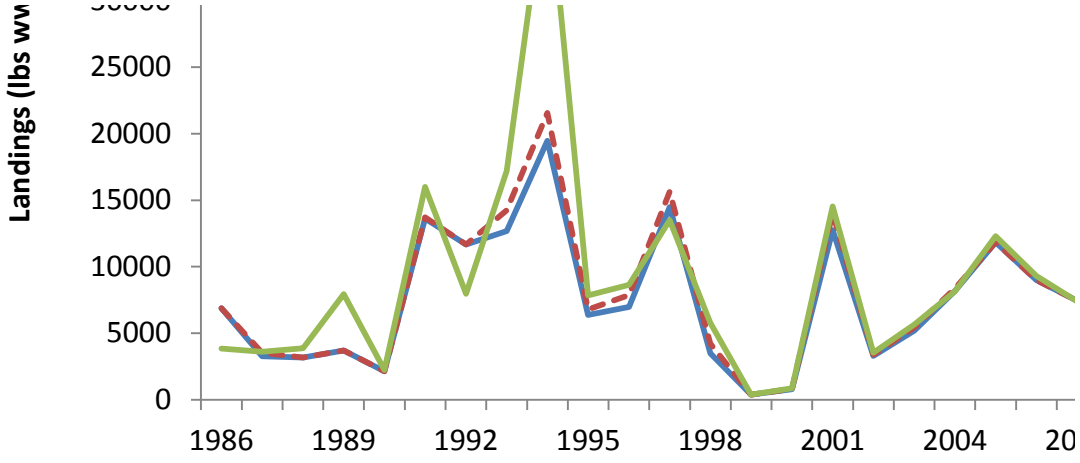
CompACL
newMRFSS+newCo
newMRIP+newCom


Landings (lbs ww
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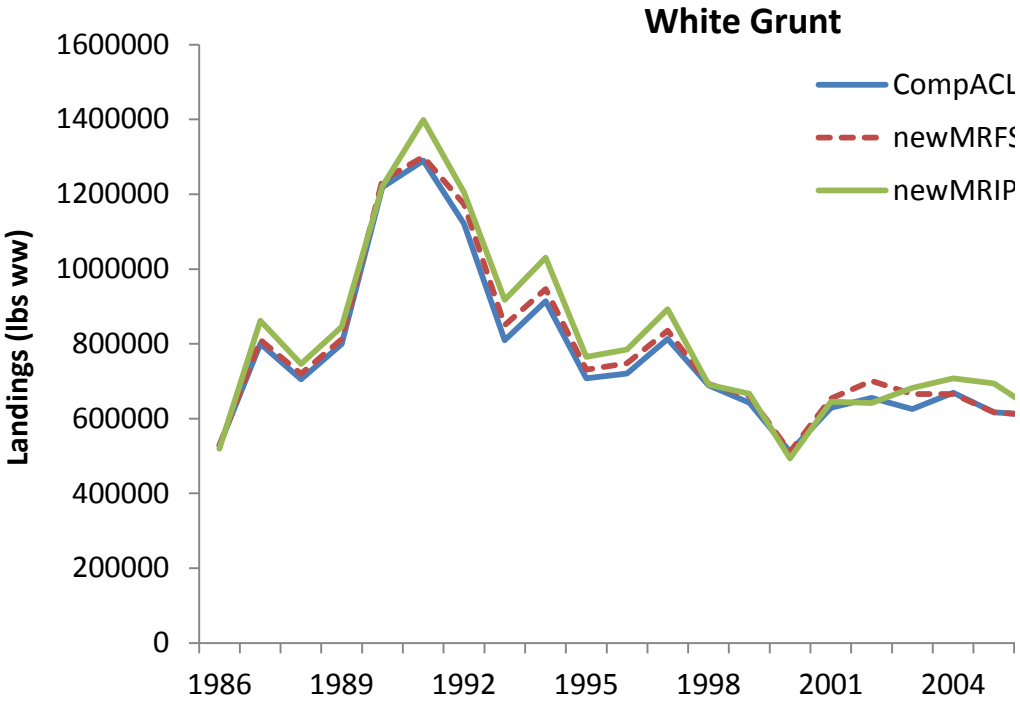
White Grunt
Landings (lbs ww)
1600000
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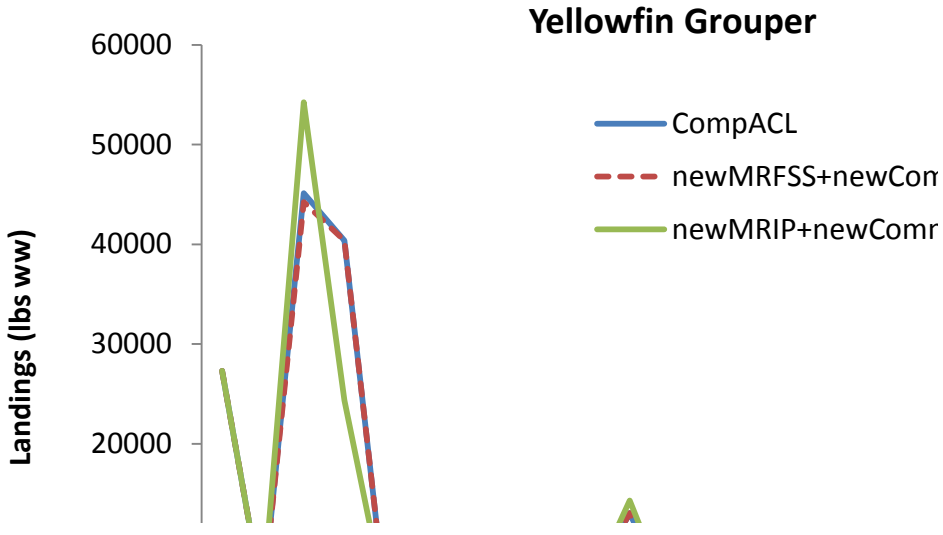
Yellowfin Grouper
Landings (lbs ww)
60000
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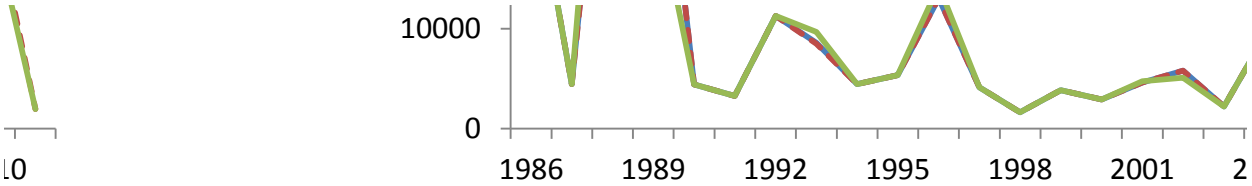
newMRIP+newComr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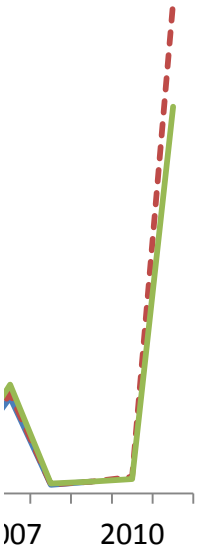
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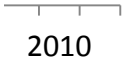
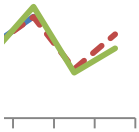
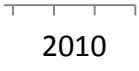


ewComm

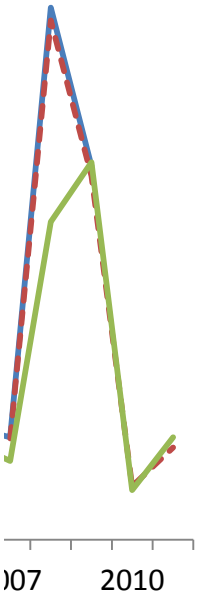
vComm





wComm

Comm



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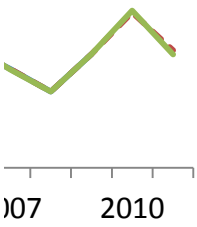

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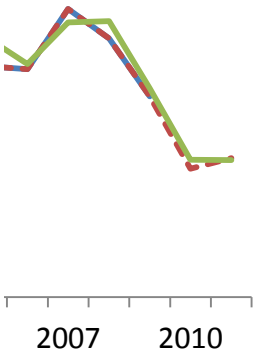
SS+newComm

ᵖ+newComm



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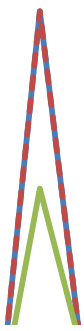
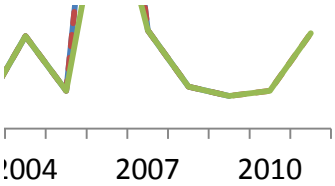



2004
2007
2010

Acceptable Biological Catch Calculations for South Atlantic Snapper-Grouper Species

LAPP/DM Branch

Southeast Regional Office

St. Petersburg, Florida

South Atlantic SSC Meeting
October 23-25, 2012

NOAA FISHERIES

Overview of ABC Calculations

ABCs calculated for 37 unassessed species

20 were assigned using proxy method due to late Council decision to retain many Snapper-Grouper stocks in FMU

Data Sources

CompACL

15 Sept 2010 Recreational ACL Data

"Shore" inadvertently assigned to For-Hire (no impact on ABC)

8 Oct 2010 Commercial ACL Data

NewMRFSS+NewComm

30 Aug 2012 Recreational ACL Data

Updated weight backfill, charter calibration (SEDAR-25 2011)

3 July 2012 Commercial ACL Data

NewMRIP+NewComm

1 Oct 2012 Recreational ACL Data

MRIP (2004-2011), adjusted MRFSS (1981-2003; SEDAR-31 2012), SEFSC standardized weight estimation (1981-2012)

3 July 2012 Commercial ACL Data

MRIP Data (2004-2011)

The Marine Recreational Information Program (MRIP) was implemented in 2004 to address issues identified by the National Research Council in the existing Marine Recreational Fisheries Statistics Survey (MRFSS) program.

GOAL - To provide more detailed, timely, and reliable estimates of marine recreational fishing catch and effort.

Currently, official MRIP estimates are available from 2004-2011. These represent the best available scientific data.

MRIP ('86-'03) = Recalibrated MRFSS

March 2012: SEDAR MRIP Recalibration Workshop

Ad-Hoc Working Group: apply ratio estimators, based on the ratios of the means, to hind-cast catch and variances.

Southeast Regional MRIP Recalibration WG: developed specific recommendations to address regional needs.

Salz et al. (2012)
MRFSS_MRIP Calibration
Ad-hoc Working Group FINAL Report

MRIP ('86-'03) = Recalibrated MRFSS

Each ratio of means was calculated at the stock, sub-region, mode level* as:

$$\hat{R} = \frac{\overline{C}_{MRIP}}{\overline{C}_{MRFSS}} = \frac{\sum_{y=1}^{n} C_{y,MRIP}}{\sum_{y=1}^{n} C_{y,MRFSS}}$$

Ratios were applied at each stratum (species, sub-region, year, wave, state, mode, and area) to the A, B1, and B2 estimates and variances:

$$\hat{C}_{y,\hat{R}} = \hat{R}\,\hat{C}_{y,MRFSS}$$

*when available, else hierarchy used→ Stock&SubRegion, Stock

MRFSS→MRIP S. Atl. Ratio Estimators

Common Name	Charter	Private/Rental	Shore
almaco jack	1.015402	0.985457	
atlantic spadefish	1.628027	0.993378	0.617729
banded rudderfish	0.931823	0.928341	0.464524
bar jack	2.481521	1.196412	1.402559
black snapper			
blackfin snapper	0.937071	0.882982	
blue runner	0.994338	1.190118	0.802393
blueline tilefish	0.940958	0.792646	
coney	0.625635	1.162762	
cubera snapper	0.901402	0.948679	0.488547
dog snapper	1.020509	0.79838	1.522893
gray snapper	0.594493	0.963733	0.543697
gray triggerfish	1.056789	0.947016	0.548359
graysby	1.417926	0.910291	
hogfish	0.903173	0.873729	0.37575
jolthead porgy	0.849587	0.897303	0.482483
knobbed porgy	1.290265	1.204519	0.771392

Common Name	Charter	Private/Rental	Shore
lane snapper	0.804986	0.765977	0.513552
lesser amberjack	0.625834	1.013631	
mahogany snapper		1.326981	0.456246
margate	0.854906	0.946525	0.768271
misty grouper			
queen snapper	0.702257	0.969656	
red hind	0.985036	1.013069	
rock hind	1.356045	1.36774	
sailors choice	0.713252	0.98031	0.558199
sand tilefish	0.657189	0.907314	0.55074
saucereye porgy	0.461468	1.038721	
scamp	1.557292	1.20065	
scup	1.540459	1.155228	0.578074
silk snapper	1.05117	0.436414	
tomtate	1.364139	0.912316	0.898122
white grunt	1.235682	1.078366	0.7404
whitebone porgy	0.940949	0.783128	0.524168
yellowedge grouper	0.590406	2.407618	
yellowfin grouper		1.648847	
yellowmouth grouper	1.117054	1.021294	

Overview of ABC Calculations

Method for computing ABC:

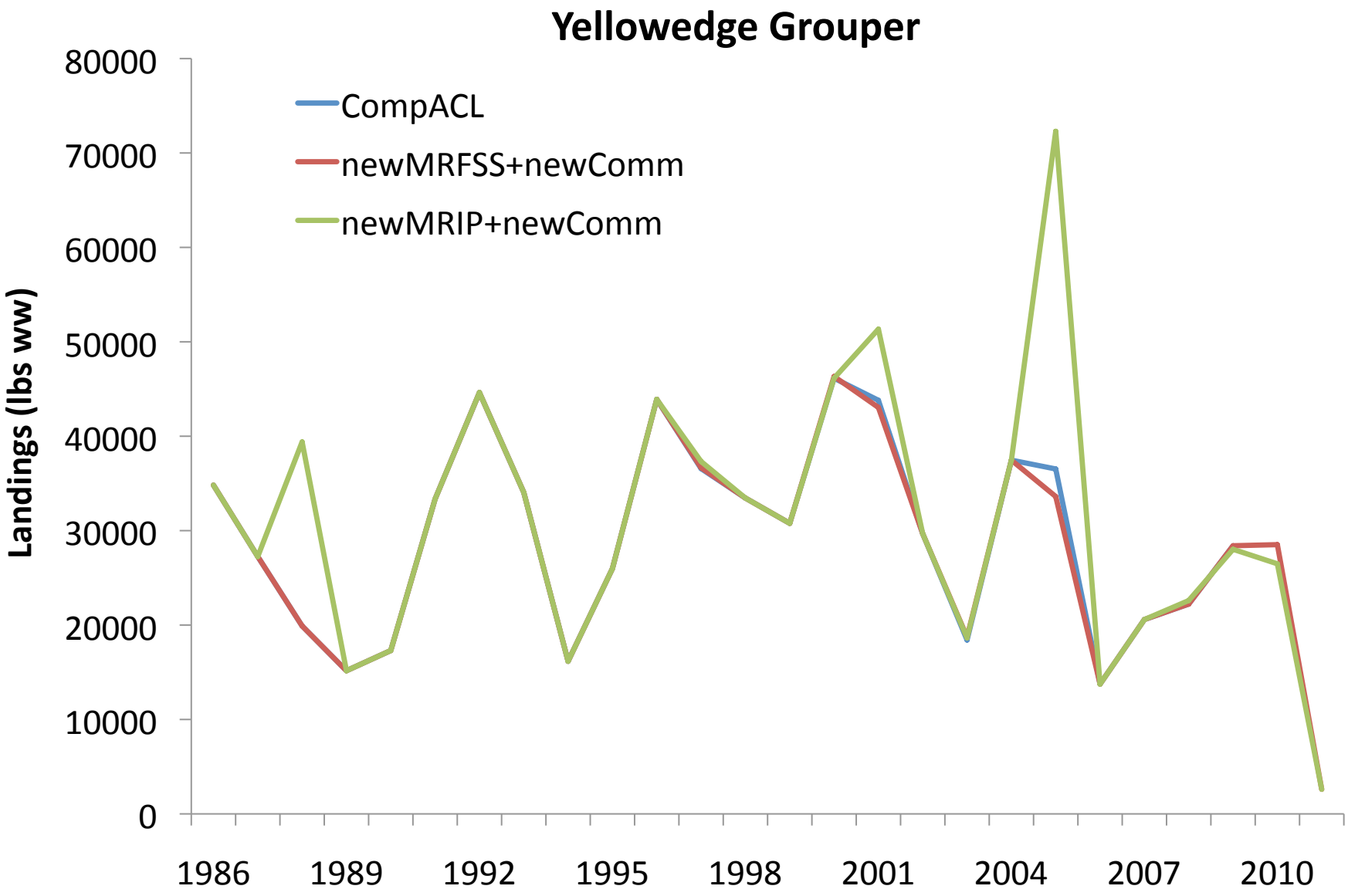
Median landings (1999-2008) – *yellowedge grouper, silk snapper, white grunt, and scamp*

3rd highest landings (1999-2008) – *32 species*

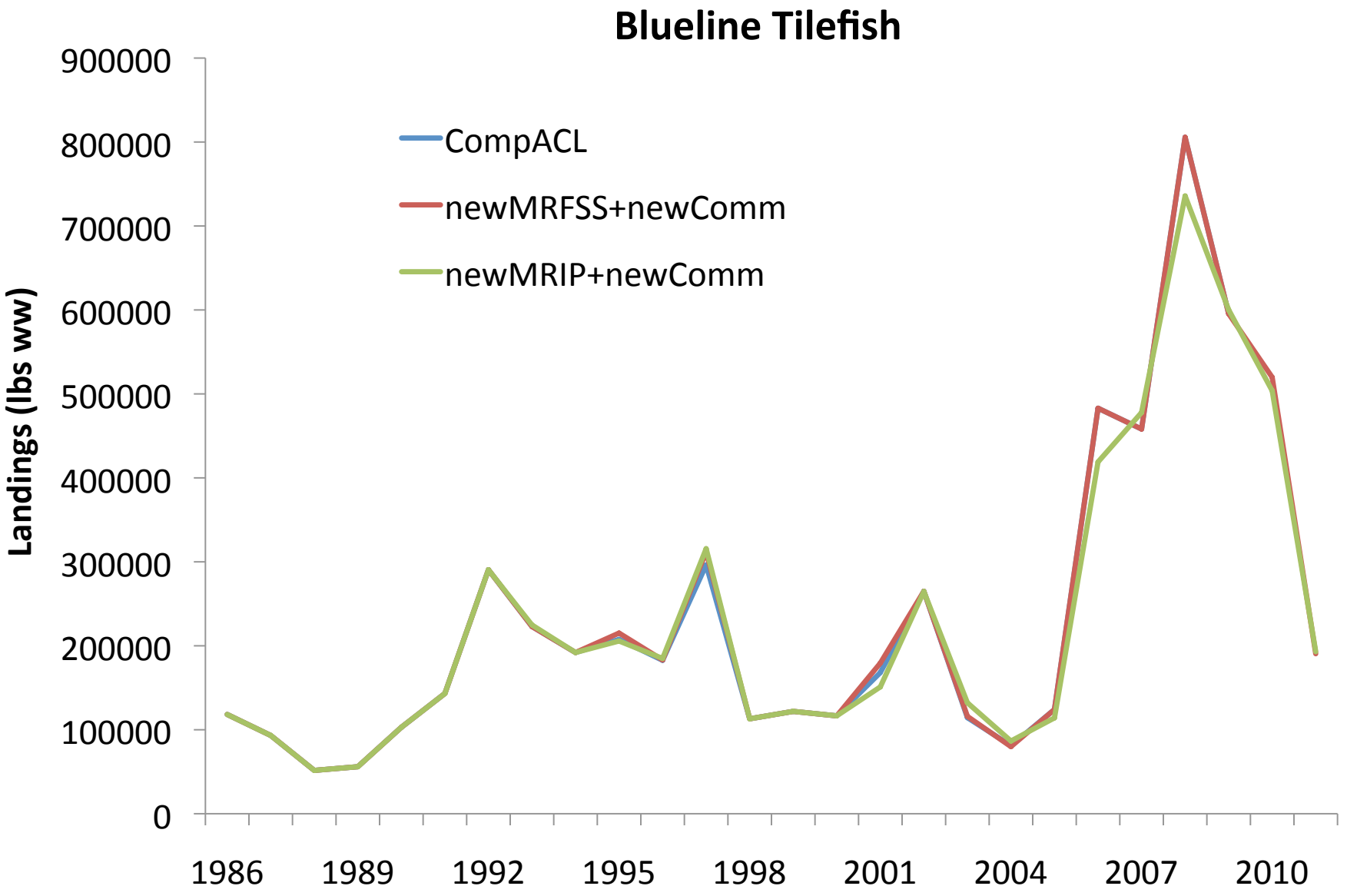
2× max landings (1986-2005) – *blueline tilefish*

ABCs calculated for each stock individually using combined commercial and recreational annual landings

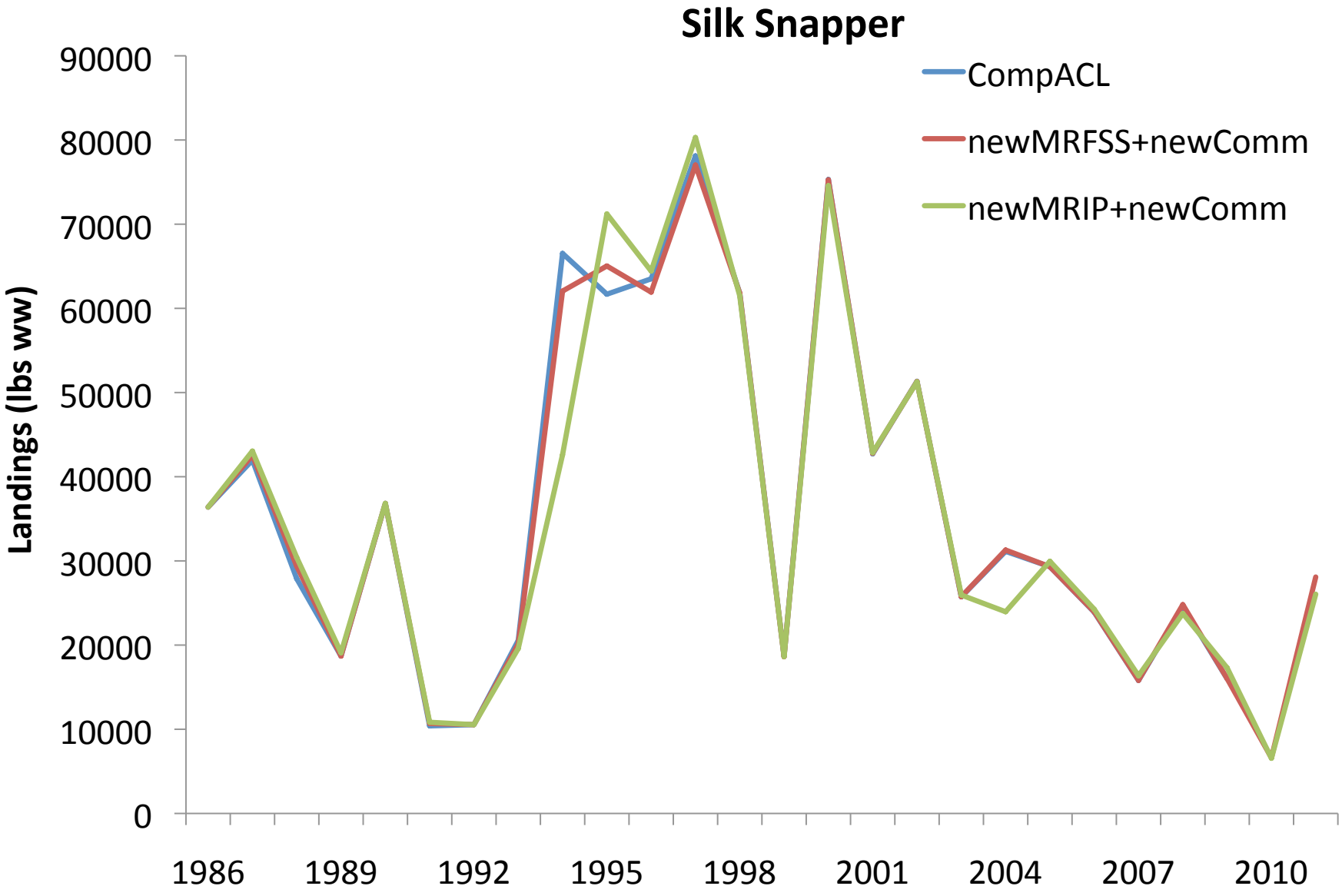
Yellowedge Grouper



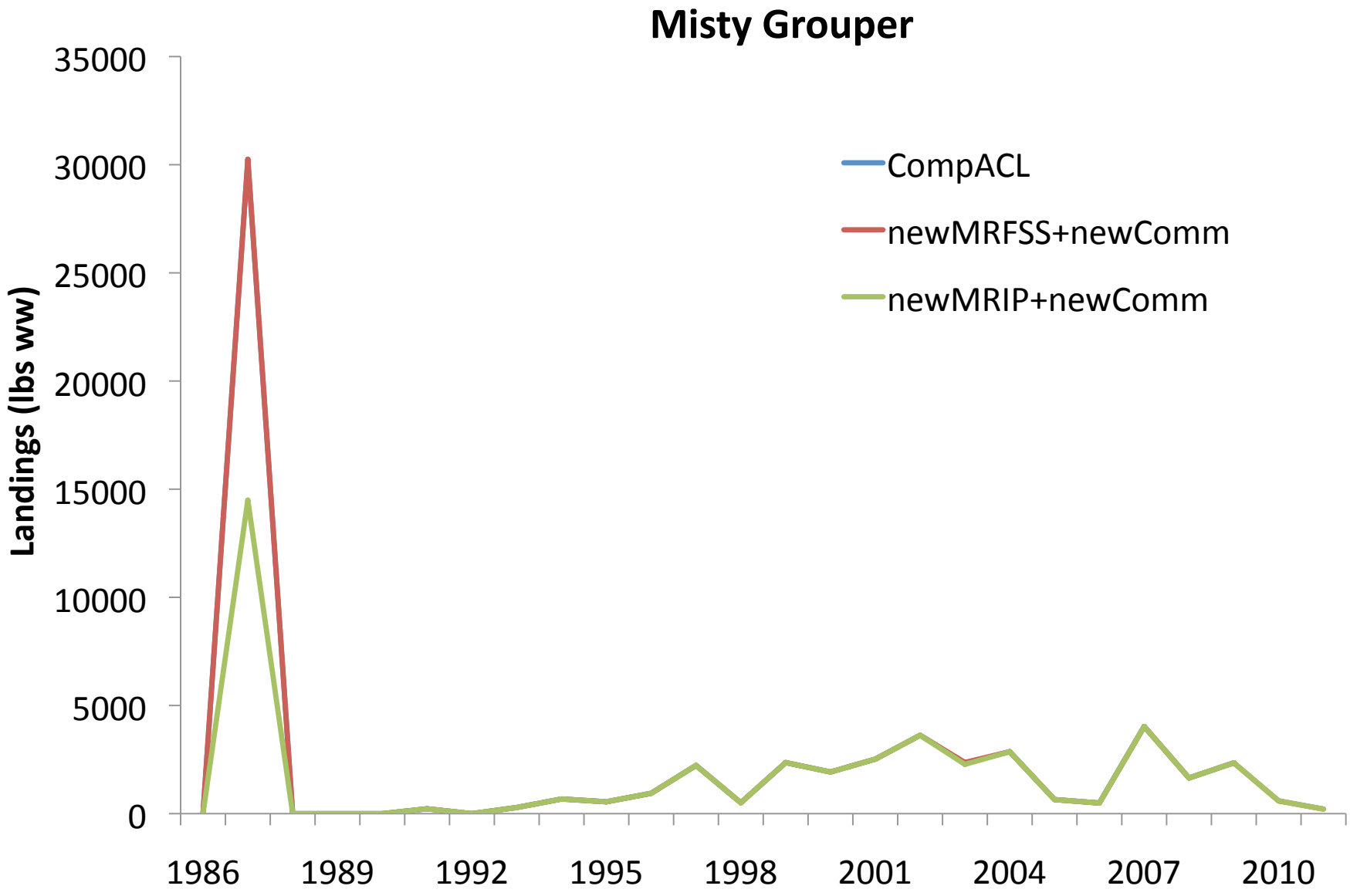
Blueline Tilefish



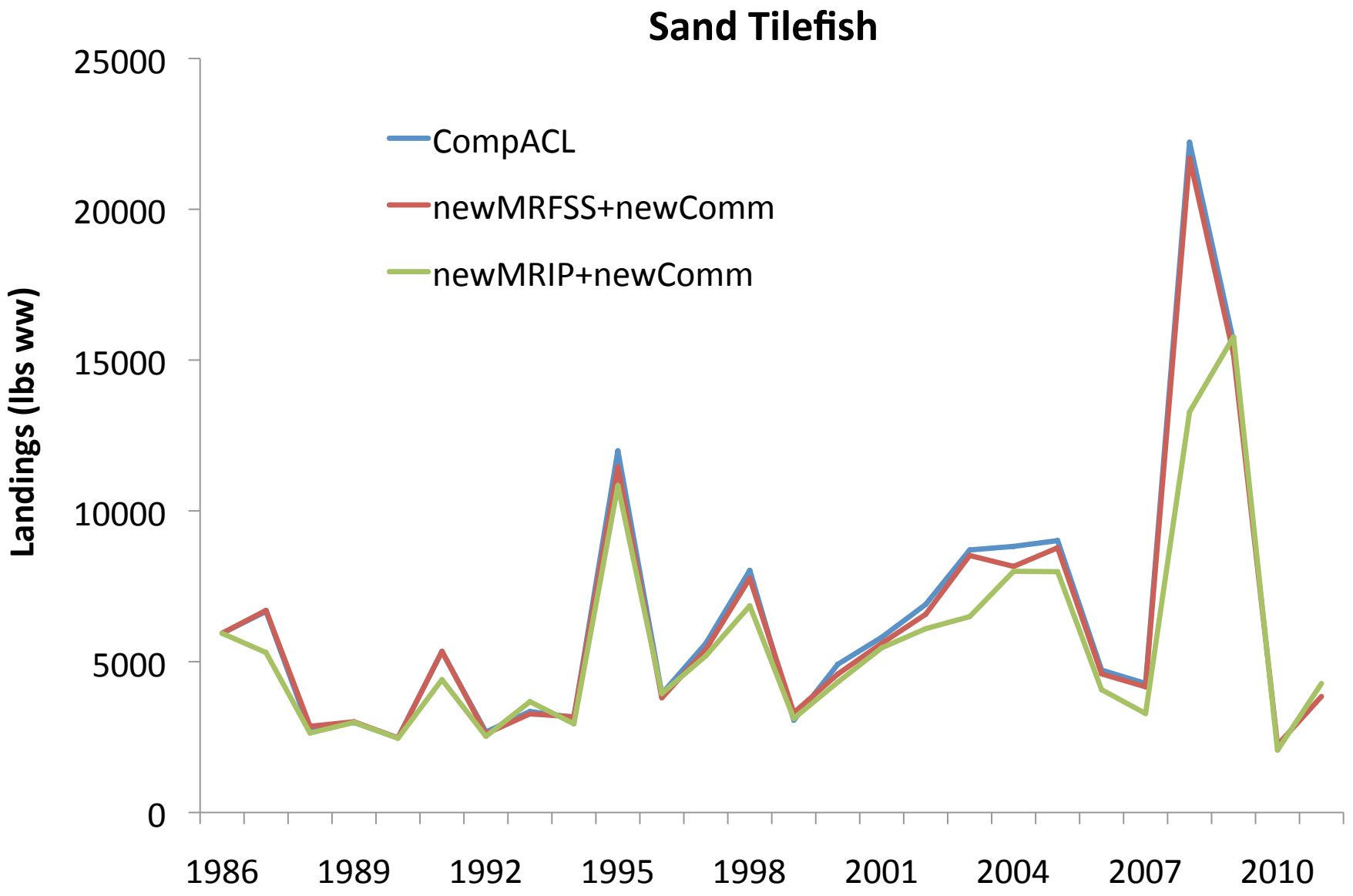
Silk Snapper



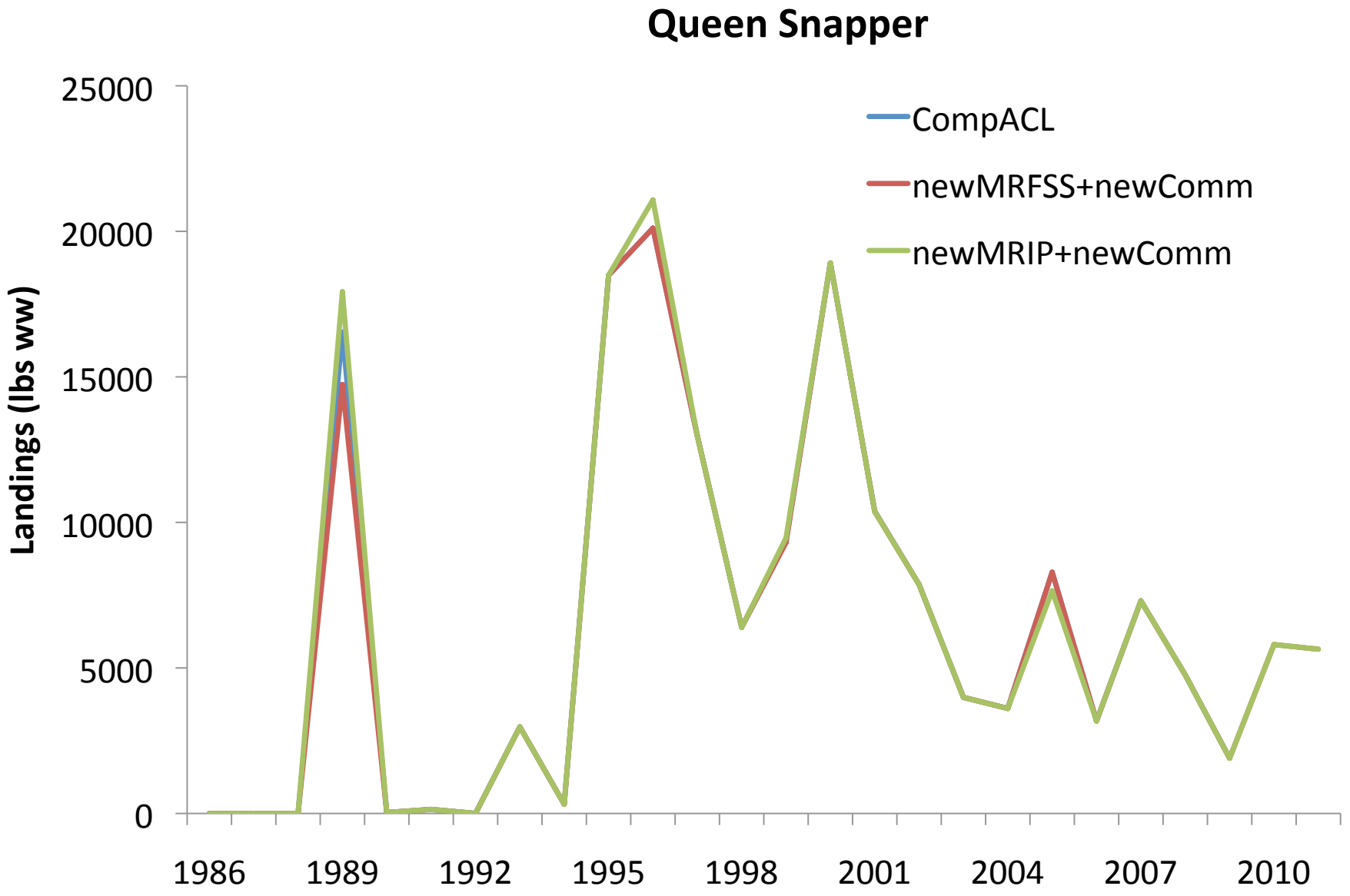
Misty Grouper



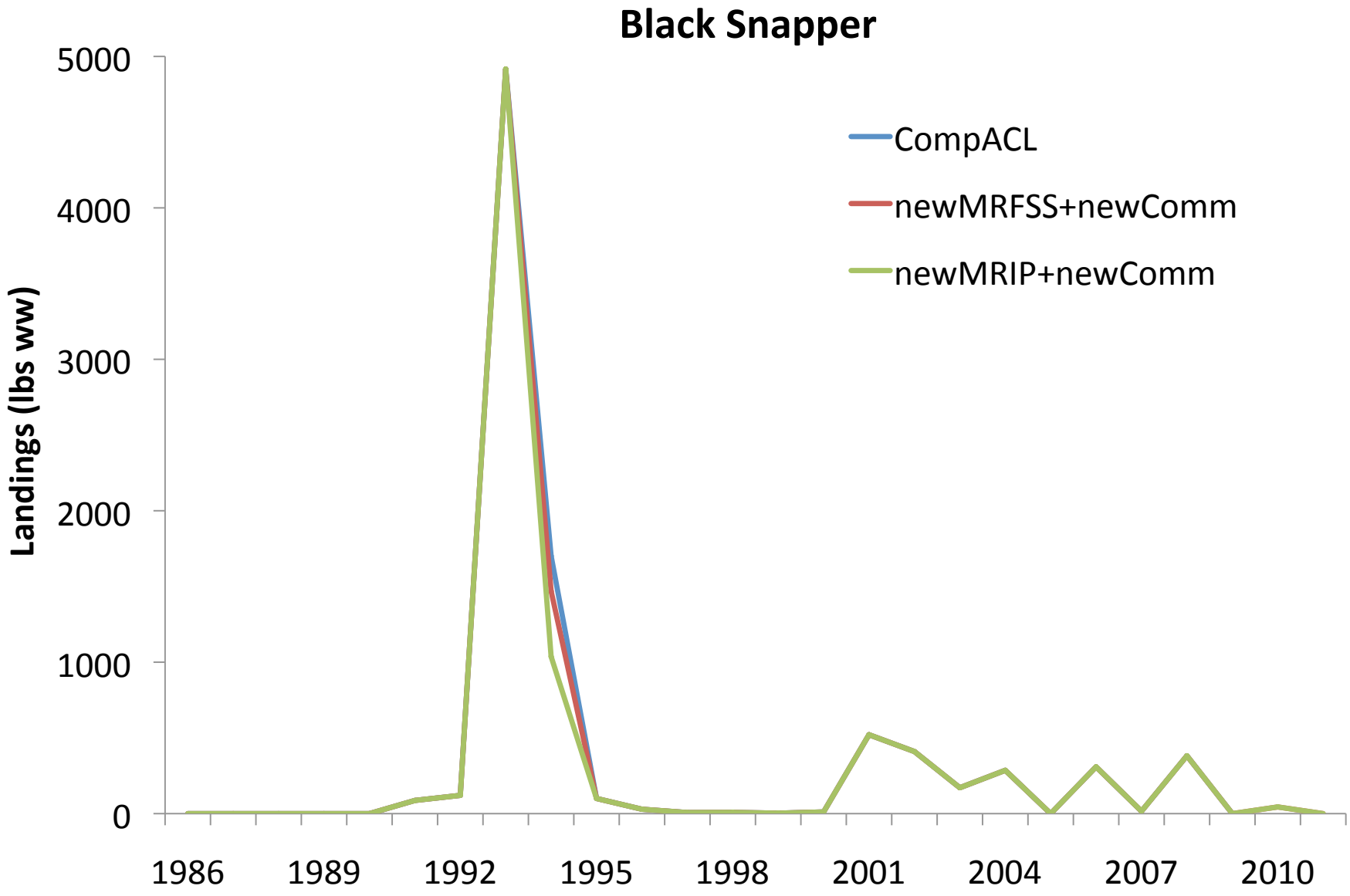
Sand Tilefish



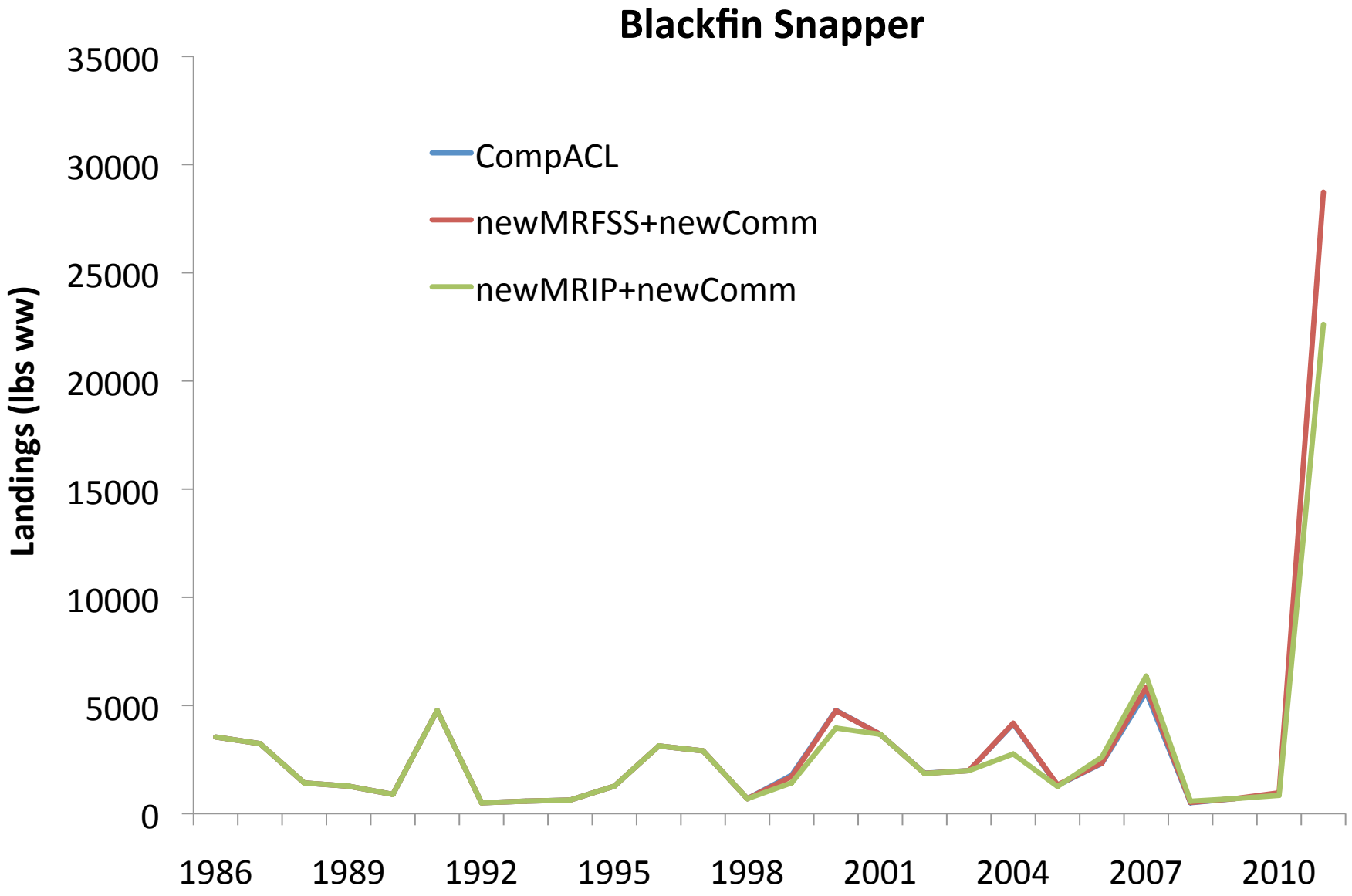
Queen Snapper



Black Snapper



Blackfin Snapper

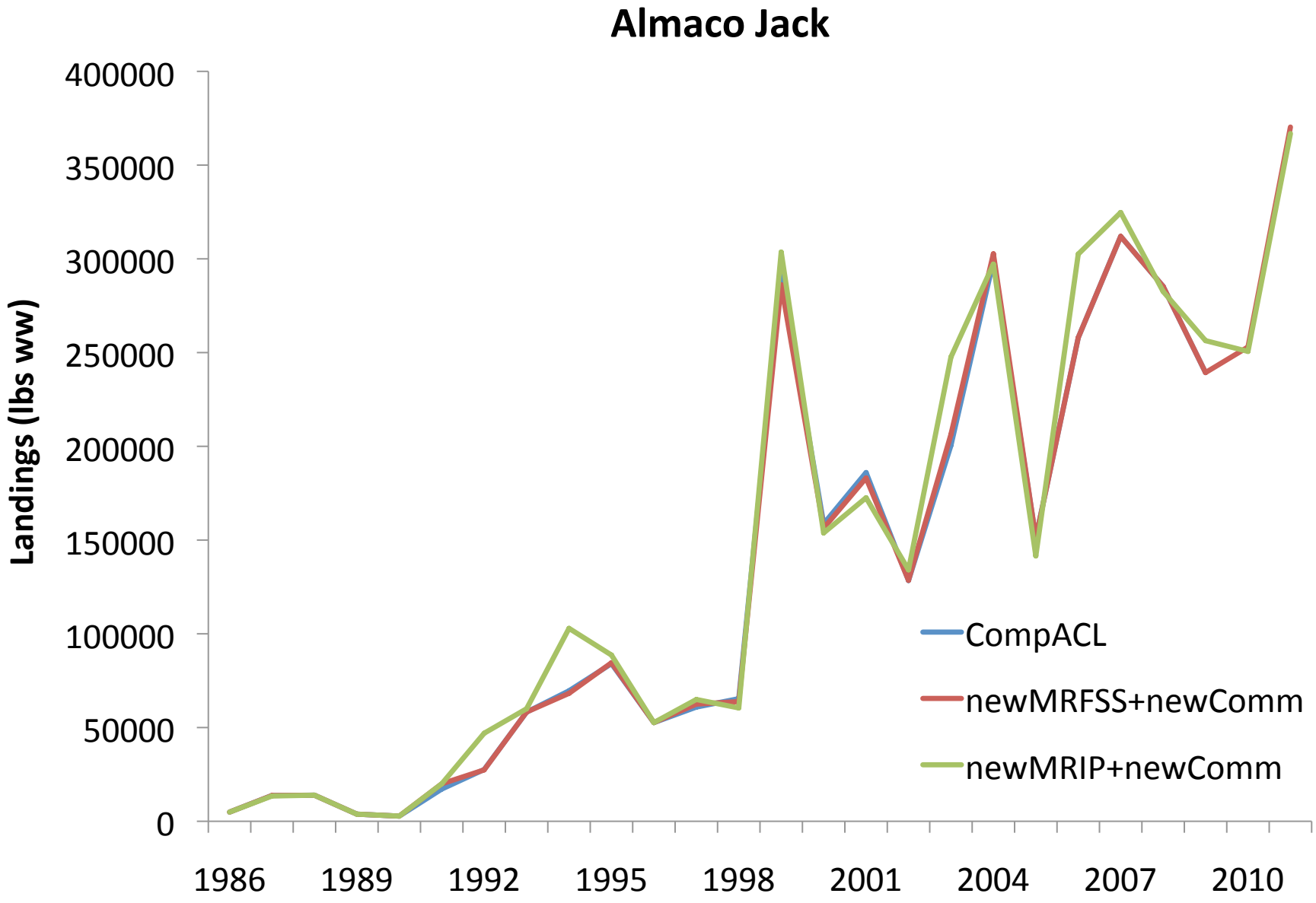


Deepwater Complex

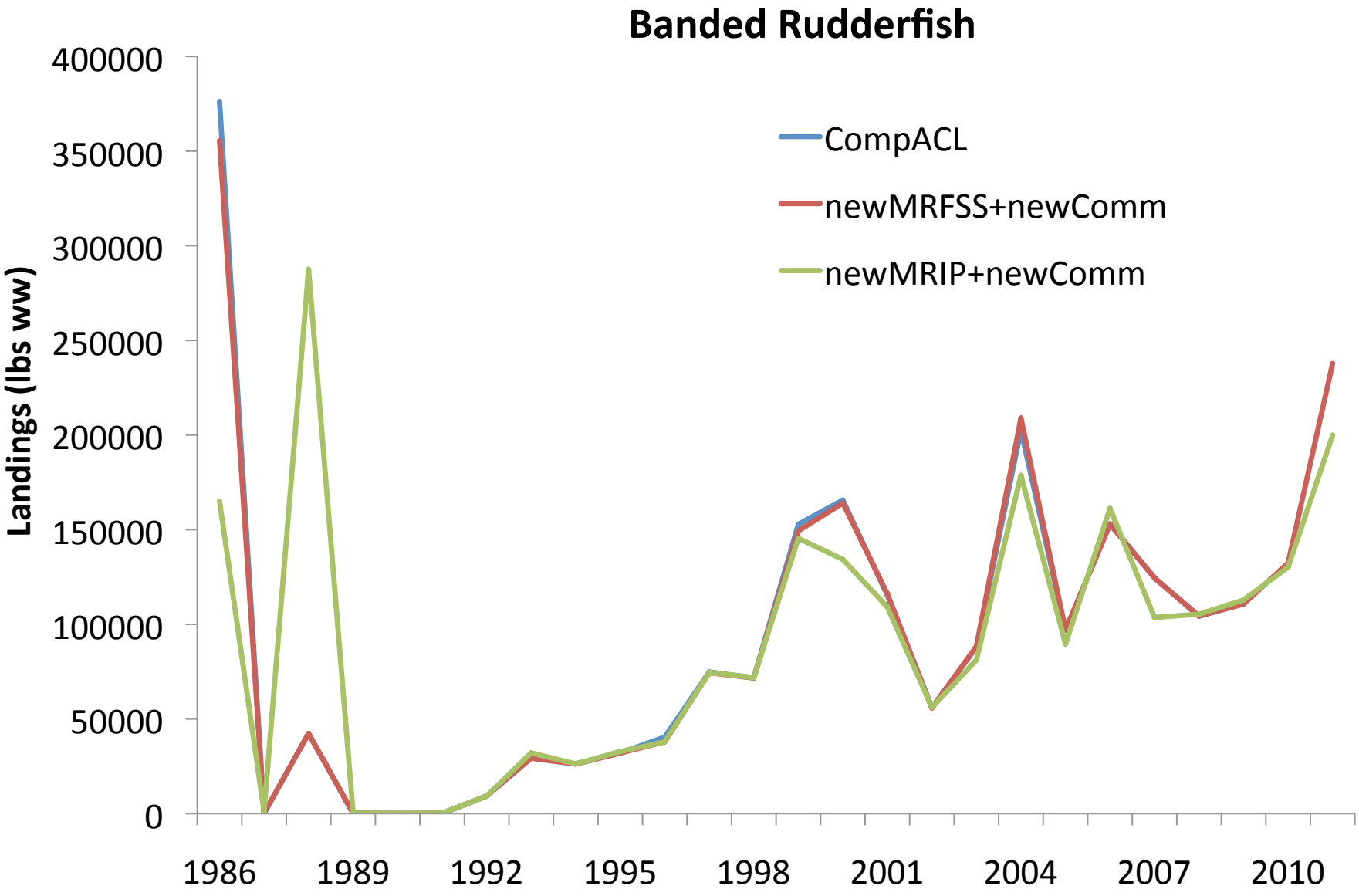
ABC proxy

STOCK OR STOCK COMPLEX NAME	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
DEEPWATER	**675,908**	**707,030**	**711,025**	**sum of individual ABCs**
Yellowedge grouper	30,221	30,221	30,221	median (99-08)
Blueline tilefish	592,602	624,028	631,341	2× max landings (86-05)
Silk Snapper	27,519	27,529	25,104	median (99-08)
Misty grouper	2,863	2,863	2,863	3rd highest (99-08)
Sand tilefish	8,823	8,521	7,983	3rd highest (99-08)
Queen snapper	9,344	9,306	9,466	3rd highest (99-08)
Black snapper	382	382	382	3rd highest (99-08)
Blackfin snapper	4,154	4,181	3,665	3rd highest (99-08)

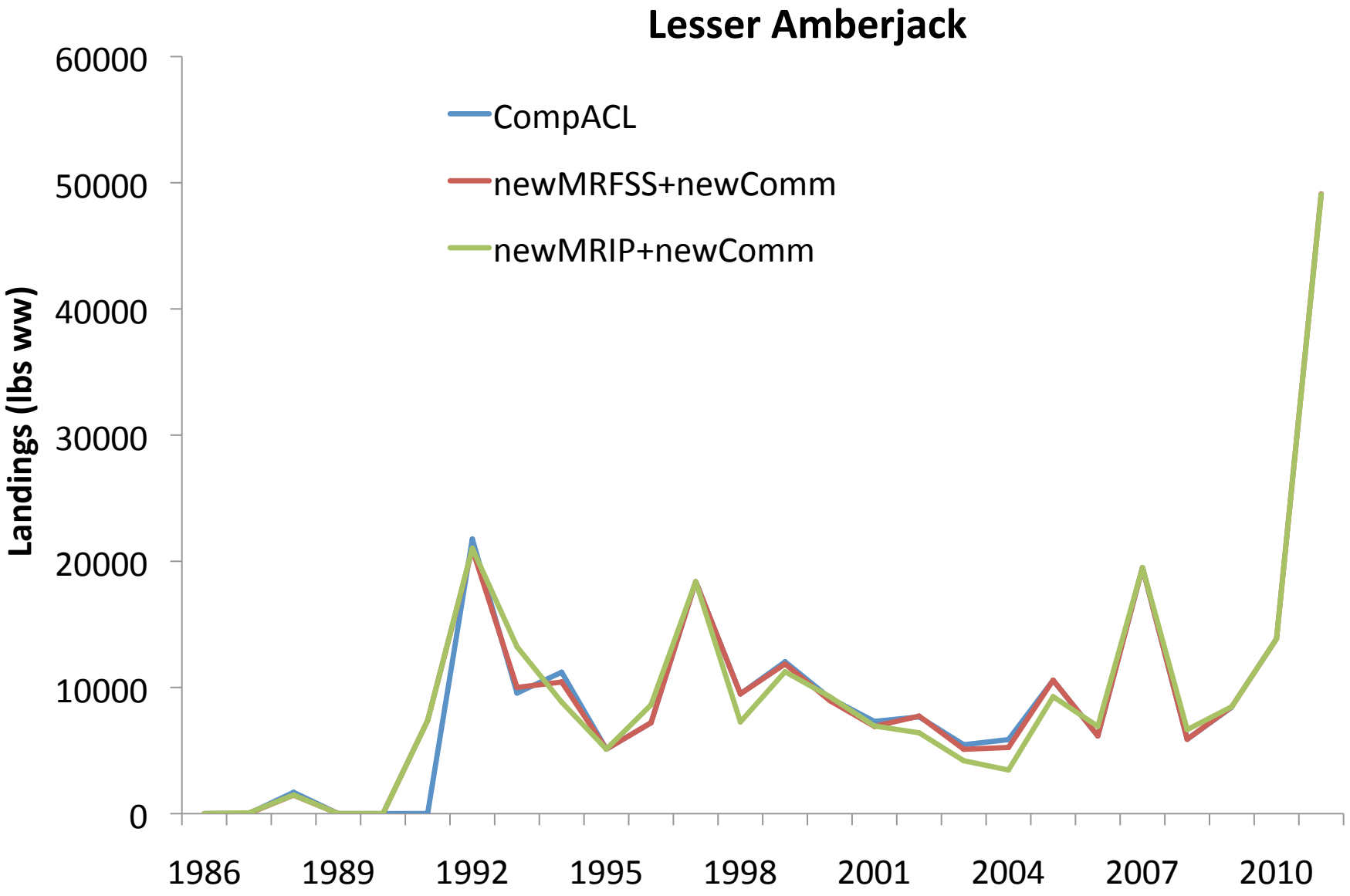
Almaco Jack


Almaco Jack
Landings (lbs ww)
400000
350000
300000
250000
200000
150000
100000
50000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Banded Rudderfish



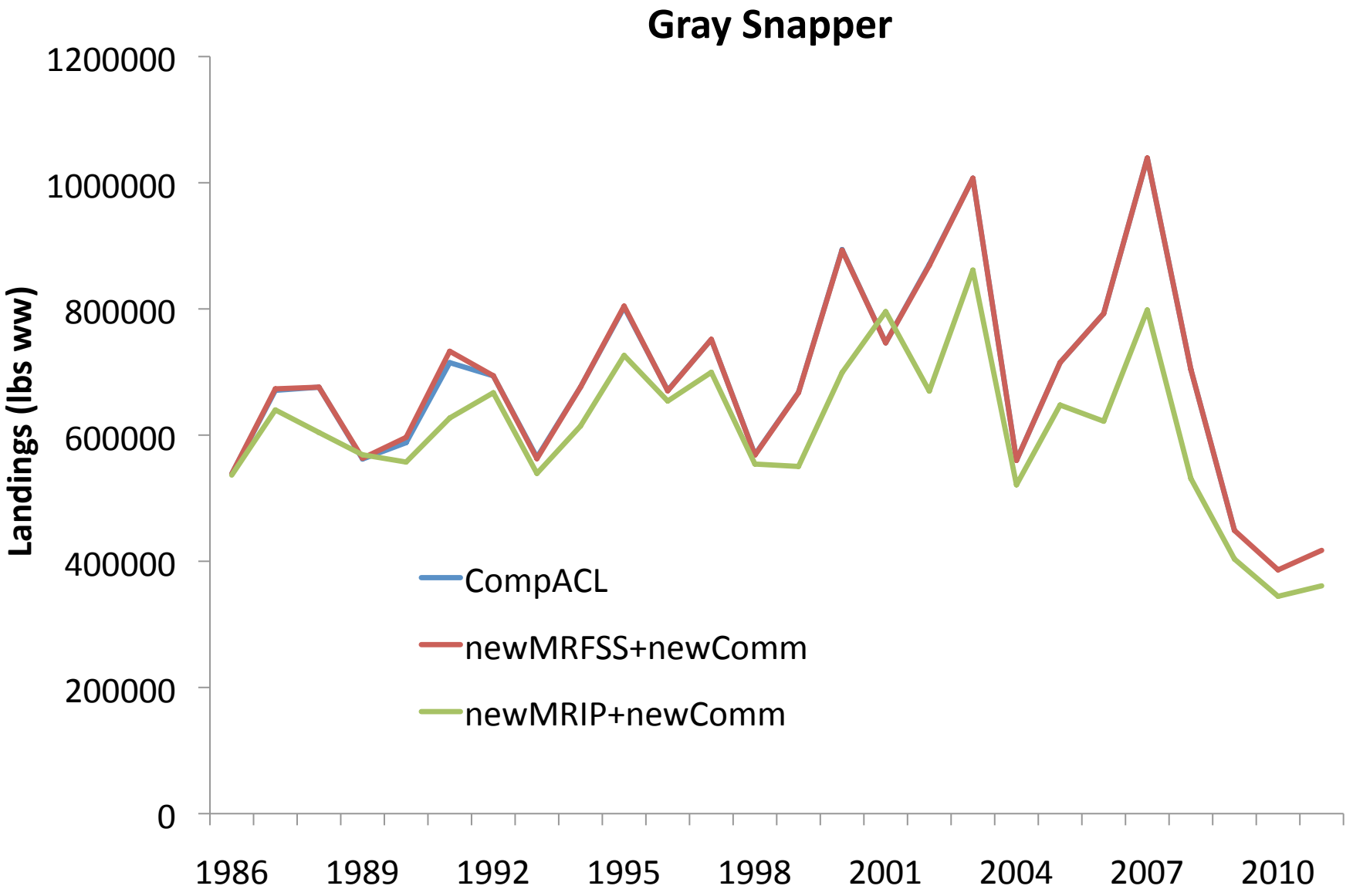
Lesser Amberjack



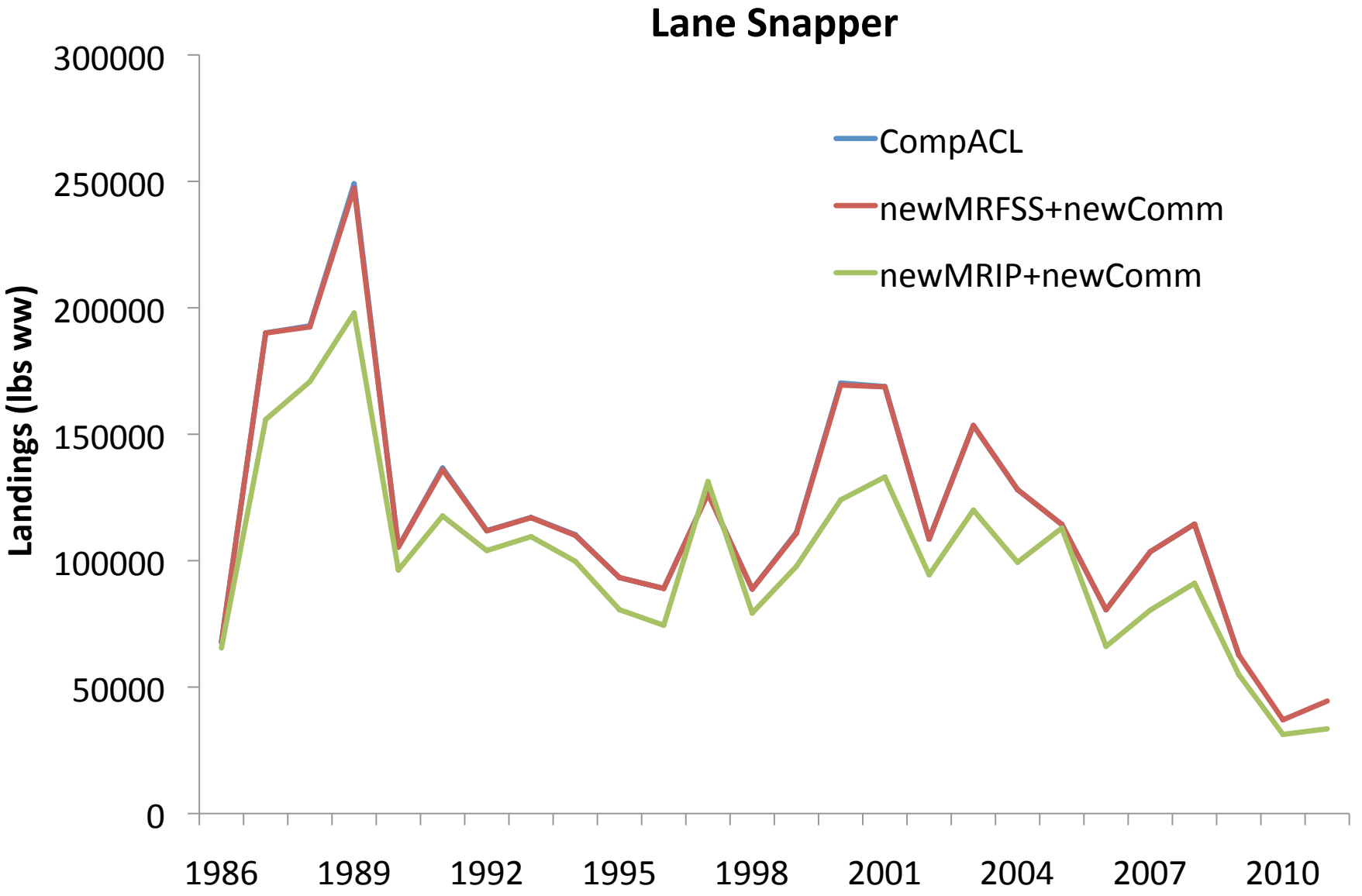
Jacks Complex

STOCK OR STOCK COMPLEX NAME	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
JACKS	**455,489**	**449,739**	**457,221**	**sum of individual ABCs**
Almaco jack	291,922	286,196	302,517	3rd highest (99-08)
Banded rudderfish	152,999	152,966	145,434	3rd highest (99-08)
Lesser amberjack	10,568	10,577	9,270	3rd highest (99-08)

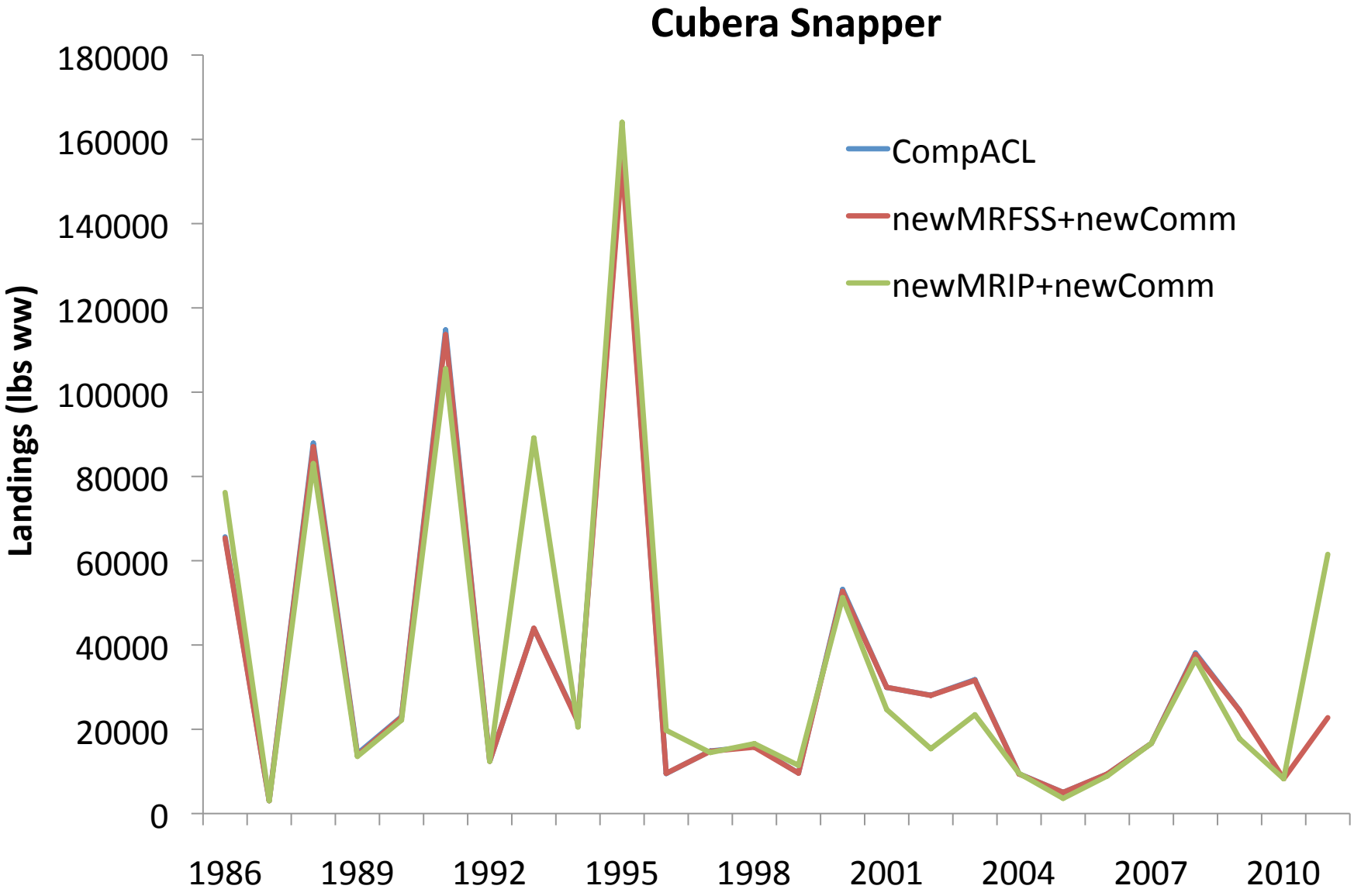
Gray Snapper



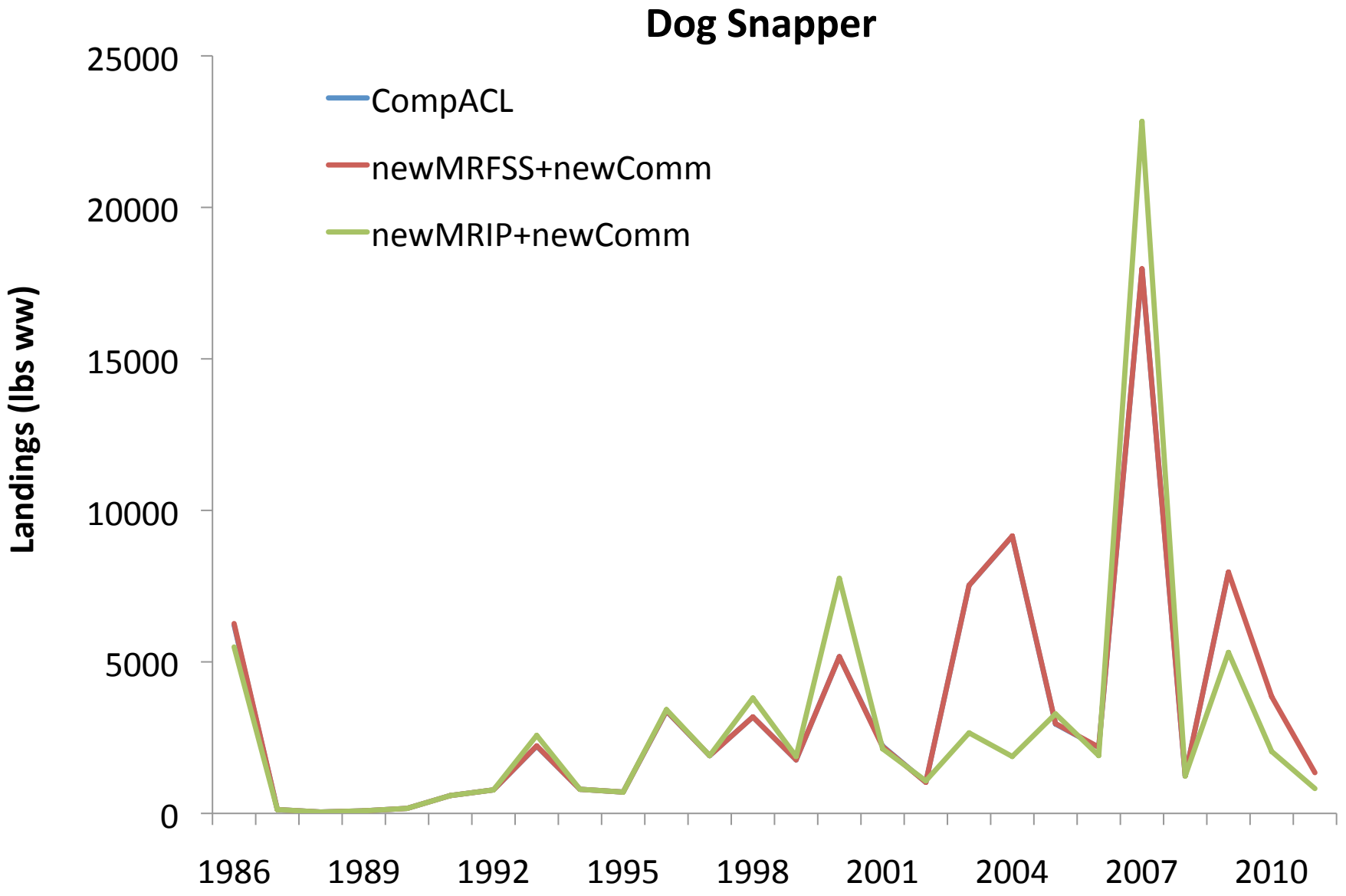
Lane Snapper



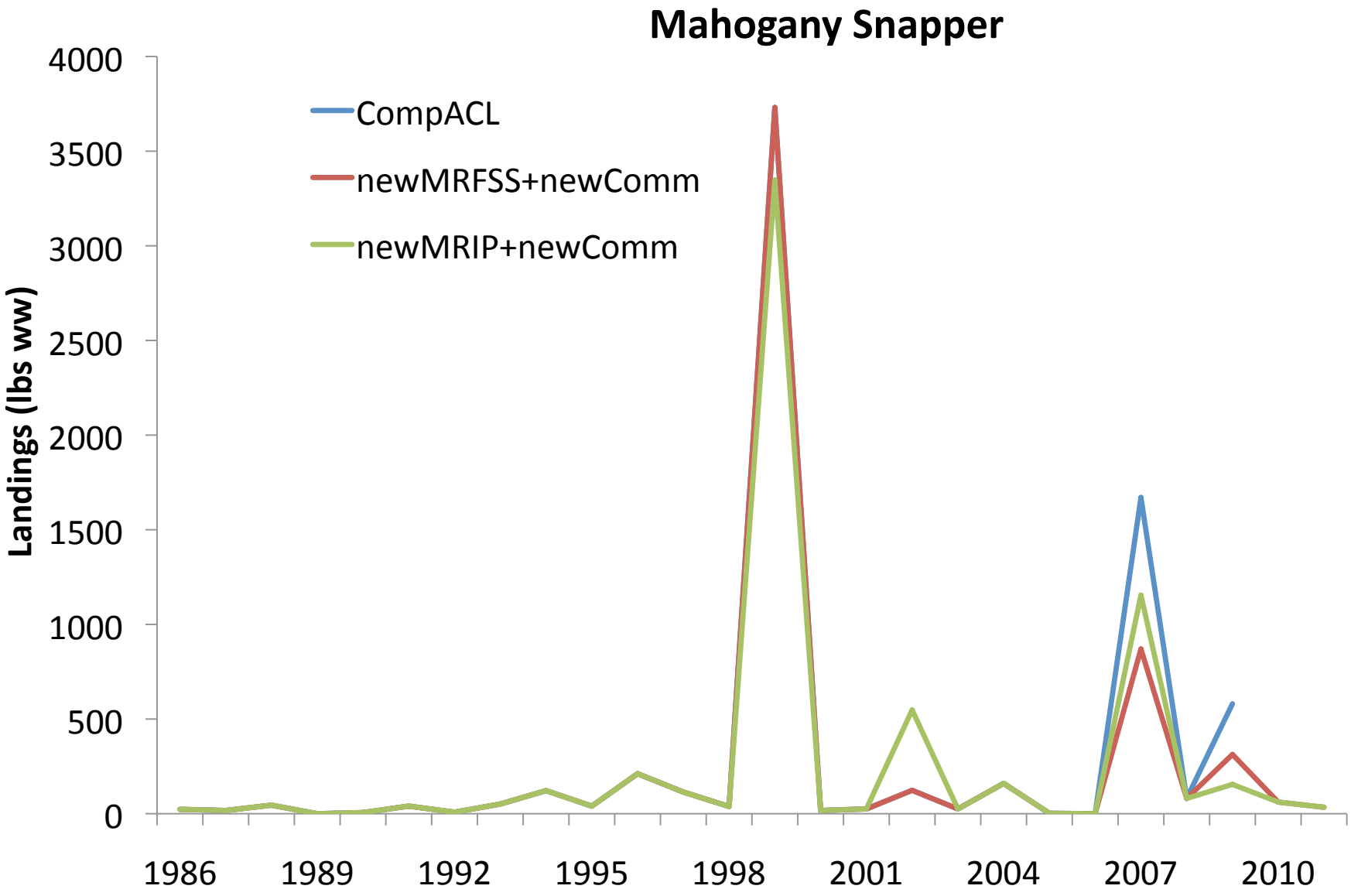
Cubera Snapper



Dog Snapper


Dog Snapper
CompACL
newMRFSS+newComm
newMRIP+newComm
Landings (lbs ww)
25000
20000
15000
10000
5000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010

Mahogany Snapper

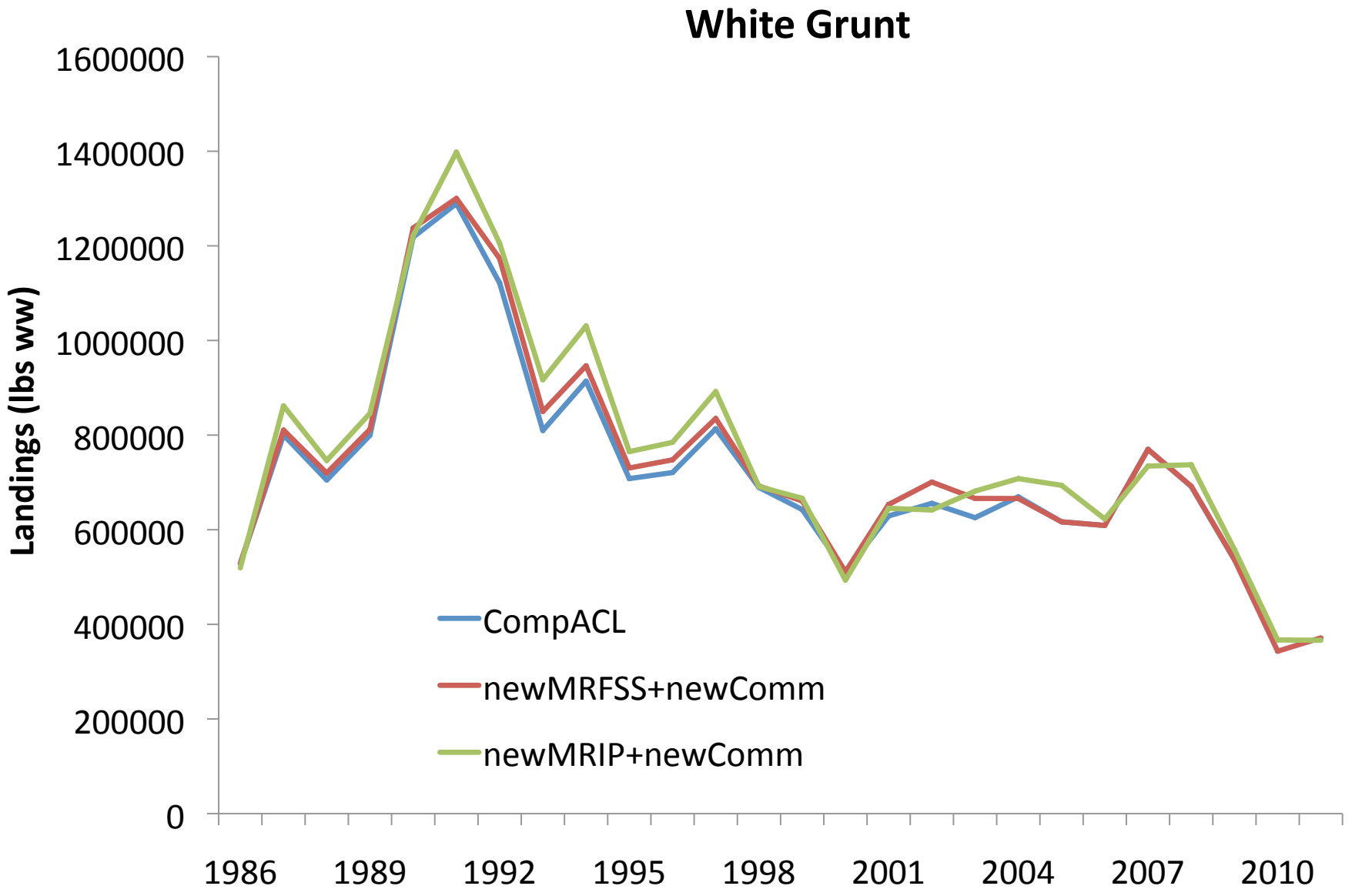


Snappers Complex

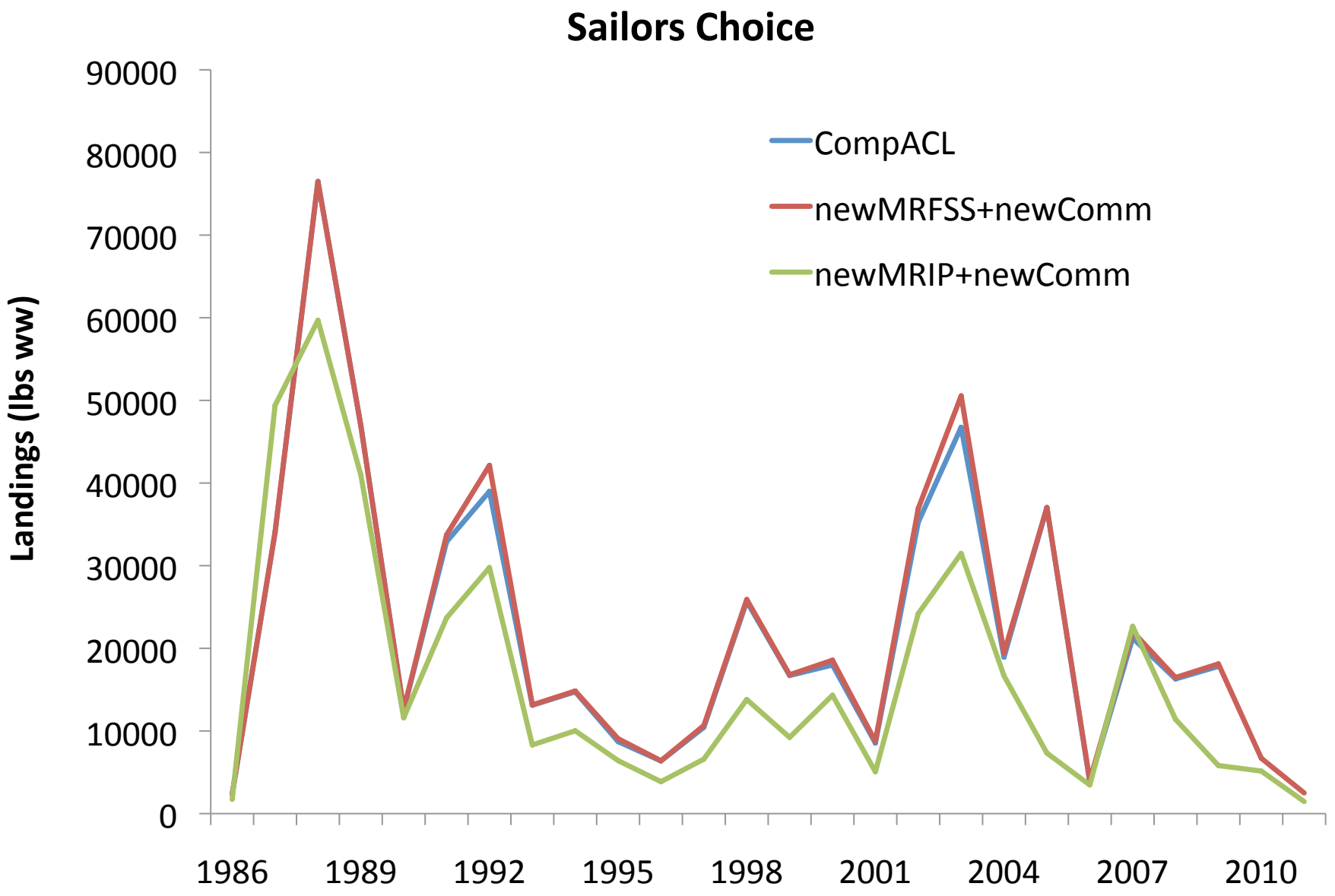
ABC proxy

STOCK OR STOCK COMPLEX NAME	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
SNAPPERS	**1,086,940**	**1,085,914**	**944,239**	**sum of individual ABCs**
Gray snapper	894,019	893,161	795,743	3rd highest (99-08)
Lane snapper	153,466	153,466	119,984	3rd highest (99-08)
Cubera snapper	31,772	31,602	24,680	3rd highest (99-08)
Dog snapper	7,523	7,525	3,285	3rd highest (99-08)
Mahogany snapper	160	160	548	3rd highest (99-08)

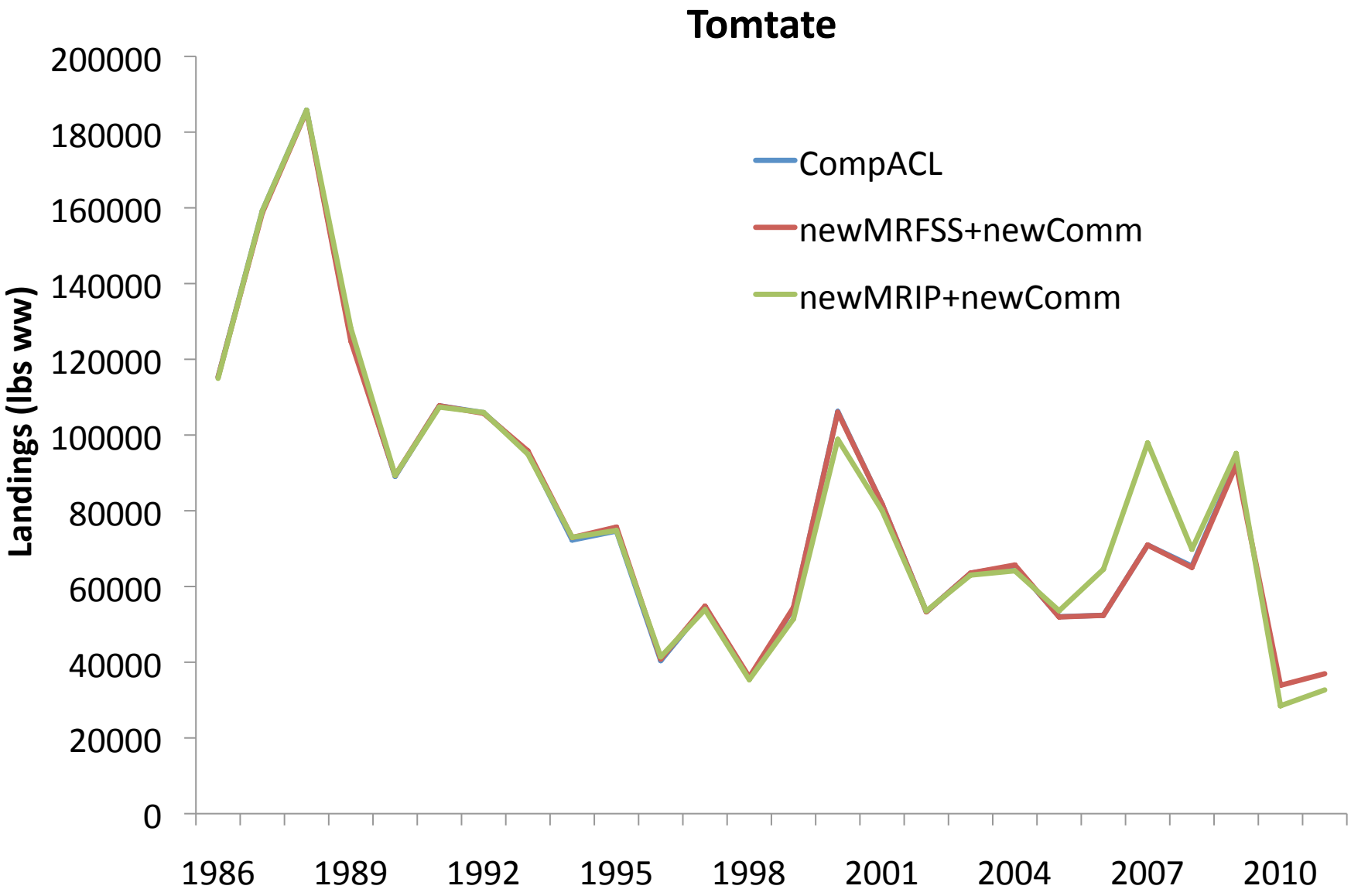
White Grunt


White Grunt
Landings (lbs ww)
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

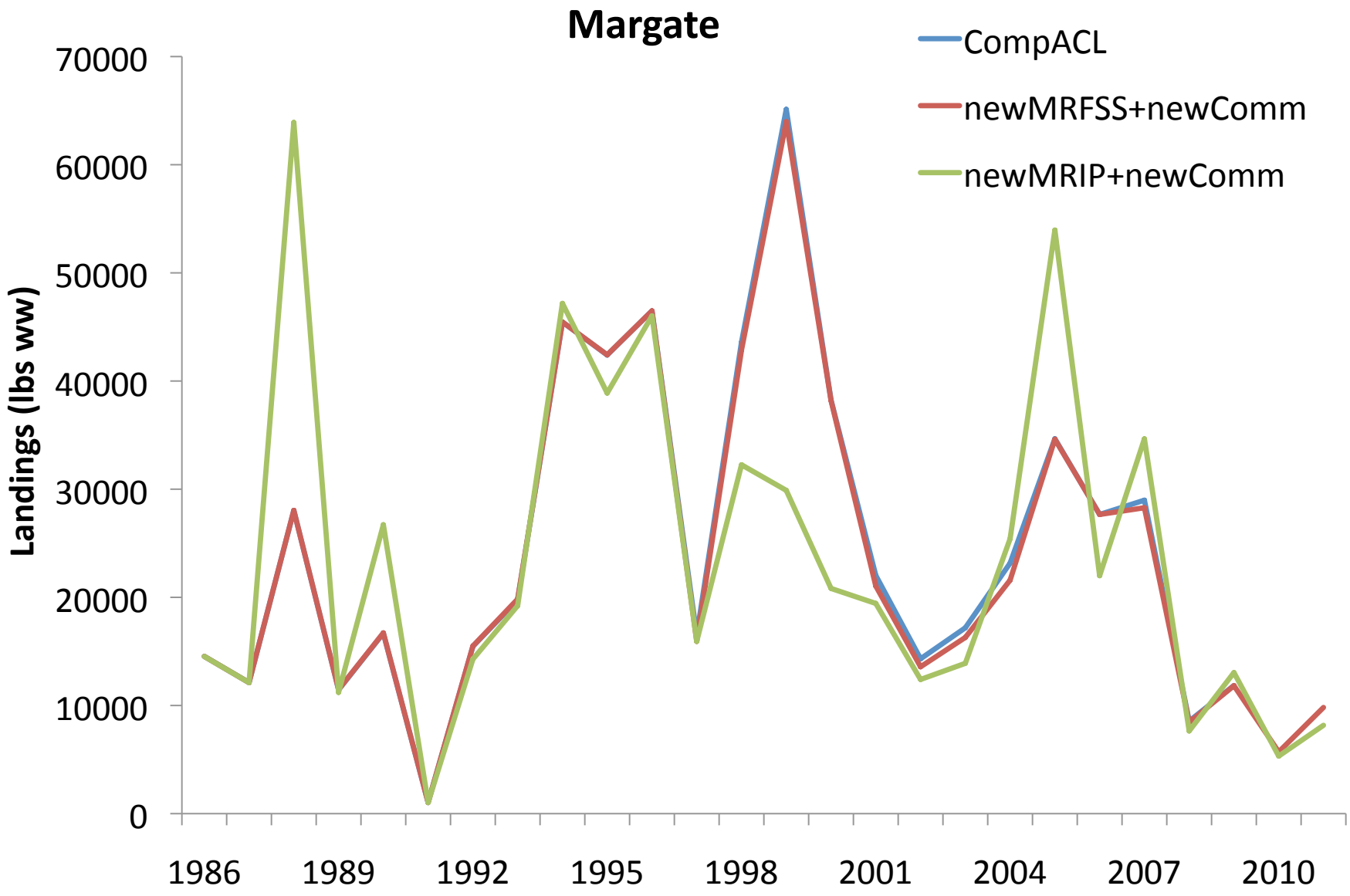
Sailors Choice



Tomtate


Tomtate
Landings (lbs ww)
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Margate

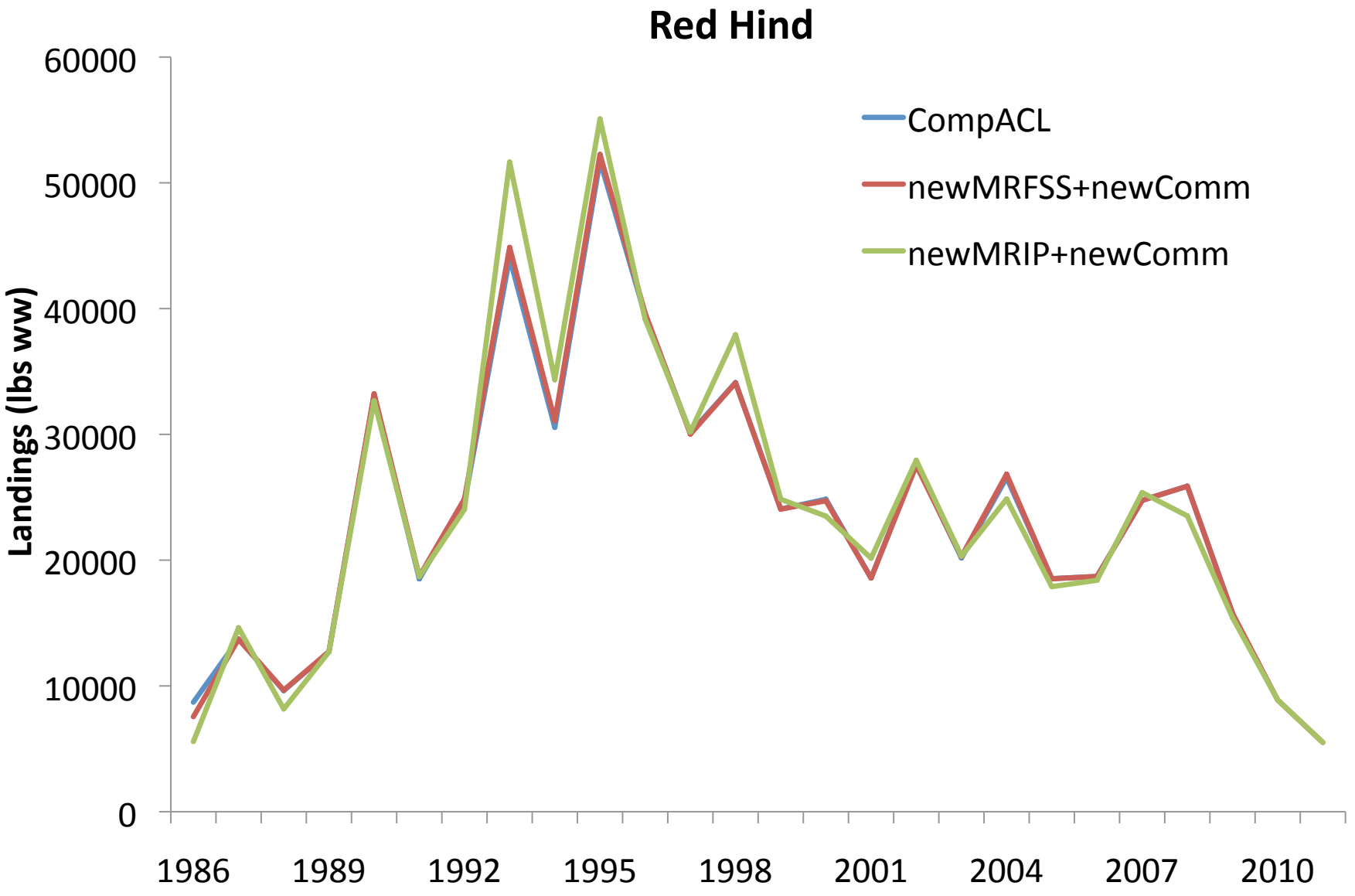

Margate
CompACL
newMRFSS+newComm
newMRIP+newComm
Landings (lbs ww)
70000
60000
50000
40000
30000
20000
10000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010

Grunts Complex

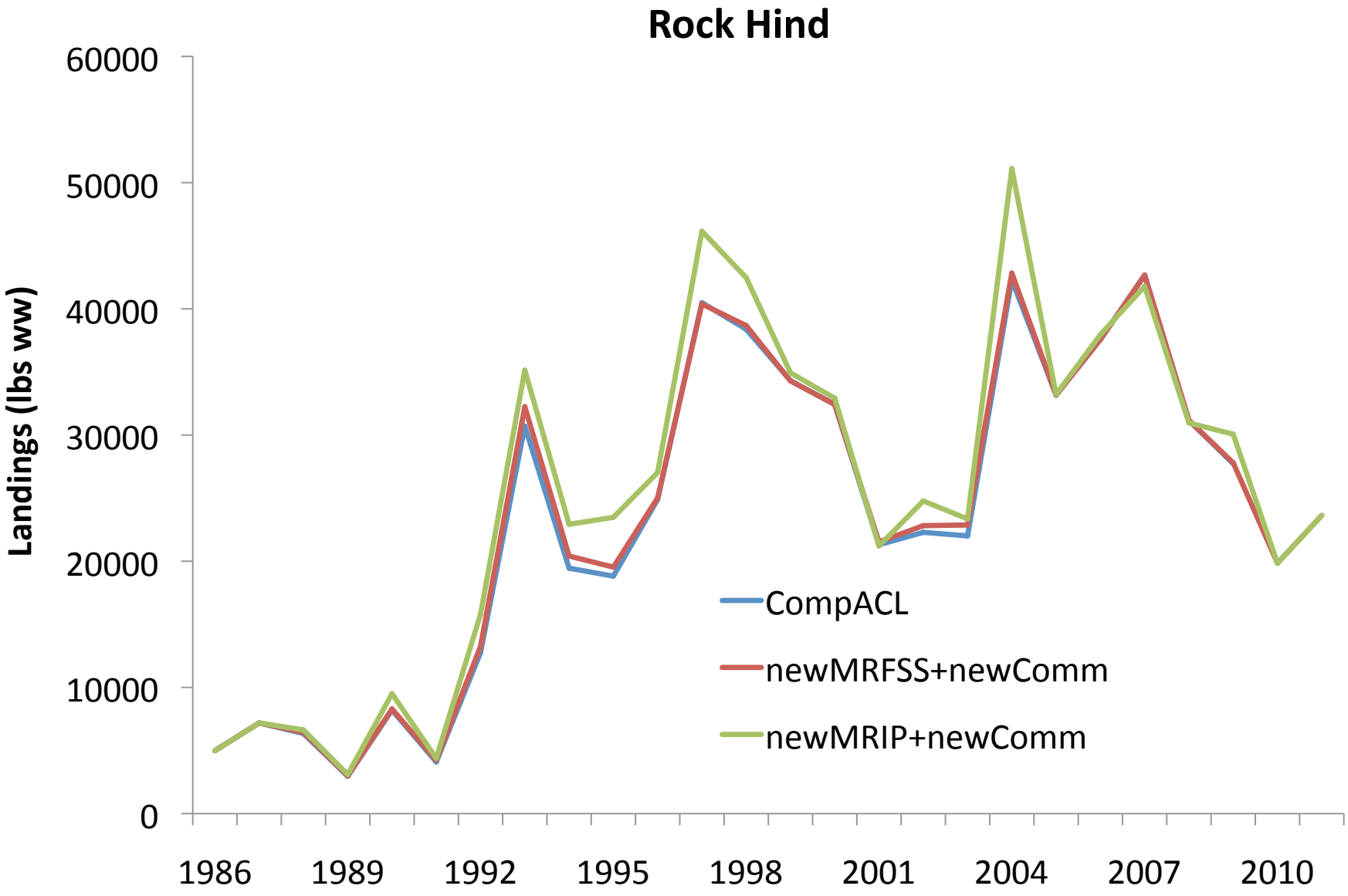
ABC proxy

STOCK OR STOCK COMPLEX NAME	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
GRUNTS	**776,774**	**805,874**	**806,652**	**sum of individual ABCs**
White grunt	635,899	663,390	674,033	median (99-08)
Sailors choice	35,266	36,920	22,674	3rd highest (99-08)
Tomtate	70,948	70,948	80,056	3rd highest (99-08)
Margate	34,662	34,616	29,889	3rd highest (99-08)

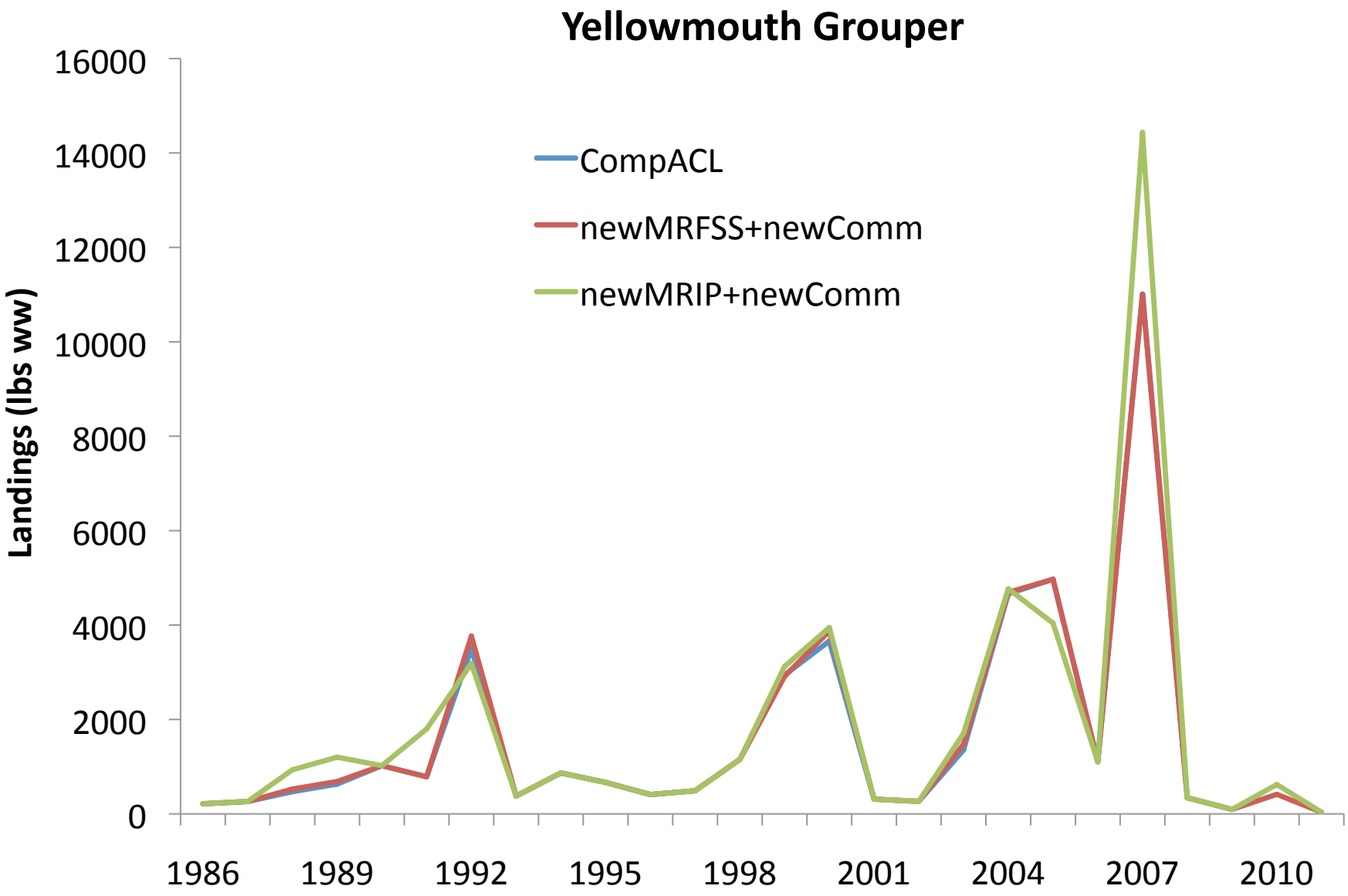
Red Hind


Red Hind
Landings (lbs ww)
60000
50000
40000
30000
20000
10000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

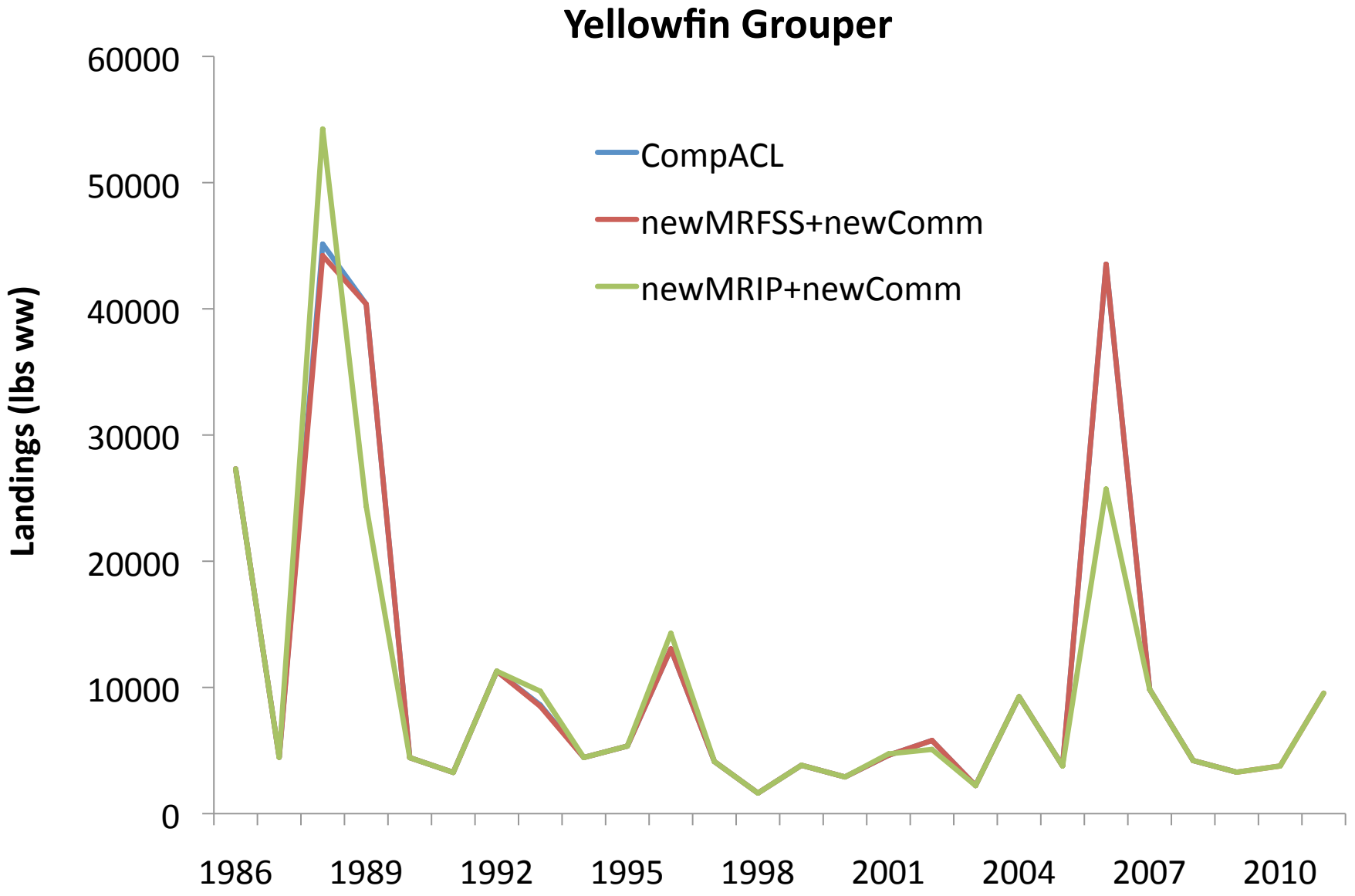
Rock Hind


Rock Hind
Landings (lbs ww)
60000
50000
40000
30000
20000
10000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

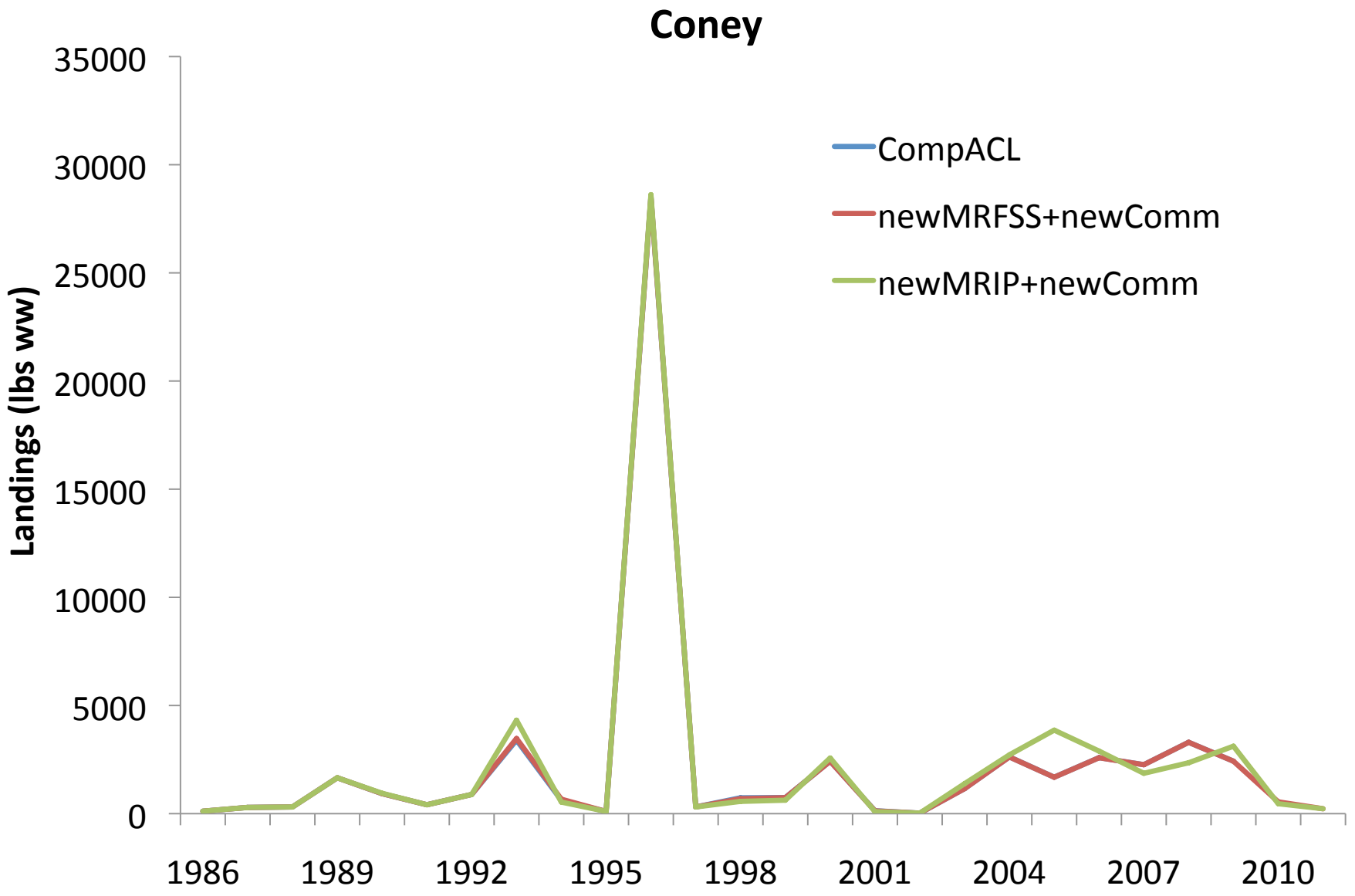
Yellowmouth Grouper



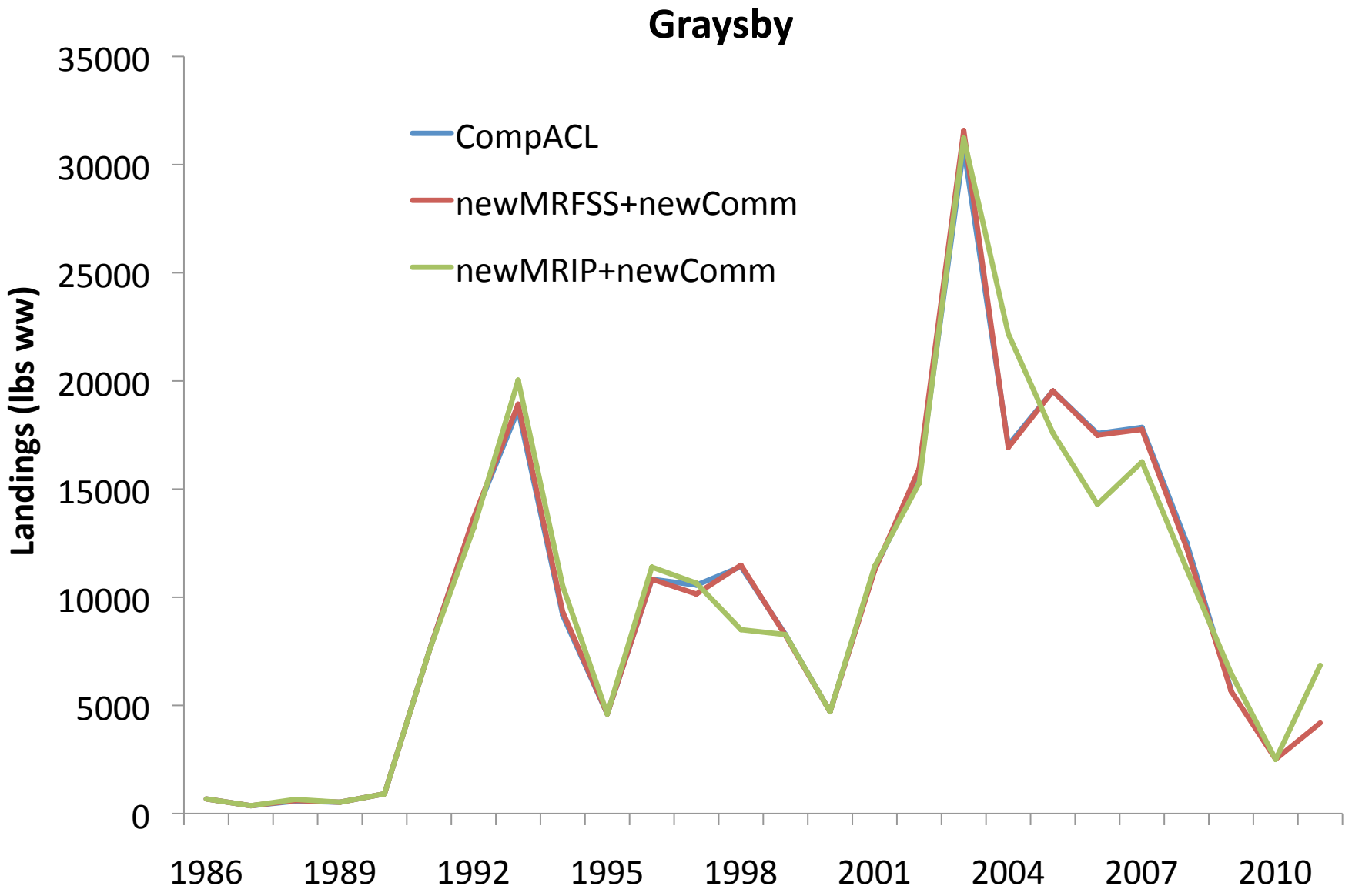
Yellowfin Grouper



Coney


Coney
Landings (lbs ww)
35000
30000
25000
20000
15000
10000
5000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Graysby

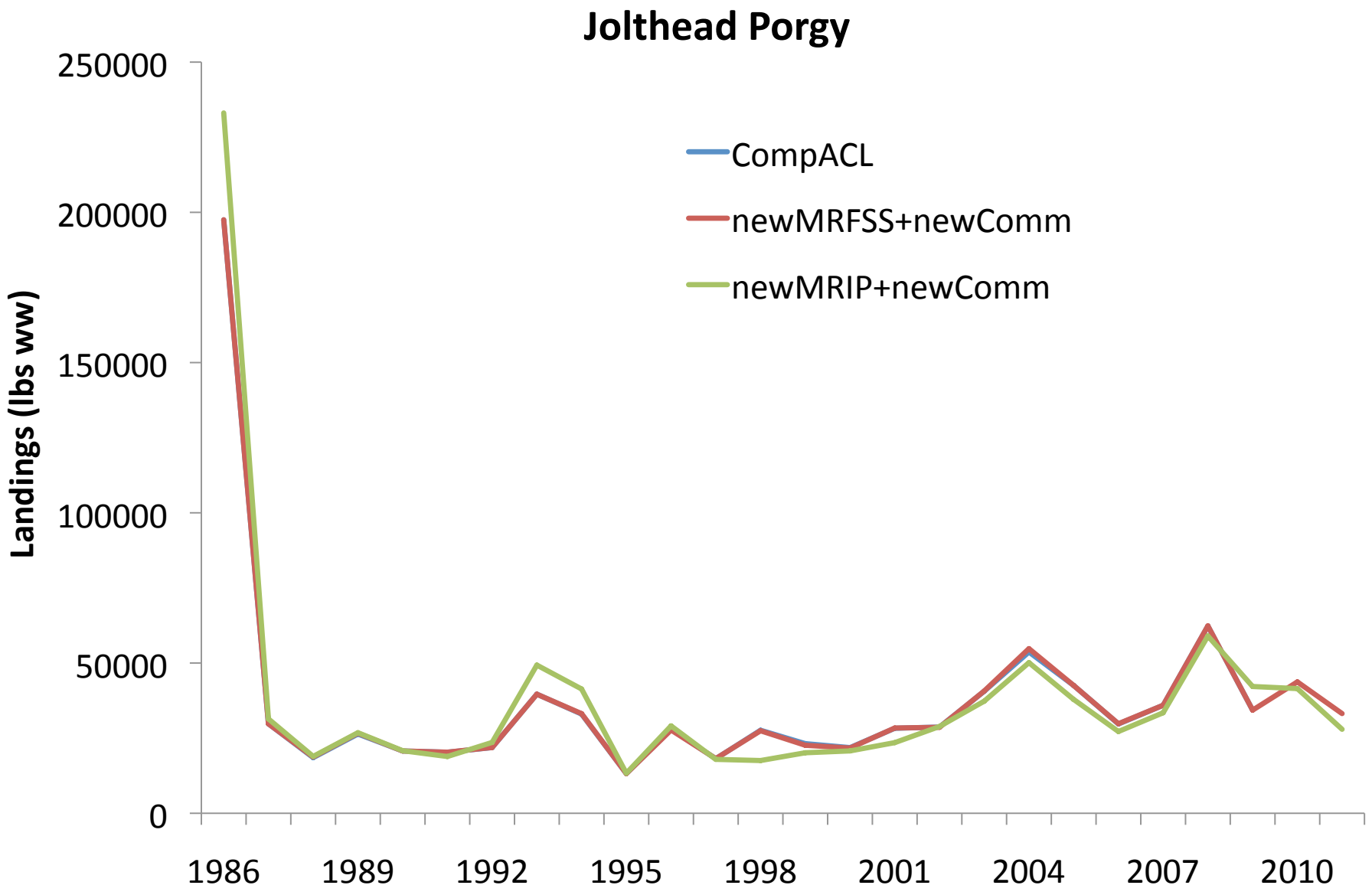

Graysby
Landings (lbs ww)
35000
30000
25000
20000
15000
10000
5000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Shallow-water Grouper Complex

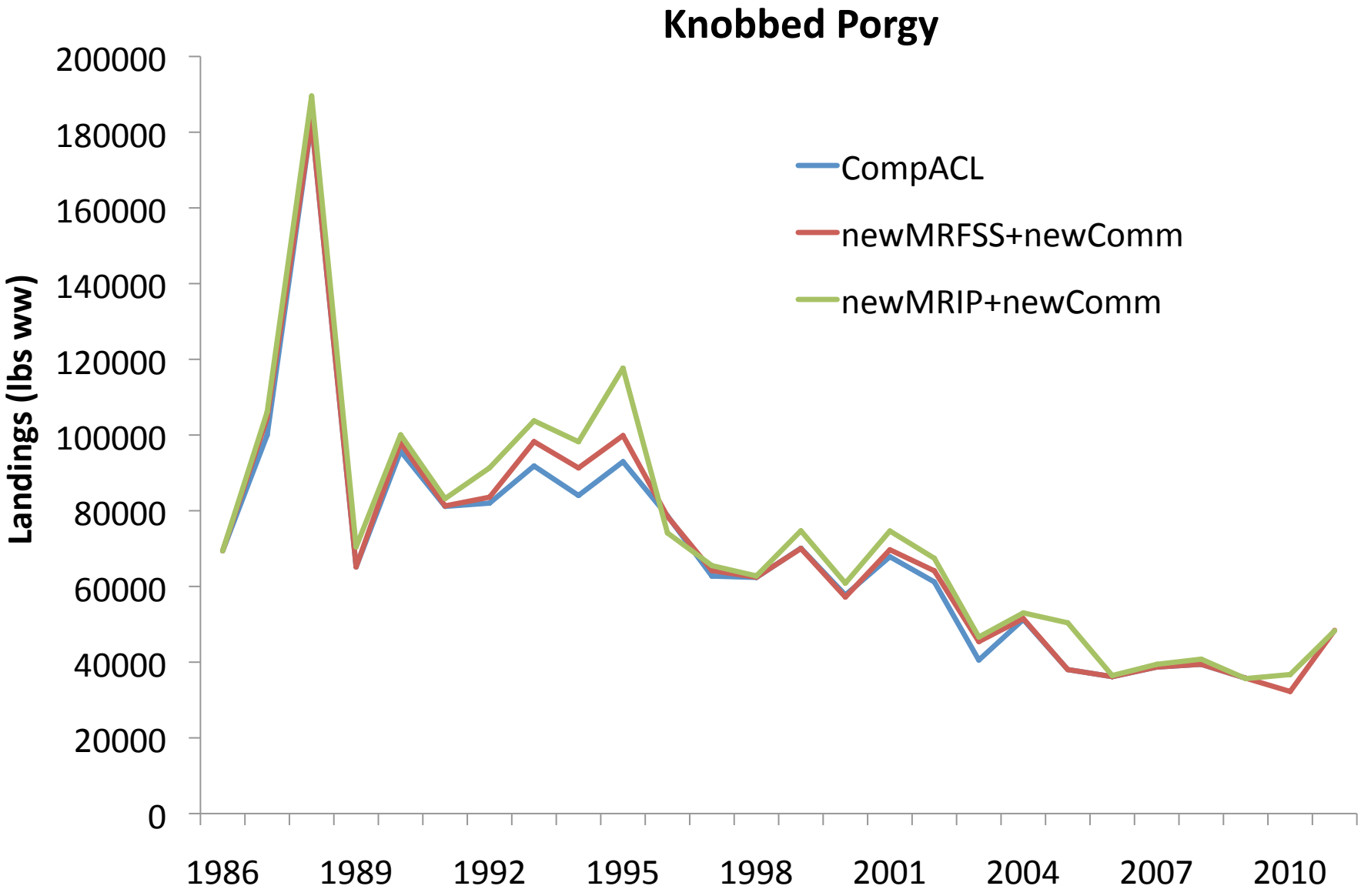
ABC proxy

STOCK OR STOCK COMPLEX NAME	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
SHALLOW-WATER GROUPERS	**97,817**	**97,745**	**96,432**	**sum of individual ABCs**
Red hind	25,885	25,875	24,867	3rd highest (99-08)
Rock hind	37,569	37,577	37,953	3rd highest (99-08)
Yellowmouth grouper	4,661	4,692	4,040	3rd highest (99-08)
Yellowfin grouper	9,258	9,258	9,258	3rd highest (99-08)
Coney	2,589	2,584	2,718	3rd highest (99-08)
Graysby	17,856	17,757	17,597	3rd highest (99-08)

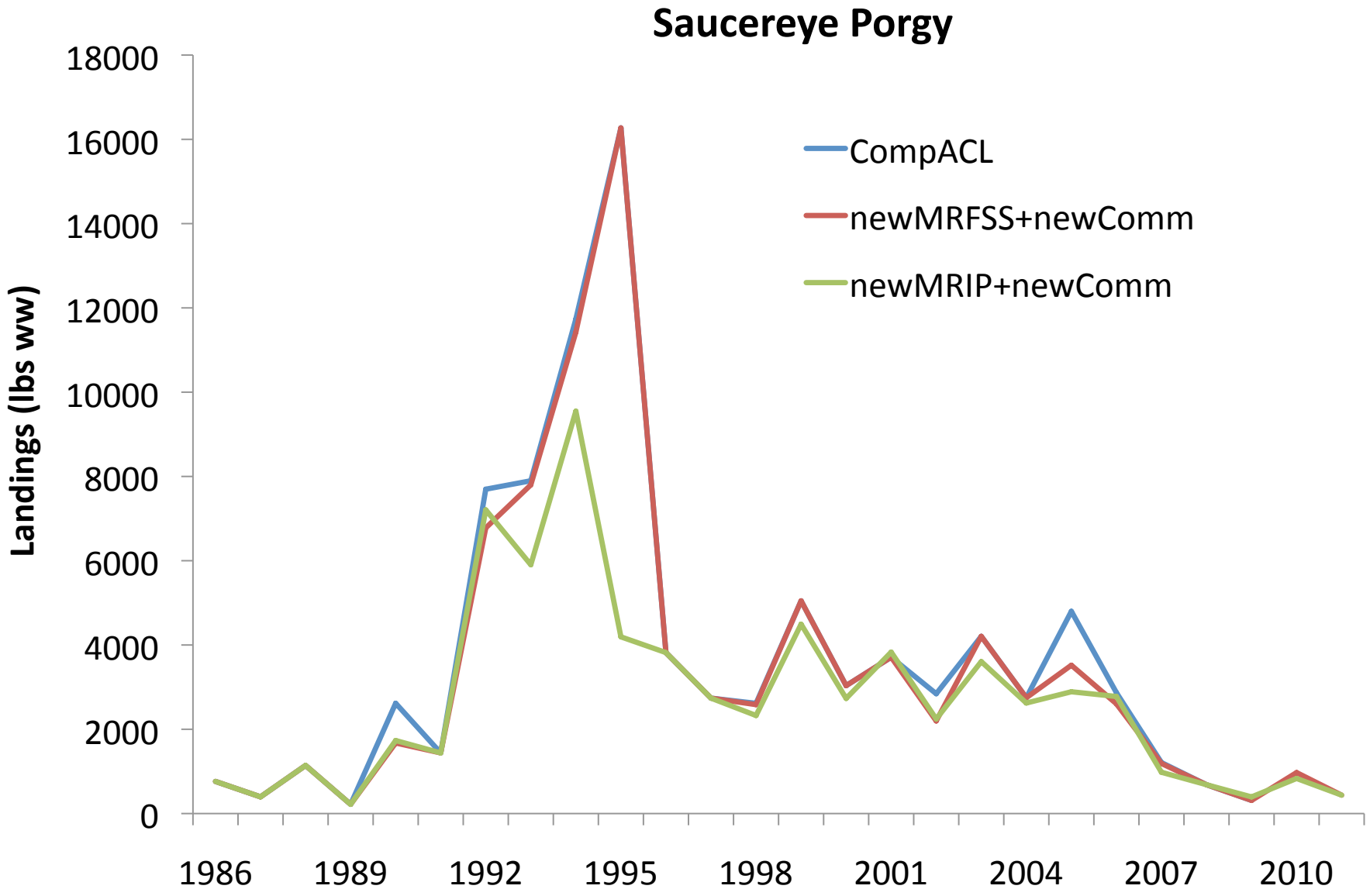
Jolthead Porgy



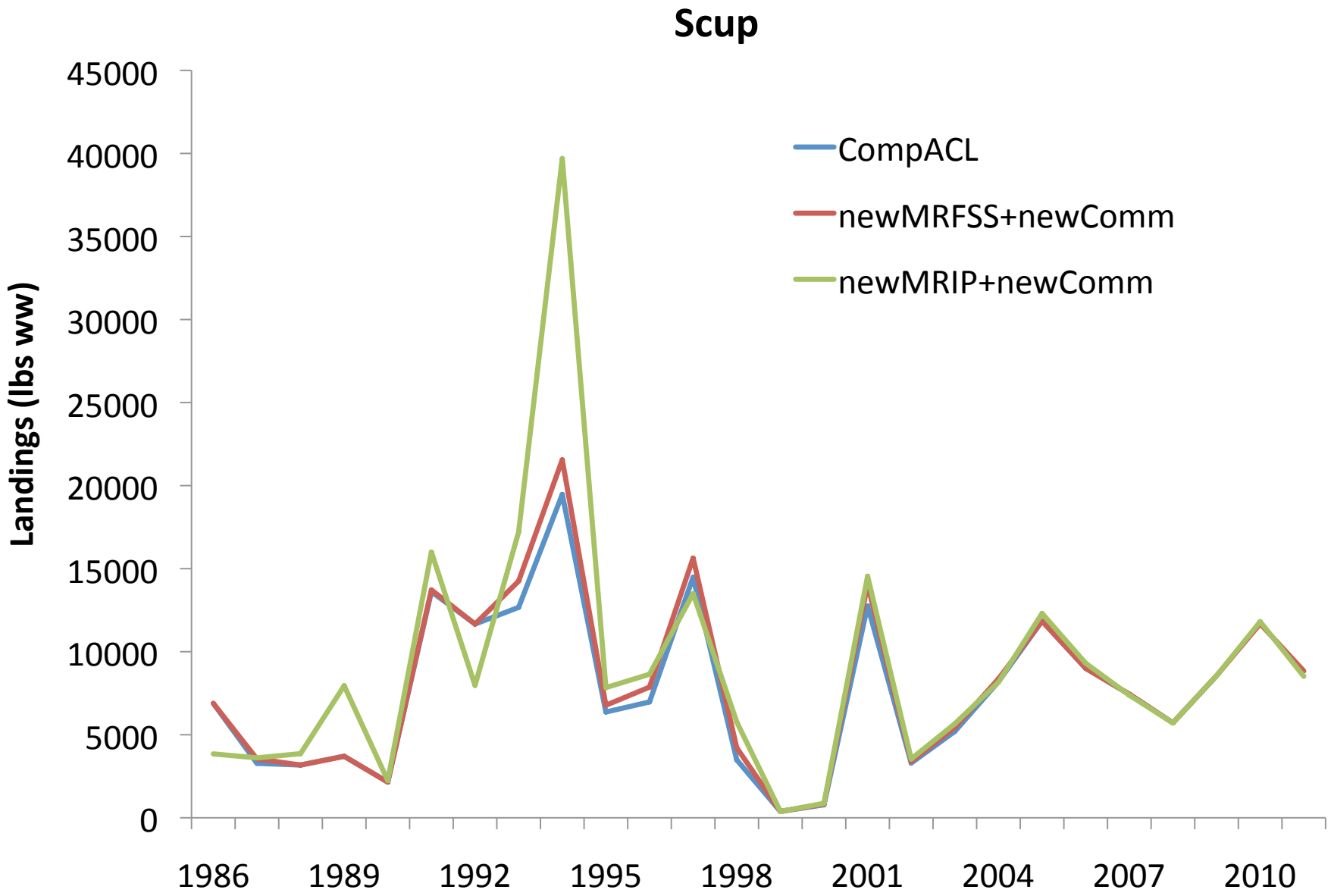
Knobbed Porgy



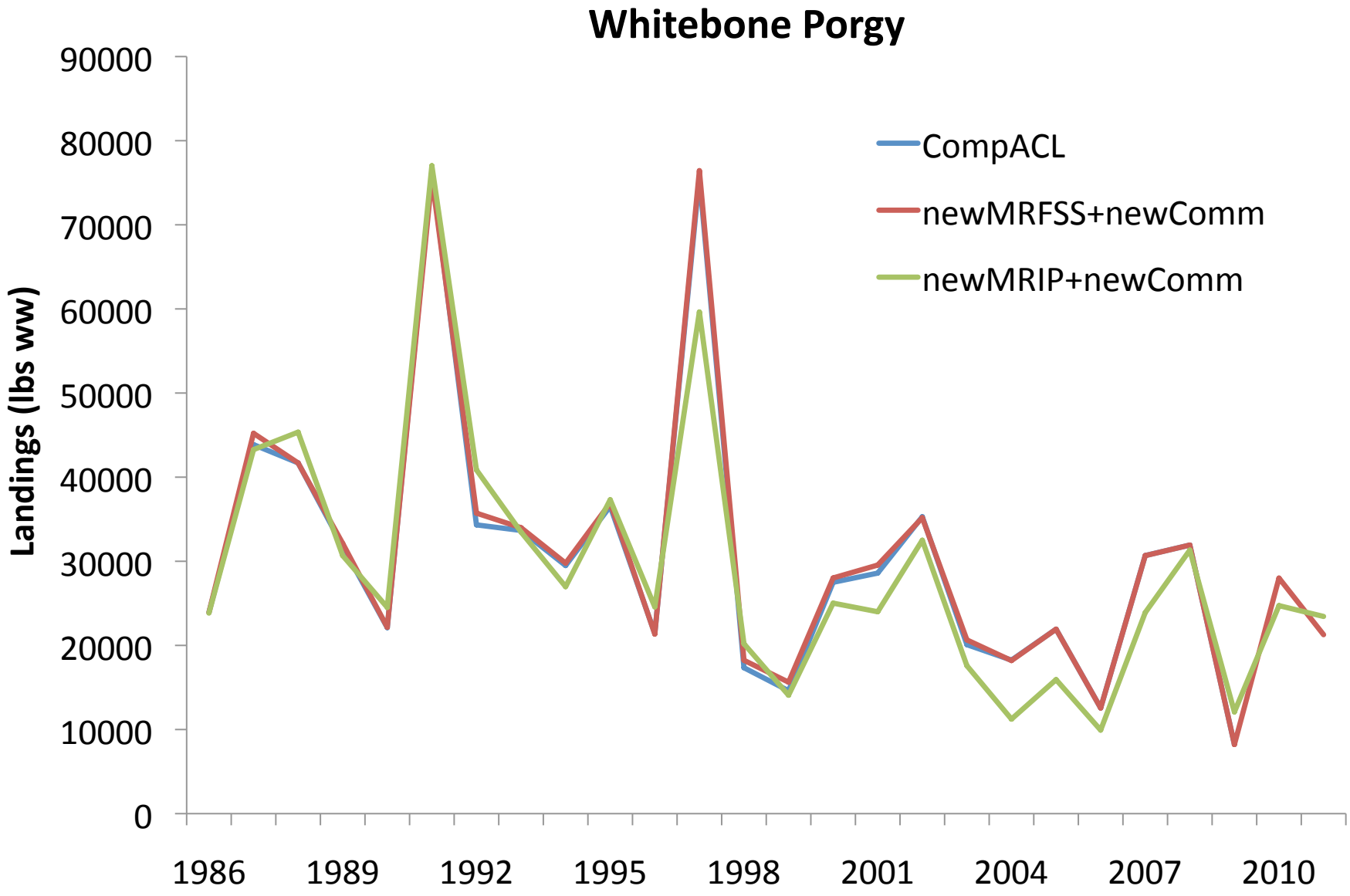
Saucereye Porgy



Scup


Scup
Landings (lbs ww)
45000
40000
35000
30000
25000
20000
15000
10000
5000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Whitebone Porgy

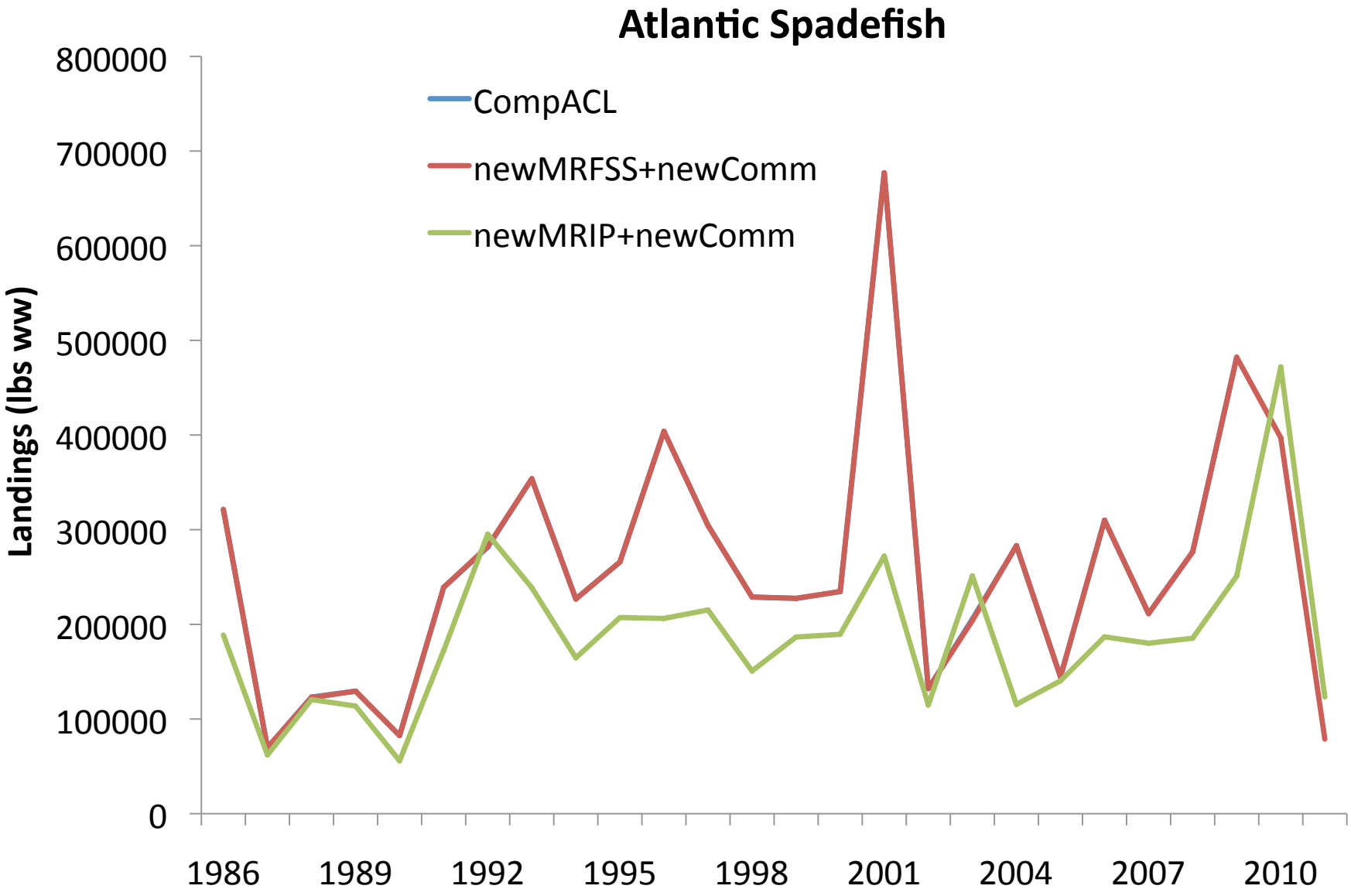


Porgies Complex

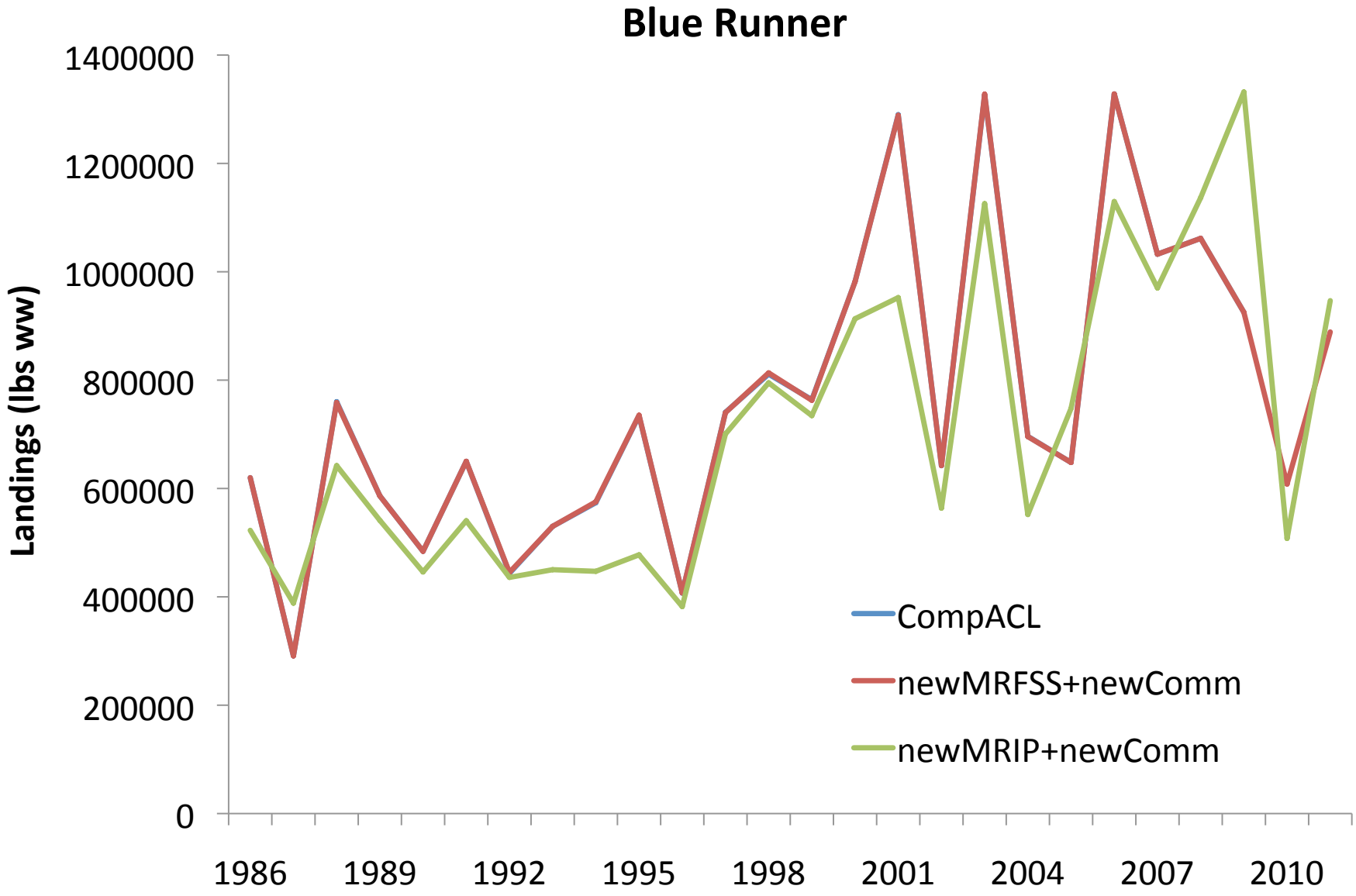
ABC proxy

STOCK OR STOCK COMPLEX NAME	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
PORGIES	**147,614**	**150,041**	**143,263**	**sum of individual ABCs**
Jolthead porgy	42,533	42,533	37,885	3rd highest (99-08)
Knobbed porgy	61,194	64,130	67,441	3rd highest (99-08)
Saucereye porgy	4,205	3,710	3,606	3rd highest (99-08)
Scup	8,999	8,999	9,306	3rd highest (99-08)
Whitebone porgy	30,684	30,671	25,024	3rd highest (99-08)

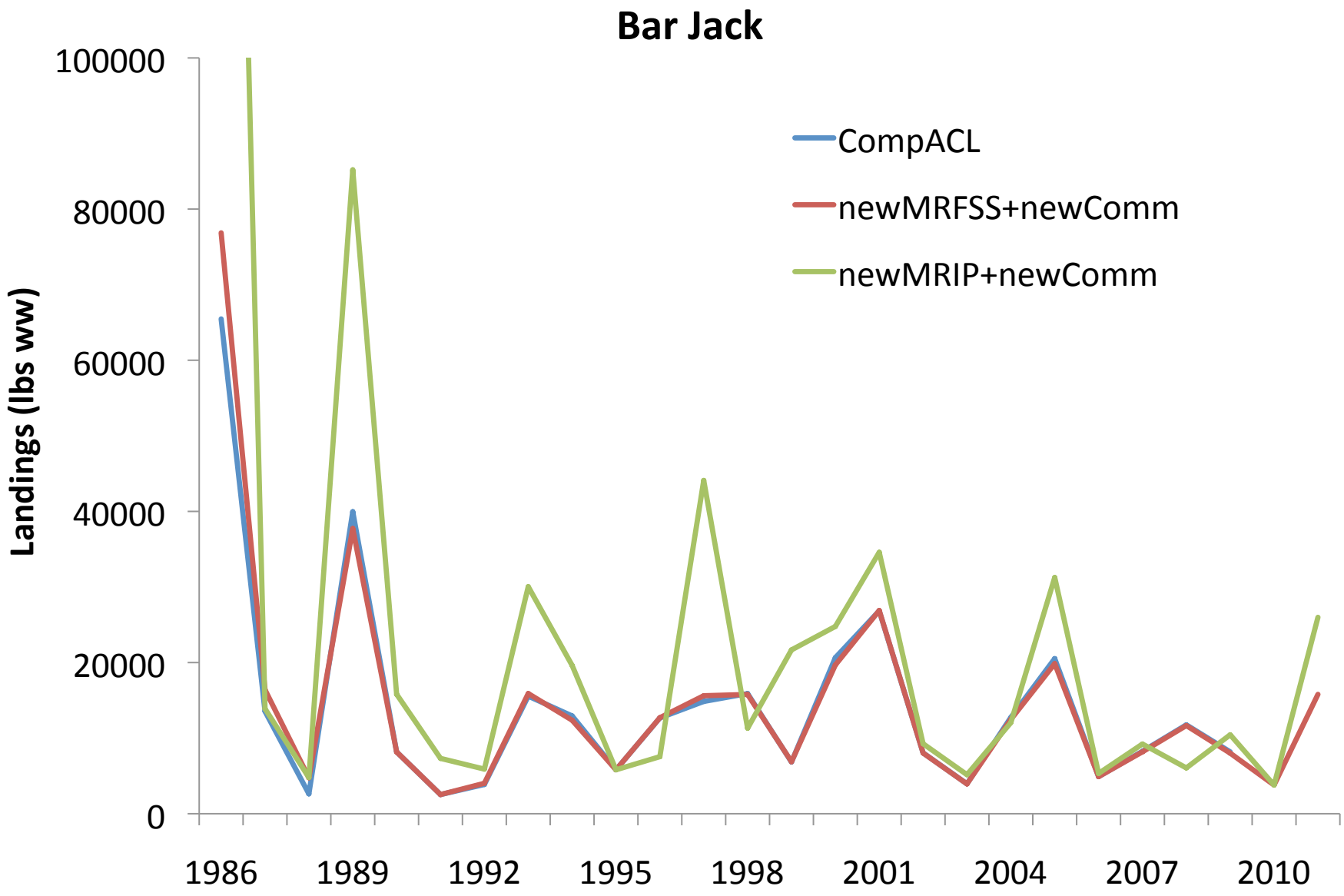
Atlantic Spadefish



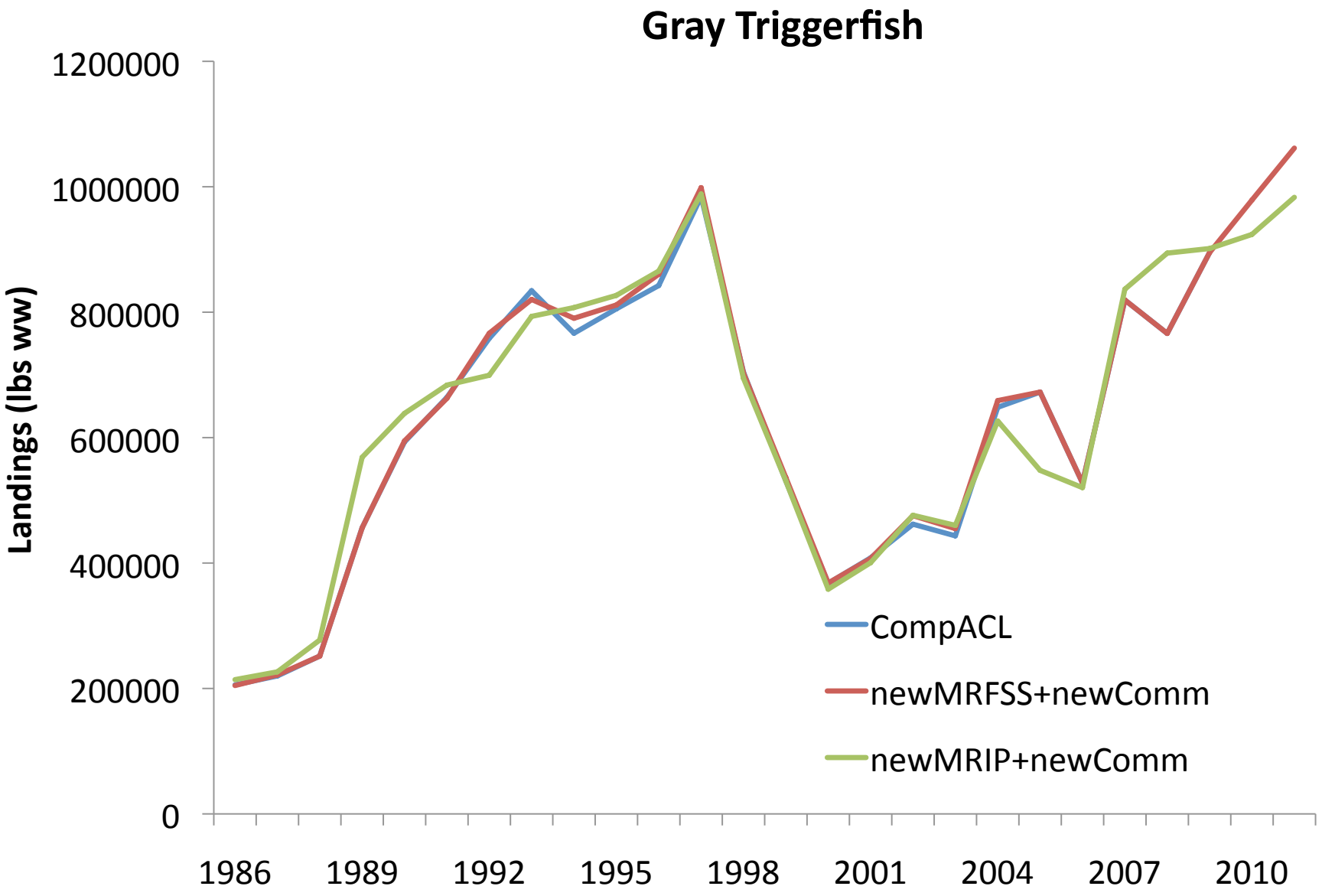
Blue Runner


Blue Runner
Landings (lbs ww)
1400000
1200000
1000000
800000
600000
400000
200000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

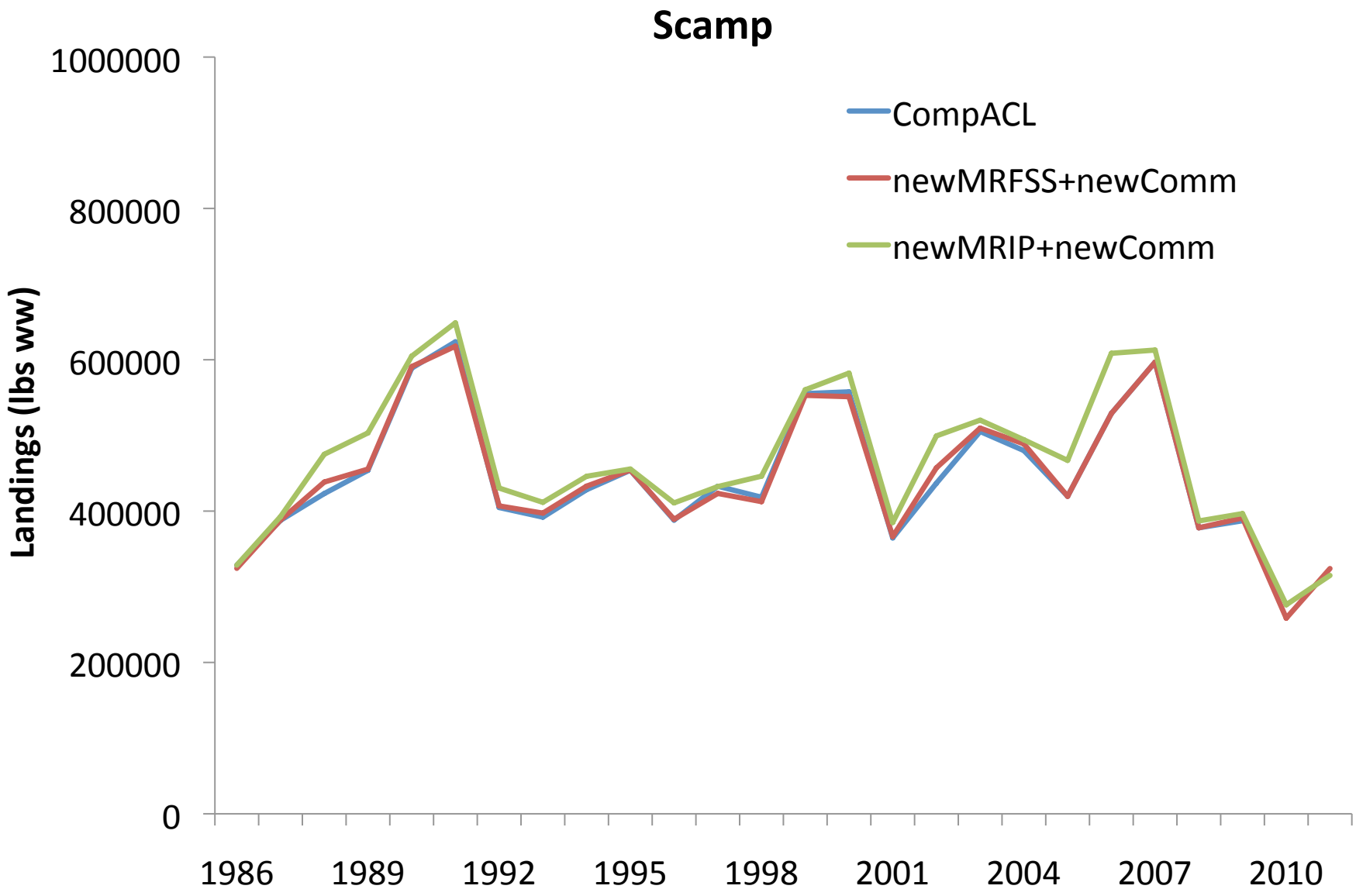
Bar Jack


Bar Jack
Landings (lbs ww)
100000
80000
60000
40000
20000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

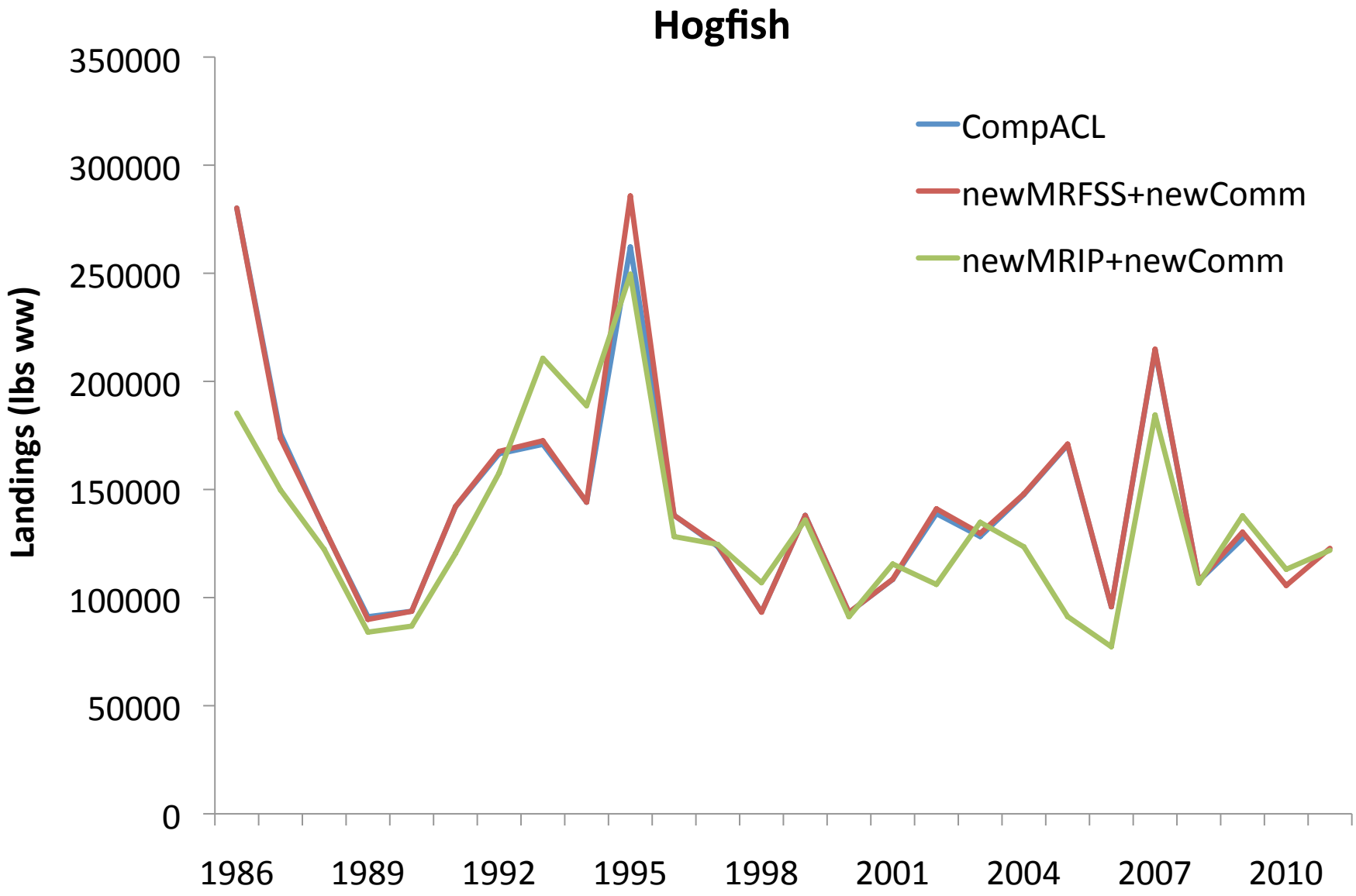
Gray Triggerfish



Scamp


Scamp
Landings (lbs ww)
1000000
800000
600000
400000
200000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Hogfish


Hogfish
Landings (lbs ww)
350000
300000
250000
200000
150000
100000
50000
0
1986
1989
1992
1995
1998
2001
2004
2007
2010
CompACL
newMRFSS+newComm
newMRIP+newComm

Individual Stocks

ABC proxy

STOCK	ABC			How ABC was calculated
	ACL Amendment	New MRFSS & Commercial	MRIP & New Commercial	
Atlantic spadefish	282,841	283,177	189,460	3rd highest (99-08)
Blue runner	1,289,941	1,288,716	1,125,729	3rd highest (99-08)
Bar jack	20,520	19,684	24,780	3rd highest (99-08)
Gray triggerfish	672,565	672,565	626,518	3rd highest (99-08)
Scamp	492,572	499,255	509,788	median (99-08)
Hogfish	147,638	147,971	134,824	3rd highest (99-08)

FINDING OF NO SIGNIFICANT IMPACT

National Oceanic and Atmospheric Administration (NOAA) Administrative Order 216-6 (NAO 216-6) (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. The National Marine Fisheries Service (NMFS) issued Instruction 30-124-1, July 22, 2005, Guidelines for the Preparation of a Finding of No Significant Impact (FONSI). In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. Section 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity". Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria, the Policy Directive from NMFS, and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to jeopardize the sustainability of any target species that may be affected by the action?

Response: No. The proposed action in this environmental assessment (EA) would not jeopardize the sustainability of any target species (see **Section 3.2**; **Chapters 4** and **6** of the EA). The amendment would revise the acceptable biological catch (ABC) estimates, annual catch limits (ACLs, including sector ACLs), and recreational annual catch targets (ACTs) for 37 un-assessed species in the snapper-grouper fishery management unit (FMU). The revisions incorporate updates to the recreational data as per the new Marine Recreational Information Program (MRIP), as well as revisions to commercial and for-hire landings. The intent of this EA is to base conservation and management measures upon the best scientific information available, and to prevent unnecessary negative socio-economic impacts that may otherwise be realized by participants in the snapper-grouper fishery and fishing community, in accordance with the provisions set forth in the Magnuson-Stevens Fishery Conservation and Management Act (Magnuson-Stevens Act).

2) Can the proposed action reasonably be expected to jeopardize the sustainability of any non-target species?

Response: No. The proposed action is not expected to jeopardize the sustainability of any non-target species (see **Section 3.2**; **Chapters 4** and **6** of the EA). A bycatch practicability analysis (BPA) is included in **Appendix E**. The BPA concluded that there could also be positive indirect biological effects associated with more accurate collection of bycatch data. Better bycatch and discard data would provide a better understanding of the composition and magnitude of catch and bycatch, enhance the quality of data provided for stock assessments, increase the quality of assessment output, provide better estimates of interactions with protected species, and lead to better decisions regarding additional measures to reduce bycatch. Furthermore, the percent differences in the revised ABCs and ACLs in the proposed action are relatively small compared to status quo, and are not expected to substantially change fishing practices.

3) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH) as defined under the Magnuson-Stevens Act and identified in FMPs?

Response: No. The proposed action is not reasonably expected to cause substantial damage to the ocean and coastal habitats and/or EFH in the U.S. waters as described in **Chapter 3.0**. The proposed action to revise ABCs, ACLs (including sector ACLs), and ACTs for 37 un-assessed snapper-grouper species is not expected to substantially alter fishing methods or activities. The habitat environment is discussed in **Section 3.1** of this EA, and the biological impacts are discussed in **Section 4.1.1**.

4) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Response: No. Although fishery management actions can sometimes affect public safety by eliminating or minimizing fishermen's flexibility to decide when, where, and how to fish, the proposed action in this EA is not expected to have such an effect. The proposed action is not expected to change fishing techniques or operations in a way that will impact the safety of commercial or recreational fishermen. These impacts are analyzed in **Chapter 4**.

5) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: No. The proposed action is not expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species. As discussed in the BPA (**Appendix E**), the proposed action is not expected to alter fishing practices in ways that would affect these species or their critical habitat in any manner not previously considered. Nor is the proposed action expected to alter fishing practices in any way that would adversely affect other non-target species. Protected resources are also discussed in **Section 3.2.2** of the EA, and the biological impacts on these resources are discussed in **Section 4.1.1**.

6) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: No. The proposed action is not expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area. The proposed action revises ABCs, ACLs (including sector ACLs), and ACTs for 37 un-assessed snapper-grouper species. However, the percent differences in the revised ABCs and ACLs in the proposed action are relatively small compared to status quo and are not expected to result in a shift in fishing effort to species that remain open to harvest or otherwise affect biodiversity or ecosystem function. The biological impacts are discussed in **Section 4.1.1** of the EA.

7) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: No. The proposed action would not create any significant social or economic impacts interrelated with natural or physical environmental effects, as discussed in **Chapters 3** and **4** of this EA. The intent of this EA is to prevent unnecessary negative socio-economic impacts that may otherwise be realized by participants in the snapper-grouper fishery and fishing community if data using the best science available is not utilized. Overall, adjustments in ACLs based on improved information would be beneficial to the species and would likely produce long-term benefits to the fishermen, coastal communities, and fishing businesses by contributing to sustainable harvest of these fish in the present and future. However, neither the biological nor social and economic impacts from this action are expected to be significant. Socio-economic impacts are also discussed in **Appendix F** (Regulatory Impact Review) and **Appendix G** (Regulatory Flexibility Analysis).

8) Are the effects on the quality of the human environment likely to be highly controversial?

Response: No. The effects on the quality of the human environment are not likely to be highly controversial. As discussed in the response to No. 7 above, the action in this amendment is expected to help avoid negative direct and indirect social benefits by utilizing data that would allow for more accurate monitoring of landings data used to determine whether an ACL will be exceeded. The intent of this EA is to base conservation and management measures (ACLs) upon the best scientific information available. The socio-economic environment and impacts are discussed in **Chapters 3** and **4,** respectively.

9) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, EFH, or ecologically critical areas?

Response: No. The proposed actions are not expected to result in substantial impacts to unique or ecologically critical areas (see **Chapter 3** for a discussion of the affected environment). In the South Atlantic, areas of unique habitat exist such as the Oculina Bank and large expanses of deepwater coral; however, regulations are currently in place to protect such known areas. Additionally, there are several notable shipwrecks along the southeast coast in state and federal waters including Lofthus (eastern Florida), SS Copenhagen (southeast Florida), Half Moon (southeast Florida), Hebe (Myrtle Beach, South Carolina), Georgiana (Charleston, South Carolina), Monitor (Cape Hatteras, North Carolina), Huron (Nags Head, North Carolina), and Metropolis (Corolla, North Carolina). The southeastern coastline is also home to numerous marshes and wetland ecosystems; however, these sensitive ecological environments do not extend into federal waters of the South Atlantic. The proposed action is not expected to alter fishing practices in any manner that would affect any of the above listed habitats or historic resources, nor would it alter any regulations intended to protect them.

10) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: No. The effects on the human environment are not likely to be highly uncertain or involve unique or unknown risks as the proposed action is not expected to alter well-established fishing methods or activities (see responses to Nos. 2 and 6 in this FONSI). Human environment is discussed in **Section 3.3** of the EA, and the biological, economic, social, and administrative impacts are discussed in **Chapter 4**.

11) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: The proposed action in this EA revises the ABCs, ACLs (including sector ACLs), and ACTs for 37 un-assessed snapper-grouper species and is related to actions originally analyzed by the environmental impact statement (EIS) for the Comprehensive ACL Amendment, which was implemented on April 16, 2012 (77 FR 15916). Revising the ABCs, ACLs and ACTs established in the Comprehensive ACL Amendment is necessary to ensure that conservation and management measures are based on the best scientific information available and to prevent unnecessary negative socio-economic impacts that may otherwise be realized by participants in the snapper-grouper fishery and fishing community. However, the proposed action is not expected to substantially alter fishing activities and is not related to any other actions with individually insignificant, but cumulatively significant impacts. The biological, economic, social, and administrative impacts are discussed in **Chapter 4**. The potential cumulative effects are discussed in **Chapter 6**.

12) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

Response: No. The proposed action makes relatively small changes to the catch levels of 37 un-assessed snapper-grouper species and is not expected to alter current fishing practices in any manner that is likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or cause loss or destruction of significant scientific, cultural, or historical resources (see **Chapter 3** for a discussion of the affected environment).

13) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: No. The proposed action will not introduce or spread any non-indigenous species because it does not substantially alter fishing methods or activities. There is no evidence or indication that any of the subject fisheries have ever resulted in the introduction or spread of non-indigenous species. The proposed action is not expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The biological impacts are discussed in **Section 4.1.1**.

14) Is the proposed action likely to establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration?

Response: No. The proposed action does not establish a precedent for future action with significant effects, and it does not represent a decision in principle about future consideration. The proposed action, conducted in accordance with regulations established under the fishery management plans (FMPs), as amended to date, in no way constitutes a decision in principle about a future consideration. FMPs and their implementing regulations are always subject to future changes. The South Atlantic Fishery Management Council and NMFS have discretion to amend a FMP and accompanying regulations, and may do so at any time, subject to the Administrative Procedures Act, National Environmental Policy Act, and other applicable laws. The potential cumulative effects are discussed in **Chapter 6** of the EA.

15) Can the proposed action reasonably be expected to threaten a violation of federal, state, or local law or requirements imposed for the protection of the environment?

Response: No. The proposed action is being taken pursuant to federal legal mandates for the management of fishery resources and does not implicate state or local requirements. It is not reasonably expected to threaten a violation of federal, state, local law, or requirements imposed for the protection of the environment. An analysis of other applicable laws related to the implementation of the EA was conducted and the analysis is contained in **Appendix H**.

16) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: No. The proposed action is not reasonably expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species (see responses to Nos. 1, 2, 5, 6, and 11 in this FONSI). Additionally, the potential cumulative effects are discussed in **Chapter 6** of this EA.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA, it is hereby determined that this action will not significantly impact the quality of the human environment as described above and in the supporting EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environmental Impact Statement is not necessary.

APR 29 2013

Roy E. Crabtree, Ph.D. Date
Regional Administrator
Southeast Regional Office
National Marine Fisheries Service