

**SECOND DRAFT
Options Paper
Generic ACL/AM Amendment
For the
Gulf of Mexico Fishery Management Council's
Red Drum, Reef Fish, Shrimp, Coral and Coral Reefs, and Stone Crab
Fishery Management Plans**

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Abbreviations Used in This Document

ABC	Acceptable biological catch
ACL	Annual catch limit
ACT	Annual catch target
AM	Accountability measure
AP	Advisory panel
B	Biomass
EA	Environmental assessment
EC	Ecosystem component
EDAH	Estimated domestic annual harvest
EEZ	Exclusive economic zone
EIS	Environmental impact statement
F	Fishing mortality rate
FMP	Fishery management plan
IFQ	Individual fishing quota
MFMT	Maximum fishing mortality threshold (overfishing threshold)
MRIP	Marine Recreational Information Program
MSRA	Magnuson-Stevens Reauthorization Act of 2006
MSST	Minimum stock size threshold (overfished threshold)
MSY	Maximum sustainable yield
NMFS	National Marine Fisheries Service (NOAA Fisheries)
NOAA	National Oceanic & Atmospheric Administration
NS1	National Standard 1 (in the Magnuson-Stevens Act)
OFL	Overfishing limit
OY	Optimum yield
PSA	Productivity-susceptibility analyses
PSE	Proportional standard error
RA	Regional Administrator
SAFMC	South Atlantic Fishery Management Council
SDC	Status determination criteria
SEDAR	Southeast Data, Assessment and Review Panel
SEP	Socioeconomic Panel
SFA	Sustainable Fisheries Act of 1996
SPR	Spawning potential ratio
SSB	Spawning stock biomass
SSBR	Spawning stock biomass ratio
SSC	Scientific and Statistical Committee
TAC	Total allowable catch
TALFF	Total allowable level of foreign fishing

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1. Introduction

1.1 Background

The Magnuson-Stevens Reauthorization Act (MSRA) of 2006 established new requirements to end and prevent overfishing through the use of annual catch limits (ACLs) and accountability measures (AMs). Implementation of ACL/AM provisions must begin in 2010 or earlier for stocks subject to overfishing, and in 2011 or earlier for all other stocks under federal management.

The Council met the requirement for stocks subject to overfishing through Reef Fish Amendments 30A (greater amberjack and gray triggerfish) and 30B (gag). Additionally, the Council has established commercial and recreational quotas for the red snapper fishery, including an individual quota system for the commercial sector. When an individual red snapper quota is reached, a commercial fisherman must stop fishing for red snapper unless he can obtain additional quota. The recreational red snapper quota is implemented by adjusting the length of the recreational season on an annual basis to match the projected length needed to fill the quota. The red snapper quotas and quota closures are consistent with establishing ACLs and AMs for this fishery.

The generic comprehensive ACL/AM amendment will address ACLs and AMs for the remaining stocks in the Council's fishery management plans (FMPs) with the exception of species managed under the Coastal Migratory Pelagics FMP and Spiny Lobster FMP, which will be addressed in joint plan amendments with the South Atlantic Fishery Management Council (SAFMC). In addition, the Council could choose to revisit and adjust the ACL/AM provisions previously adopted for red snapper, greater amberjack, gray triggerfish and gag if the Council finds it is necessary in order to be consistent with policies adopted in the generic comprehensive ACL/AM amendment.

1.2 Status of Gulf of Mexico FMP Stocks

The official status of stocks managed in federal fishery management plans is maintained by the NOAA Fisheries Office of Sustainable Fisheries and is updated on a quarterly basis. The status of 50 stocks in Gulf of Mexico FMPs that are subject to action in this amendment, as of the third quarter 2009, is shown in Table 1.2 (annual stocks such as shrimp other than royal red, and stocks managed under a joint FMP are not included). Four stocks are currently listed as overfished and undergoing overfishing (gag, gray triggerfish, greater amberjack, red snapper), although the overfishing status of red snapper is expected to change as a result of the 2009 update assessment. Nine stocks are classified as not undergoing overfishing but overfished status is unknown or undefined (red drum, goliath grouper, Nassau grouper, stone crabs, and five classifications of corals). Five stocks are also classified as neither undergoing overfishing nor overfished (mutton snapper, red grouper, vermilion snapper, yellowtail snapper, and royal red shrimp). For the remaining 32 stocks classifications have not been determined, either because there is no stock assessment, or because the assessment was inconclusive. The most recent status of stocks listing is available at <http://www.nmfs.noaa.gov/sfa/statusoffisheries/SOSmain.htm>.

The Fish Stock Sustainability Index (FSSI) is a performance measure for the sustainability of selected U.S. fish stocks that are important to commercial and recreational fisheries. Stocks with

an FSSI index are assigned a point value of 0 to 4 (higher is better) based on availability of information to determine overfishing/overfished status and the status of the stock. A detailed description of the FSSI is available at

http://www.nmfs.noaa.gov/sfa/statusoffisheries/2009/thirdquarter/fssi_summary_changes_q3_2009.pdf.

Table 1.2. Status of stocks in Gulf of Mexico FMPs subject to annual catch limits as of third quarter 2009.

FMP	Stock	Overfishing?	Overfished?	Approaching Overfished Condition?	FSSI Score
Red Drum	Red drum	No	Undefined	Unknown	1.5
Reef Fish	Almaco jack	Unknown	Undefined	Unknown	non-FSSI
	Anchor tilefish	Unknown	Undefined	Unknown	non-FSSI
	Banded rudderfish	Unknown	Undefined	Unknown	non-FSSI
	Black grouper	Unknown	Undefined	Unknown	0
	Blackfin snapper	Unknown	Undefined	Unknown	non-FSSI
	Blackline tilefish	Unknown	Undefined	Unknown	non-FSSI
	Blueline tilefish	Unknown	Undefined	Unknown	non-FSSI
	Cubera snapper	Unknown	Undefined	Unknown	non-FSSI
	Dog snapper	Unknown	Undefined	Unknown	non-FSSI
	Dwarf sand perch	Unknown	Undefined	Unknown	non-FSSI
	Gag	Yes	Yes	N/A	1
	Goldface tilefish	Unknown	Undefined	Unknown	non-FSSI
	Goliath grouper	No	Unknown	Unknown	1.5
	Gray snapper	Unknown	Undefined	Unknown	non-FSSI
	Gray Triggerfish	Yes	Yes	N/A	1
	Greater amberjack	Yes	Yes	N/A	1
	Hogfish	Unknown	Undefined	Unknown	0
	Lane snapper	Unknown	Undefined	Unknown	non-FSSI
	Lesser amberjack	Unknown	Undefined	Unknown	non-FSSI
	Mahogany snapper	Unknown	Undefined	Unknown	non-FSSI
	Misty grouper	Unknown	Undefined	Unknown	non-FSSI
	Mutton snapper	No	No	No	non-FSSI
	Nassau grouper	No	Undefined	Unknown	1.5
	Queen snapper	Unknown	Undefined	Unknown	non-FSSI
	Red hind	Unknown	Undefined	Unknown	non-FSSI
	Red grouper	No	No	No	4
	Red snapper	Yes	Yes	N/A	1
	Rock hind	Unknown	Undefined	Unknown	non-FSSI
	Sand perch	Unknown	Undefined	Unknown	non-FSSI
	Scamp	Unknown	Undefined	Unknown	non-FSSI
	Schoolmaster	Unknown	Undefined	Unknown	non-FSSI
	Silk snapper	Unknown	Undefined	Unknown	non-FSSI
	Snowy grouper	Unknown	Undefined	Unknown	0
	Speckled hind	Unknown	Undefined	Unknown	non-FSSI
	Tilefish	Unknown	Undefined	Unknown	non-FSSI
	Vermilion snapper	No	No	No	4
	Warsaw grouper	Unknown	Undefined	Unknown	non-FSSI
	Wenchman	Unknown	Undefined	Unknown	non-FSSI
	Yellowedge grouper	Unknown	Undefined	Unknown	0
	Yellowfin grouper	Unknown	Undefined	Unknown	non-FSSI
	Yellowmouth grouper	Unknown	Undefined	Unknown	non-FSSI
	Yellowtail snapper	No	No	No	4
Shrimp	Royal red shrimp	No	No	No	3
Stone Crab	Stone crabs	No	Undefined	Unknown	1.5
Coral and Coral Reefs	Black corals (Antipatharia)	No	Undefined	Unknown	non-FSSI
	Fire corals (Milleporidae)	No	Undefined	Unknown	non-FSSI
	Hydrocorals (Stylasteridae)	No	Undefined	Unknown	non-FSSI
	Soft corals (Octocorallia)	No	Undefined	Unknown	non-FSSI
	Stony corals (Scleractinia)	No	Undefined	Unknown	non-FSSI

1.3 Purpose and Need for Action

The purpose of the Generic ACL/AM Amendment is to establish the methods for implementing ACLs, AMs and associated parameters for stocks managed solely by the Gulf Council, along with initial specifications of an ACL that may be changed under a framework procedure for specifying an ACL.

The need for this action is to improve management capability to prevent and end overfishing and to maintain stocks at healthy levels, and to do so in a consistent and structures manner across all FMPs.

Several specific actions are needed to fully implement the annual catch limit and accountability measure provisions in this amendment. These actions include:

Transfer management of selected stocks to other agencies. For some stocks, presence in the federal waters of the Gulf of Mexico is uncommon and may represent a stock that is predominately within the jurisdiction of the South Atlantic Fishery Management Council, or a stock may have a limited geographic range and be landed entirely in a single state. National Standard 3 states that, to the extent practicable, an individual stock of fish shall be managed as a unit throughout its range. For these stocks, National Standard 3 may be best implemented by transferring management to another agency.

Designating ecosystem component species. Some of the stocks listed in the Council's FMPs have very low landings but no indication that they are overfished. This suggests that these stocks are not generally targeted or retained for personal use or sale. With few landings records, the accuracy of the catch statistics is questionable, making it difficult to set a scientifically valid annual catch limit. Even if a catch limit were to be set, catches of a non-targeted stock are random events that are difficult if not impossible to control through catch restrictions. For these stocks, designation as ecosystem component stocks may be the best approach to management. Since they will continue to be in the FMP, landings will continue to be monitored, and management action can be taken if subsequent changes in fishing pressure are observed.

Species groupings. In some cases, groups of stocks share a common habitat and are caught in the same fishery. In some cases the status of a stock is unknown, but they are caught in conjunction with a stock whose status is known. Some groupings already exist in management, i.e., shallow-water grouper, deep-water grouper, and tilefishes. Grouping of species that share similar fishery characteristics can simplify or reduce the number of catch limits needed, and can allow species where there is insufficient information to determine status to managed under an annual catch limit for an indicator stock whose status is known. Care should be taken, however, to assure that species groupings and resulting ACLs will protect the weakest stock in the group.

ABC control rules. Standard methods for determining the appropriate annual catch limit will allow objective and efficient assignment of catch limits. Because of different levels of information about the status of stocks, separate control rules will be needed for data-adequate and data-poor stocks. In some cases, the nature of the fishery or other considerations may require a separate control rule for a given stock.

Sector allocations. Depending upon the characteristics of a given fishery, some stocks may be best managed under a two sector approach (commercial and recreational), while other stocks may be best managed under a three sector approach (commercial, for-hire and private recreational). Some stocks are harvested almost entirely by a single sector, particularly deep-water stocks. For these stocks, it may not be necessary to have sector allocations at all. Decisions need to be made as to whether and how to assign sectors so that sector ACLs can be established.

Framework procedure for setting ACL. The current framework procedures for setting TAC in the various FMPs are outdated and do not comply with current terminology and practices. These framework procedures need to be updated, and where possible, streamlined to allow more efficient management.

Initial specification of ACLs. Once transfer of management, designation of ecosystem component species, species groupings, sector allocations, and appropriate control rules have been established, the task of assigning initial annual catch limits, and optionally annual catch targets, can proceed.

Accountability measures. In-season and post-season accountability measures need to be established to keep catch levels within the designated annual catch limits or to restore catch levels to those limits if exceeded. These accountability measures will need to take into account the timeliness of the catch data for in-season monitoring, as well as whether the stock is under a rebuilding plan.

2. Management Actions

2.1 Action 1. Management of Species or Fishery Management Plans by Other State or Federal Agencies

2.1.1 Action 1.1 Octocorals (Family Gorgoniidae, Class Anthozoa)

Alternative 1: No action, retain management of octocorals under the Corals and Coral Reefs Fishery Management Plan

Alternative 2: Delegate management of octocorals to Florida FWC

Alternative 3: Delegate management of octocorals to South Atlantic Fishery Management Council

Alternative 4: Remove octocorals from the Corals and Coral Reefs Fishery Management Plan

2.1.2 Action 1.2 Stone Crab Fishery Management Plan

Alternative 1: No action, retain management of stone crab species (*Menippe mercenaria*, *M. adina*) under the Stone Crab Fishery Management Plan

Alternative 2: Delegate management of both stone crab species to Florida FWC

Alternative 3: Repeal the Stone Crab Fishery Management Plan

2.1.3 Action 1.3 Nassau Grouper, *Epinephelus striatus*

Alternative 1: No action, retain management of Nassau grouper under the Reef Fish Fishery Management Plan

Alternative 2: Delegate management of Nassau grouper to Florida FWC

Alternative 3: Remove Nassau grouper from the Reef Fish Fishing Management Plan

2.1.4 Action 1.4 Yellowtail Snapper, *Ocyurus chrysurus*

Alternative 1: No action, retain management of yellowtail snapper under the Reef Fish Fishery Management Plan

Alternative 2: Delegate management of yellowtail snapper to the Florida FWC

Alternative 3: Remove yellowtail snapper from the Reef Fish Fishery Management Plan

Discussion:

Action 1.1 Octocorals (Family Gorgoniidae, Class Anthozoa)

The Fishery Management Plan for Coral and Coral Reefs has been jointly managed by the Gulf and South Atlantic Councils since 1982. The joint jurisdiction of the two Councils extends from the Virginia/North Carolina border in the South Atlantic to the Texas/Mexico border in the Gulf of Mexico. However, with implementation of Joint Amendment 2, the single FMP was divided into two separate fishery management plans for the South Atlantic and Gulf of Mexico Fishery Management Councils (GMFMC and SAFMC 1994). Octocorals were added to the Fishery

Management Unit under the original plan (GMFMC and SAFMC 1982). The definition of allowable octocorals changed little over the development of new Fishery Management Plans. However, Joint Amendment 2, redefined octocorals as an erect non-encrusting species of the subclass Octocorallia, including only the substrate covered by and within 1 inch of the holdfast. Harvest of the common sea fan, (*Gorgonia ventalina*) and Venus seas fan (*G. flabellum*) are prohibited (GMFMC and SAMFC 1994). Joint Amendment 1 set an annual allowable harvest of octocorals in the exclusive economic zone of 50,000 colonies (GMFMC and SAFMC 1990). This was defined as the optimum yield and overfishing was defined as the annual level of harvest that exceeds optimum yield (GMFMC and SAFMC 1990). Florida FWC had no limits on the harvest of octocorals for commercial purposes unless and until the season for all harvest of octocorals in federal exclusive economic zone waters adjacent to state waters was closed. At such time, “the season for harvest of octocorals in state waters shall also close until the October 1, start of fishing season, upon notice given by the Executive Director of the Fish and Wildlife Conservation Commission” (Florida Administrative Code 68B-42.006). Florida FWC has documented commercial landings of octocorals since 1991, when the monitoring program was discussed and endorsed in Joint Amendment 1 (GMFMC and SAFMC 1990). Florida FWC requires commercial octocoral harvesters to have a Saltwater Products License, Restricted Species Endorsement, and Marine Life Endorsement (Florida Administrative Code 68B-42.0065). Recreational landings for octocorals do not have a separate monitoring program, but Florida FWC requires harvesters to purchase a saltwater fishing license. Additionally, recreational regulations limit harvest of octocorals to 6 colonies per person per day for federal and state waters (GMFMC and SAFMC 1990; Florida Administrative Code 68B-42.005).

Octocorals are primarily harvested from state waters and used in the aquarium trade, although in some cases octocorals are harvested for biomedical research (GMFMC and SAFMC 1982; GMFMC and SAFMC 1990). Today most compounds found in octocorals that may be used in medical research are synthesized (SAFMC 2009). The joint annual quota of 50,000 colonies has not been reached by the commercial fishery. The average annual number of colonies commercially landed from state waters during the 2000-2008 time series was 38,473 colonies off both coasts combined (Figure 2.1.1.1). Fewer colonies were landed from Gulf and South Atlantic federal waters during the 2000-2008 time series, with annual average landings of 3,868 and 5,635 colonies, respectively (Figure 2.1.1.1). The 2009 data were not included because data are preliminary.

Alternative 1 is the no action alternative which would retain management of octocorals under the current Corals and Coral Reefs Fishery Management Plan for the Gulf of Mexico. Under this alternative annual catch limits and accountability measures would need to be developed (see Action 8.2, for setting an annual catch limit).

Alternative 2 would delegate management of octocorals to Florida FWC. Delegation to Florida would require agreement from Florida FWC to accept the responsibility of octocorals, but still set an annual catch limit (see Action 8.2, for setting an annual catch limit). If **Alternative 2** was selected as a preferred alternative, Florida FWC and the Council would work jointly to maintain the annual catch limit implemented by NOAA Fisheries Service. This method of management is similar to current protocols followed by Florida FWC. They have taken the lead in documenting commercial octocoral landings and adopting compatible regulations with NOAA Fisheries Service and the Council’s by closing state waters to harvest of octocorals when the exclusive

economic zone quota is filled. In addition to setting an annual catch limit, accountability measures would also need to be established to be compliant with National Standard 1 guidelines.

Alternative 3 would delegate management of octocorals to the South Atlantic Fishery Management Council. A majority, (78%) of the commercial octocoral landings occur in South Atlantic waters (Figure 2.1.1.1). The average South Atlantic commercial landings from state and federal waters during the 2000-2008 time series was 33,980 colonies, annually; whereas, the average Gulf of Mexico commercial landings from state and federal waters during the same time series was 9,593 colonies, annually. Delegation to the South Atlantic Council would require them to agree to accept the responsibility of management of octocorals and establish and implement annual catch limits and accountability measures. The Gulf Council would help in setting the annual catch limit and accountability measures as well as work with Florida FWC to monitor commercial landings.

Alternative 4 would remove the species of octocorals from the Coral and Coral Reef Fishery Management Plan and another state or federal agency may take over the responsibility of management. Under this alternative the Gulf Council would no longer need to develop an annual catch limit or accountability measure for octocorals. If this alternative, were selected and management was not accepted by the South Atlantic Council, the joint quota would need to be reanalyzed.

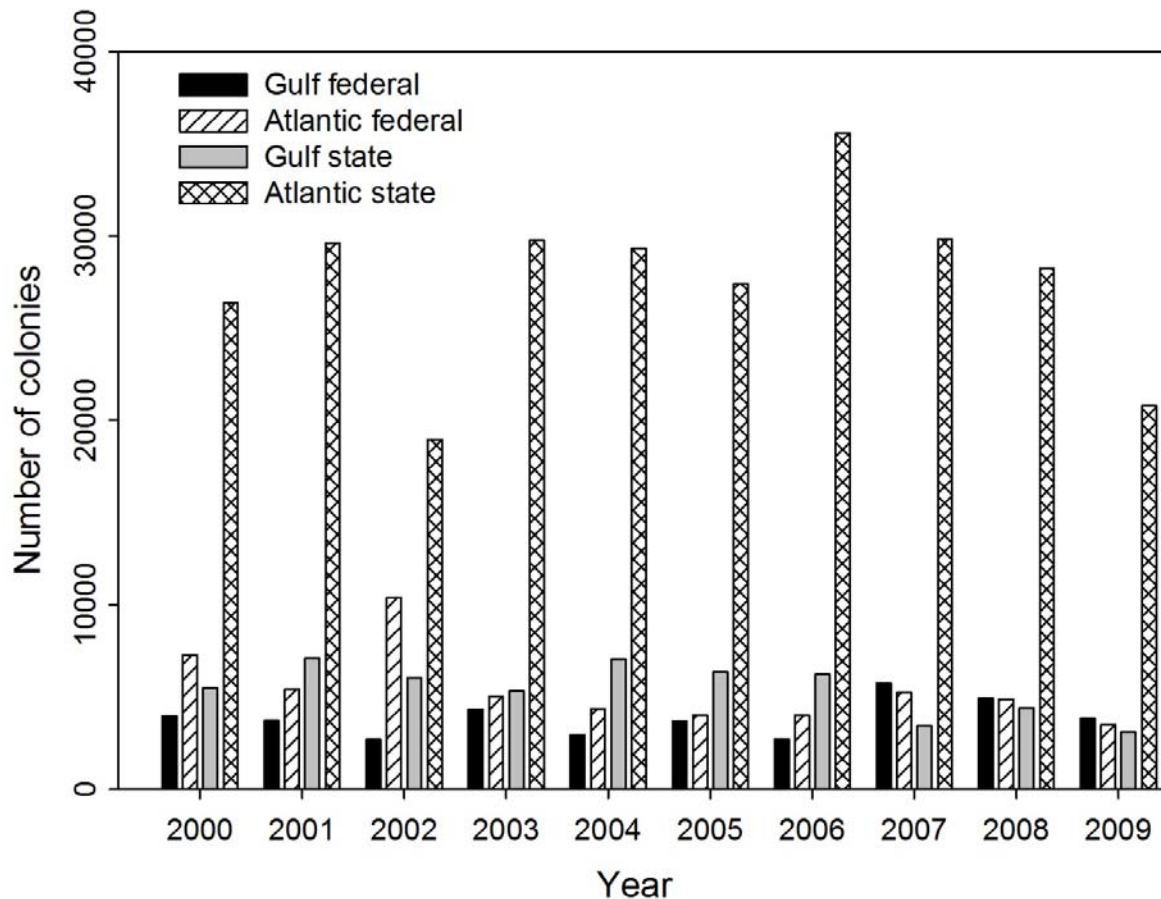


Figure 2.1.1.1. Octocoral landings from Gulf federal, South Atlantic federal, Gulf state, and South Atlantic state waters during the 2000-2009 time series. Note 2009 data are incomplete. Source: S. Brown, Florida FWC and FWRI, biologist 2010.

Action 1.2 Stone Crab Fishery Management Plan

The Stone Crab Fishery Management Plan was developed to manage the stone crab fishery and reduce gear conflicts between stone crab fishermen and shrimp fishermen in southwest Florida (GMFMC 1979). The Gulf Council and NOAA Fisheries Service have worked closely with the State of Florida adopting compatible management measures, developing a framework to allow the Regional Administrator to solve gear conflicts, implementing a 3-year vessel moratorium, and recognizing Florida FWC's license, trap certificates, and trap tags for use in the EEZ in lieu of a federal permit.

There are two species of stone crab in the fishery management plan. The principal species taken in the fishery is the Florida stone crab, *Menippe mercenaria*. The other species is the gulf stone crab, *M. adina* which occurs from northwest Florida to the western Gulf (Bert 1986). The northern area represents the end of the commercial fishery, even though the range of gulf stone crab extends across the northern and western Gulf. There are zones of secondary contact and hybridization between the two species in the Gulf between Cedar Key and Cape San Blas and in the Atlantic between Cape Canaveral and Charleston, South Carolina (Bert and Harrison 1988). Subsequent work by Bert and Harrison (1988) described a zone of hybridization from about Cedar Key, Florida, through Wakulla County, Florida, in which the hybrid of the two species was dominant.

Female Florida stone crabs typically spawn when they reach 2.25"–2.75" carapace width or approximately age 2. Although some spawning occurs all year, Florida stone crab spawning peaks from April through September. The stone crab fishery is unusual because only the claws are harvested and the crab is returned to the water alive. Harvested claws were measured in fish houses and approximately 20% of the claws measured were regenerated.

Commercial landings of stone crab in the Gulf of Mexico from 1991-1996 had high landings, but unfortunately whether the crabs were caught in state or federal waters was not always recorded (Figure 2.1.2.1). Using the 1991-2008 time series for the Gulf of Mexico, the proportion of landings by state, federal, and unknown was 49%, 30%, and 21%, respectively. After 1997, commercial landings records improved with fewer landings being recorded from unknown waters. Using the 1997-2008 time series, the proportion of landings from state, federal, and unknown waters was 41.8%, 57.9%, and less than 1%, respectively (Figure 2.1.2.1). Average landings from state of Florida waters on both coasts averaged 1.64 mp of claws from 1991-2008. Along the Gulf coast the highest commercial landings in 2008, greater than 50,000 pounds of claws, were reported in Monroe, Collier, Lee, Manatee, Pinellas, Hernando, Citrus, Levy, Dixie, Taylor and Wakulla Counties (Figure 2.1.2.2). The South Atlantic also has documented landings of stone crab; however, landings were equal to or less than 50,000 pounds of claws in 2008.

Florida FWC currently does not have a program that records and tracks landings from the recreational sector and there are no estimates on the size of the recreational fishery. However,

Florida FWC limits the recreational sector on number of traps, size limits, closed seasons, and bag limits. The harvest of claws from egg-bearing crabs is prohibited.

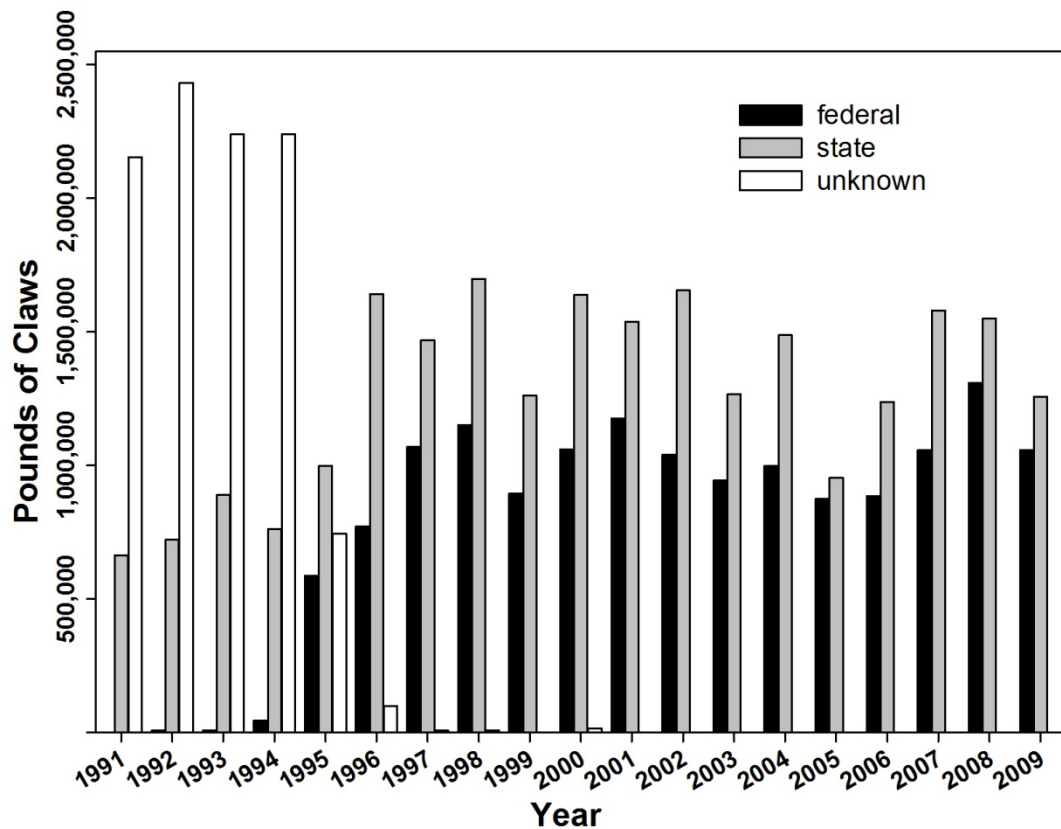


Figure 2.1.2.1. Pounds of stone crab claws from Gulf of Mexico federal, state, and unknown waters from 1991-2009. Note 2009 data are incomplete. Source: S. Brown, Florida FWC and FWRI, biologist 2010.

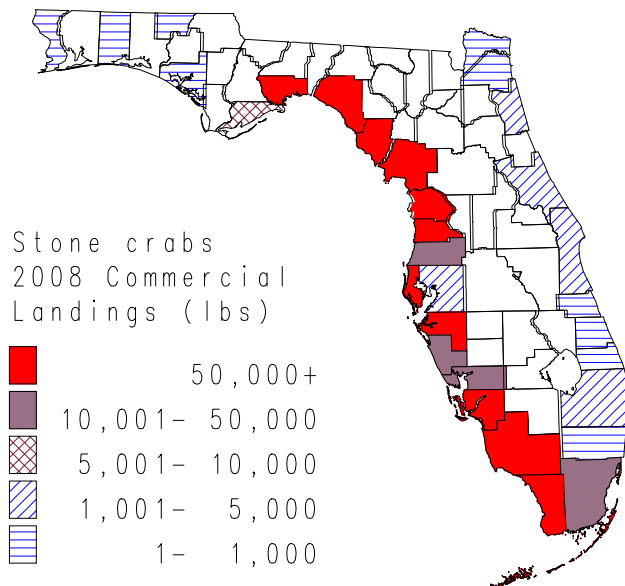


Figure 2.1.2.2. Geographic distribution of the commercial landings (pounds) of stone crab claws during 2008. Source: Florida’s Inshore and Nearshore Species: 2008 Status and Trends Report, Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, July 2009.

Alternative 1 no action would retain management of both stone crab species under the Stone Crab Fishery Management Plan. If this alternative were selected as preferred, annual catch limits and accountability measures would need to be established by 2011 (see Action 8.3 for setting an ACL).

Alternative 2 would delegate management of stone crab to Florida FWC. Delegation to Florida FWC would require the state to agree to accept the responsibility of stone crab management. Annual catch limits and accountability measures would still need to be established and implemented (see Action 8.3 for setting an ACL). Under **Alternative 2**, Florida FWC and the Council would work jointly to maintain landings below the annual catch limit implemented by NOAA Fisheries Service. This method of management is similar to current management practices with Florida FWC. Florida FWC has taken the lead in documenting commercial stone crab landings and developing a license, trap certificate, and trap tags program that can be used in state and federal waters of the Gulf of Mexico. One modification from the current management process in addition to setting an annual catch limit is establishing accountability measures. If the annual catch limit was exceeded, Florida FWC would work jointly with the Council and NOAA Fisheries Service to apply accountability measures to account for any overages, if and when they occur, consistent with the National Standard 1 guidelines.

Alternative 3 would repeal the Stone Crab Fishery Management Plan with the understanding the Florida FWC would be responsible for management of the stone crab fishery. If this alternative was selected as preferred, annual catch limits and accountability measures would no longer need to be established. Florida FWC regulations would extend into federal waters, similar to other species which are not currently in Gulf Council management plans.

*Action 1.3 Nassau Grouper, *Epinephelus striatus**

Nassau grouper were placed in the original Fishery Management Unit of the Fishery Management Plan for the Reef Fish Resources of the Gulf of Mexico and were regulated with a minimum size limit of 12-inches fork length (GMFMC 1981). Nassau grouper is commonly found in Bermuda, Florida, and the Caribbean, but they are rare in the Gulf, possibly restricted only to the extreme southeastern reefs (Hoese and Moore 1977; Shipp 1986). Amendment 1 modified the minimum size limit for Nassau grouper to 20-inches total length and placed Nassau grouper within the shallow-water grouper component for commercial quota (GMFMC 1989).

Nassau grouper can no longer be harvested. The South Atlantic Fishery Management Council closed Nassau grouper in 1991, Florida FWC closed it in 1993, and the Gulf of Mexico Fishery Management Council closed the fishery in 1996 through Amendment 14 (GMFMC 1996). In order to minimize impacts of the fishery closure, all landings comparisons were made from 1981-1990. Landings of Nassau grouper during those years are not consistent in either Gulf of Mexico or South Atlantic (Table 2.1.3.1). Landings of Nassau grouper from 1981-1990 indicate 70% of the landings came from state waters off both coasts, 26% from federal Gulf waters, and 4% from federal South Atlantic waters based on MRFSS. In the South Atlantic 52% of the landings came from state waters and 48% from federal. Commercial landings by state, federal Gulf, and federal Atlantic will be examined for similar trends, once data are obtained. Historically the bulk of the landings occurred in both the Gulf and South Atlantic by the

recreational sector (i.e., private, rental and shore) compared to the commercial sector (Table 2.1.3.1).

Table 2.1.3.1. Landings (total pounds) of Nassau grouper in the Gulf of Mexico and South Atlantic by sector from 1981-1990. Recreational denotes private, rental and shore modes. For-hire includes charter and headboat. Commercial includes all gears. Source: Southeast Regional Office.

Sector	Region	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	Sum
Commercial	Atlantic	10,212		1,071	1,910	4,526	3,624	3,580	709	80		25,712
For-hire	Atlantic						79	721	9,149	3,752	4,228	17,929
Recreational	Atlantic						37,447	30,542	16,092	52,211		136,292
Commercial	Gulf						5,403		3,666	4,170	7,906	21,145
For-hire	Gulf	8,775		22,371	18,762	7,658	24	4,660		301	529	63,080
Recreational	Gulf	280,462	98,855	234,604	290,935	9,173	471,228	144,524	37,027	76,286	193,835	1,836,929

Alternative 1 no action would retain management of Nassau grouper under the Reef Fish Fishery Management Plan. If this alternative were selected as preferred, annual catch limits and accountability measures would need to be established by 2011. The annual catch limit would equal zero based on the current prohibition of harvest, with the exception of landed Nassau grouper for research purposes.

Alternative 2 would delegate management of Nassau grouper to Florida FWC. Delegation to Florida FWC would require them to agree to accept the responsibility of management of Nassau grouper. Annual catch limits and accountability measures would still need to be established and implemented. The Gulf Council would work jointly with Florida FWC in setting the annual catch limit and accountability measures. The annual catch limits for this species should be easier to establish based on the prohibition on harvest. A majority, (70%) of the historical landings of Nassau grouper occurred in state of Florida waters. One modification from the current management process in addition to setting an annual catch limit would be establishing accountability measures. If the annual catch limit was exceeded, Florida FWC would work jointly with the Council and NOAA Fisheries Service to apply accountability measures to account for any overages, if and when they occur, under the National Standard 1 guidelines. Again, exceeding the annual catch limit would be unlikely to occur because of the prohibition harvest of Nassau grouper.

Alternative 3 would remove Nassau grouper from the Reef Fish Fishery Management Plan with the understanding that Florida FWC or another agency, possibly the South Atlantic Fishery Management Council would be responsible for management. If this alternative were selected as preferred annual catch limits and accountability measures would no longer need to be established by the Gulf Council.

*Action 1.4 Yellowtail Snapper, *Ocyurus chrysurus**

The original Reef Fish Fishery Management Plan placed yellowtail snapper in the Fishery Management Unit (GMFMC 1981). Amendment 1 set a 12-inch total length size limit for the recreational and commercial sectors and was compatible with state of Florida regulations

(GMFMC 1989). The catch of yellowtail snapper is also limited by the 10-snapper aggregate bag limit for recreational anglers and the licensing requirements for commercial fishers. The most recent stock assessment was completed by Florida FWC within the Southeast Assessment and Data Review procedure. The stock assessment indicated that yellowtail snapper were neither undergoing overfishing or overfished and that the maximum sustainable yield ranged from 2,074,550 to 3,011,515 pounds with fishing mortality at maximum sustainable yield (F_{MSY}) equal to 0.35 per year (SEDAR 3 2003).

Yellowtail snapper are tropical reef fish that are most abundant in the Bahamas, south Florida, and Caribbean. Spawning occurs in deep water off Cuba, during March through August (Piedra 1969). The MRFSS has documented recreational landings in low numbers off other Gulf States including Alabama, Louisiana, and Texas.

Commercial and recreational landings from 1982-2008 of yellowtail snapper have remained higher in the Gulf of Mexico versus the South Atlantic (Figure 2.1.4.1). Based on MRFSS data from 1986-2008, 74% of the total landings (state and federal waters) come from the west coast of Florida and 26% come from the South Atlantic (state and federal waters). Total Gulf coast landings peaked to almost 3.5 mp whole weight in 1991 and then dropped to about 1.7 mp in 1996 (Figure 2.1.4.1). Total Gulf landings have been fluctuating around about 1.8 mp since 1991. In 2008, total landings in the Gulf were 1.5 mp. Landings from 2001-2003 on the Atlantic coast have been lower, averaging about 167,000 pounds whole weight; however, landings since 2003 have been increasing to about 470,000 pounds in 2007 (Figure 2.1.4.1). Landings of yellowtail snapper from 1986-2008 indicate 58% of the yellowtail landings come from state waters off both coasts 34% from federal Gulf waters and 8% from federal South Atlantic waters based on MRFSS data. Commercial landings will be examined for similar trends, once the raw data are obtained.

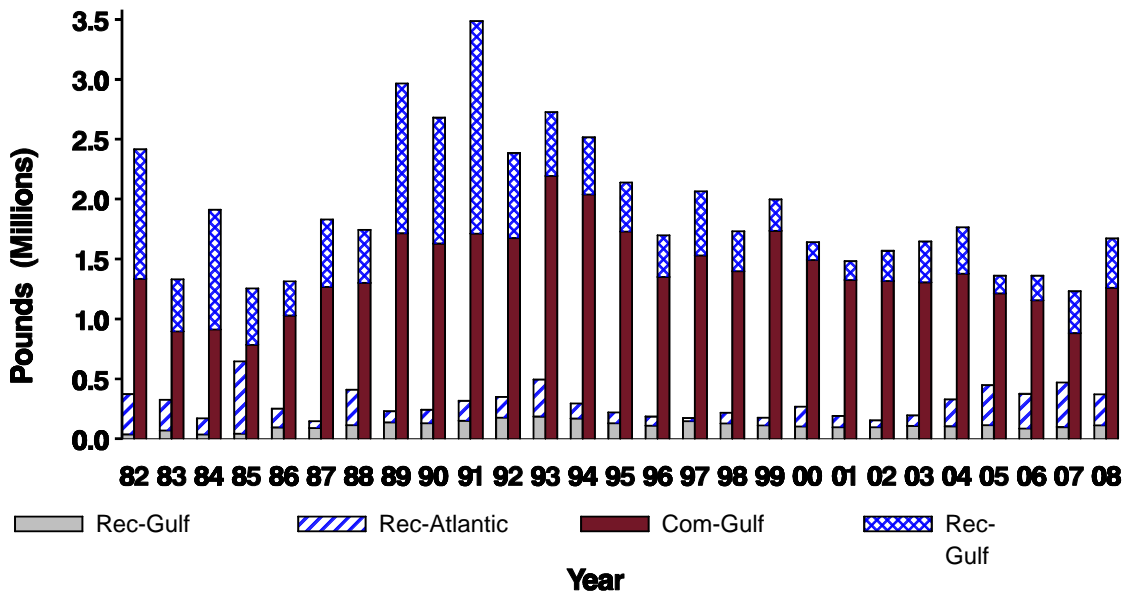


Figure 2.1.4.1. Total annual landings (pounds) of yellowtail snapper on the Atlantic and Gulf coasts of Florida, 1982-2008 by commercial and recreational sectors. Source: Florida’s Inshore and Nearshore Species: 2008 Status and Trends Report, Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, July 2009.

a. Commercial landings (pounds)

b. Recreational landings (numbers)

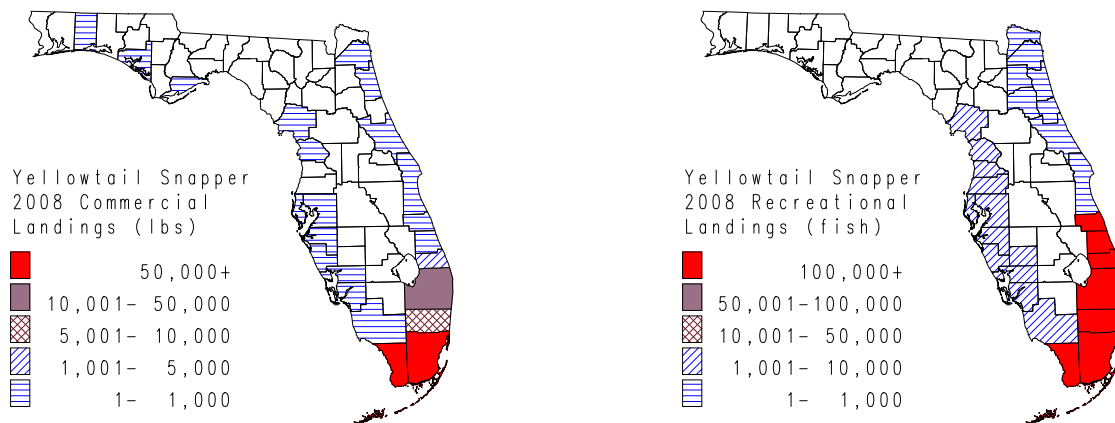


Figure 2.1.4.2. Geographic distribution of yellowtail snapper landed during 2008. (a) Commercial landings (pounds) by county; (b) Recreational landings (numbers of fish) by region. Source: Florida’s Inshore and Nearshore Species: 2008 Status and Trends Report, Florida Fish and Wildlife Conservation Commission, Fish and Wildlife Research Institute, July 2009.

In 2008, the east coast of Florida had a high number of landings, greater than 100,000 fish in multiple counties compared to the west coast (Figure 2.4.2.2). Commercial landings of greater than 50,000 pounds were focused in Monroe and Miami-Dade Counties (Figure 2.4.2.2).

Alternative 1 no action would retain management of yellowtail snapper under the Reef Fish Fishery Management Plan. If this alternative was selected as preferred, annual catch limits and accountability measures would need to be established by 2011.

Alternative 2 would delegate management of yellowtail snapper to Florida FWC. Delegation to Florida FWC would require the state to agree to accept the responsibility of management of yellowtail snapper and annual catch limits and accountability measures would still need to be established and implemented. The Gulf Council would work jointly with Florida FWC to set the annual catch limits and accountability measures. Under **Alternative 2** Florida FWC and the Council would use various management criteria to maintain annual catch limits implemented by NOAA Fisheries Service. This method of management is similar to the current management strategy. Florida FWC has taken the lead in establishing minimum size limits, documenting commercial yellowtail snapper landings, and completing a 2003 stock assessment (SEDAR 3 2003). One modification from the current management process in addition to setting an annual catch limit would be establishing accountability measures. If the annual catch limit was exceeded, Florida FWC would work jointly with the Council and NOAA Fisheries Service to apply accountability measures consistent with National Standard 1 guidelines, if overages occur.

Alternative 3 would remove yellowtail snapper from the Reef Fish Fishery Management Plan with the understanding that Florida FWC or another agency would be responsible for management of yellowtail snapper. If this alternative was selected as preferred, annual catch limits and accountability measures would no longer need to be established by the Gulf Council.

2.2 Action 2. Designating ecosystem component species

Alternative 1. No action. Do not designate any stocks as ecosystem component stocks.

Alternative 2. Designate as an ecosystem component stock any species with less than 100,000 pounds in landings from 1999-2008. (blackfin snapper, blackline tilefish, dog snapper, mahogany snapper, misty grouper, red hind, rock hind, schoolmaster, yellowfin grouper, yellowmouth grouper, anchor tilefish, dwarf sand perch)

Alternative 3. Designate as an ecosystem component stock species that meet the four National Standard 1 guidelines criteria as shown in table 2.2.1 . (black corals, fire corals, hydrocorals and stony corals)

Discussion:

Ecosystem component species may, but are not required to, be included in a fishery management plans or amendment for any of the following reasons: For data collection purposes; for ecosystem considerations related to specification of optimum yield for the associated fishery; as considerations in the development of conservation and management measures for the associated fishery; and/or to address other ecosystem issues. The option to use ecosystem component status is intended to encourage Councils to incorporate ecosystem considerations into fishery management plans.

To be considered for possible classification as an ecosystem component species, the species should meet the following criteria:

- (A) Be a non-target species or non-target stock;
- (B) Not be determined to be subject to overfishing, approaching overfished, or overfished;
- (C) Not be likely to become subject to overfishing or overfished, according to the best available information, in the absence of conservation and management measures; and
- (D) Not generally be retained for sale or personal use.

Table 2.2.1 lists all species included in this amendment, and indicates whether they meet each of the four criteria. The table also shows which species had less than 100,000 pounds of total landings during 1999-2008. Figure 2.2.1 shows conceptually the role of ecosystem component species in the ecosystem. However, none of the stocks listed meet all of the criteria for listing as an ecosystem component stock.

Table 2.2.1. Ecosystem component criteria for stocks in the Gulf of Mexico

FMP	Stock	Less than 100,000 lbs 1999-2008	National Standard 1 Guidelines Criteria			
			Non- target	Not overfished or overfishing?	Not likely to become overfished or overfishing	Not generally retained for sale or personal use
Red Drum	Red drum			Unknown	Unknown	
Reef Fish	Almaco jack		X	Unknown	Unknown	
	Anchor tilefish	X	X	Unknown	Unknown	
	Banded rudderfish		X	Unknown	Unknown	
	Black grouper			X	X	
	Blackfin snapper	X	X	Unknown	Unknown	
	Blackline tilefish	X	X	Unknown	Unknown	
	Blueline tilefish			Unknown	Unknown	
	Cubera snapper			Unknown	Unknown	
	Dog snapper	X	X	Unknown	Unknown	
	Dwarf sand perch	X	X	Unknown	Unknown	
	Gag					
	Goldface tilefish		X	Unknown	Unknown	
	Goliath grouper			Unknown	X	X
	Gray snapper			Unknown	Unknown	
	Gray Triggerfish					
	Greater amberjack					
	Hogfish			Unknown	Unknown	
	Lane snapper			Unknown	Unknown	
	Lesser amberjack		X	Unknown	Unknown	
	Mahogany snapper	X	X	Unknown	Unknown	
	Misty grouper	X	X	Unknown	Unknown	
	Mutton snapper			X		
	Nassau grouper		X	Unknown	X	X
	Queen snapper		X	Unknown	Unknown	
	Red hind	X	X	Unknown	Unknown	
	Red grouper			X		
	Red snapper					
	Rock hind	X	X	Unknown	Unknown	
	Sand perch		X	Unknown	Unknown	
	Scamp			Unknown	Unknown	
	Schoolmaster	X	X	Unknown	Unknown	
	Silk snapper		X	Unknown	Unknown	
	Snowy grouper		X	Unknown	Unknown	
	Speckled hind		X	Unknown	Unknown	
	Tilefish			Unknown	Unknown	
	Vermilion snapper			X		
	Warsaw grouper			Unknown	Unknown	
	Wenchman		X	Unknown	Unknown	
	Yellowedge grouper			Unknown	Unknown	
	Yellowfin grouper	X		Unknown	Unknown	
	Yellowmouth grouper	X	X	Unknown	Unknown	
	Yellowtail snapper			X	X	
Shrimp	Royal red shrimp			X	X	
Stone Crab	Stone crabs			Unknown	X	
Coral & Coral Reefs	Black corals (Antipatharia)		X	X	X	X
	Fire corals (Milleporidae)		X	X	X	X
	Hydrocorals (Stylasteridae)		X	X	X	X
	Soft corals (Octocorallia)			X	X	
	Stony corals (Scleractinia)		X	X	X	X

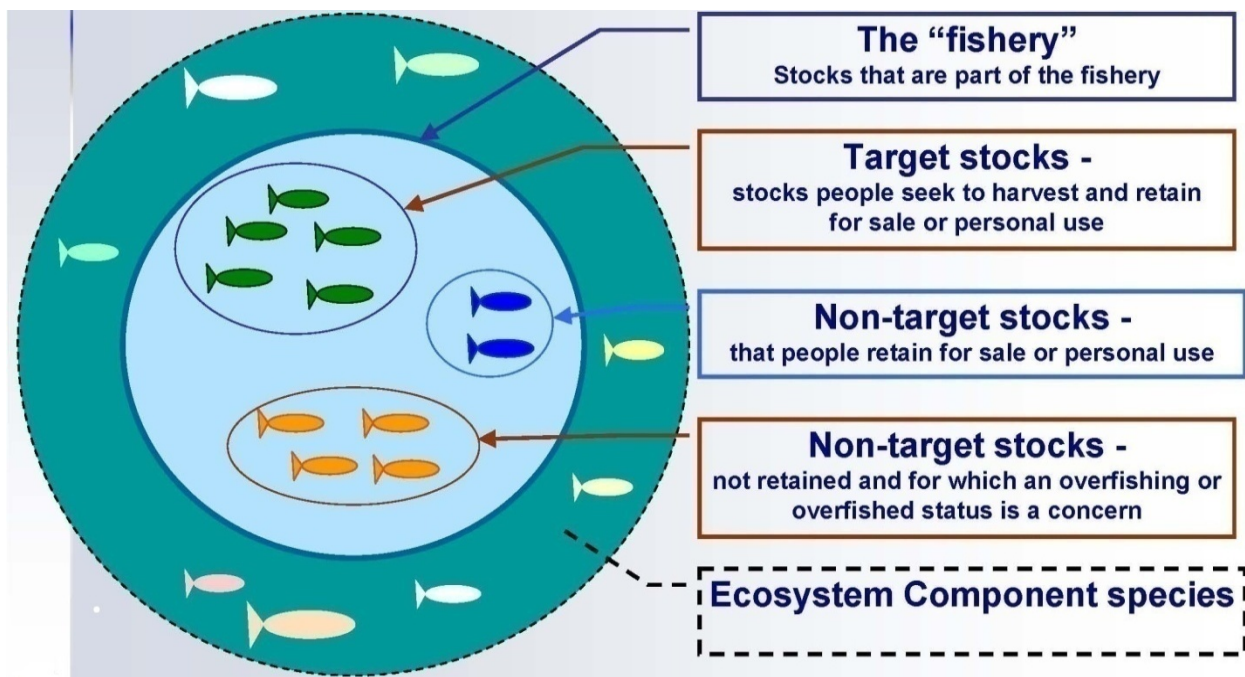


Figure 2.2.1. A conceptual model of stocks in the fishery and ecosystem component stocks.
Source: National Standard 1 guidelines.

Alternative 1, no action, does not declare any stocks to be ecosystem component stocks. All stocks listed in the Council’s fishery management plans would be required to have annual catch limits and accountability measures, or would be required to be part of an aggregation of stocks that has either an aggregation or indicator species annual catch limit and accountability measures.

Alternative 2 defines ecosystem component species as those with cumulative landings of less than 100,000 pounds during the 10 year period 1999-2008. There are 12 species that qualify under this designation, as shown in Table 2.2.1 (blackfin snapper, blackline tilefish, dog snapper, mahogany snapper, misty grouper, red hind, rock hind, schoolmaster, yellowfin grouper, yellowmouth grouper, anchor tilefish, dwarf sand perch). Goliath grouper and Nassau grouper are excluded from this list since they are protected from harvest. The small level of landings indicates that these species are not targeted and are rarely retained. For these species, there is no information suggesting that they may become targeted or that they are subject to overfishing. One issue is the accuracy of the landings data. For all of these species there are years when one or more sectors have no reported landings. For two of the species (anchor tilefish and dwarf sandperch) there are no reported landings for the entire time period. This could be due to mis-identified landings, non-reported landings, or the species could be so infrequently caught that there really are no landings in some years. Some of these species occur primarily in deep water that is less commonly fished by the recreational fishery. Even after considering the data quality, the landings of these species appear to be so low that they can be considered non-targeted. However, since stock status is unknown, it is also unknown whether they are likely to become overfished or undergo overfishing. In addition, the species will usually be retained if caught.

Alternative 3 defines ecosystem component species as those which meet the four criteria described in the National Standard 1 guidelines. Based on Table 2.2.1, the only stocks that meet these criteria are the four protected classes on corals, black corals, fire corals, hydrocorals and stony corals. For most of the finfish and shellfish species we do not have, and are unlikely to get, stock assessments. As a result, the current status of these stocks is unknown, as is the likelihood of the stocks becoming overfished or undergoing overfishing. In addition, all of the fish listed in Table 2.2.1 are likely to be retained if caught. The exception is for corals other than octocorals, i.e., black corals, fire corals, hydrocorals and stony corals. Harvest of corals other than octocorals is prohibited. Therefore, these corals are not overfished, unlikely to become overfished or to undergo overfishing, and are not generally retained if taken. Allowable Octocorals have catch limits set so far below the estimated maximum sustainable yield that they can be considered to be not overfished and unlikely to become overfished or to undergo overfishing. However, because harvest is allowed, they will generally be retained if taken.

2.3 Action 3. Species groupings

Alternative 1. No Action (Status Quo) - Maintain Existing Species Groupings.

Alternative 2. Select species groupings developed by NMFS.

Option 1. Set ACL for Deepwater Complex

Sub-option 1a. Set ACL for Yellowedge Grouper Sub-Complex

Sub-option 1b. Set ACLs for Blueline Tilefish Sub-Complex

Sub-option 1c. Set ACL for Golden Tilefish Sub-Complex

Option 2. Set ACL for Jacks Complex

Sub-option 2a. Set ACL for Greater amberjack Sub-Complex

Option 3. Set ACL for Mid-Water Complex

Sub-option 3a. Set ACL for Gray Triggerfish Sub-Complex

Sub-option 3b. Set ACL for Red Snapper Sub-Complex

Sub-option 3c. Set ACL for Vermilion Snapper Sub-Complex

Option 4. Set ACL for Shallow-Water Complex

Sub-option 4a. Set ACL for Black Grouper Sub-Complex

Sub-option 4b. Set ACL for Red Grouper Sub-Complex

Sub-option 4c. Set ACL for Gag Sub-Complex

Option 5. Set ACL for Shallow-Water Complex

Sub-option 5a. Set ACL for Yellowtail Snapper Sub-Complex

Sub-option 5b. Set ACL for Hogfish Sub-Complex

Sub-option 5c. Set ACL for Mutton Snapper Sub-Complex

Sub-option 5d. Set ACL for Gray Snapper Sub-Complex

Alternative 3. No Species Groupings.

Discussion:

The National Standard 1 Guidelines require that the Gulf Council develop annual catch limits and (optionally) annual catch targets for each of its managed fisheries. However, only 13 of the 42 species managed by the Gulf Council Reef Fish FMP will have been assessed by 2011 (e.g., red snapper, vermilion snapper, gray triggerfish, greater amberjack, black grouper, red grouper, goliath grouper, hogfish, yellowedge grouper, mutton snapper, yellowtail snapper, golden tilefish, and gag grouper). For purposes of setting annual catch limits, the guidelines allow stocks in a fishery to be grouped into stock complexes when appropriate. Reasons for grouping stocks include situations where stocks in a multispecies fishery cannot be targeted independent of one another and maximum sustainable yield cannot be defined on a stock-by-stock basis; where there is insufficient data to measure their status; or when it is not feasible for fishermen to distinguish individual stocks among their catch. The Reef Fish FMP already has a number of stock groupings, but these groupings were established prior to many of the current stock

assessments and annual catch limit requirements. In light of the current guidelines and information about the fisheries, it may be appropriate to revisit the stock groupings.

Alternative 1 maintains the existing species groupings as status quo. The species groupings developed and established by the Council are listed below. The highlighted species have established annual catch quotas.

Reef Fish Fishery Management Plan Species in the Management Unit

Grouped Species

Snappers other than red, lane and vermilion

queen snapper *Etelis oculatus*
mutton snapper *Lutjanus analis*
schoolmaster *Lutjanus apodus*
blackfin snapper *Lutjanus buccanella*
cubera snapper *Lutjanus cyanopterus*
gray (mangrove) snapper *Lutjanus griseus*
dog snapper *Lutjanus jocu*
mahogany snapper *Lutjanus mahogoni*
silk snapper *Lutjanus vivanus*
yellowtail snapper *Ocyurus chrysurus*
wenchman *Pristipomoides aquilonaris*

Shallow Water Groupers

red grouper *Epinephelus morio*
gag *Mycteroperca microlepis*
black grouper *Mycteroperca bonaci*
rock hind *Epinephelus adscensionis*
red hind *Epinephelus guttatus*
yellowmouth grouper *Mycteroperca interstitialis*
#scamp *Mycteroperca phenax*
yellowfin grouper *Mycteroperca venenosa*

#Scamp are included as deep water grouper for IFQ purposes.

Speckled hind and warsaw grouper are included as shallow water grouper for IFQ purposes.

Highlighted species or species groups have existing catch quotas.

Deep Water Groupers

##speckled hind *Epinephelus drummondhayi*
yellowedge grouper *Epinephelus flavolimbatus*
misty grouper *Epinephelus mystacinus*
##warsaw grouper *Epinephelus nigritus*
snowy grouper *Epinephelus niveatus*

Protected Groupers

Nassau grouper *Epinephelus striatus*
goliath grouper *Epinephelus itajara*

Tilefishes

tilefish *Lopholatilus chamaeleonticeps*
goldface tilefish *Caulolatilus crysops*
blueline tilefish *Caulolatilus microps*
blackline tilefish *Caulolatilus cyanops*
anchor tilefish *Caulolatilus intermedius*

Sand Perches

sand perch *Diplectrum bivattatum*
dwarf sand perch *Diplectrum formosum*

Ungrouped Species

Snappers

red snapper *Lutjanus campechanus*

lane snapper *Lutjanus synagris*

vermilion snapper *Rhomboplites aurorubens*

Jacks

greater amberjack *Seriola dumerili*

lesser amberjack *Seriola fasciata*

almaco jack *Seriola rivoliana*

banded rudderfish *Seriola zonata*

Triggerfishes

gray triggerfish *Balistes capriscus*

Hogfishes

Hogfish *Lachnolaimus maximus*

Alternative 2 selects the stock groupings that have recently been developed by NMFS.

Recent NMFS Stock Groupings Analysis

The National Marine Fisheries Services analyzed landings data: (1) To determine whether stock assemblages can be identified in the Gulf of Mexico through analytical methods to identify associated stocks, (2) to determine if these assemblages are consistent between commercial and recreational fisheries, and (3) to determine if stock dynamics of assessed (e.g., ‘indicator’) stock within each assemblage are consistent with those of the assemblage as a whole.

An implicit assumption of the use of an indicator stock for management is that population trends of the indicator stock reflect those of others in the assemblage. As such, assemblages must account for interspecies similarities in the context of biological characteristics, fisheries exploitation patterns, and stock dynamics. Biological assemblages may be defined by similarities in life history, trophic behavior, and geographic distribution. For fisheries management purposes, stocks that are caught together should be grouped, so that regulations similarly influence all assemblage members. If trends with an indicator stocks truly represent those of the assemblage as a whole, the catch-per-unit-effort (CPUE) for the indicator stock should exhibit synchrony with the CPUE patterns of the other members of the assemblage.

Methods

Following Lee and Sampson (2000), multiple statistical techniques were used to identify stock assemblages: (1) hierarchical cluster analyses based on life history; abundance; and presence-absence, (2) co-occurrence matrices, (3) nodal analyses, and (4) indices of abundance.

Data Overview

Commercial and headboat logbook data were used to evaluate similarities in spatial and temporal patterns of fisheries exploitation in the Gulf of Mexico. Commercial logbook records (SEFSC logbook data, accessed 17 Aug 2009) summarize landings on a trip level, with information for each species encountered including landings (in pounds), primary gear used, and primary area and depth of capture. Depth of capture is an important consideration when evaluating similarities in fisheries vulnerability and is only available in logbook records from 2005 onward. For the purposes of these analyses, logbook landings were summarized by species, year, month, gear type, statistical area, and depth. Only species in the Gulf Reef Fish FMP were considered. Black grouper and gag grouper landings were adjusted at a trip level for geographic differences in misidentification rates following recommendations from SEDAR 10 (2006). Year and month were defined by the date the fish were landed. Vertical line (e.g., handline and electric rig) and longline gear types were evaluated separately. Area fished was based on the 21 Gulf of Mexico commercial logbook statistical areas. Depth of capture was aggregated into atmospheric pressure bins (e.g., 33 ft = 2 atm, 66 ft = 3 atm, etc.). Records with no reported depth or area of capture (~11%) were removed from consideration. Overall, 142,666 commercial logbook records from 2005-2008 were evaluated.

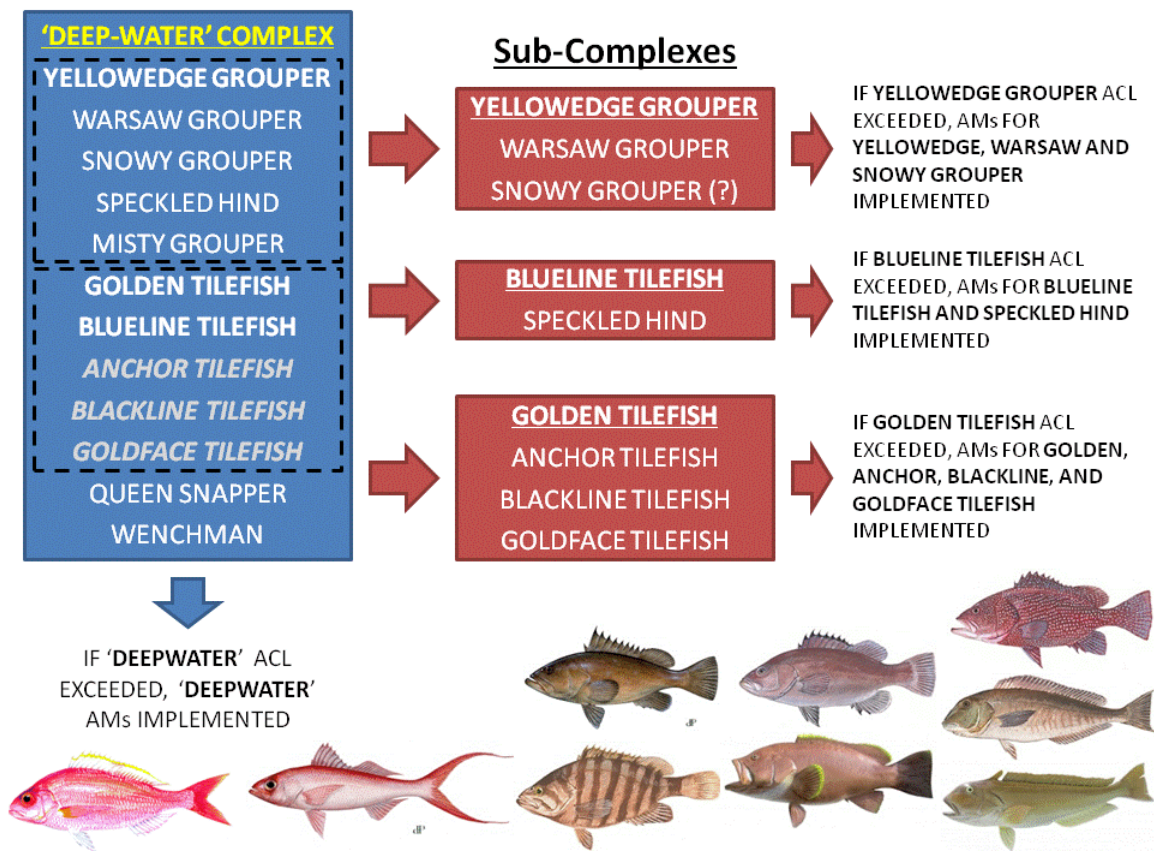
The recreational sector of the reef fish fishery was evaluated using logbook data (SEFSC headboat data, accessed 23 July 2009) reported by headboat operators. Headboats are large, for-hire vessels that typically accommodate 20 or more anglers on half- or full-day trips. Headboat records are arranged similar to commercial logbook records, and contain trip-level information on number of anglers, trip duration, date, area fished, and landings (number fish) of each species. Headboat landings were summarized by species, year, month, and area fished. Area fished was aggregated at the most common reporting level (1° latitude by 1° longitude). Records with no geographic area reported (~3%) were removed from consideration. Overall, 73,365 headboat records from 2005-2008 were evaluated.

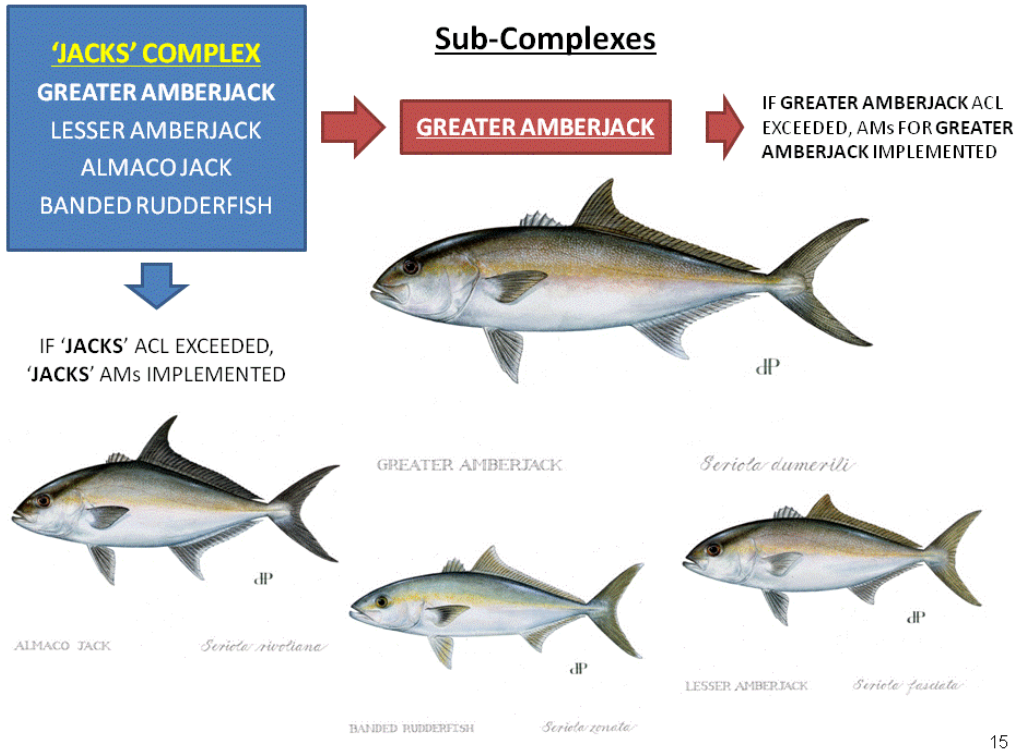
The stock groupings presented will provide a solution for setting annual catch limits and accountability measures for stocks that do not have stock assessments completed or are lacking adequate data. This method uses completed stock assessments for the indicator stocks to be the basis for the sub-complexes. Harvest of unassessed stocks is directly associated with the indicator stocks in this method. Should the indicator stock annual catch limit be exceeded, the accountability measures will be implemented for the stock grouping as a whole to prevent overfishing.

Grouping unassessed stocks into complexes helps achieve several management goals: (1) implement annual catch limits by statutory deadline, (2) avoid implementing accountability measures for stocks whose landings fluctuate due to rarity or species identification issues,

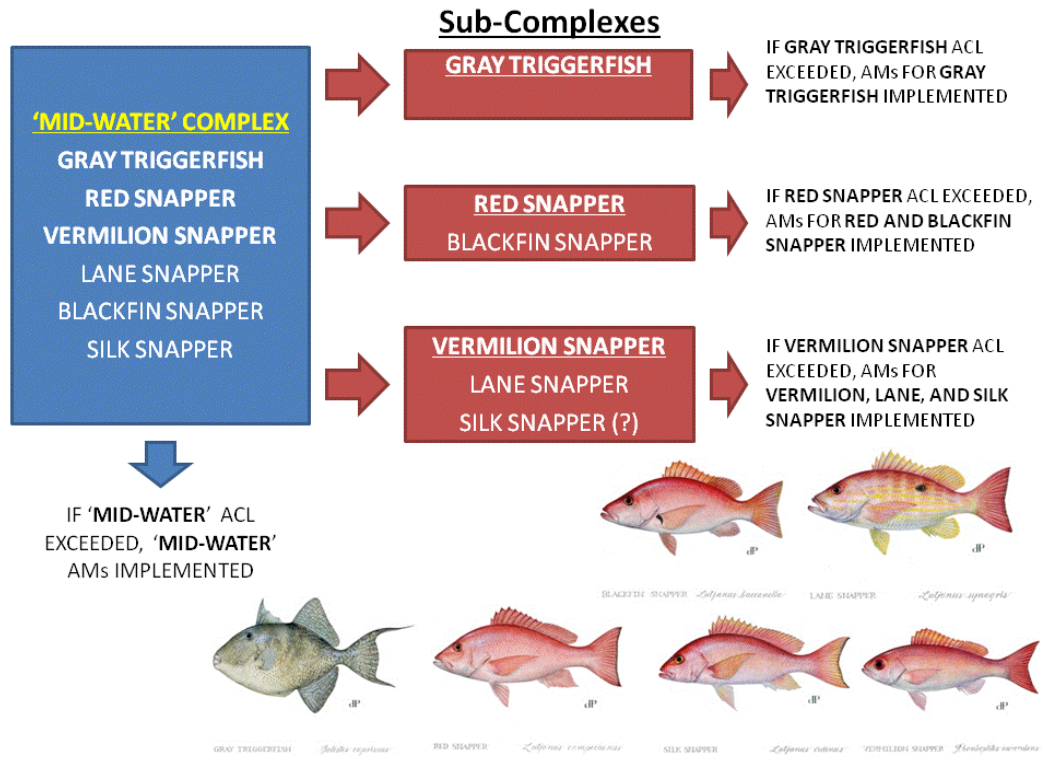
(3) allow primary data collection and enforcement focus on economically important stocks, and (4) promote regulations considerate of a multispecies context; a prelude to ecosystem-based management. Ideally, stock complexes would be viewed as an adaptive management strategy, and could be modified based upon improved data collection or new assessments.

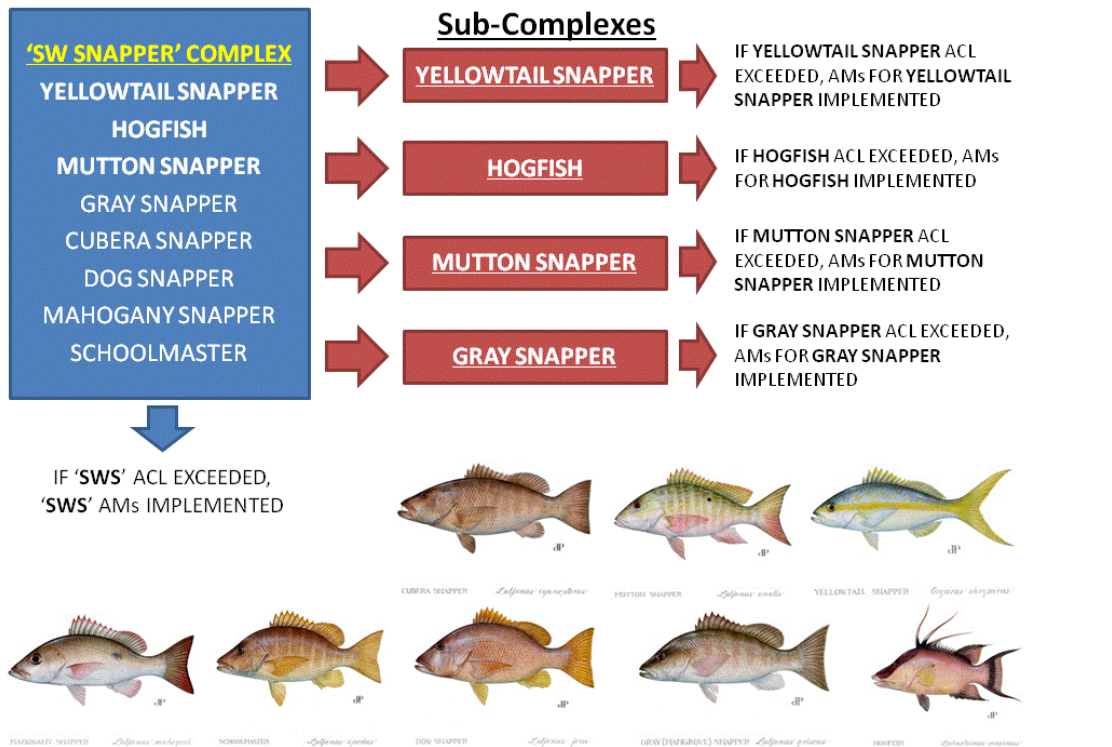
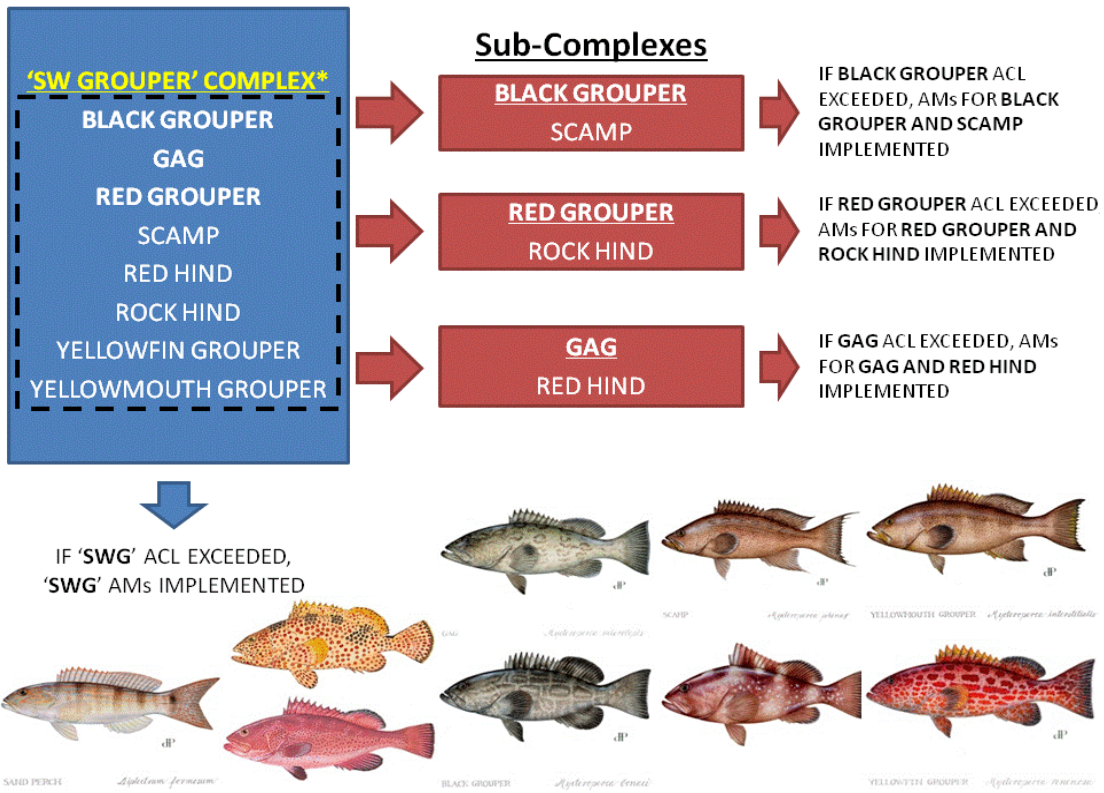
There are three approaches towards applying accountability measures to stock complexes: (1) set species-specific annual catch limits, (2) set annual catch limits for stock complexes and for indicator stocks within complexes, and (3) set annual catch limits for stock complexes without using indicator stocks. These approaches are not mutually exclusive. For example, a broad complex might be formed with an overall annual catch limit, which, if exceeded, would trigger accountability measures. Within this broader complex, one or several sub-complexes might be designated. Each sub-complex could have an annual catch limit either based on all species in the complex or on one or more indicator species. Finally, some sub-complexes might contain only one species, and would require a species-specific ACL. The proposed stock complexes and sub-complexes are illustrated below.





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Alternative 3 does not have any species groupings, and would eliminate the existing species groupings. Annual catch limits and accountability measures would be required for each individual stock in the Reef Fish FMP. For some stocks, accurate monitoring may be difficult due to low sampling rates or misidentification of rarely caught species.

2.4 Action 4. ABC control rules [UNDER CONSTRUCTION]

Alternative 1. Do not specify an ABC control rule. ABC will be set by the SSC on an ad hoc basis for each stock or stock assemblage individually.

Alternative 2. The SSC will use the ABC control rule below as guidance. The SSC may set ABC at a higher or lower level based on additional scientific input or other factors not included in the control rule.

Alternative 3. The SSC will use the ABC control rule below as a maximum level. The SSC may set ABC lower, but not higher, scientific input or other factors not included in the control rule.

Table 2.4.1. Draft ABC Control Rule and P* decision table for data adequate stocks to determine appropriate acceptable level of scientific uncertainty that the ABC level is at or below the true overfishing limit (OFL)

Decision tree for separating data rich and data poor species		
Dimensions	Tiers	Action
1) Data quality decision rule	<ol style="list-style-type: none"> 1. Quantitative assessment provides an estimate of MSY (or proxy) and a pdf 2. Reliable catch history available 3. Scarce or unreliable catch records 	<ol style="list-style-type: none"> 1. Go to P* table 2. Go to DP table Dimension 2 3. Go to DP table Dimension 3
2) Reliable catch history	<p>2a > 10 yrs of reliable catch history; reliable estimate of $M < 0.2$; prior distributions of M, F_{MSY}/M, B_{MSY}/B_0, relative stock status, and $A_{50\% Mat}$ $OFL = \text{Depletion-Based Stock Reduction Analysis (DB-SRA)}^1$ $ABC \leq 0.75 * DB-SRA^2$</p> <p>2b > 10 yrs of reliable catch history; reliable estimate of $M < 0.2$; prior distributions of M, F_{MSY}/M, B_{MSY}/B_0, and relative stock status $OFL = \text{Depletion Corrected Average Catch (DCAC)}^1$ $ABC \leq 0.75 * DCAC^2$</p> <p>2c Only reliable catch series³ $OFL = \text{average catch of the time series}$ $ABC \leq 0.75 * OFL$</p>	
3) Minimal catch data	<p>Apply dimension 2 based on similar species (i.e., life history, vulnerability)</p> <p>Apply PSA-style adjustment for risk (based on vulnerability)</p> <p>Consider use of stock complex approach with benchmarks based on most data rich/vulnerable species</p>	

The ABC control rule shown in Table 2.4.1 represents the control rule's development by the SSC as of March 24, 2010. A decision tree was refined to select which stocks to set ABC using the P* approach vs. data-poor stocks, which were further divided into those with a reliable catch history s. those with minimal catch data.

The data-adequate section is used with assessed stocks for which an estimate of MSY or MSY proxy is available that has an error distribution around the point estimate. For these stocks the P* table is used to determine an appropriate acceptable level of scientific uncertainty that the ABC level is at or below the true overfishing limit (OFL). The P* table no has two dimensions, Assessment Information and Characterization of Uncertainty. Once a level of acceptable risk is determined from the P* table, the ABC catch level can then be determined from the error distribution.

For data poor stocks, stocks that do not have an MSY estimate with an error distribution, the second section contains several tiers of alternative data-poor methods for setting ABC depending upon the amount of information that is available.

If PSA is used in the control rule, the SSC will request assistance from the SEFSC to conduct a stock vulnerability analysis using PSA to group species into guilds or clusters: low vulnerability, moderate vulnerability, and high vulnerability.

A minimum stock size threshold below which harvest of the stock would be prohibited is currently under discussion. The use of a minimum biomass threshold is optional. The North Pacific SSC adopted a threshold of 5% was relative to the unfished biomass B_0 , while the Pacific and South Atlantic SSCs adopted 10% of B_{MSY} . The SSC believes that these values are fairly close and has asked the SEFSC to evaluate them.

The SSC reviewed several action items for analyses requests to be made to the SEFSC. With this information, the SSC will be able to test the Control rule against several stocks with various levels and quality of data, and will be able to fine-tune and complete the ABC control rule. Analyses requested by the SSC include:

- Conduct a stock vulnerability analysis using PSA to group species into guilds or clusters that could be then evaluated for assignment of: (1) vulnerability thresholds (H,M,L), and (2) minimum biomass thresholds.
- Provide estimates of DCAC and DC-SRA for stocks with sufficient/suitable data.
- Conduct analyses using data rich stocks to test data poor approaches, i.e., to scale uncertainty so buffers for data rich stocks are smaller than buffers for data poor stocks (pick rep spp. for this based on range of PSA scores).
- Compare how minimum biomass thresholds of 5% B_{MSY} , 10% B_0 related to each other and how they would relate to $F_{rebuild}$ for overfished stocks.

2.5 Action 5. ACL/ACT control rules [UNDER CONSTRUCTION]

Alternative 1. Do not specify an ACL/ACT control rule. ACL/ACT will be set on an ad hoc basis for each stock or stock assemblage individually.

Alternative 2. Use the ACL/ACT control rule below as guidance. The Council may set ACL/ACT at a higher or lower level based on public testimony, scientific input, or other factors not included in the control rule.

Alternative 3. Use the ACL/ACT control rule below as a maximum level. The Council may set ACL/ACT lower, but not higher, based on public testimony, scientific input, or other factors not included in the control rule.

Table 2.5.1. Draft ACL/ACT Control Rule

Dimension	Tiers	Pts.
Stock Status	1. Stock biomass is at or above B_{OY} (or proxy).	0
	2. Stock biomass is below B_{OY} (or proxy) but at or above B_{MSY} (or proxy).	5
	3. Stock biomass is below B_{MSY} (or proxy) but at or above minimum stock size threshold (MSST).	10
	4. Stock is overfished, below MSST.	15
	5. Either status criterion is unknown.	15
Management success of last 5 years	1. Number of years catch has been above catch target multiplied by 5 2. Number of years catch has been below catch target multiplied by -5	
Stock Assemblages	1. If this ACL/ACT is for a stock assemblage, or if this species is an indicator species for a stock assemblage, add 1 point for each stock in the assemblage (excluding the indicator stock). Round up to nearest 5 points.	
Bycatch	1. Low. Discard mortality for this stock or stock assemblage is less than x% of the retained catch.	0
	2. Moderate. Discard mortality is between x% and y% of the retained catch.	5
	3. High. Discard mortality is greater than y% of the retained catch.	10

This control rule is for use in either of the following two situations:

1. If ACT is used. $ACL = ABC$. ACT is reduced from ACL based on the control rule.
2. If ACT is not used. ACL is reduced from ABC based on the control rule.

Discussion:

To give an example of how setting an ACL/ACT from a control rule might work, below is a worksheet to calculate the ACT percent reduction from ACL using the draft control rule in the Generic ACL/ACT options paper. All values are from the 2009 update assessments for red grouper and gag.

Table 2.5.2. Example of applying the draft ACL/ACT control rule from Table 2.5.1 to red grouper and gag. For purposes of the example, the application has been calculated for each ACL/ACT as a whole, but in actual use the commercial and recreational sectors would be calculated separately.

	Red Grouper	Pts	Gag	Pts
Stock status	SSB _{OY} = n/a SSB _{MSY} = 712.7 mp *SSB₂₀₀₈ = 615.5 mp MSST = 612.9 mp	10	SSB _{OY} = n/a SSB _{MAX} = 24.02 mp MSST = 20.41 mp *SSB₂₀₀₈ = 9.58 mp	15
Mgt. Success of last 5 years	Management success (comm+rec combined): Year Target Catch Over/Under 2004 6.56 mp 8.78 mp over 2005 6.56 mp 6.88 mp over 2006 6.56 mp 6.07 mp under 2007 6.56 mp 4.64 mp under 2008 6.56 mp 5.58 mp under	+10 -15	Management success (comm+rec combined): Year Target Catch Over/Under 2004 5.00 mp 7.39 mp over 2005 5.00 mp 5.99 mp over 2006 5.00 mp 3.66 mp under 2007 5.00 mp 3.49 mp under 2008 5.00 mp 4.26 mp under	+10 -15
Stock assemblages	Not an indicator stock	0	Not an indicator stock	0
Bycatch	For 2004-2008 comm+rec comb: Year Catch Dead disc. % ret. catch 2004 8.78 mp 1.23 mp 14% 2005 6.88 mp 1.00 mp 14% 2006 6.07 mp 0.88 mp 14% 2007 4.64 mp 0.69 mp 15% <u>2008 5.58 mp 1.06 mp 19%</u> 5-yr 31.95 mp 4.866 mp 15%	5	For 2004-2008 comm+rec comb: Year Catch Dead disc. % ret. catch 2004 7.39 mp 3.05 mp 41% 2005 5.99 mp 1.72 mp 29% 2006 3.66 mp 1.87 mp 51% 2007 3.49 mp 2.67 mp 76% <u>2008 4.26 mp 3.75 mp 88%</u> 5-yr 24.79 mp 13.06 mp 53%	10
Total points		10		20

Based on the draft control rule, red grouper ACT would be the ACL reduced by 10%, and the gag ACT would be the ACL reduced by 20%.

The ACL/ACT control rule is designed to be easily implemented by Council and Council staff using readily available information related to management uncertainty that requires little if any additional data analyses by the Science Center. It can be used by the Council as a guide in setting the buffer level between ABC and ACL (or between ACL and ABC if ACT is not used) based on the level on management uncertainty.

The draft ACL/ACT control rule in Table 2.5.1 uses information commonly available in SEDAR benchmark stock assessments or assessment updates (the Terms of Reference for stock assessments may need to be revised to assure that the necessary outputs are included in the assessment reports). This control rule is still under construction, and will be more fully developed in the next iteration of this amendment. Some changes that are under consideration for the control rule revisions include:

- The management success dimension should consider the magnitude of an overage.
- The overall biomass stock level could be a potential dimension.
- Socio-economic parameters could be included as a dimension

- PSA analyses, or those components of PSA analyses, could be included as a dimension.
- A method of dealing with missing or non-existent data for a given dimension needs to be developed.

The draft control rule as written is only applicable to data-adequate stocks since it requires a stock assessment to produce the inputs. A data-poor control rule needs to be developed for stocks where the information used in the data-adequate control rule is not available.

2.6 Action 6. Sector allocations

Alternative 1: No Action. Maintain the for-hire and private angler sectors within the current recreational sector and set a recreational sector ACL for each species that has a commercial and recreational allocation. Gag, gray triggerfish, greater amberjack, red grouper, and red snapper are the species with a commercial and recreational allocation.

Alternative 2: Divide the recreational sector into a for-hire sector and a private angler sector. Establish a for-hire ACL and a private recreational ACL for each species that has a commercial and recreational allocation. Gag, gray triggerfish, greater amberjack, red grouper, and red snapper are the species with a commercial and recreational allocation. For each species, the recreational ACL will be allocated between the for-hire and private angler sectors based on average landings during:

Option a: 1981 and 2008

Option b: 1999 and 2008

Option c: 2004 and 2008

Alternative 3: Establish accountability measures:

Option a: for the entire recreational sector

Option b: for each component of the recreational sector; i.e., separate accountability measures for the for-hire sector and for the private recreational sector.

Discussion and Rationale

At its October 2009 meeting, the Council indicated its intent to evaluate management measures considering the separation of the existing recreational sector into two distinct sectors, a for-hire sector and a private recreational sector, for each species that currently has a commercial and recreational allocation. A division of the recreational sector into separate for-hire and private angler sectors for reef fish has also been suggested by some for-hire operators and articulated in a document distributed to the Council (SOS plan). Opposition to the idea has also been voiced by other for-hire operators and private anglers.

Alternative 1 would maintain the for-hire and private angler grouper sectors within the current recreational sector. Under the status quo alternative, the Council would set a single recreational sector ACL for each one of the species considered. The for-hire and private angler sectors will continue to be managed using the same set of measures, including bag and size limits and season length. Under **Alternative 1**, annual fluctuations within the recreational allocation of percentages harvested by the for-hire and private angler sectors are expected to continue. For gag, gray triggerfish, greater amberjack, red grouper, and red snapper, current allocation between the commercial and recreational sectors are provided in Table 2.6.1.

Table 2.6.1. Existing Gulf of Mexico Reef Fish Sector Allocations

Species	Commercial	Recreational
Red Snapper	51%	49%
Red Grouper	76%	24%
Gag Grouper	61%	39%
Gray Triggerfish	79%	21%
Greater Amberjack	27%	73%

Under this status quo alternative, a single ACL would be defined for the entire recreational sector. It also follows that a single set of accountability measures would be applicable to the whole sector.

Alternative 2 would divide the recreational sector into a for-hire sector and a private angler sector. Under **Alternative 3**, ACLs and possibly ACTs established for the recreational sector will be apportioned between the for-hire and the private angler sectors. Alternative apportionments of the recreational allocation between the for-hire and private anglers sectors are considered in **Options a-c**. **Option a** would apportion the recreational ACL (and possibly ACT) between the for-hire and private recreational sectors based on their respective average landings during the 1981-2008 period. Under **Options b** and **c**, the apportionment would be based on average landings between 1999 and 2008, and between 2004 and 2008, respectively. For each species, percentages of the ACL that allocated to the for-hire and private recreational sectors under the different time periods considered are provided in Table 2.6.2.

Table 2.6.2. Allocation of the recreational ACL between the for-hire and private recreational sectors under alternative time intervals.

Species	Sector	Option a 1981-2008	Option b 1999-2008	Option c 2004-2008
Gag	For-hire	29.4	26.2	25.8
	Private Recreational	70.6	73.8	74.2
Gray Triggerfish	For-Hire	67.0	51.1	51.1
	Private Recreational	33.0	48.9	48.9
Greater Amberjack	For-Hire	66.2	57.1	55.0
	Private Recreational	33.8	42.9	45.0
Red Grouper	For-Hire	22.2	25.0	28.6
	Private Recreational	77.8	75.0	71.4
Red Snapper	For-Hire	57.1	51.0	50.9
	Private Recreational	42.9	49.0	49.1

While it would base the apportionment of the recreational ACL between the for-hire and private recreational sector on the longest data series available, **Option a** may not adequately reflect the species mix harvested by each sector due to the higher incidence of species mislabeling in earlier years, e.g., black grouper and gag. **Option b**, which would divide the recreational ACL based on

historical landings covering a 10-year span (1999-2008), may not be as effective as **Option c** (2004-2008) in capturing current participation levels in these fisheries.

Dividing the recreational allocation into separate for-hire and private recreational allocations would provide a consistent allocation for each sector from year to year. Each sector could have its own annual catch limit and possibly annual catch target, creating the possibility that one sector could be shut down due to having reached its annual catch limit while the other sector is allowed to continue fishing. Opponents of sector separation argue that separate allocations could deprive recreational fishermen of full access to the resource, particularly in situations where one sector fails to fully harvest its allocation, but that un-harvested allocation is unavailable to the other sector. Proponents of sector separation suggest that it could improve accountability and management flexibility, allowing the for-hire and private recreational sectors to potentially be given different fishing seasons, bag limits, or other management measures.

Alternative 3 would either establish a single set of accountability measures applicable to the recreational sector to remedy harvest levels exceeding a sector's ACL (**Option a**) or specify distinct accountability measures for the for-hire sector and recreational sectors (**Option b**). Accountability measures considered in this amendment are presented in Action 9.

2.7 Action 7. Generic Framework Procedure

Alternative 1. No Action. Do not modify the existing framework procedures for implementing management measures.

Alternative 2. Adopt the base Generic Framework Procedure as provided below.

Alternative 3. Adopt the more broad Framework Procedure as specified below.

Alternative 4. Adopt the more narrow Framework Procedure as specified below.

Discussion:

The full text of the framework procedure for each alternative follows. Table 2.7.1 highlights the major differences among the alternatives.

Table 2.7.1. Comparison of alternative framework procedures. Alternative 1 is not included because each FMP has its own framework procedure.

	Alternative 2 (base)	Alternative 3 (broad)	Alternative 4 (narrow)
Types of framework processes	- Open abbreviated - Open standard - Closed	- Open - Closed	- Open - Closed
When can open framework be used	- New stock assessment - New information or circumstances - When changes are required to comply with applicable law or a court order. Abbreviated framework can be used for minor or insignificant changes. Standard framework for all other allowed changes.	In response to any additional information or changed circumstances.	Only when there is a new stock assessment.
Actions that can be taken	- Abbreviated Open framework can be used for actions that are considered minor and insignificant. - Standard Open framework used for all others. Representative lists of actions that can be taken under Abbreviated and Standard Open framework are given, but are not exclusive. - Closed framework can be used for a specific list of actions.	- Open framework can be used for a representative list of actions, plus other measures deemed appropriate by the Council. - Closed framework can be used for a specific list of actions, plus any other immediate action specified in the regulations.	- Open framework can only be used for specific listed actions. - Closed framework can be used for a specific list of actions.
Public input	Requires public discussion at one Council meeting	Requires public discussion at one Council meeting	Requires public discussion during at least three Council meetings, and discussion at separate public hearings within the areas most affected by the proposed measures.
AP/SSC participation	The Council may convene its SSC, SEP, or AP, as appropriate	Convening the SSC, SEP, or AP, prior to final action is not required	The Council shall convene its SSC, SEP, and AP
How is a request of action made	- Abbreviated requires a letter or memo from the Council with supporting analyses - Standard requires a completed framework document with supporting analyses	Via letter, memo, or the completed framework document with supporting analyses.	Via letter, memo, or the completed framework document with supporting analyses.

Alternative 2 (Base)

This framework procedure provides standardized procedures for implementing management changes pursuant to the provisions of the FMP. There are two basic processes, the open framework process and the closed framework process. Open frameworks address issues where there is more policy discretion in selecting among various management options developed to address an identified management issue, such as changing a size limit to reduce harvest. Closed frameworks address much more specific factual circumstances, where the FMP and implementing regulations identify specific action to be taken in the event of specific facts occurring, such as closing a sector of a fishery after their quota has been harvested.

Open Framework:

1. Situations under which this framework procedure may be used to implement management changes include the following:
 - a. A new stock assessment resulting in changes to the overfishing limit, acceptable biological catch, or other associated management parameters.

In such instances the Council may, as part of a proposed framework action, propose an annual catch limit (ACL) or series of ACLs and optionally an annual catch target (ACT) or series of ACTs, as well as any corresponding adjustments to MSY, OY, and related management parameters.
 - b. New information or circumstances.

The Council will, as part of a proposed framework action, identify the new information and provide rationale as to why this new information indicates that management measures should be changed.
 - c. Changes are required to comply with applicable law such as MSA, ESA, MMPA, or are required as a result of a court order.

In such instances the Regional Administrator will notify the Council in writing of the issue and that action is required. If there is a legal deadline for taking action, the deadline will be included in the notification.
2. Open framework actions may be implemented in either of two ways, abbreviated documentation, or standard documentation process.
 - a. Abbreviated documentation process. Regulatory changes that may be categorized as a routine or insignificant may be proposed in the form of a letter or memo from the Council to the Regional Administrator containing the proposed action, and the relevant biological, social and economic information to support the action. If multiple actions are proposed, a finding that the actions are also routine or insignificant must also be included. If the Regional Administrator concurs with the determination and approves the proposed action, the action will be implemented through publication of appropriate notification in the Federal Register. Actions that may be viewed as routine or insignificant include, among others:

- i. Reporting and monitoring requirements,
 - ii. Permitting requirements,
 - iii. Bag and possession limit changes of not more than 1 fish,
 - iv. Size limit changes of not more than 10% of the prior size limit,
 - v. Vessel trip limit changes of not more than 10% of the prior trip limit,
 - vi. Closed seasons of not more than 10% of the overall open fishing season,
 - vii. Species complex composition,
 - viii. Restricted areas (seasonal or year-round) affecting no more than a total of 100 nautical square miles,
 - ix. Respecification of ACL, ACT or quotas that had been previously approved as part of a series of ACLs, ACTs or quotas,
 - x. Specification of MSY proxy, OY, and associated management parameters (such as overfished and overfishing definitions) where new values are calculated based on previously approved specifications,
 - xi. Gear restrictions, except those that result significant changes in the fishery, such as complete prohibitions on gear types,
 - xii. Quota changes of not more than 10%, or retention of portion of an annual quota in anticipation of future regulatory changes during the same fishing year,
- b. Standard documentation process. Regulatory changes that do not qualify as a routine or insignificant may be proposed in the form of a framework document with supporting analyses. Non routine or significant actions that may be implemented under a framework action include, among others:
- i. Specification of ACTs or sector ACTs,
 - ii. Rebuilding plans and revisions to approved rebuilding plans,
 - iii. The addition of new species to existing limited access privilege programs (LAPP),
 - iv. Changes specified in section 4(a) that exceed the established thresholds.

3. The Council will initiate the open framework process to inform the public of the issues and develop potential alternatives to address the issues. The framework process will include the development of documentation and public discussion during at least one council meeting.
4. Prior to taking final action on the proposed framework action, the Council may convene its SSC, SEP, or AP, as appropriate, to provide recommendations on the proposed actions.
5. For all framework actions, the Council will provide the letter, memo, or the completed framework document along with proposed regulations to the Regional Administrator in a timely manner following final action by the Council.
6. For all framework action requests, the Regional Administrator will review the Council's recommendations and supporting information and notify the Council of the determinations, in accordance with the MSA¹ and other applicable law.

¹ SEC. 304. ACTION BY THE SECRETARY 16 U.S.C. 1854

(a) REVIEW OF PLANS.—

(1) Upon transmittal by the Council to the Secretary of a fishery management plan or plan amendment, the Secretary shall—

- (A) immediately commence a review of the plan or amendment to determine whether it is consistent with the national standards, the other provisions of this Act, and any other applicable law; and
- (B) immediately publish in the Federal Register a notice stating that the plan or amendment is available and that written information, views, or comments of interested persons on the plan or amendment may be submitted to the Secretary during the 60-day period beginning on the date the notice is published.

(2) In undertaking the review required under paragraph (1), the Secretary shall—

- (A) take into account the information, views, and comments received from interested persons;
- (B) consult with the Secretary of State with respect to foreign fishing; and
- (C) consult with the Secretary of the department in which the Coast Guard is operating with respect to enforcement at sea and to fishery access adjustments referred to in section 303(a)(6).

(3) The Secretary shall approve, disapprove, or partially approve a plan or amendment within 30 days of the end of the comment period under paragraph (1) by written notice to the Council. A notice of disapproval or partial approval shall specify—

- (A) the applicable law with which the plan or amendment is inconsistent;
- (B) the nature of such inconsistencies; and
- (C) recommendations concerning the actions that could be taken by the Council to conform such plan or amendment to the requirements of applicable law. If the Secretary does not notify a Council within 30 days of the end of the comment period of the approval, disapproval, or partial approval of a plan or amendment, then such plan or amendment shall take effect as if approved.

(4) If the Secretary disapproves or partially approves a plan or amendment, the Council may submit a revised plan or amendment to the Secretary for review under this subsection.

(5) For purposes of this subsection and subsection (b), the term “immediately” means on or before the 5th day after the day on which a Council transmits to the Secretary a fishery management plan, plan amendment, or proposed regulation that the Council characterizes as final.

(b) REVIEW OF REGULATIONS.—

(1) Upon transmittal by the Council to the Secretary of proposed regulations prepared under section 303(c), the Secretary shall immediately initiate an evaluation of the proposed regulations to determine whether they are consistent with the fishery management plan, plan amendment, this Act and other applicable law. Within 15 days of initiating such evaluation the Secretary shall make a determination and—

Closed Framework:

1. Consistent with existing requirements in the FMP and implementing regulations, the Regional Administrator is authorized to conduct the following framework actions through appropriate notification in the Federal Register:
 - a. Close or adjust harvest any sector of the fishery for a species, sub-species, or species group that has a quota or sub-quota at such time as projected to be necessary to prevent the sector from exceeding its sector-quota for the remainder of the fishing year or sub-quota season,
 - b. Reopen any sector of the fishery that had been prematurely closed,
 - c. Implement an in-season AM for a sector that has reached or is projected to reach, or is approaching (e.g., within **x** percent) or is projected to approach its ACL, or implement a post-season AM for a sector that exceeded its ACL in the current year.

Alternative 3 (BROAD)

This framework procedure provides standardized procedures for implementing management changes pursuant to the provisions of the FMP. There are two processes, the open framework process and the closed framework process. Open frameworks address issues where there is more policy discretion in selecting among various management options developed to address an identified management issue, such as changing a size limit to reduce harvest. Closed frameworks address much more specific factual circumstances, where the FMP and implementing regulations identify specific action to be taken in the event of specific facts occurring, such as closing a sector of a fishery after their quota has been harvested.

Open Framework:

1. The council may utilize this framework procedure to implement management changes in response to any additional information or changed circumstances.

The Council will, as part of a proposed framework action, identify the new information and provide rationale as to why this new information requires that management measures be adjusted.

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- (A) if that determination is affirmative, the Secretary shall publish such regulations in the Federal Register, with such technical changes as may be necessary for clarity and an explanation of those changes, for a public comment period of 15 to 60 days; or
 - (B) if that determination is negative, the Secretary shall notify the Council in writing of the inconsistencies and provide recommendations on revisions that would make the proposed regulations consistent with the fishery management plan, plan amendment, this Act, and other applicable law.
- (2) Upon receiving a notification under paragraph (1)(B), the Council may revise the proposed regulations and submit them to the Secretary for reevaluation under paragraph (1).
 - (3) The Secretary shall promulgate final regulations within 30 days after the end of the comment period under paragraph (1)(A). The Secretary shall consult with the Council before making any revisions to the proposed regulations, and must publish in the Federal Register an explanation of any differences between the proposed and final regulations.

2. Open framework actions may be implemented at any time based on information supporting the need for adjustment of management measures or management parameters:
 - a. Actions that may be implemented via the framework procedure include:
 - i. Reporting and monitoring requirements,
 - ii. Permitting requirements,
 - iii. Bag and possession limits,
 - iv. Size limits,
 - v. Vessel trip limits,
 - vi. Closed seasons,
 - vii. Species complex composition, or inclusion of new species under existing IFQs,
 - viii. Restricted areas (seasonal or year-round),
 - ix. Respecification of ACL, ACT or quotas that had been previously approved as part of a series of ACLs, ACTs or quotas,
 - x. Specification of MSY proxy, OY, and associated management parameters (such as overfished and overfishing definitions) where new values are calculated based on previously approved specifications,
 - xi. Gear restrictions, except those that result in significant changes in the fishery, such as complete prohibitions on gear types,
 - xii. Quota changes,
 - xiii. Specification of ACTs or sector ACTs,
 - xiv. Rebuilding plans and revisions to approved rebuilding plans,
 - xv. Any other measures deemed appropriate by the council.
3. The Council will initiate the open framework process to inform the public of the issue and develop potential alternatives to address the issue. The framework process will include the development of documentation and public discussion during one council meeting.
4. For all framework actions, the Council will provide the letter, memo, or the completed framework document along with proposed regulations to the Regional Administrator following final action by the Council.

5. For all framework action requests, the Regional Administrator will review the Council's recommendations and supporting information and notify the Council of the determinations, in accordance with the MSA and other applicable law.

Closed Framework:

2. Consistent with existing requirements in the FMP and implementing regulations, the Regional Administrator is authorized to conduct the following framework actions through appropriate notification in the Federal Register:
 - a. Close or adjust harvest any sector of the fishery for a species, sub-species, or species group that has a quota or sub-quota at such time as projected to be necessary to prevent the sector from exceeding its sector-quota for the remainder of the fishing year or sub-quota season,
 - b. Reopen any sector of the fishery that had been prematurely closed,
 - c. Implement an in-season AM for a sector that has reached or is projected to reach, or is approaching (e.g., within **x** percent) or is projected to approach its ACL, or implement a post-season AM for a sector that exceeded its ACL in the current year,
 - d. Take any other immediate action specified in the regulations.

Alternative 4 (NARROW)

This framework procedure provides standardized procedures for implementing management changes pursuant to the provisions of the FMP. There are two basic processes, the open framework process and the closed framework process. Open frameworks address issues where there is more policy discretion in selecting among various management options developed to address an identified management issue, such as changing a size limit to reduce harvest. Closed frameworks address much more specific factual circumstances, where the FMP and implementing regulations identify specific action to be taken in the event of specific facts occurring, such as closing a sector of a fishery after their quota has been harvested.

Open Framework:

1. Situations under which this framework procedure may be used to implement management changes include only the following:
 - a. A new stock assessment resulting in changes to the overfishing limit, acceptable biological catch, or other associated management parameters.

In such instances the Council may, as part of a proposed framework action, propose an annual catch limit (ACL) or series of ACLs and optionally an annual catch target (ACT) or series of ACTs, as well as any corresponding adjustments to MSY, OY, and related management parameters.

2. Open framework actions may be implemented only in response to the above conditions.
 - a. Actions that may be implemented via the framework procedure include only the following:
 - i. Reporting and monitoring requirements,
 - ii. Bag and possession limits,
 - iii. Size limits,
 - iv. Closed seasons,
 - v. Restricted areas (seasonal or year-round),
 - vi. Quotas.
3. The Council will initiate the open framework process to inform the public of the issue and develop potential alternatives to address the issue. The framework process will include the development of documentation and public discussion during at least three council meetings, and shall be discussed at separate public hearings within the areas most affected by the proposed measures.
4. Prior to taking final action on the proposed framework action, the Council shall convene its SSC, SEP, and AP to provide recommendations on the proposed actions.
5. For all framework actions, the Council will provide the letter, memo, or the completed framework document, and all supporting analyses, along with proposed regulations to the Regional Administrator in a timely manner following final action by the Council.
6. For all framework action requests, the Regional Administrator will review the Council's recommendations and supporting information and notify the Council of the determinations, in accordance with the MSA and other applicable law. The Regional Administrator will provide the Council weekly updates on the status of the proposed measures.

Closed Framework:

3. Consistent with existing requirements in the FMP and implementing regulations, the Regional Administrator is authorized to conduct the following framework actions through appropriate notification in the Federal Register:
 - a. Close or adjust harvest any sector of the fishery for a species, sub-species, or species group that has a quota or sub-quota at such time as projected to be necessary to prevent the sector from exceeding its sector-quota for the remainder of the fishing year or sub-quota season,
 - b. Reopen any sector of the fishery that had been prematurely closed,
 - c. Implement an in-season AM for a sector that has reached or is projected to reach, or is approaching (e.g., within **x** percent) or is projected to approach its ACL, or implement a post-season AM for a sector that exceeded its ACL in the current year.

2.8 Action 8. Initial specification of Annual Catch Limits

2.8.1 Action 8.1. Specify ACL for Red Drum in Federal and State Waters

Alternative 1. No action – do not set Annual Catch Limits for Gulf red drum

**Alternative 2. Set Annual Catch Limits based on federal and state landings
Set a single Annual Catch Limit in federal waters (ACL=0) combined with Annual
Catch Limits set by the states based on individual state landings**

**Alternative 3. Once an Acceptable Biological Catch is recommended by the
Scientific and Statistical Committee, the red drum Annual Catch Limit will be
set at:**

**Option a. Set Annual Catch Limit at 100% of Acceptable Biological
Catch**

Option b. Set Annual Catch Limit at 75% of Acceptable Biological Catch

**Option c. Set an Annual Catch Limit corresponding to the Annual Catch
Limit/Annual Catch Target control rule**

**Alternative 4. Once an Acceptable Biological Catch is recommended by the
Scientific and Statistical Committee, the red drum Annual Catch Limit =
Acceptable Biological Catch and the Annual Catch Target will be at:**

**Option a. Set Annual Catch Target at 100% of Acceptable Biological
Catch**

**Option b. Set Annual Catch Target at 75% of Acceptable Biological
Catch**

**Option c. Set Annual Catch Limit to correspond to the Annual Catch
Limit/Annual Catch Target control rule**

Discussion:

Historically, Gulf-wide reported annual red drum landings usually varied between 1 and 3 million pounds until the mid 1980s when “blackened redfish” became popular. This resulted in a huge demand for commercially caught red drum that were targeted both in offshore state waters and the exclusive economic zone (EEZ). On June 25, 1986, the Secretary of Commerce implemented an emergency rule limiting the commercial catch in the exclusive economic zone to one million pounds amid concerns that the stock would collapse. Federal waters in the Gulf of Mexico were closed in 1987 and have remained closed to both red drum recreational and commercial fishing (Porch 2000). Recreational red drum fisheries do occur in all Gulf coast state waters. Mississippi is the only state that also has a small red drum commercial fishery (Figure 2.8.1.1).

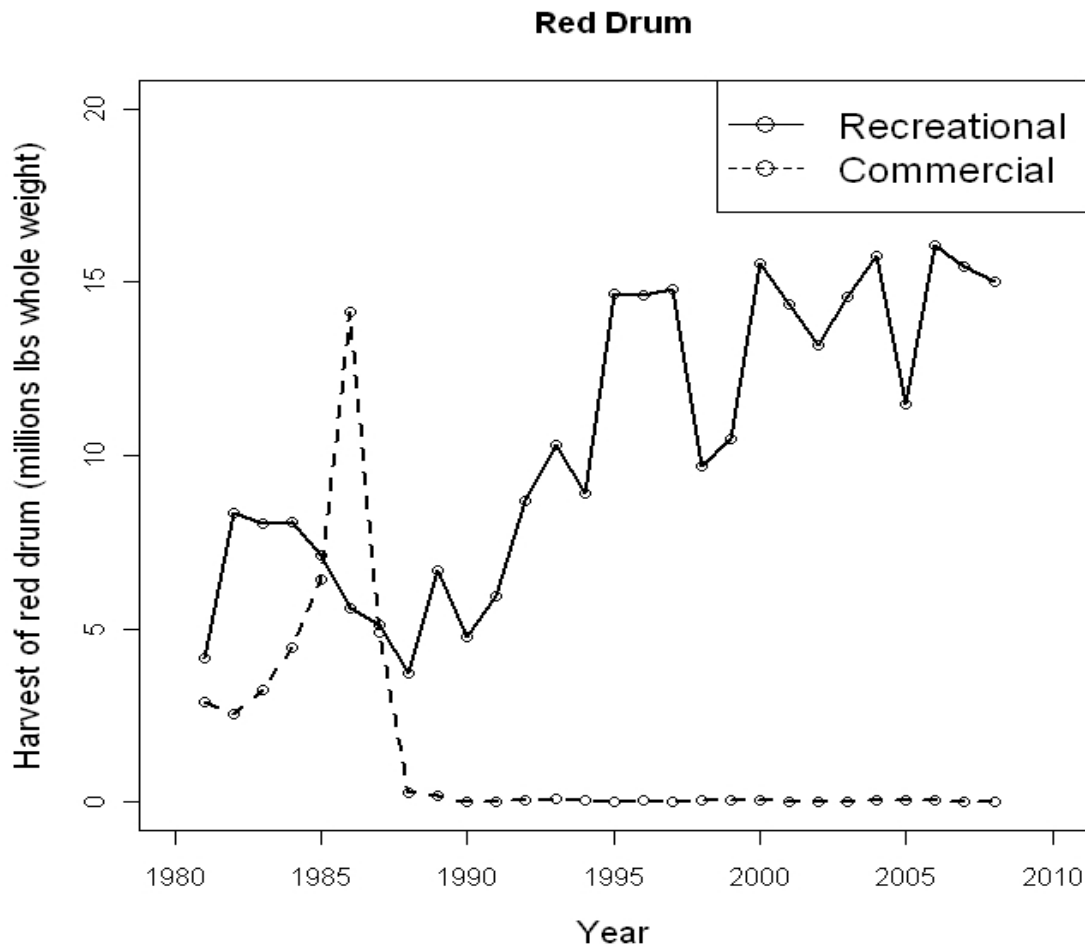


Figure 2.8.1.1. Red drum recreational and commercial landings in Gulf of Mexico state waters from 1981 – 2008. Source: Dr. Nick Farmer, NMFS-SEFSC St. Petersburg, Florida

There are four alternatives for setting annual catch limits (ACLs) for Gulf of Mexico red drum. **Alternative 1** is the no action alternative. Selection of this alternative as the preferred alternative would not satisfy the National Standard 1 Guidelines and the revised Magnuson-Stevens Reauthorization Act of 2006. Gulf of Mexico red drum are not considered to be undergoing overfishing; however, the red drum status is undefined with regard to being overfished and it is unknown if the stocks are approaching an overfished condition.

Alternative 2 is to set an annual catch limit based on federal and state landings. Under this alternative a single annual catch limit would be set in federal waters (ACL=0) since the red drum fishery is closed in federal waters and individual states would set their own annual catch limits based on the average each state's five years landings. There has not been a stock assessment of Gulf-wide red drum since 2000. Some states, however, conduct their own assessments such as Florida and Louisiana (Mike Murphy and Harry Blanchet, personal communication). Two Florida assessments were conducted for stocks off Florida in 2003 and 2007 (Murphy, M.D. 2005; Murphy, M.D. and J. Munyandorero 2008). The latest assessment from Louisiana was

updated through the incorporation of recreational landings through 2004 and fishery independent trammel net samples through 2005.

Although the Mississippi red drum commercial fishery is regulated by a 35,000 pound whole weight quota, all the state recreational red drum fisheries are currently regulated by percent escapement from estuarine waters to near shore adult areas. The National Marine Fisheries Service uses escapement as a determination criteria to estimate the amount of fishing pressure on the red drum inshore population and mandates a 30% or greater escapement rate. Escapement rates vary by state. The most current escapement rates by state are shown as Table 2.8.1.1. Escapement is shown as a percentage because it is based on the ratio of the number of red drum present at age 4, divided by the number of age 4 fish that would be present if the red drum fishery did not exist.

Table 2.8.1.1. The most recent escapement rates provided by each of the Gulf coast states.

State	Escapement Rate	Year
Alabama	34%	2007
Florida	46%	2007
Louisiana	48%	2005
Mississippi	35.4%	2006
Texas	30%	2009

Difficulties with this alternative are that each state has different size and bag limits. Current state regulations permit red drum harvest for fish anywhere between the sizes of 16 –30 inches total length (406 -762 mm) depending on the state and daily bag limits vary from one to five fish per day (Table 2.8.1.2).

Table 2.8.1.2. Red drum size and bag limits in Gulf coast state waters.

State	Size Limits (in) TL	Bag Limits	Special Regulations
Alabama	16-26 only 1 over 26/trip	3 fish/person/day	
Florida	18-27	1 fish/person/day	TL in: tail squeezed No oversized fish permitted
Louisiana	16-27 only 1 over 27/trip	5 fish/person/day	
Mississippi	18-30 only 1 over 30/trip	3 fish/person/day	Commercial =18 in , only 1 over 30 in
Texas	20-28 only 2 over 28 /yr	3 fish/person/day	1 tag for oversized, 2 nd tag if 1 st tag is filled out and returned

Smaller and larger fish must be released. Having a small slot size unintentionally promotes a large catch and release activity. In Florida Gulf coast state waters the average number of recreationally caught red drum released alive increased to 3.2 million fish during 1990- 2007 from the 1.4 million fish caught from 1982-1986 (Murphy and Munyandorero 2007). Murphy and Munyandorero (2007) estimated the number of fish killed by anglers (landings and 5% of live releases) from 1950-2007 and found increased red drum mortality (harvest and release

mortality) since the late 1980's through 2007 that they attributed to Florida's increased human population. They expressed concern that at the current increase in total mortality, the escapement rate could fall below 30% on the Florida Gulf coast in 2011.

Released red drum survival appears to be higher when fish are caught on non-offset circle hooks. Research conducted by Aguilar et al (2002) and Vecchio and Wenner (2007) demonstrated that use of non-offset circle hooks significantly reduced hooking mortality in red drum off North and South Carolina. However, Vecchio and Wenner (2007) reported that there is some catch-and-release mortality of adults during spawning season when fish are caught from depths of 33-66 ft (10-12 m) with an average landing time of 10 minutes. Smaller red drum are usually found along coastal beaches and in shallow estuarine waters (NMFS 1986; Murphy and Munyandorero 2007) and therefore should not suffer from barotraumas. However, larger fish in federal waters that comprise the spawning stock have been reportedly caught at depths of 16 – 89 ft (5 – 27 m) in the Gulf (NMFS 1986). Vecchio and Wenner (2007) reported that most large fish were able to return to the bottom after a few minutes but during spawning season, fish exhibited a slower recovery rate raising concerns of increased predation or decreased spawning success after a catch-and-release event.

Alternative 3 has three options all based on setting annual catch limits determined by the acceptable biological catch recommended by the Scientific and Statistical Committee. Under **Option a**, the annual catch limit would be equal to 100% of the acceptable biological catch. If additional fish were caught over the quota then accountability measures would go into effect. **Option b** would set the annual catch limit equal to 75% of the acceptable biological catch. This would provide a buffer by creating an acceptable risk that overfishing would not occur and would account for other risks or uncertainties. **Option c**, sets the annual catch limit to correspond to the annual catch limit/annual catch target control rule. The annual catch target would be set below the annual catch limit in order to reduce the possibility that accountability measures would be triggered.

Alternative 4 also has three options. Once an acceptable biological catch limit is recommended by the Scientific and Statistical Committee, the red drum annual catch limit would be equal to the acceptable biological catch and the annual catch target. Under **Option a**, the annual catch target would be set at 100% of the acceptable biological catch. **Option b** would set the annual catch target at 75% of the acceptable biological catch. **Option c** would set the annual catch limit to correspond to the annual catch limit/annual catch target control rule.

2.8.2 Action 8.2. Specify ACL for Allowable Octocorals

*Alternatives in this action are subject to change based on decisions made by the South Atlantic Council and their Scientific and Statistical Committee for setting an overfishing limit and acceptable biological catch for octocorals due to the joint quota. These alternatives are also subject to change based on the Gulf Scientific and Statistical Committee recommendations for an overfishing limit and acceptable biological catch for octocorals.

Alternative 1. No action, do not set an annual catch limit for octocorals.

Alternative 2. Once an Allowable Biological Catch is recommended by the Scientific and Statistical Committee, the allowable octocorals Annual Catch Limit will be set at:

Option a. Set Annual Catch Limit at 100% of Allowable Biological Catch

Option b. Set Annual Catch Limit at 75% of Allowable Biological Catch

Option c. Set an Annual Catch Limit corresponding to the Annual Catch Limit/Annual Catch Target control rule

Alternative 3. Set ACL at average annual harvest for 2000-2008:

Option a: Set annual catch limit for state and federal waters of the Gulf of Mexico and South Atlantic at 43,573 colonies, annually

Option b: Set annual catch limit for state and federal waters of the Gulf of Mexico at 9,593 colonies, annually

Option c: Set annual catch limit for federal waters of the Gulf of Mexico at 3,867 colonies, annually

Discussion:

This action explores setting an annual catch limit for octocorals in the Fishery Management Plan for Coral and Coral Reefs. Due to octocoral quota being jointly management with the South Atlantic Council, a range of alternatives were developed to address setting annual catch limits. Amendment 1 to the Fishery Management Plan for Coral and Coral Reefs established a joint optimum yield of 50,000 colonies of octocorals, annually from federal waters of the Gulf of Mexico and South Atlantic (GMFMC and SAFMC 1990). The rationale for creating an optimum yield of 50,000 colonies was described in Amendment 1 (GMFMC and SAFMC 1990). This estimate was described as a conservative estimate based on the standing stock of allowable octocorals on the patch reefs of the Keys alone which is believed to be 4.7 billion colonies and only 14 of the 77 octocoral species are estimated to be harvested. This would be 18% of the species and if evenly distributed by number (which is not likely but our best assumption), would comprise a standing stock of 846 million colonies. A very conservative harvest level of 1% would be 8.5 million colonies. The allowable optimum yield of 50,000 colonies would provide an ample harvest for commercial and recreational users until such time as better data become available without compromising the stock (GMFMC and SAFMC 1990). Overfishing was also defined in Amendment 1 as the annual level of harvest that exceeds optimum yield of 50,000 colonies. **Alternative 1** is the no action alternative and would not set an annual catch limit for octocorals. If this alternative were selected as preferred then the National Standard 1 guidelines would not be met. All alternatives are preliminary and require approval of the Gulf Scientific and Statistical Committee as well as the South Atlantic Scientific and Statistical Committee and Council. **Alternative 2** would set the annual catch limit equal to the acceptable biological catch selected by the Scientific and Statistical Committee. **Alternative 3** explores various options to

set annual catch limits based on average annual harvest during the 2000-2008 time series.

Alternative 3, Option a would set annual catch limit utilizing the joint quota for state and federal waters of the Gulf of Mexico and South Atlantic at 43,573 colonies, annually.

Alternative 3, Option b would set annual catch limit for state and federal waters of the Gulf of Mexico at 9,593 colonies, annually. **Alternative 3, Option c** would set annual catch limit for federal waters of the Gulf of Mexico at 3,867 colonies, annually.

2.8.3 Action 8.3. Specify ACL for Stone Crab

* These alternatives are subject to change based on the Scientific and Statistical Committee recommendation for an overfishing limit and acceptable biological catch for stone crab.

Alternative 1. No action, do not set an annual catch limit for stone crab

Alternative 2. Once an Allowable Biological Catch is recommended by the Scientific and Statistical Committee, the stone crab Annual Catch Limit will be set at:

Option a. Set Annual Catch Limit at 100% of Allowable Biological Catch

Option b. Set Annual Catch Limit at 75% of Allowable Biological Catch

Option c. Set an Annual Catch Limit corresponding to the Annual Catch Limit/Annual Catch Target control rule

Alternative 3. Set ACL based on average Gulf of Mexico landings from state and federal waters

Option a: Set ACL = 2,387,791 pounds of claws (average landings from 2004-2008)

Option b: Set ACL = 2,442,723 pounds of claws (average landings from 1999-2008)

Option c: Set ACL = 2,603,274 pounds of claws (average landings from all available years 1991-2008)

Discussion:

This action explores setting an annual catch limit for stone crab species, *Menippe mercenaria* and *M. adina* to the Fishery Management Plan for stone crab of the Gulf of Mexico. The Gulf Council has worked closely with Florida FWC adopting compatible management measures recognizing their license, trap certificates, and trap tags for use in the exclusive economic zone in lieu of a federal permit. Florida FWC has monitored the commercial stone crab fishery since the 1970's. The recreational fishery landings are not monitored by Florida FWC or the NOAA Fisheries Service. However, there are state regulations adopted by the Council and NOAA Fisheries Service, including claw minimum size limits, closed fishing seasons, bag limits, trap limits, and a prohibition for collecting egg-bearing females. The Sustainable Fisheries Act was developed in 1999. It modified maximum sustainable yield to a harvest which results from a realized egg production per recruit at or above 70% of potential production. This harvest capacity is currently estimated at between 3.0 and 3.5 mp of claws. Optimum yield is equal to maximum sustainable yield. Overfishing is defined as a harvest level (or fishing mortality rate) that would result in a realized egg production per recruit of below 70% of potential production. The overfished condition would occur when the realized egg production per recruit is reduced below 40% of potential production. **Alternative 1** is the no action alternative and would not set an annual catch limit for stone crab. If this alternative were selected as preferred then the National Standard 1 guidelines would not be met. All alternatives are preliminary and require approval of the Scientific and Statistical Committee. **Alternative 2** would set the annual catch limit equal to the acceptable biological catch selected by the Scientific and Statistical Committee. **Alternative 3** would set an annual catch limit based on average Gulf of Mexico landings from state and federal waters (Source: S. Brown, Florida FWC and FWRI, biologist, 2010). **Alternative 3, Option a** would set annual catch limit equal to 2,387,791 pounds of claws, based on average landings from 2004-2008. **Alternative 3, Option b** would set annual catch limit

equal to 2,442,723 pounds of claws, based on average landings from 1999-2008. **Alternative 3, Option c** would set annual catch limit equal to 2,603,274 pounds of claws annually based on average landings from all available years 1991-2008.

2.8.4 Action 8.4. Specify ACL for Royal Red Shrimp

In Shrimp Amendment 13, the Scientific and Statistical Committee approved a range for maximum sustainable yield of 392,000 to 650,000 pounds of tails, annually (GMFMC 2005). The new National Standard 1 guidelines only allow the overfishing limit and acceptable biological catch to be in terms of a single value, not a range. Therefore, the overfishing limit is based on the upper limit of the Scientific and Statistical Committee's range, of 650,000 pounds of tails, annually. The annual catch limit must be set at or below the acceptable biological catch. Although the acceptable biological catch recommendation must come from the Scientific and Statistical Committee under the Magnuson-Steven Act, for purposes of this draft options paper the following will be used as an interim acceptable biological catch, pending a recommendation from the Scientific and Statistical Committee, which could change after review.

Alternative 1. No Action, do not set an annual catch limit for royal red shrimp.

Alternative 2. Once an Allowable Biological Catch is recommended by the Scientific and Statistical Committee, the royal red shrimp Annual Catch Limit will be set at:

Option a. Set Annual Catch Limit at 100% of Allowable Biological Catch

Option b. Set Annual Catch Limit at 75% of Allowable Biological Catch

Option c. Set an Annual Catch Limit corresponding to the Annual Catch Limit/Annual Catch Target control rule

Alternative 3. Set an annual catch limit based on average landings

Option a: ACL = 141,379 pounds of tails, annually (average landings from all available years 1962-2008)

Option b: ACL = 191,860 pounds of tails, annually (average landings from last 5 years)

Option c: ACL = 233,182 pound of tails, annually (average landings from the last 10 years)

Discussion:

This action establishes alternatives for setting annual catch limits for Gulf of Mexico royal red shrimp, *Hymenopenaeus robustus*. The royal red shrimp fishery is only a commercial deep water fishery with a limited number of participants. In 2009, there were 277 vessels with Gulf of Mexico vessel permits and all of these were active permits (J. Dudley, NOAA permits office, personal communication). **Alternative 1** is the no action alternative. If this alternative was selected as the preferred alternative, the National Standard 1 guidelines would not be met in 2011. This species is not currently believed to be overfished or undergoing overfishing, based on the definitions established in Shrimp Amendment 13 [71 FR 56039].

The range of maximum sustainable yield and definition of optimum yield were approved through the Generic Sustainable Fisheries Act in 1999 and implemented in Shrimp Amendment 13. Further definitions for optimum yield were also established in Shrimp Amendment 13, as optimum yield equal to maximum sustainable yield. An overfishing threshold was also established in Shrimp Amendment 13, as a fishing mortality rate that results in an annual catch exceeding maximum sustainable yield for two consecutive years. The overfished definition for royal red shrimp was defined as the spawning stock biomass less than 50% of the biomass at maximum sustainable yield (GMFMC 2005).

The royal red shrimp fishery in the Gulf of Mexico is conducted in deep waters from approximately 100 and 300 fathoms. Partly because of these fishing depths and the distance from shore, only a small number of boats have historically participated in the fishery. In addition, to a commercial shrimp vessel permit, Shrimp Amendment 13, required a royal red shrimp endorsement to harvest royal red shrimp from the Gulf exclusive economic zone. Due to the low number of participants, but large geographic range of the species in the Gulf of Mexico, it is likely that **Alternative 2 Option a:** set annual catch limit at 294,000 pounds of tails, annually would not be exceeded. It would be 75% of the lower range of the maximum sustainable yield (392,000 pounds of tails, annually) recommended by the Scientific and Statistical Committee in Shrimp Amendment 13. **Alternative 2 Option b:** set annual catch limit at 390,750 pounds of tails, annually. **Alternative 2 Option b** would set the annual catch limit higher than highest recorded landings of 336,810 pounds of royal red shrimp tails in 1994 (Figure 2.8.4.1). Due to this stock not being fully exploited throughout its geographic range royal red shrimp landings are lower than what could be harvested if the stock was completely exploited (GMFMC 2005). This alternative is also under the lower range of maximum sustainable yield (392,000 pounds of tails, annually) recommended by the Scientific and Statistical Committee.

This number was derived from taking 75% of the mean range of maximum sustainable yield recommended by the Scientific and Statistical Committee (521,000 pounds of tails, annually). **Alternative 2 Option c:** set annual catch limit at 487,500 pounds of tails, annually. This number was derived from 75% of the upper range of maximum sustainable yield (650,000 pounds of tails, annually) recommended by the Science and Statistical Committee.

Alternative 3 options would set an annual catch limit for royal red shrimp based on average landings (Figure 2.8.4.1). **Alternative 3 Option a:** will set annual catch limit the lowest under **Alternative 3**. It is based on all landings from all available years 1962-2008. **Alternative 3 Option b:** will set annual catch limit at 191,860 pounds of tails, annually and **Option c:** will set annual catch limit at 233,182 pounds of tails, annually. All of the options under **Alternative 3** are more conservative, setting the annual catch limit lower than the minimum maximum sustainable yield (392,000 pounds of tails, annually) recommended by the Scientific and Statistical Committee.

If **Options a** or **b** under **Alternative 2** were selected as the preferred alternatives they are not expected to have negative impacts to the ecological and biological environment. However, **Alternative 2 Options c** will set the annual catch limit greater than the minimum maximum sustainable yield recommendation from the Scientific and Statistical Committee. If this alternative were selected as preferred alternative specific justification and rationale will have to given and potential negative impacts to the ecological and biological environment will need to be analyzed. All of the options under **Alternative 3** will set the annual catch limit less than the minimum maximum sustainable yield recommended by the Scientific and Statistical Committee in Shrimp Amendment 13 and are not expected to have negative impacts on the ecological and biological environment. The royal red shrimp fishery has limited participation, with an additional royal red shrimp endorsement necessary, in addition to the commercial shrimp vessel permit to harvest royal red shrimp in the Gulf exclusive economic zone. Setting the annual catch limit for royal red shrimp less than 392,000 pounds, of tails annually is not expected to have any negative impacts to the biological environments.

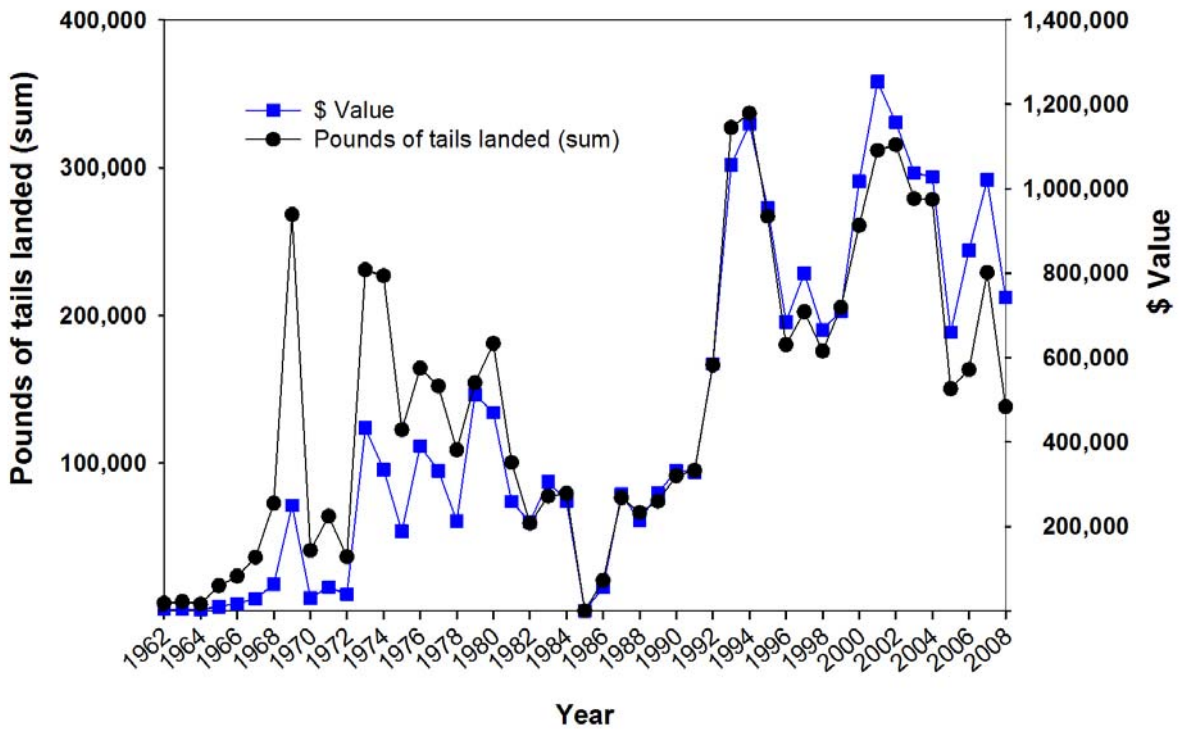


Figure 2.8.4.1 U.S. Landed Royal Red Shrimp and the dollar (\$) value from the Gulf of Mexico 1962 through 2008. Source: J. Nance, NMFS-SEFSC Galveston, Texas.

2.8.5 Action 8.5. Specify ACL and ACT for Data Adequate Stocks and Stock Groupings [TO BE COMPLETED]

Alternative 1. No action. Do not set annual catch limits or annual catch targets for data-adequate stocks or stock groups. The limits set in previous or concurrent actions will apply where applicable.

Alternative 2. Set annual catch limits and optionally annual catch targets as indicated by the annual catch limit control rule for data adequate stocks.

Alternative 3. Set annual catch limits and optionally annual catch targets individually for specific stocks or stock complexes as follows (list stocks for this alternative and their ACL/ACT below).

Table 2.8.5.1. ACLs and ACTs under Alternative 1 (no action) or Alternative 2 (ACL Control Rule).

Species or Species Grouping		Alternative 1 No action		Alternative 2 ACL Control Rule for Data Adequate Stocks		Indicator species (if any)
		ACL	ACT	ACL	ACT	
SWG	Total	Amend 32	Amend 32			none
	Commercial	Amend 32	Amend 32			
	Recreational	Amend 32	Amend 32			
DWG	Total	1.02 mp gw	1.02 mp gw			none
Tilefishes	Total	0.44 mp	.044 mp			none
Yellowtail snapper	Total	Not set	Not set			
	Commercial	Not set	Not set			
	Recreational	Not set	Not set			
Hogfish	Total	Not set	Not set			
	Commercial	Not set	Not set			
	Recreational	Not set	Not set			
To be completed						

2.8.6 Action 8.6. Specify ACL and ACT for Data Poor Stocks and Stock Groupings [TO BE COMPLETED]

Alternative 1. No action. Do not set annual catch limits or annual catch targets for data-poor species or species groups. The limits set in previous or concurrent actions will apply where applicable (see Table 6).

Alternative 2. Set annual catch limits and optionally annual catch targets as indicated by the annual catch limit control rule for data poor stocks (see Table 6).

Alternative 3. Set annual catch limits and optionally annual catch targets individually for specific stocks or stock complexes as follows (list stocks for this alternative and their ACL/ACT below).

Table 2.8.6.1. ACLs and ACTs under Alternative 1 (no action) or Alternative 2 (ACL Control Rule).

Species or Species Grouping		Alternative 1 No action		Alternative 2 ACL Control Rule for Data Poor Stocks		Indicator species (if any)
		ACL	ACT	ACL	ACT	
Lesser amberjack, Banded rudderfish, Almaco jack	Total	Not set	Not set			none
Cubera snapper	Total	Not set	Not set			
Queen snapper	Total	Not set	Not set			
Snapper grouping	Total	Not set	Not set			none
Sand perch, Dwarf sand perch	Total	Not set	Not set			none
To be completed						

2.9 Action 9. Accountability measures

The purpose of this section is to consider actions to implement accountability measures (AMs) for different fisheries and sectors. Alternatives for accountability measures are provided but not for specific fisheries at this time because important decisions regarding allowable biological catch (ABC) control rules, annual catch limits (ACLs), annual catch targets (ACTs), and species groups have not been made. These decisions are important for deciding which AMs would be feasible for a given fishery sector.

Although IFQs are considered a form of accountability measure, implementation of new IFQ systems is outside the scope of this amendment. A single species IFQ system is currently in place for the commercial red snapper fishery, and a multi-species IFQ system is in place for the commercial grouper and tilefish fisheries. If the Council wishes to consider implementing IFQs for fisheries not currently under such programs, it should do so through a separate amendment.

Accountability measures are designed to prevent ACLs from being exceeded, and if exceeded, correct or mitigate overages (50 CFR 600.310(g)). The National Standard 1 (NS1) guidelines for accountability measures identify two types of AMs. These are in-season AMs and AMs for when the ACL is exceeded. These AMs are not mutually exclusive and should be used together where appropriate.

For in-season AMs, the guidelines indicate in-season monitoring and management measures should be included in fishery management plans whenever possible to reduce the likelihood ACLs will be exceeded within a fishing year. In-season accountability measures that the Council could authorize NMFS to take can include closing the fishery when the annual catch limit is reached, changing trip or bag limits when the annual catch target or some percentage of the annual catch limit is reached, or other appropriate management measures.

If an ACL has been exceeded, the Council must be able to make this determination as early as possible and then quickly implement accountability measures to address the overage and underlying cause of the overage. Actions that the Council could authorize NMFS to take as post-season accountability measures can include changing the season length, changing trip or bag limits, or other appropriate management measures. For stocks under a rebuilding plan, the NS1 guidance recommends the AM should have some overage adjustment that reduces the ACL in the following year by the full amount of the overage, unless the best scientific information available shows that a reduced overage adjustment, or no adjustment, is needed to mitigate the effects of the overages (50 CFR 600.310(g)(3)).

The NS1 guidance also includes a caveat allowing AMs to be based on multiyear averaging for stocks with variable annual catches or a lack of reliable catch data (50 CFR 600.310(g)(4)). To use these types of AMs, the Council would need to justify the need for landings to be averaged. This type of AM has been used for the recreational sector to manage gray triggerfish and groupers.

2.9.1 Action 9.1. Accountability Measures for the Commercial Sector

Alternative 1. No action. Do not establish accountability measures (AM) in this amendment for stocks that do not currently have AMs.

Alternative 2. For non-IFQ fisheries, if annual landings for the commercial sector as estimated by the Southeast Fisheries Science Center (SEFSC), reach or are projected to reach the ACL for that year, the Assistant Administrator (AA) for Fisheries shall file a notification with the Office of the Federal Register to close the commercial sector for the remainder of the fishing year. If despite such a closure, annual landings for the commercial sector exceed the ACL for a given fishing year:

Option a. the AA shall file a notification with the Office of the Federal Register to implement temporary regulations consistent with actions allowed under framework in the following year to limit harvest to the ACL.

Option b. the Council shall request the AA to file a notification with the Office of the Federal Register to implement temporary regulations as defined under framework in the following year to limit harvest to the ACL. If the Council does not make a recommendation, the AA shall file a notification with the Office of the Federal Register to close the commercial fishery once the quota or ACL for that fishing year is met.

Alternative 3. For non-IFQ fisheries, divide the fishing year into in-season quarters with the total ACL for a species or species group allocated between the quarters. If a quarterly allocation of ACL is reached or projected to be reached by the SEFSC, the AA shall issue a notice closing the commercial sector for the rest of quarter. If the quarterly allocation is exceeded, the amount the allocation is exceeded will be subtracted from the subsequent quarter. If the quarterly allocation is not exceeded, the unharvested portion of the allocation will be added to the next quarter's allocation.

Alternative 4. For non-IFQ fisheries, divide the fishing year in half with the total ACL for a species or species group allocated between the two 6 month intervals. If more than half of the ACL has been harvested or projected to be harvested after 6 months based on estimates from the SEFSC, the Council shall request the AA for Fisheries to file a notification with the Office of the Federal Register to implement temporary regulations as defined under framework for the rest of the fishing year to limit harvest such that the ACL is not exceeded. Once annual landings for the commercial sector as estimated by the SEFSC reach or are projected to reach the quota or ACL for that year, the AA shall file a notification with the Office of the Federal Register to close the commercial fishery for the remainder of the fishing year.

Alternative 5. For non-IFQ fisheries, if a stock is under a rebuilding plan and the ACL for the fishing year is exceeded, an overage adjustment is invoked reducing the ACL in the subsequent year. The overage adjustment incurred by the commercial sector is equal to:

Option a. the full amount of the overage, unless the best scientific information available shows that a reduced overage adjustment, or no adjustment, is needed to mitigate the effects of the overage.

Option b. the amount the ACL is exceeded weighted by some measure of stock productivity or susceptibility to overfishing (e.g., p* or PSA).

Option c. 110% of the overage amount.

Alternative 6. For non-IFQ fisheries, if a stock is not overfished and the ACL for the fishing year is exceeded, an overage adjustment is invoked reducing the ACL in the subsequent year. The overage adjustment incurred by the commercial sector is equal to:

Option a. the full amount of the overage, unless the best scientific information available shows that a reduced overage adjustment, or no adjustment, is needed to mitigate the effects of the overage.

Option b. zero pounds unless the overage is due to overfishing by the commercial sector, at which point the overage adjustment would be sufficient to minimize the risk of overfishing in the following year.

Alternative 1 (no action) would not put in place any new commercial AM. Species with AMs include red snapper, red grouper, gag, shallow water grouper, deepwater grouper, tilefish, greater amberjack, and gray triggerfish. Red snapper, gag, shallow water grouper, deepwater grouper, and tilefish are currently managed under an IFQ program. Greater amberjack and gray triggerfish use season closures should ACLs be projected to be met or exceeded. Under this alternative, other species would need to be managed through the use of regulatory or plan amendments. Because these management vehicles can take over a year to implement a rule constraining harvest, they are impractical to use as an AM.

Alternative 2 contains both an in-season and post-season AMs should annual landings reach or surpass the ACL. If landings within a year indicate the commercial ACL will be reached, the AA has the ability to close the commercial sector of the fishery through a notification with the Office of the Federal Register. If it appears the ACL has been exceeded within a fishing year, two options are provided to control harvest in the subsequent year to reduce the likelihood the ACL would be exceeded. **Option a** would allow the AA to implement management measures consistent with those allowed under framework (Action 7) to limit harvest to a level where the ACL would not be exceeded. These measures would be implemented through a notification with the Office of the Federal Register Measures and could include closing the commercial sector once the ACL is met or projected to be met, or limiting effort through trip limits, season closures, or size limits. **Option b** would allow the Council to review possible management measures to control harvest including season closures, trip limits, size limits, and other management measures authorized under framework. After evaluating their options, the Council in a letter to the AA would request the implementation of specific temporary management measures. The AA would implement the measures through a notification with the Office of the Federal Register. If the Council did not request any management measures, then the AA through a notification with the Office of the Federal Register would close the commercial sector once the ACL is met or projected to be met.

This alternative is advantageous by providing both in-season and post-season AMs to constrain harvest if it appears ACLs could be or are exceeded. Because these temporary measures could quickly be put into effect through a notification with the Office of the Federal Register, the measures could be quickly made effective. Under both **Options a and b**, measures could be customized to fit the needs of the commercial sector. For example, it might be preferable for the sector to have a trip limit rather than a season closure to allow fishing to occur through the end of the fishing year. The options differ in that under **Option a**, only the AA would need to make the determination on what measures should be applied. Under **Option b**, the AA would need to work with the Council to develop measures, unless the Council made no recommendation. With no recommendation, the AA's only option would be to close the fishery if it appeared the ACL would be met.

Alternatives 3 and 4 are similar because they break the fishing year into segments, each with its own sub-ACLs. The sum of these sub-ACLs would be equal to the sector's ACL. Under **Alternative 3**, the fishing year would be split into quarters (3 months) with a one fourth of the quota or ACL being awarded to each quarter². If the ACL allocation within a quarter were to be reached, the fishery would close. The fishery would resume during the following quarter until that quarter's ACL allocation was filled, and so on. This type of ACL partitioning would allow the fishery to remain open over the course of the year with some limited closures. A problem with splitting the year into quarters is there are delays in reporting by dealers of up to two weeks that could cause a sub-ACL to be overrun. Any sub-ACL overruns or underharvest would be applied to the following quarter's sub-ACL. Any underharvest by year's end would not be added to the next year's quota or ACL. **Alternative 4** is similar to **Alternative 3** except it splits the year in half rather than into quarters. This would reduce the problem of sub-ACL overruns due to reporting delays of landings data.

Alternatives 5 and 6 address overages if an ACL is exceeded by using an overage adjustment where the following year's ACL would be reduced by a certain amount. This is particularly important in cases where a stock is rebuilding. Any overage could reduce the stock size such that the ability of the stock to recover within its rebuilding timeframe is compromised. Therefore, reducing the ACL in the following year (overage adjustment) is an important consideration for overfished stocks and is recommended in National Standard 1 Guidance (50 CFR 600.310(g)(4)).

Alternative 5 provides three options for overage adjustments for overfished stocks. **Option a** would simply require any overage to be subtracted from the ACL in the subsequent year if the ACL were exceeded unless scientific information indicated some lesser amount was needed to mitigate the effects of the overage. Because different species have different life history characteristics, each species has varying susceptibilities to becoming overfished. **Option b** would use a weighting factor to be applied to the overage based on some measure of either stock productivity or its susceptibility to overfishing (e.g., p^* or stock productivity analysis). The weighting factor would be designed such that the lower a stock's productivity or the greater the susceptibility to overfishing, the greater the overage adjustment would be. The last option, **Option c**, would apply an overage adjustment greater than the overage. Reducing the subsequent year's ACL beyond the overage amount would supply the stock some relief from the

² Note the fishing year could be divided into other fractions and the quota or ACL could be distributed based on different criteria (e.g., proportionally based on average landings).

overharvest and would increase the likelihood the stock recovers within the rebuilding timeframe. Currently **Option c** is set at 110% of the overage as an example. The actual amount could be changed to better reflect the characteristics of a fishery as these AMs are further developed. It should be noted that **Options b and c** exceed the requirements in the National Standard 1 guidance.

Alternative 6 provides two options for overage adjustments for stocks not overfished. Overage adjustments are not necessarily needed for healthy stocks; however, if overages to an ACL occur, particularly due to overfishing, the stock condition could be diminished. This is particularly important for less productive stocks. Therefore, an overage adjustment may be desirable.

Option a, like **Alternative 5, Option a**, simply requires any overage to be subtracted from the ACL in the following year if the ACL were exceeded unless scientific information indicated some lesser amount was needed to mitigate the effects of the overage. **Options b** requires a overage adjustment only if the overage is a result of overfishing. This might be evident if the commercial sector's harvest exceeds its allocation for a species if applied to the OFL. If the overage is due to overfishing, the full amount of the overage would be used in adjusting the ACL.

2.9.2 Action 9.2 Accountability Measures for the Recreational Sector

Alternative 1. No action. Do not establish an accountability measures in this amendment for the recreational sector for stocks that do not currently have accountability measures.

Alternative 2. The trigger for accountability measures is when the ACL is exceeded based upon:

Option a. a single year of landings beginning with landings from 2011.

Option b. a single year of landings beginning with landings from 2011, a 2-year average of landings in 2012 (average of 2011+2012) compared to the 2011-2012 two year average of ACLs, then a 3-year average of landings in 2013 (average of 2011+2012+2013) compared to the equivalent 3-year average of ACLs and thereafter (i.e., average of 2012-2014, 2013-2015, 2014-2016, etc.). If in any year the ACL is reduced, the sequence of future ACLs will:

Sub-option i. continue using 3-year averages.

Sub-option ii. begin again starting with a single year of landings for that year, followed by a 2-year average for the next year, and a 3-year average in the third year and thereafter.

Alternative 3. If annual landings for the recreational sector as estimated by the Southeast Fisheries Science Center (SEFSC) exceed the ACL trigger before the year ends, the Assistant Administrator (AA) for Fisheries shall file a notification with the Office of the Federal Register to close the recreational sector for the remainder of the fishing year. If annual landings for the recreational sector as estimated by the SEFSC are found to exceed the ACL trigger for given fishing year:

Option a. the AA shall file a notification with the Office of the Federal Register to close the recreational sector once the ACL for the following year is projected to be met.

Option b. the Council shall request the AA to file a notification with the Office of the Federal Register to implement temporary regulations as defined under framework in the following year to limit harvest to the ACL. If the Council does not issue a request, the AA shall file a notification with the Office of the Federal Register to close the recreational sector once the ACL for the following year is projected to be met.

Alternative 4. If the estimated harvest by the SEFSC from January through April (waves 1 and 2), exceeds the average landings of this time period for the past five years by more than 20%*, the Council shall request the AA to file a notification with the Office of the Federal Register to implement temporary regulations as defined under framework for the rest of the fishing year to reduce effort such that the likelihood the ACL is exceeded is minimized.

Alternative 5. If a stock is undergoing rebuilding and the ACL for a fishing year is exceeded, an overage adjustment measure is invoked reducing the ACL in the subsequent year. The overage adjustment incurred by the recreational sector is equal to:

Option a. the full amount of the overage, unless the best scientific information available shows that a reduced overage adjustment, or no adjustment, is needed to mitigate the effects of the overage.

Option b. the amount the ACL is exceeded weighted by some measure of stock productivity or susceptibility to overfishing (e.g., p* or PSA).

Option c. 110% of the overage amount.

Alternative 6. If a stock is not overfished and the ACL for the fishing year is exceeded, an overage adjustment measure is invoked reducing the ACL in the subsequent year. The overage adjustment incurred by the recreational sector is equal to:

Option a. the full amount of the overage, unless the best scientific information available shows that a reduced overage adjustment, or no adjustment, is needed to mitigate the effects of the overage.

Option b. zero pounds unless the overage is due to overfishing by the commercial sector, at which point the overage adjustment would be sufficient to minimize the risk of overfishing in the following year.

*Note this value is a placeholder. Some other value may be determined to be more appropriate.

Discussion:

Alternative 1 (no action) would not put in place any new recreational accountability measures. Species with accountability measures include red snapper, red grouper, gag, greater amberjack, and gray triggerfish. Red snapper are managed by a recreational quota which is tied to a fishing season. Greater amberjack are managed such that if the recreational annual share of quota is met, the fishing season is closed. If the recreational annual share of quota is exceeded, the ACL for the subsequent year is reduced by the overage amount and the season is closed once that reduced ACL is met. For gag, red grouper, and gray triggerfish, the ACL trigger is based on an average of three years with the season length reduced should the ACL be exceeded. Under this alternative, other species would need to be managed through the use of regulatory or plan amendments. Because these management vehicles can take well over a year to implement a rule constraining harvest, they are impractical to use as accountability measures.

Alternative 2 defines how the triggers for accountability measures are applied relative to the ACL. **Option a** would set the trigger based on one year while **Option b** sets it based on average landings of three years, respectively. Under **Option b**, in 2011, landings would be compared only to the 2011 ACL to determine if accountability measures should be implemented. In 2012, average landings for 2011-2012 would be compared to the average of the 2011-2012 ACLs. In 2013, average landings for 2011-2013 would be compared to the average of the 2011-2013 ACLs.

Thereafter, three year running average landings would then be compared to three year running average ACLs for the equivalent years until a subsequent amendment or framework action is implemented. By using multiyear landings averages under **Option b**, year-to-year fluctuations in harvests could occur without necessarily triggering accountability measures. These multi-year averages are allowed under the national standard guidelines for stocks with “highly variable annual catches and lack reliable in-season or annual data on which to base accountability measures.” Because recreational harvests are estimated from fishing surveys, this type of accountability measure trigger would be appropriate for the recreational sector in some fisheries.

Sub-options i and ii determine what happens if an ACL is reduced. If this reduction is in response to a change in stock status, the new ACL could be exceeded if underharvest occurred in the preceding two years keeping the trigger below the new ACL. This underharvest could be a result of the change in stock status and if not addressed, could have a negative effect on the stock. **Sub-option i** would allow the ACL to be adjusted based on continued averaging of three years of harvest and would not address the situation described above. **Sub-option ii** would reset the clock so that the new ACL would be compared the harvest for year 1 under the new ACL, etcetera.

Alternative 3 is similar to **Action 2.9.1, Alternative 2** for the commercial accountability measures. It contains both in-season and post-season accountability measures should annual landings reach or surpass the ACL. If landings within a year indicate the recreational quota or ACL would be reached, the AA has the ability to close the recreational sector of the fishery through a notification with the Office of the Federal Register. However, because recreational harvests are estimated from recreational surveys, the time lag in providing useful estimates of harvests may not be available until after the fishing year ends. If the ACL has been exceeded, two options are provided to control harvest in the subsequent year to reduce the likelihood the ACL would be exceeded. **Option a** would allow the AA to implement management measures consistent with those allowed under framework (Action 7) to limit harvest to a level where the ACL would not be exceeded. These measures would be implemented through a notification with the Office of the Federal Register Measures and could include closing the recreational sector once the ACL is met or projected to be met, or limiting effort through trip limits, season closures, or size limits. **Option b** would allow the Council to review possible management measures to control harvest including season closures, trip limits, size limits, and other management measures authorized under framework. After evaluating their options, the Council in a letter to the AA would request the implementation of specific temporary management measures. The AA would implement the measures through a notification with the Office of the Federal Register. If the Council did not request any management measures, then the AA through a notification with the Office of the Federal Register would close the commercial sector once the ACL is met or projected to be met.

This alternative is advantageous because it provides both in-season and post-season accountability measures to constrain harvest if it appears ACLs could be or are exceeded. Because these temporary measures could quickly be put into effect through a notification with the Office of the Federal Register, the measures could be quickly made effective. Under both **Options a and b**, measures could be customized to fit the needs of the recreational sector. For example, it might be preferable for the sector to have a bag limit decrease rather than a season closure to allow fishing to occur through the end of the fishing year. The options differ in that under **Option a**, only the AA would need to make the determination on what measures should be applied. Under **Option b**, the AA would need to work with the Council to develop measures,

unless the Council made no recommendation. With no recommendation, the AA's only option would be to close the fishery if it appeared the ACL would be met.

Alternative 4 would provide an in-season accountability measure for the recreational sector of fisheries. Because of the lag time processing recreational survey to estimate landings for different waves (data available at least two months after a two-month wave ends), estimated landings for the year through a particular wave) would be compared to average landings for this time period over the past five years. If the landings were above the average by a certain amount, then the Council would request the AA put temporary measures in effect through a notice in the Federal Register. The example used in **Alternative 4** would use landings through Wave 2 (January-April) which should be available by July. If those landings exceeded the average landings from the past five years through Wave 2 by 20%, then the Council would request the AA put in place temporary regulations to reduce fishing effort such that the ACL was not exceeded. These measures could include a reduction in bag limits or a season closure. Any underharvest of the annual ACL at the end of a fishing year would not be added to the next year's ACL.

Alternatives 5 and 6 address overages if an ACL is exceeded by using an overage adjustment where the following year's ACL would be reduced by a certain amount. This is particularly important in cases where a stock is rebuilding. Any overage could reduce the stock size such that the ability of the stock to recover within its rebuilding timeframe is compromised. Therefore, reducing the ACL in the following year (overage adjustment) is an important consideration for overfished stocks and is recommended in National Standard 1 Guidance (50 CFR 600.310(g)(4)).

Alternative 5 provides three options for overage adjustments for overfished stocks. **Option a** would simply require any overage to be subtracted from the ACL in the subsequent year if the ACL were exceeded unless scientific information indicated some lesser amount was needed to mitigate the effects of the overage. Because different species have different life history characteristics, each species has varying susceptibilities to becoming overfished. **Option b** would use a weighting factor to be applied to the overage based on some measure of either stock productivity or its susceptibility to overfishing (e.g., p^* or stock productivity analysis). The weighting factor would be designed such that the lower a stock's productivity or the greater the susceptibility to overfishing, the greater the overage adjustment would be. The last option, **Option c**, would apply an overage adjustment greater than the overage. Reducing the subsequent year's ACL beyond the overage amount would supply the stock some relief from the overharvest and would increase the likelihood the stock recovers within the rebuilding timeframe. Currently **Option c** is set at 110% of the overage as an example. The actual amount could be changed to better reflect the characteristics of a fishery as these accountability measures are further developed. It should be noted that **Options b and c** exceed the requirements in the National Standard 1 guidance.

Alternative 6 provides two options for overage adjustments for stocks not overfished. Overage adjustments are not necessarily needed for healthy stocks; however, if overages to an ACL occur, particularly due to overfishing, the stock condition could be diminished. This is particularly important for less productive stocks. Therefore, an overage adjustment may be desirable.

Option a, like **Alternative 5, Option a**, simply requires any overage to be subtracted from the ACL in the following year if the ACL were exceeded unless scientific information indicated some lesser amount was needed to mitigate the effects of the overage. **Option b** requires a overage adjustment only if the overage is a result of overfishing. This might be evident if the recreational sector's harvest exceeds its allocation for a species if applied to the OFL. If the overage is due to overfishing, the full amount of the overage would be used in adjusting the ACL.

2.10 ABC Statement for Penaeid Shrimp Species

Section 303(a)(15) of the Magnuson-Stevens Act states that it “shall not apply to a fishery for species that has a life cycle of approximately 1 year unless the Secretary has determined the fishery is subject to overfishing of that species”. This exception applies to a stock for which the average length of time it takes for an individual to produce a reproductively active offspring is approximately 1 year and that individual has only one breeding season in its lifetime. While exempt from the annual catch limit and accountability measure requirements, fishery management plans or plan amendments for these stocks must have status determination criteria, maximum sustainable yield, optimum yield, acceptable biological catch, and an acceptable biological catch control rule. Shrimp Amendment 13 (implemented in 2006) and the 1999 Generic Sustainable Fisheries Act Amendment established status determination criteria, maximum sustainable yield, and optimum yield, all of which were based on recommendations from, or review by, the Scientific and Statistical Committee. However, these amendments did not establish an overfishing limit, acceptable biological catch, or ABC control rule.

In Shrimp Amendment 13, the Council chose not to use a point estimate of maximum sustainable yield due to the uncertainty with these estimates and the potential fluctuations in catch due to the environmental sensitivity of these stocks. For penaeid (brown, white, and pink) shrimp stocks, the council determined it was appropriate to establish a maximum sustainable yield control rule that would relate maximum sustainable yield in terms of catch to a quantifiable level of escapement in each stock, where a proxy for biomass at maximum sustainable yield is established as the minimum parent stock size known to have produced maximum sustainable yield the following year. Shrimp harvests can exceed a long-term average MSY for perhaps several years without damage to stock productivity. Conversely, harvests below MSY might occur during periods of low recruitment or when the fishery does not target a species to the extent possible during a given year.

Shrimp Amendment 13 specified maximum sustainable yield for each of the three species as a range, based on the lowest and highest landings from 1990-2000. In selecting this range, the Council noted in Amendment 13 that under optimum environmental conditions and maximum effort the maximum probable catch for brown, white, and pink shrimp could be 216 million pounds of tails. This optimal level could be analogous to an overfishing limit.

The three penaeid shrimp species are considered to be a species assemblage for purposes of setting annual catch limits and associated catch levels. The summed maximum values for the maximum sustainable yield ranges are slightly lower at 194 million pounds of tails. This sum of maximum values for the ranges of maximum sustainable yield for each species accounts for the environmental variability with maximum sustainable yield reduced to account for the environmental variability/uncertainty. Acceptable biological catch can be set equal to it, and is unlikely to exceed OFL.

Acceptable biological catch cannot be specified as a range. The Council views acceptable biological catch as the equivalent of maximum sustainable yield in this context, as there is no basis upon which to vary acceptable biological catch from maximum sustainable yield. The Council has determined setting acceptable biological catch equal to this sum of the maximum values associated with the harvest of each species is appropriate and accounts for annual environmental variability, while still achieving an escapement rate to produce a sufficiently large parent stock size that will provide adequate recruitment for next year’s crop. The National

Marine Fisheries Service has monitored the parent stock levels for all three penaeid species since 1970. The parent stock numbers for all three penaeid species have remained above the overfished threshold throughout this monitoring period. These stocks are not considered overfished or undergoing overfishing.

The acceptable biological catch control rule for the penaeid shrimp stock assemblage is that the acceptable biological catch is equal to the sum of the maximum sustainable yields (or upper limit of a range of maximum sustainable yield) for all of the stocks in the assemblage, provided that the sum remains below the overfishing limit of 216 million pounds of tails. If a stock assessment results in an acceptable biological catch that would equal or exceed the overfishing limit, then the acceptable biological catch will remain at its previous level until an analyses of the overfishing limit can be conducted and either the overfishing limit of acceptable biological catch revised so that the acceptable biological catch remains sufficiently below the overfishing limit to account for environmental variability and scientific uncertainty.

In summary:

- Brown, white and pink shrimp are grouped into a penaeid shrimp assemblage.
- Overfishing limit for penaeid shrimp equals 216 million pounds of tails.
- Acceptable biological catch for penaeid shrimp equals 194 million pounds of tails
- ABC control rule for penaeid shrimp is that the acceptable biological catch equals the sum of the maximum sustainable yields (or upper limit of a range of maximum sustainable yield) for all of the stocks in the assemblage, provided that the sum remains below the overfishing limit. If a stock assessment results in an acceptable biological catch that would equal or exceed the overfishing limit, then the acceptable biological catch will remain at its previous level until an analysis of the overfishing limit can be conducted and either the overfishing limit of acceptable biological catch revised.

These proposed definitions of overfishing limit and acceptable biological catch will be reviewed by the Scientific and Statistical Committee for their acceptance or revision prior to the Council taking final action on this amendment.

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4. Appendices

4.1 Terms and Definitions

Maximum Sustainable Yield (MSY) is the largest long-term average catch or yield that can be taken from a stock or stock complex under prevailing ecological, environmental conditions and fishery technological characteristics (e.g., gear selectivity), and the distribution of catch among fleets.

MSY fishing mortality rate (F_{MSY}) is the fishing mortality rate that, if applied over the long term, would result in MSY.

MSY stock size (B_{MSY}) means the long-term average size of the stock or stock complex, measured in terms of spawning biomass or other appropriate measure of the stock's reproductive potential that would be achieved by fishing at F_{MSY} .

MSY for stock complexes. MSY should be estimated on a stock-by-stock basis whenever possible. However, when MSY cannot be estimated for each stock in a stock complex, then MSY may be estimated for one or more indicator stocks for the complex or for the complex as a whole. When indicator stocks are used, the stock complex's MSY could be listed as “unknown,” while noting that the complex is managed on the basis of one or more indicator stocks that do have known stock-specific MSYs, or suitable proxies, as described in paragraph

(e)(1)(iv) of this section. When indicator stocks are not used, MSY, or a suitable proxy, should be calculated for the stock complex as a whole.

Status determination criteria (SDC) mean the quantifiable factors, MFMT, OFL, and MSST, or their proxies, that are used to determine if overfishing has occurred, or if the stock or stock complex is overfished. Magnuson-Stevens Act (section 3(34)) defines both “overfishing” and “overfished” to mean a rate or level of fishing mortality that jeopardizes the capacity of a fishery to produce the MSY on a continuing basis. To avoid confusion, this section clarifies that “overfished” relates to biomass of a stock or stock complex, and “overfishing” pertains to a rate or level of removal of fish from a stock or stock complex.

Overfishing (to overfish) occurs whenever a stock or stock complex is subjected to a level of fishing mortality or annual total catch that jeopardizes the capacity of a stock or stock complex to produce MSY on a continuing basis.

- Exceeding the MFMT for a period of 1 year or more constitutes overfishing. (CFR 600.310(e)(2)(ii)(A)(1))
- Should the annual catch exceed the annual OFL for 1 year or more, the stock or stock complex is considered subject to overfishing. (CFR 600.310(e)(2)(ii)(A)(2))

Maximum fishing mortality threshold (MFMT) means the level of fishing mortality (F), on an annual basis, above which overfishing is occurring. The MFMT or reasonable proxy may be expressed either as a single number (a fishing mortality rate or F value), or as a function of spawning biomass or other measure of reproductive potential.

Overfishing limit (OFL) means the annual amount of catch that corresponds to the estimate of MFMT applied to a stock or stock complex’s abundance and is expressed in terms of numbers or weight of fish. The OFL is an estimate of the catch level above which overfishing is occurring.

Overfished. A stock or stock complex is considered “overfished” when its biomass has declined below a level that jeopardizes the capacity of the stock or stock complex to produce MSY on a continuing basis.

Minimum stock size threshold (MSST) means the level of biomass below which the stock or stock complex is considered to be overfished.

- The MSST or reasonable proxy must be expressed in terms of spawning biomass or other measure of reproductive potential. (CFR 630.310(e)(2)(ii)(B))
- To the extent possible, the MSST should equal whichever of the following is greater: One-half the MSY stock size, or the minimum stock size at which rebuilding to the MSY level would be expected to occur within 10 years, if the stock or stock complex were exploited at the MFMT (CFR 630.310(e)(2)(ii)(B))

Approaching an overfished condition. A stock or stock complex is approaching an overfished condition when it is projected that there is more than a 50 percent chance that the biomass of the stock or stock complex will decline below the MSST within two years.

Optimum yield (OY). Magnuson-Stevens Act section (3)(33) defines “optimum,” with respect to the yield from a fishery, as the amount of fish 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; that is prescribed on the basis of the MSY

from the fishery, as reduced by any relevant economic, social, or ecological factor; and, in the case of an overfished fishery, that provides for rebuilding to a level consistent with producing the MSY in such fishery. OY may be established at the stock or stock complex level, or at the fishery level.

Catch is the total quantity of fish, measured in weight or numbers of fish, taken in commercial, recreational, subsistence, tribal, and other fisheries. Catch includes fish that are retained for any purpose, as well as mortality of fish that are discarded.

Acceptable biological catch (ABC) is a level of a stock or stock complex's annual catch that accounts for the scientific uncertainty in the estimate of OFL and any other scientific uncertainty, and should be specified based on the ABC control rule.

ABC control rule means a specified approach to setting the ABC for a stock or stock complex as a function of the scientific uncertainty in the estimate of OFL and any other scientific uncertainty.

Annual catch limit (ACL) is the level of annual catch of a stock or stock complex that serves as the basis for invoking AMs. ACL cannot exceed the ABC, but may be divided into sector-ACLs.

Annual catch target (ACT) is an amount of annual catch of a stock or stock complex that is the management target of the fishery, and accounts for management uncertainty in controlling the actual catch at or below the ACL. ACTs are recommended in the system of accountability measures so that ACL is not exceeded.

ACT control rule means a specified approach to setting the ACT for a stock or stock complex such that the risk of exceeding the ACL due to management uncertainty is at an acceptably low level.

4.2 Overview

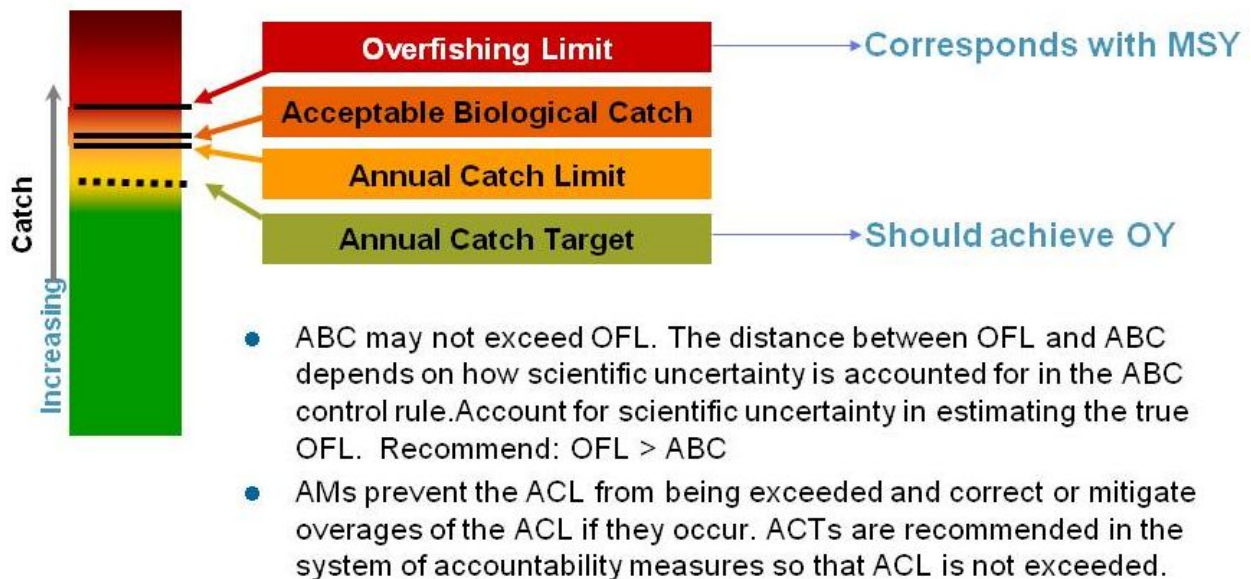


Figure 4.2. xxxxxx

The setting of an ACL begins with specifying an OFL. This is the yield above which overfishing occurs. It corresponds to fishing at the MFMT which is usually the fishing mortality rate corresponding to MSY (F_{MSY}). When sufficient data exists to conduct an assessment the OFL is set based on a stock assessment. When there is insufficient data for an assessment the OFL is based on the Scientific and Statistical Committee's (SSC) best estimate of the catch level when fishing at MFMT. In the latter case, an OFL control rule may be developed as part of this amendment to guide the SSC in setting OFL. OFL is similar to MSY, except that OFL is the annual estimate of maximum yield which can fluctuate from year to year, whereas MSY is a long-term average.

Once an OFL is specified, an ABC level is recommended by the Council's SSC. The ABC is based on the OFL as reduced by scientific uncertainty.

OFL and ABC are set by scientists, whereas the next two reference points, ACL and, optionally, ACT, are set by managers.

The ACL is set by the Council at a level which cannot exceed the ABC. The purpose of an ACL is to set a catch level that triggers AMs to prevent the ABC from being exceeded or to correct for an overage in the prior year. While it is possible to set OFL, ABC and ACL all equal to each other, NMFS will assume that this will lead to overfishing unless justification can be provided why it won't.

ACT is optional, but if used, is analogous to the OY level in the same way that OFL is analogous to the MSY level. If an ACT is specified, it should be set at a level that takes into account management uncertainty and provides a low likelihood of the ACL being exceeded. If ACTs are not used, then management uncertainty must be incorporated into the AMs. However, ACTs can be integrated into AMs.

Scientific Uncertainty vs. Management Uncertainty

The NS1 Guidelines discuss two types of uncertainty that must be taken into consideration when setting catch levels, scientific uncertainty and management uncertainty. The two types of uncertainty are described, and are applied at different points in the process.

Scientific uncertainty includes uncertainty around the estimate of a stock's biomass and its MFMT. Stock assessment models have scientific uncertainty associated with the validity of assumptions used in the model, and with the accuracy and variability of the data used.

Management uncertainty occurs because of the lack of sufficient information about catch (e.g., late reporting, underreporting and misreporting of landings or bycatch). There are two sources of management uncertainty:

1. Uncertainty in the ability of managers to constrain catch so the ACL is not exceeded. This relates to the difference between the actual catch and the amount of catch that was expected to result from the management measures applied to a fishery.
2. Uncertainty in quantifying the true catch amounts (i.e., estimation errors). Errors can be caused by untimely catch data that prevents in-season management measures from being effective, from underreporting, late reporting and misreporting, or from inaccurate assumptions about discard mortality of a stock in commercial and recreational fisheries.

The basic relationship of these parameters can be shown as:

$$\text{OFL} \geq \text{ABC} \geq \text{ACL} \geq \text{ACT}$$

OFL and ABC are single values that apply to the entire stock. ACLs and ACTs can be divided into sector ACLs and ACTs as long as the sum of the ACLs does not exceed the ABC and the sum of the ACTs does not exceed the ACL. However, for some stocks the landings data is highly variable, which could make any division of ACL into sector-ACLs difficult and controversial.

AMs are pre-arranged actions triggered by the ACL to prevent the ACL from being exceeded, or to implement mitigating actions if ACLs are exceeded. AMs can be either in-season (such as monitoring and closing a fishery to prevent its ACL from being exceeded), or post-season (such as shortening a fishing season in the subsequent year if the ACL was exceeded in the current year).

This scoping document introduces and examines concepts involved in establishing ACLs, AMs and associated parameters.

4.3 Species Listed in Gulf Council FMPs

ACLs and AMs for species in joint FMPs will be set through separate joint amendments.

Coastal Migratory Pelagics FMP (Gulf and South Atlantic Councils joint plan)

Species in the Management Unit

king mackerel	<i>Scomberomorus cavalla</i>
Spanish mackerel	<i>Scomberomorus maculatus</i>
cobia	<i>Rachycentron canadum</i>

Species in the Fishery but Not in the Management Unit

cero	<i>Scomberomorus regalis</i>
little tuny	<i>Euthynnus alletteratus</i>
dolphin	<i>Coryphaena hippurus</i>
bluefish	<i>Pomatomus saltatrix</i> (Gulf of Mexico only)

Red Drum FMP

Species in the Management Unit

red drum	<i>Sciaenops ocellatus</i>
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Reef Fish FMP

Species in the Management Unit

Snappers - Lutjanidae Family

queen snapper	<i>Etelis oculatus</i>
mutton snapper	<i>Lutjanus analis</i>
schoolmaster	<i>Lutjanus apodus</i>
blackfin snapper	<i>Lutjanus buccanella</i>
red snapper	<i>Lutjanus campechanus</i>
cubera snapper	<i>Lutjanus cyanopterus</i>
gray (mangrove) snapper	<i>Lutjanus griseus</i>
dog snapper	<i>Lutjanus jocu</i>
mahogany snapper	<i>Lutjanus mahogoni</i>
lane snapper	<i>Lutjanus synagris</i>
silk snapper	<i>Lutjanus vivanus</i>
yellowtail snapper	<i>Ocyurus chrysurus</i>
wenchman	<i>Pristipomoides aquilonaris</i>
vermilion snapper	<i>Rhomboplites aurorubens</i>

Groupers - Serranidae Family

rock hind	<i>Epinephelus adscensionis</i>	
speckled hind	<i>Epinephelus drummondhayi</i>	(deep-water grouper)
yellowedge grouper	<i>Epinephelus flavolimbatus</i>	(deep-water grouper)
red hind	<i>Epinephelus guttatus</i>	
goliath grouper	<i>Epinephelus itajara</i>	(protected species)
red grouper	<i>Epinephelus morio</i>	

misty grouper	<i>Epinephelus mystacinus</i>	(deep-water grouper)
warsaw grouper	<i>Epinephelus nigritus</i>	(deep-water grouper)
snowy grouper	<i>Epinephelus niveatus</i>	(deep-water grouper)
Nassau grouper	<i>Epinephelus striatus</i>	(<u>protected species</u>)
black grouper	<i>Mycteroperca bonaci</i>	
yellowmouth grouper	<i>Mycteroperca interstitialis</i>	
gag	<i>Mycteroperca microlepis</i>	
scamp	<i>Mycteroperca phenax</i>	
yellowfin grouper	<i>Mycteroperca venenosa</i>	

Marbled grouper (*Epinephelus inermis*) landings are included in NMFS landings, but are not listed in the regulations as a grouper (50 CFR Part 622, Appendix A, Table 3).

Tilefishes - Malacanthidae (Branchiostegidae) Family

goldface tilefish	<i>Caulolatilus crysops</i>
blackline tilefish	<i>Caulolatilus cyanops</i>
anchor tilefish	<i>Caulolatilus intermedius</i>
blueline tilefish	<i>Caulolatilus microps</i>
tilefish	<i>Lopholatilus chamaeleonticeps</i>

Jacks - Carangidae Family

greater amberjack	<i>Seriola dumerili</i>
lesser amberjack	<i>Seriola fasciata</i>
almaco jack	<i>Seriola rivoliana</i>
banded rudderfish	<i>Seriola zonata</i>

Triggerfishes - Balistidae Family

gray triggerfish	<i>Balistes capriscus</i>
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Wrasses - Labridae Family

hogfish	<i>Lachnolaimus maximus</i>
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Sand Perches - Serranidae Family**

sand perch	<i>Diplectrum bivattatum</i>
dwarf sand perch	<i>Diplectrum formosum</i>

** Sand perches are listed as groupers in 50 CFR Part 622, Appendix A, Table 3, but are excluded from regulations that prohibit the use of reef fish for bait, that prohibit harvest in the stressed area using a powerhead, and are excluded from bag limit regulations.

Shrimp FMP

<u>Species in the Management Unit</u>		
***brown shrimp	<i>Penaeus aztecus</i>	(exempt from ACL/AM)
***white shrimp	<i>Penaeus setiferus</i>	(exempt from ACL/AM)
***pink shrimp	<i>Penaeus duorarum</i>	(exempt from ACL/AM)
royal red shrimp	<i>Hymenopenaeus robustus</i>	

*** Species with a life cycle of approximately 1 year are exempt from ACL and AM requirements. This includes all species in the shrimp FMP except royal red shrimp.

Spiny Lobster FMP (Gulf and South Atlantic Councils joint plan)

<u>Species in the Management Unit</u>	
spiny lobster	<i>Panulirus argus</i>
slipper lobster	<i>Scyllarides nodifer</i>

<u>Species in the Fishery but Not in the Management Unit</u>	
spotted spiny lobster	<i>Panulirus argus</i>
smooth tail lobster	<i>Panulirus laeviscauda</i>
Spanish slipper lobster	<i>Scyllarides aequinoctialis</i>

Stone Crab FMP

<u>Species in the Management Unit</u>	
stone crab	<i>Menippe mercenaria</i>
stone crab (Cedar Key north)	<i>Menippe adina</i>

Coral and Coral Reefs FMP (Gulf and South Atlantic Councils joint Plan)

<u>Species in the Management Unit</u>
corals of the class Hydrozoa (stinging and hydrocorals)
corals of the class Anthozoa (sea fans, whips, precious coral, sea pen, stony corals)

Note: The FMP does not list individual coral species comprising the management unit. However, there are 318 species referred to in the FMP as occurring in Gulf of Mexico and/or South Atlantic waters. The list of coral species is available upon request.