

Modifications to Shallow-water Grouper and Deep-water Grouper Management Measures



Draft Options for Amendment 58 to the Fishery Management Plan for Reef Fish Resources of the Gulf of Mexico

August 2024



This is a publication of the Gulf of Mexico Fishery Management Council Pursuant to National Oceanic and Atmospheric Administration Award No. NA20NMF4410007.

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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
APAIS	Access Point Angler Intercept Survey
BiOp	biological opinion
BPA	bycatch practicability analysis
CFpA	net cash flow per angler
CFR	code of federal regulations
CHTS	coastal household telephone survey
Council	Gulf of Mexico Fishery Management Council
CS	consumer surplus
CVA	climate vulnerability analysis
DLMTToolkit	Data Limited Methods Toolkit
DPS	distinct population segment
EA	environmental assessment
EEZ	exclusive economic zone
EFH	essential fish habitat
EFP	exempted fishing permit
EIS	environmental impact statement
EJ	environmental justice
E.O.	executive order
ESA	Endangered Species Act
F	fishing mortality
FES	fishing effort survey
FHS	for-hire survey
FMP	Fishery Management Plan
FMSY	maximum sustainable yield
FWC	Florida Fish and Wildlife Conservation Commission
GRFS	Gulf Reef Fish Survey
GT	grouper-tilefish
Gulf	Gulf of Mexico
HAPC	habitat area of particular concern
HHI	Hertindahl-Hirschman Index
IFQ	individual fishing quota
IPCC	Intergovernmental Panel on Climate Change
IRFA	initial regulatory flexibility analysis
LAPP	Limited Access Privilege Program
LKE	lowest known entity
LQ	local quotient
Magnuson-Stevens Act	Magnuson-Stevens Fishery Conservation and Management Act
MFMT	maximum fishing mortality threshold
MMPA	Marine Mammal Protection Act

mp	million pounds
MPA	marine protected area
MRIP	Marine Recreational Information Program
MRFSS	Marine Recreational Fisheries Statistics Survey
MSST	minimum stock size threshold
MSY	maximum sustainable yield
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	overfishing limit
OST	Office of Science and Technology
OY	optimum yield
PAH	polycyclic aromatic hydrocarbons
PS	producer surplus
PW	product weight
Reef Fish FMP	Fishery Management Plan for Reef Fish Resources in the Gulf of Mexico
RFA	Regulatory Flexibility Act
RFFA	reasonably foreseeable future actions
RG	red grouper
RQ	regional quotient
RIR	regulatory impact review
RS	red snapper
SDC	status determination criteria
Secretary	Secretary of Commerce
SEDAR	Southeast Data and Review
SEFSC	Southeast Fisheries Science Center
SERO	Southeast Regional Office
SMZ	special management zone
SOI	segments of interest
SPR	spawning potential ratio
SSB	spawning stock biomass
SSC	Scientific and Statistical Committee
SRFS	State Reef Fish Survey
SRHS	Southeast Region Headboat Survey
SWG	shallow-water grouper
T	time
TF	tilefish
TL	total length
VOC	volatile organic compounds
ww	whole weight

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CHAPTER 1. INTRODUCTION

1.1 Background

Several species of Gulf of Mexico (Gulf) grouper are currently managed within two distinct complexes: the Other Shallow-water Grouper (SWG) complex and the Deep-water Grouper (DWG) complex. Scamp (*Mycteroperca phenax*), yellowmouth grouper (*Mycteroperca interstitialis*), black grouper (*Mycteroperca bonaci*), and yellowfin grouper (*Mycteroperca venenosa*) are managed under the Other SWG complex. Yellowedge grouper (*Epinephelus flavolimbatus*), snowy grouper (*Hyporthodus niveatus*), warsaw grouper (*Hyporthodus nigritus*), and speckled hind (*Epinephelus drummondhayi*) are managed under the DWG complex. These species were originally assigned to these complexes under the Generic Annual Catch Limits (ACLs) and Accountability Measures (AMs) Amendment to the Fishery Management Plans (FMPs) of the Gulf of Mexico Region (ACL/AM Amendment; GMFMC 2011). Assignment of these species was, at the time, made with respect to where these species occurred in the Gulf environment, and whether it was common for these species to be caught on the same fishing trips. Until recently, none of these eight species had approved peer-reviewed stock assessments available to inform their stock status¹. In 2022, a stock assessment of scamp and yellowmouth grouper was completed (SEDAR 68 2022), which assessed both species together, and passed a peer-review by the Gulf of Mexico Fishery Management Council's (Council) Scientific and Statistical Committee (SSC). The SSC recommended updated status determination criteria (SDC) and catch advice for these two species. To act on these recommendations, the Council initiated work on Amendment 58 to the FMP for the Reef Fish Resources in the Gulf of Mexico (Reef Fish FMP). Following, in 2024, a stock assessment of yellowedge grouper also passed a peer-review by the SSC (SEDAR 85 2023). Likewise, the SSC recommended updated SDC and catch advice for yellowedge grouper. Due to the way in which the Other SWG and DWG are managed, modifications to the management of these species are examined concurrently herein.

The Other SWG and DWG complexes are both managed under respective total complex ACLs, and there is no defined commercial or recreational sector allocation for either complex. However, the commercial sector is apportioned a specified amount of the total complex ACL for each complex as specified in the Generic ACL/AM Amendment, and that apportionment and the associated catch limits are shown in Table 1.1.1. The commercial apportionment was done to allow the commercial sector to operate under the Grouper-Tilefish Individual Fishing Quota (IFQ) program (Amendment 29 to the Reef Fish FMP; GMFMC 2008b). Landings (2000 – 2023) by species for the Other SWG and DWG are shown in Table 1.1.2 and Table 1.1.3, respectively. The recreational landings data used to develop the current catch limits were derived from the Marine Recreational Fisheries Statistics Survey (MRFSS). Recreational landings are now estimated using Marine Recreational Information Program, which includes an Access Point Angler Intercept Survey (APAIS) and Fishing Effort Survey (FES), collectively

¹ Black grouper had last been assessed in 2010 (SEDAR 19), but an assessment attempted in 2017 (SEDAR 48) had to be terminated due to irreconcilable data issues. Thus, no assessment for informing the stock status of black grouper relative to its SDC exists.

referred to as MRIP-FES. MRFSS and MRIP-FES both generate estimates in pounds of fish but those estimates are not directly comparable because they use different scales. Therefore, the total landings shown in Table 1.1.2 cannot be directly compared to the total ACL shown in Table 1.1.1. A depiction of the percentage of commercial landings attributable to each species within each grouper complex is shown in Figure 1.1.1.

Table 1.1.1. Catch limits and buffers by complex and sector for Other SWG and DWG, as established in the Generic ACL/AM Amendment. Values are in millions of pounds (mp) gutted weight (gw). OFL = overfishing limit; ABC = acceptable biological catch. An OFL for Other SWG, and recreational ACLs for both complexes, are presently undefined.

Complex	Year	OFL	ABC (Total ACL)	Comm ACL	Comm Quota	Comm Buffer	Rec ACL
SWG	2015+	undefined	0.710	0.547	0.526	4%	undefined
DWG	2016+	1.113	1.105	1.066	1.024	4%	undefined

Table 1.1.2. Landings for Other SWG by sector from 2000 – 2023. Landings are in lb gw. Data for 2023 are preliminary. Black grouper and yellowfin grouper (YFG) are aggregated for the recreational sector due to data confidentiality requirements. Scamp and yellowmouth grouper (YMG) are aggregated for both sectors because of data confidentiality requirements.

Year		Commercial				Recreational (MRIP-FES)			Total Landings
		Black Grouper	Yellowfin Grouper	Scamp + YMG	Total Comm Landings	Black Grouper + YFG	Scamp + YMG	Total Rec Landings	
2000	Pre-IFQ Years SEFSC Commercial ACL Files (February 2024)	390,587	6,996	44,673	442,256	10,777	47,803	58,580	500,836
2001		346,566	7,225	30,542	384,333	27,371	66,988	94,359	478,692
2002		283,751	7,856	47,543	339,150	34,386	93,232	127,617	466,767
2003		332,134	4,380	40,933	377,447	57,770	190,718	248,488	625,935
2004		354,782	6,258	53,848	414,888	8,256	141,925	150,181	565,069
2005		208,309	6,523	47,052	261,884	179,806	168,590	348,396	610,280
2006		147,329	689	35,980	183,998	1,921	324,857	326,778	510,776
2007		92,189	3,913	61,417	157,519	19,863	115,204	135,067	292,586
2008		65,081	2,464	73,528	141,073	3,984	278,945	282,930	424,003
2009		39,702	1,962	66,812	108,476	87,567	198,979	286,546	395,022
2010	Gulf IFQ Program	20,905	1,394	153,618	175,917	334	92,861	93,195	269,112
2011		34,970	945	149,834	185,749	565	124,482	125,048	310,797
2012		47,537	739	249,826	298,102	51,332	237,195	288,527	586,629
2013		56,750	856	243,129	300,735	5,912	261,809	267,721	568,456
2014		60,555	568	169,125	230,248	826	264,495	265,321	495,569
2015		54,831	442	183,154	238,427	3,807	342,097	345,904	584,331
2016		48,788	709	285,741	335,238	8,182	244,715	252,897	588,135
2017		37,032	152	162,825	200,009	8,817	193,630	202,447	402,456
2018		34,806	440	143,047	178,293	358	233,878	234,236	412,529
2019		25,634	377	114,072	140,083	356	411,764	412,120	552,203
2020		25,345	66	119,043	144,454	2,099	380,593	382,692	527,146
2021		25,899	47	129,982	155,928	199	317,851	318,050	473,978
2022		23,892	54	122,752	146,698	1,215	326,023	327,237	473,935
2023		39,814	61	109,137	149,012	32,744	211,234	243,977	392,989

Sources: Commercial data from SEFSC Commercial ACL Data (March 2024); SERO Catch Share Database (February 2024). Recreational data from SEFSC Recreational MRIP-FES ACL File (MRIP_FES_rec81_23wv6_24Apr24).

Table 1.1.3. Landings for DWG by sector from 2000 – 2023. Landings are in lb gw. Data for 2023 are preliminary.

Year		Commercial					Recreational (MRIP-FES)					Total Landings	
		Snowy Grouper	Speckled Hind	Warsaw Grouper	Yellowedge Grouper	Total Comm Landings	Snowy Grouper	Speckled Hind	Warsaw Grouper	Yellowedge Grouper	Total Rec Landings		
2000	Pre-IFQ Years SEFSC Commercial ACL Files (February 2024)	184,381	64,242	161,543	1,349,383	1,759,549	Confidential					13,917	1,773,466
2001		175,591	62,366	145,278	873,682	1,256,917	2,804	3,131	90,316	1,382	97,633	1,354,550	
2002		134,999	48,220	217,031	925,582	1,325,832	5,778	1,434	61,520	2,178	70,910	1,396,742	
2003		218,137	82,000	265,480	1,291,967	1,857,584	697	13,465	48,588	331	63,080	1,920,664	
2004		180,487	101,745	176,895	1,020,564	1,479,691	3,273	26,016	89,214	1,171	119,673	1,599,364	
2005		182,647	88,636	164,292	918,521	1,354,096	1,771	159	29,522	105,090	136,542	1,490,638	
2006		171,616	64,620	140,662	824,952	1,201,850	1,610	43,455	84,972	2,566	132,604	1,334,454	
2007		175,531	79,784	86,376	1,002,080	1,343,771	1,035	5,402	9,498	2,844	18,779	1,362,550	
2008		199,782	41,187	88,622	946,423	1,276,014	2,426	974	17,434	1,261	22,094	1,298,108	
2009		183,998	68,292	117,695	972,112	1,342,097	1,731	708	42,449	3,235	48,123	1,390,220	
2010	Gulf IFQ Program	90,180	15,359	56,496	443,887	605,922	11,177	14,265	5,507	28,644	59,593	665,515	
2011		132,971	24,925	61,661	558,908	778,465	8,108	2,462	6,621	9,538	26,729	805,194	
2012		168,759	43,344	86,212	667,785	966,100	69,469	4,191	35,329	1,219	110,208	1,076,308	
2013		108,689	34,922	103,074	673,349	920,034	50,297	208	18,774	6,239	75,518	995,552	
2014		159,857	72,241	75,426	773,621	1,081,145	61,282	517	72,897	19,003	153,698	1,234,843	
2015		108,980	55,550	55,502	735,218	955,250	12,174	783	3,636	15,733	32,326	987,576	
2016		94,830	41,151	44,635	709,349	889,965	3,365	14,931	8,773	22,795	49,864	939,829	
2017		87,587	51,061	44,362	677,926	860,936	2,168	345	8,969	4,139	15,621	876,557	
2018		89,416	60,618	35,976	677,310	863,320	6,349	366	55,304	39,501	101,521	964,841	
2019		91,430	67,082	33,590	804,558	996,660	5,408	5,767	3,225	74,516	88,916	1,085,576	
2020		99,072	36,187	22,707	665,406	823,372	4,890	222	18,865	33,754	57,730	881,102	
2021		91,362	41,451	17,419	681,679	831,911	11,899	288	2,216	15,298	29,701	861,612	
2022		76,075	27,776	15,012	461,661	580,524	15,356	843	2,850	19,898	38,946	619,470	
2023		64,877	34,297	12,056	514,547	625,777	10,370	2,885	2,906	52,718	68,879	694,656	

Sources: Commercial data from SEFSC Commercial ACL Data (March 2024); SERO Catch Share Database (February 2024). Recreational data from SEFSC Recreational MRIP-FES ACL File (MRIP_FES_rec81_23wv6_24Apr24).

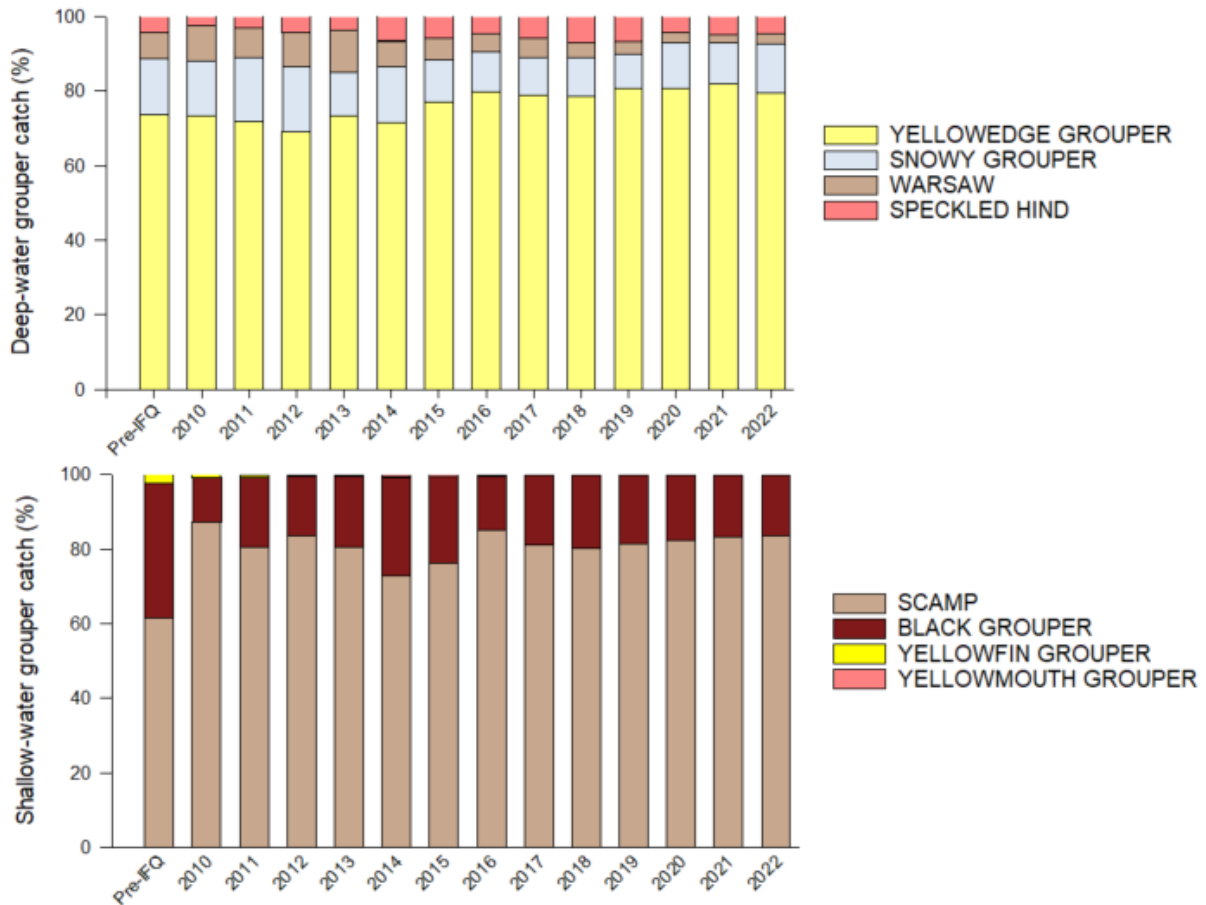


Figure 1.1.1. Percentages of commercial landings by species for the DWG (top) and Other SWG (bottom) complexes from the 2022 Grouper-Tilefish IFQ Program Report². Data for the three years prior to the start of the IFQ program are summarized as “Pre-IFQ”.

Commercial Sector

Commercial harvest of Other SWG and DWG has been managed under the Grouper-Tilefish IFQ program since 2010 (GMFMC 2008b). Anyone commercially fishing for Other SWG or DWG must possess a federal commercial reef fish permit and Other SWG and/or DWG allocation under the IFQ program. IFQ allocation is determined and distributed at the beginning of each calendar year by multiplying a shareholder's IFQ Other SWG and DWG shares, represented as a fraction of the total commercial quota, times the commercial quota for that complex. The current commercial quota is approximately 4% below the commercial ACL for both complexes (GMFMC 2011; Table 1.1.1). The difference between the commercial quota and the commercial ACL was put in place to account for uncertainty with discards from the implementation of the IFQ program, and it was noted that this buffer could be re-evaluated with time. The IFQ program acts as the AM for the commercial portion of the reef fish fishery for Other SWG and

² https://noaa-sero.s3.amazonaws.com/drop-files/cs/2022_GT_AnnualReport_Final.pdf

DWG, and the commercial quota has never been exceeded for either complex under the IFQ program.

Other SWG and DWG Flexibility Measures

Amendment 29 to the Reef Fish FMP established flexibility measures between the Other SWG and DWG complexes, in order to reduce discards and allow commercial fishermen to better use the allocation they have in a given fishing year. These measures were implemented without regard to a species' stock status. A graphical depiction of these flexibility measures is shown in Figure 1.1.2. Briefly:

- A shareholder may land scamp under their DWG allocation, so long as they have already used all their Other SWG allocation.
- A shareholder may land warsaw grouper or speckled hind under their Other SWG allocation, so long as they have already used all their DWG allocation.

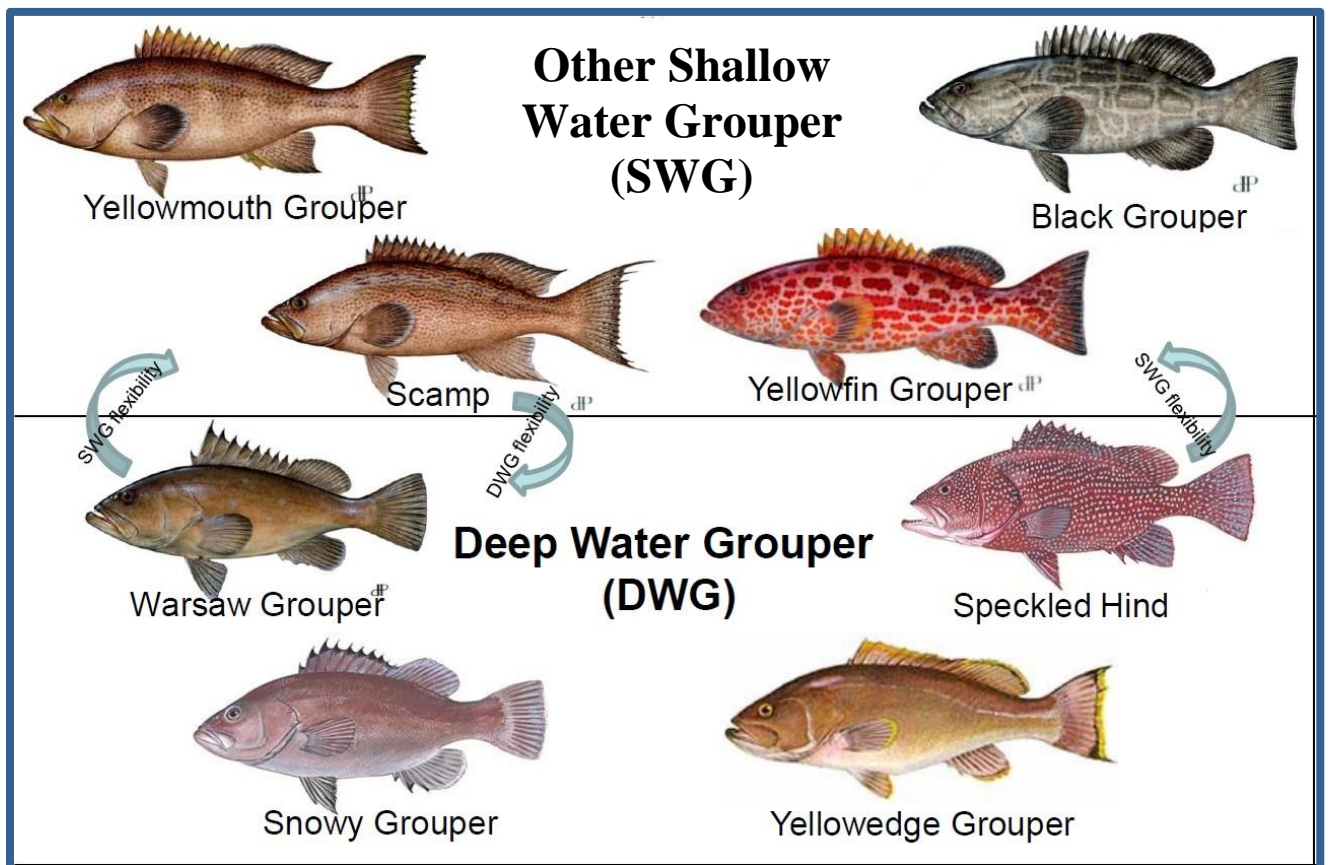


Figure 1.1.2. Depiction of the Other SWG and DWG flexibility measures as defined in Reef Fish Amendment 29.

Recreational Sector

Recreational fishing for Other SWG and DWG occurs primarily via hook-and-line. All species can be caught throughout the Gulf except for black grouper, which is most common to the southeastern Gulf off Florida. Recreational landings comprise an increasing proportion of landings for both complexes in recent history, yet still comprise only a small fraction of landings for DWG (see Table 1.1.2).

Presently, there is no defined ACL for the recreational sector for either the Other SWG or DWG complexes. It is assumed that the difference between the sector apportionment for the commercial ACL from the Generic ACL/AM Amendment and the total complex ACL is to be used by the recreational sector. Because the commercial sector operates under an IFQ program, the pounds available to the commercial sector are released to shareholder accounts on January 1 each year and cannot be recalled. Thus, outside of the use of the IFQ program as the AM for the commercial sector, the only other AM for the Other SWG and DWG complexes is a post-season AM for the recreational sector. This AM states that in the year following an overage for either complex, fishing for that complex will close for the recreational sector if the complex's total ACL is projected to be reached. No payback provision for an overage of a complex ACL currently exists for either complex.

Recreational Data

Federal Data Collection Programs

The National Marine Fisheries Service (NMFS) created the Marine Recreational Fisheries Statistics Survey (MRFSS) in 1979. In the Gulf, MRFSS collected recreational catch and effort data, including for Other SWG and DWG species, since 1981. MRFSS included both offsite telephone surveys and onsite interviews at marinas and other points where recreational anglers fish. In 2008, the Marine Recreational Information Program (MRIP) replaced MRFSS to meet increasing demand for more precise, accurate, and timely recreational catch estimates. Until 2013, recreational catch, effort, and participation were estimated through a suite of independent but complementary surveys: telephone surveys of households and for-hire vessel operators that collected information about recreational fishing activity and an angler intercept survey that collected information about the fish that were caught.

The MRIP Access Point Angler Intercept Survey (APAIS) began incorporating a new survey design in 2013. This new design addressed concerns regarding the validity of the survey approach, specifically that trips recorded during a given time period are representative of trips for a full day, by extending the time period dockside samplers stayed at an assigned location (Foster et al. 2018). The more complete temporal coverage with the new survey design provides for consistent increases or decreases in APAIS angler catch rate statistics, which are used in stock assessments and management, for at least some species (NOAA Fisheries 2019).

MRIP transitioned from the legacy Coastal Household Telephone Survey (CHTS) to a new mail survey (Fishing Effort Survey [FES]) in 2015, and in 2018, MRIP-FES replaced MRIP-CHTS. Both survey methods collect data needed to estimate marine recreational fishing effort (number

of fishing trips) by shore and private/rental boat anglers on the Atlantic and Gulf coasts. MRIP-CHTS used random-digit dialing of homes in coastal counties to contact anglers. The new mail-based FES uses angler license and registration information as one way to identify and contact anglers (supplemented with data from the U.S. Postal Service, which includes virtually all U.S. households). Because FES and CHTS are so different, NMFS conducted side-by-side testing of the two methods and found that, in general, total recreational fishing effort estimates generated from the FES are higher — and in some cases substantially higher — than the CHTS estimates (NOAA Fisheries 2019). This is because the FES is designed to measure fishing activity more accurately than the CHTS, albeit while recognizing a greater degree of uncertainty in those landings estimates. This increase in estimated effort is not because there was a sudden rise in fishing effort, but rather because FES better targets actual fishery participants through the directed mail survey. Likewise, the increase in uncertainty about the effort estimates reflects uncertainty that was likely also present in CHTS but went unaccounted due to biases that were identified as FES was developed. NMFS developed a calibration model to allow historic effort estimates using MRIP-CHTS to be compared to new estimates from MRIP-FES.

2023 MRIP-FES Pilot Study and 2024 Comprehensive Study

At the August 2023 Council meeting, the National Oceanic and Atmospheric Administration (NOAA) Office of Science and Technology (OST) discussed the release of a pilot study (NOAA 2023³), which evaluated potential respondents' bias as recall error in the mail portion of the recreational FES survey used to estimate effort. The 2023 pilot study evaluated this bias for a portion of the year across several states, and preliminary results suggest the order of the questions in the survey has led to overestimation of fishing effort by MRIP-FES. A more comprehensive pilot study began in 2024, will be independently peer-reviewed in early 2025, and will then be available for evaluation by data users (e.g., the Southeast Fisheries Science Center [SEFSC], Southeast Regional Office [SERO], and the Council) thereafter.

Recent Stock Assessments and Catch Projections

SEDAR 68 (2022)

SEDAR 68 2022 was completed in 2021 using data through 2020 and assessed both scamp and yellowmouth grouper together as a complex. The stock identification workshop for SEDAR 68 2022 determined that species misidentification was likely for scamp and yellowmouth grouper measuring approximately 16 inches total length and less; the decision was made to assess the two species together due to the potential for species misidentification combined with similar life histories. SEDAR 68 2022 used updated recreational landings information informed by MRIP-FES. In reviewing SEDAR 68 2022, the Council's SSC determined that the current maximum sustainable yield (MSY) proxy of the yield when fishing at a 30% spawning potential ratio ($F_{30\%SPR}$), was not biologically appropriate for protogynous hermaphrodites (animals which begin life as females and can change sex to male at older ages) like scamp and yellowmouth grouper. Thus, the SSC recommended changing the MSY proxy to a more conservative yield

³ <https://www.fisheries.noaa.gov/recreational-fishing-data/fishing-effort-survey-research-and-improvements>

when fishing at $F_{40\%SPR}$, thereby ensuring a larger fraction of the spawning stock biomass would be conserved each year to support future recruitment. The issue of recruitment was discussed at length during the review, with the SSC determining it more appropriate to project future yield under a more conservative recruitment forecast commensurate with recent data. The SSC ultimately recommended catch limits for scamp and yellowmouth grouper shown in Table 1.1.4. While the OFL decreases from 2024 to 2026 as the stock is fished to a long-term equilibrium level, the ABC is fixed at the yield when fishing at 75% of $F_{40\%SPR}$ and based on lower estimated recruitment in the short-term. Despite the healthy stock status (not overfished or undergoing overfishing as of 2020), the recommended catch limits are a reduction from current landings due to the use of a new MSY proxy, along with recent increases in removals of scamp and yellowmouth grouper by the recreational sector without being offset by sufficient recent recruitment (see Table 1.1.2). Consistent with the requirements of the Magnuson-Stevens Fishery Conservation and Management Act, the Council is considering the SSC recommendations to change the MSY proxy and specify new catch limits consistent with that new MSY proxy and the results of SEDAR 68 2022.

Table 1.1.4. SSC recommended OFL and ABC values for scamp and yellowmouth grouper, based on the results of SEDAR 68 (2022) and using an MSY proxy of the yield when fishing at $F_{40\%SPR}$. Catch limits are in lb gw.

Year	OFL	ABC
2024	271,000	203,000
2025	263,000	203,000
2026+	257,000	203,000

To constrain harvest to the reduced catch levels and to prevent future overfishing of scamp and yellowmouth grouper, these stocks will need to be managed separately from black grouper and yellowfin grouper. Therefore, separate catch levels for black grouper and yellowfin grouper are proposed based on the same data and methodology used when the Other SWG catch limits were developed in the Generic ACL/AM Amendment (Table 1.1.5). More information on these methodologies can be reviewed in GMFMC (2011)⁴. Importantly, the recreational landings estimates used to develop these catch limits were derived from MRFSS, and that is not being changed through this amendment.⁵

Table 1.1.5. Revised catch limits for black grouper and yellowfin grouper in the Gulf of Mexico, using the time series for each as recommended in the Generic ACL/AM Amendment, and following the jurisdictional apportionment with the South Atlantic Fishery Management Council for black grouper therein. Catch limits are in lb gw and in MRFSS data units.

Year	OFL	Gulf ABC	Gulf Comm ACL	Gulf Comm ACT	Gulf Rec ACL
2015+	Undefined	310,844	227,735	218,626	83,109

⁴ <https://gulfcouncil.org/wp-content/uploads/Final-Generic-ACL-AM-Amendment-September-9-2011-v.pdf>

⁵ <https://gulfcouncil.org/wp-content/uploads/Final-Generic-ACL-AM-Amendment-September-9-2011-v.pdf>

Black grouper was last assessed as a single stock that spans the jurisdictions of both the Gulf and South Atlantic Fishery Management Councils (SEDAR 19 2010). Thus, the stock OFL and ABC include harvest in both the Gulf of Mexico and South Atlantic and the ABC is apportioned between the two Councils as specified in the Generic ACL/AM Amendment. Because any changes to the stock OFL and ABC would need to be recommended by both Councils, the Gulf Council is not considering any changes to those catch limits. The proposed combined black grouper and yellowfin grouper catch limits includes the established Gulf apportionment of the black grouper ABC. There is no stock assessment for yellowfin grouper due to limited harvest of this species. The yellowfin grouper portion of the combined catch limits was derived using average total yellowfin grouper landings from the years 1999 – 2008.

SEDAR 85 (2023)

SEDAR 85 was completed in 2023 using data through 2021 and assessed yellowedge grouper. SEDAR 85 used updated recreational landings information informed by MRIP-FES; however, because recreational landings make up such a small fraction of total yellowedge grouper removals (Table 1.1.3), recreational landings were combined with the commercial vertical line fleet in the base model. These fleets were combined due to similarities in their estimated selectivity and retention functions. In reviewing SEDAR 85, the Council’s SSC determined that the proxy value for MSY, set at the yield when fishing at $F_{30\%SPR}$, was not biologically appropriate for protogynous hermaphrodites like yellowedge grouper, like the SSC’s determination for scamp and yellowmouth grouper in SEDAR 68 2022. Thus, the SSC recommended changing the MSY proxy to a more conservative yield when fishing at $F_{40\%SPR}$. Combined with assumptions about recent lower recruitment, this resulted in SEDAR 85 estimating that yellowedge grouper was not overfished, but was experiencing overfishing, as of 2021. Magnuson-Stevens Act. During its review of SEDAR 85, the SSC ultimately recommended revised catch limits for yellowedge grouper, which are expected to end overfishing and are shown in Table 1.1.6.

Table 1.1.6. SSC recommended OFL and ABC values for yellowedge grouper, based on the results of SEDAR 85 (2023) and using an MSY proxy of the yield when fishing at $F_{40\%SPR}$. Catch limits are in lb gw.

Year	OFL	ABC
2025 – 2029+	487,000	372,000

The SSC also recommended updated catch limits for snowy grouper, warsaw grouper, and speckled hind, also adjusted to include the use of MRIP-FES to inform recreational landings (Table 1.1.7). The SSC used Tier 3b of the Council’s ABC Control Rule, which is generally reserved for unassessed and data-poor species, since none of these three species have a peer-reviewed stock assessment to use to inform management decisions.

Table 1.1.7. SSC recommended OFL and ABC values for snowy grouper, warsaw grouper, and speckled hind in lb gw.

Year	OFL	ABC
2025+	244,035	183,026

The SSC thought it appropriate, in the case of DWG, to continue managing all four species together as a complex (Table 1.1.8) by adding the OFL and ABC values for yellowedge grouper to the values for snowy grouper, warsaw grouper, and speckled hind. Since several deepwater grouper species inhabit similar environments, the SSC acknowledged the difficulty for fishermen attempting to avoid catching yellowedge grouper when targeting other deepwater grouper species. Managing all four DWG species together is expected to reduce overall discard mortality.

Table 1.1.8. SSC combined DWG OFL and ABC recommendations in lb gw.

Year	OFL	ABC
2025 – 2029+	731,035	555,026

Expected Management Considerations

The modifications to the catch limits recommended by the SSC for scamp and yellowmouth grouper, and for DWG, will necessitate several changes to Other SWG and DWG management in the Gulf.

For Other SWG:

The Council needs to consider revising the MSY proxy for scamp and yellowmouth grouper given the SSC’s recommendation to modify that proxy to $F_{40\%SPR}$ for those species. The SSC did not recommend, and the Council is not considering revising the MSY proxy for the other two SWG species. The revisions to the scamp and yellowmouth grouper MSY proxy and catch limits require that these species be managed separately from black grouper and yellowfin grouper to prevent overfishing from occurring. Managing scamp and yellowmouth grouper separately from black grouper and yellowfin grouper requires revisions to the Other SWG complex composition, and to the Grouper-Tilefish IFQ program with respect to program structure and share allocation. Those revisions will also require the Council to reconsider the sector allocation for scamp and yellowmouth grouper. Due to the many changes proposed to Other SWG, including to the sector allocation, the current AMs will need to be examined to prevent overfishing.

For DWG:

The Council needs to consider revising the MSY proxy for yellowedge grouper given the SSC’s recommendation to modify that proxy to $F_{40\%SPR}$ for that species. The SSC did not recommend, and the Council is not considering revising the MSY proxy for the other three DWG species. Due in large part to the magnitude of the reduction of the DWG ABC compared to the current landings for the DWG complex, it is possible that the number and composition of DWG discards could change. Thus, the establishment of the separate yellowedge grouper catch limits may require further evaluation of expected discards. The SSC recommended keeping the four DWG species in the same complex for management to reduce discards, which would be expected to be vulnerable to considerable discard mortality due to the deeper depths from which those species are harvested. If yellowedge grouper is managed separately from the other three DWG species, revisions to the DWG complex composition and to the Grouper-Tilefish IFQ program with

respect to program structure and share allocation would become necessary. . Due to the changes proposed to DWG, the current AMs will need to be examined to prevent overfishing.

For both Other SWG and DWG:

Due to the risk of overfishing scamp and yellowmouth grouper (current landings compared to the proposed ABC), and the subsequent need to restructure the Other SWG, the current flexibility measure allowing warsaw grouper and speckled hind to be landed under Other SWG allocation will need to be modified. At present, the scamp and yellowmouth grouper is approximately 40% of the recent landings of those two species. Thus, it is expected that the scamp and yellowmouth grouper ABC would be comprised entirely of landings of those species. This would not allow for any remaining quota for the landings of other species under the current flexibility measures.

1.2 Purpose and Need

The purpose of this amendment is to modify the management of several grouper species in response to recent stock assessment results. These actions modify the complex structure, IFQ program, status determination criteria, catch limits, accountability measures, and sector allocations for species in the Other SWG complex; the status determination criteria, catch limits, and accountability measures for species in the DWG complex; and, the flexibility measures between the Other SWG and DWG complexes.

The need for these actions is to use the best scientific information available, based on recent stock assessments, to implement measures to avoid future overfishing of scamp and end overfishing of yellowedge grouper, and to achieve OY for the species considered herein, consistent with the authority under the Magnuson-Stevens Fishery Conservation and Management Act.

1.3 History of Management

Amendment 1 to the Reef Fish FMP, including an environmental assessment (EA), regulatory impact review (RIR), and regulatory flexibility analysis (RFA), implemented in 1990, set objectives to stabilize long-term population levels of all reef fish species by establishing a survival rate of biomass into the stock of spawning age fish to achieve at least 20% spawning stock biomass per recruit by January 1, 2000. It set a five-grouper recreational daily bag limit; allowed a 2-day possession limit for charter vessels and head boats on trips that extend beyond 24 hours, provided the vessel has two licensed operators aboard as required by the U.S. Coast Guard, and each passenger can provide a receipt to verify the length of the trip; set an 11.0 mp commercial quota for grouper, with the commercial quota divided into a 9.2 mp SWG (black grouper, gag, red grouper, Nassau grouper, yellowfin grouper, yellowmouth grouper, rock hind, red hind, speckled hind, and scamp) quota and a 1.8 mp DWG (misty grouper, snowy grouper, yellowedge grouper, and warsaw grouper, and scamp once the SWG quota was filled) quota; established a longline and buoy gear boundary at the 50-fathom depth contour west of Cape San Blas, Florida, and the 20-fathom depth contour east of Cape San Blas, inshore of which the directed harvest of reef fish with longline gear and buoy gear was prohibited, and the retention of reef fish captured incidentally in other longline operations (e.g., sharks) was limited to the

recreational daily bag limit; limited trawl vessels to the recreational size and daily bag limits of reef fish; established fish trap permits (up to 100 fish traps per permit holder); and established a commercial reef fish vessel permit.

A July 1991 Regulatory Amendment, including EA and effective November 1991, provided a one-time increase in the 1991 quota for SWG from 9.2 mp to 9.92 mp.

Amendment 3 to the Reef Fish FMP, including an EA, RIR, and RFA and implemented in July 1991, transferred speckled hind from the SWG quota category to the DWG quota category.

A November 1991 Regulatory Amendment, including EA, RIR and initial regulatory flexibility analysis (IRFA) and effective June 1992, raised the 1992 commercial quota for shallow-water groupers to 9.8 mp whole weight (ww).

Amendment 5 to the Reef Fish FMP, including an EA, RIR, and RFA and implemented in February 1994, established restrictions on the use of fish traps in the Gulf exclusive economic zone (EEZ); implemented a three-year moratorium on the use of fish traps by creating a fish trap endorsement for fishermen with historical landings; created a special management zone (SMZ) with gear restrictions off the Alabama coast; created a framework procedure for establishing future SMZ's; required that all finfish except for oceanic migratory species be landed with head and fins attached; and closed the region of Riley's Hump (near Dry Tortugas, Florida) to all fishing during May and June to protect mutton snapper spawning aggregations.

A Framework Action, including an EA, RIR, and RFA implemented in June 2000, increased the commercial size limit for black grouper from 20 to 24 inch total length (TL); prohibited commercial sale of gag, black, and red grouper each year from February 15 to March 15 (during the peak of gag spawning season); and established two marine reserves (Steamboat Lumps and Madison-Swanson) that are closed year-round to fishing for all species under the Council's jurisdiction.

Secretarial Amendment 1 to the Reef Fish FMP, including EIS, RIR, IRFA, and effective July 2004, revised the commercial trip limit to 5,200 lb gutted weight (gw) to achieve a red grouper harvest reduction, a reduction in the SWG quota from 9.35 mp gw (9.8 mp ww) to 8.8 mp gw, and repealed the Feb. 15 – Mar. 15 closed season on commercial harvest of red grouper, black grouper and gag in the Gulf exclusive economic zone (EEZ) (which appeared to be resulting in mini-derby fisheries around the closed season rather than a fishing reduction). The DWG quota was reduced from 1.6 mp ww (equal to 1.35 mp landed weight) to 1.02 mp gw. NMFS rejected the proposed 5,200-pound SWG trip limit and the repeal of the February 15 – March 15 commercial closed season. The remaining proposed measures were approved, and NOAA added a commercial red grouper quota of 5.31 million pounds gutted weight with the stipulation that the commercial SWG fishery close when either the SWG quota or red grouper quota is reached, whichever occurs first.

An October 2005 Regulatory Amendment, including EA, RIR, IRFA and implemented in January 2006, established an aggregate DWG and SWG commercial trip limit of 6,000 lb gw.

Amendment 29 to the Reef Fish FMP, including an EA, RIR, and RFA, implemented January 2010, established an IFQ system for the commercial harvest of grouper and tilefish.

Amendment 30B to the Reef Fish FMP, including a final Supplemental Environmental Impact Statement (SEIS), RIR and IRFA, implemented May 2009, established ACLs and AMs for the commercial aggregate SWG fishery. For the commercial sector, the amendment for 2009 reduced the aggregate SWG quota from 8.80 mp gw to 7.8 mp gw. The gag and SWG quotas were scheduled to increase in subsequent years as the gag stock rebuilt. When 80 percent of a grouper species quota is reached, the allowable catch per trip for that species will be reduced to an incidental catch limit of 200 pounds until the species quota is filled, in order to reduce discard mortality of that species while fishermen target other species. The amendment repealed the commercial closed season of February 15 to March 15 on gag, black and red grouper, and replaced it with a January through April seasonal area closure to all fishing at the Edges 40-fathom contour, a 390-nautical square mile gag spawning region northwest of Steamboat Lumps. In addition, the Steamboat Lumps and Madison-Swanson fishing area restrictions were continued indefinitely. For the recreational sector, the amendment reduced the aggregate grouper bag limit from five fish to four. A recreational closed season on SWG was established from February 1 through March 31 shoreward of 20-fathoms. Finally, the amendment required that all vessels with federal commercial or charter reef fish permits comply with the more restrictive of state or federal reef fish regulations when fishing in state waters.

Amendment 31 to the Reef Fish FMP, including a final SEIS, RIR and IRFA, implemented May 2010, prohibited the use of bottom longline gear shoreward of a line approximating the 35-fathom contour from June through August; established a longline endorsement; and restricted the total number of hooks onboard each reef fish bottom longline vessel to 1,000, of which only 750 may be rigged for fishing.

Amendment 32 to the Reef Fish FMP, including EIS, RIR and IRFA and implemented in March 2012, contained a commercial SWG quota adjustment to account for dead discards, and simplified the commercial SWG AMs by using the IFQ program to reduce redundancy.

Amendment 38 to the Reef Fish FMP, including EA, RIR, and RFA and implemented in March 2013, revised the postseason recreational AM that reduces the length of the recreational season for all SWG in the year following a year in which the ACL for gag or red grouper is exceeded. The modified AM reduces the recreational season of only the species (gag or red grouper) for which the ACL was exceeded.

A **2013 Framework Action**, including EA, RIR, and RFA and implemented in March 2013, eliminated the February 1 through March 31 SWG closure shoreward of 20 fathoms.

Amendment 44 to the Reef Fish FMP standardized the MSST for certain reef fish species. The MSST is used to determine whether a stock is overfished; if the biomass of the stock falls below the threshold, then the stock is overfished. The MSST for several reef fish species was set equal to 50% of the biomass at MSY. This amendment was approved on December 21, 2017.

Amendment 36A to the Reef Fish FMP, including EIS, RIR and IRFA and implemented in January 2019, requires all reef fish permitted vessels landing federally managed reef-fish to land at approved locations and hail-in at least 3 hours, but no more than 24 hours before landing. The Amendment returns red snapper and grouper-tilefish shares from non-activated individual fishing quota (IFQ) accounts to the National Marine Fisheries Service (NMFS) for redistribution and allows NMFS to withhold a portion of IFQ allocation at the start of the year equal to an anticipated quota reduction.

CHAPTER 2. MANAGEMENT ALTERNATIVES

2.1 Action 1.1: Modification of Gulf of Mexico (Gulf) Other Shallow Water Grouper (SWG) Complex

Alternative 1: No Action – Maintain the current composition of the Other SWG complex: scamp, yellowmouth grouper (YMG), black grouper, and yellowfin grouper (YFG).

Alternative 2: Modify the composition of the Other SWG complex to form two sub-complexes. Sub-complex A is comprised of scamp and yellowmouth grouper; sub-complex B is comprised of black grouper and yellowfin grouper. Create two new share categories: one for scamp and yellowmouth grouper; and one for black grouper and yellowfin grouper.

Note: Alternative 1 is inconsistent with the best scientific information available and is therefore not a viable alternative.

Discussion:

This action would modify the Gulf Other SWG complex based on the results of the SEDAR 68 2022 stock assessment, which assessed Gulf scamp and yellowmouth grouper as a single complex. SEDAR 68 2022 used data through 2020 and updated recreational landings information informed by the Marine Recreational Information Survey (MRIP)-Fishing Effort Survey (FES). The SEDAR 68 2022 stock assessment and its resultant catch projections were determined to be consistent with the best scientific information available by the Gulf of Mexico Fishery Management Council's (Council) Scientific and Statistical Committee (SSC). Although the SSC found the stock to not be overfished and overfishing was not occurring as of 2020, a change to a more conservative proxy for the maximum sustainable yield (MSY) proxy see Chapter 1 above) and recent lower recruitment led the SSC to recommend more conservative catch limits. The recommended catch limits are a reduction from current landings due to the use of the new MSY proxy, along with recent increases in removals of scamp and yellowmouth grouper by the recreational sector (see Table 1.1.2).

Black grouper was last assessed as a single stock across the Gulf and South Atlantic Councils' jurisdictions U.S. (SEDAR 19 2010). Thus, the stock OFL and ABC include harvest in both the Gulf of Mexico and South Atlantic and the ABC is apportioned between the two Councils as specified in the Generic ACL/AM Amendment. Because any changes to the stock OFL and ABC would need to be recommended by both Councils, the Gulf Council is not considering any changes to those catch limits. The proposed combined black grouper and yellowfin grouper catch limits includes the established Gulf apportionment of the black grouper ABC. There is no stock assessment for yellowfin grouper due to limited harvest of this species.

Alternative 1 would maintain the current Other SWG stock complex, such that it includes scamp, yellowmouth grouper, yellowfin grouper, and black grouper. This alternative is not viable for several reasons. SEDAR 68 2022 included recreational landings estimates for scamp and yellowmouth grouper derived from MRIP-FES while recreational landings estimates for

yellowfin grouper and black grouper were derived using MRFSS. Therefore, the recreational landings are not comparable and cannot be combined within a SWG complex. In addition, scamp and yellowmouth grouper require a substantial reduction in the allowable harvest based on SEDAR 68 2022 and the SSC's recommendations. Allowing the current Other SWG complex could allow for overfishing of scamp and yellowmouth grouper.

Alternative 2 would modify the Other SWG complex to form two sub-complexes. Sub-complex A would include scamp and yellowmouth grouper and sub-complex B would include black grouper and yellowfin grouper. In addition, because Other SWG species are commercially harvested under the Grouper-Tilefish Individual Fishing Quota (IFQ) program, **Alternative 2** would also create two new share categories, replacing the Other SWG share category: one for scamp and yellowmouth grouper, and one for black grouper and yellowfin grouper.

Because **Alternative 1** is not viable, and **Alternative 2** best represents the biological requirements of these managed species consistent with the best scientific information available (BSIA), no other alternatives are being considered under this action. Another approach to management under the current IFQ system for these species would not be consistent with BSIA.

2.2 Action 1.2: Distribution of IFQ Program Shares to Newly Established Share Categories under the Other SWG Complex

Alternative 1: No Action. Proportionally distribute sub-complex A and sub-complex B share categories based on existing Other SWG share percentages.

Alternative 2. Proportionally distribute sub-complex A and sub-complex B share categories based on landings histories of species within each sub-complex. Scamp and yellowmouth grouper landings would determine landings history for sub-complex A. Black grouper and yellowfin grouper landings would determine landings history for sub-complex B.

- **Option 2a:** Use landings history from 2011 – 2023
- **Option 2b:** Use landings history from 2011 – 2019, and 2021 – 2023
- **Option 2c:** Use landings history from 2016 – 2019, and 2021 – 2023

Alternative 3. Proportionally distribute sub-complex A and sub-complex B share categories, with 50% based on existing Other SWG share percentages and 50% based on landings histories of species within each sub-complex. Scamp and yellowmouth grouper landings would determine landings history for sub-complex A. Black grouper and yellowfin grouper landings would determine landings history for sub-complex B.

- **Option 3a:** Use landings history from 2011 – 2023
- **Option 3b:** Use landings history from 2011 – 2019, and 2021 – 2023
- **Option 3c:** Use landings history from 2016 – 2019, and 2021 – 2023

Discussion:

This action would address the distribution of shares within the two sub-complexes created in Action 1.1. The distribution of shares decided upon would be applied in the same manner for both sub-complexes. In **Alternative 1**, the shares within the two sub-complexes would be proportionally distributed based on shares held within the existing Other SWG share category. Therefore, as an example, if an account currently holds 0.15% of shares within the Other SWG share category, that account would hold 0.15% of shares within sub-complex A and 0.15% of shares within sub-complex B.

In **Alternative 2**, the shares within the two sub-complexes would be proportionally distributed based on landings histories of species within each sub-complex, such that scamp and yellowmouth grouper landings would determine landings history for sub-complex A, while black grouper and yellowfin grouper landings would determine landings history for sub-complex B. Three options describe the reference period that would be used for landings history. Under **Option 2a**, the reference period would be 2011-2023, which includes all years since the IFQ program was implemented for Other SWG up through the most recent data available (2023). This option omits 2010 landings, which was the first year of the IFQ program, as 2010 was affected by the Deepwater Horizon Oil Spill. Under **Option 2b**, the reference period would include 2011-2019 and 2021-2023. This option would omit 2020 landings, due to indications that 2020 represents an outlier year because of the COVID-19 pandemic and its effects on fishing effort and harvest. Under **Option 2c**, the reference period would be from 2016-2019 and 2021-2023. This option includes the years that the IFQ program allowed public participation, which is when shares could be obtained by accounts not holding a reef fish permit and are consequently unable to land IFQ species. Public participants could be fishermen separating their assets (e.g., having shares in another business name), dealers obtaining shares, brokers obtaining shares, or retired fishermen retaining their shares. This time series again excludes 2020 due to its potential as an outlier.

In **Alternative 2**, shares are redistributed only to accounts with a landings history. Landings history within the IFQ system is determined by the vessel and shareholder account that landed the species, regardless of the source of allocation. Transfer of allocation is an expected result of an IFQ program. Other SWG allocation is transferred in excess of the quota beginning in 2015 and has remained close to or over the quota each year thereafter (i.e., 107% of the quota was transferred in 2022). The large amount of allocation transferred indicates that allocation may be transferred multiple times before being landed. This holds true even when a low proportion of the quota is being landed, such as seen in recent years (31-36% of the quota landed). This disconnect may indicate that allocation is not available to those who encounter and land SWG.

Accounts that own shares and transfer most or all of their allocation instead of landing it, would have a landings history limited to their actual landings. Accounts that do not own shares (allocation only holders) but, purchase allocation and would have a landings history associated with their actual landings.

In **Alternative 3**, shares within the two sub-complexes are proportionally distributed, with 50% based on existing Other SWG share percentages (as described in **Alternative 1**) and with 50%

based on landings histories of species within each sub-complex (as described in **Alternative 2**). **Options 3a-3c** describe the reference period that would be used for landings history and mirror those under **Alternative 2 (Options 2a-2c)**. Shares within the two sub-complexes would be based partially on existing shares of Other SWG and partially on landings history. This option allows for changes in fishermen behavior within the program over time.

2.3 Action 2: Modification of Gulf Other SWG Biological Reference Points and Status Determination Criteria (SDC)

Alternative 1: No Action – Maintain the current maximum sustainable yield (MSY), maximum fishing mortality threshold (MFMT), minimum stock size threshold (MSST), and optimum yield (OY) for Other SWG as defined in Reef Fish Amendment 48 for the new SWG sub-complexes (A and B) as established in Action 1:

- MSY = the yield when fishing at a 30% spawning potential ratio ($F_{30\%SPR}$)
- MFMT = F_{MSY}
- MSST = 75% of the biomass at MSY (B_{MSY})
- OY = 90% of MSY

Alternative 2: Modify the MSY proxy for SWG sub-complex A (scamp and yellowmouth grouper) to be the yield when fishing at $F_{40\%SPR}$. Maintain the MSY proxy for SWG sub-complex B (black grouper and yellowfin grouper) as yield when fishing at $F_{30\%SPR}$. Maintain the MFMT, MSST, and OY as defined in Reef Fish Amendment 48 for the new SWG sub-complexes (A and B):

- MFMT = F_{MSY}
- MSST = 75% of B_{MSY}
- OY = 90% of MSY

Discussion:

Alternative 1 would retain the current biological reference points and SDC for Other SWG as defined in Amendment 48 to the Reef Fish FMP (GMFMC 2021) This would be inconsistent with the SSC's recommendation to modify the MSY proxy for scamp and yellowmouth grouper to the more conservative yield when fishing at $F_{40\%SPR}$. Retaining the status quo MSY proxy would also result in an overfishing limit (OFL) and acceptable biological catch (ABC) that are greater than those recommended by the SSC (see Action 1 discussion in Chapter 2). As such, **Alternative 1** is not a viable alternative.

Alternative 2 would revise the biological reference points and SDC for SWG Sub-complex A (scamp/ yellowmouth grouper; if selected in Action 1) but would not change the biological reference points and SDC for the SWG Sub-complex B (black grouper/ yellowfin grouper). The biological reference points and SDC for SWG Sub-complex A would be updated based on the

results of the SEDAR 68 2022 stock assessment as recommended by the SSC. In reviewing SEDAR 68 2022, the Council’s SSC determined that an MSY proxy of the yield when fishing at $F_{30\%SPR}$ was not biologically appropriate for protogynous hermaphrodites like scamp and yellowmouth grouper. Thus, the SSC recommended changing the MSY proxy to the more conservative yield when fishing at $F_{40\%SPR}$. The SSC also recommended maintaining current specifications for MFMT, MSST, and OY for SWG Sub-complex A. **Alternative 2** is expected to make SWG Sub-complex A more resilient to fishing pressure and other factors (e.g., climate change, episodic mortality events like red tides) that may negatively impact the health of these stocks. **Alternative 2** would result in lower catch limits for SWG Sub-complex A than **Alternative 1** because it conserves a larger proportion of the biomass and is therefore expected to result in improved stock health with time. **Alternative 2** would not result in any changes to Sub-Complex B relative to **Alternative 1**.

Under **Alternative 2**, the biological reference points and SDC for SWG Sub-complex B would not change. Because the black grouper was last assessed as a single stock across the Gulf and South Atlantic, there is a stock OFL and ABC, and that ABC is apportioned between the Gulf and South Atlantic Councils. Thus, the Gulf Council is not considering modifications to biological reference points and SDC criteria for the black grouper stock at this time.

2.4 Action 3: Modify Scamp and Yellowmouth Grouper Catch Limits

Alternative 1: No Action – Maintain the current catch limits for the Other SWG complex. The OFL is undefined for the complex. The ABC = 0.710 mp gw. The commercial ACL = 0.547 mp gw, and the commercial annual catch target (ACT) = 0.526 mp gw. The recreational ACL and ACT are unspecified.

Alternative 2: Establish catch limits for scamp and yellowmouth grouper based on the SSC’s recommendations from SEDAR 68 2022 for 2024 – 2026. The stock ACL would be set equal to the ABC. Catch limits, in mp gw, were derived in part using MRIP-FES and would be monitored using estimates from MRIP-FES.

Year	OFL	ABC	Total ACL
2024	0.271	0.203	0.203
2025	0.263	0.203	0.203
2026+	0.257	0.203	0.203

Note that the commercial IFQ program is managed to the commercial ACT/quota. Also, the 2024 catch limit is unlikely to be implemented due to document development timing.

Option 2a: Maintain the buffer between the commercial allocation of the ACL and commercial quota at 4%. Manage the recreational sector to its sector ACL.

Option 2b: Maintain the buffer between the commercial allocation of the ACL and commercial quota at 4%. Create a buffer between the recreational ACL and

the recreational ACT using the Council's ACL/ACT Control Rule. This buffer is equal to 18%, and manage the recreational sector to this ACT.

Note: The catch limits for black grouper and yellowfin grouper would remain as set in the Generic ACL Amendment. The commercial ACT is 4% below the commercial ACL.

Discussion:

This action would consider updates to the catch limits (OFL, ABC, ACL, and ACT) for scamp and YMG based on SEDAR 68 and OFL and ABC recommendations from the SSC.

Alternative 1 (No Action) would maintain the current catch limits as established in the Generic ACL/AM Amendment. These catch limits were set using recreational data from MRFSS, and using an MSY proxy of the yield when fishing at $F_{30\%SPR}$. SEDAR 68 2022 included recreational landings estimates derived from MRIP-FES, and the resultant catch projections used a more conservative but biologically appropriate MSY proxy of the yield when fishing at $F_{40\%SPR}$. The SSC has recommended that SEDAR 68 2022 and the resultant OFL and ABC projections are consistent with the best scientific information available. The catch limits in **Alternative 1** do not reflect the SSC's recent recommendations, and would allow for overfishing of the scamp/yellowmouth grouper sub-complex by not managing scamp and yellowmouth grouper explicitly, but rather along with black grouper and yellowfin grouper. Thus, **Alternative 1** is not a viable alternative.

Alternative 2 would modify catch limits for SWG Sub-Complex A (scamp/ yellowmouth grouper) for 2024 through 2026+ by setting the OFL at the yield when fishing at $F_{40\%SPR}$ and the ABC at the yield when fishing at 75% of $F_{40\%SPR}$, or 0.203 mp gw each year. Catch limits in 2027 and subsequent years would be set at the 2026 levels until changed by future management action. The SSC recommended changing the F_{MSY} proxy to $F_{40\%SPR}$, thereby ensuring a larger fraction of the spawning stock biomass would be conserved each year to support future recruitment and make the stock more robust to fishing pressure and environmental variables. The buffer between the commercial ACL and the commercial quota would be maintained at 4%. Two options are considered for setting a recreational ACT. **Option 2a** of **Alternative 2** would not use a recreational ACT and would manage the recreational sector to its allocated ACL. **Option 2b** of **Alternative 2** would use the Council's ACL/ACT Control Rule to define a recreational ACT buffered from the recreational ACL. The ACL/ACT Control Rule results in a recreational ACT that is 18% below the recreational ACL (see Appendix A). Calculation of the 18% buffer required using data for scamp only as a proxy for the proportional standard error in the calculation, since data on other species were too limited to provide a reasonable estimation. Under **Option 2b** of **Alternative 2**, the recreational sector would be managed to its ACT.

For the black grouper and yellowfin grouper, the catch limits would be maintained in both **Alternative 1** and **Alternative 2**. Black grouper catch limits were set in the Generic ACL/AM Amendment based on average landings from 2004 – 2008 and 73% of the ACL was allocated to the commercial sector. As explained in Action 1, black grouper is considered as one stock across the Gulf and South Atlantic. Apportionment between the Councils is based on the Council jurisdictional boundary: South Atlantic = 47% of stock ABC and Gulf = 53% of stock ABC (as established by using 50% of catch history from 1986 – 2008 + 50% of catch history from 2006 –

2008). Because black grouper is jointly managed by the Council and South Atlantic Council, catch limits cannot be modified in this amendment without cooperation from the South Atlantic Council. Although the Council’s SSC recommended reductions for black grouper catch limits, these reductions cannot be implemented because the amendment is not being developed in conjunction with the South Atlantic Council. Current yellowfin grouper catch limits were set in the Generic ACL/AM Amendment based on landings from 2001 – 2004 and 80.1% of the ACL was allocated to the commercial sector. The yellowfin grouper ACL is added to the Gulf apportionment of the black grouper stock ACL in the same data units. The catch limits for the black grouper/ yellowfin grouper SWG Sub-complex B are shown in Table 2.4.1.

Table 2.4.1. Black grouper and yellowfin grouper catch limits in lb gw.

Year	Gulf ABC	Gulf Com ACL	Gulf Com ACT	Gulf Rec ACL
2015+	310,844	227,735	218,626	83,109

*In MRFSS data units.

In **Alternative 1**, the catch limits are calculated using recreational landings data from MRFSS, whereas **Alternative 2** catch limits are generated using recreational landings data from MRIP-FES. SEDAR 68 2022 resulted in an SSC recommended decrease of approximately 60% in the scamp/ yellowmouth grouper allowable catch. Conversions from MRFSS to MRIP-FES have generally resulted in higher recreational catch and effort values because MRIP-FES estimates more recreational fishing effort than MRFSS. MRIP-FES estimated recreational landings were 2.18 times higher than MRIP-CHTS/MRFSS recreational landings estimates on average between 2001 and 2021. Therefore, reductions in catch limits that appear large are, in fact, larger than the numbers alone would indicate due to the change in data units from MRFSS to MRIP-FES. Although **Alternative 2** is the only viable option, it will impart large reductions in both recreational and commercial allowable landings of SWG Sub-complex A. Neither **Alternative 1** nor **Alternative 2** would change catch limits for SWG Sub-complex B. **Option 2a** under **Alternative 2** would not set a recreational ACT, and would instead manage to the recreational ACL for SWG Sub-complex A. **Option 2b** under **Alternative 2** would set the recreational ACT 18% below the recreational ACL. **Option 2a** would provide more available recreational harvest to fishermen but would result in a greater likelihood of exceeding the recreational ACL for SWG Sub-complex A, and potentially exceeding the OFL. **Option 2b** would provide a buffer to decrease the chances of exceeding the ACL and of overfishing but is likely to result in less realized harvest by the recreational sector. **Options 2a** and **2b** would not directly impact SWG Sub-complex B catch limits or expected harvest.

2.5 Action 4: Establish Sector Allocations for New Shallow-water Grouper Complexes and Modify Accountability Measures

Alternative 1: No Action – Maintain the current apportionment of the stock ACL to the commercial sector established in the Generic Annual Catch Limit/AM (ACL/AM) Amendment (GMFMC 2011) based on average landings of black grouper from 2004-2008, and average

landings of scamp, yellowfin grouper, and yellowmouth grouper from 2001-2004. This resulted in a commercial apportionment of 73% of the Gulf’s apportionment of the black grouper ABC and 80.1% of the scamp, yellowfin grouper, and yellowmouth grouper combined ABC. If the sum of the commercial and recreational landings exceeds the stock complex ACL in a fishing year, then during the following fishing year, if the sum of the commercial and recreational landings reaches or is projected to reach the applicable ACL, NMFS will close the recreational sector for the remainder of that fishing year.

Alternative 2: Establish commercial-recreational allocations for the SWG sub-complexes as established in Action 1. Sub-complex A (scamp and yellowmouth grouper) would be split 38.6% for the commercial sector and 61.4% for the recreational sector. The allocation is on harvest for each sector from 2012-2023 (all years since implementation of the Generic ACL Amendment), excluding the COVID year of 2020. The allocation for sub-complex B (black grouper and yellowfin grouper) would be based on the commercial apportionments specified in the Generic ACL/AM Amendment, which would retain an allocation of 73% commercial: 27% recreational for black grouper and 80.1% commercial: 19.9% recreational for yellowfin grouper. Recreational fishing would close for a sub-complex (either A or B) when NMFS projects that the recreational portion of that complex’s ACL will be met.

Alternative 3: Establish commercial-recreational allocations for the SWG sub-complexes as established in Action 1. Sub-complex A (scamp and yellowmouth grouper) would be split 29.2% for the commercial sector and 70.8% for the recreational sector. The allocation is based on harvest for each sector from the most recent five years of data (2018-2023), excluding the COVID year of 2020. The allocation for sub-complex B (black grouper and yellowfin grouper) will be based on the commercial apportionments specified in the Generic ACL/AM Amendment, which would result in an allocation of 73% commercial: 27% recreational for black grouper and 80.1% commercial: 19.9% recreational for yellowfin grouper. Recreational fishing will close for a sub-complex (either A or B) when NMFS projects that the recreational portion of that complex’s ACL will be met.

Discussion:

At its October 2023 meeting, the Council passed a motion stating that they would, “*delay any changes in allocation between the commercial and recreational sectors of any Gulf fishery resources that are subject to MRIP-FES until such time as the 2024 [MRIP] pilot study has been completed and deemed consistent with BSIA by the Gulf SSC.*” However, SEDAR 68 2022 updated recreational landings estimates consistent with MRIP-FES, which changes the historical landings estimates used to specify the commercial apportionment established in the Generic ACL/AM Amendment. Therefore, it is necessary to evaluate whether a change to that apportionment is appropriate.

Under **Alternative 1**, apportionment of the stock ACL to the commercial sector would remain as established in the Generic Annual Catch Limit/AM Amendment. This apportionment was based on average landings of black grouper from 2004-2008, and average landings of scamp, yellowfin grouper, and yellowmouth grouper from 2001-2004, and resulted in commercial apportionment of 73% of the Gulf’s apportionment of the black grouper ABC and 80.1% of scamp, yellowfin

grouper, and yellowmouth grouper combined ABC. This apportionment was intended to account for small amount of recreational harvest and perpetuate existing fishing practices, and was determined to be consistent with the requirements of National Standard 4. The AM for the commercial sector is the IFQ program, which does not allow for more harvest than that specified by the commercial sector’s ACL. If the stock ACL is exceeded during a fishing year, then in the following year, NMFS restricts harvest to prevent an overage of the Other SWG stock ACL. Because no express commercial-recreational allocation for the Other SWG complex was established in the Generic ACL/AM Amendment, recreational catch limits were not specified. Thus, the commercial allocations used in this action were defined in the Generic ACL/AM Amendment for each species, but the recreational allocation was determined by subtracting the commercial ACL from the total ACL. Under the current recreational AM, a closure of the recreational sector could only occur if the total stock ACL was met or projected to be met; so, although recreational harvest has frequently exceeded the percentage allocation (i.e., 19.9% for scamp, yellowmouth grouper, and yellowfin grouper; 27% for black grouper) used in this amendment, the Other SWG complex was never closed to fishing because the total ACL was not fully harvested in any year, since the commercial sector did fully harvest its allocation.

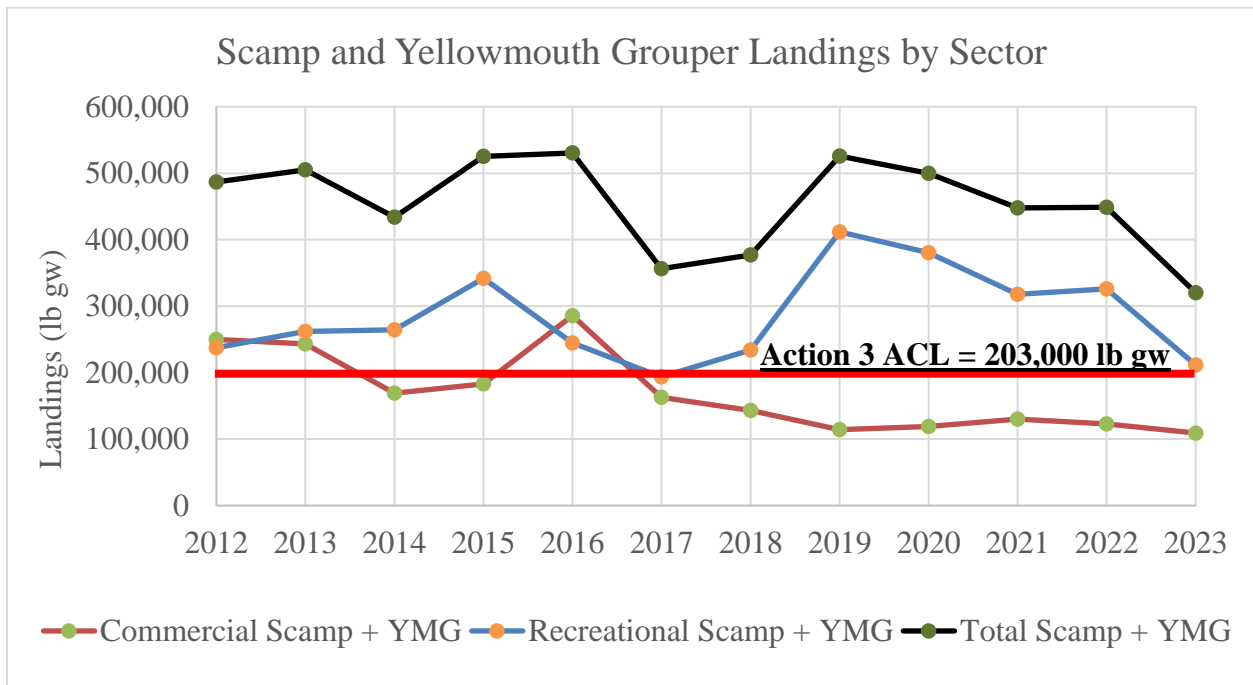


Figure 2.5.1. Scamp/ yellowmouth grouper landings for 2012 – 2023. Recreational data are in MRIP-FES units. Note that total catch exceeds the proposed SWG Sub-complex A total ACL (see Action 3) as recommended by the SSC in each year since 2012. Landings data are derived from the same sources as Table 1.1.2.

Table 2.5.1. Excerpt of scamp and yellowmouth grouper (YMG) landings compared to total Other SWG landings, and the sector-specific percentages of scamp and YMG landings, for 2012 – 2023. Alternative-specific calculations of sector allocation both exclude 2020. Data used are the same as in Table 1.1.2.

Year	Comm Scamp + YMG	Total Comm Landings	Comm Scamp + YMG	Total Rec Landings	Total Landings	Scamp + YMG % Comm	Scamp + YMG % Rec	
2012	249,826	298,102	237,195	288,527	586,629	51.3%	48.7%	
2013	243,129	300,735	261,809	267,721	568,456	48.2%	51.8%	
2014	169,125	230,248	264,495	265,321	495,569	39.0%	61.0%	
2015	183,154	238,427	342,097	345,904	584,331	34.9%	65.1%	
2016	285,741	335,238	244,715	252,897	588,135	53.9%	46.1%	
2017	162,825	200,009	193,630	202,447	402,456	45.7%	54.3%	
2018	143,047	178,293	233,878	234,236	412,529	38.0%	62.0%	
2019	114,072	140,083	411,764	412,120	552,203	21.7%	78.3%	
2020	119,043	144,454	380,593	382,692	527,146	23.8%	76.2%	
2021	129,982	155,928	317,851	318,050	473,978	29.0%	71.0%	
2022	122,752	146,698	326,023	327,237	473,935	27.4%	72.6%	
2023	109,137	149,012	211,234	243,977	392,989	34.1%	65.9%	
						% Comm	% Rec	
						Alt 2	38.6%	61.4%
						Alt 3	29.2%	70.8%

The commercial and recreational allocations proposed under **Alternative 2** would be 38.6% and 61.4%, respectively (Table 2.5.1). This represents a large decrease in the commercial sector allocation with a similar increase in the recreational sector allocation. This allocation is based on landings for all years (apart from 2020) since the Generic ACL/AM Amendment established the Other SWG complex, its commercial allocation for those species, and set catch limits (Figure 2.5.1). 2020 was considered an outlier year due to abnormal fishing effort for many Gulf species because of the COVID-19 pandemic. In using all years since 2012, when Generic ACL/AM Amendment was implemented, **Alternative 2** provides the greatest number of years of appropriate landings to be used in setting the allocation percentages. Because of the longer time period (relative to other alternatives) used in setting the allocation, **Alternative 2** may serve to avoid the effects of short-term trends or changes in fishery dynamics, instead relying on the long-term catch percentages by sector. **Alternative 2** would also implement a new AM for sub-complexes A and B. Recreational fishing would close for a sub-complex (either A or B) when NMFS projects that the recreational portion of that complex’s ACL will be met. **Alternative 2** is less likely to result in overfishing of the new sub-complexes than **Alternative 1** because unlike **Alternative 1**, it requires a closure of the recreational fishery based on recreational landings (or projected recreational landings) alone, and does not require the stock ACL to be met prior to closure. Under **Alternative 2**, when landing are projected to meet the recreational ACL, the recreational component would be closed. Because the recreational component would close based

on a projection of recreational landings, the commercial sector to continue to fish without jeopardy of exceeding the stock ACL.

Alternative 3 would set the allocation at 29.2% commercial and 70.8% recreational. This represents the largest decrease in commercial allocation from status quo, and also the largest increase in recreational allocation. This allocation is based on data from 2018 – 2023 (again, excluding 2020), i.e., the most recent five years of available landings data. Commercial scamp and yellowmouth grouper landings declined precipitously from 2016 to 2019 and have remained somewhat steady since. Contrarily, recreational landings began increasing in 2017, spiked in 2018, and have remained higher than their ten-year average since. Thus, the five-year average for Other SWG shows an increasing trend in recreational landings with a corresponding decreasing trend in commercial landings. Like **Alternative 2**, **Alternative 3** would implement a new AM for sub-complexes A and B. Recreational fishing would close for a sub-complex (either A or B) when NMFS projects that the recreational portion of that complex’s ACL will be met. **Alternative 3** is less likely to result in overfishing of the new sub-complexes than **Alternative 1** (same risk as **Alternative 2**) because unlike **Alternative 1**, it requires a closure of the recreational fishery based on recreational landings (or projected recreational landings) alone, and does not require the stock ACL to be met prior to closure. Under **Alternative 2**, when landings are projected to meet the recreational ACL, the recreational component would be closed. Because the recreational component would close based on a projection of recreational landings, the commercial sector to continue to fish without jeopardy of exceeding the stock ACL.

Both **Alternative 2** and **Alternative 3** would implement vast relative increases for the recreational sector when compared to **Alternative 1**. However, both **Alternative 2** and **Alternative 3** would set the allocation to mirror more closely catch trends in the fishery in recent years. **Alternative 3** would allocate a greater percentage of the ACL to the recreational fishery based on the shortest considered time period (i.e., the most recent five-year trend in landings), while **Alternative 2** would provide a “middle road” based on landings since implementation of the Generic ACL/AM Amendment. Under both **Alternative 2** and **Alternative 3**, the recreational sector would be expected to have a fishing season duration less than the calendar year, based on the total ACL proposed for scamp and yellowmouth grouper in Action 4 (below). Both **Alternative 2** and **Alternative 3** are also expected to have similar effects in reducing the risk of overfishing relative to **Alternative 1** due to the proposed implementation of seasonal closures based on projection that the recreational ACL rather than stock ACL has been reached.

2.6 Action 5: Modification of Deep-water Grouper Catch Limits

Alternative 1: No Action. Maintain the current OFL, ABC, commercial ACL, and commercial quota for the deep-water grouper (DWG) complex. The OFL is set at 1.113 mp gw, the ABC and stock ACL at 1.105 mp gw, the commercial ACL at 1.070 mp gw, and the commercial quota at 1.024 mp gw. These catch limits are based on the Generic ACL/AM Amendment, and apply to yellowedge grouper, snowy grouper, warsaw grouper, and speckled hind, which are managed together as a single complex. These catch limits were set using recreational landings estimates derived from MRFSS.

Note: The data units used to determine the catch limits in Alternative 1 include data from a survey which is no longer in operation. Subsequent catch limit recommendations have used more contemporary data and those newer analyses are recognized as consistent with the best scientific information available. Thus, Alternative 1 is not a viable alternative.

Alternative 2: Revise the catch limits for 2025 – 2029 and subsequent years for the DWG complex based on the SSC’s recommendations from its February 2024 meeting. The yellowedge grouper OFL and ABC will be set based on an MSY proxy of the yield when fishing at 40% spawning potential ratio ($F_{40\%SPR}$). The MSY proxy for the three remaining DWG complex species will remain at the yield when fishing at $F_{30\%SPR}$. The OFL and ABC for yellowedge grouper and the three remaining species will be combined, respectively, and all four species will be managed as a single complex. The DWG complex OFL is 731,035 lb gw, and the ABC is 555,026 lb gw. The commercial ACL is 535,433 lb gw, and the commercial quota is 514,015 lb gw. These catch limits use MRIP-FES data units.

Discussion:

SEDAR 85 (2023) assessed Gulf yellowedge grouper and found that while the stock was not overfished as of 2021, it was experiencing overfishing. The Council’s SSC evaluated SEDAR 85 and found the analyses to be consistent with the best scientific information available at its February 2024 meeting in Tampa, Florida. The SSC recommended that the OFL and ABC for yellowedge grouper for 2025 – 2029 and subsequent years be 487,000 lb gw and 372,000 lb gw, respectively. The SSC then evaluated updated projections for the other three DWG complex species: snowy grouper, warsaw grouper, and speckled hind. These updated projections, like SEDAR 85, were informed by MRIP-FES for the recreational private vessel landings. The SSC recommended that the OFL and ABC for the remaining three DWG complex species for 2025 – 2029 and subsequent years be 244,035 lb gw and 183,026 lb gw, respectively. Since several DWG species inhabit similar environments, the SSC acknowledged the difficulty fishermen would have of attempting to avoid catching yellowedge grouper when targeting other DWG species. Therefore, the SSC also recommended keeping yellowedge grouper within the DWG complex. Since yellowedge grouper has a stock assessment, catch advice informed by SEDAR 85 will be added to the OFL and ABC (calculated using Tier 3b of the ABC Control Rule) for the rest of the DWG complex. This determination maintains the current management structure for this complex.

Alternative 1 would maintain the current OFL and ABC for the DWG complex, at 1.113 mp gw and 1.105 mp gw, respectively. The commercial ACL is currently 1.066 mp gw, or 96.47% of the ABC. The commercial quota is set using a 4% buffer from the commercial ACL, at 1.024 mp gw. This reduction of the commercial ACL and commercial quota is derived from calculations and recommendations from the Generic ACL/AM Amendment (GMFMC 2011). The catch limits in **Alternative 1** were established using recreational landings data from the Marine Recreational Fisheries Statistics Survey, which has not been in use since 2013. The catch limits in **Alternative 1** are no longer consistent with the best scientific information available. Thus, **Alternative 1** is not a viable alternative. Notably absent from these calculations is a recreational sector ACL. No ACL was established for the recreational sector

under the Generic ACL/AM amendment due in part to the very low landings for that sector during the time period used to inform the catch limits in **Alternative 1** (1999 – 2008). However, the AMs for DWG do account for the recreational sector. If the complex ACL is exceeded in a fishing year, then in the year following the overage, NMFS will close the recreational sector to fishing for the remainder of the fishing year when the complex ACL is projected to be reached. The IFQ program serves as the AM for the commercial sector.

Alternative 2 would revise the catch limits for 2025 – 2029 and subsequent years for the DWG complex based on the SSC’s recommendations from its February 2024 meeting, which included the use of MRIP-FES data units for recreational private vessel landings. The DWG complex OFL would be 731,035 lb gw, and the ABC would be 555,026 lb gw. Subsequently and based on the calculations and recommendations from the Generic ACL/AM Amendment, the commercial ACL would be 535,433 lb gw, and the commercial quota would be 514,015 lb gw. **Alternative 2** would modify the MSY proxy for yellowedge grouper to be the yield when fishing at $F_{40\%SPR}$, while the MSY proxy for the three remaining DWG complex species would remain at the yield when fishing at $F_{30\%SPR}$. The SSC recommended this modification in MSY proxy for yellowedge grouper based on the results of the SEDAR 85 stock assessment, and in recognition of yellowedge grouper reaching sexual maturity at older ages (half of females are sexually mature by age-9) and being longer lived (maximum age is estimated at 85 years, SEDAR 85 2023). To reduce the likelihood of dead discards, all four species would continue to be managed as a single complex under **Alternative 2**. Despite combining the OFLs and ABCs of yellowedge grouper with the three other DWG species, the recommended catch limits are expected to end current and prevent future overfishing of yellowedge grouper. This is due in part to the historical composition of landings from the DWG complex, in that the other three species are expected to account for some fraction of landings for that complex (see Table 1.1.3).

Compared to **Alternative 1**, **Alternative 2** is a reduction in catch limits of approximately 50%. This is due to three main factors. First, the modification of the F_{MSY} proxy for yellowedge grouper in **Alternative 2** to the more conservative $F_{40\%SPR}$ results in a reduction in allowable yield compared to **Alternative 1**, as more of the spawning stock biomass is conserved. Second, when evaluating the projections for yellowedge grouper, the SSC used the average recruitment from 1998 – 2012 to inform future recruitment from the yellowedge grouper stock. This decision recognized lower recruitment during the time period in which recruitment was estimable, and results in a lower yield projection to account for that. Third, the yield projections informing **Alternative 2** are designed to prevent overfishing, as is currently occurring under **Alternative 1**. This measure also contributes to the reduction in catch limits under **Alternative 2**.

2.7 Action 6: Modification of Deep-water Grouper Accountability Measures

Alternative 1: No Action. Maintain the AMs for the DWG complex. For the commercial sector, the Grouper-Tilefish IFQ program serves as the AM. For the recreational sector, if the total complex ACL is exceeded in a fishing year, then in the following fishing year, the Regional

Administrator monitors the total landings for the DWG complex and will close the recreational fishing season for the complex for the remainder of that fishing year when the total complex ACL is projected to be met.

Alternative 2: Revise the AMs for the DWG complex. For the commercial sector, the Grouper-Tilefish IFQ program serves as the AM. For the recreational sector, if the total complex ACL is projected to be met in a fishing year, then the Regional Administrator would close the recreational fishing season for the complex for the remainder of that fishing year.

Discussion:

The current AMs for the DWG complex were established in the Generic ACL/AM Amendment (GMFMC 2011). These AMs are reflected in **Alternative 1**.

Alternative 2 is proposed in recognition of the overfishing status of yellowedge grouper from SEDAR 85 (2023). Because yellowedge grouper is undergoing overfishing as of 2021, the Council must take steps to end overfishing. This is expected to be accomplished through the reduction of catch limits, as specified in **Alternative 2** of Action 5. In this action, **Alternative 2** would modify the AMs for the recreational sector such that if the total complex ACL was projected to be met in a fishing year, then the Regional Administrator would close fishing for the recreational sector for the remainder of that fishing year (in-season AM). Further, **Alternative 2** includes a payback provision, such that if the total complex ACL was exceeded in the previous fishing year, then in the following fishing year, the total complex ACL will be reduced by the amount of the overage in the previous fishing year.

Based on the landings in Table 1.1.3, and on the proposed catch limits specified in **Alternative 2** of Action 5, it is expected that the fishing season for the recreational sector under **Alternative 2** would not continue for the full year as it has in previous years. This is expected for two reasons. First, the total ACL specified in **Alternative 2** of Action 5 is tantamount to a reduction in landings of approximately 50%. Second, based on the decrementing of the catch limits as specified originally in the Generic ACL/AM Amendment (total ABC to total ACL, total ACL to commercial ACL, and that which remains available for recreational harvest), and again considering the historical landings in Table 1.1.3, the total ACL specified in **Alternative 2** of Action 5 is expected to be met annually before the end of the fishing year. It is common in these circumstances for overages of the total ACL to occur due to the imprecision of the timing of the fishing season projections, and when the closure of the fishing season is scheduled. These fishing season projections are only as reliable as the data upon which they are based. Particularly for DWG species, the accuracy with which the recreational landings as estimated under the current data collection system is poor. When the proportional standard error (PSE) for a species' landings estimate is greater than or equal to 50%, the NOAA Office of Science and Technology (OST), which administers MRIP-FES, does not recommend that estimate for use in

management decisions⁶. Per NOAA OST, “the higher the PSE, the larger the margin of error or uncertainty in the data’s accuracy.” While commercial landings from the Grouper-Tilefish IFQ program are known with little uncertainty, PSEs for all DWG species routinely exceed 50%, even at the greatest degree of data aggregation (Gulf-wide, for all recreational fishing modes, for the entire calendar year)⁷. These data are presently only representative of Mississippi, Alabama, and Florida; Texas and Louisiana have separate recreational data collection programs for estimating recreational landings. Thus, the variability and imprecision of the recreational landings data for DWG species makes the efficacy of applying the AMs in Action 6 problematic.

2.8 Action 7: Modification of Flexibility Measures between DWG and Other SWG Components of the Grouper-Tilefish IFQ Program

Alternative 1: No Action. Maintain the current Other SWG/DWG flexibility measures as established in Reef Fish Amendment 29 (GMFMC 2009). Currently within the IFQ program for Gulf groupers and tilefishes, an IFQ account holder that has no Other SWG allocation (e.g., allocation has been landed, transferred, or the account had no shares to receive SWG allocation) can use DWG allocation to land scamp. Likewise, an IFQ account holder that has no DWG allocation, can use Other SWG allocation to land warsaw grouper and speckled hind.

Note: Because separate catch limits have been recommended for scamp and yellowmouth grouper following the SSC’s review of SEDAR 68 2022, those species must now be managed separately from black grouper and yellowfin grouper (see Action 1). Further, the magnitude of the SSC’s recommended reduction in catch limits for scamp and yellowmouth grouper places those species at risk of considerable overharvest under the current flexibility measures. Thus, due to the risk of overfishing of scamp and yellowmouth grouper, Alternative 1 is not a viable alternative.

Alternative 2: Eliminate the Other SWG and DWG flexibility measures as established in Reef Fish Amendment 29.

Alternative 3: Create multi-use allocation for scamp, speckled hind, and warsaw grouper, utilizing a formula that ensures the commercial ACL is not exceeded for DWG or SWG sub-complex A (SWG-A). Convert a portion of SWG-A allocation to DWG multi-use allocation utilizing a formula that divides the difference between the SWG-A ACL and quota divided by the DWG quota. Convert a portion of the DWG allocation into SWG-A multi-use allocation utilizing a formula that divides the difference between the DWG ACL and quota by the SWG-A quota. Multi-use allocation cannot be transferred or used for landings until all primary allocation

⁶ <https://www.fisheries.noaa.gov/recreational-fishing-data/introduction-marine-recreational-information-program-data#data-use-considerations>

⁷ <https://www.fisheries.noaa.gov/data-tools/recreational-fisheries-statistics-queries>

is zero within the shareholder account and related vessel accounts. If SWG-A is under a rebuilding plan, there will be no DWG multi-use. If DWG is under a rebuilding plan, there will be no SWG-A multi-use. The formulas are as follows:

$$\text{SWG-A multi-use (as percentage)} = 100 * \frac{\text{DWG Commercial ACL} - \text{DWG Commercial Quota}}{\text{SWG-A Commercial Quota}}$$

$$\text{DWG multi-use (as percentage)} = 100 * \frac{\text{SWG-A Commercial ACL} - \text{SWG-A Commercial Quota}}{\text{DWG Commercial Quota}}$$

Alternative 4: Allow scamp and yellowmouth grouper to continue to be landed under DWG, as long as scamp and yellowmouth grouper are not in a rebuilding plan. Allow warsaw and speckled hind to be landed under the SWG sub-complex A that includes scamp and yellowmouth grouper, as long as DWG groupers are not in a rebuilding plan.

Discussion:

The flexibility measures outlined for the Grouper-Tilefish IFQ program were designed to allow IFQ account holders to better use their annual allocation of Other SWG and DWG, thereby increasing economic opportunity while reducing discards. **Alternative 1** represents the status quo and is demonstrated in Figure 2.7.1.

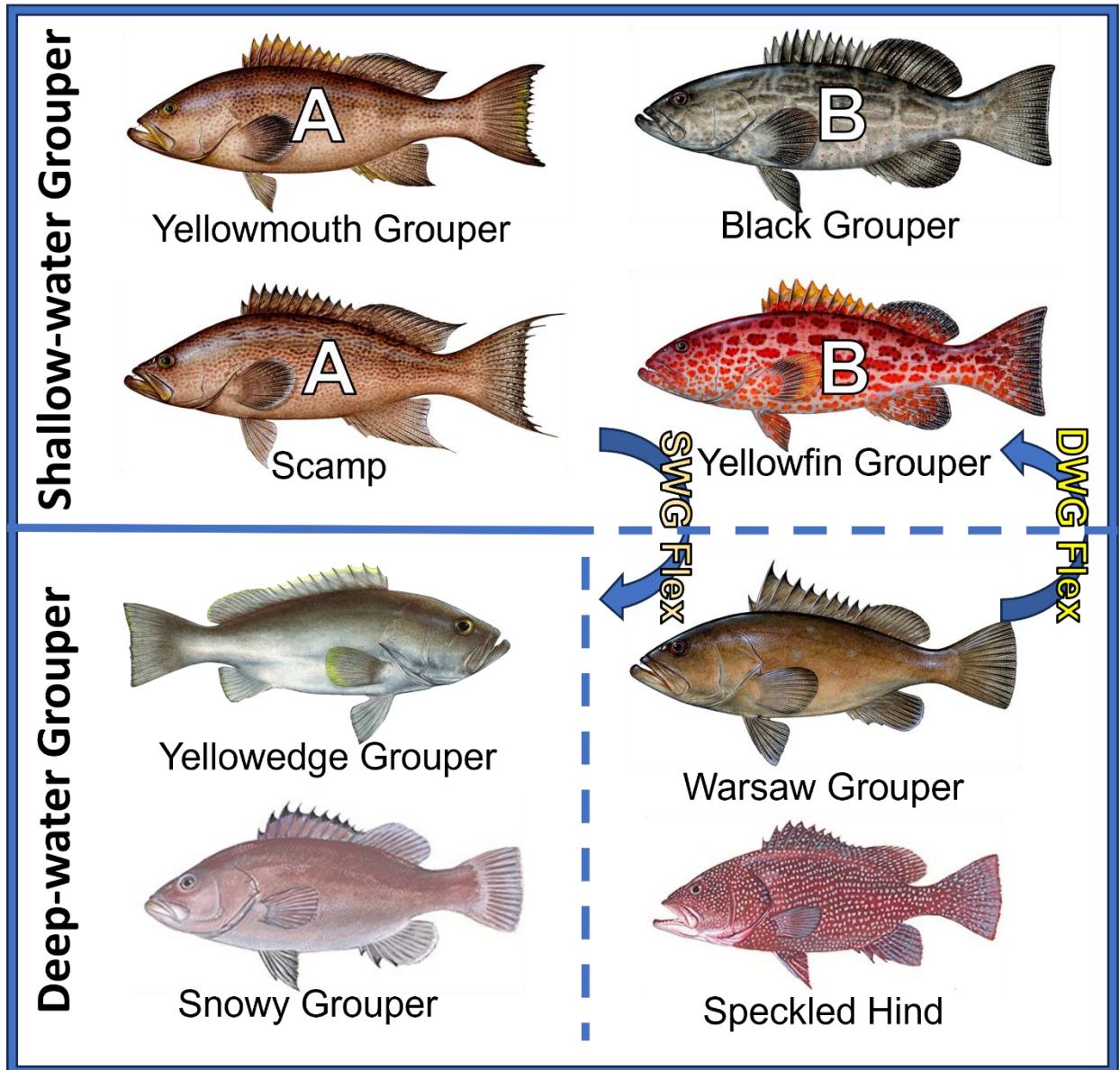


Figure 2.8.1. Depiction of the flexibility measures currently in place for the Other SWG and DWG complexes in the Grouper-Tilefish IFQ program. This represents **Alternative 1** of this action.

Under **Alternative 1**, after all of an IFQ account holder’s Other SWG allocation has been landed or transferred, and the IFQ account holder otherwise has no Other SWG allocation, then DWG allocation may be used to land and sell scamp only. Likewise, after all of an IFQ account holder’s DWG allocation has been landed or transferred, and the IFQ account holder otherwise has no DWG allocation, then Other SWG allocation may be used to land and sell warsaw grouper and speckled hind. Under Reef Fish Amendment 29 (2009), the intent of these flexibility measures was to reduce discards and allow better utilization of an IFQ account holder’s available allocation across the Other SWG and DWG share categories. Further, these flexibility measures paired exchanges of species that were shown to be landed on the same

commercial trips. How IFQ account holders have used these flexibility measures is shown in Figure 2.7.2, using data from 2022. Separate catch limits have been recommended for scamp and yellowmouth grouper; thus, those species must now be managed separately from black grouper and yellowfin grouper. The magnitude of the reduction in catch limits for scamp and yellowmouth grouper places those species at risk of considerable overharvest under **Alternative 1** of this action; therefore, due to the risk of overfishing of scamp and yellowmouth grouper, **Alternative 1** is not a viable alternative.

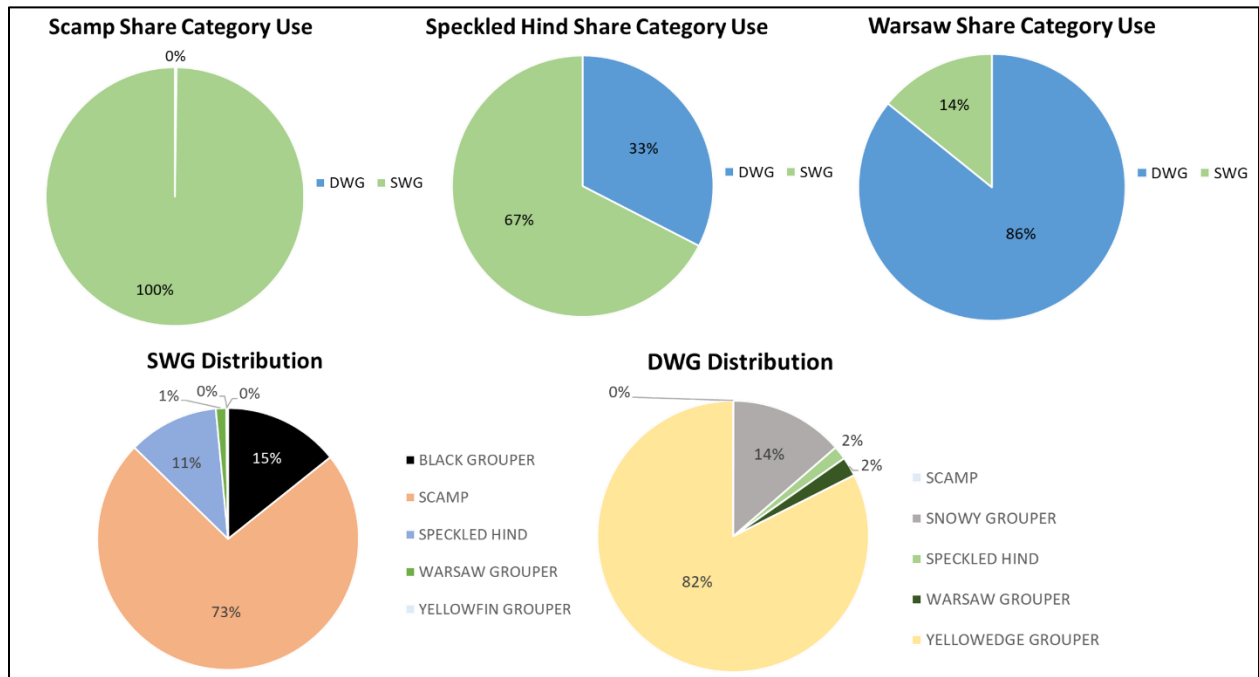


Figure 2.8.2. Share category use within the Other SWG and DWG categories of the Grouper-Tilefish IFQ program for 2022, focused on species included in the flexibility measures as established under Reef Fish Amendment 20 (Alternative 1).

Alternative 2 would eliminate the flexibility measures as established in Reef Fish Amendment 29. This alternative is illustrated in Figure 2.7.3. Doing so would require IFQ account holders to use allocation for Other SWG species only on those species, and likewise for DWG species. **Alternative 2** would be expected to result in an increase in discard mortality only to the extent to which the current flexibility measures under **Alternative 1** reduce discards. The degree to which discards would change is partially informed by which share category is used to land which species, as shown in Figure 2.7.4. Generally, additional discards of speckled hind, followed by warsaw grouper, may occur, if sufficient DWG allocation does not exist in an IFQ account for the account holder to land those species under that allocation. However, the degree to which discards would change from the status quo would also depend on behavioral changes on behalf of IFQ account holders, which is difficult to predict in the absence of physical market drivers, like the absence of the flexibility measures. Figure 2.7.4 shows that scamp is caught on 78% of the trips that land speckled hind and 71% of the trips landing Warsaw grouper. This indicates that if a DWG flexibility measure is retained, it should be applied with sub-complex A, as Scamp

occurs more often with those species and not be applied to sub-complex B, as black grouper is rarely landed with speckled hind (18% of trips) or Warsaw grouper (9%) of trips.

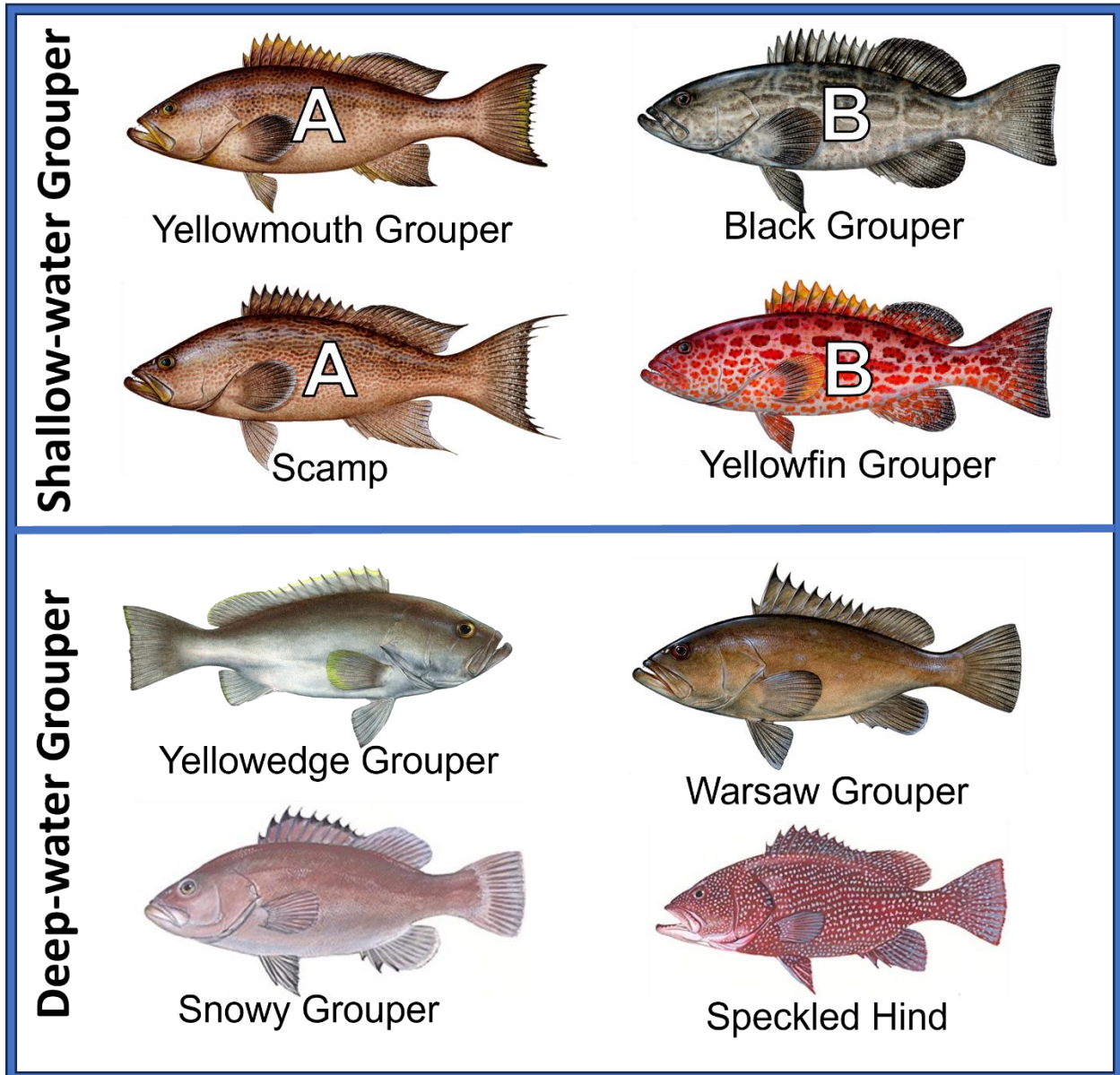


Figure 2.8.3. Depiction of the absence of flexibility measures for the Other SWG and DWG complexes in the Grouper-Tilefish IFQ program. This represents **Alternative 2** of this action.

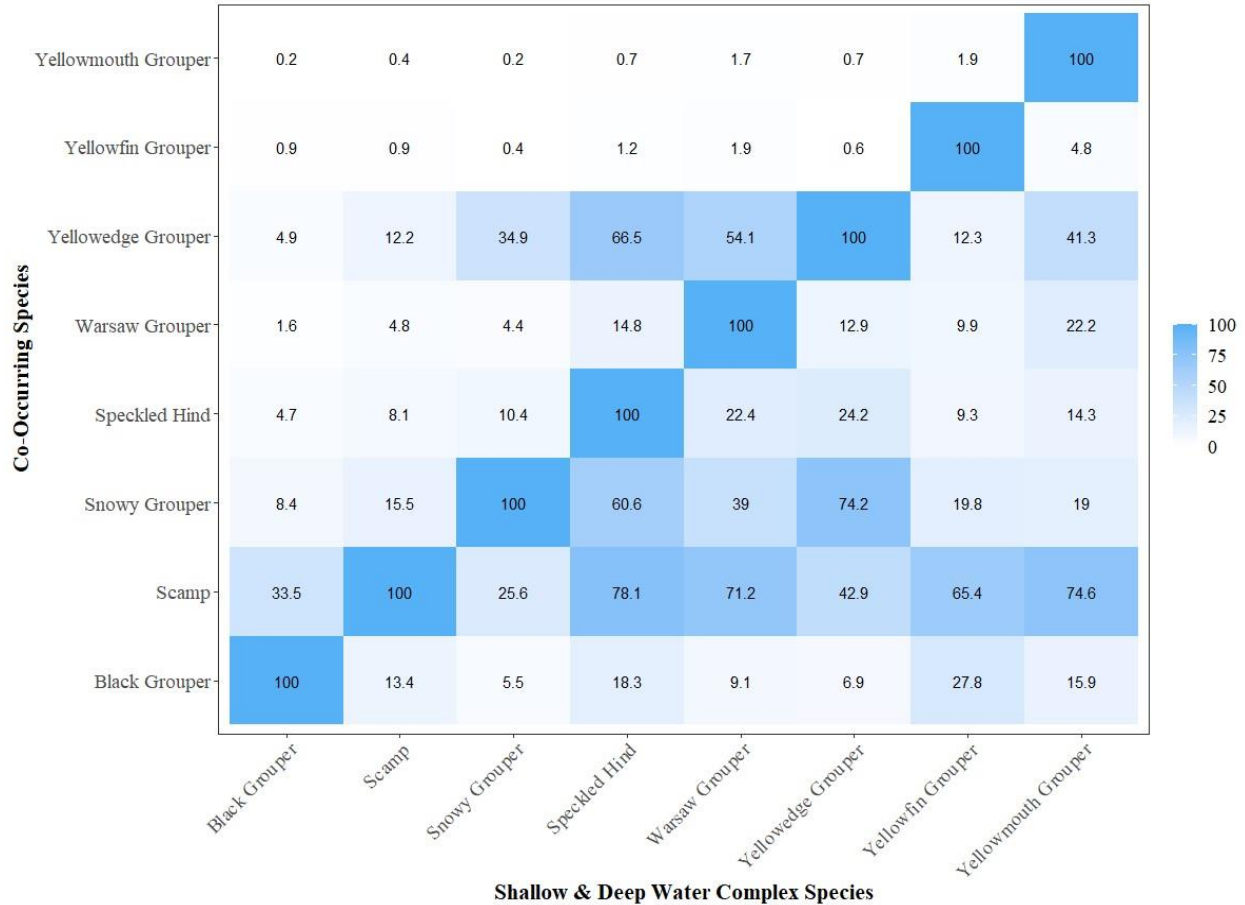


Figure 2.7.4. Co-occurrence (percentage of trips with both species landed) of commercial landings of Other SWG and DWG species within the Grouper-Tilefish IFQ program. The x-axis represents the species comprising most landings on the commercial trip.

Under **Alternative 3**, two formulas are applied to create multi-use categories for the SWG-A sub-complex and for DWG. The formulas are a modification of the multi-use formulas for gag grouper and red grouper in Reef Fish Amendment 32 (2013). The percentage is calculated for the (sub-)complex as a whole and then applied to each individual share account. Identical to what is done for gag grouper and red grouper multi-use, if either the SWG-A sub-complex or DWG is under a rebuilding plan, then the percentage of multi-use for the opposite (sub-)complex is zero. In addition, all multi-use percentages would be rounded down to prevent overages of the targeted species' ACL. The formula prevents exceeding the ACL even if the multi-use allocations are used to land just one species.

Under **Alternative 4**, the Other SWG and DWG flexibility measures established in Reef Fish Amendment 29 would be remain unchanged for scamp, which could be landed using DWG allocation after all of an IFQ account holder's Other SWG allocation has been landed or transferred, and the IFQ account holder otherwise has no Other SWG allocation. The Other SWG and DWG flexibility measures would be modified under this alternative; however, for Speckled Hind and Warsaw grouper, which could be landed using SWG-A sub-complex

allocation after all of an IFQ account holder’s DWG allocation has been landed or transferred, and the IFQ account holder otherwise has no DWG allocation. Since quotas are being reduced under both DWG and the SWG-A sub-complex, past behavior of the flexibility measures may be a good indicator of behavior under these new quotas. The species that might be the most impacted is speckled hind where 71% of the species were landed under the secondary category of Other SWG. With the reduced quotas in the SWG-A sub-complex and DWG, fishermen might utilize the SWG-A sub-complex for scamp, thereby reducing how much SWG-A sub-complex would be used for DWG. This in turn would increase landings under DWG as fishermen seek to obtain more DWG allocation to land speckled hind.

Based on the SWG-A stock ACL from Action 3, **Alternative 2**, the current 4% ACL/ACT commercial buffer for Other SWG, and the DWG commercial ACL and quota from Action 5, **Alternative 2**, scenarios based on the current proposed commercial sector allocations in Action 4, **Alternatives 2 and 3** are shown below.

Table 2.8.1. Resulting multi-use percentages for Action 7, **Alternatives 2 and 3**, contingent on commercial sector allocations.

	SWG-A multi-use	DWG multi-use
Action 4, Alt 2 (38.6% comm)	28%	0.6%
Action 4, Alt 3 (29.2% comm)	37%	0.4%

CHAPTER 3. AFFECTED ENVIRONMENT

3.1 Description of the Physical Environment

3.2 Description of the Biological and Ecological Environment

3.3 Description of the Economic Environment

3.4 Description of the Social Environment

3.5 Description of the Administrative Environment

CHAPTER 4. REFERENCES

Abbott, J., D. Willard. 2017. Rights-based management for recreational for-hire fisheries: Evidence from a policy trial. *Fisheries Research* 196: 106-116.

Barnette, M. C. 2001. A review of the fishing gear utilized within the Southeast Region and their potential impacts on essential fish habitat. NOAA Technical Memorandum. NMFS-SEFSC-449. National Marine Fisheries Service. St. Petersburg, Florida. 68 pp.
<https://repository.library.noaa.gov/view/noaa/8527>

Bohaboy, E.C., T.L. Guttridge, N. Hammerschlag, M.P.M. Van Zinnicq Bergmann, and W.F. Patterson III. 2020. Application of three-dimensional acoustic telemetry to assess the effects of rapid recompression on reef fish discard mortality. *ICES Journal of Marine Science* 77(1): 83-96.

Breitburg, D., L.A. Levin, A. Oschiles, M. Gregoire, F.P. Chavez, D.J. Conley, V. Garcon, D. Gilbert, D. Gutierrez, K. Isensee, G.S. Jacinto, K.E. Limburg, I. Montes, S.W.A. Naqvi, G.C. Pitcher, N.N. Rabalais, M.R. Roman, K.A. Rose, B.A. Seibel, M. Telszewski, M. Yasuhara, J. Zhang. 2018. Declining oxygen in the global ocean and coastal waters. *Science* 359(6371).
<https://doi.org/10.1126/science.aam7240>

Carter, D., C. Liese, , S. Lovell. 2022. The option price of recreational bag limits and the value of harvest. *Marine Resource Economics* 37(1): 35-52.

Carter, D., Lovell, S., Liese, C. 2020. Does angler willingness-to-pay for changes in harvest regulations vary by state? Results from a choice experiment in the Gulf of Mexico. *Marine Policy* 121:104-196.

Chagaris, D., S. Sagarese, N. Farmer, B. Mahmoudi, K. de Mutsert, S. VanderKooy, W. F. Patterson III, M. Kilgour, A. Schueller, R. Ahrens, and M. Laretta. 2019. Management challenges are opportunities for fisheries ecosystem models in the Gulf of Mexico. *Marine Policy* 101:1-7.

Coleman, F. C., C.C. Koenig, and L.A. Collins. 1996. Reproductive styles of shallow-water groupers (*Pisces: Serranidae*) in the eastern Gulf of Mexico and the consequences of fishing on spawning aggregations. *Environmental Biology of Fishes* 47:129-141.

Fodrie, F. J., K. L. Heck, Jr., S. P. Powers, W. M. Graham, and K. L. Robinson. 2010. Climate-related, decadal-scale assemblage changes of seagrass-associated fishes in the northern Gulf of Mexico. *Global Change Biology* 16(1):48-59.

Gilmore, R.G., and R.J. Jones. 1992. Color variation and associated behavior in the epinepheline groupers, *Mycteroperca microlepis* (Goode and Bean) and *M. phenax* (Jordan and Swain). *Bulletin of Marine Science* 51(1):83-103.

GMFMC. 1981. Environmental impact statement and fishery management plan for the reef fish resources of the Gulf of Mexico and environmental impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida. 328 pp.

<https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/REEF%20FISH/RF%20FMP%20and%20EIS%201981-08.pdf>

GMFMC. 1989. Amendment number 1 to the reef fish fishery management plan, includes environmental assessment, regulatory impact review, and regulatory flexibility analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 357 pp.

<https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/REEF%20FISH/RF%20Amend-01%20Final%201989-08-rescan.pdf>

GMFMC. 1999 Generic sustainable fisheries act amendment, to the following FMPs: Gulf coral and coral reef resources, coastal migratory pelagics, red drum, reef fish, shrimp, spiny lobster, stone crab. Includes regulatory impact review, initial regulatory flexibility analysis and environmental assessment. Gulf of Mexico Fishery Management Council, Tampa, Florida. 318 pp. <https://gulfcouncil.org/wp-content/uploads/Generic-SFA-amendment-1999.pdf>

GMFMC. 2003. Amendment 21 to the reef fish fishery management plan. Includes regulatory impact review, initial regulatory flexibility analyses, and environmental assessment. Gulf of Mexico Fishery Management Council, Tampa, Florida. 215 pp.

<https://gulfcouncil.org/wp-content/uploads/RF-Amend-21-Final-2003-09.pdf>

GMFMC. 2004a. Final environmental impact statement for the generic essential fish habitat amendment to the following fishery management plans of the Gulf of Mexico: Shrimp fishery of the Gulf of Mexico, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico, stone crab fishery of the Gulf of Mexico, coral and coral reef fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coastal migratory pelagic resources of the Gulf of Mexico of Mexico and South Atlantic. Gulf of Mexico Fishery Management Council. Tampa, Florida. 682 pp.

GMFMC. 2004b. Final amendment 22 to the reef fish fishery management plan to set red snapper sustainable fisheries act targets and thresholds, set a rebuilding plan, and establish bycatch reporting methodologies for the reef fish fishery. Includes final supplemental environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 291 pp.

<https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/REEF%20FISH/Amend%2022%20Final%2070204.pdf>

GMFMC. 2005. Final generic amendment number 3 for addressing essential fish habitat requirements, habitat areas of particular concern, and adverse effects of fishing in the following fishery management plans of the Gulf of Mexico: Shrimp fishery of the Gulf of Mexico, United States waters, red drum fishery of the Gulf of Mexico, reef fish fishery of the Gulf of Mexico,

coastal migratory pelagic resources (mackerels) in the Gulf of Mexico and South Atlantic, stone crab fishery of the Gulf of Mexico, spiny lobster fishery of the Gulf of Mexico and South Atlantic, coral and coral reefs of the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida. 106 pp.

https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/GENERIC/FINAL3_EFH_Amendment.pdf

GMFMC. 2008a. Final reef fish amendment 30B: Gag – end overfishing and set management thresholds and targets, Red grouper – set optimum yield, TAC, and management measures, time/area closures, and federal regulatory compliance including environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 462 pp.

https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/REEF%20FISH/Final%20Amendment%2030B%2010_10_08.pdf

GMFMC. 2008b. Amendment 29 to the reef fish fishery management plan – effort management in the commercial grouper and tilefish fisheries, including final environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 302 pp. https://gulfcouncil.org/wp-content/uploads/Reef-Fish-Amdt-29-Dec-08_508Compliant.pdf

GMFMC. 2008c. Final reef fish amendment 30A: Greater amberjack – revise rebuilding plan, accountability measures; gray triggerfish – establish rebuilding plan, end overfishing, accountability measures, regional management, management thresholds and benchmarks, including supplemental environmental impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 346 pp.

[Final Reef Fish Amendment 30A \(gulfcouncil.org\)](https://gulfcouncil.org/Reef-Fish-Amdt-29-Dec-08_508Compliant.pdf)

GMFMC. 2010. Final amendment 31 to the fishery management plan for reef fish resources in the Gulf of Mexico (revised). Addresses bycatch of sea turtles in the bottom longline component of the Gulf of Mexico reef fish fishery, includes revised final environmental impact statement and regulatory impact review. Gulf of Mexico Fishery Management Council. Tampa, Florida. 305 pp.

<https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/REEF%20FISH/Final%20Amendment%2031%20-%20revised%20-%202002-2010.pdf>

GMFMC. 2011a. Final generic annual catch limits/accountability measures amendment for the Gulf of Mexico Fishery Management Council's red drum, reef fish, shrimp, coral and coral reefs fishery management plans, including environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida. 378 pp.

http://www.gulfcouncil.org/docs/amendments/Final%20Generic%20ACL_AM_Amendment-September%209%202011%20v.pdf

GMFMC. 2011b. Final reef fish amendment 32 – gag grouper – rebuilding plan, annual catch limits, management measures. Red grouper – annual catch limits, management measures, and grouper accountability measures, including final environmental impact statement, regulatory impact review, regulatory flexibility analysis, and fishery impact statement. Gulf of Mexico Fishery Management Council, Tampa, Florida. 406 pp.
[http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011\[2\].pdf](http://www.gulfcouncil.org/docs/amendments/Final%20RF32_EIS_October_21_2011[2].pdf)

GMFMC. 2012a. Final amendment 35 to the fishery management plan for the reef fish resources of the Gulf of Mexico: Modifications to the greater amberjack rebuilding plan and adjustments to the recreational and commercial management measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 226 pp.
https://gulfcouncil.org/wp-content/uploads/FISHERY%20MANAGEMENT/REEF%20FISH/Final_Amendment_35_Greater_Amberjack_Rebuilding_8_May_2012.pdf

GMFMC. 2012b. Final amendment 38 to the fishery management plan for the reef fish resources of the Gulf of Mexico: Modifications to the shallow-water grouper accountability measures, including an environmental assessment, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 94 pp.
<http://www.gulfcouncil.org/docs/amendments/Final%20Amendment%2038%2009-12-2012.pdf>

GMFMC. 2015. Final amendment 28 to the fishery management plan for the reef fish resources of the Gulf of Mexico: Red snapper allocation, including final environmental impact statement, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 328 pp.
<http://gulfcouncil.org/docs/amendments/Final%20Red%20Snapper%20Allocation%20RF%20Amendment%2028.pdf>

GMFMC. 2016. Framework action to the fishery management plan for the reef fish resources of the Gulf of Mexico: Modifications to gag minimum size limits, recreational season and black grouper minimum size limits. Including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 117 pp.
[Modifications to Gag Minimum Size Limits, Recreational Season and Black Grouper Minimum Size Limits \(gulfcouncil.org\)](http://gulfcouncil.org/Modifications%20to%20Gag%20Minimum%20Size%20Limits,%20Recreational%20Season%20and%20Black%20Grouper%20Minimum%20Size%20Limits)

GMFMC. 2017a. Final amendment 44(revised) to the fishery management plan for the reef fish resources of the Gulf of Mexico: Minimum stock size threshold (MSST) revision for reef fish stocks with existing status determination criteria, including environmental assessment and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida. 124 pp.
https://gulfcouncil.org/wp-content/uploads/RF-Final-Amendment-44-revised-MSST-GOM-Reef-Fish-update-2_508Compliant.pdf

GMFMC. 2017b. Final framework action to the fishery management plan for reef fish resources of the Gulf of Mexico: Modifications to mutton snapper and gag management measures, including environmental assessment, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council, Tampa, Florida. 151pp.

<http://gulfcouncil.org/wp-content/uploads/Mutton-Snapper-Framework-Action-070717-Final-1.pdf>

GMFMC. 2021a. Final amendment 48 to the fishery management plans for reef fish resources in the Gulf of Mexico: Status determination criteria and optimum yield for reef fish and red drum, including environmental assessment and fishery impact statement. Gulf of Mexico Fishery Management Council. Tampa, Florida. 169 pp.

https://gulfcouncil.org/wp-content/uploads/Amendment-RF48-RD5_04262021_Final_Transmittal_revised.pdf

GMFMC. 2021b. Final amendment 53 to the fishery management plans for the reef fish resources in the Gulf of Mexico: Red grouper allocations and annual catch levels and targets, including final environmental impact statement, fishery impact statement, regulatory impact review, and regulatory flexibility act analysis. Gulf of Mexico Fishery Management Council. Tampa, Florida. 323 pp.

https://gulfcouncil.org/wp-content/uploads/RF-AM-53-Red-Grouper_9_24_2021_Final.pdf

GMFMC and NOAA. 2022. Interim action to reduce overfishing of gag in the Gulf of Mexico. Gulf of Mexico Fishery Management Council, Tampa, Florida and NMFS Southeast Regional Office, St. Petersburg, Florida. 156 pp. https://media.fisheries.noaa.gov/2023-01/Gag%20Interim%20Rule_EA%20_final508_01182023.pdf

GMFMC and NOAA. 2021. Red snapper and grouper-tilefish individual fishing quota programs review. Gulf of Mexico Fishery Management Council, Tampa, Florida and NMFS Southeast Regional Office, St. Petersburg, Florida. 245 pp.

https://gulfcouncil.org/wp-content/uploads/Joint-RS-GT-IFQ-Review-w-appendix-10-27-21-Final_508.pdf

Hamilton, A. N., Jr. 2000. Gear impacts on essential fish habitat in the Southeastern Region. National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Fisheries Science Center, Pascagoula, Mississippi. 41 pp.

Harford, W.J., S.R. Sagarese, and M. Karnauskas. 2019. Coping with information gaps in stock productivity for rebuilding and achieving maximum sustainable yield for grouper–snapper fisheries. *Fish and Fisheries* 20(2):303-321.

Jacob, S., P. Weeks, B. Blount, and M. Jepson. 2013. Development and evaluation of social indicators of vulnerability and resiliency for fishing communities in the Gulf of Mexico. *Marine Policy* 37:86-95.

- Jepson, M. and L.L. Colburn. 2013. Development of social indicators of fishing community vulnerability and resilience in the U.S. Southeast and Northeast Regions. NOAA Technical Memorandum NMFS-F/SPO-129. NMFS, St. Petersburg, Florida. 72 pp.
- Keithly W.R., Jr. and M. Tabarestani. 2018. The Gulf of Mexico grouper/tilefish fishery after introduction of an individual fishing quota program: The impact on ex-vessel prices. 17 pp. [Demand-Analysis.pdf \(gulfcouncil.org\)](#)
- Keithly, W. R., Jr. and H. Wang. 2018. Results from the National Marine Fisheries Service 2016 Gulf of Mexico grouper/tilefish IFQ survey. NMFS, Miami, Florida. 50 pp. [Dealer-Survey.pdf \(gulfcouncil.org\)](#)
- Kennedy, V.S., R.R. Twilley, J.A. Kleypas, J.H. Cowan, and S.R. Hare. 2002. Coastal and marine ecosystems & global climate change: Potential effects on U.S. resources. Pew Center on Global Climate Change, Arlington, Virginia. 52 pp. https://www.c2es.org/site/assets/uploads/2002/08/marine_ecosystems.pdf
- McEachran, J.D. and J.D. Fechtel. 2005. Fishes of the Gulf of Mexico, Vol. 2. *Scorpaeniformes* to *Tetraodontiformes*. University of Texas Press, Austin, Texas.
- NMFS. 2011a. Biological opinion on the continued authorization of reef fish fishing under the Gulf of Mexico reef fish fishery management plan. National Marine Fisheries Service, Southeast Regional Office, St. Petersburg, Florida. 216 pp.
- NMFS. 2011b. A user's guide to the National I/O Model. NMFS Office of Science and Technology. Silver Spring MD, 39 pp.
- NMFS. 2022a. Fisheries economics of the United States, 2019. U.S. Dept. of Commerce, NOAA Tech. Memo. NMFS-F/SPO-229A, 236 pp.
- NMFS. 2022b. Gulf of Mexico grouper-tilefish individual fishing quota report (2021 Update). National Marine Fisheries Service, Southeast Regional Office. St. Petersburg, Florida. 84pp. SERO-LAPP-2022-2. https://noaa-sero.s3.amazonaws.com/drop-files/cs/2021_GT_AnnualReport_SEROFinal.pdf
- Overstreet, E., L. Perruso, and C. Liese. 2017. Economics of the Gulf of Mexico reef fish fishery - 2014. NOAA Technical Memorandum NMFS-SEFSC-716. 84 pp.
- Overstreet, E. and C. Liese. 2018a. Economics of the Gulf of Mexico reef fish fishery - 2015. NOAA Technical Memorandum NMFS-SEFSC-724. SEFSC, Miami. 78 pp.
- Overstreet, E. and C. Liese. 2018b. Economics of the Gulf of Mexico reef fish fishery-2016. NOAA Technical Memorandum NMFS-SEFSC-725. SEFSC, Miami. 116 pp. <https://repository.library.noaa.gov/view/noaa/19805>

Pulver, J. 2017. Sink or swim? Factors affecting immediate discard mortality for the Gulf of Mexico commercial reef fish fishery. *Fisheries Research* 188: 166-172.

<https://www.sciencedirect.com/science/article/abs/pii/S0165783616304374?via%3Dihub>

Savolainen, M.A., R.H. Caffey, and R.F. Kazmierczak, Jr. 2012. Economic and attitudinal perspectives of the recreational for-hire fishing industry in the U.S. Gulf of Mexico. Center for Natural Resource Economics and Policy, LSU AgCenter and Louisiana Sea Grant College Program, Department of Agricultural Economics and Agribusiness, Louisiana State University, Baton Rouge, LA. 171 pp.

www.laseagrant.org/wp-content/uploads/Gulf-RFH-Survey-Final-Report-2012.pdf

SEDAR 19. 2010. SEDAR 19 Stock Assessment of Gulf of Mexico and South Atlantic Black Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. 661 pp.

<https://sedarweb.org/documents/sedar-19-final-stock-assessment-report-south-atlantic-and-gulf-of-mexico-black-grouper/>

SEDAR 68. 2021. SEDAR 68 Operational Assessment of Gulf of Mexico Scamp and Yellowmouth Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. 231 pp.

<https://sedarweb.org/documents/sedar-68oa-gulf-of-mexico-scamp-operational-assessment-final-stock-assessment-report/>

SEDAR 85. 2023. SEDAR 85 Operational Assessment of Gulf of Mexico Yellowedge Grouper. Southeast Data, Assessment, and Review. North Charleston, South Carolina. 293 pp.

<https://sedarweb.org/documents/sedar-85-gulf-of-mexico-yellowedge-grouper-final-stock-assessment-report/>

Siebenaler, J.B. and W. Brady. 1952. A high speed manual commercial fishing reel. Technical Series 4. Florida Board of Conservation, Tallahassee, Florida. 11 pp.

Souza, Philip M., Jr. and Christopher Liese. 2019. Economics of the federal for-hire fleet in the Southeast - 2017. NOAA Technical Memorandum NMFS-SEFSC-740. SEFSC, Miami. 42 pp.

Swedmark, M., A. Granmo, and S. Kollberg. 1973. Effects of oil dispersants and oil emulsions on marine animals. *Water Research* 7(11): 1649-1672.

Wells, M.L., V.L. Trainer, T.J. Smayda, B.S.O. Karlson, C.G. Trick, R.M. Kudela, A. Ishikawa, S. Bernard, A. Wulff, D.M. Anderson, W.P. Cochlan. 2015. Harmful algal blooms and climate change: Learning from the past and present to forecast the future. *Harmful Algae* 49: 68-93

Whitehead, A., B. Dubansky, C. Bodinier, T. Garcia, S. Miles, C. Pilley, V. Raghunathan, J. L. Roach, N. Walker, R.B. Walter, C. D. Rice, F. Galvez. 2012. Genomic and physiological footprint of the *Deepwater Horizon* oil spill on resident marsh fishes. *Proceedings of the National Academy of Sciences* 109 (50): 20298-20302

Appendix A. Gulf of Mexico Fishery Management Council ACL/ACT Buffer Calculation Spreadsheet

As of 05/30/2024

Note: Scamp used as indicator for PSE determination and SDC

Gulf SWG

ACL/ACT Buffer Spreadsheet

version 4.1 - April 2011

Sector: Rec

sum of points 4

Years: 2020-2023

max points 5.0

Buffer between ACL and ACT (or ABC and ACL) Unweighted 15

Min. Buffer	0	min. buffer	User adjustable
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	18	Weighted	
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Max Unw. Buff	19	max unwt. Buff	User adjustable
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Max Wtd Buff	25	max wtd. buffer	User adjustable
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Component	Element score	Element	Selection	Element result
Stock assemblage	0	This ACL/ACT is for a single stock.		1
	1	This ACL/ACT is for a stock assemblage, or an indicator species for a stock assemblage	x	
Ability to Constrain Catch	0	Catch limit has been exceeded 0 or 1 times in last 4 years	x	0.0
	1	Catch limit has been exceeded 2 or more times in last 4 years	x	
		For the year with max. average, add 0.5 pts. For every 10 percentage points (rounded up) above ACL	0.0	
		Not applicable (there is no catch limit)		
Apply this component to recreational fisheries, not commercial or IFQ fisheries				
Precision of Landings Data Recreational	0	Method of absolute counting		2
	1	MRIP proportional standard error (PSE) <= 20		
	2	MRIP proportional standard error (PSE) > 20	x	
		Not applicable (will not be included in buffer calculation)		
Apply this component to commercial fisheries or any fishery under an IFQ program				
Precision of Landings Data Commercial	0	Landings from IFQ program		not applicable
	1	Landings based on dealer reporting		
	2	Landings based on other		
		Not applicable (will not be included in buffer calculation)	x	
Timeliness	0	In-season accountability measures used or fishery is under an IFQ		1
	1	In-season accountability measures not used	x	
Sum				4

Weighting factor		Element weight	Element	Selection	Weighting
Overfished status	0	1.	Stock biomass is at or above BOY (or proxy).		0.2
	0.1	2.	Stock biomass is below BOY (or proxy) but at or above BMSY (or proxy).		
	0.2	3.	Stock biomass is below BMSY (or proxy) but at or above minimum stock size threshold (MSST)	x	
	0.3	4.	Stock is overfished, below MSST.		
	0.3	5.	Status criterion is unknown.		