MULTI-YEAR SPECIFICATIONS FRAMEWORK

FRAMEWORK ADJUSTMENT #X TO THE TILEFISH FISHERY MANAGEMENT PLAN

DRAFT ENVIRONMENTAL ASSESSMENT (EA)
(Including a Regulatory Impact Review, Regulatory Flexibility Act Analysis)

July 2021

Mid-Atlantic Fishery Management Council

in cooperation with

the National Marine Fisheries Service

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1.0 EXECUTIVE SUMMARY

In this Framework Adjustment to the Tilefish Fishery Management Plan (FMP), the Mid-Atlantic Fishery Management Council (MAFMC or Council) considered measures to revise the specifications process by considering the duration for setting multi-year management measures and the timing of the fishing year. In addition, this framework will set new specifications (catch and landings limits) for 2022, 2023, and 2024.

The first action considered would modify the process by altering the duration that multi-year management measures for golden tilefish can be set (currently 3 year maximum). This action would modify the annual specifications process, so that they could be set for the maximum number of years needed to be consistent with the Northeast Region Coordinating Council (NRCC) approved stock assessment schedule. This action will address an approved Council directive to "Initiate a framework to allow golden tilefish specifications to be set for more than 3 years." This issue was included in the Council's 2021 Implementation Plan in response to Executive Order (EO) 13921 (Promoting American Seafood Competitiveness and Economic Growth). The purpose of this EO is, "to strengthen the American economy; improve the competitiveness of American industry; ensure food security; provide environmentally safe and sustainable seafood; support American workers; ensure coordinated, predictable, and transparent Federal actions; and remove unnecessary regulatory burdens."

The second action considered would change the timing of the fishing year. Current regulations define the golden tilefish fishing year as the 12-month period from November 1 – October 31. The Golden Tilefish Individual Fishing Quota 5-Year Review Report recommended that the fishing year be changed to January 1 – December 31 to ease the administration of cost recovery in the golden tilefish individual fishing quota (IFQ) fishery (which is calculated on a calendar year basis; January 1 – December 31).[1] Unifying the allocation usage monitoring and the cost recovery time periods to a single 12-month period would reduce the administrative burden and potentially decrease administrative costs recovered from the industry. In addition, the calendar year is the time period upon which the stock assessment is based. Lastly, industry members have indicated that ending the fishing year in December, rather than October, will create more stability in terms of harvesting their full allocation. October can be a very stormy, and unpredictable month with fish on the move in response to changing weather conditions.

In addition to the specification process related issues described above, this framework will set annual specification measures for the 2022-2024 fishing seasons. The 2021 Golden Tilefish Management Track Assessment was used to revise the previously set 2022 (interim) specifications and set new specifications for the 2023 and 2024 fishing seasons. The purpose of setting specifications is to implement commercial quotas for the golden tilefish fishery in 2022-2024 that are necessary to prevent overfishing and ensure annual catch limits (ACLs) are not exceeded.

[1] Available here (Golden Tilefish Individual Fishing Quota 5-Year Review Report).

After the Council selects its preferred alternatives, this framework will be submitted to NOAA Fisheries for approval and implementation. NOAA Fisheries will publish a proposed rule along with this Environmental Assessment (EA) for public comment. After considering public comment on the proposed rule, NOAA Fisheries will publish a final rule with implementation details, if the action is approved or partially approved by NOAA Fisheries.

This document describes all evaluated management alternatives and their expected impacts on five aspects of the affected environment, which are defined as valued ecosystem components (VECs; sections 6.0 and 7.0). Summaries of the alternatives and expected impacts are below. A detailed description and discussion of the expected environmental impacts resulting from each of the alternatives, as well as any cumulative impacts, considered in this document are provided in section 7.0. For purposes of impact evaluation, no action (s*tatus quo*) alternatives are compared to the current baseline condition, while all other alternatives are compared to the no action/s*tatus quo* alternative. This framework document was developed in accordance with all applicable laws and statutes as described in section 8.0.

Summary of Alternatives

The multi-year specifications alternatives are summarized in Box ES-1 to Box ES-3 and described in more detail in section 5.0.

Box ES-1. Summary of the multi-year specifications alternatives.

Alternatives	Summary of Alternatives
Alternative 1 (*No Action/Status Quo*)	No changes to the process to set golden tilefish management specifications for up to 3 years.
Alternative 2 (**Preferred:** Specifications to be set for the maximum number of years needed to be consistent with the Northeast Regional Coordinating Council approved stock assessment schedule)	Specifications could be set for the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish assessment is produced.

Box ES-2. Summary of the fishing year alternatives.

Alternatives	Summary of Alternatives
Alternative 1 (*No Action/Status Quo*)	No changes to the current golden tilefish fishing year. The golden tilefish fishing year will continue to be November 1 - October 31.
Alternative 2 (**Preferred:** The golden tilefish fishing year is the 12-month period beginning with January 1, annually)	The golden tilefish fishing year is the 12-month period beginning January 1, annually. Therefore, the fishing year will be from January 1 – December 31.

[Revise once the Council completes selection of the preferred alternatives]

Box ES-3. Summary of the 2022-2024 golden tilefish quota alternatives.

Alternatives	Commercial Component	2022 Quotas	2023 Quotas	2024 Quotas
Alternative 1 (*No Action/ Status Quo*)	**Overall**	1,624,305	1,624,305	1,624,305
	IFQ vessels	1,554,038	1,554,038	1,554,038
	Incidental vessels	70,267	70,267	70,267
Alternative 2 (Average quotas; SSC/MC recommended)	**Overall**	1,946,914	1,946,914	1,946,914
	IFQ vessels	1,866,103	1,866,103	1,866,103
	Incidental vessels	80,811	80,811	80,811
Alternative 3 (Time varying quotas)	**Overall**	1,894,003	2,004,234	1,944,709
	IFQ vessels	1,815,837	1,920,557	1,864,008
	Incidental vessels	78,165	83,677	80,701

Summary of Impacts

The following section presents a qualitative summary of the expected impacts for alternatives under consideration (Boxes ES-1 to ES-3). For purposes of impact evaluation, *status quo* alternatives are compared to the current conditions, while all other alternatives are compared to the *status quo* alternative (alternatives are fully described in sections 5.1 to 5.3). The expected impacts of the alternatives in this document on the VECs are summarized in Box ES-4 to Box ES-6 and described in more detail in sections 7.1 to 7.3.

Multi-Year Specifications Alternatives

None of the multi-year specifications alternatives are expected to impact the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set golden tilefish management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the target species (tilefish) compared to the current condition of the stock. Alternative 2 (preferred) would not change the process by which the annual multi-year specifications are set; it would simply modify the number of years (time period) for which those measures could be set. Under alternative 2, specifications could be set for up to the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. Both, alternatives are expected to have no impact (direct or indirect) on the target species (tilefish) compared to the current condition of the stock.

The no action alternative and the preferred alternative are process related and are expected to have no impact (direct or indirect) on target species (tilefish), non-target species, the physical habitat, protected resources, or human communities compared to the current conditions. Although there are no impacts on the VECs, preferred alternative 2 would provide for some administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fishery between stock assessments; thus, improving the management process (i.e., efficient use of Council and NOAA staff time and reducing management costs). It is possible that this could in turn decrease the administrative burden and the IFQ cost recovery fee.

Fishing Year Timing Alternatives

None of the fishing year alternatives are expected to impact the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the current golden tilefish fishing year. The golden tilefish fishing year will continue to be November 1 - October 31. The no action alternative is expected to have no impact (direct or indirect) on the target species (tilefish) compared to the current condition of the stock. Alternative 2

(preferred) would change the process by which the current fishing year timing is set. Under alternative 2, the golden tilefish fishing year is the 12-month period beginning with January 1, annually. Alternative 2 would result in quota specifications for the January 1 – December 31 period, to be aligned the with the 12-month cycle for which the stock assessment is based (January 1 – December 31); thus, potentially reducing uncertainty in the long-term.[2] This is expected to result in impacts to the stock that range from no impacts to slightly positive impacts compared to the current conditions.

The no action alternative and the preferred alternative are process related and are expected to have no impact (direct or indirect) on non-target species, the physical habitat, or protected resources compared to the current conditions.

Under alternative 1 (no action/*status quo*), there would be no changes to the current golden tilefish fishing year. The golden tilefish fishing year will continue to be November 1 – October 31. The no action alternative is expected to have no impact (direct or indirect) on the human communities compared to the current conditions. Preferred alternative 2 would align the fishing year with cost recovery calculations associated with managing the IFQ system. This could in turn decrease the administrative burden and the IFQ cost recovery fee. In addition, industry members have indicated that aligning the fishing year with the calendar year will create more stability in terms of harvesting their full allocation. This is expected to result in impacts to the human communities that range from no impacts to slightly positive impacts compared to the current conditions. When comparing across both alternatives, alternative 2 is expected to result in impacts to human communities that range from no impacts to slightly positive impacts compared to *status quo* measure (alternative 1).

2022-2024 Golden Tilefish Fishery Specifications (Catch and Landings Limits)

[Revise once the Council completes selection of the preferred alternatives]

Overall, alternative 1 (*status quo*) is expected to provide a small decrease in fishing opportunities in 2022 compared to 2021 on common monthly denominator basis, but similar fishing opportunities in 2023-2024.[3] Alternative 2 (average quotas) and alternative 3 (time varying quotas) are expected to provide near identical common monthly denominator basis fishing opportunities in 2022 compared to 2021, but higher fishing opportunities in 2023-2024. Regardless the potential changes in fishing opportunities and

[2] Currently, the fishing year starts on November 1 (November 1 – October 31), two months ahead of the yearly projections used to derived catch and landings limits (January 1 – December 31).

[3] The small decrease in fishing opportunities is due to the one-time only adjustment to bridge the gap as a result of the change to the current fishing year. Since fishing year 2021 is November 1, 2020 – October 31, 2021, and fishing year 2022 will extended from November 1, 2021 to December 31, 2022, on a common month denominator basis, there is a small quota reduction. As indicated above, this is a one-time only adjustment as a result of the change to the fishing year under preferred fishing year timing alternative 2. See section 7.3.1.1 for numerical example of the common monthly denominator basis derivation/comparison. Then, for 2023 and 2024, the Council would implement specifications starting on January 1 and ending in December 31.

effort in some instances, it is not expected that these alternatives will result in notable changes in spatial and/or temporal distribution of fishing effort.
All three alternatives are expected to result in slight positive impacts on the managed resource overall in 2022-2024 by ensuring future sustainability of the stock and maintaining current conditions of the stock. However, positive impacts under alternative 1 (*status quo*) are expected to be slightly greater in magnitude than under alternative 2 (average quotas) and alternative 3 (time varying quotas) because of lower fishing effort. The positive impacts of alternatives 2 and 3 are expected to be identical. When comparing all three alternatives for 2022-2024 for non-target species, impacts are expected to range from negligible negative (blueline tilefish and conger eel) to slight positive (spiny dogfish and smooth dogfish) compared to the current conditions. However, the magnitude of the negative impacts is expected to be slightly greater under alternative 2 (average quotas) and alternative 3 (time varying quotas) because of higher fishing effort compared to alternative 1 (*status quo*). Similarly, the magnitude of the positive impacts is expected to be slightly lesser under alternative 2 (average quotas) and alternative 3 (time varying quotas).

All three alternatives are expected to result in negligible negative impacts on physical habitat by maintaining the current conditions (i.e., current levels of impacts on habitat), although perhaps slightly less under less so under alternative 1. When comparing all three alternatives for 2022-2024 for habitat, the magnitude of the negative impacts is expected to be slightly lesser under alternative 1 (*status quo*) due to lower fishing effort compared to alternative 2 (average quotas) and alternative 3 (time varying quotas). Similarly, the magnitude of the negative impacts is expected to be similar under alternative 2 (average quotas) and alternative 3 (time varying quotas).

Under all three alternatives, the current conditions of protected resources are unlikely to change (as described in section 6.3). All three alternatives are expected to result in impacts that range from negligible negative impacts on sea turtles species (because there is still a chance for interaction with gear) to no impacts on all other protected species. When comparing all three alternatives for 2022-2024 for protected resources, the magnitude of the negative impacts on sea turtles is expected to be slightly lesser under alternative 1 (*status quo*) due to lower fishing effort compared to alternative 2 (average quotas) and alternative 3 (time varying quotas). Similarly, the magnitude of the negative impacts is expected to be similar under alternative 2 (average quotas) and alternative 3 (time varying quotas).

Maintaining the *status quo* alternative would result in negative socioeconomic impacts due to a lower common monthly denominator basis quota in 2022 compared to 2021. However, for 2023 and 2024 no change in ex-vessel gross revenues are expected if landings and prices are similar to those that occurred in 2021. This is due to the fact that overall commercial quotas in 2023 and 2024 quotas are identical to the quotas implemented in 2021. Alternatives 2 and 3 are expected to result in positive socioeconomic impacts compared to the *status quo* alternative 1. However, the magnitude of the positive impacts are greater under alternative 3 than under alternative 2.

Box ES-4. Overall qualitative summary of the expected impacts on the current conditions of valued ecosystem components, from multi-year specifications alternatives considered in this document. A minus sign (–) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero (0) is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). Negligible equates to non-significant.

Alternatives	Biological	Physical Habitat	Protected Resources	Human Communities
Alternative 1 (Non-Preferred: *No Action/Status Quo*)	0	0	0	0
Alternative 2 (**Preferred:** Specifications to be set for the maximum number of years needed to be consistent with the Northeast Regional Coordinating Council approved stock assessment schedule)	0	0	0	0; some administrative efficiencies would result.

Box ES-5. Overall qualitative summary of the expected impacts on the current conditions of valued ecosystem components, from fishing year alternatives considered in this document. A minus sign (–) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero (0) is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). Negligible equates to non-significant.

Alternatives	Biological	Physical Habitat	Protected Resources	Human Communities
Alternative 1 (Non-Preferred: *No Action/Status Quo*)	0	0	0	0
Alternative 2 (**Preferred:** The golden tilefish fishing year is the 12-month period beginning with January 1, annually)	0 to sl + (target); 0 (non-target)	0	0	0 to sl +

[Revise once the Council completes selection of the preferred alternatives]

Box ES-6. Overall qualitative summary of the expected impacts on the current conditions of valued ecosystem components, from various golden tilefish quota alternatives considered in this document. A minus sign (–) signifies an expected negative impact, a plus sign (+) signifies an expected positive impact, and zero (0) is used to indicate a null impact. A "sl" in front of a sign is used to convey a minor effect, such as slight positive (sl+). Negligible equates to non-significant.

Year	Alternatives	Biological	Physical Habitat	Protected Resources	Human Communities
2022-2024 (same for each year, unless otherwise noted)	**Alternative 1** (*Status Quo/No Action*)	sl + (target); negligible – to sl + (non-target)	Negligible –	Negligible – (sea turtles) to 0 impact (all other protected species)	– (2022); 0 (2023-2024)
	Alternative 2 (Average quotas; SSC/MC recommended)	sl + (target); negligible – to sl + (non-target)	Negligible –	Negligible – (sea turtles) to 0 impact (all other protected species)	sl + (2022); + (2023-2024)
	Alternative 3 (Time varying quotas)	sl + (target); negligible – to sl + (non-target)	Negligible –	Negligible – (sea turtles) to 0 impact (all other protected species)	Negligible – (2022); + (2023-2024)

Cumulative Impacts

[Revise once the Council completes selection of the preferred alternatives]

For golden tilefish, the Council analyzed the managed resources (target) and non-target species, physical habitat, protected species, and human communities (socioeconomic) impacts of the Council-considered alternatives. When the proposed action is considered in conjunction with all the other pressures placed on fisheries by past, present, and reasonably foreseeable future actions, it is not expected to result in any significant impacts, positive or negative; therefore, there are no significant cumulative effects on the human environment associated with the action proposed in this document (see section 7.3).

Conclusions

[Revise once the Council completes selection of the preferred alternatives]

A detailed description and discussion of the expected environmental impacts resulting from each of the alternatives, as well as any cumulative impacts, considered in this framework document are provided in section 7.0. None of the preferred action alternatives are associated with significant impacts to the target and non-target species, physical habitat, protected species, or human communities individually or in conjunction with other actions

under National Environmental Policy Act (NEPA); therefore, a "Finding of No Significant Impact" is warranted.

2.0 LIST OF ACRONYMS

ABC	Acceptable Biological Catch
ACL	Annual Catch Limit
ACT	Annual Catch Target
ALWTRP	Atlantic Large Whale Take Reduction Plan
ASMFC	Atlantic States Marine Fisheries Commission
AWEA	American Wind Energy Association
BOEM	Bureau of Ocean and Energy Management
CEA	Cumulative Effects Analysis
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CPUE	Catch Per Unit Effort
CV	Coefficient of Variation
CZMA	Coastal Zone Management Act
DPS	Distinct Population Segment
EA	Environmental Assessment
EFH	Essential Fish Habitat
EEZ	Exclusive Economic Zone
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act of 1973
F	Fishing Mortality Rate
FMP	Fishery Management Plan
F_{MSY}	Fishing Mortality Rate at Maximum Sustainable Yield
FR	Federal Register
FONSI	Finding of No Significant Impact
GARFO	Greater Atlantic Regional Fisheries Office
GOM	Gulf of Maine
IFQ	Individual Fishing Quota
LOF	List of Fisheries
MAFMC	Mid-Atlantic Fishery Management Council (or Council)
MC	Monitoring Committee
MMPA	Marine Mammal Protection Act
MSA	Magnuson-Stevens Fishery Conservation and Management Act
MSY	Maximum Sustainable Yield
mt	metric tons
NAO	National Oceanic and Atmospheric Administration Administrative Order
NEFSC	Northeast Fisheries Science Center
NEFOP	Northeast Fisheries Observer Program
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OFL	Overfishing Limit
OY	Optimum Yield
PBR	Potential Biological Removal
RFA	Regulatory Flexibility Act

RHL	Recreational Harvest Limit
PRA	Paperwork Reduction Act
RIR	Regulatory Impact Review
SARC	Stock Assessment Review Committee
SAW	Stock Assessment Workshop
SBA	Small Business Administration
SI	Serious Injury
SSB	Spawning Stock Biomass
SSB_{MSY}	Spawning Stock Biomass at Maximum Sustainable Yield
SSC	Scientific and Statistical Committee
TAL	Total Allowable Landings
US	United States
USFWS	United States Fish and Wildlife Service
VECs	Valued Ecosystem Components
VTR	Vessel Trip Report

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4.0 PURPOSE AND NEED FOR ACTION

The purpose of this framework is to address issues related to the administration of the golden tilefish fishery, while continuing to achieve the management objectives of the FMP. The need for this framework relates to a desire by the Council to optimize the management system for the golden tilefish fishery.

The FMP, which initiated the management for golden tilefish (*Lopholatilus chamaeleonticeps*), became effective November 1, 2001 (66 FR 49136; September 26, 2001) and included management and administrative measures to ensure effective management of the tilefish resource. Amendment 1 to the FMP implemented an IFQ in the directed golden tilefish fishery (74 FR 42580; August 24, 2009). It also implemented new reporting requirements and gear modifications, addressed recreational fishing issues, and reviewed the essential fish habitat (EFH) components of the FMP, including implementing gear restricted areas to prevent bottom trawling in habitat areas of particular concern. Amendment 6 to the FMP incorporated blueline tilefish (*Caulolatilus microps*) as a managed species in the FMP and established blueline tilefish management measures, including, an ACL process, sector allocations, possession limits, fishing season, permitting, and reporting requirements (82 FR 52851; November 15, 2017). The management regime and objectives of the fishery are detailed in the FMP, including any subsequent amendments, and are available at: http://www.mafmc.org.

The purpose and need for this framework are summarized in Box 4.1. The full range of management issues addressed in this framework intended to achieve FMP management objectives are described under the headings below.

Box 4.1. Purpose and Need.

NEED	CORRESPONDING PURPOSE
1. Improve timing of multi-year specifications.	Implement multi-year specifications measures to provide additional flexibility to the quota setting process.
2. Modify the fishing year.	Implement a fishing year that improves the administration the tilefish IFQ program, and aligns the quota setting process with stock assessment results/projections.
3. Prevent overfishing and ensure ACLs are not exceeded. Achieve maximum sustainable yield in the golden tilefish fishery.	Implement measures to specify levels of harvest and catch of golden tilefish consistent with the Magnuson-Stevens Act and the objectives of the FMP, including to prevent overfishing and set annual fishery specifications.

Multi-Year Specifications

At the October 2020 Council meeting, the Council approved a final list of recommendations in response to EO 13921 (Promoting American Seafood Competitiveness and Economic Growth). The purpose of this EO is, "to strengthen the American economy; improve the competitiveness of American industry; ensure food security; provide environmentally safe and sustainable seafood; support American workers; ensure coordinated, predictable, and transparent Federal actions; and remove unnecessary regulatory burdens." Section 4 of the EO requires each Regional Fishery Management Council to submit to the Secretary of Commerce a prioritized list of recommended actions to reduce the burden on domestic fishing and to increase production within sustainable fisheries, including a proposal for initiating action by May 6, 2021. The Council approved 18 recommendations which cover a broad range of topics. For golden tilefish, the Council added a new initiative to the Council's 2021 Implementation Plan to address the objectives of the EO: "Initiate a framework to allow golden tilefish specifications to be set for more than 3 years."

Golden tilefish regulations allow multi-year annual specifications to be set for up to 3 years at a time (CFR §§ 648.290 and 291). Therefore, current regulations allow, but do not obligate the Council to specify commercial quotas and other management measure for up to 3 years. Multi-year regulations have been implemented for all fisheries managed by the Mid-Atlantic Fishery Management Council (MAFMC or Council) to relieve administrative demands on the Council and NMFS imposed by annual specification requirements. Longer term specifications provide greater regulatory consistency and predictability to the fishing sectors. This action would modify the annual specifications process, so that they could be set for the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. As a result, this action would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish stock assessment is produced.

Fishing Year Timing

Current regulations define the golden tilefish fishing year as the 12-month period beginning with November 1, annually (50 CFR § 648.292). The current fishing year was initially established to correspond with the implementation date of the Fishery Management Plan (MAFMC 2000; 66 FR 49136, September 26, 2001). The final rule that initiated the Tilefish FMP became effective November 1, 2001. The Golden Tilefish Individual Fishing Quota 5-Year Review Report contains the following recommendation regarding changing the fishing year:

> *The golden tilefish fishing year, under which IFQ allocation usage is monitored, extends from November 1 – October 31 of the following year. However, costs are recovered in the Golden Tilefish IFQ fishery on a calendar-year basis. This discrepancy has, at times, caused some difficulties in the administration of the cost recovery program, as the cost recovery year traverses two fishing years, and vice versa. To ease the administration of the cost recovery in the Golden Tilefish IFQ fishery,*

unifying the allocation usage monitoring and the cost recovery time periods to a single 12-month period should be considered. The calendar year is strongly recommended as this is also the time period upon which stock assessments are based. Changing the golden tilefish fishing year could potentially decrease administrative costs recovered from the industry.

Furthermore, industry members have indicated that ending the fishing year in December, rather than October, will create more stability in terms of harvesting their full allocation. October can be a very stormy, and unpredictable month with fish on the move in response to changing weather conditions.

2022-2024 Fishery Specifications (Catch and Landings Limits)

[Revise once the Council completes selection of the preferred alternatives]

In 2020, the Council set specifications for 2021 and interim specifications for 2022 (Table 1). The 2022 interim specifications were set because of potential timing constraints associated with the 2021 management track assessment and administrative efficiencies. The interim 2022 measures provided a placeholder in the event that there was insufficient administrative time for Council approval and rulemaking for the start of the 2022 fishing year (i.e., November 1, 2021). The Council anticipated the use of the 2021 golden tilefish management track assessment to review and possibly revise the interim 2022 specifications and set specifications for the 2023 and 2024 fishing seasons. At the July SSC and MC meetings, new catch and landings limits for the 2022 to 2024 fishing years were recommended to the Council (see discussion below for additional details). Therefore, in addition to the two process related issues described above, this framework will set specifications for the 2022, 2023, and 2024 fishing seasons.[4]

[4] The new 2022 catch and landings limits presented in this document (shown in Table 2) replaced the interim 2022 catch and landings limits previously adopted by the Council (shown in Table 1).

Table 1. Catch and landings limits (in pounds unless otherwise noted) for the current specifications cycle (2021-2022).

	2021 (initial values)*	2021 IFQ TAL w/ Max Carryover**	2022 (interim)	Basis
ABC	1.636 m lb (742 mt)	–	1.636 m lb (742 mt)	SSC recommendation, based on data update, recent fishing trends, and scheduled 2021 management track assessment update that will be used to revise 2022 interim specifications
ACL	1.636 m lb (742 mt)	–	1.636 m lb (742 mt)	ABC = ACL
Management Uncertainty	0	–	0	Derived by Monitoring Committee (MC)
IFQ ACT	1.554 m lb (705 mt)	–	1.554 m lb (705 mt)	95% ACL
Incidental ACT	0.082 m lb (37 mt)	–	0.082 m lb (37 mt)	5% ACL
IFQ Discards	0	–	0	Discards in the IFQ fishery are prohibited
Incidental Discards	0.011 m lb (5 mt)	–	0.011 m lb (5 mt)	Avg. discard (2015-2019) mostly sm/lg mesh OT and Gillnet gear. NEFSC
IFQ TAL	1.554 m lb (705 mt)	1.601 m lb (726 mt)	1.554 m lb (705 mt)	IFQ ACT - IFQ Discards
Incidental TAL	0.070 m lb (32 mt)	–	0.070 m lb (32 mt)	Incidental ACT - Incidental Discards

*ABC values are typically reported in metric tons (mt) and thus, the management measures are developed using mt. When values are converted to millions of pounds (m lb) the numbers may change due to rounding. Projected incidental discards are initially reported in pounds and then converted to mt. 1 mt = 2,204.6226 pounds. **Due to the COVID-19 national emergency, the Council requested the service to consider an emergency action to allow a 5% rollover of unused IFQ 2020 quota allocation for the golden tilefish fishing year November 1, 2020 through October 31, 2021. Only the IFQ TAL would be affected by the requested emergency carryover. All other specifications would remain at proposed 2021 values.

The MSA requires each Council's Scientific and Statistical Committee (SSC) to provide recommendations for acceptable biological catch (ABC), preventing overfishing, and maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. In addition, the Monitoring Committee (MC) established in the FMP for the fishery is responsible for developing recommendations for the Council on the management measures necessary to achieve the recommended catch limits, including annual catch targets (ACTs) for this species. A memo from the SSC chairman to the Council chair, dated July XX, 2021 (available at (http://www.mafmc.org/ssc/), provides details on the derivation of ABC for the managed resource and highlights the specific sources of scientific uncertainty that were of particular relevance to the SSC deliberation. Briefing materials for the August 2021 Council Meeting (available at http://www.mafmc.org) detail the MC recommendations for ACTs that account for management uncertainty, and other recommended changes to

management measures for the commercial fishery. An overview of the SSC and MC recommendations is provided below.

[Revise once the SSC completes ABC process alternatives]

Revise text below to capture SSC meeting outcome:

. . . Based on the updated information presented, the SSC derived ABC recommendations based on the traditional approach of varying ABCs in each year, and a constant ABC approach derived from the projected ABCs (as requested under ToR #3). The SSC accepted the CV of 100% in the OFL as the foundation for the ABC. Using the Council's published risk policy, the recommended ABCs are as follows:

	Traditional - ABC	Constant – ABC (Staff/MC recommended)
2022	1,911,408 pounds (867 mt) (OFL= x,xxx,xxx or 1,011 mt)	1,964,319 pounds (891 mt) (OFL= x,xxx,xxx or 1,011 mt)
2023	2,021,639 pounds (917 mt) (OFL= x,xxx,xxx or 1,013 mt)	1,964,319 pounds (891 mt) (OFL= x,xxx,xxx or 1,010 mt)
2024	1,962,114 pounds (890 mt) (OFL= x,xxx,xxx or 975 mt)	1,964,319 pounds (891 mt) (OFL= x,xxx,xxx or 976 mt)

While the SSC reported ABC values under two scenarios, they mentioned the benefits of a constant ABC in providing fishery stability. The monitoring committee discussed the different components of the golden tilefish catch and recent fishery trends.

[Revise text below to capture SSC and MC meeting outcomes]

The SSC identified an overfishing limit (OFL) for golden tilefish for 2022, 2023, and 2024, of 2.228 million pounds (1,011 mt), 2.226 million pounds (1,010 mt), and 2.151 million pounds (976 mt), respectively. The OFL is the maximum amount of catch that can be removed from the stock without causing overfishing, and is derived using the maximum fishing mortality threshold (MFMT) rate as applied to the projected stock size. The SSC determined that the level of uncertainty around the OFL requires an SSC-specified coefficient of variation (CV). The SSC recommended an ABC of 1.964 million pounds (891 mt) for each year 2020, 2021, and 2022. These are based on the Council risk policy, assuming a lognormal OFL distribution with a CV = 100%, and consistency in catch advise (average probability of overfishing when recommending multi-year ABCs). As defined in the Omnibus ACLs and AMs Amendment, ABC is equivalent to ACL.

The MC recommended no reduction from the 2022, 2023, and 2024 ACLs to the ACTs to

account for management uncertainty. The MC recommended ACTs for the IFQ fishery of 1.886 million pounds (846 mt) for each year 2022, 2023, and 2024. They recommended ACTs for the incidental fishery of 0.098 million pounds (45 mt) for each year 2022, 2023, and 2024. These combined ACTs are equivalent to the SSC's ABC recommendation (and hence, to the ACL). The ABC is divided into IFQ and incidental category ACTs based on the allocation system described in the FMP (i.e., 95% IFQ and 5% incidental). The IFQ TAL and incidental category TAL were derived by subtracting projected discards from the ACTs. The resulting quota for the IFQ fishery is 1,866,103 pounds (846.45 mt) for each year 2022, 2023, and 2024. The resulting incidental category quota is 80,811 pounds (36.66 mt) for each year 2022, 2023, and 2024. The MC did not recommend changes to any of the other golden tilefish measures for 2022-2024.

After consideration of the SSC and MC's recommendations, the Council has developed recommendations to the NMFS Greater Atlantic Regional Administrator, with those alternatives recommended by the Council identified (catch and landings limits) in this framework document as "preferred."[5] The Council did not recommend changes to other regulations in place for this fishery (e.g., incidental trip limit, recreational bag limit, etc.); therefore, any other fishery management measures in place will remain unchanged (*status quo*) for the 2022-2024 fishing years. Comprehensive descriptions of the regulations for tilefish as detailed in the Code of Federal Regulations (CFR) are available through the website for the Greater Atlantic Regional Fisheries Office (GARFO) of NMFS: http://www.nero.noaa.gov/nero/regs/. The Regional Administrator will review the recommendations forwarded through this document and may revise them if necessary to achieve FMP objectives and statutory requirements. This framework document serves a dual purpose. It conveys the Council recommendations (i.e., preferred alternative) to the Regional Administrator and also serves as a decision document for the Regional Administrator, who reviews the analysis of impacts of the various management alternatives presented here and determines which alternative achieves the FMP objectives as well as the objectives and statutory requirements under MSA and other applicable laws.

This Environmental Assessment (EA) examines the impacts of each proposed action on the human environment. The aspects of the human environment that are likely to be directly or indirectly affected by the actions proposed in this document are described as *valued ecosystem components* (VECs; Beanlands and Duinker 1984). These VECs comprise the affected environment and are specifically defined as the managed resource (golden tilefish) and any non-target species; physical habitat, including EFH for the managed resource and non-target species; Endangered Species Act (ESA) listed and Marine Mammal Protection Act (MMPA) protected species; and any human communities (social and economic aspects of the environment). The impacts of the alternatives are evaluated with respect to these VECs.

A full description of each alternative and a discussion of a no action/*status quo* alternative are given in section 5.0.

Process

[5] The Council accepted the recommendations of the SSC and MC.

[Revise once the Council completes selection of the preferred alternatives]

The Council accepted comments at both Council meetings and during the Advisory Panel (AP), SSC, and MC meetings. More specifically, the Council selected preferred alternatives for multi-year specifications and fishing year timing at the April 2021 Council meeting after receiving input from the February 17, 2021 Tilefish AP meeting. At the August 2021 Council meeting, the Council selected preferred 2022-2024 fishery specifications (catch and landings limits) after considering input from Council staff, the Tilefish AP (February 17, 2021), SSC (meeting of July 21, 2021), and Tilefish MC (meeting of July 22, 2021). The Council approved the preferred alternatives in this framework document for submission to NOAA Fisheries for approval and implementation at the August 2021 Council meeting. NOAA Fisheries will publish a proposed rule along with this Environmental Assessment for public comment. After considering public comment on the proposed rule, NOAA Fisheries will publish a final rule with implementation details, as long as the action is ultimately approved by NOAA Fisheries.

4.1 Management Objectives

The overall goal of the FMP is to rebuild tilefish so that the optimum yield can be obtained from this resource. To meet the overall goal, the following objectives are adopted:

1. Prevent overfishing and rebuild the resource to the biomass that would support MSY.
2. Prevent overcapitalization and limit new entrants.
3. Identify and describe essential tilefish habitat.
4. Collect necessary data to develop, monitor, and assess biological, economic, and social impacts of management measures designed to prevent overfishing and to reduce bycatch of tilefish in all fisheries

5.0 MANAGEMENT ALTERNATIVES

[Revise to capture SSC, MC, Staff recommendations]

5.1 Multi-Year Specifications

5.1.1 Alternative 1 (Non-Preferred): *No Action/Status Quo*

Under this no action alternative, there would be no changes to the process to set golden tilefish annual specifications for up to 3 years.

5.1.2 Alternative 2 (Preferred): Specifications to be set for the maximum number of years needed to be consistent with the Northeast Regional Coordinating Council approved stock assessment schedule

Under this alternative, annual specifications could be set for the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule.[6] This alternative would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish stock assessment is produced. New specifications of annual catch and landings limits (or other annual specifications measures) would be prepared in the final year of the quota period unless there is a need for interim quota modifications. Council staff would coordinate with Northeast Fisheries Science Center (NEFSC) staff, during the first quarter of each year (during the multi-year specifications period) to assess whether there is any relevant information regarding these fisheries that need to be addressed or used to produce interim quota modifications. The results would be provided to the Council in a memorandum. In the year in which a multi-year annual specifications expire, Council staff would produce a fishery information document and specification recommendation memorandum (as is done for all the Council managed FMPs) to provide to the SSC and the Council. None of the other existing catch and landings limits requirements, accountability measures, reporting requirements or ITQ system management procedures will change under alternative 2.

5.2. Fishing Year Timing

5.2.1 Alternative 1 (Non-Preferred): *No Action/Status Quo*

Under this alternative, the fishing year requirements as established in the Tilefish FMP would continue to apply. Current regulations define the golden tilefish fishing year as the 12-month period beginning with November 1, annually (November 1 – October 31).

5.2.1 Alternative 2 (Preferred): The Golden Tilefish Fishing Year is the 12-Month Period Beginning With January 1, Annually

Under this alternative, the golden tilefish fishing year is the 12-month period beginning January 1, annually. Therefore, the fishing year will be from January 1 – December 31.

5.3 2022-2024 Golden Tilefish Fishery Specifications (Catch and Landings Limits) Alternatives

The catch and landings limits for all alternatives are given in Table 2 (at the end of this section).

5.3.1 Alternative 1: *No Action/Status Quo*

[Revise once the Council completes selection of the preferred alternatives]

Alternative 1 contains *status quo* ABCs (and other catch and landings limits). The golden tilefish ABCs for each year 2022, 2023, and 2024 have a probability of overfishing of 36%,

[6] For example, under the current schedule, management track assessments are scheduled every 3 years. However, as fishery independent data becomes available and/or stock assessment modeling improves, future management track assessments could be conducted every four years or so.

35%, and 36%, respectively, assuming a CV of 100%. The average of overfishing over the 2022-2024 three-year period is 35%.

2022

For 2022, alternative 1 would implement the same catch and landings levels implemented by the Council for the 2022 (interim) fishing year for the upcoming fishing years 2023 and 2024. More specifically, the Council adopted an ABC of 1.636 million pounds (742 mt). The ABC is 73% of the OFL. The Council also adopted the ABC = ACL.

After considering relevant sources of management uncertainty, 5% of the annual catch target (ACT) was allocated to the incidental sector of the fishery and the remaining 95% to the IFQ sector. After removing projected incidental discards, the resulting IFQ total allowable landings (TAL) was 1.554 million pounds (705 mt) and the resulting incidental TAL was 0.070 million pounds (32 mt). The resulting quota for the IFQ fishery is 1,554,038 pounds (704.900 mt) and the incidental category quota is 70,267 pounds (31.873 mt).

2023

For 2023, alternative 1 contains catch and landings levels equivalent to those presented under alternative 1 for 2022 (see above). However, the ABC is 72% of the OFL.

2024

For 2024, alternative 1 contains catch and landings levels equivalent to those presented under alternative 1 for 2022 (see above). In addition, the ABC is also 73% of the OFL.

Table 2. Comparison of the golden tilefish alternatives for 2022, 2023, and 2024 and associated catch and landings limits (in pounds unless otherwise noted).

	Alt. 1 (*No Action / Status Quo*)			**Alt. 2** (Constant quotas; SSC/MC recommended)			**Alt. 3** (Time varying quotas)		
	2022	**2023**	**2024**	**2022**	**2023**	**2024**	**2022**	**2023**	**2024**
OFL	2,228,873 (1,011 mt)	2,272,966 (1,031 mt)	2,231,078 (1,012 mt)	2,228,873 (1,011 mt)	2,226,669 (1,010 mt)	2,151,712 (976 mt)	2,228,873 (1,011 mt)	2,233,283 (1,013 mt)	2,149,507 (975 mt)
ABC	1,635,830 (742 mt)	1,635,830 (742 mt)	1,635,830 (742 mt)	1,964,319 (891 mt)	1,964,319 (891 mt)	1,964,319 (891 mt)	1,911,408 (867 mt)	2,021,639 (917 mt)	1,962,114 (890 mt)
ABC/OFL	73%	72%	73%	88%	88%	91%	86%	91%	91%
ACL	1,635,830 (742 mt)	1,635,830 (742 mt)	1,635,830 (742 mt)	1,964,319 (891 mt)	1,964,319 (891 mt)	1,964,319 (891 mt)	1,911,408 (867 mt)	2,021,639 (917 mt)	1,962,114 (890 mt)
IFQ fishery ACT	1,554,038 (705 mt)	1,554,038 (705 mt)	1,554,038 (705 mt)	1,866,103 (846 mt)	1,866,103 (846 mt)	1,866,103 (846 mt)	1,815,837 (824 mt)	1.920,557 (871 mt)	1,864,008 (846 mt)
Incidental fishery ACT	81,791 (37 mt)	81,791 (37 mt)	81,791 (37 mt)	98,216 (45 mt)	98,216 (45 mt)	98,216 (45 mt)	95,570 (43 mt)	101,082 (46 mt)	98,106 (45 mt)
Projected IFQ fishery discards	0	0	0	0	0	0	0	0	0
Projected incidental fishery discards	11,524 (5 mt)	11,524 (5 mt)	11,524 (5 mt)	17,405 (8 mt)	17,405 (8 mt)	17,405 (8 mt)	17,405 (8 mt)	17,405 (8 mt)	17,405 (8 mt)
IFQ fishery TAL = IFQ fishery quota	1,554,038 (704.900 mt)	1,554,038 (704.900 mt)	1,554,038 (704.900 mt)	1,866,103 (846.450 mt)	1,866,103 (846.450 mt)	1,866,103 (846.450 mt)	1,815,837 (823.650 mt)	1,920,557 (871.150 mt)	1,864,008 (845.500 mt)
Incidental fishery TAL = incidental fishery quota	70,267 (31.873 mt)	70,267 (31.873 mt)	70,267 (31.873 mt)	80,811 (36.665 mt)	80,811 (36.655 mt)	80,811 (36.655 mt)	78,165 (35.455 mt)	83,677 (37.955 mt)	80,701 (36.605 mt)

5.3.2 Alternative 2: SSC and MC Recommended (2022, 2023, 2024)

[Revise once the Council completes selection of the preferred alternatives]

Alternative 2 contains the SSC and MC recommendations for 2022, 2023, and 2024. The SSC recommended a three-year ABC based on Council risk policy that can be used to maintain consistency in catch advise.[7] The golden tilefish recommended ABC for each year 2022, 2023, and 2024 is 1.964 million pounds (891 mt). This ABC was based on the stock assessment being classified as an SSC-modified OFL probability distribution and an averaged ABC for 2022-2024. This constant ABC results in average probability of overfishing of 45% over the three-years (44% in each 2022 and 2023, and 46% in 2024) assuming a CV of 100%. This constant ABC is consistent with the Council's risk policy which can be used to maintain consistency in catch advise and is expected to ensure that overfishing does not occur.

2022
For 2022, alternative 2 in 2022 includes an ABC of 1.964 million pounds (891 mt). This ABC is 88% of the OFL. The ACL is set equal to the ABC. This alternative also includes an IFQ fishery ACT equal to 1.866 million pounds (846 mt) and an incidental fishery ACT equal to 0.098 million pounds (45 mt). After deducting discards in the incidental fishery (0.017 million pounds or 8 mt), the incidental fishery TAL is 0.081 million pounds (37 mt); the IFQ fishery TAL remains at 1.866 million pounds (846 mt; no discards applied). The resulting quota for the IFQ fishery is 1,866,103 pounds (846.450 mt) and an incidental category quota is 80,811 pounds (36.665 mt).

2023
For 2023, alternative 2 contains catch and landings levels equivalent to those presented under alternative 2 for 2022 (see above). In addition, the ABC is also 88% of the OFL.

2024
For 2024, alternative 2 contains catch and landings levels equivalent to those presented under alternative 2 for 2022 (see above). However, the ABC is 91% of the OFL.

5.3.3 Alternative 3: Time Varying Quotas for the 2022, 2023, and 2024 Period

[Revise once the Council completes selection of the preferred alternatives]

Alternative 3 contains varying ABCs (and other catch and landings limits across time). The golden tilefish ABCs for each year 2022, 2023, and 2024 have a probability of overfishing of 43%, 45%, and 46%, respectively, assuming a CV of 100%. The average of overfishing over the 2022-2024 three-year period is 45%.

[7] Average ABC (or average risk of overfishing) that results in an average probability of overfishing that remains between zero and 40%, and does not exceed a 50-percent probability in any given year.

2022
For 2022, alternative 3 includes an ABC of 1.911 million pounds (867 mt). This ABC is 86% of the OFL. The ACL is set equal to the ABC. This alternative also includes an IFQ fishery ACT equal to 1.816 million pounds (824 mt) and an incidental fishery ACT equal to 0.096 million pounds (43 mt). After deducting discards in the incidental fishery (0.017 million pounds or 8 mt), the incidental fishery TAL is 0.078 million pounds (35 mt); the IFQ fishery TAL remains at 1.816 million pounds (824 mt; no discards applied). The resulting quota for the IFQ fishery is 1,815,837 pounds (823.650 mt) and the incidental category quota is 78,165 pounds (35.455 mt).

2023
For 2023, alternative 3 includes an ABC of 2.022 million pounds (917 mt). This ABC is 91% of the OFL. The ACL is set equal to the ABC. This alternative also includes an IFQ fishery ACT equal to 1.921 million pounds (871 mt) and an incidental fishery ACT equal to 0.101 million pounds (46 mt). After deducting discards in the incidental fishery (0.017 million pounds or 8 mt), the incidental fishery TAL is 0.084 million pounds (38 mt); the IFQ fishery TAL remains at 1.921 million pounds (871 mt; no discards applied). The resulting quota for the IFQ fishery is 1,920,557 pounds (871.150 mt) and the incidental category quota is 83,677 pounds (37.955 mt).

2024
For 2024, alternative 3 includes an ABC of 1.962 million pounds (890 mt). This ABC is 91% of the OFL. The ACL is set equal to the ABC. This alternative also includes an IFQ fishery ACT equal to 1.864 million pounds (846 mt) and an incidental fishery ACT equal to 0.098 million pounds (45 mt). After deducting discards in the incidental fishery (0.017 million pounds or 8 mt), the incidental fishery TAL is 0.081 million pounds (37 mt); the IFQ fishery TAL remains at 1.864 million pounds (846 mt; no discards applied). The resulting quota for the IFQ fishery is 1,864,008 pounds (846.500 mt) and the incidental category quota is 80,701 pounds (36.605 mt).

6.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT AND FISHERIES

The affected environment consists of those physical, biological, and human components of the environment expected to experience impacts if any of the actions considered in this document were to be implemented. This document focuses on four aspects of the affected environment, which are defined as VECs.

The VECs include:

- Managed species (i.e., golden tilefish) and non-target species
- Physical habitat
- Protected species
- Human communities

The following sections describe the recent condition of the VECs.

6.1 Description of the Managed Resource and Non-Target Species

6.1.1 Description of the Fisheries

The management unit is all golden tilefish (*Lopholatilus chamaeleonticeps*) under U.S. jurisdiction in the Atlantic Ocean north of the Virginia/North Carolina border. The commercial fisheries for tilefish are fully described in Amendment 1 to the FMP (MAFMC 2009) and are also outlined by principal port in section 6.4 of that document. Tilefish are primarily caught by bottom longline gear (directed fishery) and otter trawl gear (in incidental fisheries for tilefish). An overview of landings for this fishery is provided below. Additional information on the tilefish fishery can be found in Council meeting materials available at: http://www.mafmc.org.

6.1.1.1 Basic Biology

Golden tilefish are found along the outer continental shelf and slope from Nova Scotia, Canada to Surinam on the northern coast of South America (Dooley 1978; Markle et al. 1980) in depths of 250 to 1,500 feet. In the southern New England/mid-Atlantic area, tilefish generally occur at depths of 250 to 1,200 feet and at temperatures from 48°F to 62°F or 8.9°C to 16.7°C (Nelson and Carpenter 1968; Low et al. 1983; Grimes et al. 1986).

Tilefish are shelter seeking and perhaps habitat limited. There are indications that at least some of the population is relatively nonmigratory (Turner 1986). Warme et al. (1977) first reported that tilefish occupied excavations in submarine canyon walls along with a variety of other fishes and invertebrates, and they referred to these areas as "pueblo villages." Valentine et al. (1980) described tilefish use of scour depressions around boulders for shelter. Able et al. (1982) observed tilefish use of vertical burrows in Pleistocene clay substrates in the Hudson Canyon area, and Grimes et al. (1986) found vertical burrows to be the predominant type of shelter used by tilefish in the mid-Atlantic/southern New England region. Able et al. (1982) suggested that sediment type might control the distribution and abundance of the species, and the longline fishery for tilefish in the Hudson Canyon area is primarily restricted to areas with Pleistocene clay substrate (Turner 1986). Males achieve larger sizes than females, but do not live as long (Turner 1986). The largest male reported by Turner was 44.1 inches at 20 years old, and the largest female was 39 years at 40.2 inches FL (fork length). The oldest fish was a 46-year old female of 33.5 inches, while the oldest male was 41.3 inches and 29 years.

The size of sexual maturity of tilefish collected off New Jersey in 1971-73 was 24-26 inches TL (total length) in females and 26-28 inches TL in males (Morse 1981). Idelberger (1985) reported that 50 percent of females were mature at about 20 inches FL, a finding consistent with studies of the South Atlantic stock, where some males delayed participating in spawning for 2-3 years when they were 4-6 inches larger (Erickson and Grossman 1986). Grimes et al. (1988) reported that in the late 1970s and early 1980s, both sexes were sexually mature at about 19-26 inches FL and 5-7 years of age; the mean size at 50 percent maturity varied with the method used and between sexes. Grimes et al. (1986) estimated that 50 percent of the females were mature at about 19 inches FL using a visual method

and about 23 inches FL using a histological method. For males, the visual method estimated 50 percent maturity at 24 inches FL while the histological method estimated 50 percent maturity at 21 inches FL. The visual method is consistent with NEFSC (Northeast Fisheries Science Center) estimates for other species (O'Brien et al. 1993). Grimes et al. (1988) reported that the mean size and age of maturity in males (but not females) was reduced after 4-5 years of heavy fishing effort. Vidal (2009) conducted an aging study to evaluate changes in growth curves since 1982, the last time the reproductive biology was evaluated by Grimes et al. (1988). Histological results from Vidal's study indicate that size at 50 percent maturity was 18 inches for females and 19 inches for males (NEFSC 2009).

Nothing is known about the diets and feeding habits of tilefish larvae, but they probably prey on zooplankton. The examination of stomach and intestinal contents by various investigators reveal that tilefish feed on a great variety of food items (Collins 1884, Linton 1901a,b, and Bigelow and Schroeder 1953). Among those items identified by Linton (1901a,b) were several species of crabs, mollusks, annelid worms, polychaetes, sea cucumbers, anemones, tunicates, and fish bones. Bigelow and Schroeder (1953) identified shrimp, sea urchins and several species of fishes in tilefish stomachs. Freeman and Turner (1977) reported examining nearly 150 tilefish ranging in length from 11.5 to 41.5 inches. Crustaceans were the principal food items of tilefish with squat lobster (*Munida*) and spider crabs (*Euprognatha*) the most important crustaceans. The authors report that crustaceans were the most important food item regardless of the size of tilefish, but that small tilefish fed more on mollusks and echinoderms than larger tilefish. Tilefish burrows provide habitat for numerous other species of fish and invertebrates (Able et al. 1982 and Grimes et al. 1986) and in this respect, they are similar to "pueblo villages" (Warme et al. 1977).

Able et al. (1982) and Grimes et al. (1986) concluded that a primary function of tilefish burrows was predator avoidance. The NEFSC database only notes goosefish as a predator. While tilefish are sometimes preyed upon by spiny dogfish and conger eels, by far the most important predator of tilefish is other tilefish (Freeman and Turner 1977). It is also probable that large bottom-dwelling sharks of the genus *Carcharhinus*, especially the dusky and sandbar, prey upon free swimming tilefish.

6.1.1.2 Commercial and Recreational Fishing Trends

For the 1970 to 2020 calendar years, golden tilefish landings have ranged from 128 thousand pounds live weight (1970) to 8.7 million pounds (1979). For the 2001 to 2020 period, golden tilefish landings have averaged 1.8 million pounds live weight, ranging from 1.1 (2016) to 2.5 (2004) million pounds. In 2020, commercial golden tilefish landings were 1.4 million pounds live weight (Figure 3).

The fishery is managed and monitored using dealer weighout data that is submitted weekly to the Greater Atlantic Regional Fisheries Office (GARFO). The directed fishery is also managed via an IFQ program. If a permanent IFQ allocation is exceeded, including any overage that results from golden tilefish landed by a lessee in excess of the lease amount, the permanent allocation will be reduced by the amount of the overage in the subsequent fishing year. If a permanent IFQ allocation overage is not deducted from the appropriate

allocation before the IFQ allocation permit is issued for the subsequent fishing year, a revised IFQ allocation permit reflecting the deduction of the overage will be issued. If the allocation cannot be reduced in the subsequent fishing year because the full allocation had already been landed or transferred, the IFQ allocation permit would indicate a reduced allocation for the amount of the overage in the next fishing year.

The commercial/incidental trip limit (for vessels that possess a Commercial/Incidental Tilefish Permit without an IFQ Allocation Permit) is 500 pounds or 50%, by weight, of all fish (including the golden tilefish) onboard the vessel, whichever is less. If the incidental harvest exceeds 5% of the TAL for a given fishing year, the incidental trip limit of 500 pounds may be reduced in the following fishing year. The incidental fishery has landed on average 38,140 pounds of golden tilefish for the 2016-2021 period (less than 3% of the overall commercial landings).

Table 3 summarizes the golden tilefish management measures for the 2005-2022 fishing years. Commercial golden tilefish landings have been below the commercial quota specified each year since the Tilefish FMP was first implemented except for fishing years 2003-2004 (not shown in Table 3), and 2010. In 2003 and 2004, the commercial quota was exceeded by 0.3 (16 percent) and 0.6 (31 percent) million pounds, respectively. In 2019 and 2020, 1.4 million pounds (96 percent of the quota) and 1.6 million pounds (86 percent of the quota) of golden tilefish were landed, respectively.

A small recreational fishery briefly occurred during the mid-1970's, with less than 100,000 pounds landed annually (MAFMC 2000). Subsequent recreational catches have been low for the 1982-2020 period, ranging from zero for most years to approximately 213,000 fish in 2010 according to NMFS recreational statistics. In 2019, approximately 11,000 fish were landed. No landings were reported in 2020. In addition, the 2021 golden tilefish management track assessment indicates that recreational catches appear to be low (Nitschke 2021).

VTR data indicates that for the 1996-2020 period, the number of golden tilefish kept by party/charter vessels from Maine through Virginia is low, ranging from 81 fish in 1996 to 8,297 fish in 2015. On average, 2,562 tilefish were caught by party/charter vessels during the 1996-2020 period. In 2020, party/charter boats reported 3,466 fish landed, a 36% decrease from 2019 (5,424 fish landed). The industry experienced cancellations of for-hire overnight trips in 2020 due to the COVID-19 pandemic. Furthermore, in 2020, tuna fishing was better than average, which resulted in less boats targeting golden tilefish. As a general rule, when tuna fishing is not good, anglers offset those trips by targeting tilefish (MAFMC 2021). Mean party/charter effort ranged from less than one fish per angler in 1999 throughout 2002 and 2005 to approximately eight fish per angler in 1998, averaging 2.8 fish for the 1996-2020 period.

To improve tilefish management and reporting, GARFO implemented mandatory private recreational permitting and reporting for tilefish anglers in August 2020. This action was approved in late 2017, but with delayed implementation. Outreach materials and webinars

were provided by GARFO and the Council leading up to the final rule and will continue to be circulated as these regulations become commonplace.

Under this rule, private recreational vessels (including for-hire operators using their vessels for non-charter, recreational trips) are required to obtain a federal vessel permit to target or retain golden or blueline tilefish north of the Virginia/North Carolina border. These vessel operators would also be required to submit VTRs electronically within 24 hours of returning to port for trips where tilefish were targeted or retained. This permit allows recreational anglers to land both golden and blueline tilefish. For the 2020 fishing year (August – December), 50 fish were reported landed on 4 private recreational trips (with 5 fish discarded). The low landings associated with private anglers may be attributed to the short fishing season (as a result of when implementation occurred), this being the first-time recreational anglers are required to report.

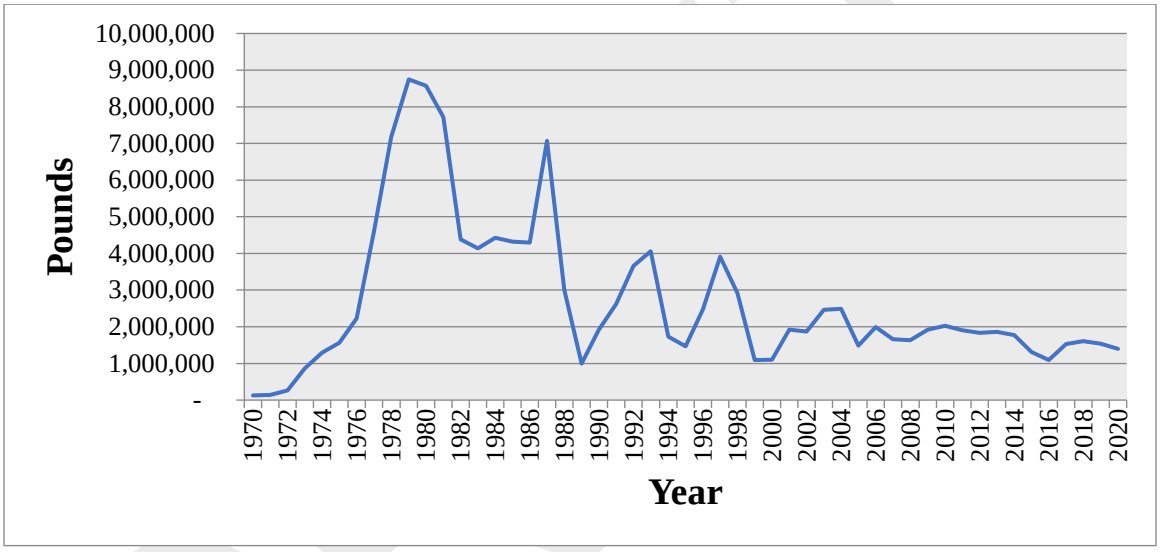

Figure 1. Commercial U.S. Golden Tilefish Landings (live weight) from Maine-Virginia, 1970-2020 (calendar year). Source: 1970-1993 Tilefish FMP. 1994-2020 NMFS unpublished dealer data.

Table 3. Summary of management measures and landings for fishing year 2005-2022.[a]

Management Measures	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ABC (m lb)	-	-	-	-	-	-	-	-	2.013	2.013	1.766	1.898	1.898	1.636	1.636	1.636	1.636	1.636
TAL (m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887	1.626	1.626	1.626	1.625	1.625
Com. quota-(m lb)	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.995	1.755	1.887	1.887	1.626	1.626	1.626	1.625/ 1.701*	1.625
Com. landings	1.497	1.898	1.777	1.672	1.887	1.997	1.946	1.856	1.839	1.830	1.354	1.050	1.500	1.624	1.563	1.403	-	-
Com. Overage / underage (m lb)	–0.498	–0.097	–0.218	–0.323	–0.108	+0.002	–0.049	–0.139	–0.156	–0.165	–0.401	–0.836	–0.387	<–0.003	–0.064	–0.223	-	-
Incidental trip limit (lb)	133	300	300	300	300	300	300	500	500	500	500	500	500	500	500	500	500	500
Rec. possession limit	-	-	-	-	-	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]	8[b]

[a] Fishing year 2005 (November 1, 2004 – October 31, 2005). [b] Eight fish per person per trip. *The Council requested for emergency action to allow unharvested 2020 IFQ pounds to be carried over into the 2021 fishing year, up to 5% of the quota shareholders initial 2020 allocation.

6.1.2 Description of the Stock (Including Status, Stock Characteristics, and Ecological Relationships)

Reports on stock status, including Stock Assessment Workshop (SAW) reports, and Stock Assessment Review Committee (SARC) reports, and assessment update reports are available online at the Northeast Fisheries Science Center (NEFSC) website: http://www.nefsc.noaa.gov/. The EFH Source Document, which includes details on stock characteristics and ecological relationships, is available at the following website: http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

Biological Reference Points

The biological reference points for golden tilefish were updated during the 2021 management track assessment (Nitschke 2021). The fishing mortality threshold for golden tilefish is $F_{40\%}$ (as F_{MSY} proxy) = 0.261, and $SSB_{40\%}$ (SSB_{MSY} proxy) is 24.23 million pounds (10,995 mt).

Stock Status

The latest assessment indicates that the golden tilefish stock was not overfished and overfishing was not occurring in 2020, relative to the newly updated biological reference points. Fishing mortality in 2020 was estimated at F=0.160; 39% below the fishing mortality threshold of F=0.261 ($F_{MSY\ proxy}$). SSB in 2020 was estimated at 23.28 million pounds (10,562 mt), and was at 96% of the biomass target ($SSB_{MSY\ proxy}$).

6.1.3 Non-Target Species

The term "bycatch" as defined by the MSA, means fish that are harvested in a fishery but that are not sold or kept for personal use. Bycatch includes the discard of whole fish at sea or elsewhere, including economic and regulatory discards, and fishing mortality due to an encounter with fishing gear that does not result in capture of fish (i.e., unobserved fishing mortality).

According to VTR data, very little (0.03%) discarding was reported by longline vessels that targeted tilefish for the 2016 through 2020 period (Table 4). In addition, the 2017 stock assessment indicates that "most of the commercial landings are taken by the directed longline fishery," and that tilefish discards in the trawl and longline fishery appear to be a minor component of the total catch (Nitschke 2021).

Status of Non-Target Species

In this section, the status of the more frequently encountered non-target species that are managed, those that account for 0.1% or more of the total catch in the golden tilefish trips, are described here (Table 4).

Based on the spiny dogfish current biomass reference points and an assessment update considering data through spring of 2018,[8] the stock is not overfished or experiencing overfishing. A benchmark assessment for spiny dogfish is scheduled for 2022. The most recent stock assessment report for

[8] Available here (2018 Spiny Dogfish Assessment Update).

smooth dogfish (SEDAR 39)[9] conducted in 2015 indicates that the stock is not overfished and not subject to overfishing. The most recent benchmark assessment for blueline tilefish was SEDAR 50 (SEDAR 2017).[10] Genetic work conducted for SEDAR 50 suggests a genetically homogenous population off the entire Atlantic coast yet does not suggest what catch may be appropriate off various parts of the coast. In SEDAR 50, the blueline tilefish stock was split in two, north and south of Cape Hatteras to allow each Council (Mid and South Atlantic) to set their own specifications. The stock south of Cape Hatteras was determined to be not overfished with overfishing not occurring. The assessment did not provide stock status information relevant to the Mid-Atlantic management area due to insufficient data. The other species listed that constitute more than 0.1% of the total catch in Table 4 (e.g., conger eel) has not been assessed; therefore, their overfished and overfishing status is unknown.

[9] Available here (SEDAR 39).
[10] Available here (SEDAR 50).

Table 4. Catch disposition for directed tilefish trips[a], Maine through Virginia, 2016-2020 combined.

Common Name	Kept pounds	% species kept	% total landed	Discarded pounds	% species discarded	% total discarded	Total pounds	Disc: Kept Ratio
GOLDEN TILEFISH	5,627,411	100.00%	94.90%	0	0.00%	0.00%	5,627,411	0.00
SPINY DOGFISH	223,676	100.00%	3.77%	0	0.00%	0.00%	223,676	0.00
DOGFISH SMOOTH	30,292	97.43%	0.51%	800	2.57%	40.77%	31,092	0.03
BLUELINE TILEFISH	16,074	100.00%	0.27%	0	0.00%	0.00%	16,074	0.00
CONGER EEL	14,274	96.62%	0.24%	500	3.38%	25.48%	14,774	0.04
YELLOWFIN TUNA	4,480	99.01%	0.08%	45	0.99%	2.29%	4,525	0.01
DOLPHIN FISH	3,639	98.64%	0.06%	50	1.36%	2.55%	3,689	0.01
BLACK BELLIED ROSEFISH	2,293	99.91%	0.04%	2	0.09%	0.10%	2,295	0.00
SILVER HAKE (WHITING)	1,452	100.00%	0.02%	0	0.00%	0.00%	1,452	0.00
WRECKFISH	896	100.00%	0.02%	0	0.00%	0.00%	896	0.00
BIG EYE TUNA	814	100.00%	0.01%	0	0.00%	0.00%	814	0.00
BARRELFISH	699	100.00%	0.01%	0	0.00%	0.00%	699	0.00
RED HAKE	666	57.12%	0.01%	500	42.88%	25.48%	1,166	0.75
MAKO SHORTFIN SHARK	561	100.00%	0.01%	0	0.00%	0.00%	561	0.00
SAND TILEFISH	506	100.00%	0.01%	0	0.00%	0.00%	506	0.00
ANGLER	429	100.00%	0.01%	0	0.00%	0.00%	429	0.00
SKATES OTHER	378	100.00%	0.01%	0	0.00%	0.00%	378	0.00
BLUEFIN TUNA	251	100.00%	0.00%	0	0.00%	0.00%	251	0.00
BLUEFISH	232	100.00%	0.00%	0	0.00%	0.00%	232	0.00
MAKO SHARK	166	100.00%	0.00%	0	0.00%	0.00%	166	0.00
WHITE HAKE	146	100.00%	0.00%	0	0.00%	0.00%	146	0.00
BLACK SEA BASS	128	100.00%	0.00%	0	0.00%	0.00%	128	0.00
ALBACORE TUNA	110	100.00%	0.00%	0	0.00%	0.00%	110	0.00
SWORDFISH	102	100.00%	0.00%	0	0.00%	0.00%	102	0.00
BLACKFIN TUNA	92	100.00%	0.00%	0	0.00%	0.00%	92	0.00

Table 4 (continued). Catch disposition for directed tilefish trips[a], Maine through Virginia, 2016-2020 combined.

Common Name	Kept pounds	% species kept	% total landed	Discarded pounds	% species discarded	% total discarded	Total pounds	Disc: Kept Ratio
SUMMER FLOUNDER	50	100.00%	0.00%	0	0.00%	0.00%	50	0.00
BLACK TIP SHARK	50	100.00%	0.00%	0	0.00%	0.00%	50	0.00
SKIPJACK TUNA	24	100.00%	0.00%	0	0.00%	0.00%	24	0.00
TRIGGERFISH	20	100.00%	0.00%	0	0.00%	0.00%	20	0.00
FISH OTHER	17	100.00%	0.00%	0	0.00%	0.00%	17	0.00
WEAKFISH SQUETEAGUE	16	100.00%	0.00%	0	0.00%	0.00%	16	0.00
HAGFISH	5	100.00%	0.00%	0	0.00%	0.00%	5	0.00
POLLOCK	0	0.00%	0.00%	65	100.00%	3.31%	65	--
ALL SPECIES	5,929,949	99.97%	100.00%	1,962	0.03%	100.00%	5,931,911	0.00

[a] Directed trips for tilefish were defined as trips comprising 75% or more by weight of tilefish landed.
Number of trips = 491.

6.2 Physical Environment and Essential Fish Habitat

The physical, chemical, biological, and geological components of benthic and pelagic environments are important aspects of habitat for marine species and have implications for reproduction, growth, and survival of marine species. The following sections briefly describe key aspects of the physical habitat which may be impacted by the alternatives considered in this document. This information is largely drawn from Stevenson et al. (2004), unless otherwise noted.

6.2.1 Physical Environment

Golden tilefish inhabit the Northeast U.S. Shelf Ecosystem, which has been described as including the area from the Gulf of Maine south to Cape Hatteras, extending from the coast seaward to the edge of the continental shelf, including the slope sea offshore to the Gulf Stream. The northeast shelf ecosystem includes the Gulf of Maine, Georges Bank, the Mid-Atlantic Bight, and the continental slope.

The Gulf of Maine is an enclosed coastal sea, characterized by relatively cold waters and deep basins, with a patchwork of various sediment types.

Georges Bank is a relatively shallow coastal plateau that slopes gently from north to south and has steep submarine canyons on its eastern and southeastern edge. It is characterized by highly productive, well-mixed waters and strong currents.

The Mid-Atlantic Bight is comprised of the sandy, relatively flat, gently sloping continental shelf from southern New England to Cape Hatteras, North Carolina. The continental slope begins at the

continental shelf break and continues eastward with increasing depth until it becomes the continental rise. It is homogenous, with exceptions at the shelf break, some of the canyons, the Hudson Shelf Valley, and in areas of glacially rafted hard bottom. The continental shelf in this region was shaped largely by sea level fluctuations caused by past ice ages. The shelf's basic morphology and sediments derive from the retreat of the last ice sheet and the subsequent rise in sea level. Currents and waves have since modified this basic structure.

Shelf and slope waters of the Mid-Atlantic Bight have a slow southwestward flow that is occasionally interrupted by warm core rings or meanders from the Gulf Stream. On average, shelf water moves parallel to bathymetry isobars at speeds of 5-10 cm/s (2-4 in/s) at the surface and 2 cm/s (1 in/s) or less at the bottom. Storm events can cause much more energetic variations in flow. Tidal currents on the inner shelf have a higher flow rate of 20 cm/s (8 in/s) that increases to 100 cm/s (39 in/s) near inlets.

The shelf slopes gently from shore out to between 100 and 200 km (62 and 124 miles) offshore where it transforms to the slope (100-200 m water depth or 328-656 ft) at the shelf break. Numerous canyons incise the slope, and some cut up onto the shelf itself. The primary morphological features of the shelf include shelf valleys and channels, shoal massifs, scarps, and sand ridges and swales. Most of these structures are relic except for some sand ridges and smaller sand-formed features. Shelf valleys and slope canyons were formed by rivers of glacier outwash that deposited sediments on the outer shelf edge as they entered the ocean. Most valleys cut about 10 m (33 ft) into the shelf; however, the Hudson Shelf Valley is about 35 m (115 ft) deep. The valleys were partially filled as the glacier melted and retreated across the shelf. The glacier also left behind a lengthy scarp near the shelf break from Chesapeake Bay north to the eastern end of Long Island. Shoal retreat massifs were produced by extensive deposition at a cape or estuary mouth. Massifs were also formed as estuaries retreated across the shelf.

Some sand ridges are more modern in origin than the shelf's glaciated morphology. Their formation is not well understood; however, they appear to develop from the sediments that erode from the shore face. They maintain their shape, so it is assumed that they are in equilibrium with modern current and storm regimes. They are usually grouped, with heights of about 10 m (33 ft), lengths of 10-50 km (6-31 miles) and spacing of 2 km (1 mile). Ridges are usually oriented at a slight angle towards shore, running in length from northeast to southwest. The seaward face usually has the steepest slope. Sand ridges are often covered with smaller similar forms such as sand waves, megaripples, and ripples. Swales occur between sand ridges. Since ridges are higher than the adjacent swales, they are exposed to more energy from water currents and experience more sediment mobility than swales. Ridges tend to contain less fine sand, silt and clay while relatively sheltered swales contain more of the finer particles. Swales have greater benthic macrofaunal density, species richness and biomass, due in part to the increased abundance of detrital food and the less physically rigorous conditions.

Sand waves are usually found in patches of 5-10 with heights of about 2 m (7 ft), lengths of 50-100 m (164-328 ft) and 1-2 km (0.6-1 mile) between patches. Sand waves are primarily found on the inner shelf, and often observed on sides of sand ridges. They may remain intact over several seasons. Megaripples occur on sand waves or separately on the inner or central shelf. During the winter storm season, they may cover as much as 15% of the inner shelf. They tend to form in large

patches and usually have lengths of 3-5 m with heights of 0.5-1 m. Megaripples tend to survive for less than a season. They can form during a storm and reshape the upper 50-100 cm (20-39 in) of the sediments within a few hours. Ripples are also found everywhere on the shelf and appear or disappear within hours or days, depending upon storms and currents. Ripples usually have lengths of about 1-150 cm (0.4-59 in) and heights of a few centimeters.

Sediments are uniformly distributed over the shelf in this region. A sheet of sand and gravel varying in thickness from 0-10 m (0-33 ft) covers most of the shelf. The mean bottom flow from the constant southwesterly current is not fast enough to move sand, so sediment transport must be episodic. Net sediment movement is in the same southwesterly direction as the current. The sands are mostly medium to coarse grains, with finer sand in the Hudson Shelf Valley and on the outer shelf. Mud is rare over most of the shelf but is common in the Hudson Shelf Valley.

Occasionally relic estuarine mud deposits are re-exposed in the swales between sand ridges. Fine sediment content increases rapidly at the shelf break, which is sometimes called the "mud line," and sediments are 70-100% fine on the slope. On the slope, silty sand, silt, and clay predominate (Stevenson et al. 2004).

Greene et al. (2010) identified and described Ecological Marine Units (EMUs) in New England and the Mid-Atlantic based on sediment type, seabed form (a combination of slope and relative depth), and benthic organisms. According to this classification scheme, the sediment composition off New England and the Mid-Atlantic is about 68% sand, 26% gravel, and 6% silt/mud. The seafloor is classified as about 52% flat, 26% depression, 19% slope, and 3% steep (Table 5).

Artificial reefs are another significant Mid-Atlantic habitat. These localized areas of hard structure were formed by shipwrecks, lost cargoes, disposed solid materials, shoreline jetties and groins, submerged pipelines, cables, and other materials (Steimle and Zetlin 2000). While some of these materials were deposited specifically for use as fish habitat, most have an alternative primary purpose; however, they have all become an integral part of the coastal and shelf ecosystem. In general, reefs are important for attachment sites, shelter, and food for many species, and fish predators such as tunas may be attracted by prey aggregations or may be behaviorally attracted to the reef structure.

Like all the world's oceans, the western North Atlantic is experiencing changes to the physical environment as a result of global climate change. These changes include warming temperatures; sea level rise; ocean acidification; changes in stream flow, ocean circulation, and sediment deposition; and increased frequency, intensity, and duration of extreme climate events. These changes in physical habitat can impact the metabolic rate and other biological processes of marine species. As such, these changes have implications for the distribution and productivity of many marine species. Several studies demonstrate that the distribution and productivity of several species in the Mid-Atlantic have changed over time, likely because of changes in physical habitat conditions such as temperature (e.g., Weinberg 2005, Lucey and Nye 2010, Nye et al. 2011, Pinsky et al. 2013, Gaichas et al. 2015).

Table 5. Composition of EMUs off New England and the Mid-Atlantic (Greene et al. 2010). EMUs which account for less than 1% of the surface area of these regions are not shown.

Ecological Marine Unit	Percent Coverage
High Flat Sand	13%
Moderate Flat Sand	10%
High Flat Gravel	8%
Side Slope Sand	6%
Somewhat Deep Flat Sand	5%
Low Slope Sand	5%
Moderate Depression Sand	4%
Very Shallow Flat Sand	4%
Side Slope Silt/Mud	4%
Moderate Flat Gravel	4%
Deeper Depression Sand	4%
Shallow Depression Sand	3%
Very Shallow Depression Sand	3%
Deeper Depression Gravel	3%
Shallow Flat Sand	3%
Steep Sand	3%
Side Slope Gravel	3%
High Flat Silt/Mud	2%
Shallow Depression Gravel	2%
Low Slope Gravel	2%
Moderate Depression Gravel	2%
Somewhat Deep Depression Sand	2%
Deeper Flat Sand	1%
Shallow Flat Gravel	1%
Deep Depression Gravel	1%
Deepest Depression Sand	1%
Very Shallow Depression Gravel	1%

6.2.2 Essential Fish Habitat

Information on tilefish habitat requirements can be found in the document titled, Essential Fish Habitat Source Document: Tilefish, *Lopholatilus chamaeleonticeps*, Life History and Habitat Characteristics" (Steimle et al. 1999). An electronic version of this source document is available at the following website:
http://www.nefsc.noaa.gov/nefsc/habitat/efh/.

The current designation of EFH by life history stage for tilefish is provided here:

Eggs and Larvae: EFH for tilefish eggs and larvae is the water column on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary in mean water column temperatures between 7.5°C and 17.5°C (45.5°F to 63.5°F).

Juveniles and Adults: EFH for tilefish juveniles and adults is semi-lithified clay substrate on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary in bottom water temperatures which range from 9°C to 14°C (48.2ºF to 57.2ºF), which generally occur in depths between 100 and 300 meters (328 to 984 ft). Tilefish create horizontal or vertical burrows in semi-lithified clay sediments, a substrate type with cohesive properties that allow the burrows to maintain their shape. Tilefish may also utilize rocks, boulders, scour depressions beneath boulders, and exposed rock ledges as shelter.

Although the revised designations emphasize temperature and substrate type (clay) over depth as being indicative of EFH, depth was used for the purposes of mapping the EFH designations. Depth is fixed and not seasonally variable, therefore the depth ranges that define the area where the preferred bottom temperatures conditions typically prevail (100 to 300 meters, or 328 ft to 984 ft) were used to create maps of benthic EFH for juvenile and adult tilefish on the outer continental shelf and slope from the U.S./Canadian boundary to the Virginia/North Carolina boundary.

Tilefish are primarily caught by bottom longline and otter trawl. Based on dealer data from 2016-2020, the bulk of the tilefish landings are taken by longline gear (97%) followed by bottom trawl gear (2%). No other gear had any significant commercial landings. Minimal catches were also recorded for hand line, gillnets, dredge (other), and pot/traps (Table 6).

Table 6. Golden tilefish commercial landings ('000 pounds live weight) by gear, Maine through Virginia, 2016-2020 (calendar year).

Gear	Pounds	Percent
Otter Trawl Bottom, Fish	126	1.8
Otter Trawl Bottom, Other	5	*
Gillnet, Anchored/Sink/Other	8	*
Lines, Hand	26	*
Lines, Long Set with Hooks	6,950	97.1
Pot & Trap	1	*
Dredge, other	6	*
Unknown, Other Combined Gears	38	*
All Gear	7,159	100.0

Note: * = less than 1,000 pounds or less than 1%. Source: NMFS unpublished dealer data.

There are other federally-managed species with life stages that occupy essential benthic habitats that may be susceptible to adverse impacts from otter trawl gear; those can be found in Appendix A as well as the NOAA Fisheries EFH Mapper, which is available at: https://www.fisheries.noaa.gov/resource/map/essential-fish-habitat-mapper.

6.2.3 Fishery Impact Considerations

The directed commercial fishery for golden tilefish is prosecuted with bottom longline gear. A panel of experts who participated in a 2001 workshop to evaluate the potential habitat impacts of fishing gears used in the Northeast region concluded that longlines (which land the bulk of the golden tilefish) cause some low degree impacts in mud, sand, and gravel habitats (NEFSC 2002). Longline gear has minimal detectable impacts to marine habitats. Longlines modify the structural component of the habitat, but the impacts are short-term and temporary. Additionally, deployment and retrieval of anchors result in minimal disturbance to bottom sediments; effects (e.g., increased turbidity) are minimal and ephemeral. Because of the limited length of time this gear is deployed, effects at the community and ecosystem levels are not detectable (Stevenson et al. 2004).

Bottom trawls, which account for nearly all of the rest of the landings, and which are mostly incidental catches, had the greatest impacts which occur in low and high energy gravel habitats and in hard clay outcroppings (NEFSC 2002). Otter trawls have limited utility because of the habitat preferred by golden tilefish. Otter trawls are only effective where the bottom is firm, flat, and free of obstructions. Soft mud bottom, rough or irregular bottom, or areas with obstructions, which are those that are most frequented by golden tilefish, are not conducive to bottom trawling. However, tilefish are often taken incidental to other directed fisheries, such as the trawl fisheries for lobster and flounder (Freeman and Turner 1977) and hake, squid, mackerel, and butterfish (MAFMC 2000).

Golden tilefish are restricted to the continental shelf break south of the Gulf of Maine (Steimle et al. 1999). They occupy a number of habitats, including scour basins around rocks or other rough bottom areas that form burrow-like cavities, and pueblo habitats in clay substrate. The dominant habitat type is a vertical burrow in a substrate of semi-hard silt-clay, 6 to 10 feet deep and 12 to 16 feet in diameter with a funnel shape. These burrows are excavated by golden tilefish, secondary burrows are created by other organisms, including lobsters, conger eels, and galatheid crabs. Golden tilefish are visual daytime feeders on galatheid crabs, mollusks, shrimps, polychaetes, and occasionally fish. Mollusks and echinoderms are more important to smaller tilefish. Little is known about juveniles of this species. A report to the Mid-Atlantic Fishery Management Council (Able and Muzeni 2002), based upon a review of archived video surveys in areas of golden tilefish habitat, did not find visual evidence of direct impacts to burrows due to otter trawls. The Northeast Region EFH Steering Committee Workshop (NEFSC 2002) concluded that there was the potential for a high degree of impact to the physical structure of hard clay outcroppings (pueblo village habitat) by trawls that would result in permanent change to a major physical feature which provides shelter for golden tilefish as well as their benthic prey. Although Able and Muzeni's (2002) review did not offer any evidence of this type of negative effect, their sample size for this habitat type was very small. Due to the golden tilefish's reliance on structured shelter and benthic prey, as well as the benthic prey's reliance on much of the same habitat, and the need for further study, the vulnerability of tilefish EFH to otter trawls was ranked as high (Stevenson et al. 2004). Clam dredges operate in shallow, sandy waters typically uninhabited by tilefish (Wallace and Hoff 2005), so EFH vulnerability was rated as none for this gear. Scallop vessel monitoring data indicate that scallop dredges operate to a small extent in areas overlapping tilefish EFH; therefore, EFH vulnerability to scallop dredges was ranked as low (Stevenson et al. 2004). Tilefish eggs and larvae are pelagic: therefore, EFH vulnerability to gear is not applicable.

Amendment 1 to the Tilefish FMP (MAFMC 2009) prohibited the use of bottom-tending mobile gear within specific areas of the Oceanographer, Lydonia, Veacth, and Norfolk canyons.[11] The gear restricted areas in these four canyons were chosen to providing protection to areas that are known to have clay outcrop/pueblo habitats.

The recreational fishery uses hook and line gear. Recreational hook and line gears generally have minimal impacts on physical habitat and EFH in the region (Stevenson et al. 2004). Weighted hook and line gear can contact the bottom, but the magnitude and footprint of any impacts resulting from this contact is likely minimal. Thus, the recreational fisheries are expected to have very minor or no impacts on habitat.

6.3 ESA-Listed Species and MMPA Protected Species

6.3.1 Species in the Fisheries Environment

There are numerous species inhabiting the environment, within the management unit of tilefish, that are afforded protection under the Endangered Species Act (ESA) of 1973 (i.e., for those designated as threatened or endangered) and the Marine Mammal Protection Act of 1972 (MMPA). Table 7 provides species listed as threatened or endangered under the ESA, as well as one candidate species, that occur within the management unit for golden tilefish. More detailed description of the species listed in Table 7, including their environment, ecological relationships and life history information including recent stock status, is available at http://www.greateratlantic.fisheries.noaa.gov/Protected/ and http://www.nmfs.noaa.gov/pr/sars/region.htm.

Cusk, a NMFS "candidate species" under the ESA, occurs in the affected environment of the golden tilefish fishery. Candidate species are those petitioned species that NMFS is actively considering for listing as endangered or threatened under the ESA and also include those species for which NMFS has initiated an ESA status review through an announcement in the *Federal Register*. The conference provisions of the ESA apply once a species is proposed for listing (see 50 CFR § 402.10); however, candidate species receive no substantive or procedural protection under the ESA. As a result, this species will not be discussed further in this section. For additional information on cusk and proactive conservation efforts being initiated for the species: http://www.nero.noaa.gov/prot_res/CandidateSpeciesProgram/CuskSOC.html.

[11] See tilefish regulations at http://www.nero.noaa.gov/regs/fr.html for specific coordinates of the closed areas.

Table 7. Species Protected Under the ESA and/or MMPA that May Occur in the Affected Environment of the Golden Tilefish Fishery.

Species	Status	Potentially affected by this action?
Cetaceans		
North Atlantic right whale (*Eubalaena glacialis*)	Endangered	Yes
Humpback whale (*Megaptera novaeangliae*)[1]	Protected (MMPA)	Yes
Fin whale (*Balaenoptera physalus*)	Endangered	Yes
Sei whale (*Balaenoptera borealis*)	Endangered	No
Blue whale (*Balaenoptera musculus*)	Endangered	No
Sperm whale (*Physeter macrocephalus*	Endangered	No
Pygmy sperm whale (Kogia breviceps)	Protected (MMPA)	No
Dwarf sperm whale (Kogia sima)	Protected (MMPA)	No
Minke whale (*Balaenoptera acutorostrata*)	Protected (MMPA)	Yes
Pilot whale (*Globicephala spp*.)[2]	Protected (MMPA)	No
Risso's dolphin (*Grampus griseus*)	Protected (MMPA)	No
Atlantic white-sided dolphin (*Lagenorhynchus acutus*)	Protected (MMPA)	No
Short Beaked Common dolphin (*Delphinus delphis*)[3]	Protected (MMPA)	No
Atlantic Spotted dolphin (*Stenella frontalis*)	Protected (MMPA)	No
Striped dolphin (Stenella coeruleoalba)	Protected (MMPA)	No
Beaked whales (Ziphius and Mesoplodon spp)[4]	Protected (MMPA)	No
Bottlenose dolphin (*Tursiops truncatus*)[5]	Protected (MMPA)	Yes
Harbor porpoise (*Phocoena phocoena*)	Protected (MMPA)	No
Sea Turtles		
Leatherback sea turtle (*Dermochelys coriacea*)	Endangered	Yes
Kemp's ridley sea turtle (*Lepidochelys kempii*)	Endangered	Yes
Green sea turtle, North Atlantic DPS (*Chelonia mydas*)	Threatened[6]	Yes
Loggerhead sea turtle (*Caretta caretta*), Northwest Atlantic Ocean DPS	Threatened	Yes
Hawksbill sea turtle (*Eretmochelys imbricate*)	Endangered	No
Fish		
Shortnose sturgeon (*Acipenser brevirostrum*)	Endangered	No
Atlantic salmon (*Salmo salar*)	Endangered	No
Atlantic sturgeon *(Acipenser oxyrinchus)*		
Gulf of Maine DPS	Threatened	Yes
New York Bight DPS, Chesapeake Bay DPS, Carolina DPS & South Atlantic DPS	Endangered	Yes
Cusk (*Brosme brosme)*	Candidate	Yes
Pinnipeds		
Harbor seal (*Phoca vitulina*)	Protected (MMPA)	No
Gray seal (*Halichoerus grypus*)	Protected (MMPA)	No

Species	Status	Potentially affected by this action?
Harp seal (*Phoca groenlandicus*)	Protected (MMPA)	No
Hooded seal (*Cystophora cristata*)	Protected (MMPA)	No
Critical Habitat		
Northwest Atlantic DPS of Loggerhead Sea Turtle	ESA-listed	No
North Atlantic right whale[7]	ESA-listed	No

Notes:

[1] On September 8, 2016, a final rule was issued revising the ESA listing status of humpback whales (81 FR 62259). Fourteen DPSs (Distinct Population Segments) were designated: one as threatened, four as endangered, and nine as not warranting listing. The DPS found in U.S. Atlantic waters, the West Indies DPS, is delisted under the ESA; however, this DPS is still protected under the MMPA.

[2] There are 2 species of pilot whales: short finned (*G. melas melas*) and long finned (*G. macrorhynchus*). Due to the difficulties in identifying the species at sea, they are often just referred to as *Globicephala spp*.

[3] Prior to 2008, this species was called "common dolphin."

4 There are multiple species of beaked whales in the Northwest Atlantic. They include the cuvier's (*Ziphius cavirostris*), blainville's (*Mesoplodon densirostris*), gervais' (*Mesoplodon europaeus*), sowerbys' (*Mesoplodon bidens*), and trues' (*Mesoplodon mirus*) beaked whales. Species of Mesoplodon; however, are difficult to identify at sea, and therefore, much of the available characterization for beaked whales is to the genus level only.

[5] This includes the Western North Atlantic Offshore, Northern Migratory Coastal, and Southern Migratory Coastal Stocks of Bottlenose Dolphins.

[6] On April 6, 2016, a final rule was issued removing the current range-wide listing of green sea turtles and, in its place, listing eight green sea turtle DPSs as threatened and three DPSs as endangered (81 FR 20057). The green sea turtle DPS located in the Northwest Atlantic is the North Atlantic DPS of green sea turtles; this DPS is considered threatened under the ESA.

[7] Originally designated June 3, 1994 (59 FR 28805); Expanded on January 27, 2016 (81 FR 4837).

6.3.2 Commercial Fisheries and Protected Species Interactions

The golden tilefish commercial fishery is prosecuted primarily with bottom longline gear. As provided in Table 7, species of large whales, dolphins, sea turtles, and Atlantic sturgeon have the potential to be affected by the operation of the golden tilefish fishery. The List of Fisheries (LOF) classifies U.S. commercial fisheries into Categories according to the level of interactions that result in incidental mortality or serious injury of marine mammals. There are no documented interactions with ESA-listed and MMPA protected species with bottom longline gear in the tilefish fishery. Below, information is provided on the risk of these species interacting with bottom longline gear.

Large Whales, Bottlenose Dolphins, and Atlantic sturgeon

Based on information provided by Waring et al. (2014), Waring et al. (2015), Waring et al. (2016), Hayes et al. (2017), NMFS NEFSC FSB (2015), NMFS NEFSC FSB (2016), NMFS NEFSC FSB (2019), the MMPA List of Fisheries (82 FR 3655; January 12, 2017) and information provided on the Northeast Fisheries Observer Program (NEFOP) website (http://www.nefsc.noaa.gov/fsb/take_reports/nefop.html), there has been no confirmed serious injury or mortality, or documented interactions, in general, with bottom longline gear and large whales, bottlenose dolphins, or Atlantic sturgeon. Based on this information, bottom longline gear is not expected to pose an interaction risk to any of these species and therefore, is not expected to be source of serious injury or mortality to these species.

Sea Turtles

Sea turtles are vulnerable to interacting with bottom longline gear; however, the risk is tied to where the gear is placed relative to where and when sea turtles are present. As sea turtles are commonly found in neritic waters of the inner continental shelf (Braun-McNeill and Epperly 2002; Morreale and Standora 2005; Blumenthal et al. 2006; Hawkes et al. 2006; McClellan and Read 2007; Mansfield et al. 2009; Hawkes et al. 2011; Griffin et al. 2013; James et al. 2005; Eckert et al. 2006; Murphy et al. 2006; Dodge et al. 2014),[12] bottom longline gear placed in continental shelf waters (<200 meters) poses a greater risk of an interaction than bottom longline gear placed in deep waters greater than 200 meters. This is evidenced by the large number of sea turtle interactions observed in the South Atlantic and Gulf of Mexico (under NMFS SERO jurisdiction; NMFS 2006; NMFS 2011a; NMFS 2012), where numerous fisheries prosecuted by bottom longline gear (e.g., HMS fishery-Atlantic shark bottom longline component; Gulf of Mexico reef fishery) operate in nearshore southern continental shelf waters (<200 meters) where sea turtles are commonly present year-round. Under such conditions, the co-occurrence of gear and sea turtles is high, thereby causing increased interaction risks. In contrast, in the Greater Atlantic Region (GAR), no sea turtles have been observed in bottom longline gear from 1989-2018 (NMFS NEFSC FSB 2015, 2016, 2019). This may in part be due to the fact that fisheries (e.g., tilefish spp.) prosecuted by bottom longline gear in the GAR primarily operate in deep continental shelf edge/slope waters (>200 meters). In deeper waters, sea turtle (primarily loggerhead and leatherback) behaviors are primarily directed at migratory movements. As a result, sea turtles are more likely to be present in the water column than near the deep benthos where bottom longline is present, thereby reducing the co-occurrence of bottom longline gear and sea turtles and thus, the potential for an interaction (Braun-McNeill and Epperly 2002; McClellan and Read 2007; Mansfield et al. 2009; Hawkes et al. 2011; Griffin et al. 2013; http://seamap.env.duke.edu/). Based on this, although sea turtle interactions with bottom longline gear are possible, due to the fishing behavior of GAR fisheries prosecuted by bottom longline gear, the risk of an interaction is likely low in the GAR.

6.3.3 Recreational Fisheries and Protected Species Interactions

The golden tilefish recreational fishery has been prosecuted with hook and line gear. As provided in Table 7, species of large whales, dolphins, sea turtles, and Atlantic sturgeon have the potential to be affected by the operation of the golden tilefish fishery. Below information is provided on the risk of these species interacting with hook and line gear (i.e., rod and reel).

Large Whales

Large whales have been reported or observed with hook and line or monofilament line wrapped around or trailing from appendages of the whale's body. In the most recent (2010-2014) mortality and serious injury determinations for baleen whales, the majority of cases identified with confirmed hook and line or monofilament entanglement did not result in the serious injury or mortality to the whale (89.5% observed/reported whales had a serious injury value of 0; 10.5%

[12] Also see sea turtle species status reviews and recovery plans at the following websites: http://www.nmfs.noaa.gov/pr/listing/reviews.htm#species; http://www.nmfs.noaa.gov/pr/recovery/plans.htm#turtles

had a serious injury value of 0.75; none of the cases resulted in mortality; Henry et al. 2016).[13] In fact, 85.0% of the whales observed or reported with a hook/line or monofilament entanglement were resighted gear free and healthy; confirmation of the health of the other remaining whales remain unknown as no resightings had been made over the timeframe of the assessment (Henry et al. 2016). Based on this information, while large whale interactions with hook and line gear are possible, there is a low probability that an interaction will result in serious injury or mortality to any large whale species. Therefore, relative to other gear types known to result in the serious injury and mortality to large whales (i.e., fixed gear; Hayes et al. 2017; Henry et al. 2016; Palmer 2017), hook and line gear is expected to be low source serious injury or mortality to any large whale.

Small Cetaceans (Bottlenose Dolphins)

Over the past several years, observer coverage has been limited for fisheries prosecuted with hook and line or trap/pot gear. In the absence of extensive observer data for these fisheries, stranding data provides the next best source of information on species interactions with hook and line or trap pot gear. It is important to note; however, stranding data underestimates the extent of human-related mortality and serious injury because not all of the marine mammals that die or are seriously injured in human interactions are discovered, reported, or show signs of entanglement. Additionally, if gear is present, it is often difficult to definitively attribute the animal's death to the gear interaction, or if pieces of gear are absent, attribute the death or serious injury to a specific fishery or fishing gear type. As a result, the conclusions below should be taken with these considerations in mind and with an understanding that interactions may occur more frequently than what we are able to detect and provide at this time.

Several bottlenose dolphin stocks have been identified as species at risk of becoming serious injured or killed by hook and line. Reviewing the stock assessment reports for each dolphin stock identified in Table 7, stranding data provides the best source of information on species interaction history with hook and line gear type. Specifically, based on stranding data from 2007-2013, estimated mean annual mortality for each stock due to interactions with hook and line gear was approximately one animal (Waring et al. 2014; Waring et al. 2016).[14] Based on this and the best available information, hook and line interaction risks to small cetaceans (specifically bottlenose dolphins) are expected to be low. Should an interaction with a small cetacean occur, serious injury or mortality to the animal is possible; however, relative to other gear types known to result in the serious injury and mortality to small cetaceans (i.e., trawl or gillnet gears; Hayes et al. 2017; Henry et al. 2016; Palmer 2017), hook and line gear represents a low source of serious injury or mortality to any small cetacean.

[13] Any injury leading to a significant health decline (e.g., skin discoloration, lesions near the nares, fat loss, increased cyamid loads) is classified as a serious injury (SI); A value of "1" is set for cases determined to be a SI (Henry et al. 2016).

[14] Stranding data provided in Waring et al. (2015) and Hayes et al. (2017) was not considered in estimating mean annual mortality as not all bottlenose dolphin stocks are addressed in this stock assessment report and/or details of the strandings were not provided. As all bottlenose dolphin stocks are considered in Waring et al. (2014) and Waring et al. (2016), these stock assessment reports were used to estimate mean annual mortality. Estimates of mean annual mortality were calculated based on the total number of animals that stranded between 2007-2013, and that were determined to have incurred serious injuries or mortality as result of interacting with hook and line gear. Please note, any animals released alive with no serious injuries were not included in the estimate. Also, if maximum or minimum number of animals stranded were provided, to be conservative, we considered the maximum estimated number in calculating our mean annual estimate of mortality.

Sea Turtles

ESA-listed species of sea turtles are known to interact with hook and line gear, particularly in nearshore, southern waters (e.g., Virginia, south; Sea Turtle Disentanglement Network; NMFS 2013). Serious injury and mortality to sea turtles can be incurred by interactions with hook and line gear, and therefore, can pose a risk to these species. However, the extent to which these interactions are impacting sea turtle populations is still under investigation and therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of sea turtle populations. However, as with the commercial fishery (see section 6.3.2), the golden tilefish recreational fishery primarily operates in deep continental shelf edge/slope waters (>200 meters) which could reduce the potential for interaction.

Atlantic Sturgeon

ESA listed species of Atlantic sturgeon are known to interact with hook and line gear, particularly in nearshore, waters from the Gulf Maine to Southern New England (Network; NMFS 2013). Serious injury and mortality to Atlantic sturgeon can be incurred by hook and line gear interactions, and therefore, can pose a risk to these species. However, the extent to which these interactions are impacting Atlantic sturgeon DPSs is still under investigation and therefore, no conclusions can currently be made on the impact of hook and line gear on the continued survival of Atlantic sturgeon DPSs (NMFS 2013; NMFS 2011b). Nevertheless, subadult and adult Atlantic sturgeon live in coastal waters and estuaries when not spawning (they spawn in freshwater), generally in shallow (10-50 meter depth) nearshore areas dominated by gravel and sand substrates. As with the commercial fishery (see section 6.3.2), the golden tilefish recreational fishery primarily operates in deep continental shelf edge/slope waters (>200 meters) which could reduce the potential for interaction.

6.4 Human Communities

A detailed description of the social and economic aspects of the fishery for golden tilefish was presented in Amendment 1 to the FMP (MAFMC 2009). Montauk, New York and Barnegat Light, New Jersey continue to be the ports with the vast number of landings. Recent trends in the fishery are presented below.

Additional information on "Community Profiles for the Northeast U.S. Fisheries" can be found at: https://www.nefsc.noaa.gov/read/socialsci/communitySnapshots.php. In addition, Fishery Performance Reports prepared by industry advisors, provide additonal information on the social and economic environments from the industry members perspectives and are available at: http://www.mafmc.org. Recent trends in the fisheries are presented below and in Fishery Information Documents also available on the Council website.

6.4.1 Fishery Descriptions

In 2020, about 1.3 million pounds of tilefish were landed, slightly lower than 2018 at 1.4 million pounds. The average ex-vessel price of tilefish reported by processors was $3.75 in 2020, slightly lower than the $3.81 per pound seen in 2019. The total ex-vessel value of the 2020 harvest was approximately $4.8 million, slightly lower than $5.4 million in 2019 (Figure 2).

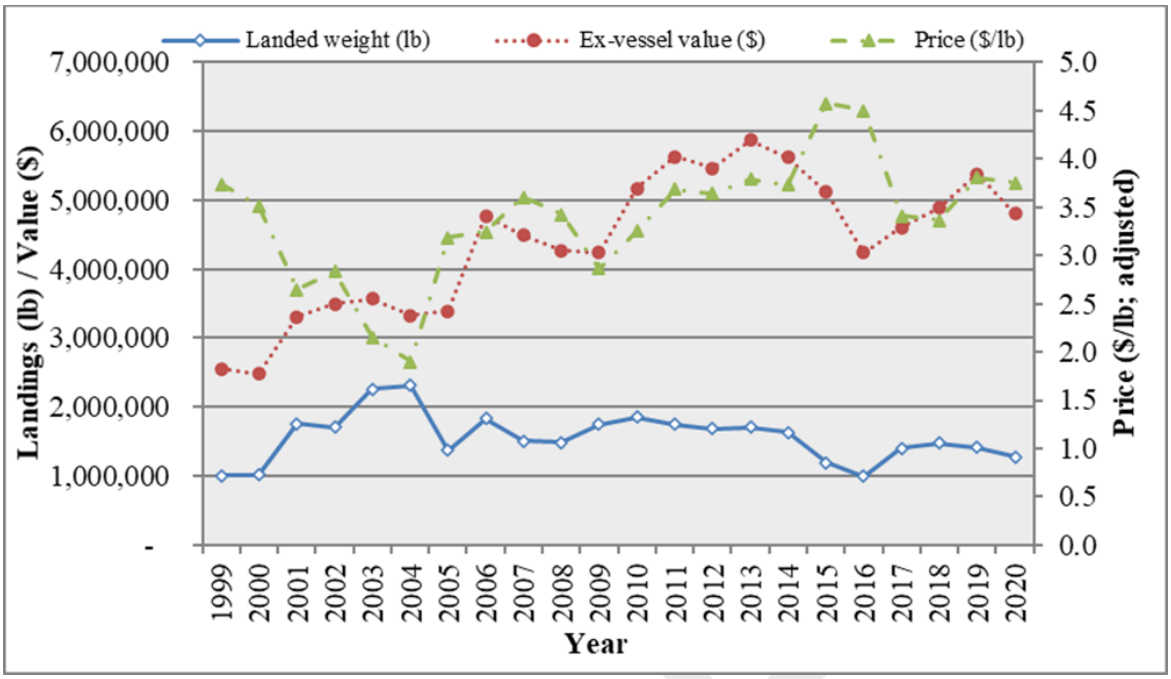

Figure 2. Landings (landed weight), ex-vessel value, and price for golden tilefish, Maine through Virginia combined, 1999-2020 (calendar year).

Note: Price data have been adjusted by the GDP deflator indexed for 2019. (2020-unadjusted as GDP deflator for that year was not available when this figure was produced). Source: NMFS unpublished dealer data.

The 2016 through 2020 coastwide average ex-vessel price per pound for all market categories combined was $3.64. Price differentials for the 2016 through 2020 period combined indicate that larger fish tend to bring higher prices (Table 8). Nevertheless, even though there is a price differential for various sizes of tilefish landed, tilefish fishermen land all fish caught as the survival rate of discarded fish is very low (Laurie Nolan, Personal Communication 2006; Kitts et al. 2007).

Table 8. Landings, ex-vessel value, and price of golden tilefish by size category, from Maine thought Virginia, 2016-2020 (calendar year).

Market category	Landed weight (pounds)	Value ($)	Price ($/pound)	Approximate market size range (pounds)
Extra large	233,934	1,079,040	4.61	> 25
Large	1,543,603	7,448,229	4.83	7 – 24
Large/medium[a]	892,318	3,681,030	4.13	5 – 7
Medium	1,885,084	6,545,801	3.47	3.5 – 5
Small or kittens	1,747,962	4,507,553	2.58	2 – 3.5
Extra small	202,636	442,690	2.18	< 2
Unclassified	68,890	197,607	2.87	---
All	6,574,427	23,901,950	3.64	---

[a]Large/medium code was implemented on May 1, 2016. Prior to that, golden tilefish sold in the large/medium range were sold as unclassified fish. Source: NMFS unpublished dealer data.

The COVID-19 pandemic caused a large reduction in the demand for golden tilefish with restaurant closures in 2020. As a consequence, there was a dramatic reduction in effort by all vessels. Full-time vessels in New York capped their trips at about 16,000 pounds and only one vessel landed each week. Barnegat Light (New Jersey), capped landings at about 8,000 to 10,000 pounds per week. Spreading landings helped stabilize prices.

Tilefish prices have remained stable because the tilefish industry continues to coordinate times of landings to avoid market gluts and market floods and spread tilefish landings throughout the year. The ability to do this has improved since IFQs came into place. Overall, prices have been relatively stable in all market categories. However, due to COVID-19, a large price reduction occurred in this fishery, especially at the beginning of the pandemic in 2020.[15]

6.4.2 Description of the Areas Fished

A detailed description of the areas fished by the fishery for golden tilefish was presented in Amendment 1 to the FMP (MAFMC 2009). The following provides information about recent fishery conditions. The commercial fishery for tilefish is prosecuted with bottom longline gear.

Approximately 47% of the landings for 2020 were caught in statistical area 616; statistical area 537 had 37%; statistical areas 539 and 526 (includes Hydrographer and Veatch Canyons) had 5 and 3%, respectively; and statistical area 626 had %. Less than 1% of the total landings were caught in statistical area 525 (includes Oceanographer, Lydonia, and Gilbert Canyons), 612, and 622 (Table 9). NMFS statistical areas are shown in Figure 3.

For the 1999 to 2020 period, commercial golden tilefish landings are spread across the years with no strong seasonal variation (Tables 10 and 11). However, in recent years, a slight downward trend in the proportion of golden tilefish landed during the winter period (November-February) and a slight upward trend in the proportion of golden tilefish landed during the May-June period are evident compared to earlier years (Table 11).

[15] Source: 2021 Golden Tilefish Advisory Panel Fishery Performance Report

Table 9. Golden tilefish percent landings by statistical area and year, 1996-2020 (calendar year).

Year	525	526	537	539	612	613	616	622	626	Other
1996	0.05	5.21	64.04	0.39	*	1.09	27.81	0.01	-	1.40
1997	0.03	0.67	79.51	0.02	*	2.59	16.41	0.01	*	0.74
1998	1.26	2.19	81.95	0.04	0.02	5.45	8.55	*	*	0.53
1999	0.97	0.22	55.79	0.02	0.22	3.71	36.60	0.02	0.02	0.43
2000	0.36	3.79	46.10	0.01	0.05	2.36	43.94	0.47	0.14	2.78
2001	0.23	3.09	23.92	*	0.01	3.16	68.96	*	0.10	0.52
2002	0.12	8.73	35.86	0.07	0.01	18.50	36.54	0.02	0.02	0.14
2003	0.88	1.81	38.48	0.10	-	11.85	46.51	0.05	0.05	0.26
2004	1.03	2.59	62.85	0.05	5.28	0.70	25.95	0.03	0.06	1.66
2005	0.12	0.25	62.99	0.02	0.03	6.11	25.68	0.03	0.20	4.56
2006	*	1.54	64.30	0.50	1.24	0.71	30.09	0.04	0.05	1.53
2007	0.02	0.42	57.61	0.01	-	5.53	33.93	0.85	0.45	1.18
2008	1.09	0.06	44.07	0.01	-	4.62	46.94	2.05	0.02	1.14
2009	2.17	0.01	42.62	1.30	0.04	4.37	46.12	1.34	1.16	0.88
2010	0.01	0.01	57.14	0.55	0.02	8.39	32.83	0.69	0.04	0.31
2011	0.02	*	53.06	0.01	-	3.12	39.98	0.31	0.06	3.44
2012	0.01	0.01	52.54	0.03	*	0.58	43.92	0.20	0.10	2.62
2013	*	0.67	56.22	1.06	0.03	0.68	35.39	1.21	4.59	0.16
2014	0.01	0.52	49.36	1.89	0.01	1.29	42.85	2.67	0.35	1.06
2015	3.06	0.98	30.00	2.55	-	0.01	55.02	2.34	5.53	1.50
2016	1.03	4.77	32.33	0.01	-	0.98	54.50	0.17	5.81	0.39
2017	0.01	5.45	27.73	2.69	0.01	0.94	55.33	0.16	5.49	2.19
2018	*	1.65	46.99	3.27	-	0.06	41.18	0.57	6.13	0.15
2019	0.01	1.38	55.43	1.86	*	1.69	38.50	0.06	0.34	0.74
2020	0.02	3.45	36.79	4.92	0.02	1.42	47.03	0.10	2.20	4.07
All	0.48	1.90	53.28	0.75	0.42	3.64	36.64	0.48	1.09	1.31

Note: - = no landings; * = less than 0.01%. Source: NMFS unpublished VTR data.

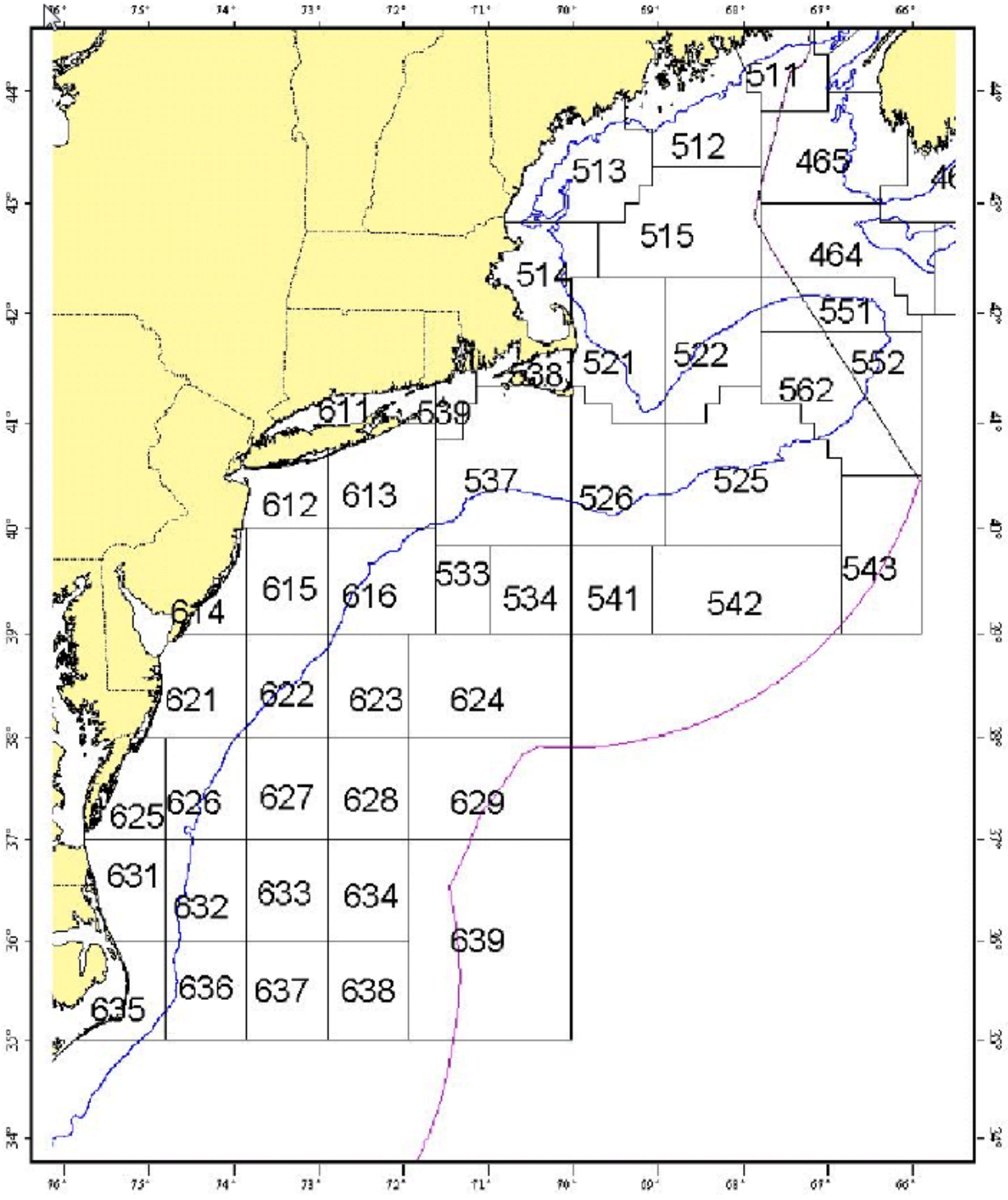

Figure 3. NMFS Statistical Areas.

Table 10. Golden tilefish commercial landings ('000 pound live weight) by month and year, Maine through Virginia, 1999-2020 (calendar year).

Year	Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1999	118	114	124	103	93	91	55	106	83	59	77	75	1,096
2000	52	105	159	101	107	99	34	91	42	107	96	112	1,105
2001	107	151	159	188	153	179	177	157	156	156	161	176	1,920
2002	143	232	257	144	164	117	107	141	148	146	68	200	1,867
2003	183	181	295	254	209	185	152	180	210	202	189	223	2,463
2004	192	354	514	323	143	56	113	122	181	236	71	189	2,492
2005	127	159	234	168	33	57	117	104	96	94	141	158	1,487
2006	210	226	292	125	127	124	86	152	116	140	169	228	1,996
2007	122	118	192	147	159	96	131	133	125	174	77	189	1,664
2008	235	206	219	173	124	123	62	90	101	90	109	104	1,636
2009	90	145	185	200	237	211	184	157	157	128	94	134	1,922
2010	149	133	273	216	195	157	149	157	176	188	98	137	2,027
2011	152	94	269	209	227	137	138	149	120	194	65	150	1,905
2012	146	114	142	207	151	131	157	204	186	221	39	139	1,836
2013	105	115	146	269	234	193	147	157	126	169	67	133	1,862
2014	114	93	146	183	187	233	215	171	134	149	50	102	1,778
2015	68	70	144	128	181	146	130	127	123	82	48	62	1,308
2016	43	53	91	71	110	119	131	136	91	96	83	64	1,089
2017	86	69	77	193	195	179	135	134	105	180	47	133	1,533
2018	81	134	124	194	149	196	181	148	133	103	64	98	1,606
2019	91	106	131	130	234	164	131	137	158	119	40	96	1,537
2020	75	95	143	54	187	159	147	133	93	180	65	65	1,396
Total	2,687	3,067	4,319	3,780	3,601	3,151	2,878	3,086	2,860	3,212	1,918	2,966	37,523
Avg. 11-20	96	94	141	164	186	166	151	150	127	149	57	104	1,585

Source: NMFS unpublished dealer data.

Table 11. Percent of golden tilefish commercial landings (live weight) by month and year, Maine through Virginia, 1999-2020 (calendar year).

Year	Month												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
1999	10.75	10.38	11.28	9.41	8.50	8.29	4.99	9.66	7.55	5.36	6.98	6.86	100.00
2000	4.68	9.48	14.41	9.13	9.67	8.95	3.05	8.26	3.78	9.71	8.70	10.18	100.00
2001	5.59	7.88	8.30	9.77	7.95	9.32	9.24	8.16	8.13	8.11	8.40	9.14	100.00
2002	7.64	12.43	13.76	7.73	8.78	6.28	5.74	7.56	7.91	7.85	3.63	10.70	100.00
2003	7.44	7.33	11.98	10.31	8.47	7.52	6.18	7.32	8.52	8.19	7.68	9.05	100.00
2004	7.69	14.21	20.64	12.95	5.74	2.23	4.52	4.88	7.25	9.46	2.87	7.57	100.00
2005	8.54	10.71	15.77	11.28	2.24	3.82	7.85	6.98	6.43	6.32	9.46	10.60	100.00
2006	10.50	11.32	14.65	6.28	6.38	6.22	4.33	7.60	5.82	7.04	8.46	11.41	100.00
2007	7.35	7.08	11.55	8.83	9.56	5.79	7.86	7.99	7.53	10.48	4.63	11.35	100.00
2008	14.37	12.59	13.40	10.56	7.60	7.50	3.77	5.53	6.18	5.49	6.66	6.35	100.00
2009	4.67	7.55	9.64	10.39	12.36	10.97	9.56	8.18	8.16	6.65	4.88	6.99	100.00
2010	7.35	6.54	13.49	10.68	9.61	7.73	7.37	7.75	8.68	9.25	4.81	6.74	100.00
2011	7.96	4.96	14.13	10.99	11.93	7.20	7.24	7.82	6.30	10.18	3.41	7.88	100.00
2012	7.94	6.22	7.72	11.26	8.22	7.11	8.57	11.09	10.14	12.03	2.15	7.55	100.00
2013	5.66	6.18	7.84	14.47	12.54	10.37	7.90	8.46	6.75	9.08	3.60	7.14	100.00
2014	6.41	5.25	8.20	10.31	10.50	13.09	12.07	9.63	7.55	8.40	2.84	5.74	100.00
2015	5.21	5.38	10.97	9.79	13.86	11.16	9.91	9.71	9.40	6.24	3.67	4.73	100.00
2016	3.94	4.85	8.34	6.52	10.11	10.97	12.00	12.47	8.39	8.85	7.66	5.91	100.00
2017	5.59	4.52	5.05	12.56	12.72	11.67	8.84	8.72	6.87	11.73	3.05	8.68	100.00
2018	5.02	8.37	7.73	12.07	9.31	12.20	11.28	9.22	8.31	6.40	3.99	6.10	100.00
2019	5.93	6.87	8.53	8.46	15.24	10.64	8.49	8.92	10.26	7.77	2.62	6.27	100.00
2020	5.39	6.78	10.27	3.86	13.43	11.40	10.52	9.52	6.67	12.86	4.62	4.68	100.00
Total	7.16	8.17	11.51	10.07	9.60	8.40	7.67	8.22	7.62	8.56	5.11	7.90	100.00

Source: NMFS unpublished dealer data.

6.4.3 Port and Community Description

The ports and communities that are dependent on golden tilefish are fully described in Amendment 1 to the FMP (section 6.5; MAFMC 2009; available at: http://www.mafmc.org/fisheries/fmp/tilefish). Additional information on "Community Profiles for the Northeast US Fisheries" can be found at: https://apps-nefsc.fisheries.noaa.gov/read/socialsci/communitySnapshots.php.

To examine recent landings patterns among ports, 2019-2020 NMFS dealer data are used. The top commercial landings ports for golden tilefish are shown in Table 12. A "top port" is defined as any port that landed at least 10,000 pounds of golden tilefish. Ports that received 1% or greater of their total revenue from golden tilefish are shown in Table 13.

Table 12. Top ports (≥ 10,000 pounds per year) of landings (live weight) for golden tilefish, based on NMFS 2019-2020 dealer data (calendar year). Since this table includes only the "top ports," it may not include all of the landings for the year.

Port	2019		2020	
	Landings (pounds)	# Vessels	Landings (pounds)	# Vessels
Montauk, NY	910,338 (906,619)	16 (3)	782,026 (779,977)	13 (4)
Barnegat Light/Long Beach, NJ	398,374 (398,374)	5 (5)	376,294 (376,374)	5 (5)
Hampton Bays, NY	201,246 (C)	5 (C)	188,556 (C)	5 (C)
Point Judith, RI	5,763 (0)	51 (0)	9,792 (0)	52 (0)

[a]Values in parentheses correspond to IFQ vessels. Note: C = Confidential. Source: NMFS unpublished dealer data. Note: ports that may have had landings ≥ 10,000 pounds not added to this table due to confidentiality issues.

Table 13. Ports that generated 1% or greater of total revenues from golden tilefish, 2016-2020 (calendar year).

Port	State	Ex-vessel revenue all species combined	Ex-vessel revenue golden tilefish	Golden tilefish contribution to total port ex-vessel revenues
Ocean City	NJ	12,441	4,565	37%
East Hampton	NY	63,090	11,698	19%
Montauk	NY	84,058,877	13,381,066	16%
Hampton Bays	NY	30,107,477	3,924,172	13%
Lynnhaven	VA	552,687	45,679	8%
Barnegat & Barnegat Light/Long Beach	NJ	122,929,588	6,056,760	5%
Shinnecock	NY	6,153,917	203,603	3%

Source: NMFS unpublished dealer data.

6.4.4 IFQ Allocations, Vessels, Permits, Dealers, and Markets

There were 11 IFQ allocation holders in 2020. The average golden tilefish quota allocation percent was 10%, ranging from 2 to 28%. The bulk of the landings occur in New York and New Jersey, particularly Montauk, New York, and Barnegat Light , New Jersey.

Data from the Greater Atlantic permit application database shows that in 2020 there were 1,927 vessels that held a valid open access commercial/incidental permit (valid for both golden and blueline tilefish) and 606 vessels held a valid open access party/charter tilefish permit. However, not all of those vessels are active participants in the fishery.

In 2020 there were 50 federally permitted dealers who bought golden tilefish from 105 vessels that landed this species from Maine through Virginia. In addition, 54 dealers bought golden tilefish from 106 vessels in 2019. These dealers bought approximately $5.4 and $4.8 million of golden tilefish in 2019 and 2020, respectively, and are distributed by state as indicated in Table 14. Table 15 shows relative dealer dependence on tilefish.

Furthermore, according to vessel trip report (VTR) data, 26 party/charter vessels reported a total of 77 trips that landed golden tilefish in 2020. VTR data indicates that party/charter vessel landed 3,466 golden tilefish in 2020. This represented a 36% decrease from 2019 (5,424 fish landed).

Table 14. Dealers reporting buying golden tilefish, by state in 2019-2020 (calendar year).

Number of dealers	MA		RI		CT		NY		NJ		VA		Other	
	'19	'20	'19	'20	'19	'20	'19	'20	'19	'20	'19	'20	'19	'20
	4	6	10	10	10	6	16	13	8	7	C	4	6	4

Note: C = Confidential. Source: NMFS unpublished dealer data.

Table 15. Dealer dependence on golden tilefish, 2016-2020 (calendar year).

Number of dealers	Relative dependence on tilefish
67	<5%
7	5%-10%
2	10% - 25%
4	25% - 50%
2	50% - 75%
1	90%+

Source: NMFS unpublished dealer data.

Most tilefish are sold fresh. The bulk of the catch is gutted at sea and iced during long trips. Incidental catches are not gutted. When the catch arrives at the dock it is sorted, washed, weighted, boxed, and iced in 60 pound cartons. Tilefish are generally transported to the Fulton Market by truck. Tilefish is carried as a specialty item in the Fulton Market for mostly ethnic customers. However, an increasing although small amount is going to local buyers on Long Island, where there has been an uptick in local restaurants featuring local fishes. Tilefish supplies are very stable throughout the year as the IFQ participants spread their landings through the fishing season to avoid market gluts and price fluctuations. Nevertheless, the price for Golden tilefish decreases when tilefish landed in the South Atlantic "derby" fishery enters the New York market. This typically occurs a few months out of the year as the South Atlantic tilefish fishery typically closes early in the season. Fishermen in the Mid-Atlantic take this into account when planning fishing activity.

7.0 ENVIROMENTAL CONSEQUENCES OF ALTERNATIVES

Environmental impacts are described both in terms of their direction (negative, positive, or no impact) and their magnitude (slight, moderate, or high). Table 16 summarizes the guidelines used for each VEC to determine the magnitude and direction of the impacts described in this section.

The recent conditions of the VECs include the biological conditions of the target stocks, non-target stocks, and protected species over the most recent five years (sections 6.1 and 6.3). They also include the fishing practices and levels of effort and landings in the golden tilefish fishery over the most recent years, as well as the economic characteristics of the fisheries over the most recent years (depending on the dataset; section 6.4). The recent conditions of the VECs also include recent levels of habitat availability and quality (section 6.2). The current condition of each VEC is described in Table 17.

This EA analyzes the impacts of the alternatives described fully under section 5.0 on each VEC. For ease of reference, those alternatives are listed here.

Multi-Year Specifications Alternatives

- Alternative 1: *No Action/Status Quo* – No changes to the process to set golden tilefish management specifications for up to 3 years
- Alternative 2: Specifications to be set for the maximum number of years needed to be consistent with the Northeast Regional Coordinating Council approved stock assessment schedule

Fishing Year Timing Alternatives

- Alternative 1: *No Action/Status Quo* – No changes to the current golden tilefish fishing year. The golden tilefish fishing year will continue to be November 1 – October 31
- Alternative 2: The golden tilefish fishing year is the 12-month period beginning with January 1, annually. Therefore, the fishing year will be from January 1 – December 31

2022-2024 Golden Tilefish Fishery Specifications (Catch and Landings Limits) Alternatives

[Revise once the Council completes selection of the preferred alternatives]

- Alternative 1: *No Action/Status Quo* (2022, 2023, 2024)
- Alternative 2: SSC and MC recommended (2022, 2023, 2024)
- Alternative 3: Time varying quotas (2022, 2023, 2024)

When considering impacts on each VEC, the alternatives are compared to the current condition of the VEC. The alternatives are also compared to each other.

The alternatives are not compared to a theoretical condition where the fisheries are not operating. These fisheries have occurred for many decades and are expected to continue into the foreseeable future. The nature and extent of the management programs for these fisheries have been examined in detail in EAs and Environmental Impact Statements (EISs) prepared for previously implemented management actions under the Tilefish FMP.

This action proposes modifications that revise the process for specifying multi-year management measures and the process for specifying the fishing year timing. In addition, this framework will set new specifications for 2022-2024. Under the management program for tilefish detailed in the FMP, the catch and landings limits no action alternative is equivalent to the *status quo* alternative. Therefore, for purposes of comparing impacts of fishery specifications throughout this document, the proposed alternatives for golden tilefish are compared to the no action or *status quo* alternative (baseline). The golden tilefish regulations specify that the overall tilefish commercial quota would remain at 1.624 million pounds unless modified by the annual specifications process (section 648.292(b)). The comprehensive system of catch limits and accountability measures considers both scientific and management uncertainty, and is designed to ensure commercial catch does not exceed the ACL, which is equal to the ABC. The amount of total catch, landings, and

discards produced in this fishery in 2022-2024 is contingent on how the fishery regulations including IFQs and incidental landings interact to achieve the specific levels of overall commercial quotas implemented. Therefore, for the purposes of impact analyses, changes in the commercial quotas and associated landings are expected to drive any anticipated changes in effort and impacts on the valued VECs considered in this EA. There are "roll-over" provisions for this fishery currently provided for in the FMP that do not require action on the part of NMFS and maintains current regulations and specifications. The no action or *status quo* alternative allows NMFS to specify and implement ACLs and commercial quotas for this fishery, as required in the regulations at 50 CFR §648, for the upcoming fishing year. Monitoring the IFQ and incidental landings is essential for management of this fishery and forms the backbone of the current IFQ quota-based management systems under the FMP. Therefore, the alternatives proposed for catch and landings limits are compared to the no action or *status quo* (baseline) alternatives for 2022-2024.

In general, alternatives which may result in overfishing or an overfished status for target and non-target species may have negative impacts for those species, compared to the current condition of the VEC. Conversely, alternatives which may result in a decrease in fishing effort, resulting in ending overfishing or rebuilding to the biomass target, may result in positive impacts for those species by resulting in a decrease in fishing mortality (Table 16).

For the physical environment and habitat, alternatives that improve the quality or quantity of habitat or result in a decrease in fishing effort are expected to have positive impacts. Alternatives that degrade the quality or quantity, or increase disturbance of habitat are expected to have negative impacts (Table 16). In addition, alternatives that result in continued fishing effort may result in slight negative impacts. A reduction in fishing effort is likely to decrease the time that fishing gear is in the water, thus reducing the potential for interactions between fishing gear and habitat. The directed commercial fishery for golden tilefish is prosecuted with bottom longline gear. Otter trawls may also be used (in incidental fisheries for tilefish), but have limited utility because of the habitat preferred by tilefish. Longlines (which land the bulk of the tilefish) cause some low degree impacts in mud, sand, and gravel habitats (section 6.2.3).

For protected species, consideration is given to both ESA-listed species and MMPA protected species. ESA-listed species include populations of fish, marine mammals, or turtles at risk of extinction (endangered) or endangerment (threatened). For ESA-listed species, any action that results in interactions or takes is expected to have negative impacts, including actions that reduce interactions. Actions expected to result in positive impacts on ESA-listed species include only those that contain specific measures to ensure no interactions (i.e., no take). By definition, all species listed under the ESA are in poor condition and any take has the potential to negatively impact that species' recovery.

Under the MMPA, the stock condition of each protected species varies, but all are in need of protection. For marine mammal stocks/species that have their potential biological removal (PBR) level reached or exceeded, negative impacts would be expected from any alternative that has the potential to interact with these species or stocks. For species that

are at more sustainable levels (i.e., PBR levels have not been exceeded), actions not expected to change fishing behavior or effort such that interaction risks increase relative to what has been in the fishery previously, may have positive impacts by maintaining takes below the PBR level and approaching the Zero Mortality Rate Goal (Table 16). The impacts of each alternative on the protected resources VEC take into account impacts on ESA-listed species, impacts on marine mammal stocks in good condition (i.e., PBR level has not been exceeded), and marine mammal stocks that have exceeded or are in danger of exceeding their PBR level.

Socioeconomic (human communities) impacts are considered in relation to potential changes in landings and prices, and by extension, revenues, compared to the current fisheries conditions. Alternatives which could result in an increase in landings are generally considered to have positive socioeconomic impacts because they could result in increased revenues; however, if an increase in landings leads to a decrease in price or a decrease in stock biomass for any of the landed species, then negative socioeconomic impacts could occur.

Expected Changes in Fishing Effort Under Alternatives Considered

The expected impacts to each VEC are derived from both consideration of the current condition of the VEC and the expected changes in fishing effort under each of the alternatives. It is not possible to quantify with confidence how effort will change under each alternative; therefore, expected changes are typically described qualitatively.

Table 16. General definitions for impacts and qualifiers relative to resource condition (i.e., baseline) summarized in Table 17 below.

General Definitions				
VEC	**Resource Condition**	**Impact of Action**		
		Positive (+)	Negative (-)	No Impact (0)
Target and Non-target Species	Overfished status defined by the MSA	Alternatives that would maintain or are projected to result in a stock status above an overfished condition*	Alternatives that would maintain or are projected to result in a stock status below an overfished condition*	Alternatives that do not impact stock / populations
ESA-listed Protected Species (endangered or threatened)	Populations at risk of extinction (endangered) or endangerment (threatened)	Alternatives that contain specific measures to ensure no interactions with protected species (e.g., no take)	Alternatives that result in interactions/take of listed resources, including actions that reduce interactions	Alternatives that do not impact ESA listed species
MMPA Protected Species (not also ESA listed)	Stock health may vary but populations remain impacted	Alternatives that will maintain takes below PBR and approaching the Zero Mortality Rate Goal	Alternatives that result in interactions with/take of marine mammal species that could result in takes above PBR	Alternatives that do not impact MMPA Protected Species
Physical Environment / Habitat / EFH	Many habitats degraded from historical effort (see condition of the resources table for details)	Alternatives that improve the quality or quantity of habitat	Alternatives that degrade the quality, quantity or increase disturbance of habitat	Alternatives that do not impact habitat quality
Human Communities / Socioeconomic	Highly variable but generally stable in recent years (see condition of the resources table for details)	Alternatives that increase revenue and social well-being of fishermen and/or communities	Alternatives that decrease revenue and social well-being of fishermen and/or communities	Alternatives that do not impact revenue and social well-being of fishermen and/or communities
	Impact Qualifiers			
A range of impact qualifiers is used to indicate any existing uncertainty	Negligible (non-significant).	To such a small degree to be indistinguishable from no impact		
	Slight (sl), as in slight positive or slight negative)	To a lesser degree / minor		
	Moderately (M) positive or negative	To an average degree (i.e., more than "slight," but not "high")		
	High (H), as in high positive or high negative	To a substantial degree (not significant unless stated)		
	Significant (in the case of an EIS)	Affecting the resource condition to a great degree, see 40 CFR § 1508.27.		
	Likely	Some degree of uncertainty associated with the impact		
*Actions that will substantially increase or decrease stock size, but do not change a stock status may have different impacts depending on the particular action and stock. Meaningful differences between alternatives may be illustrated by using another resource attribute aside from the MSA status, but this must be justified within the impact analysis.				

Table 17. Baseline conditions of VECs considered in this action, as summarized in section 6.0.

VEC		Baseline Condition	
		Status/Trends, Overfishing?	**Status/Trends, Overfished?**
Target stock (section 6.1.2)	**Golden Tilefish**	No	No
Non-target species (principal species listed in section 6.1.3 that account for 0.1% or more of the total catch from golden tilefish trips)	**Spiny dogfish**	No	No
	Smooth dogfish	No	No
	Blueline tilefish (South Atlantic)	No	No
	Blueline tilefish (Mid-Atlantic)	Unknown	Unknown
	Conger eel	Unknown	Unknown
Habitat (section 6.2)		Commercial fishing impacts are complex and variable and typically non adverse; Non-fishing activities had historically negative but site-specific effects on habitat quality.	
Protected resources (section 6.3)	**Sea turtles**	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (Northwest Atlantic Ocean DPS) and green (North Atlantic DPS) sea turtles are classified as threatened.	
	Fish	Atlantic salmon, shortnose sturgeon, and the New York Bight, Chesapeake, Carolina, and South Atlantic DPSs of Atlantic sturgeon are classified as endangered under the ESA; the Atlantic sturgeon Gulf of Maine DPS is listed as threatened; cusk are candidate species	
	Large whales	All large whales in the Northwest Atlantic are protected under the MMPA. North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA.	
	Small cetaceans	Pilot whales, dolphins, and harbor porpoise are all protected under the MMPA.	
	Pinnipeds	Gray, harbor, hooded, and harp seals are protected under the MMPA.	
Human communities (section 6.4)		Golden tilefish stock support a small IFQ fishery and related support services. There were 11 IFQ allocation owners in 2020 and the number of active vessels participating in the IFQ fishery has ranged from 9 to 10 in recent years. 2020 estimated ex-vessel revenues was about $4.8 million. The bulk of the landings occur in New York and New Jersey, particularly Montauk, New York, and Barnegat Light, New Jersey. In addition, there is a small incidental fishery (landed on average less than 3% of the total landings for the 2016-2021 period). In 2020 there were 50 federally permitted dealers who bought golden tilefish from 105 vessels that landed this species from Maine through Virginia. Most tilefish are sold fresh. The bulk of the catch is gutted at sea and iced during long trips. Incidental catches are not gutted. Tilefish supplies are very stable throughout the year as the IFQ participants spread their landings through the fishing season to avoid market gluts and price fluctuations.	

7.1 Multi-Year Specifications Alternatives

7.1.1 Impacts on Golden Tilefish and Non-Target Species

The alternatives discussed in this section are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices, as they only address the process for the duration of setting multi-year management measures.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set golden tilefish management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the target species (tilefish) compared to the current condition of the stock.

The no action alternative is not expected to impact (direct or indirect) non-target species caught in the golden tilefish commercial fishery. All of the species most commonly caught on directed tilefish trips have positive stock status, except for blueline tilefish in the Mid-Atlantic and conger eel which status are unknown. As indicated above, the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Therefore, the no action alternative is expected to have no impact on interaction of this fishery with non-targeted species compared to the current conditions.

Alternative 2 would not change the process by which the annual multi-year specifications are set; it would simply modify the number of years (time period) for which those measures could be set. Under alternative 2, specifications could be set for up to the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish stock assessment is produced. New specifications of annual catch and landings limits (or other annual specifications measures) would be prepared in the final year of the quota period unless there is a need for interim quota modifications. Specifications under the multi-year process described in alternative 2 would include all the environmental impact review procedures currently required under the MSA, and other applicable laws, including NEPA. These review procedures collectively ensure that impacts on fisheries resources be considered prior to implementation of the proposed harvest levels. In addition, under this alternative, Council staff will coordinate with NEFSC staff, during the first quarter of each year (during the multi-year specifications period) to assess if there is any information regarding these fisheries that needs to be brought to the attention of the SSC and Council. Alternative 2 is expected to have no impact (direct or indirect) on the target species (tilefish) or non-target species caught in the golden tilefish fishery compared to the current conditions. None of the other existing catch and landings limits requirements, accountability measures, reporting requirements or IFQ system management procedures will change under alternative 2. Alternative 2 is expected to have the same impacts on the target and non-target species as alternative 1 (*status quo*).

When comparing across both alternatives, alternative 2 is expected to have no impacts compared to *status quo* measures (alternative 1).

Although there are no impacts on the VECs, alternative 2 would provide for some administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fishery between stock assessments; thus, improving the management process (i.e., efficient use of Council and NOAA staff time and reducing and management

7.1.2 Impacts on Physical Habitat

The alternatives discussed in this section are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set golden tilefish management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the physical habitat compared to the current conditions.

Alternative 2 would not change the process by which the annual multi-year specifications are set; it would simply modify the number of years (time period) for which those measures could be set. Under alternative 2, specifications could be set for up to the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish stock assessment is produced. Any future specification set would still undergo environmental review (as noted under section 7.1.1). Alternative 2 is expected to have no impact (direct or indirect) on the physical habitat. None of the other existing catch and landings limits requirements, accountability measures, reporting requirements or IFQ system management procedures will change under alternative 2. Alternative 2 is expected to have the same impacts on the physical habitat as alternative 1 (*status quo*).

When comparing across both alternatives for habitat, alternative 2 is expected to have no impacts compared to the *status quo* measures.

7.1.3 Impacts on Protected Species

The alternatives discussed in this section are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set golden tilefish management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on protected resources compared to the current conditions.

Alternative 2 would change the process by which the periodicity of the annual multi-year specifications are set; it would simply change the number of years (time period) for which those measures could be set. Under alternative 2, specifications could be set for up to the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish stock assessment is produced. Any future specification set would still undergo environmental review (as noted under section 7.1.1). None of the other existing catch and landings limits requirements, accountability measures, reporting requirements or IFQ system management procedures will change under alternative 2. Alternative 2 is expected to have the same impacts on the protected resources as alternative 1 (*status quo*).

When comparing across both alternatives for protected resources, alternative 2 is expected to have no impacts compared to the *status quo* measures.

7.1.4 Impacts on Human Communities

The alternatives discussed in this section are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the process to set golden tilefish management specifications for up to 3 years. The no action alternative is expected to have no impact (direct or indirect) on the human communities compared to the current conditions.

Alternative 2 would not change the process by which the annual multi-year specifications are set; it would simply modify the number of years (time period) for which those measures could be set. Under alternative 2, specifications could be set for up to the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. This alternative would provide additional flexibility as specifications could be set to cover the time period until a new golden tilefish stock assessment is produced. Any future specification set would still undergo environmental review (as noted under section 7.1.1). Alternative 2 is expected to have no impact (direct or indirect) on the human communities compared to the current conditions. None of the other existing catch and landings limits requirements, accountability measures, reporting requirements or IFQ system management procedures will change under alternative 2. Alternative 2 is expected to have the same impacts on the human communities as alternative 1 (*status quo*).

When comparing across both alternatives, alternative 2 is expected to have no impacts compared to *status quo* measures (alternative 1).

Although there are no impacts on the VECs, alternative 2 would provide for some administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fishery between stock assessments; thus, improving the management process (i.e., efficient use of Council and

NOAA staff time and reducing management costs). It is possible that this could in turn decrease the administrative burden and the IFQ cost recovery fee.

7.2 Fishing Year Timing Alternatives

7.2.1 Impacts on Golden Tilefish and Non-Target Species

The alternatives discussed in this section are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices, as they only address the process for setting the timing of the fishing year. As indicated in section 6.1.3, commercial golden tilefish landings are spread across the years with no strong seasonal variation.

Under alternative 1 (no action/*status quo*), there would be no changes to the current golden tilefish fishing year. The golden tilefish fishing year will continue to be November 1 – October 31. The no action alternative is expected to have no impact (direct or indirect) on the target species (tilefish) compared to the current condition of the stock.

The no action alternative is not expected to impact non-target species caught in the golden tilefish commercial fishery (neither direct nor indirectly). All of the species most commonly caught on directed tilefish trips have positive stock status, except for blueline tilefish in the Mid-Atlantic and conger eel which status are unknown. As indicated above, the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices are not expected to change under this alternative. Therefore, the no action alternative is expected to have no impact on interaction of this fishery with non-targeted species.

Alternative 2 would change the process by which the current fishing year is set. Under alternative 2, the golden tilefish fishing year is the 12-month period beginning with January 1, annually. This alternative would result in quota specifications for the January 1 – December 31, to be aligned the 12-month fishing year cycle with the 12-month cycle for which the stock assessment is based; thus, potentially reducing uncertainty in the long-term.[16] This is expected to result in impacts to the golden tilefish stock that range from no impacts to slightly positive impacts compared to the current conditions. Alternative 2 is expected to have no impact (direct or indirect) on non-target species caught in the golden tilefish fishery when compared to the current conditions. None of the other existing catch and landings limits requirements, accountability measures, reporting requirements or IFQ system management procedures will change under alternative 2.

When comparing across both alternatives, alternative 2 is expected to result in impacts that range from no impacts to slightly positive impacts compared to *status quo* measure (alternative 1).

[16] Currently, the fishing year starts on November 1 (November 1 – October 31), two months ahead of the yearly projections used to derived catch and landings limits (January 1 – December 31).

7.2.2 Impacts on Physical Habitat

The impacts on habitat are identical to those described under section 7.1.2 above.

7.2.3 Impacts on Protected Species

The impacts on protected resources are identical to those described under section 7.1.3 above.

7.2.4 Impacts on Human Communities

The alternatives discussed in this section are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

Under alternative 1 (no action/*status quo*), there would be no changes to the current golden tilefish fishing year. The golden tilefish fishing year will continue to be November 1 – October 31. The no action alternative is expected to have no impact (direct or indirect) on the human communities compared to the current conditions.

Alternative 2 would change the process by which the current fishing year is set. Under alternative 2, the golden tilefish fishing year is the 12-month period beginning with January 1, annually. This alternative would result in quota specifications for the January 1 – December 31, to be aligned with cost recovery calculations associated with managing the IFQ system. This could in turn decrease the administrative burden and the IFQ cost recovery fee. In addition, industry members have indicated that aligning the fishing year with the calendar year will create more stability in terms of harvesting their full allocation. This is expected to result in impacts to the human communities that range from no impacts to slightly positive impacts compared to the current conditions.

When comparing across both alternatives, alternative 2 is expected to result in impacts that range from no impacts to slightly positive impacts compared to *status quo* measure (alternative 1).

7.3 2022-2024 Golden Tilefish Fishery Specifications (Catch and Landings Limits) Alternatives

[Revise once the Council completes selection of the preferred alternatives]

The golden tilefish specifications alternatives are fully described fully under section 5.0 which specify commercial quotas given n Table 18 for the 2022, 2023, and 2024 golden tilefish fishery, that are necessary to ensure overfishing does not occur and ACLs are not exceeded. For a detailed description of how these quota based-alternatives were developed see section 5.3 and summarized in Table 2.

Table 18. Summary of the commercial quotas (in pounds) for each of the quota-based alternatives.

Alternatives	Commercial Component	2022 Quotas	2023 Quotas	2024 Quotas
Alternative 1 (*No Action / Status Quo/*)	**Overall**	1,624,305	1,624,305	1,624,305
	IFQ Vessels	1,554,038	1,554,038	1,554,038
	Incidental Vessels	70,267	70,267	70,267
Alternative 2 (SSC and MC Recommended**)**	**Overall**	1,946,914	1,946,914	1,946,914
	IFQ Vessels	1,866,103	1,866,103	1,866,103
	Incidental Vessels	80,811	80,811	80,811
Alternative 3 (Time varying quotas**)**	**Overall**	1,894,003	2,004,234	1,944,709
	IFQ Vessels	1,815,837	1,920,557	1,864,008
	Incidental Vessels	78,165	83,677	80,701

For purposes of comparing each of the alternatives, the proposed 2022, 2023, and 2024 commercial quotas under each alternative is compared to the 2021 commercial quota and 2020 commercial landings (2020 is used a s a proxy as complete year data from 2020 is not available), to provide the increase or decrease quota (or fishing opportunity level) or harvest limit that is expected under each alternative (Table 19).

Table 19. The percentage difference between the proposed commercial quotas under each alternative and the 2020 commercial landings and *status quo* 2021 quotas (all in a 12-month period basis).

Alternatives	**Compare (Percent Change)**	**2022 Quotas**	**2023 Quotas**	**2024 Quotas**
Alternative 1 (*No Action / Status Quo*)	2020 Overall Landings	+16%	+16%	+16%
	2020 IFQ Landings	+13%	+13%	+13%
	2020 Incidental Landings	+172%	+172%	+172%
	2021 Overall Quota	0%	0%	0%
	2021 IFQ	0%	0%	0%
	2021 Incidental Quota	0%	0%	0%
Alternative 2 (SSC and MC Recommended**)**	2020 Overall Landings	+39%	+39%	+39%
	2020 IFQ Landings	+36%	+36%	+36%
	2020 Incidental Landings	+212%	+212%	+212%
	2021 Overall Quota	+20%	+20%	+20%
	2021 IFQ	+20%	+20%	+20%
	2021 Incidental Quota	+15%	+15%	+15%
Alternative 3 (Time varying quotas**)**	2020 Overall Landings	+35%	+43%	+39%
	2020 IFQ Landings	+32%	+39%	+35%
	2020 Incidental Landings	+202%	+224%	+212%
	2021 Overall Quota	+17%	+23%	+20%
	2021 IFQ	+17%	+24%	+20%
	2021 Incidental Quota	+11%	+19%	+15%

7.3.1 Impacts on Golden Tilefish and Non-Target Species

7.3.1.1 Alternative 1: *No Action/Status Quo*

As indicated in sections 4.0, at the first framework meeting (April 2021), the Council selected preferred alternatives for the two process related issues addressed in this framework document. One of this issues is the timing of the fishing year. The Council selected an alternative that sets the golden tilefish fishing year as the 12-month period beginning with January 1, annually (alternative 2 in sections 5.2.1 and 7.2). Therefore, the fishing year will be from January 1 – December 31 (compared to the current November 1 – October 31 fishing year). To facilitate the transition from the current fishing year (November 1 to October 31) to January 1 to December 31, a one-time only adjustment to bridge the gap will be necessary. More specifically, the 2022 fishing year will be extended from November 1, 2021 to December 31, 2022 (14-month period). Then, for 2023 and 2024, the Council would implement specifications starting on January 1 and ending in December 31.

Under *status quo* alternative 1, the resulting quota for the IFQ fishery is 1,554,038 pounds and the incidental category quota is 70,267 pounds (Table 18). Table 19 shows the potential changes in quota levels (fishing opportunity) for various alternatives in 2022, 2023, and 2024, compared to the current quota levels (2021 *status quo* quotas). However, these comparisons are made on a 12-month fishing year. Therefore, in order to make a more robust comparison of impacts of the proposed commercial quota in 2022 under this alternative compared to 2021, the fishing year quotas for 2021 and 2022 are broken down to a common monthly denominator basis to assess impacts of the 14-month 2022 fishing year compared to 2021 12-month fishing year. The current 2021 overall commercial quota of 1,624,305 pounds is equivalent to 135,359 pounds/month (1,624,305 pounds / 12 months) and the 2022 overall quota is equivalent to 116,022 pounds/month (1,624,305 pounds / 14 months). Therefore, on a common monthly denominator basis, the overall commercial quota is reduced by 14% in extended fishing year 2022 compared to fishing year 2021; however, in 2023 and 2024 it remains identical (i.e., no change from 2021 quota on common monthly denominator basis). A similar approach will be used when describing impacts of the 2022 overall commercial quotas under alternatives 2 (SSC and MC recommended) and 3 (time varying quotas) presented below.

In general terms, commercial golden tilefish landings are spread across the years with no strong seasonal variation (section 6.4.2). In fact, for the last five years (2016-2020), the monthly proportion of golden tilefish landings by the Montauk fleet (which accounts for over 70% of the total golden tilefish landings) was evenly distributed throughout the year. For the Barnegat light fleet (typically smaller boats), the proportion of landings was higher from April through September (Table 20). With the exception of 2020, the golden tilefish fleet has landed the bulk of the quota since the overall 1,626,435 pounds quota was implemented in 2018 (Table 3).

Table 20. Proportion (percent) of golden tilefish landings on a monthly basis by the Montauk (NY) and Barnegat Light (NJ) golden tilefish fleets from 2016-2020.

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Montauk	6.94	8.29	9.19	7.80	9.11	8.62	8.59	8.75	8.52	9.96	5.42	8.80
Barnegat Light	0.04	0.02	3.53	10.40	21.96	20.84	14.97	11.64	7.16	8.66	0.77	-

Note: These values are based on 94.3% of the total golden tilefish landings for the 2016-2020 period.

The resulting quota for the IFQ fishery is 1,554,038 pounds and the incidental category quota is 70,267 pounds under *status quo* alternative 1 would therefore be expected to provide a small decrease in fishing opportunities in 2022 compared to 2021. Therefore, a small decrease in fishing effort is expected. Nevertheless, no impact on the prosecution of the golden tilefish fishery, including distribution of fishing effort, or fishing methods and practices are expected.

However, the proposed quotas under this alternative would be expected to result in the same fishing opportunities in 2023 and 2024 compared to 2021. This alternative is expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices in 2022 and 2023 compared to 2021.

The expected levels of catch and landings under this alternative are lower than those allowed for under the SSC's recommended 2022-2024 ABC (represented by alternative 2). Therefore, this alternative is more conservative than necessary to prevent overfishing and achieve optimum yield for golden tilefish. The ABC under this alternative would result in an average probability of overfishing of 35% over the 2022-2024 three-year period (36% in 2022, 35% in 2023, and 36% in 2024).

The positive stock status of golden tilefish (i.e., not overfished, overfishing not occurring) would be expected to be maintained. Therefore, this alternative is expected to result in slight positive impacts on the stock by ensuring future sustainability compared to the current condition.

Due to expected slight decrease in fishing effort in 2022 and *status quo* levels of commercial fishing effort in 2023 and 2024, interactions with non-target species would likely remain similar to 2016-2020 levels. This is not expected to result in a change in the stock status of non-target species. As indicated in section 6.1.3, the bulk of the tilefish landings are taken by the directed bottom longline fishery and tilefish discards in the trawl and longline fishery are negligible. Furthermore, as described in section 6.1.3, only spiny dogfish, smooth dogfish, blueline tilefish, and conger eel made up at least 0.1% of catch in the golden tilefish directed commercial fishery. According to the most recent stock assessment information, spiny dogfish and smooth dogfish are not overfished and overfishing is not occurring. The stock status of blueline tilefish (mid-Atlantic) and conger eel are unknown or have not been assessed. For non-target species caught incidentally in this fishery, their catch rates would also not change as a result of this alternative; therefore, the current condition of these non-target species would not be expected to change (as described in section 6.1.3). The contribution of blueline tilefish and conger eel to the total

catch on directed golden tilefish trips is very small (0.27% and 0.24% respectively; Table 4) and their stock status is unknow. The contribution of spiny dogfish and smooth dogfish to the total catch on directed golden tilefish trips is also very small (3.77% and 0.51% respectively; Table 4) and they are not overfished or experiencing overfishing. Therefore, impacts for non-target species under this alternative could potentially range from negligible negative (blueline tilefish and conger eel) to slight positive (spiny dogfish and smooth dogfish) compared to the current conditions.

7.3.1.2 Alternative 2: SSC and MC recommended (2022, 2023, 2024)

Under alternative 2, the resulting quota for the IFQ fishery is 1,866,103 pounds and the incidental category quota is 78,165 pounds (Table 18). Alternative 2 would therefore be expected to provide a small increase in fishing opportunities in 2022, 2023, and 2024 compared to the *status quo* measures (alternative 1) and about the same fishing opportunities compared to alternative 3 (Table 19). On a common monthly denominator basis, the overall commercial quota is increased by 3% in 2022 and by 20% in each 2023 and 2024, compared to fishing year 2021 (see section 7.3.1.1 for numerical example of the common monthly denominator basis derivation/comparison).

The tilefish stock was 96 percent of the SSB_{MSY} proxy in 2020, and is projected to be 95%, 103%, and 108% of SSB_{MSY} proxy in 2022, 2023, and 2024, respectively (Nitschke 2021a; Paul Nitschke, Personal Communication, 2021b). Therefore, overall changes in golden tilefish abundance are expected to be small and remain relatively unchanged in 2022-2024.

Alternative 2 is consistent with the ABC recommendation of the SSC [and Council]. This alternative includes an average ABC for 2022-2024. This constant ABC results in average probability of overfishing of 45% over the 2022-2024 three-year period (44% in each 2022 and 2023, and 46% in 2024) assuming a CV of 100%. Alternative 3 (varying ABCs across time) also results in an average probability of overfishing of 45% over the 2022-2024 three-year period (43% in 2022, 45% in 2023, and 46% in 2024). While the overall probability of overfishing is identical under alternatives 2 and 3, alternative 2 provides consistency in catches through the specifications cycle (2022-2024).

The proposed catch and landing limits under alternative 2 are designed to prevent the stocks from becoming overfished and to prevent overfishing from occurring. The overall commercial quota under this alternative would result in an increase in quota compared to current conditions (*status quo* quota). While this alternative is likely to result in some increase in golden tilefish fishing effort and landings, it is not expected to result in notable changes in spatial and/or temporal distribution of fishing effort.

The positive stock status of golden tilefish (i.e., not overfished, overfishing not occurring) would be expected to be maintained. Therefore, this alternative is expected to result in slight positive impacts on the stock by ensuring future sustainability compared to the current condition.

Due to the small, expected increase of commercial fishing effort, interactions with non-target species would likely remain similar to 2016-2020 levels. Therefore, for the same reasons described under alternative 1 above regarding the contribution of these non-target species to the total catch on directed golden tilefish trips (section 7.3.1.1), impacts for non-target species under this alternative could potentially range from negligible negative (blueline tilefish and conger eel) to slight positive (spiny dogfish and smooth dogfish) compared to the current conditions.

7.3.1.3 Alternative 3: Time varying quotas (2022, 2023, 2024)

Under alternative 3, the resulting quota for the IFQ fishery is 1,815,837 pounds, 1,920,557 pounds, and 1,864,008 pounds for 2022, 2023, and 2024, respectively. The incidental category quota is 78,165 pounds, 83,667 pounds, and 80,701 pounds for 2022, 2023, and 2024, respectively. Alternative 2 would therefore be expected to provide a small increase in fishing opportunities in 2022, 2023, and 2024 compared to the *status quo* measures (alternative 1) and about the same fishing opportunities compared to alternative 3 (Table 19). On a common monthly denominator basis, basis, the overall commercial quota is near identical in 2022 (i.e., 0.05% lower), and 23% and 20% higher in 2023 and 2024, respectively, compared to fishing year 2021 (see section 7.3.1.1 for numerical example of the common monthly denominator basis derivation/comparison).

The main difference between this alternative and alternative 2, is that under alternative 3, the ABC and other catch and landings limits change from year to year, while under alternative 2, those value are constant from year to year.

The proposed catch and landing limits under alternative 3 are designed to prevent the stocks from becoming overfished and to prevent overfishing from occurring. The overall commercial quota under this alternative would result in a no change, 23% increase, and 20% increase in quota, in 2022, 2023, and 2024, respectively, compared to current conditions (*status quo* quota). While this alternative is likely to result in some increase in golden tilefish fishing effort and landings, it is not expected to result in notable changes in spatial and/or temporal distribution of fishing effort.

Impacts on the target and non-target species under this alternative would be identical to those described under alternative 2 above (section 7.3.1.2). Therefore, this alternative is expected to result in slight positive impacts on the stock by ensuring future sustainability compared to the current condition. Impacts for non-target species under this alternative could potentially range from negligible negative (blueline tilefish and conger eel) to slight positive (spiny dogfish and smooth dogfish) when compared to the current conditions.

7.3.1.4 Comparison of Alternatives for Target and Non-Target Species

All three alternatives are expected to result in slight positive impacts on the managed resource overall in 2022-2024 by ensuring future sustainability of the stock and maintaining current conditions of the stock. However, positive impacts under alternative 1 (*status quo*) are expected to be slightly greater in magnitude than under alternative 2 (SSC

and MC recommended) and alternative 3 (time varying quotas) because of lower fishing effort. The positive impacts of alternatives 2 and 3 are expected to be identical.

When comparing all three alternatives for 2022-2024 for non-target species, impacts are expected to range from negligible negative (blueline tilefish and conger eel) to slight positive (spiny dogfish and smooth dogfish) compared to the current conditions. However, the magnitude of the negative impacts is expected to be slightly greater under alternative 2 (SSC and MC recommended) and alternative 3 (time varying quotas) because of higher fishing effort compared to alternative 1 (*status quo*). Similarly, the magnitude of the positive impacts is expected to be slightly lesser under alternative 2 (SSC and MC recommended) and alternative 3 (time varying quotas).

7.3.2 Impacts on Physical Habitat

7.3.2.1 Alternative 1: *No Action/Status Quo*

As detailed under alternative 1 in section 7.3.1.1, on a common monthly denominator basis, the overall commercial quota is reduced by 14% in extended fishing year 2022 compared to fishing year 2021; however, in 2023 and 2024 it remains identical; that is, no change from the 2021 quota.

As indicated in section 6.2.3, the directed commercial fishery for golden tilefish is prosecuted with bottom longline gear. Longlines (which land the bulk of the golden tilefish) cause some low degree impacts in mud, sand, and gravel habitats. Longline gear has minimal detectable impacts to marine habitats. Longlines modify the structural component of the habitat, but the impacts are short-term and temporary. Additionally, deployment and retrieval of anchors result in minimal disturbance to bottom sediments; effects (e.g., increased turbidity) are minimal and ephemeral. Because of the limited length of time this gear is deployed, effects at the community and ecosystem levels are not detectable.

The overall commercial quota under *status quo* alternative 1 is expected to provide a small decrease in fishing opportunities in 2022 compared to 2021. Therefore, a small decrease in fishing effort is expected. Nevertheless, no impact on the prosecution of the golden tilefish fishery, including distribution of fishing effort, or fishing methods and practices are expected.

However, the proposed quotas under this alternative would be expected to result in the same fishing opportunities in 2023 and 2024 compared to 2021. This alternative is expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices in 2022 and 2023 compared to 2021.

The ongoing fishing activity and disturbance of habitat would be expected to continue to have negligible negative impacts. Therefore, negligible negative impacts are expected on physical habitat (as described above and in section 6.2.3), compared to the current conditions.

7.3.2.2 Alternative 2: SSC and MC recommended (2022, 2023, 2024)

As detailed under alternative 2 in section 7.3.1.2, on a common monthly denominator basis, the overall commercial quota is increased by 3% in 2022 and by 20% in each 2023 and 2024, compared to fishing year 2021.

The overall commercial quota under alternative 2 is expected to provide near identical fishing opportunities in 2022 compared to 2021. Therefore, no significant change on the prosecution of the golden tilefish fishery, including fishing effort, distribution of fishing effort, or fishing methods and practices are expected.

However, the overall commercial quota under this alternative would result in increase in quota in 2023 and 2024 compared to 2021 (*status quo* quota). While this alternative is likely to result in some increase in golden tilefish fishing effort and landings, it is not expected to result in notable changes in spatial and/or temporal distribution of fishing effort in 2022 and 2023, compared to 2021.

The ongoing fishing activity and disturbance of habitat would be expected to continue to have negligible negative impacts. Therefore, negligible negative impacts are expected on physical habitat (as described above and in section 6.2.3), compared to the current conditions.

7.3.2.3 Alternative 3: Time varying quotas (2022, 2023, 2024)

As detailed under alternative 3 in section 7.3.1.3, on a common monthly denominator basis, the overall commercial quota is near identical in 2022 (i.e., 0.05% lower), and 23% and 20% higher in 2023 and 2024, respectively, compared to fishing year 2021.

The overall commercial quota under alternative 3 is expected to provide near identical fishing opportunities in 2022 compared to 2021. Therefore, no significant change on the prosecution of the golden tilefish fishery, including fishing effort and landings, distribution of fishing effort, or fishing methods and practices are expected.

However, the overall commercial quota under this alternative would result in increase in quota in 2023 and 2024 compared to 2021 (*status quo* quota). While this alternative is likely to result in some increase in golden tilefish fishing effort and landings, it is not expected to result in notable changes in spatial and/or temporal distribution of fishing effort in 2022 and 2023, compared to 2021.

The ongoing fishing activity and disturbance of habitat would be expected to continue to have negligible negative impacts. Therefore, negligible negative impacts are expected on physical habitat (as described above and in section 6.2.3), compared to the current conditions.

7.3.2.4 Comparison of Alternatives for Physical Habitat

All three alternatives are expected to result in negligible negative impacts on physical habitat by maintaining the current conditions (i.e., current levels of impacts on habitat), although perhaps slightly less under less so under alternative 1.

When comparing all three alternatives for 2022-2024 for habitat, the magnitude of the negative impacts is expected to be slightly lesser under alternative 1 (*status quo*) due to lower fishing effort compared to alternative 2 (SSC and MC recommended) and alternative 3 (time varying quotas). Similarly, the magnitude of the negative impacts is expected to be similar under alternative 2 (SSC and MC recommended) and alternative 3 (time varying quotas).

7.3.3 Impacts on Protected Species

7.3.3.1 Alternative 1: *No Action/Status Quo*

As detailed under alternative 1 in section 7.3.1.1, on a common monthly denominator basis, the overall commercial quota is reduced by 14% in extended fishing year 2022 compared to fishing year 2021; however, in 2023 and 2024 it remains identical; that is, no change from the 2021 quota.

The golden tilefish fishery are prosecuted with bottom longline gear. As noted in section 6.3, sea turtles are the only protected species that have the potential to interact with bottom longline gear. However, based on the best available information, bottom longline interactions with sea turtles are expected to be rare to non-existent under golden tilefish fishery because of where and how the fishery operates. In fact, in the Greater Atlantic Region, no sea turtles have been observed in bottom longline (see section 6.3).

The overall commercial quota under *status quo* alternative 1 is expected to provide a small decrease in fishing opportunities in 2022 compared to 2021. Therefore, a small decrease in fishing effort is expected. Nevertheless, no impact on the prosecution of the golden tilefish fishery, including distribution of fishing effort, or fishing methods and practices are expected.

However, the proposed quotas under this alternative would be expected to result in the same fishing opportunities in 2023 and 2024 compared to 2021. This alternative is expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices in 2022 and 2023 compared to 2021.

As such, minimal interaction is expected between bottom longline gear and these protected resources, regardless of whether changes in fishing effort occur. As a result, this alternative is expected to result in impacts that range from negligible negative (sea turtles species; because there is still a chance for interaction with gear) to no impacts (all other protected species), compared to the current conditions.

7.3.3.2 Alternative 2: SSC and MC recommended (2022, 2023, 2024)

As detailed under alternative 2 in section 7.3.1.2, on a common monthly denominator basis, the overall commercial quota is increased by 3% in 2022 and by 20% in each 2023 and 2024, compared to fishing year 2021.

The overall commercial quota under alternative 2 is expected to provide near identical fishing opportunities in 2022 compared to 2021. Therefore, no significant change on the prosecution of the golden tilefish fishery, including fishing effort, distribution of fishing effort, or fishing methods and practices are expected.

However, the overall commercial quota under this alternative would result in increase in quota in 2023 and 2024 compared to 2021 (*status quo* quota). While this alternative is likely to result in some increase in golden tilefish fishing effort and landings, it is not expected to result in notable changes in spatial and/or temporal distribution of fishing effort in 2022 and 2023, compared to 2021.

As such, minimal interaction is expected between bottom longline gear and these protected resources, regardless of whether changes in fishing effort occur. As a result, this alternative is expected to result in impacts that range from negligible negative (sea turtles species; because there is still a chance for interaction with gear) to no impacts (all other protected species), compared to the current conditions.

7.3.3.3 Alternative 3: Time varying quotas (2022, 2023, 2024)

As detailed under alternative 3 in section 7.3.1.3, on a common monthly denominator basis, the overall commercial quota is near identical in 2022 (i.e., 0.05% lower), and 23% and 20% higher in 2023 and 2024, respectively, compared to fishing year 2021.

The overall commercial quota under alternative 3 is expected to provide near identical fishing opportunities in 2022 compared to 2021. Therefore, no significant change on the prosecution of the golden tilefish fishery, including fishing effort and landings, distribution of fishing effort, or fishing methods and practices are expected.

However, the overall commercial quota under this alternative would result in increase in quota in 2023 and 2024 compared to 2021 (*status quo* quota). While this alternative is likely to result in some increase in golden tilefish fishing effort and landings, it is not expected to result in notable changes in spatial and/or temporal distribution of fishing effort in 2022 and 2023, compared to 2021.

As such, minimal interaction is expected between bottom longline gear and these protected resources, regardless of whether changes in fishing effort occur. As a result, this alternative is expected to result in impacts that range from negligible negative impacts (sea turtles species; because there is still a chance for interaction with gear) to no impacts (all other protected species), compared to the current conditions.

7.3.3.4 Comparison of Alternatives for Protected Species

Under all three alternatives, the current conditions of protected resources are unlikely to change (as described in section 6.3). All three alternatives are expected to result in impacts that range from negligible negative impacts on sea turtles species (because there is still a chance for interaction with gear) to no impacts on all other protected species.

When comparing all three alternatives for 2022-2024 for protected resources, the magnitude of the negative impacts on sea turtles is expected to be slightly lesser under alternative 1 (*status quo*) due to lower fishing effort compared to alternative 2 (SSC and MC recommended) and alternative 3 (time varying quotas). Similarly, the magnitude of the negative impacts is expected to be similar under alternative 2 (SSC and MC recommended) and alternative 3 (time varying quotas).

7.3.4 Impacts on Human Communities (Socioeconomic Impacts)

7.3.4.1 Alternative 1: *No Action/Status Quo*

The analyses for the various alternatives presented in this section and the two other alternatives described below are principally for the commercial fishery. Recreational catches appear to be a minor component of total removals (section 6.1.1) and the only management measure for the recreational fishery in the FMP is a recreational bag-limit of 8-fish per angler per trip which is not being revised through this framework. There is no quota allocation for this small component of the fishery. The proposed catch and landing limits for the commercial fishery are not expected to affect recent trends in recreational catches or recreational trips for tilefish. As such, no economic changes to that small sector of the fishery are expected.

In examining the impacts on human communities, the effects of actions were analyzed by employing quantitative approaches to the extent possible. Where quantitative data were not available, qualitative analyses were conducted. In the current analysis, effects associated with the proposed management measures should be evaluated by looking at the impact the proposed measures are expected to have on revenues.

Total golden tilefish revenues, landings, and prices per pound were estimated for calendar year 2020. Since fishing year 2020 is the last full year of data available (complete year data from 2021 is not available), it was chosen as a proxy current condition (the last year for which complete data is available). As such, 2020 data were used as a proxy for 2021. These estimates provide the basis for which subsequent quota and landings changes and their associated effect on revenues were compared. Expected change in revenues are deducted or added, as appropriate, depending upon which quota scenario is evaluated.

As detailed under alternative 1 in section 7.3.1.1, on a common monthly denominator basis, the overall commercial quota is reduced by 14% in extended fishing year 2022 compared to fishing year 2021; however, in 2023 and 2024 it remains identical; that is, no change from the 2021 quota.

As such, overall commercial landings under this alternative would be approximately 232,044 pounds lower in 2022 compared to current conditions. Assuming the 2020 ex-vessel price of $3.75 per pound (nominal price), the 2022 overall quota under this alternative would result in a reduction in ex-vessel gross revenues of $0.87 million compared to 2021. Therefore, negative socioeconomic impacts are expected in 2022, when compared to the current conditions. The changes in ex-vessel gross revenues associated with the potential changes in quotas in 2022 versus 2021 assumed static prices for golden tilefish. However, it is possible that given the potential decrease in landings for tilefish, the price for this species may increase holding all other factors constant. If this occurs, an increase in the price for tilefish may mitigate some of the revenue losses associated with lower quantity of tilefish quota availability.

Lastly, since the monthly average calculations in 2021 included 14 months, and 2022 included 12 months, which were averaged, it is also possible that vessels that fish for golden tilefish on a year-round basis will incur in a greater proportional reduction in ex-vessel gross revenues in 2022 (only) when compared to vessels that participate in the fishery to a lesser extend during the December – February winter months. This is due to the fact that when comparing changes in quota levels under an equally based common monthly denominator for fishing year 2022 only (compared to 2021), the quota for fishing year 2022 was based on a 14-month extended fishing year (November 1, 2021 – December 31, 2022) and for the 2021 fishing year quota, was based on a 12-month fishing year (November 1, 2020 – October 31, 2021). Since some golden tilefish fishing fleet vessels do not typically land significant quantities of tilefish in the winter months (Table 20), their proportional reduction in revenues in 2022 compared to 2021 will likely be smaller than that for components of the fleet that operate year-round.

Since the quotas for 2023 and 2024 are identical to the quotas implemented in 2021, no change in ex-vessel gross revenues are expected if landings and prices are similar to those that occurred in 2021. The overall ex-vessel revenue reduction over the 2022-2024 period is $0.87 million.

7.3.4.2 Alternative 2: SSC and MC recommended (2022, 2023, 2024)

As detailed under alternative 2 in section 7.3.1.2, on a common monthly denominator basis, the overall commercial quota is increased by 3% in 2022 and by 20% in each 2023 and 2024, compared to fishing year 2021.

As such, overall commercial landings under this alternative would be approximately 44,472 pounds higher in 2022 and 322,609 pounds higher in each 2023 and 2024 compared to current conditions. Assuming the 2020 ex-vessel price of $3.75 per pound (nominal price), the 2022 overall quotas under this alternative would result in an increase in ex-vessel gross revenues of $0.17 million compared to 2021. In addition, the 2023 and 2024 overall quotas would result in an in an increase in ex-vessel gross revenues of $1.21 million each, compared to 2021.

The overall ex-vessel revenue increase over the 2022-2024 period is $2.59 million. As a result, this alternative is expected to result in socioeconomic impacts that range from slight positive impacts (i.e., 2022) to positive impacts (i.e., 2023 and 2024), compared to the current conditions. However, it is possible that given the potential increase in landings for tilefish, the price for this species may decrease holding all other factors constant. If this occurs, a decrease in the price for tilefish may mitigate some of the revenue gains associated with higher quantity of tilefish quota availability.

Lastly, since the monthly average calculations in 2021 included 14 months, and 2022 included 12 months, which were averaged, itis also possible that vessels that fish for golden tilefish on a year-round basis will incur in a smaller proportional increase in ex-vessel gross revenues in 2022 (only) when compared to vessels that participate in the fishery to a lesser extend during the December – February winter months. This is due to the fact that when comparing changes in quota levels under an equally based common monthly denominator for fishing year 2022 only (compared to 2021), the quota for fishing year 2022 was based on a 14-month extended fishing year (November 1, 2021 – December 31, 2022) and for the 2021 fishing year quota, was based on a 12-month fishing year (November 1, 2020 – October 31, 2021). Since some golden tilefish fishing fleet vessels do not typically land significant quantities of tilefish in the winter months (Table 20), their proportional increase in revenues in 2022 compared to 2021 will likely be larger than that for components of the fleet that operate year-round

7.3.4.3 Alternative 3: Time varying quotas (2022, 2023, 2024)

As detailed under alternative 3 in section 7.3.1.3, on a common monthly denominator basis, the overall commercial quota is near identical in 2022 (i.e., 0.05% lower), and 23% and 20% higher in 2023 and 2024, respectively, compared to fishing year 2021.

As such, overall commercial landings under this alternative would be approximately 3,278 pounds lower, 379,929 pounds higher, and 320,404 pounds higher in 2022, 2023, and 2024, respectively, compared to current conditions. Assuming the 2020 ex-vessel price of $3.75 per pound (nominal price), the overall quotas under this alternative would result in a reduction in ex-vessel gross revenues of $3,278 in 2022, and an increase of $1.42 million, and $1.20 million, in 2023 and 2024, respectively, compared to 2021.

The overall ex-vessel revenue increase over the 2022-2024 period is $2.62 million. As a result, this alternative is expected to result in socioeconomic impacts that range from negligible negative impacts (i.e., 2022) to positive impacts (i.e., 2023 and 2024), compared to the current conditions. However, it is possible that given the potential increase in landings for tilefish in 2023-2024, the price for this species may decrease holding all other factors constant. If this occurs, a decrease in the price for tilefish may mitigate some of the revenue gains associated with higher quantity of tilefish quota availability.

Lastly, since the monthly average calculations in 2021 included 14 months, and 2022 included 12 months, which were averaged, it is also possible that vessels that fish for golden tilefish on a year-round basis will incur in a greater proportional reduction in ex-

vessel gross revenues in 2022 (only) when compared to vessels that participate in the fishery to a lesser extend during the December – February winter months. This is due to the fact that when comparing changes in quota levels under an equally based common monthly denominator for fishing year 2022 only (compared to 2021), the quota for fishing year 2022 was based on a 14-month extended fishing year (November 1, 2021 – December 31, 2022) and for the 2021 fishing year quota, was based on a 12-month fishing year (November 1, 2020 – October 31, 2021). Since some golden tilefish fishing fleet vessels do not typically land significant quantities of tilefish in the winter months (Table 20), their proportional reduction in revenues in 2022 compared to 2021 will likely be smaller than that for components of the fleet that operate year-round.

7.3.4.4 Comparison of Alternatives for Human Communities

Maintaining the *status quo* alternative would result in negative socioeconomic impacts due to a lower common monthly denominator basis quota in 2022 compared to 2021. However, for 2023 and 2024 no change in ex-vessel gross revenues are expected if landings and prices are similar to those that occurred in 2021. This is due to the fact that overall commercial quotas in 2023 and 2024 quotas are identical to the quotas implemented in 2021.

Alternatives 2 and 3 are expected to result in positive socioeconomic impacts compared to the *status quo* alternative 1. However, the magnitude of the positive impacts are greater under alternative 3 than under alternative 2.

7.4 Cumulative Effects Analysis

[Revise once the Council completes selection of the preferred alternatives]

7.4.1 Introduction

A cumulative effects analysis (CEA) is required by the Council on Environmental Quality (CEQ; 40 CFR § 508.7) and NOAA policy and procedures for NEPA, found in NOAA Administrative Order 216-6A (Companion Manual, January 13, 2017). The purpose of the CEA is to consider the combined effects of many actions on the human environment over time that would be missed if each action were evaluated separately. CEQ guidelines recognize that it is not practical to analyze the cumulative effects of an action from every conceivable perspective. Rather, the intent is to focus on those effects that are truly meaningful. The following remarks address the significance of the expected cumulative impacts as they relate to the federally managed golden tilefish fishery.

A cumulative effects assessment makes effect determinations based on a combination of; 1) impacts from past, present, and reasonably foreseeable future actions; 2) the baseline conditions of the VECs (the combined effects from past, present, and reasonably foreseeable future actions plus the present condition of the VEC); and 3) impacts of the alternatives under consideration for this action.

7.4.1.1 Consideration of the Valued Ecosystem Components (VECs)

The VECs for the golden tilefish fishery are generally the "place" where the impacts of management actions occur and are identified in section 6.0 (Description of the Affected Environment).

- Target species (i.e., golden tilefish) and non-target species
- Physical habitat (including EFH)
- Protected species
- Human communities

The CEA identifies and characterizes the impacts on the VECs by the alternatives under consideration when analyzed in the context of other past, present, and reasonably foreseeable future actions.

7.4.1.2 Geographic Boundaries

The analysis of impacts focuses on actions related to the harvest of golden tilefish. The Western Atlantic Ocean is the core geographic scope for each of the VECs. The core geographic scopes for the managed species is the management unit for golden tilefish (section 6.1). For non-target species, those ranges may be expanded and would depend on the range of each species in the Western Atlantic Ocean. For habitat, the core geographic scope is focused on EFH within the EEZ but includes all habitat utilized by golden tilefish and non-target species in the Western Atlantic Ocean. The core geographic scope for protected species is their range in the Western Atlantic Ocean. For human communities, the core geographic boundaries are defined as those U.S. fishing communities in coastal states from Maine through Virginia directly involved in the harvest or processing of golden tilefish (section 6.4).

7.4.1.3 Temporal Boundaries

Overall, while the effects of the historical golden tilefish fishery are important and considered in the analysis, the temporal scope of past and present actions for golden tilefish and non-target species and other fisheries, the physical environment and EFH, and human communities is primarily focused on actions that occurred after FMP implementation (2001). For protected species, the scope of past and present actions is focused on the 1980s and 1990s (when NMFS began generating stock assessments for marine mammals and sea turtles that inhabit waters of the U.S. EEZ) through the present.

The temporal scope of future actions for all VECs extends about three to five years (2024 to 2026) into the future. The dynamic nature of resource management for this species and lack of information on projects that may occur in the future make it difficult to predict impacts beyond this timeframe with any certainty. The impacts discussed in this section are focused on the cumulative effects of the proposed action (i.e., the suite of preferred alternatives) in combination with the relevant past, present, and reasonably foreseeable future actions over these time scales.

7.4.2 Relevant Actions Other Than Those Proposed in this Document

Past, present, and reasonably foreseeable future actions for golden tilefish management include the establishment of the original FMP, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and measures to constrain catch and harvest). Key actions are described below.

7.4.2.1 Fishery Management Actions

7.4.2.1.1 Tilefish FMP Actions

Past, present, and reasonably foreseeable future actions for golden tilefish management includes the establishment of the original FMPs, all subsequent amendments and frameworks, and the setting of annual specifications (annual catch limits and other measures to constrain catch and harvest).

The Tilefish FMP became effective in 2001 and included management and administrative measures to ensure effective management of the golden tilefish resource. In 2009, Amendment 1 included a new structure for managing the commercial golden tilefish fishery using an IFQ system. In addition, Amendment implemented new reporting requirements, and reviewed the EFH components of the FMP, including implementing gear restricted areas to prevent bottom trawling in habitat areas of particular concern. In 2011, Amendment 3 (omnibus amendment) brought the Tilefish FMP into compliance with the ACL and accountability measure requirements of the MSA. Related to this requirement, the Council annually implements or reviews catch and landings limits for each species consistent with the recommendations of the SSC, and reviews other management measures as necessary to prevent catch limits from being exceeded and to meet the objectives of the FMP. In 2017, Amendment 6 incorporated blueline tilefish (*Caulolatilus microps*) as a managed species in the Tilefish Fishery Management Plan and established blueline tilefish management measures, including, an ACL process, sector allocations, possession limits, fishing season, permitting, and reporting requirements. In addition, Amendment 6 incorporated mandatory permitting and reporting of golden and blueline tilefish for both for-hire and private recreational fishing in order to develop better information on recreational tilefish landings in the Mid-Atlantic. The mandatory permitting and reporting of golden and blueline tilefish for both for-hire and private recreational fishing were effective in late 2020 (the delayed implementation was due to additional time needed for development). Framework 2, implemented in 2018 made several changes to the FMP and were intended to improve and simplify the administration of the golden tilefish fishery. Lastly, in 2020 Framework 6 (Omnibus Acceptable Biological Catch and Risk Policy Framework) modified the Council's ABC control rule and risk policy. The revised risk policy is intended to reduce the probability of overfishing as stock size falls below the target biomass while allowing for increased risk and greater economic benefit under higher stock biomass conditions.

The MSA is the statutory basis for federal fisheries management. The cumulative impacts of past, present, and reasonably foreseeable future federal fishery management actions on

the VECs should generally be associated with positive long-term outcomes because they constrain fishing effort and manage stocks at sustainable levels. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should promote positive effects on human communities in the long-term. Generally, FMP actions have had slight negative impacts on habitat, due to continued fishing operations which impact physical habitat; however, some actions have had direct or indirect long-term positive impacts on habitat through designating or protecting important habitats. FMP actions have also had some slight indirect positive impacts on protected species, including ESA-listed species. The FMP required standardized bycatch reporting (SBRM) obtained through fishing vessel observer coverage allows for the collection of better information on bycatch in these fisheries. In addition, the introduction of the IFQ Program in 2009 resulted in fleet consolidation and fewer vessels fishing and producing underwater sounds, which have been shown to introduce risks to protected species, such as whales and other marine mammals.

7.4.2.1.2 Other Fishery Management Actions

In addition to the Tilefish FMP, there are many other FMPs and associated fishery management actions for other species that have impacted these VECs over the temporal scale described in section 7.4.1.3. These include FMPs managed by the Mid-Atlantic Fishery Management Council, New England Fishery Management Council, Atlantic States Marine Fisheries Commission, and to a lesser extent, the South Atlantic Fishery Management Council. Omnibus amendments are also frequently developed to amend multiple FMPs at once. Actions associated with other FMPs and omnibus amendments have included measures to regulate fishing effort for other species, measures to protect habitat and forage species, and fishery monitoring and reporting requirements.

For example, the NEFMC's omnibus habitat amendments revised EFH and habitat area of particular concern designations for NEFMC-managed species, revised or created habitat management areas, including gear restrictions to protect vulnerable habitat from fishing gear impacts, and established habitat research areas. These actions are expected to have overall positive impacts on habitat and EFH, with expected long-term positive implications for target and non-target species, while having mixed socioeconomic impacts on various user groups. However, no socioeconomic impacts on the golden tilefish fishery are expected given limited overlaps with the management areas, or a very general distribution that does not overlap with the management areas considered under this omnibus amendment.

The MAFMC's omnibus forage amendment, implemented in 2017, established a commercial possession limit for over 50 forage species which were previously unmanaged in federal waters. This action is thought to have ongoing positive impacts to target, non-target, and protected species by protecting a forage base for these populations and limiting the expansion of any existing fishing effort on forage stocks.

The convening of take reduction teams for marine mammals over the temporal scope described in section 7.4.1.3 has had positive impacts for marine mammals via

recommendations for management measures to reduce mortality and injury to marine mammals. These actions have had indirect positive impacts on target species, non-target species, and habitat as they have improved monitoring of fishing effort and reduced the amount of gear in the water. These measures have had indirect negative impacts on human communities through reduced fishery efficiency.
In the reasonably foreseeable future, the MAFMC and NEFMC are considering modifications to observer coverage requirements through an omnibus amendment that considers measures that would allow the Councils to implement industry-funded monitoring coverage in some FMPs above levels required by the Standard Bycatch Reporting Methodology in order to assess the amount and type of catch, monitor annual catch limits, and/or provide other information for management. This action could have long-term positive impacts on target species, non-target species, and protected species through improved monitoring and scientific data on these stocks. This could potentially result in negative socioeconomic impacts to commercial fishing vessels due to increased costs.

As with the Tilefish FMP actions described above, other FMP actions have had positive long-term cumulative impacts on managed and non-target species because they constrain fishing effort and manage stocks at sustainable levels. As previously stated, constraining fishing effort can have negative short-term socioeconomic impacts and long-term positive impacts. These actions have typically had slight negative impacts on habitat, due to continued fishing operations; however, some actions had long-term positive impacts through designating or protecting important habitats. FMP actions have also had a range of impacts on protected species, including generally slight negative impacts on ESA-listed species, and slight negative to slight positive impacts on non ESA-listed marine mammals, depending on the species.

7.4.2.1.3 Fishery Management Action Summary

The Council has taken many actions to manage its fisheries. The MSA is the statutory basis for federal fisheries management. The cumulative impacts on the VECs of past, present, and reasonably foreseeable future federal fishery management actions under the MSA should generally be associated with positive long-term outcomes because they constrain fishing effort and manage stocks at sustainable levels. Constraining fishing effort through regulatory actions can have negative short-term socioeconomic impacts. These impacts are sometimes necessary to bring about long-term sustainability of a resource, and as such should promote positive effects on human communities in the long-term.

7.4.2.2 Non-Fishing Impacts

7.4.2.2.1 Other Human Activities

Non-fishing activities that occur in the marine nearshore and offshore environments and connected watersheds can cause the loss or degradation of habitat and/or affect the species that reside in those areas. The impacts of most nearshore human-induced non-fishing activities tend to be localized in the nearshore areas and marine project areas where they occur, although effects on species could be felt throughout their populations since many

marine organisms are highly mobile. For offshore projects, some impacts may be localized while others may have regional influence, especially for larger projects. The following discussion of impacts is based on past assessments of activities and assume these activities will likely continue as projects are proposed.

Examples of these activities include point source and non-point source pollution, shipping, dredging/deepening, wind energy development, oil and gas development, construction, and other activities. Specific examples include at-sea disposal areas, oil and mineral resource exploration, aquaculture, construction of offshore windfarms, and bulk transportation of petrochemicals. Episodic storm events and the restoration activities that follow can also cause impacts. The impacts from these non-fishing activities primarily stem from habitat loss due to human interaction and alternation or natural disturbances. These activities are widespread and can have localized impacts on habitat related to accretion of sediments, pollutants, habitat conversion, and shifting currents and thermoclines. For protected species, primary concerns associated with non-fishing activities include vessel strikes, dredge interactions (especially for sea turtles and sturgeon), and underwater noise. These activities have both direct and indirect impacts on protected species. Wherever these activities co-occur, they are likely to work additively or synergistically to decrease habitat quality and as such may indirectly constrain the productivity of managed species, non-target species, and protected species. Decreased habitat suitability tends to reduce the tolerance of these VECs to the impacts of fishing effort. Non-fishing activities can cause target, non-target, and protected species to shift their distributions away from preferred areas, and may also lead to decreased reproductive ability and success (from current changes, spawning disruptions, and behavior changes), disrupted or modified food web interactions, and increased disease. While localized impacts may be larger in scale, the overall impact on the affected species and their habitats on a population level is unknown, but likely to have impacts that mostly range from no impact to slight negative impacts, depending on the species and activity.

Non-fishing activities permitted under other Federal agencies (e.g., beach nourishment, offshore wind facilities,) require examinations of potential impacts on the VECs. The MSA imposes an obligation on other federal agencies to consult with the Secretary of Commerce on actions that may adversely affect EFH (50 CFR § 600.930). NMFS and the eight regional fishery management councils engage in this review process by making comments and recommendations on federal or state actions that may affect habitat for their managed species. Agencies need to respond to, but do not necessarily need to adopt these recommendations. Habitat conservation measure serves to potentially minimize the extent and magnitude of indirect negative impacts federally-permitted activities could have on resources under NMFS' jurisdiction. In addition to guidelines mandated by the MSA, NMFS evaluates non-fishing effects during the review process required by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act for certain activities that are regulated by Federal, state, and local authority. Non-fishing activities must also meet the mandates under the ESA, specifically Section 7(a)(2),[17] which ensures that agency

[17] Section 7(a)(2) estates, "each Federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section

actions do not jeopardize the continued existence of endangered species and their critical habitat.

In recent years, offshore wind energy and oil and gas exploration have become more relevant in the Greater Atlantic region. They are expected to impact all VECs, as described below.

Impacts of Offshore Wind Energy Development on Biological Resources (Target species, Non-target species, Protected Species) and the Physical Environment

Construction activities may have both direct and indirect impacts on marine resources, ranging from temporary changes in distribution to injury and mortality. Impacts could occur from changes to habitat in the areas of wind turbines and cable corridors and increased vessel traffic to and from these areas. Species that reside in affected wind farms year round may experience different impacts than species that seasonally reside in or migrate through these areas. Species that typically reside in areas where wind turbines are installed may return to the area and adapt to habitat changes after construction is complete. Inter-array and electricity export cables will generate electromagnetic fields, which can affect patterns of movement, spawning, and recruitment success for various species. Effects will depend on cable type, transmission capacity, burial depth, and proximity to other cables. Substantial structural changes in habitats associated with cables are not expected unless cables are left unburied (see below). However, the cable burial process may alter sediment composition along the corridor, thereby affecting infauna and emergent biota. Taormina et al. (2018) provide a recent review of various cable impacts, and Hutchinson et al. (2020) and Taormina et al. (2020) examine the effects of electromagnetic fields in particular.

The full build out of offshore wind farms will result in broad habitat alteration. The wind turbines will alter hydrodynamics of the area, which may affect primary productivity and physically change the distribution of prey and larvae. It is not clear how these changes will affect the reproductive success of marine resources. Scour and sedimentation could have negative effects on egg masses that attach to the bottom. Benthic habitat will be altered due to the placement of scour protection at wind turbine foundations, and over cables that are not buried to target depth in the sediment, converting soft substrates into hard substrates. This could alter species composition and predator/prey relationships by increasing favorable habitat for some species and decreasing habitat for others. The placement of wind turbines will also establish new vertical structure in the water column, which could serve as reefs for bottom species, fish aggregating devices for pelagic species, and substrate for the colonization of other species, e.g., mussels. Various authors have studied these types of effects (e.g., Bergström et al. 2013, Dannheim et al. 2019, Degraer et al. 2019, Langhamer 2012, Methratta and Dardick 2019, Stenberg et al. 2015).

referred to as an "agency action") is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of critical habitat."

Elevated levels of sound produced during site assessment activities, construction, and operation of offshore wind facilities will impact the soundscape.[18] Temporary, acute, noise impacts from construction activity could impact reproductive behavior and migration patterns; the long-term impact of operational noise from turbines may also affect behavior of fish and prey species, through both vibrations in the immediate area surrounding them in the water column, and through the foundation into the substrate. Depending on the sound frequency and source level, noise impacts to species may be direct or indirect (Finneran 2015, Finneran 2016, Nowacek et al. 2007, NRC 2000, NRC 2003, NRC 2005, Madsen et al. 2006, Piniak 2012, Popper et al. 2014, Richardson et al. 1995, Thomsen et al. 2006). Exposure to underwater noise can directly affect species via behavioral modification (avoidance, startle, spawning) or injury (sound exposure resulting in internal damage to hearing structures or internal organs) (Bailey et al. 2010, Bailey et al. 2014, Bergström et al. 2014, Ellison et al. 2011, Ellison et al. 2018, Forney et al. 2017, Madsen et al. 2006, Nowacek et al. 2007, NRC 2003, NRC 2005, Richardson et al. 1995, Romano et al. 2004, Slabbekoorn et al. 2010, Thomsen et al. 2006, Wright et al. 2007). Indirect effects are likely to result from changes to the acoustic environment of the species, which may affect the completion of essential life functions (e.g., migrating, breeding, communicating, resting, foraging)[19] (Forney et al. 2017, Richardson et al. 1995, Slabbekoorn et al. 2010, Thomsen et al. 2006).

Wind farm survey and construction activities and turbine/cable placement will substantially affect NMFS scientific research surveys, including stock assessment surveys for fisheries and protected species[20] and ecological monitoring surveys. Disruption of such scientific surveys could increase scientific uncertainty in survey results and may significantly affect NMFS' ability to monitor the health, status, and behavior of marine resources and protected species and their habitat use within this region. Based on existing regional Fishery Management Councils' acceptable biological catch control rule processes and risk policies (e.g., 50 CFR §§ 648.20 and 21), increased assessment uncertainty could result in lower commercial quotas and recreational harvest limits that may reduce the likelihood of overharvesting and mitigate associated biological impacts on fish stocks. However, this would also result in lower associated fishing revenue and reduced recreational fishing opportunities, which could result in indirect negative impacts on fishing communities.

Impacts of Offshore Wind Energy Development on Socioeconomic Resources

One offshore wind pilot project off Virginia installed two turbines in 2020**.** Several potential offshore wind energy sites have been leased or identified for future wind energy development in federal waters from Massachusetts to North Carolina (see leasing map below – Figure 4). According to BOEM, approximately 22 gigawatts (close to 2,000 wind turbines based on current technology) of Atlantic offshore wind development via 17

[18] See NMFS Ocean Noise Strategy Roadmap: https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf
[19] See NMFS Ocean Noise Strategy Roadmap: https://cetsound.noaa.gov/Assets/cetsound/documents/Roadmap/ONS_Roadmap_Final_Complete.pdf
[20] Changes in required flight altitudes due to proposed turbine height would affect aerial survey design and protocols (BOEM 2020a).

projects are reasonably foreseeable along the east coast (BOEM 2020a). BOEM has recently begun a planning process for the Gulf of Maine via a regional intergovernmental renewable energy task force (https://www.boem.gov/Gulf-of-Maine). It is not clear at this time where development might occur in the Gulf of Maine. Given the water depth in the region, floating turbines will likely be the primary type of wind turbine foundations to be deployed in the area. As the number of wind farms increases, so too would the level and scope of impacts to affected habitats, marine resources, and human communities.

Offshore wind energy development is being considered in parts of the outer continental shelf that do not overlap with the directed golden tilefish fishery. In the southern New England/mid-Atlantic area, tilefish generally occur at depths of 250 to 1,200 feet. This depth range is larger than the 197 feet maximum water deeps for fixed bottom wind structures.[21] The distribution of the fishery as percentage by statistical area over time is shown in Table 8 (section 6.2). Combined golden and blueline tilefish revenues in the current offshore wind leases and project areas (Figure 4) is relatively low, ranging from a few hundred dollars per year for most sites (for the 2008-2019 time period) to $600 per year (Kitty Hawk Wind – 0508, North Carolina).[22]

There could also be social and economic benefits in the form of jobs associated with construction and maintenance, and replacement of some electricity generated using fossil fuels with renewable sources (AWEA 2020).

It remains unclear how fishing or transiting to and from fishing grounds (whether or not those grounds are within a wind farm) might be affected by the presence of a wind farm (fixed-bottom structures (less than 197 ft water depth) or floating structures beyond about the 197 ft water depth).[23] While no offshore wind developers have expressed an intent to exclude fishing vessels from wind turbine arrays once construction is complete, it could be difficult for operators to tow bottom-tending mobile gear or transit amongst the wind turbines, depending on the spacing and orientation of the array and weather conditions.[24] If vessel operators choose to avoid fishing or transiting within wind farms, effort displacement and additional steaming time could result in negative socioeconomic impacts to affected communities, including user conflicts, decreased catch and associated revenue, safety concerns, and increased fuel costs. If vessels elect to fish within wind farms effects

[21] https://www.boem.gov/sites/default/files/documents/environment/Wind-Turbine-Foundations-White%20Paper-Final-White-Paper.pdf

[22] https://www.fisheries.noaa.gov/resource/data/socioeconomic-impacts-atlantic-offshore-wind-development

[23] Beyond about the 60 m (197 ft) water depth, offshore wind projects are expected to transition from fixed-bottom structures to floating structures. Several floating offshore wind projects for deep water have now been deployed or are in advanced planning stages. Source: https://www.boem.gov/sites/default/files/documents/environment/Wind-Turbine-Foundations-White%20Paper-Final-White-Paper.pdf

[24] The United States Coast Guard has considered transit and safety issues related to the Massachusetts and Rhode Island lease areas in a recent port access route study, and has recommended uniform 1 mile spacing in east-west and north-south directions between turbines to facilitate access for fishing, transit, and search and rescue operations. Future studies in other regions could result in different spacing recommendations (UCSG 2020).

could be negative due to reduced catch and associated revenue, user conflicts, and increased risk of allision and collision.

Impacts of Oil and Gas Development on Biological and Socioeconomic Resources

For oil and gas, this timeframe could include leasing and possible surveys, depending on the direction of BOEM's 5-year planning process in the North and Mid-Atlantic regions. (Note that there are fewer oil and gas development activities in the region than offshore wind; therefore, the non-fishing impacts focus more heavily on offshore wind.) Seismic surveys to detect and quantify mineral resources in the seabed impact marine species and the acoustic environment within which marine species live. These surveys have uncertain impacts on fish behaviors that could cumulatively lead to negative population level impacts. For protected species (sea turtle, fish, small cetacean, pinniped, large whale), the severity of these behavioral or physiological impacts is based on the species' hearing threshold, the overlap of this threshold with the frequencies emitted by the survey, as well as the duration of time the surveys would operate, as these factors influence exposure rate (Ellison et al. 2011, Ellison et al. 2018, Finneran 2015, Finneran 2016, Madsen et al. 2006, Nelms et al. 2016, Nowacek et al. 2007, Nowacek et al. 2015, NRC 2000, NRC 2003, NRC 2005, Piniak 2012, Popper et al. 2014, Richardson et al. 1995, Thomsen et al. 2006, Weilgart 2013). If fishery resources are affected by seismic surveys, then so in turn the fishermen targeting these resources would be affected. However, such surveys could increase jobs, which may provide some positive effects on human communities (BOEM 2020b). It is important to understand that seismic surveys for mineral resources are different from surveys used to characterize submarine geology for offshore wind installations, and thus these two types of activities are expected to have different impacts on marine species.

Offshore Energy Summary

The overall impact of offshore wind energy and oil and gas exploration on the affected species and their habitats on a population is unknown, but will likely range from no impact to moderate negative, depending on the number and locations of projects that occur. The individual project phases (site assessment, construction, operation, and decommissioning) as well as different aspects of the technology (foundations, cables/pipelines, turbines) will have varying impacts on resources. Mitigation efforts, such as habitat conservation measures, time of year construction restrictions, layout modifications, and fishery compensation funds could lessen the magnitude of negative impacts as well. The overall impact on socioeconomic resources is likely slightly positive to moderate negative; potentially positive due to a potentially increase in jobs and recreational fishing opportunities, but negative due to displacement and disruption of commercial fishing effort.

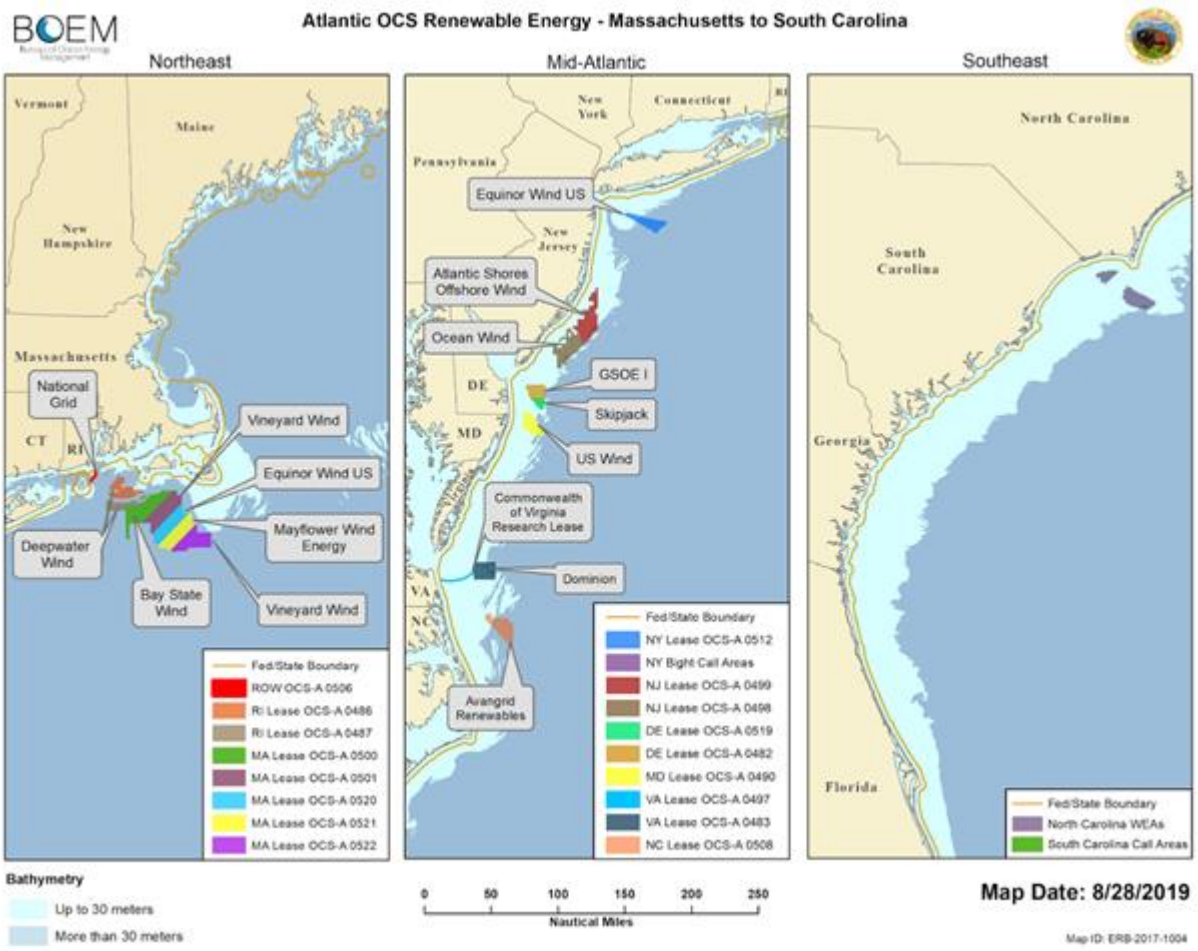

Figure 4. Map of BOEM Wind Planning areas, Wind Energy Areas, and Wind Leasing Areas on the Atlantic Outer Continental Shelf. Source: https://www.boem.gov/sites/default/files/uploadedImages/BOEM/Renewable_Energy_Program/Mapping_and_Data/ocs_wpa.jpg

7.4.2.2.2 Global Climate Change

Global climate change affects all components of marine ecosystems, including human communities. Physical changes that are occurring and will continue to occur to these systems include sea-level rise, changes in sediment deposition; changes in ocean circulation; increased frequency, intensity and duration of extreme climate events; changing ocean chemistry; and warming ocean temperatures. The rate of physical and chemical changes in marine ecosystems have been most rapid in recent decades (Johnson et al. 2019). Emerging evidence demonstrates that these physical changes are resulting in direct and indirect ecological responses within marine ecosystems which may alter the fundamental production characteristics of marine systems (Stenseth et al. 2002). The general trend of changes can be explained by warming causing increased ocean stratification, which reduces primary production, lowering energy supply for higher trophic levels and changing metabolic rates. Different responses to warming can lead to altered food-web structures and ecosystem-level changes. Shifts in spatial distribution are

generally to higher latitudes (i.e., poleward) and to deeper waters as species seek cooler waters within their normal temperature preferences. Climate change will also potentially exacerbate the stresses imposed by fishing and other non-fishing human activities and stressors. Survival of marine resources under a changing climate depends on their ability to adapt to change, but also how and to what degree those other human activities influence their natural adaptive capacity.

Results from the Northeast Fisheries Climate Vulnerability Assessment indicate that climate change could have impacts on Council-managed species that range from negative to positive, depending on the adaptability of each species to the changing environment (Hare et al. 2016). This assessment determined that tilefish has a high overall vulnerability to climate change. The exposure of tilefish to the effects of climate change was determined to be "high" due to the impacts of ocean surface temperature and ocean acidification. Exposure to these two factors occur during all life stages. All tilefish life stages use marine habitats. Spawning occurs from March to November with a peak in May to September. Little is known about spawning behavior, but tilefish are highly fecund, may be pair spawners, and are likely fractional or serial spawners. Eggs are buoyant and hatch after at least 40 hours based on captive eggs held at warmer temperatures than experienced in the wild. Larvae are planktonic from July to September in warm waters over the outer continental shelf. Larvae are probably zooplanktivorous. Settlement patterns are unknown, but juveniles have been found in vertical shaft burrows in semi-lithified clay and in anthropogenic structures like lobster traps and shipwrecks. Juveniles may not be able to excavate their own burrows initially, so may use the burrows of other animals to start their own. Adults and juveniles have been found from depths of 80-540 m, but mostly occur in a narrow band of the outer continental shelf and upper slope (100-200 m) where water temperatures stay fairly stable (8-17°C) known as the warm belt. Tilefish was determined to have a "high" biological sensitivity to climate change due to the population growth rate and adult mobility. Tilefish are slow growing and long-lived. In addition, tilefish use burrows for shelter and are relatively site specific (Hare et al. 2016).[25]

Overall climate vulnerability results for additional Greater Atlantic species, including some of the non-target species identified in this action, are shown in Figure 5 (Hare et al. 2016).[27] While the effects of climate change may benefit some habitats and the populations of species through increased availability of food and nutrients, reduced energetic costs, or decreased competition and predation, a shift in environmental conditions outside the normal range can result in negative impacts for those habitats and species unable to adapt. That, in turn, may lead to higher mortality, reduced growth, smaller size, and reduced reproduction or populations. Thus, already stressed populations are expected to be less resilient and more vulnerable to climate impacts. Climate change is expected to have impacts that range from positive to negative depending on the species. However, future mitigation and adaptation strategies may mitigate some of these impacts. The science of predicting, evaluating, monitoring, and categorizing these changes continues to evolve. The social and economic impacts of climate change will depend on stakeholder and community dependence on the fisheries, and their capacity to adapt to change. Commercial

[25] Climate vulnerability profiles for individual species are available at: https://www.st.nmfs.noaa.gov/ecosystems/climate/northeast-fish-and-shellfish-climate-vulnerability/index

and recreational fisheries may adapt in different ways, and methods of adaptation will differ among regions. In addition to added scientific uncertainty, climate change will introduce implementation uncertainty and other challenges to effective conservation and management (MAFMC 2014).

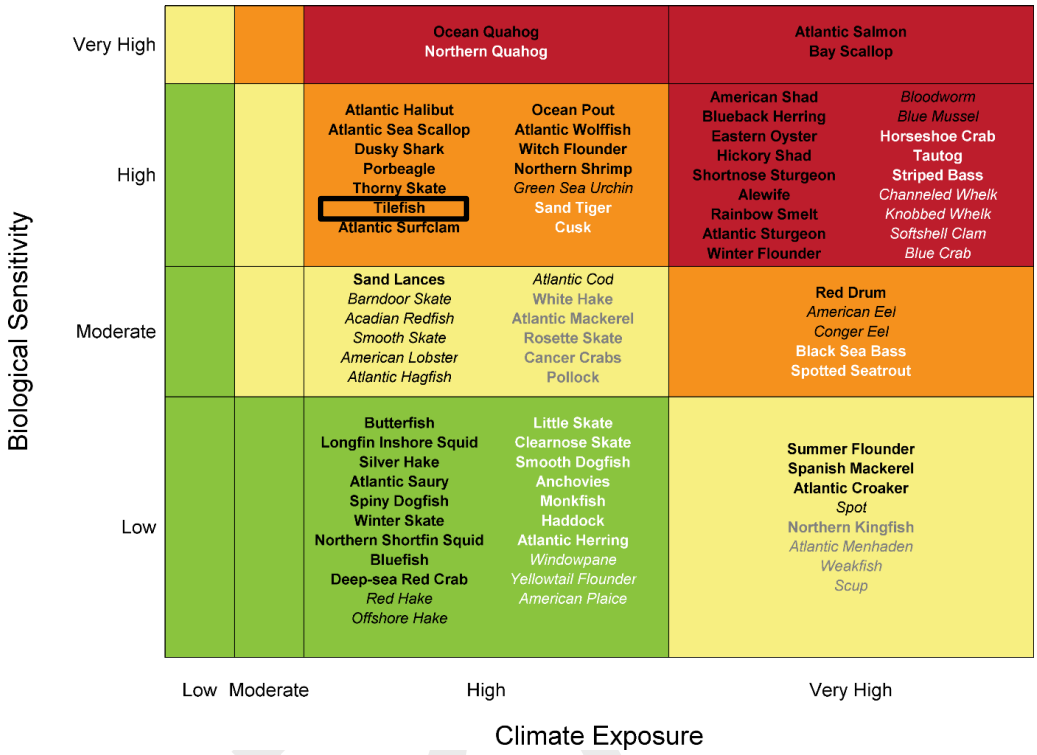

Figure 5. Overall climate vulnerability score for Greater Atlantic species, with tilefish highlighted with black box. *Overall climate vulnerability is denoted by color: low (green), moderate (yellow), high (orange), and very high (red). Certainty in score is denoted by text font and text color: very high certainty (> 95%, black, bold font), high certainty (90–95%, black, italic font), moderate certainty (66–90%, white or gray, bold font), low certainty (< 66%, white or gray, italic font).* Source: Hare et al. 2016.

7.4.2 Baseline Condition for the Resources, Ecosystems, and Human Communities

For the purposes of this CEA, the baseline condition is considered as the present condition of the VECs plus the combined effects of the past, present, and reasonably foreseeable future actions.

Table 21 summarizes the added effects of the condition of the VECs (i.e., status/trends/stresses from affected environment and impacts) and the sum effect of the past, present, and reasonably foreseeable future actions (from previous summary table or past, present, reasonably foreseeable future action section above). The resulting CEA baseline for each VEC is exhibited in the last column of Table 21. As mentioned above, the CEA baseline is then used to assess cumulative effects of the proposed management actions.

Table 21. Summary of the current status; combined effects of Past, Present, and Reasonably foreseeable future actions; and the combined baseline condition of each VEC.

VEC	Status and Trends	Combined Effects of Past, Present, and Reasonably Foreseeable Future Actions (Table 22)	Combined CEA Baseline Conditions
Managed Resource	Golden tilefish not overfished or overfishing	**Positive** Stocks are being managed sustainably	**Positive** Stocks are being managed sustainably
Non-target Species	Non-targets that are managed are not overfished or overfishing. The status of blueline tilefish is unknow (section 6.1). Highly directed fishery, with low rates of non-targets relative to target species	**Positive** Decreased effort and reduced bycatch continue; most non-target stocks continue to be sustainably managed under ACLs/AMs	**Slight positive** Decreased effort and reduced bycatch continue; non-target stocks that are managed are not overfished/not overfishing or of unknown status
Habitat	Fishing impacts are complex and variable and typically non adverse (see section 6.2). Gear restrictions has reduced magnitude of the direct negative fishing impacts in the indirect otter trawl fishery; providing protection to areas that are known to have clay outcrop/pueblo habitats. Non-fishing activities have had historically negative but site-specific effects on habitat	**Mixed** Continued fisheries management will likely control effort and thus fishery related habitat impacts but fishery and non-fishery related activities will continue to reduce habitat quality	**Slight positive** Continued fisheries management will likely control effort and thus fishery related habitat impacts; fishing pressure will continue to occur, but overall knowledge of and protection of key habitats continues to improve
Protected Resources	Leatherback and Kemp's ridley sea turtles are classified as endangered under the ESA; loggerhead (Northwest Atlantic DPS) and green (North Atlantic DPS) sea turtles are classified as threatened. All large whales in the Northwest Atlantic are protected under the MMPA. Of these large whales, North Atlantic right, fin, blue, sei, and sperm whales are also listed as endangered under the ESA. Small cetaceans and pinnipeds: protected under MMPA Atlantic salmon (Gulf of Maine DPS): threatened under ESA Atlantic sturgeon: New York Bight, Chesapeake, Carolina, and South Atlantic DPSs are endangered under ESA; Gulf of Maine DPS is listed as threatened under the ESA	**Negligible negative to slight positive** Continued effort controls along with past regulations will likely help stabilize protected species interactions	**Negligible negative to slight positive** Continued catch and effort controls are likely to reduce gear encounters through effort reductions. Additional management actions taken under ESA/MMPA should also help mitigate the risk of gear interactions

Human Communities	Golden tilefish stock support a small IFQ fishery and related support services. There were 11 IFQ allocation owners in 2020 and the number of active vessels participating in the IFQ fishery has ranged from 9 to 10 in recent years. 2020 estimated ex-vessel revenues was about $4.8 million. The bulk of the landings occur in New York and New Jersey, particularly Montauk, New York, and Barnegat Light, New Jersey. In addition, there is a small incidental fishery (landed on average less than 3% of the total landings for the 2016-2021 period). In 2020 there were 50 federally permitted dealers who bought golden tilefish from 105 vessels that landed this species from Maine through Virginia. Most tilefish are sold fresh. The bulk of the catch is gutted at sea and iced during long trips. Incidental catches are not gutted. Tilefish supplies are very stable throughout the year as the IFQ participants spread their landings through the fishing season to avoid market gluts and price fluctuations	**Mixed** Continued fisheries management will likely control effort and thus may lead to short-term negative economic impacts for some participants and positive socioeconomic outcomes for other participants and communities	**Positive** Short-term negative impacts occur from effort limitations/cost recovery/data collection, but long-term positive conditions result from higher prices and continued management under ACLs and AMs. Resource supports viable communities and economies

7.4.3 Summary of the Effects of the Proposed Actions

The preferred multi-year specifications (alternative 2) and timing of the fishing year (alternative 2) alternatives will make minor process related changes to the management system and are not expected to result in significant changes to the management system or impacts the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices.

The preferred alternative for the commercial quota (alternative 2: SSC and MC recommended) would implement overall commercial quota levels that may result in increased fishing effort in 2022-2024 compared to 2021. The impacts of the proposed actions are described in sections 7.1 to 7.3 and summarized in Boxes ES-4 to ES-6.

7.4.4 Magnitude and Significance of Cumulative Effects

In determining the magnitude and significance of the cumulative impacts of the preferred alternatives, the incremental impacts of the direct and indirect impacts should be considered, on a VEC-by-VEC basis, in addition to the effects of all actions (those identified and discussed relative to the past, present, and reasonably foreseeable future actions of both fishing and non-fishing actions). Boxes ES-4 to ES-6 and sections 7.1 to 7.3 provides a summary of likely impacts found in the various groups of management

alternatives contained in this action. The CEA baseline described above in represents the sum of past, present, and reasonably foreseeable future actions and conditions of each VEC. When an alternative has a positive impact on the VEC, for example, reduced fishing mortality on a managed species, it has a positive cumulative effect on the stock size of the species when combined with "other" actions that were also designed to increase stock size. In contrast, when an alternative has negative effects on a VEC, such as increased mortality, the cumulative effect on the VEC would be negative and tend to reduce the positive effects of the other actions. The resultant positive and negative cumulative effects are described below for each VEC. As seen above in section 7.4.2.2, non-fishing impacts on the VECs generally range from no impact to slight negative.

7.4.4.1 Magnitude and Significance of Cumulative Effects on Managed Species and Non-Target Species

Past fishery management actions taken through the federal fisheries management process such as catch limits and commercial quotas ensure that stocks are managed sustainably and that measures are consistent with the objectives for the FMP under the guidance of the MSA. The combined impacts of past federal fishery management actions on non-target species have been generally positive, as decreased effort and reduced catch of non-target species continue. Current regulations continue to manage for sustainable stocks, thus controlling effort on direct and discard/bycatch species. It is anticipated that the future management actions described in section 7.4.2.1.2 will have additional indirect positive effects on the managed resources through actions which reduce and monitor bycatch, protect habitat, and protect the ecosystem services on which the productivity of golden tilefish depend.

The preferred multi-year specifications alternative and the timing of the fishing year alternative will make minor process related changes to the management system and are not expected to result in significant changes to the management system or impacts the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices. The impacts of annual specification of catch limits and other management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on the managed species by achieving the objectives specified in the FMP. Overall, the relevant past, present, and reasonably foreseeable future actions, including the proposed action, are cumulatively expected to yield non-significant positive impacts on target and non-target species (section 7.4.2.1.2).

7.4.4.2 Magnitude and Significance of Cumulative Effects on Habitat

Past fishery management actions taken through the federal fisheries management process have had positive cumulative effects on habitat. The actions have constrained fishing effort both at a large scale and locally which may reduce impacts on habitat. As required under these FMP actions, EFH and Habitat Areas of Particular Concern were designated for the

managed stocks. It is anticipated that the future management actions will result in additional direct or indirect positive effects on habitat through actions which protect EFH and protect ecosystem services on which these species' productivity depends.

Many additional non-fishing activities, as described above, are concentrated near-shore and likely work additively or synergistically to decrease habitat quality. The effects of these actions, combined with impacts resulting from years of commercial fishing activity, have negatively affected habitat. These impacts could be broad in scope. All the VECs are interrelated; therefore, the linkages among habitat quality, managed and non-target species productivity, and associated fishery yields should be considered. For habitat, there are direct and indirect negative effects from actions which may be localized or broad in scope; however, positive actions that have broad implications have been, and will likely continue to be, taken to improve the condition of habitat. Some actions, such as coastal population growth and climate change may impact habitat and ecosystem productivity; however, these actions are beyond the scope of NMFS and Council management.

As described in sections 7.1 to 7.3, the impacts of the proposed actions on habitat are expected to range from no impacts to negligible negative impacts. The preferred alternatives are expected to maintain or to result in some increase in fishing effort compared to 2021. The impacted areas have been fished for many years with many different gear types and therefore will not likely be further impacted by these measures. Overall, the relevant past, present, and reasonably foreseeable future actions, including the proposed action, are cumulatively expected to yield negligible non-significant impacts on habitat that range from slight negative to slight positive.

7.4.4.3 Magnitude and Significance of Cumulative Effects on Protected Species

As indicated in section 6.3, the directed commercial fishery for golden tilefish is prosecuted with bottom longline gear. Based on available information, it has been determined that this action is not likely to affect protected species (ESA-listed and/or MMPA protected). This determination was made because either the occurrence of the species is not known to overlap with the golden tilefish commercial fishery and/or there have never been documented interactions between the species and the primary gear type (i.e., bottom longline gear) used to prosecute the fishery.

Given their life history dynamics, large changes in protected species abundance over long time periods, and the multiple and wide-ranging fisheries management actions that have occurred, the cumulative impacts on protected species were evaluated over a long-time frame (i.e., from the early 1970s when the Marine Mammal Protection Act and Endangered Species Act were implemented through the present).

Numerous protected species (ESA listed and/or MMPA protected) occur in the Northwest Atlantic. The distribution and status of those species in the region are described in section 6.0 (affected environment). Depending on species and status, the population trends for these protected resources are variable, and as follows:

Sea Turtles

Nest counts inform population trends for sea turtle species. In the affected environment (section 6.0), four sea turtle species were identified in the region: Northwest Atlantic Ocean DPS of loggerhead, Kemp's ridley, North Atlantic DPS of green, and leatherback sea turtles. For the Northwest Atlantic Ocean DPS of loggerhead sea turtles, there are five unique recovery units that comprise the DPS. Nesting trends for each of these recovery units are variable; however, recent data from Florida index nesting beaches, which comprise most of the nesting in the DPS, indicate a 19% increase in nesting from 1989 to 2018 (https://myfwc.com/research/wildlife/sea-turtles/nesting/loggerhead-trends/). Overall, short-term trends for loggerhead sea turtles (Northwest Atlantic Ocean DPS) have shown increases; however, over the long-term the DPS is considered stable. For Kemp's ridley sea turtles, from 1980 through 2003, the number of nests at three primary nesting beaches (Rancho Nuevo, Tepehuajes, and Playa Dos) increased 15% annually (Heppell et al. 2005); however, due to recent declines in nest counts, decreased survival of immature and adult sea turtles, and updated population modeling, this rate is not expected to continue and the overall trend is unclear (NMFS and USFWS 2015, Caillouet et al. 2018). The North Atlantic DPS of green sea turtle is showing a positive trend in nesting; however, increases in nester abundance for the North Atlantic DPS in recent years must be viewed cautiously as the datasets represent a fraction of a green sea turtle generation which is between 30 and 40 years (Seminoff et al. 2015). Leatherback turtle nesting in the Northwest Atlantic is showing an overall negative trend, with the most notable decrease occurring during the most recent time frame of 2008 to 2017 (Northwest Atlantic Leatherback Working Group 2018).

Large Whales

Large whale assessment indicates that for some species there is decreasing (i.e., North Atlantic right whales) trend in the population, while for other species, as a trend analysis has not been conducted, it is unknown what the population trajectory is.

Small cetaceans and Pinnipeds

For most small cetaceans and pinniped populations, it is unknown what the population trajectory is as a trend analysis has not been conducted for these populations. However, in the most recent stock assessment reports, population trends were provided for common bottlenose dolphin stocks and gray seals; the analysis indicated a declining trend in population size for all common bottlenose dolphin stocks and an increasing trend for the gray seal population (Hayes et al. 2018, Hayes et al. 2019, Hayes et al. 2020).

Atlantic Sturgeon

The ASMFC released a new benchmark stock assessment for Atlantic sturgeon in October 2017 (ASMFC 2017). Based on historic removals and estimated effective population size, the 2017 stock assessment concluded that all five Atlantic sturgeon DPSs are depleted relative to historical levels. However, the 2017 stock assessment does provide some evidence of population recovery at the coastwide scale, and mixed population recovery at the DPS scale (ASMFC 2017). The 2017 stock assessment also concluded that a variety of factors (i.e., bycatch, habitat loss, and ship strikes) continue to impede the recovery rate of Atlantic sturgeon (ASMFC 2017).

Atlantic Salmon

The GOM DPS of Atlantic salmon currently exhibits critically low spawner abundance and poor marine survival (USASAC 2020). The abundance of GOM DPS Atlantic salmon has been low and either stable or declining over the past several decades and the proportion of fish that are of natural origin is small and displays no sign of growth (USASAC 2020).

As described in sections 7.1 to 7.3, the proposed actions in this document are expected to have no impacts on protected species. The golden tilefish fishery are prosecuted with bottom longline gear. As noted in section 6.3, sea turtles are the only protected species that have the potential to interact with bottom longline gear. However, based on the best available information, bottom longline interactions with sea turtles are expected to be rare to non-existent under golden tilefish fishery because of where and how the fishery operates. In fact, in the Greater Atlantic Region, no sea turtles have been observed in bottom longline (see section 6.3). Since monitoring of bycatch has begun, there have been no documented interactions of ESA and/or MMPA protected species and the fishing gear used to prosecute the golden tilefish fishery (see section 6.3 and 7.1 to 7.3). Taking into consideration the above information, past fishery management actions taken through the respective FMPs and annual specifications process have had slight indirect positive cumulative effects on protected species. The actions have constrained fishing effort both at a large scale and locally, and have implemented, pursuant to the ESA, MMPA, or MSA, gear modifications, requirements, and management areas. These measures and/or actions have served to reduce interactions between protected species and fishing gear. It is anticipated that future management actions will result in additional indirect slight positive effects on protected species. These impacts could be broad in scope.

Overall, the relevant past, present, and reasonably foreseeable future actions, including the proposed action, are cumulatively expected to range from slight negative to slight positive impacts on protected species.

7.4.4.4 Magnitude and Significance of Cumulative Effects on Human Communities

Past fishery management actions taken through the federal fisheries management process have had both positive and negative cumulative socioeconomic effects by benefiting domestic fisheries through sustainable fishery management practices while also sometimes reducing the ability of some individuals to participate in fisheries. Sustainable management practices are, however, expected to yield broad positive impacts to fishermen, their communities, businesses, and the nation as a whole. It is anticipated that the future management actions described in section 7.4.2.1.2 will result in positive effects for human communities due to sustainable management practices, although additional indirect negative effects on some communities could occur if management actions result in reduced revenues. The same tradeoff exists for many non-fishing activities, resulting in overall negative impacts on human communities by reducing marine resource availability; however, this effect is non-quantifiable. Despite the potential for negative short-term effects on human communities due to reduced revenue, positive long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the past, present, and reasonably foreseeable future actions that are truly meaningful to human communities have had overall positive cumulative effects.

The preferred multi-year specifications alternative and the timing of the fishing year alternative will make minor process related changes to the management system and are not expected to result in significant changes to the management system or impact the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices (sections 7.1 and 7.2).

Catch limits and commercial quotas for the managed resource have been specified to ensure the rebuilt stock is managed in a sustainable manner, and measures are consistent with the objectives of the FMP under the guidance of the MSA. The impacts of annual specification of catch limits and other management measures are largely dependent on how effective those measures are in meeting the objectives of preventing overfishing and achieving optimum yield, and on the extent to which mitigating measures are effective. The proposed actions described in this document would positively reinforce the past and anticipated positive cumulative effects on human communities by achieving the objectives specified in the FMP. As described in section 7.3, the proposed catch limits and commercial quotas are expected to result in increased fishing effort in 2022-2024 compared to 2021. However, they are not expected to significantly impact the prosecution of the golden tilefish fisheries, including fishery distribution, or fishing methods and practices. The preferred quota alternatives are expected to increase fishing effort and landings levels compared to 2021. Positive not significant long-term effects are expected due to the long-term sustainability of the managed stocks. Overall, the relevant past, present, and reasonably foreseeable future actions, including the proposed action, are cumulatively expected to be slight positive impacts on human communities.

7.4.5 Proposed Action on all the VECs

The Council's preferred alternatives (i.e., the proposed action) are described in section 5.0. The direct and indirect impacts of the proposed action on the VECs are described in sections 7.1 to 7.3 and summarized in the Executive Summary (section 1.0). The magnitude and significance of the cumulative effects, including additive and synergistic effects of the proposed action, as well as past, present, and future actions, have been taken into account.

When considered in conjunction with all other pressures placed on the fisheries by past, present, and reasonably foreseeable future actions, the preferred alternatives are not expected to result in any significant impacts, positive or negative. The preferred multi-year specifications alternative and the timing of the fishing year alternative will make minor process related changes to the management system and are not expected to result in significant changes to the management system or impact the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices. The preferred action for implementing catch and landings limits for golden tilefish in 2022-2024 are likely to result in increased fishing effort and landings. These measures are not expected alter the current stock status and condition of golden tilefish (which are positive), the condition of non-target species (negligible negative to slight positive), the condition of physical habitat (negligible negative), the condition of protected species (no impact to negligible negative), or the condition of the human communities (negligible positive to positive). The preferred quota alternatives are consistent with other

management measures that have been implemented in the past for these fisheries. The process related management measure will make minor process related changes to the management system and are expected to improve the manner in which the fishery operates. These measures are part of a broader management scheme for the golden tilefish fishery. This management scheme has helped rebuild stocks and ensure long-term sustainability, while minimizing environmental impacts.

Management actions should be taken in a manner that will optimize the conditions of managed species, habitat, and human communities. Consistent with NEPA, the MSA requires that management actions be taken only after consideration of impacts to the biological, physical, economic, and social dimensions of the human environment. Given this regulatory environment, and because fishery management actions must strive to create and maintain sustainable resources, impacts on all VECs from past, present, and reasonably foreseeable future actions have generally been positive and are expected to continue in that manner for the foreseeable future. This is not to say that some aspects of the VECs are not experiencing negative impacts, but rather that when considered as a whole and as a result of the management measure implemented in these fisheries, the overall long-term trend is positive.

There are no significant cumulative effects associated with the preferred alternatives based on the information and analyses presented in this document and in past FMP documents (Table 22). Cumulatively, for the next three to five years (2024 to 2026), it is anticipated that the preferred alternatives will result in a range of non-significant impacts on all VECs ranging from no impact to positive.

Table 22. Magnitude and significance of the cumulative, additive, and synergistic effects of the preferred alternatives, as well as past, present, and reasonably foreseeable future actions.

VEC	Current Status	Combined Cumulative Effects Assessment Baseline Conditions	Direct/Indirect Impacts of the Preferred Actions on current conditions	Significant Cumulative Effects
Multi-Year Specifications Alternative 2: Specifications to be set for the maximum number of years needed to be consistent with the Northeast Regional Coordinating Council approved stock assessment schedule				
Managed Resource	Positive (section 6.1)	Positive (section 7.4.4.1)	No impact (section 7.1.1)	**None**
Non-target Species	Complex and variable (section 6.1)	Positive (section 7.4.4.1)	No impact (section 7.1.1)	**None**
Habitat	Complex and variable (section 6.2)	Slight negative to slight positive (section 7.4.4.2)	No impact (section 7.1.2)	**None**
Protected Resources	Complex and variable (section 6.3)	Slight negative to slight positive (section 7.4.4.3)	No impact (section 7.1.3)	**None**
Human Communities	Important commercial fishery (section 6.4)	Slight positive (section 7.4.4.4)	No impact (section 7.1.4). However, potential reduction in the administrative burden	**None**
Fishing Year Timing Alternative 2: The golden tilefish fishing year is the 12-month period beginning with January 1, annually. Therefore, the fishing year will be from January 1 – December 31				
Managed Resource	Positive (section 6.1)	Positive (section 7.4.4.1)	No impact to slight positive (section 7.2.1)	**None**
Non-target Species	Complex and variable (section 6.1)	Positive (section 7.4.4.1)	No impact (section 7.2.1)	**None**
Habitat	Complex and variable (section 6.2)	Slight negative to slight positive (section 7.4.4.2)	No impact (section 7.2.2)	**None**
Protected Resources	Complex and variable (section 6.3)	Slight negative to slight positive (section 7.4.4.3)	No impact (section 7.2.3)	**None**
Human Communities	Important commercial fishery (section 6.4)	Slight positive (section 7.4.4.4)	No impact to slight positive (section 7.2.4)	**None**
2022-2024 Golden Tilefish Fishery Specifications (Catch and Landings Limits) Alternative 2: SSC and MC recommended				
Managed Resource	Positive (section 6.1)	Positive (section 7.4.4.1)	Slight positive (2023-2024) (section 7.3.1.2)	**None**
Non-target Species	Complex and variable (section 6.1)	Positive (section 7.4.4.1)	Negligible negative to slight positive (2022-2024) (section 7.3.1.2)	**None**
Habitat	Complex and variable (section 6.2)	Slight negative to slight positive (section 7.4.4.2)	Negligible negative (2022-2024) (section 7.3.2.2)	**None**
Protected Resources	Complex and variable (section 6.3)	Slight negative to slight positive (section 7.4.4.3)	No impact to negligible negative (2022-2024) (section 7.3.3.2)	**None**
Human Communities	Important commercial fishery (section 6.4)	Slight positive (section 7.4.4.4)	Slight positive (2022) to positive (2023-2024) (section 7.3.4.2)	**None**

8.0 APPLICABLE LAWS

This section to be completed prior to the second required framework meeting.

8.1 Magnuson-Stevens Fishery Conservation and Management Act (MSA)

8.1.1 National Standards

Section 301 of the MSA requires that FMPs contain conservation and management measures that are consistent with the ten National Standards. The Council continues to meet the obligations of National Standard 1 by adopting and implementing conservation and management measures that will continue to prevent overfishing, while achieving, on a continuing basis, the optimum yield (OY) for golden tilefish, and the U.S. fishing industry. To achieve OY, both scientific and management uncertainty are addressed when establishing catch limits. The Council developed recommendations that do not exceed the ABC recommendations of the SSC, which explicitly address scientific uncertainty. The Council considered management uncertainty and other social, economic, and ecological factors, when recommending ACTs. The Council uses the best scientific information available (National Standard 2) and manages golden tilefish throughout the range (National Standard 3). These management measures do not discriminate among residents of different states (National Standard 4) and they do not have economic allocation as their sole purpose (National Standard 5). The measures account for variations in the fisheries (National Standard 6) and avoid unnecessary duplication (National Standard 7). They take into account the fishing communities (National Standard 8) and they promote safety at sea (National Standard 10). The proposed actions are consistent with National Standard 9, which addresses bycatch in fisheries. NOAA Fisheries has implemented many regulations that have indirectly reduced fishing gear impacts on EFH. By continuing to meet the National Standards requirements of the MSA through future FMP amendments, framework actions, and the annual specification setting process, the Council will ensure that cumulative impacts of these actions will remain positive overall for the managed species, the ports and communities that depend on these fisheries, and the Nation as a whole.

8.1.2 Essential Fish Habitat Assessment

EFH assessments are required for any action that is expected to have an adverse impact on EFH, even if the impact is only minimal and/or temporary in nature (50 CFR § 600.920 (e) (1-5)).

Description of Action

As previously described, the proposed action will make minor process related changes to the multi-year specifications and timing of the fishing year. In addition, the action will implement catch and landings limits for the commercial fishery for 2022-2024. The proposed actions are described in more detail in section 5.0.

Potential Adverse Effects of the Action on EFH

A previously mentioned, the directed commercial golden tilefish fishery is prosecuted with bottom longline gear. The recreational fishery uses hook and line gear. The types of habitat impacts caused by these gears are summarized in section 6.2.3.

As described in section 7.0, The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort. Under this action, the locations of fishing are not expected to change and the amount of gear in the water and duration of time that gear is in the water are not expected to increase substantially in a manner that would cause meaningful increased negative impacts on habitat. The habitats that are impacted by golden tilefish have been impacted by many fisheries over many years. The levels of fishing effort expected under the preferred alternative are not expected to cause additional habitat damage, but they are expected to limit the recovery of previously impacted areas. Thus, the proposed action for golden tilefish is expected to have negligible negative impacts on habitat and EFH.

Proposed Measures to Avoid, Minimize, or Mitigate Adverse Impacts of This Action
The commercial fishery for golden tilefish is prosecuted with bottom long line gear. Hook and line gear is used in the recreational fishery.

The Council determined in Amendment 1 that there may be some adverse effects of longline gear on EFH, but that the effects are short-term and minimal. Because of the limited length of time this gear is deployed, effects at the community and ecosystem levels are not detectable. Hook and line gear have minimal adverse impacts in the region (Stevenson et al. 2004). These characteristics of the commercial and recreational fisheries have not changed since Amendment 1.

Section 6.2.3. lists examples of management measures previously implemented with the intent of minimizing the impacts of various fisheries on habitat. None of these measures substantially restrict the golden tilefish fishery.

Conclusions

Overall, the preferred alternatives are expected to have negligible negative impacts on EFH.

8.2 NEPA FINDING OF NO SIGNIFICANT IMPACT (FONSI)

[Revise once the Council completes selection of the preferred alternatives]

The Council on Environmental Quality Regulations state that the determination of significance using an analysis of effects requires examination of both context and intensity,

and lists ten criteria for intensity (40 CFR § 1508.27). In addition, the companion manual for NOAA Administrative Order 216-6A provides sixteen criteria (the same ten as the Council on Environmental Quality Regulations and six additional) for determining whether the impacts of a proposed action are significant. Each criterion is discussed below with respect to the proposed action and considered individually as well as in combination with the others.

1. Can the proposed action reasonably be expected to cause both beneficial and adverse impacts that overall may result in a significant effect, even if the effect will be beneficial?

The expected impacts of the proposed action (i.e., multi-year specifications alternative 2, timing of the fishing year alternative 2, and commercial catch and landings limits (quotas) alternative 1) are fully described in section 7.0. The preferred alternatives are not expected to result in significant impacts on any VECs, nor will they result in overall significant effects, either beneficial or adverse.

As described in section 7.1, the preferred multi-year specifications alternative addresses a process related issue. This preferred alternative provides additional flexibility to the quota setting process by improving the timing of multi-year specifications. This action would modify the annual specifications process, so that they could be set for the maximum number of years needed to be consistent with the NRCC approved stock assessment schedule. This alternative is not expected to impact the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices, as they only address a process related issues. This process related alternative is not expected to impact (directly or indirectly) the stock status and condition of golden tilefish and non-target species, the physical habitat, protected species, or the human communities.

As described in section 7.2, the preferred timing of the fishing year alternative also addresses a process related issue. This preferred alternative would establish a January 1 – December 31 fishing year. This alternative is not expected to impact the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices, as they only address a process related issue. This alternative improves the administration of the tilefish IFQ program by merely aligning the fishing year with the cost recovery calculations (calendar year basis) associated with managing the IFQ system. This could in turn decrease the administrative burden and the IFQ cost recovery fee. This is expected to result in impacts to the human communities that range from no impacts to slightly positive impacts compared to the current conditions. In addition, the fishing year under this alternative would result in quota specifications to be aligned the with the 12-month cycle for which the stock assessment is based (January 1 – December 31), thus, potentially reducing uncertainty in the long-term. This is expected to result in impacts to the stock that range from no impacts to slightly positive impacts compared to the current conditions. Lastly, this process related alternative is not expected to impact (directly or indirectly) the physical habitat or protected species.

As described in section 7.3, the preferred 2022-2024 catch and landings for golden tilefish are consistent with the FMP objectives and recommendations of the SSC and the Tilefish Monitoring Committee. The proposed catch and landing limits are designed to prevent the stocks from becoming overfished and to prevent overfishing from occurring. The preferred quota alternatives are expected to result in increased golden tilefish fishing effort and landings. However, they are not expected to result in notable changes in spatial and/or temporal distribution of fishing effort. These expected changes in fishing effort are not expected to change the stock status and condition of golden tilefish (which are slight positive; section 7.3.1.2) and non-target species (which currently range from negligible negative to slight positive; section 7.3.1.2).

The expected changes in fishing effort are also not expected to change the status of any protected species and they are not expected to cause substantial additional damage to physical habitat, beyond that caused by many fisheries which have operated in the affected environment for many years. As such, the preferred quota alternatives are not expected to change the current condition of the physical habitat (impact is negligible negative; section 7.3.2.2) or the condition of protected species (impact ranges from no impact to negligible negative; section 7.3.3.2). Lastly, the preferred quota alternatives are expected to result in increased commercial golden tilefish harvest. Therefore, they are expected to result in positive impacts to human communities (section 7.3.4.2).

2. Can the proposed action reasonably be expected to significantly affect public health or safety?

None of the preferred alternatives alter the manner in which the industry conducts fishing activities. Therefore, no changes in fishing behavior that would affect safety are anticipated. The overall effect of the proposed actions on these fisheries, including the communities in which they operate, will not adversely impact public health or safety.

3. Can the proposed action reasonably be expected to result in significant impacts to unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas?

The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. In addition, this action implements catch and landings limits in 2022-2024 for the golden tilefish fishery that are not expected to substantially change fishing effort. Other types of commercial fishing already occur in the impacted areas. Although it is possible that historic or cultural resources such as shipwrecks could be present, vessels try to avoid fishing too close to most physical structures due to possible loss or entanglement of fishing gear. Therefore, it is not likely that the proposed action would result in substantial impacts to unique areas.

4. Are the proposed action's effects on the quality of the human environment likely to be highly controversial?

The impacts of the proposed measures on the human environment are described in section 7.0. This action will make minor process related changes to the multi-year specifications and timing of the fishing year. Both of these process related measure are expected to improve the administration of the golden tilefish IFQ system. In identifying the preferred multi-year specifications and timing of the fishing year alternatives, the Council considered the intent of fisheries management as prescribed through the National Standards of the MSA, including both social and economic concerns and the Golden Tilefish Individual Fishing Quota 5-Year Review Report.[26] This action also implements catch and landings limits in 2022-2024 for the golden tilefish fishery. These limits are based on measures contained in the FMP, which have been in place for many years. The scientific information upon which the annual quotas are based has been peer reviewed and is the most recent information available. Thus, the measures contained in this action are not expected to be highly controversial.

5. Are the proposed action's effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

The impacts of the proposed measures on the human environment are described in section 7.0. The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort.

The preferred alternatives are not expected to alter fishing methods or activities or is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The impacts to managed species, non-target species, and protected resources will continue to be monitored. The measures contained in this action are not expected to have highly uncertain effects or to involve unique or unknown risks on the human environment.

6. Can the proposed action reasonably be expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

The preferred alternatives are not expected to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration. This action will make minor process related changes to the multi-year specifications and timing of the fishing year. All these process related measures are consistent with those in place in other federal marine fisheries; they are not novel or unique. In addition, this action will implement catch and landings limits in 2022-2024 for the golden tilefish fishery. When new stock assessment or other biological information about these species becomes available in the future, then the specifications will be adjusted consistent with the FMP and

[26] See footnote #1.

MSA. Specifications are routine adjustments and the adjustments undertaken herein are similar to those taken in the past. None of the proposed alternatives is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. None of the preferred alternatives results in significant effects, nor do they represent a decision in principle about a future consideration. The impact of any future changes will be analyzed as to their significance in the process of developing and implementing them.

7. Is the proposed action related to other actions that when considered together will have individually insignificant but cumulatively significant impacts?

As discussed in section 7.4, the proposed action is not expected to have individually insignificant, but cumulatively significant impacts. The preferred alternatives, together with past, present, and reasonably foreseeable future actions, are not expected to result in significant cumulative impacts on the biological, physical, and human components of the environment.

8. Can the proposed action reasonably be expected to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources?

The impacts of the proposed measures on the human environment are described in section 7.0. The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort. Although there are shipwrecks present in the area where fishing occurs, including some registered on the National Register of Historic Places, vessels typically avoid fishing too close to wrecks due to the possible loss or entanglement of fishing gear. Therefore, it is not likely that the proposed action would adversely affect the historic resources listed above.

9. Can the proposed action reasonably be expected to have a significant impact on endangered or threatened species, or their critical habitat as defined under the Endangered Species Act of 1973?

The golden tilefish fishery is primarily a commercial fishery. Based on dealer data from 2016-2020, the bulk of the tilefish landings are taken by the directed golden tilefish fishery which uses bottom longline gear (97%) followed by the incidental fishery using bottom trawl gear (<2%; section 6.2). The recreational fishery uses hook and line gear. The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this

action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort. In addition, both the commercial and recreational golden tilefish fisheries primarily operates in deep continental shelf edge/slope waters (>200 meters) which could reduce the potential for interaction. Based on this information, and the fact that there have never been observed or documented interactions between ESA-listed species and bottom longline gear (see section 6.3), the preferred alternatives are not expected to impact ESA listed species.

In addition, as provided in section 6.3, operation of the golden tilefish fishery will not adversely affect North Atlantic right whale critical habitat; the proposed action does not result in any changes in the fishery that would change this determination. Given this and the information above, this action is not expected to affect ESA listed species or designated critical habitat in any manner not considered in previous consultations on the fisheries.

10. Can the proposed action reasonably be expected to threaten a violation of Federal, state, or local law or requirements imposed for environmental protection?

The preferred alternatives are not expected to alter fishing methods or activities such that they threaten a violation of federal, State, or local law or requirements imposed for the protection of the environment. The proposed measures have been found to be consistent with other applicable laws (sections 8.3-8.11 below).

11. Can the proposed action reasonably be expected to adversely affect stocks of marine mammals as defined in the Marine Mammal Protection Act?

The golden tilefish fishery is prosecuted with bottom longline gear (section 6.2). The recreational fishery uses hook and line gear (section 6.3). The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort. Based on this information, and the fact that there have never been observed documented interactions between MMPA protected species and bottom longline gear or hook and line, the primary recreational gear type, has minimal interactions with protected species (sections 6.3), the preferred alternatives are not expected to impact MMPA protected species. Given this, this action is not expected to affect MMPA protected species in any manner not considered in previous consultations on the fisheries.

12. Can the proposed action reasonably be expected to adversely affect managed fish species?

The impacts of this action on managed fish species, including target and non-target species, are described in sections 7.1 to 7.3. None of the proposed specifications presented in this

document is expected to jeopardize the sustainability of any target or non-target species affected by the action. The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort. The preferred catch and landings (commercial quotas) alternatives are consistent with the FMP objectives and the recommendations of the Council's SSC and MC. The proposed measures are not expected to result in overfishing of golden tilefish. The proposed actions will ensure the long-term sustainability of harvests from the golden tilefish stock. With the exception of some unassessed stocks, most non-target-species are not currently overfished and not experiencing overfishing (section 6.1.3). The expected changes in fishing effort are not expected to have any significant adverse impacts on managed or non-target species.

13. Can the proposed action reasonably be expected to adversely affect essential fish habitat as defined under the Magnuson-Stevens Fishery Conservation and Management Act?

The proposed action is not expected to cause substantial damage to EFH as defined under the MSA and identified in the FMPs. The preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. The commercial fisheries are primarily prosecuted with bottom longline gear (section 6.2). The recreational fishery uses hook and line (section 6.3). Longline gear has minimal detectable impacts to marine habitats. Longlines modify the structural component of the habitat, but the impacts are short-term and temporary (section 6.2.3). In general, recreational hook and line gear in the recreational fishery is not associated with adverse EFH impacts because the gear does not alter bottom structure. The proposed action is not expected to alter fishing methods or activities or is expected to significantly increase fishing effort or result in notable changes in the spatial and/or temporal distribution of current fishing effort. The proposed actions is expected to result in negligible negative impacts to habitat as the result of continued fishing (section 7.1.2).

14. Can the proposed action reasonably be expected to adversely affect vulnerable marine or coastal ecosystems, including but not limited to, deep coral ecosystems?

The preferred alternatives are not expected to have significant impacts on the natural or physical environment, including vulnerable marine or coastal ecosystems. The preferred alternatives are not expected to alter fishing methods or activities or to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. The areas fished for golden tilefish have been fished for many years, and for a variety of species, and this action is not expected to change the locations of fishing activity. While

some fishing takes place near the continental slope/shelf break where deep sea corals may be found in and around the submarine canyons, much of this area in the Mid-Atlantic is now protected by a prohibition on bottom-tending gear in the Frank R. Lautenberg Deep Sea Coral Protection Area (81 FR 90246; December 14, 2016). A proposed rule to establish similar coral protections off New England published on January 2, 2020 (85 FR 285). The preferred alternatives are not expected to alter golden tilefish fishing patterns relative to this protected area or in any other manner that would lead to adverse impacts on deep sea coral or other vulnerable marine or coastal ecosystems.

15. Can the proposed action reasonably be expected to adversely affect biodiversity or ecosystem functioning (e.g., benthic productivity, predator-prey relationships, etc.)?

The impacts of the golden tilefish fishery on biodiversity and ecosystem functioning have not been assessed; however, the impacts to components of the ecosystem (i.e., non-target species, habitat, and protected species) have been considered. As described in section 7.0, the preferred multi-year specifications and timing of the fishing year alternatives will make minor process related changes to the management system and are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. In all, this action is not expected to result in notable changes in the spatial and/or temporal distribution of current fishing effort. These expected levels of effort are not likely to negatively impact the stock status of non-target species (section 7.1), they are not likely to cause additional habitat damage beyond that previously caused by a variety of fisheries (section 7.2), and they are not expected to jeopardize any protected species (section 7.3). They are however, not expected to contribute to the recovery of any endangered or threatened species. For these reasons, the preferred alternatives are not expected to have a substantial impact on biodiversity and ecosystem function within the affected area.

16. Can the proposed action reasonably be expected to result in the introduction or spread of a nonindigenous species?

This action will implement minor process related changes to the multi-year specifications and timing of the fishing year. In addition, the action will implement catch and landings limits in 2022-2024 for golden tilefish. There is no evidence or indication that this fishery has ever resulted in the introduction or spread of nonindigenous species. The preferred multi-year specifications and timing of the fishing year alternatives are not expected to change fishing effort. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates. None of the proposed alternatives is expected to alter fishing methods or activities. None of the proposed specifications is expected to substantially increase fishing effort or the spatial and/or temporal distribution of current fishing effort. Therefore, it is highly unlikely that the proposed action would be expected to result in the introduction or spread of a non-indigenous species.

DETERMINATION

In view of the information presented in this document and the analysis contained in the supporting EA prepared for this action, it is hereby determined that these proposed Tilefish FMP measures will not significantly impact the quality of the human environment as described above and in the supporting EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an EIS for this action is not necessary.

_____ _____

Regional Administrator for GARFO, NMFS, NOAA *Date*

8.3 Endangered Species Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on ESA-listed protected species. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to significantly increase fishing effort or impact the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect endangered or threatened species or critical habitat in any manner not considered in previous consultations on the fisheries.

8.4 Marine Mammal Protection Act

Sections 6.3 and 7.0 should be referenced for an assessment of the impacts of the proposed action on and MMPA protected species. None of the actions proposed in this document are expected to alter fishing methods or activities or is expected to significantly increase fishing effort or impact the spatial and/or temporal distribution of current fishing effort. Therefore, this action is not expected to affect marine mammals in any manner not considered in previous consultations on the fisheries.

8.5 Coastal Zone Management Act

The Coastal Zone Management Act (CZMA) of 1972, as amended, provides measures for ensuring the stability of productive fishery habitat while striving to balance development pressures with social, economic, cultural, and other impacts on the coastal zone. It is recognized that responsible management of both coastal zones and fish stocks must involve mutually supportive goals. The Council will submit this document to NMFS. NMFS must determine whether this action is consistent to the maximum extent practicable with the CZM programs for each state (Maine through Virginia).

8.6 Administrative Procedure Act

Sections 551-553 of the Federal Administrative Procedure Act establish procedural requirements applicable to informal rulemaking by federal agencies. The purpose is to ensure public access to the federal rulemaking process and to give the public notice and opportunity to comment before the agency promulgates new regulations.

The Administrative Procedure Act requires solicitation and review of public comment on actions taken in the development of an FMP and subsequent amendments and framework adjustments. Development of this framework document provided many opportunities for public review, input, and access to the rulemaking process. This action and the proposed measures were developed through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on the framework management measures during the AP meeting (via webinar) held February 17, 2021, the SSC meeting held on July 21, 2021, the MC meeting held on July 22, 2021, and during the MAFMC meetings held on April 7, 2021 (via webinar) and August 11, 2021. In addition, the public will have further opportunity to comment on this framework document once NMFS publishes a request for comments notice in the FR.

8.7 Section 515 (Data Quality Act)

Utility of Information Product

This action proposes measures to change process related issues regarding setting multi-year specifications and the timing of the fishing year. In addition, to these two process related issues, this framework will set annual specification measures for the 2022, 2023, and 2024 fishing seasons. This document includes a description of the alternatives considered, the preferred action and rationale for selection, and any changes to the implementing regulations of the FMP. As such, this document enables the implementing agency (NMFS) to make a decision on implementation (i.e., management measures) and this document serves as a supporting document for the proposed rule.

The action contained within this framework document was developed to be consistent with the FMP, MSA, and other applicable laws, through a multi-stage process that was open to review by affected members of the public. The public had the opportunity to review and comment on management measures during a number of public meetings (see section 8.6). The public will have further opportunity to review and comment on this framework document once NMFS publishes a request for comments notice in the FR.

Integrity of Information Product

The information product meets the standards for integrity under the following types of documents: Other/Discussion (e.g., Confidentiality of Statistics of the MSA; NOAA Administrative Order 216-100, Protection of Confidential Fisheries Statistics; 50 CFR § 229.11, Confidentiality of information collected under the MMPA).

Objectivity of Information Product

The category of information product that applies here is "Natural Resource Plans." This section (section 8.0) describes how this document was developed to be consistent with any applicable laws, including MSA with any of the applicable National Standards. The analyses used to develop the alternatives (i.e., policy choices) are based upon the best scientific information available and the most up to date information is used to develop the EA which evaluates the impacts of those alternatives (section 7.0). The specialists who worked with these core data sets and population assessment models are familiar with the most recent analytical techniques and are familiar with the available data and information relevant to the golden tilefish fishery.

The review process for this framework document involves MAFMC, NEFSC, GARFO, and NMFS headquarters. The NEFSC technical review is conducted by senior level scientists with specialties in fisheries ecology, population dynamics and biology, as well as economics and social anthropology. The MAFMC review process involves staff technical experts and public meetings at which affected stakeholders have the opportunity to comments on proposed management measures. Review by GARFO is conducted by those with expertise in fisheries management and policy, habitat conservation, protected resources, and compliance with the applicable law. Final approval of the framework document and clearance of the rule is conducted by staff at NOAA Fisheries Headquarters, the Department of Commerce, and the U.S. Office of Management and Budget.

8.8 Paperwork Reduction Act

The Paperwork Reduction Act (PRA) concerns the collection of information. The intent of the PRA is to minimize the federal paperwork burden for individuals, small businesses, state and local governments, and other persons as well as to maximize the usefulness of information collected by the Federal government. There are no changes to the existing reporting requirements previously approved under this FMP for vessel permits, dealer reporting, or vessel logbooks. This action does not contain a collection-of-information requirement for purposes of the PRA.

8.9 Impacts of the Plan Relative to Federalism/EO 13132

This framework document does not contain policies with federalism implications sufficient to warrant preparation of a federalism assessment under Executive Order (EO) 13132.

8.10 Environmental Justice/EO 12898

Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations provides guidelines to ensure that potential impacts on these populations are identified and mitigated, and that these populations can participate effectively in the NEPA process (EO 12898). NOAA guidance NAO 216-6A, Companion Manual, Section 10(A) requires the consideration of EO 12898 in NEPA documents. Agencies should also encourage public participation, especially by affected

communities, during scoping, as part of a broader strategy to address environmental justice issues. Minority and low-income individuals or populations must not be excluded from participation in, denied the benefits of, or subjected to discrimination because of their race, color, or national origin.

Although the impacts of this action may affect communities with environmental justice concerns, the proposed actions should not have disproportionately high effects on low income or minority populations. The proposed actions would apply to all participants in the affected area, regardless of minority status or income level. The existing demographic data on participants in the golden tilefish fishery (i.e., vessel owners, crew, dealers, processors, employees of supporting industries) do not allow identification of those who live below the poverty level or are racial or ethnic minorities. Thus, it is impossible to fully determine how the actions within this specification document may impact these population segments. The public comment process is an opportunity to identify issues that may be related to environmental justice, but none have been raised relative to this action. The public has never requested translations of documents pertinent to the golden tilefish fishery.

For primary port communities relevant to this action (section 6.4), poverty and minority rate data (for 2019) at the state and county levels are in Table 23. Minority rates are well below the state averages. Poverty rates are below of state averages.

With respect to subsistence consumption of fish and wildlife, federal agencies are required to collect, maintain, and analyze information on the consumption patterns of populations who principally rely on fish and/or wildlife for subsistence. GARFO tracks these issues, but there are no federally recognized tribal agreements for subsistence fishing in Mid-Atlantic federal waters.

Table 23. Demographic data for golden tilefish fishing communities (counties).

State/County	Minority Rate[a]	Poverty Rate
New York	44.7%	13.0%
Suffolk	33.4%	6.8%
New Jersey	45.4%	9.2%
Ocean	15.7%	9.0%

Source: U.S. Census Bureau, 2019: https://www.census.gov/quickfacts/fact/table/US/PST045219
[a] Persons other than those who report as White persons not Hispanic or Latino.

8.11 Regulatory Flexibility Act and Regulatory Impact Review

[Revise once the Council completes selection of the preferred alternatives]

This section provides analysis to address the requirements of Executive Order 12866 (Regulatory Planning and Review) and the Regulatory Flexibility Act (RFA). These two mandates are addressed together as many of their requirements are duplicative. In addition, many of their requirements duplicate those of the MSA and/or NEPA; therefore, this section contains several references to previous sections of this document.

8.11.1 Basis and Purpose of the Rule and Summary of the Preferred Alternatives

This action is taken under the authority of the MSA and regulations at 50 CFR part 648. Section 4.0 includes the NEPA purpose and need for this action. As described in more detail in section 5.0, this action contains two preferred alternatives that will make minor process related changes to the management system. In addition, to these two process related issues, this framework will set annual specification measures for the 2022, 2023, and 2024 fishing seasons.

The first preferred process related alternative is the multi-year specifications alternative 2 (sections 5.1.1 and 7.1) which will allow for specifications to be set for the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule. The second preferred process related alternative is the timing of the fishing year alternative 2 (section 5.2.1 and 7.2) which will set the golden tilefish fishing year as the 12-month period beginning with January 1, annually (therefore, the fishing year will be from January 1 – December 31). The preferred catch and landings limits (commercial quotas) alternative 2 (sections 5.3.2 and 7.3.1.2) will result in a quota for the IFQ fishery of 1,866,103 pounds and a quota for the incidental category of 78,165 pounds for each 2022, 20223, and 2024 fishing years.

The two process related action in this framework document are expected to have no impact on the prosecution of the golden tilefish fishery, including landings levels, distribution of fishing effort, or fishing methods and practices, as they only address the process for the duration of setting multi-year management measures. The catch and landings limits (commercial quotas) implemented under this action could result in some changes in fishing effort; although they are not expected to notably change the manner in which the fishery operates.

Additional non-preferred alternatives were also considered. All alternatives are described in detail in section 5.0 and 7.0. For the purposes of the RFA, only the preferred alternatives and those non-preferred alternatives which would minimize negative impacts to small businesses are considered (section 8.11.4).

8.11.2 Regulatory Flexibility Act

The RFA, first enacted in 1980, and codified at 5 U.S.C. 600-611, was designed to place the burden on the government to review all regulations to ensure that, while accomplishing their intended purposes, they do not unduly inhibit the ability of small entities to compete. The RFA recognizes that the size of a business, unit of government, or nonprofit organization frequently has a bearing on its ability to comply with a Federal regulation. Major goals of the RFA are: 1) to increase agency awareness and understanding of the impact of their regulations on small business; 2) to require that agencies communicate and explain their findings to the public; and 3) to encourage agencies to use flexibility and to provide regulatory relief to small entities. The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities and on the

consideration of alternatives that may minimize the impacts, while still achieving the stated objective of the action.

The RFA emphasizes predicting significant adverse impacts on small entities as a group distinct from other entities, as well as consideration of alternatives that may minimize negative impacts to small entities, while still achieving the objective of the action (section 8.11.4). When an agency publishes a proposed rule, it must either, (1) certify that the action will not have a significant adverse impact on a substantial number of small entities, and support such a certification with a factual basis demonstrating this outcome, or (2) if such a certification cannot be supported by a factual basis, prepare and make available for public review an Initial Regulatory Flexibility Analysis (IRFA) that describes the impact of the proposed rule on small entities.

The sections below provide supporting analysis to assess whether the proposed regulations will have a "significant impact on a substantial number of small entities."

8.11.2.1 Description and Number of Entities to Which the Rule Applies

The small entities to which this action applies include all federally permitted fishing vessels for the golden tilefish fishery operating in the Northeast Region. These vessels include both small regulated entities engaged in either commercial harvesting or a party/charter business activity. Private recreational anglers are not considered "entities" under the RFA, thus economic impacts on private anglers are not considered here.

For RFA purposes only, NMFS established a small business size standard for businesses, including their affiliates, whose primary industry is commercial fishing (50 CFR §200.2). A business primarily engaged in commercial fishing is classified as a small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of $11 million, for all its affiliated operations worldwide. A business primarily engaged in for-hire fishing is classified as small business if it is independently owned and operated, is not dominant in its field of operation (including its affiliates), and has combined annual receipts not in excess of $8.0 million.

In order to identify firms, vessel ownership data,[27] which have been added to the permit database, was used to identify all the individuals who own fishing vessels. With this information, vessels were grouped together according to common owners. The resulting groupings were then treated as a fishing business, for purposes of identifying small and large firms.

The small entities that would be affected by this action include commercial fishing operations with federal tilefish permits. Recreational for-hire operations holding Federal tilefish party/charter permits are also considered regulated entities; however, as indicated in section 7.4, currently there are no catch and landings limits associated with the

[27] Affiliate database for 2018-2020 was provided by the NMFS NEFSC Social Science Branch. This is the latest affiliate data set available for analysis.

recreational fishery. Recreational catches appear to be a minor component of total removals and the only management measure for the recreational fishery in the FMP is a recreational bag-limit of 8-fish per angler per trip which is not being revised through this framework document. The proposed process related alternatives or catch and landing limits for the commercial fishery are not expected to affect recent trends in recreational catches or for-hire recreational trips for golden tilefish. As such, no economic changes to that small sector of the fishery are expected.

According to the ownership database, 143 affiliate firms landed golden tilefish during the 2018-2020 period, with 141 of those business affiliates categorized as small business and 2 categorized as large business (Table 24).[28] The three-year average (2018-2020) combined gross receipts (all species combined) for all small entities only was $132,194,765 and the average golden tilefish receipts was $4,973,718; this indicates that golden tilefish revenues contributed approximately 3.76% of the total gross receipts for these small entities. The 2 firms that were categorized as large entities had combined gross receipts of $53,450,954 and combined golden tilefish receipts of $417, as such, golden tilefish receipts as a proportion of gross receipts is <0.01% (Table 24).

In general terms, the active commercial golden tilefish fishery participants (i.e., small firms that catch golden tilefish in the directed and incidental fisheries) derive a small share of overall gross receipts from the golden tilefish fishery. However, for small firms generating on average $10,000 or more of their total revenues from golden tilefish revenues (e.g., more dependent of golden tilefish), a large number of the active participants generate a large share of gross receipts from the tilefish fishery (Table 25).

A business primarily engaged in for-hire fishing activity is classified as a small business if it has combined annual receipts not in excess of $7 million. According to the vessel ownership data (see description of data set above) 361 for-hire affiliate firms generated revenues from fishing recreationally for various species during the 2018-2020 period; all of those business affiliates are categorized as small business.[29] It is not possible to derive what proportion of the overall revenues for these for-hire firms came from specify fishing activities (e.g., summer flounder, scup, black sea bass, bluefish, groundfish, golden tilefish, weakfish, striped bass, tautog, pelagics). Nevertheless, given the popularity of golden tilefish as a recreational species in the Mid-Atlantic and New England regions, it is likely that revenues generated from golden tilefish is not significant for some if not all of these firms. The three-year average (2018-2020) combined gross receipts (all for-hire fishing activity combined) for the small entities was $49,916,903, ranging from less than $10,000 for 105 entities (lowest value $46) to over $1,000,000 for 8 entities (highest value $3,587,272).

[28] For the 2018-2020 period, 1,225 firms held Federal Open Access Commercial/Incidental Tilefish permits.
[29] For the 2018-2020 period, 521 firms held Federal Open Access Charter/Party permits.

Table 24. Small and large entities average revenues and tilefish revenues, 2018-2020.

Revenue (millions of dollars(M))	Count of Firms*	Average Gross Receipts 2018-2020 (all firms combined)	Average Tilefish Receipts 2018-2020 (all firms combined)	Tilefish Receipts as a Proportion of Gross Receipts
<0.5M	67	16,472,631	719,960	4.37%
0.5 – 1M	36	25,959,729	497,487	1.92%
1 – 2M	27	39,346,313	2,439,664	6.20%
2 – 5M	7	21,818,420	1,316,270	6.03%
5 – 11M	4	28,597,672	337	<0.01%
>11M	2	53,450,954	417	<0.01%
Total	143	185,645,718	4,974,135	2.68%

*At the ownership level as described above. Note: The businesses are grouped based on their average annual revenue from commercial fishing during 2016-2018. Businesses were classified as small or large based on their revenues in 2018 only. Only those businesses which reported commercial fishing revenue during 2018-2020 are shown.

Table 25. Small entities average revenues and golden tilefish revenues for entities generating on average $10,000 or more of their total revenues from golden tilefish revenues, 2018-2020.

Revenue (millions of dollars(M))	Count of Firms*	Average Gross Receipts 2018-2020 (all firms combined)	Average Tilefish Receipts 2018-2020 (all firms combined)	Tilefish Receipts as a Proportion of Gross Receipts
<1M	6	2,466,816	1,176,549	47.70%
1 – 4M	3	6,791,167	3,735,995	55.01%
Total	9	9,257,984	4,912,544	53.06%

*At the ownership level as described above. Note: The businesses are grouped based on their average annual revenue from commercial fishing during 2016-2018. Businesses were classified as small or large based on their revenues in 2018 only. Only those businesses which reported commercial fishing revenue during 2018-2020 are shown.

The expected effects of the proposed action were analyzed by employing quantitative approaches to the extent possible. In the current analysis, effects on profitability associated with the proposed management measures should be evaluated by looking at the impact of the proposed measures on individual business entities costs and revenues. Changes in gross revenues are used as a proxy for profitability. Where quantitative data were not available, qualitative analyses were conducted.

8.11.2.2 Economic Impacts on Regulated Communities

Multi-Year Specifications Alternative

The first action considered would change the process by altering the duration that multi-year management measures for golden tilefish can be set (currently 3 year maximum). This action would modify the annual specifications process, so that they could be set for the maximum number of years needed to be consistent with the NRCC-approved stock assessment schedule.

This process related action is expected to have no impact on the prosecution of the golden tilefish fishery, including fishing effort and landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which the golden tilefish commercial and recreational fisheries are prosecuted, or the commercial and for-hire industries operate. This alternative is fully described in detail in section 5.1.2. The economic impacts of this alternative are described in section 7.1.4.

While no immediate direct economic impacts are expected from these process related alternative, it is possible that it could provide for some administrative efficiencies by reducing the need to create and implement multiple specification documents to set management measures for the fishery between stock assessments; thus, improving the management process (i.e., efficient use of Council and NOAA staff time and reducing management costs). It is possible that this could in turn decrease the administrative burden and the IFQ cost recovery fee.

Fishing Year Timing Alternative

The second process related action would change the timing of the fishing year (currently November 1 – October 31) and set the golden tilefish fishing year as the 12-month period beginning with January 1, annually (therefore, the fishing year will be from January 1 – December 31). This alternative is fully described in detail in section 5.2.2. The economic impacts of this alternative are described in section 7.2.4.

This alternative would result in quota specifications for the January 1 – December 31, to be aligned with cost recovery calculations associated with managing the IFQ system. This could in turn decrease the administrative burden and the IFQ cost recovery fee. In addition, industry members have indicated that aligning the fishing year with the calendar year will create more stability in terms of harvesting their full allocation. While not quantifiable, this is expected to result in impacts that range from no impacts to slightly positive impacts compared to the current conditions.

2022-2024 Golden Tilefish Fishery Specifications (Catch and Landings Limits)

The overall commercial landings under the preferred alternative would be approximately 44,472 pounds higher in 2022 and 322,609 pounds higher in each 2023 and 2024 compared

to current conditions. This alternative is fully described in detail in section 5.3.2. The economic impacts of this alternative are described in section 7.3.4.2.

Assuming the 2020 ex-vessel price of $3.75 per pound (nominal price), the 2022 overall quotas under this alternative would result in an increase in ex-vessel gross revenues of $0.17 million compared to 2021. In addition, the 2023 and 2024 overall quotas would result in an in an increase in ex-vessel gross revenues of $1.21 million each, compared to 2021. The overall ex-vessel revenue increase over the 2022-2024 period is $2.59 million. However, it is possible that given the potential increase in landings for tilefish, the price for this species may decrease holding all other factors constant. If this occurs, a decrease in the price for tilefish may mitigate some of the revenue gains associated with higher quantity of tilefish quota availability.

Lastly, since the monthly average calculations in 2021 included 14 months, and 2022 included 12 months, which were averaged, it is also possible that vessels that fish for golden tilefish on a year-round basis will incur in a smaller proportional increase in ex-vessel gross revenues in 2022 (only) when compared to vessels that participate in the fishery to a lesser extend during the December – February winter months. This is due to the fact that when comparing changes in quota levels under an equally based common monthly denominator for fishing year 2022 only (compared to 2021), the quota for fishing year 2022 was based on a 14-month extended fishing year (November 1, 2021 – December 31, 2022) and for the 2021 fishing year quota, was based on a 12-month fishing year (November 1, 2020 – October 31, 2021). Since some golden tilefish fishing fleet vessels do not typically land significant quantities of tilefish in the winter months (Table 20), their proportional increase in revenues in 2022 compared to 2021 will likely be larger than that for components of the fleet that operate year-round.

8.11.3 Regulatory Impact Review

Executive Order 12866 requires a Regulatory Impact Review (RIR) in order to enhance planning and coordination with respect to new and existing regulations. This Executive Order requires the Office of Management and Budget to review regulatory programs that are considered to be "significant."

Executive Order 12866 requires a review of proposed regulations to determine whether or not the expected effects would be significant, where a significant regulatory action is one that may:

- Have an annual effect on the economy of $100 million or more,
- Adversely affect in a material way the economy, a sector of the economy, productivity, jobs, the environment, public health or safety, or State, local, or tribal governments or communities,
- Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency,
- Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof, or

- Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Most of the alternatives presented in this framework are process related. This action will make process related changes by altering the duration that multi-year management measures for golden tilefish can be set and setting the golden tilefish fishing year from January 1 – December 31). These process related alternatives are not expected to impact the prosecution of the golden tilefish fishery, including fishing effort and landings levels, fishery distribution, or fishing methods and practices. The proposed action is not expected to result in changes to the manner in which the golden tilefish commercial and recreational fisheries are prosecuted, or the commercial and for-hire industries operate.

In addition to the specification process related issues described above, this framework will set annual specification measures for the 2022, 2023, and 2024 fishing seasons. The preferred commercial quotas for 2022-2024 are expected to result in increased catch and greater economic welfare and result in positive socioeconomic impacts. However, they are not expected to result in notable changes in spatial and/or temporal distribution of fishing effort or the way the fishery operates.

As shown in section 6.4.1, the total ex-vessel value of the golden tilefish fishery was approximately $4.8 million in 2020. The preferred alternatives being considered by this action are necessary to improve the management of this fishery.

Executive Order 12866 mandates that proposed measures be analyzed below in terms of: (1) changes in net benefits and costs to stakeholders, (2) changes to the distribution of benefits and costs within the industry, (3) changes in income and employment, (4) cumulative impacts of the regulation, and (5) changes in other social concerns. As described in Section 7, none of the preferred measures will substantially limit the fisheries compared to recent performance. These findings support a determination that this action is not significant for purposes of Executive Order 12866.

There should not be substantial distributional issues (all permit holders are impacted similarly), and impacts on income and employment should mirror the impacts on fishing revenues described above (i.e., should be very minor). As described in section 7.0, the Council has concluded that no significant cumulative impacts will result from the proposed specifications. There are no other expected social concerns.

DETERMINATION OF EXECUTIVE ORDER 12866 SIGNIFICANCE

Given the analysis in section 7.0 and summary information above, the action overall should have neutral impacts on participants in the golden tilefish fisheries that are well below the $100 million threshold for a significance determination. In addition, there should be no interactions with activities of other agencies and no impacts on entitlements, grants, user fees, or loan programs. The proposed action is also similar to actions taken previously that set golden tilefish specifications or make minor improvements to the management system,

and as such does not raise novel legal or policy issues. As such, the Proposed Action is not considered significant as defined by Executive Order 12866.

8.11.4 Analysis of Non-Preferred Alternatives

When considering the economic impacts of the alternatives under the Regulatory Flexibility Act and Executive Order 12866, consideration should also be given to those non-preferred alternatives which would result in higher net benefits or lower costs to small entities while still achieving the stated objective of the action.

As described in section 5.3.3 and 7.3.4.3, the 2022-2024 Golden Tilefish Fishery Specifications (catch and landings limits) alternative 3 would result in a slightly higher overall commercial quota for the combined 2022-2024 period compared to preferred alternative 2. The overall ex-vessel revenue increase over the 2022-2024 period is $2.62 million under non-preferred alternative 3. This value is only slightly higher than under preferred alternative 2 ($2.59 million). The main difference between non-preferred alternative 3 and preferred alternative 2, is that under alternative 3, the ABC and other catch and landings limits change from year to year, while under alternative 2, those value are constant from year to year. The Council selected alternative 2 as the preferred alternative as it provides consistent quota levels from year to year versus varying year to year quota levels under alternative 3.

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10.0 LIST OF AGENCIES AND PERSONS CONSULTED

In preparing this framework document, the Council consulted with NMFS, The New England and South Atlantic Fishery Management Councils, Fish and Wildlife Service, and the states of Maine through North Carolina through their membership on the Council. To ensure compliance with NMFS formatting requirements, the advice of NMFS GARFO personnel was sought.

Copies of the framework document, including the Environmental Assessment and Regulatory Flexibility Analysis and other supporting documents for the framework are available from Dr. Christopher M. Moore, Executive Director, Mid-Atlantic Fishery Management Council, Suite 201, 800 North State Street, Dover, DE 19901