



Amendment 12 to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic

(Adding bullet mackerel and frigate mackerel as ecosystem component species)

Decision Document

March 2020

Background

Summary of the South Atlantic Fishery Management Council's previous discussions on bullet mackerel and frigate mackerel

In March 2018, the Mid-Atlantic Fishery Management Council (Mid-Atlantic Council; MAFMC) requested that the South Atlantic Fishery Management Council (South Atlantic Council; SAFMC) consider managing frigate mackerel (*Auxis thazard*) and bullet mackerel (*Auxis rochet*) as ecosystem component (EC) species in the Fishery Management Plan (FMP) for the Dolphin and Wahoo Fishery of the Atlantic (Dolphin Wahoo FMP). The National Marine Fisheries Service (NMFS) disapproved inclusion of these two species in the Mid-Atlantic Council's Unmanaged Forage Omnibus Amendment. NMFS stated that the reasons for disapproval included the following: 1) inconsistency with National Standard 2 and an insufficient

connection to that Council’s FMPs; 2) not meeting the Mid-Atlantic Council Scientific and Statistical Committee’s (SSC) criteria for forage species; and 3) inconsistency with criteria for EC species as outlined in the NS guidelines at 50 C.F.R. § 600.305 that explains EC species should not include target stocks that are caught for sale or personal use. NMFS goes on to state that the mackerel species “are caught and sold by commercial vessels and are retained for personal use as bait by recreational fisheries in Federal waters, creating competing interests and conflicts among user groups, both of which are criteria that could exclude consideration of bullet and frigate mackerel as EC species under the National Standard Guidelines.”¹

At the December 2018 meeting, the Dolphin Wahoo Committee of the South Atlantic Council (Committee) received a presentation on the presence of the two mackerel species in the diets of dolphin and wahoo and discussed the request from the Mid-Atlantic Council to manage bullet mackerel and frigate mackerel as EC species in the Dolphin Wahoo FMP. At the March 2019 meeting, the Committee discussed a white paper on mechanisms and regulatory parameters for adding EC species to a FMP, ways that other Councils have addressed EC species in their FMPs, as well as background information on fisheries for bullet mackerel and frigate mackerel. The Committee voted to send the topic of adding bullet mackerel and frigate mackerel to the Dolphin Wahoo FMP as EC species out for scoping in the spring of 2019.

At the June 2019 meeting, the Committee reviewed scoping comments and directed staff to start work on Amendment 12 to the Dolphin Wahoo FMP (Amendment 12) that would add bullet mackerel and frigate mackerel to the FMP as EC species and provide an options paper for the amendment at the September 2019 South Atlantic Council meeting. In developing the options paper, the Committee directed the amendment’s interdisciplinary plan team (IPT) to focus on the potential options that were taken out for scoping (**Table 1**). Additionally, the Committee discussed exploring a prohibition on sale of bullet mackerel and frigate mackerel as a potential measure.

Table 1. Potential options for developing measures to address bullet mackerel and frigate mackerel as EC species in the Dolphin Wahoo FMP that were taken out to scoping in the spring of 2019.

Options	Description
1) Request guidance from the SSC	Request guidance from the SSC on identifying prey species to be listed as ecosystem components.
2) Designate EC species with no management related items	Designate EC species with no management related items such as trip or possession limits. This is similar to actions taken to list some snapper grouper species as EC species in the Snapper Grouper FMP and may elevate the importance of the species for research and monitoring purposes.
3) Prohibit or limit a directed fishery (trip limit)	Prohibit directed fisheries for designated EC species by establishing a trip limit which can be based on a total amount or a percent of total trip landings. This trip limit can apply across all gears or can focus on specific gears.
4) Prohibit or limit a directed fishery (annual vessel limit)	Prohibit directed fisheries for designated EC species by establishing an annual vessel limit.

¹ The Federal Register Notice with NMFS approved and disapproved measures can be found at <https://thefederalregister.org/82-FR/40721>

5) Implement a reporting requirement	Establish or focus reporting requirements towards EC species such as through logbooks or dealer reports.
6) Implement a permit requirement	Establish permit requirements for EC species.
7) Implement a protocol for building directed fisheries for EC species	Establish a mechanism or protocol for allowing the development of a directed fishery for species listed as ecosystem components.
8) Other options???	Under National Standards General guidelines “ <i>management measures can be adopted in order to...address other ecosystem issues.</i> ” Are there “other ecosystem issues” not listed that need to be addressed in the Dolphin Wahoo FMP and what management measures could be created to do so?

At the September 2019 meeting, the Committee was presented several potential actions to include in Amendment 12. The Committee discussed the amendment and only approved **Action 1** for inclusion in the amendment, which would designate bullet mackerel and frigate mackerel as EC species in the Dolphin Wahoo FMP. Initially the Committee intended to explore other actions that would implement regulatory measures to compliment the EC listing but decided to delay further discussion until more information could be provided at a later date on the ability of the South Atlantic Council to implement such measures. At the September 2019 meeting, the South Atlantic Council also passed a motion (**Appendix 1**) requesting that NMFS provide guidance at the March 2020 meeting on parameters regarding the Council’s ability to add EC species to an FMP and implement relevant regulatory measures. The response from NMFS is included as **Attachment 2a** in the briefing book for the Dolphin Wahoo Committee’s March 2020 briefing book.

Actions in this amendment

Action 1. Designate bullet mackerel and frigate mackerel as ecosystem component species in the Dolphin Wahoo Fishery Management Plan.

Note: The South Atlantic Council only approved Action 1 for inclusion in Amendment 12 at their September 2019 meeting. The other draft actions in this amendment may or may not be further considered, depending upon the Committee’s preference and guidance received from NMFS on parameters regarding the South Atlantic Council’s ability to add EC species to an FMP and implement regulatory measures.

- DRAFT Action 2.** Establish a permit requirement for bullet mackerel and frigate mackerel.
DRAFT Action 3. Establish reporting requirements for bullet mackerel and frigate mackerel.
DRAFT Action 4. Establish a commercial trip limit for bullet mackerel and frigate mackerel.
DRAFT Action 5. Establish a commercial annual vessel limit for bullet mackerel and frigate mackerel.
DRAFT Action 6. Establish a recreational bag or vessel limit for bullet mackerel and frigate mackerel.
DRAFT Action 7. Establish a process for allowing the development of a directed fishery for bullet and frigate mackerel.

DRAFT Action 8. Establish a prohibition on sale of bullet mackerel and frigate mackerel.

DRAFT Action 9. Other actions that should be considered in Amendment 12?

Objectives for this meeting

- Review the purpose and need for the amendment and make modifications as appropriate.
- Review **Action 1** and provide guidance to staff if it is the intent for EC species designation to apply outside of the South Atlantic Region.
- Consider whether the additional draft actions should be included in the amendment.
- Consider timing of the amendment.

Potential amendment timing

March 2020	NMFS provides guidance on parameters of the South Atlantic Council's ability to add EC species to an FMP and implement regulatory measures. The Committee reviews the amendment, modify as appropriate, and consider approval for public hearings.
June 2020	Review public comment and modify amendment as appropriate.
September 2020	Review amendment, modify as appropriate, and consider approval for formal review.

Purpose and Need statement

The *purpose* is to add bullet mackerel and frigate mackerel to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic as ecosystem component (EC) species based on their ecological importance as forage fish for wahoo.

The *need* is to safeguard the ecological role of bullet mackerel and frigate mackerel as forage species for wahoo.

IPT's suggested version:

The *purpose* and *need* is to add bullet mackerel and frigate mackerel to the Fishery Management Plan for the Dolphin Wahoo Fishery of the Atlantic as ecosystem component (EC) species to safeguard their ecological role as forage fish for wahoo.

IPT Recommendation/Comments:

- The purpose and need statements can be combined in a single sentence when appropriate. Some IPT members felt that the suggested wording offered a more concise statement if that is the Committee's preference.

Committee Action:

- APPROVE THE IPT'S SUGGESTED PURPOSE AND NEED STATEMENT.
- DO NOT APPROVE THE IPT'S SUGGESTED PURPOSE AND NEED STATEMENT (COMMITTEE TO SUGGEST MODIFICATIONS).
- OTHER?

Action in the Amendment

Action 1. Designate bullet mackerel and frigate mackerel as ecosystem component species in the Dolphin Wahoo Fishery Management Plan

Alternative 1 (No Action). There are no ecosystem component species in the Dolphin Wahoo Fishery Management Plan.

Alternative 2. Add bullet mackerel and frigate mackerel to the Dolphin Wahoo Fishery Management Plan and designate the two mackerel species as ecosystem component species.

Discussion:

- This action is intended to address Option #2 from **Table 1**. “Designate EC species with no management related items such as trip or possession limits. This is similar to actions taken to list some snapper grouper species as EC species in the Snapper Grouper FMP and may elevate the importance of the species for research and monitoring purposes.”
- The action is necessary to add bullet and frigate mackerel to the Dolphin Wahoo FMP and serves as an initial step towards implementing any subsequent actions.
- Full consideration of the ten factors listed in the National Standard General Guidelines (50 C.F.R §600.305(c)(1)) for deciding whether a species is in need of “conservation and management” will evolve as the amendment develops (**Appendix 2**). The IPT discussed these ten factors and after initial analysis determined that bullet and frigate mackerel do not appear to be in need of “conservation and management” and thus have the potential to be designated as EC species.
- Based on the guidance that is provided by NMFS, if it is the intent of the Committee to pursue EC status for bullet and frigate mackerel outside of the South Atlantic Region, then the Committee may need to request Secretarial designation to do so.

Public Comments:

- Scoping was held in May 2019 to gather public comments on the concept of adding bullet and frigate mackerel to the Dolphin Wahoo FMP as EC species. The Council received 117 comments during scoping, with the vast majority of commenters expressing support for the Council adding the two species as ecosystem components. A summary of the comments can be found by clicking [HERE](#).

SSC/Advisory Panel Recommendations:

Habitat Protection and Ecosystem Based Management Advisory Panel Review

- At the November 2018 Meeting of the Habitat and Ecosystem Advisory Panel (AP) presentations were made outlining the scientific data identifying the importance of frigate mackerel and bullet mackerel as forage for wahoo and dolphin. In keeping with renewed efforts by fisheries management entities to proactively address potential threats to currently unmanaged species in addition to the growing emphasis on developing ecosystem management approaches the AP recommended that the Council begin monitoring the bullet and frigate mackerel species.
- This issue was revisited by the Habitat and Ecosystem AP at the May 2019 meeting. The AP recommended that the Council take proactive actions for bullet mackerel and frigate mackerel due to sound existing science regarding their importance as prey for wahoo and dolphin. Additionally, the AP felt that a dedicated scientific study should target bullet mackerel and frigate mackerel in conjunction with other identified forage prey to enable the future development of comprehensive fisheries management plans.

Dolphin Wahoo Advisory Panel Review

- The Dolphin Wahoo AP met via webinar of August 22, 2019 and was provided information on the South Atlantic Council's consideration of adding bullet mackerel and frigate mackerel as EC species in the Dolphin Wahoo FMP, including background information on the two mackerel species and options that the Council is initially considering in Amendment 12. The AP expressed general support for designating bullet mackerel and frigate mackerel as EC species, with some members noting that in their experience wahoo particularly target the *Auxis* species as forage and fishermen use them as effective live baits as well as troll around mackerel schools when targeting wahoo. The AP felt that the South Atlantic Council should consider a "conservative approach" that would help ensure there are not major increases in the harvest of bullet mackerel and frigate mackerel.

The AP made the following motions:

MOTION #1: RECOMMEND THAT THE SOUTH ATLANTIC COUNCIL DESIGNATE BULLET AND FRIGATE MACKEREL AS ECOSYSTEM COMPONENT SPECIES IN THE DOLPHIN WAHOO FMP. ALSO THE AP ENDORSES THAT THE SOUTH ATLANTIC COUNCIL PROACTIVELY PROTECTS THE SPECIES AS PREY.
APPROVED BY AP (6 IN FAVOR/0 OPPOSED/1 ABSTENTION)

MOTION #2: CONSIDER REGULATORY ACTIONS IN CONJUNCTION WITH ADDING BULLET AND FRIGATE MACKEREL AS ECOSYSTEM COMPONENT SPECIES.
APPROVED BY AP (6 IN FAVOR/0 OPPOSED/1 ABSTENTION)

Scientific and Statistical Committee Review

- The South Atlantic Council's SSC was presented background information on Amendment 12 during their October 2019 meeting. The SSC discussed the amendment and recommended adding bullet mackerel and frigate mackerel to the Dolphin Wahoo FMP as ecosystem component species. The SSC had no additional recommendations, noting that additional guidance from NMFS will be forthcoming that may affect any regulatory measures that the South Atlantic Council may consider.

Committee Action:

- WRITE A LETTER TO THE SECRETARY REQUESTING AUTHORITY TO DESIGNATE BULLET AND FRIGATE MACKEREL AS ECOSYSTEM COMPONENT SPECIES IN THE DOLPHIN WAHOO FISHERY MANAGEMENT PLAN THROUGH THE MID-ATLANTIC AND NEW ENGLAND REGIONS.
- DO NOT REQUEST AUTHORITY TO DESIGNATE BULLET AND FRIGATE MACKEREL AS ECOSYSTEM COMPONENT SPECIES IN THE DOLPHIN WAHOO FISHERY MANAGEMENT PLAN THROUGH THE MID-ATLANTIC AND NEW ENGLAND REGIONS.
- OTHER?

DRAFT Actions

Note: The South Atlantic Council only approved Action 1 for inclusion in Amendment 12 at their September 2019 meeting. The following draft actions may or may not be further considered, depending upon the Committee's preference and the guidance received from NMFS on parameters regarding the South Atlantic Council's ability to add EC species to an FMP and implement regulatory measures.

DRAFT Action 2. Establish a permit requirement for bullet mackerel and frigate mackerel

Alternative 1 (No Action). There is no permit requirement for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone.

Alternative 2. Require a permit for bullet mackerel and frigate mackerel commercially harvested in the Atlantic Exclusive Economic Zone.

Sub-alternative 2a. An Atlantic Dolphin/Wahoo Commercial Permit.

Sub-alternative 2c. Any federal commercial permit.

Sub-alternative 3c. Create a new bullet mackerel and frigate mackerel commercial permit.

Alternative 3. Require a permit for bullet mackerel and frigate mackerel recreationally harvested onboard for-hire vessels in the Atlantic Exclusive Economic Zone.

Sub-alternative 3a. An Atlantic Charter/Headboat for Dolphin/Wahoo Permit.

Sub-alternative 3b. Any federal for-hire permit.

Sub-alternative 3c. Create a new bullet mackerel and frigate mackerel for-hire permit.

DRAFT Action 3. Establish reporting requirements for bullet mackerel and frigate mackerel

Alternative 1 (No Action). There are no federal reporting requirements for bullet mackerel and frigate mackerel harvested or discarded in the Atlantic Exclusive Economic Zone.

Alternative 2. Require reporting of bullet mackerel and frigate mackerel harvested or discarded onboard commercial vessels in the Atlantic Exclusive Economic Zone onboard vessels.

DRAFT Action 4. Establish a commercial trip limit for bullet mackerel and frigate mackerel

Alternative 1 (No Action). There is no commercial trip limit for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone.

Alternative 2. Establish a commercial trip limit for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone:

Sub-alternative 2a. Not to exceed X pounds.

Sub-alternative 2b. Not to exceed X percent of the total harvested species on board by weight upon offloading of catch.

DRAFT Action 5. Establish an annual commercial vessel limit for bullet mackerel and frigate mackerel

Alternative 1 (No Action). There is no annual commercial limit per vessel for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone.

Alternative 2. Establish an annual commercial limit per vessel for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone:

Sub-alternative 2a. not to exceed X pounds.

DRAFT Action 6. Establish a recreational bag and vessel limit for bullet mackerel and frigate mackerel

Alternative 1 (No Action). There is no recreational bag or vessel limit for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone.

Alternative 2. Establish a recreational bag limit for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone:

Sub-alternative 2a. Not to exceed X number of bullet mackerel or frigate mackerel per person onboard.

Sub-alternative 2b. Not to exceed X pounds of bullet mackerel or frigate mackerel per person onboard.

Alternative 3. Establish a recreational vessel limit for bullet mackerel and frigate mackerel harvested in the Atlantic Exclusive Economic Zone:

Sub-alternative 3a. Not to exceed **X** number of bullet mackerel or frigate mackerel per vessel.

Sub-alternative 3b. Not to exceed **X** pounds of bullet mackerel or frigate mackerel per vessel.

DRAFT Action 7. Establish a process that allows new fisheries for bullet mackerel and frigate mackerel to develop or existing fisheries to expand

Alternative 1 (No Action). Bullet mackerel and frigate mackerel are currently unmanaged species in the Atlantic Exclusive Economic Zone.

Alternative 2. Establish a process that allows new fisheries for bullet mackerel and frigate mackerel to develop or existing fisheries to expand in the Atlantic Exclusive Economic Zone.

DRAFT Action 8. Prohibit the sale of bullet mackerel and frigate mackerel

Alternative 1 (No Action). Bullet mackerel and frigate mackerel caught from the Atlantic Exclusive Economic Zone may be sold.

Alternative 2. Prohibit the sale of bullet mackerel and frigate mackerel caught from the Atlantic Exclusive Economic Zone.

DRAFT Action 9. Other actions that should be considered in Amendment 12?

Committee Action:

- APPROVE FURTHER DEVELOPMENT OF DOLPHIN WAHOO AMENDMENT 12 TO BE REVIEWED IN JUNE 2020.
- APPROVE FURTHER DEVELOPMENT OF DOLPHIN WAHOO AMENDMENT 12 TO BE REVIEWED AT A LATER DATE (COMMITTEE TO SUGGEST OTHER DATE).
- OTHER?

Appendix 1. South Atlantic Council motion requesting further guidance on parameters of EC species designation.

MOTION: REQUEST THAT NMFS PROVIDE INFORMATION ON FEASIBILITY OF THE ADDITIONAL BULLET AND FRIGATE ACTIONS IN AMENDMENT 12 (BEYOND DESIGNATION AS ECOSYSTEM COMPONENT SPECIES) AND PRESENT THIS TO THE COUNCIL AT THE MARCH 2020 COUNCIL MEETING. ALSO PROVIDE INFORMATION ON:

1. THE JURISDICTIONAL ISSUE – EXAMINE THE PRECEDENT OF EXTENDING CMP MANAGEMENT THROUGH THE MAFMC; IF INCLUDING AS AN ACTION IN AN AMENDMENT WILL NOT WORK, THEN HOW DOES THE SAFMC GAIN AUTHORITY FOR A SPECIES ALONG THE ENTIRE EAST COAST?
2. FROM AN ECOSYSTEM COMPONENT SPECIES PERSPECTIVE, WHAT ARE APPROPRIATE REGULATORY ACTIONS THAT COULD PREVENT DEVELOPMENT OF AN UNREGULATED FISHERY BEFORE THE COUNCIL CAN DEVELOP AN AMENDMENT TO DETERMINE WHETHER MANAGEMENT IS NEEDED? FOR EXAMPLE, COMMERCIAL TRIP LIMITS AND A TOTAL QUOTA.
3. ALLOWABLE GEARS FOR DOLPHIN INCLUDES AUTOMATIC REEL, BANDIT GEAR, HANDLINE, PELAGIC LONGLINE, ROD AND REEL, AND SPEAR (INCLUDING POWERHEADS). IF BULLET AND FRIGATE ARE ADDED TO THE DOLPHIN WAHOO FMP AS ECOSYSTEM COMPONENT SPECIES, WOULD THIS LIST OF ALLOWABLE GEARS APPLY? (NOTE: CURRENT COMMERCIAL FISHERY (NON-FMP) ALLOWABLE GEAR INCLUDES TRAWL, GILLNET, HOOK AND LINE, LONGLINE, HANDLINE, ROD AND REEL, BANDIT GEAR, CAST NET, LAMPARA NET, AND SPEAR.)

APPROVED BY COUNCIL

Appendix 2. Draft Consideration of Factors Related to the Need for Conservation and Management of Bullet Mackerel and Frigate Mackerel.

Ecosystem component species are defined as “stocks that a Council or the Secretary has determined do not require conservation and management, but desire to list in an FMP in order to achieve ecosystem management objectives” (50 C.F.R §600.305(d)(13)). According to National Standards General guidelines as found in 50 C.F.R §600.305(c)(1) “...a Council should consider the following non-exhaustive list of factors when deciding whether additional stocks require conservation and management:

- (i) *The stock is an important component of the marine environment.*
- (ii) *The stock is caught by the fishery.*
- (iii) *Whether an FMP can improve or maintain the condition of the stock.*
- (iv) *The stock is a target of a fishery.*
- (v) *The stock is important to commercial, recreational, or subsistence users.*
- (vi) *The fishery is important to the Nation or to the regional economy.*
- (vii) *The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.*
- (viii) *The economic condition of a fishery and whether an FMP can produce more efficient utilization.*
- (ix) *The needs of a developing fishery, and whether an FMP can foster orderly growth.*
- (x) *The extent to which the fishery is already adequately managed by states, by state/Federal programs, or by Federal regulations pursuant to other FMPs or international commissions, or by industry self-regulation, consistent with the requirements of the Magnuson-Stevens Act and other applicable law.”*

If it is determined that a stock requires conservation and management, then “such stocks must have ACLs, other reference points, and accountability measures. Other stocks that are identified in an FMP (i.e., EC species or stocks that the fishery interacts with but are managed primarily under another FMP)...do not require ACLs, other reference points, or accountability measures” (50 C.F.R §600.310(d)(1)). The following section provides an initial analysis of the aforementioned factors:

i. *The stock is an important component of the marine environment.*

Stocks of bullet mackerel and frigate mackerel are an important component of the marine environment in some contexts. While the species may play a minor role in the context of all species in the North Atlantic, both species are an important component in the diet of wahoo. Bullet mackerel can reach about 20 inches in length and resemble frigate mackerel. They feed on a variety of prey, especially clupeoids (i.e. herrings and sardines), crustaceans, and squids. Bullet mackerel are found nearly worldwide in warm waters. In the western Atlantic, they are found from Cape Cod to the Gulf of Mexico and often form schools (Collette and Klein-MacPhee 2002; Froese and Pauly 2016). Frigate mackerel can reach two feet in length and exhibit schooling behavior as well. Frigate mackerel feed on a variety of fish, squids, and small crustaceans. In the western North Atlantic frigate mackerel are mostly found from North Carolina to Florida (Kells and Carpenter 2011, Froese and Pauly 2016).

Both bullet mackerel and frigate mackerel (*Auxis* spp.) have been identified in the diets of dolphin and wahoo in the North Atlantic (Rudershausen et al. 2010; Poland 2014). Wahoo particularly have shown a strong reliance on bullet mackerel and frigate mackerel, with studies indicating that the *Auxis* species are the most dominant forage species observed in the diets of wahoo (Rudershausen et al. 2010; Poland 2014). While dolphin tend to have more diverse diets and a lower reliance on the *Auxis* species, bullet mackerel and frigate mackerel have been identified as important prey for dolphin at times (Rudershausen et al. 2010; Poland 2014). Additionally, bullet mackerel and frigate mackerel have been identified as important forage for other offshore pelagic predatory species such as blue marlin and yellowfin tuna (Rudershausen et al. 2010; Poland 2014).

ii. *The stock is caught by the fishery.*

Compared to many managed species, annual landings of Atlantic bullet mackerel and frigate mackerel are low along the entire Atlantic coastline. Over the past ten years of available data (2008 to 2017), average annual commercial landings of frigate mackerel were 1,677 pounds whole weight (lbs ww) and there were no recorded commercial landings of bullet mackerel. Over this same time period, there were 2,296 lbs ww of bullet mackerel and 7,142 lbs ww of frigate mackerel landed on average recreationally each year. The extent to which these landings occurred in the dolphin wahoo fishery is unknown; however, it is unlikely that these species were often harvested in conjunction with efforts to harvest dolphin and wahoo, especially in the commercial sector. Bullet mackerel and frigate mackerel have largely been landed commercially using gill net, pound net, float trap, and otter trawl gears, none of which are allowable gears in the dolphin wahoo fishery.

iii. *Whether an FMP can improve or maintain the condition of the stock.*

Neither stock has been assessed to date; thus, the stock condition is not well understood for either species. There are low reported landings of either species in the U.S. Atlantic Exclusive Economic Zone. However, there is no other available information suggesting that the stocks may be in a depleted or otherwise diminished condition, or that management is necessary to address such conditions. While the condition of the stocks is not well understood, conservation and management under a fishery management plan (FMP) usually presents some potential to improve or maintain the condition of the stock. Unless harvest is occurring in state waters, management under a FMP would allow management measures to be adopted that would at least be able to maintain the current condition of the stocks.

iv. *The stock is a target of a fishery.*

Given the relatively low landings of either bullet mackerel or frigate mackerel, the stocks of these species do not seem to be the target of any fishery. The species appear to be incidentally caught when fishing for other species commercially. Recreationally, there have been very few trips intercepted that indicated targeting bullet mackerel or frigate mackerel.

v. *The stock is important to commercial, recreational, or subsistence users.*

The stocks of bullet mackerel and frigate mackerel do not appear to be directly important to commercial, recreational, or subsistence users given the relatively low landings of the two species. Such stocks may be indirectly important in supporting wahoo populations that are important to and harvested by some commercial, recreational, or subsistence users given the strong reliance of wahoo on bullet mackerel and frigate mackerel as forage species.

vi. *The fishery is important to the Nation or to the regional economy.*

Given the low landings of either bullet mackerel or frigate mackerel, the fisheries for these species do not appear to be of notable importance to the Nation or the regional economy. However, in light of the strong reliance of wahoo on bullet mackerel and frigate mackerel as forage species, these species appear to be important prey items for wahoo, which is subject to a fishery with much greater importance to the national and regional economy.

vii. *The need to resolve competing interests and conflicts among user groups and whether an FMP can further that resolution.*

There are no known competing interests or conflicts among user groups within the current fisheries harvesting bullet mackerel or frigate mackerel; therefore, conservation and management under an FMP would not have any competing interests to resolve.

viii. *The economic condition of a fishery and whether an FMP can produce more efficient utilization.*

Given the low landings for the species, it appears that the bullet mackerel and frigate mackerel stocks are not being directly utilized to a significant extent. Therefore, efficient utilization of these stocks is not likely to be improved by conservation and management under an FMP.

ix. *The needs of a developing fishery, and whether an FMP can foster orderly growth.*

There is currently no known developing fishery for Atlantic bullet mackerel or frigate mackerel. Therefore, there are no needs of a developing fishery to consider and there appears to be no growth in which to promote order.

x. *The extent to which the fishery is already adequately managed by states, by state/Federal programs, or by Federal regulations pursuant to other FMPs or international commissions, or by industry self-regulation, consistent with the requirements of the Magnuson-Stevens Act and other applicable law.*

There are no known regulations in place to directly manage Atlantic bullet mackerel or frigate mackerel on the state, federal, or international levels. These species may be indirectly managed through existing state or federal fisheries regulations such as gear restrictions or generic bag limits and size limits.

Appendix 3. Information on fisheries landing bullet mackerel and frigate mackerel.

According to data provided by a query of the landings database for the Atlantic Coast Cooperative Statistics Program (ACCSP), commercial landings of frigate mackerel over the past 20 years were only reported by dealers in the Mid-Atlantic and New England regions. There were no reported commercial landings of bullet mackerel. Bullet mackerel and frigate mackerel are similar in appearance and it is possible that some landings of bullet mackerel may have been misidentified as frigate mackerel. Additionally, federal observer data has included records of small amounts of bullet mackerel caught in bottom trawl tows which resulted in landings of longfin squid, black sea bass, and summer flounder, indicating that the species are caught in some commercial fishing operations as bycatch.

Commercial landings of frigate mackerel have been variable but typically are relatively low, averaging 4,508 pounds whole weight (lbs ww) annually over the past twenty years of available data (1998 through 2017) and 1,677 lbs ww annually over the past ten years (2008 through 2017) (**Table 2**). Based on the relatively low annual landings in most years, it appears that frigate mackerel are typically caught incidentally to other species. The average ex-vessel price and value have been highly variable as well, with ex-vessel prices as low as \$0.16/lb ww to upwards of \$1.50/lb ww and annual ex-vessel values of less than \$538 to upwards of \$9,792 (2017 dollars). The species have largely been landed commercially using gill net, pound net, float trap, and otter trawl gears. None of these gears are allowed for use in the dolphin wahoo fishery, therefore presumably these landings were not made on commercial trips landing dolphin or wahoo.

Table 2. Commercial landings, ex-vessel value, and ex-vessel price for frigate mackerel landed from the U.S. Atlantic Ocean, 1998-2017 (2017 dollars). * denotes confidential data.

Year	Landings (lbs ww)	Ex-Vessel Value	Average Ex-Vessel Price
1998	2,989	\$664	\$0.22
1999	36,472	\$5,875	\$0.16
2000	19,682	\$9,792	\$0.50
2001	6,343	\$6,705	\$1.06
2002	1,714	\$1,763	\$1.03
2003	4,013	\$2,430	\$0.61
2004	*	*	*
2005	*	*	*
2006	*	*	*
2007	*	*	*
2008	*	*	*
2009	*	*	*
2010	*	*	*
2011	3,467	\$3,052	\$0.88
2012	457	\$538	\$1.18
2013	*	*	*
2014	5,674	\$6,215	\$1.10

2015	*	*	*
2016	894	\$1,342	\$1.50
2017	*	*	*
20-year average	4,508	\$2,391	\$0.93
10-year average	1,677	\$1,654	\$1.14

Source: ACCSP Commercial Landings Query.

Recreational landings have been variable and sporadic, averaging 1,159 lbs ww for bullet mackerel, 3,571 lbs ww for frigate mackerel, and 4,730 lbs ww for both species combined annually over the past twenty years of available data (1998 through 2017) (**Table 3**). Recreational catches of bullet mackerel and frigate mackerel have largely occurred in the South Atlantic Region, with some limited catches reported from the Mid-Atlantic Region. Based on the relatively low annual landings, it appears that bullet mackerel and frigate mackerel are typically caught incidentally to other species. Fishermen have also noted that these species are used as bait. In most circumstances, the catch estimates are accompanied by a relatively high percent standard error (PSE), which is likely reflective of relatively few intercepts.

Table 3. Recreational landings of bullet mackerel and frigate mackerel from the U.S. Atlantic Ocean, 1998-2017.

Year	Bullet Mackerel Landings (lbs ww)	PSE	Frigate Mackerel Landings (lbs ww)	PSE	Combined Landings (lbs ww)
1998	211	113.9	0	-	211
1999	0	-	0	-	0
2000	0	-	0	-	0
2001	0	-	0	-	0
2002	0	-	0	-	0
2003	0	-	0	-	0
2004	0	-	0	-	0
2005	0	-	0	-	0
2006	0	-	0	-	0
2007	0	-	0	-	0
2008	0	-	0	-	0
2009	0	-	0	-	0
2010	0	-	322	86	322
2011	166	74.6	0	-	166
2012	296	99.5	51,856	101.3	52,152
2013	0	-	17,592	66.3	17,592
2014	786	50.5	0	-	786
2015	0	-	1,618	95.3	1,618
2016	11,467	31.5	0	-	11,467
2017	10,247	30.9	34	101	10,281
20-year average	1,159	-	3,571	-	4,730
10-year average	2,296	-	7,142	-	9,438

Source: ACCSP Recreational Landings Query based on MRIP data.

Note: Headboat landings from the South Atlantic Region, while minimal, are not included. Over the time series examined, there were no reported headboat landings of bullet mackerel. There were no headboat landings of frigate mackerel reported until 2011. From 2011 to 2017 headboat landings were relatively low and averaged 117 lbs ww annually.