

# **Governance Case Studies on Marine Fisheries that Cross Jurisdictional Boundaries in the United States**

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U.S. Department of Commerce  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service

NOAA Technical Memorandum NMFS-OSF-10  
September 2021



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## 1.0 INTRODUCTION

Governance of marine fisheries in the United States is highly jurisdictional. States manage fisheries from the mean low water line out to 3 nautical miles<sup>1</sup>, and NOAA's National Marine Fisheries Service (NMFS) and eight Regional Fishery Management Councils (Councils) manage fisheries in the exclusive economic zone (EEZ; from state waters to 200 nm from shore). NMFS and Councils have a strong track record of managing fisheries and stocks across jurisdictions. Scientific studies and stock assessments are showing that species distributions are shifting within and across Council jurisdictions, driven by climate change and other causes. Further, there is continued interest in ecosystem-based fisheries management (EBFM) and accounting for the interactions between species, such as predators and prey, which could be managed by separate jurisdictions. NMFS has developed an EBFM Policy and Roadmap and a Climate Science Strategy to help guide fisheries managers as they adapt to these new conditions. However, neither of those documents specifically addresses how NMFS or the Councils should determine or adjust governance to account for shifting species distributions. Therefore, this document: a) describes existing governance structures for federal fisheries distributed across more than one jurisdiction (e.g., across multiple Council areas) within the United States, b) briefly discusses management of species between a Council and the states<sup>2</sup> or interstate commissions, c) provides a current example where shifting distributions led to an updated governance structure, and d) turns to the peer-reviewed literature to identify and summarize ideas fisheries managers can consider when preparing for these shifts.

To date, there are three existing governance approaches being used for fisheries that span multiple U.S. Council jurisdictions: 1) an individual Council or the Secretary of Commerce<sup>3</sup> manages the fishery as a single management unit across multiple jurisdictions, 2) more than one Council jointly manages the fishery as a single management unit, and 3) more than one Council manages the fishery, but the fishery has been split into different management units based on identified boundaries between jurisdictions. There is no current guidance on how NMFS or the Councils should determine or adjust governance to account for shifting species distributions. There are a variety of ways to answer these governance questions, and this paper explores the pros and cons to the various approaches. Factors to consider include: the necessary time and resources, stakeholder interest (e.g., high interest stocks may benefit from

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<sup>1</sup> State jurisdiction is 9 nautical miles for Texas, Puerto Rico, and the Gulf coast of Florida. In the Gulf of Mexico, the state boundary has been extended to 9 nautical miles for all stocks in the reef fish Fishery Management Plan (FMP).

<sup>2</sup> Discussions of shared management between two or more states is not covered within this document given the variety of arrangements that can exist between states in their management.

<sup>3</sup> The Secretary of Commerce has management authority of Atlantic Highly Migratory Species (HMS) under Magnuson-Stevens Act sections 302(a)(3) and 304(g). 16 U.S.C. §§ 1852(a)(3) and 1854(g).



joint management where stakeholders in both Councils have direct influence on management), biological factors (e.g., when the biological stock boundary aligns with jurisdictional boundaries, separate management might be appropriate), and the need for coordination (e.g., how much would varying regulations across jurisdictions complicate compliance and enforcement). In addition, an examination of the peer-reviewed literature reveals how others have addressed this issue and suggest new ideas for fishery managers moving forward. Please note that shifting distributions may also create new problems related to allocation and access to fishing resources. While fishing allocations are outside the scope of this document, much of the discussion within this paper could also be relevant to fisheries allocation issues.

## **2.0 HISTORY OF GOVERNANCE AND MANDATES**

In 1976, the U.S. Congress passed the Fishery Conservation and Management Act (FCMA), which created eight Regional Fishery Management Councils (Councils) tasked with developing fishery management plans (and their amendments, collectively referred to as FMPs) for managing fisheries within specified geographical areas.<sup>4</sup> The law specified for fisheries that extend beyond the geographical authority of any one Council, the Secretary has the option of designating one Council to prepare an FMP or requiring that an FMP be prepared jointly by the Councils concerned.<sup>5</sup> Original designation of which Council will manage which fisheries was completed via discussions and agreements between Councils and NMFS (see below). The original FCMA did not clarify how highly migratory species (HMS) such as billfish and sharks should be managed. In the early 1980's, all five Atlantic Councils discussed a joint management plan for these species that was never completed due to the difficulty of coordinating across Councils and a 1990 amendment to FCMA. The FCMA has been amended multiple times, with a 1990 update authorizing the Secretary of Commerce, through NMFS, to directly manage and develop FMPs for highly migratory species in the Atlantic Ocean, Gulf of Mexico and Caribbean Sea (referred to as Atlantic HMS).<sup>6</sup>

The current version of the FCMA, now called the Magnuson-Stevens Fishery Conservation and Management Act (MSA) contains multiple mandates relevant for managing fisheries found in more than one jurisdiction. Excerpts from the relevant mandates and NMFS guidance are provided in Appendix A. In summary, the most relevant MSA mandates are sections 301(a)(3) [National Standard 3] and 304(f)(1). National Standard 3 states that, to the extent practicable, an individual stock of fish should be managed as a unit

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<sup>4</sup> 16 U.S.C. § 1852(a)(1)

<sup>5</sup> *Id.* § 1854(f)(1)

<sup>6</sup> *Id.* § 1852(a)(3)

throughout its range. NMFS guidance on National Standard 3<sup>7</sup> and regulations on inter-council fisheries<sup>8</sup> clarify that the FMP should include the entire range of a stock, but different management measures can be developed for specific geographic areas, if necessary. For fisheries that extend beyond the geographical authority of any one Council, Section 304(f)(1) provides NMFS (via the Secretary) the option of designating which Council(s) shall prepare an FMP or requiring that an FMP be prepared jointly by the Councils concerned.<sup>9</sup> Other MSA sections address situations where state management can extend into Federal waters and vice-versa (see Appendix A).

## **2.1 Determining Governance for First FMPs under FCMA**

The Councils and NMFS negotiated many of the current governance constructs for fishery management plans soon after the passage of the FCMA in 1976. The geographical jurisdictions of each Council were mandated (see MSA 302(a)(1)), but NMFS and the Councils had to clarify the governance structure for fisheries that are found in more than one jurisdiction. For example, the Mid-Atlantic Fishery Management Council (MAFMC) and New England Fishery Management Council (NEFMC) met for two days in December 1976 and sent a co-signed letter to NMFS outlining which fisheries (including some that spanned multiple Council jurisdictions) would be managed by MAFMC and NEFMC. Other governance decisions were more controversial. For example, a 1978 memorandum outlines disagreements between the South Atlantic Fishery Management Council (SAFMC) and Gulf of Mexico Fishery Management Council (GMFMC) on the Council boundary for migratory sharks. The memorandum goes so far as to outline the formation of an arbitration board that would be used to solve the dispute (see Appendix B).

An exchange in 1980 between the NMFS Assistant Administrator and the Chair of the Caribbean Fishery Management Council (CFMC) clarifies NMFS's position on its authority to make the final decisions on governance:

“To facilitate management of a broad-range fishery, congress gave the Secretary authority, in section 304(f)(1)(B)[of the MSA], to designate which Councils should prepare the joint plan. The Secretary's authority is discretionary in the sense that he has leeway to decide which fisheries need joint plans and which Councils have sufficient interest in a fishery to be designated as plan preparers. Of course, the Secretary would consult with the Councils and take their wishes into account in making 304(f)(1)(B) designations. But once a designation is made, the Councils must proceed according to its terms, whether an individual Council originally or subsequently found it convenient.”

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<sup>7</sup> 50 C.F.R. § 600.320

<sup>8</sup> 50 C.F.R. § 600.110

<sup>9</sup> 16 U.S.C. § 1854(f)(1)

Early in the process, there were calls for NMFS to create formal guidelines on lead Council designations that would include criteria for determining the lead Council and a procedure for resolving disputes. However, such guidelines were never developed. Instead, in a letter from NMFS to the Councils, NMFS noted that the general criteria laid out in a 1986-letter from MAFMC to NMFS regarding the lead Council for oceanic pelagic fisheries could be used as the criteria for determining which Council(s) should have governance over any fishery: 1) magnitude of the fishery, catch, and economic impact of the fishery in the area of the Council, 2) staff expertise on the fish stocks, and 3) availability of staff to devote time to creating and managing the FMP. In general, these are the criteria that are still informally considered today.

### **3.0 EXISTING GOVERNANCE APPROACHES**

There are currently three existing governance approaches being used for fisheries that span multiple Council jurisdictions: 1) an individual Council or the Secretary of Commerce<sup>10</sup> manages the fishery as a single management unit across multiple jurisdictions, 2) more than one Council jointly manages the fishery as a single management unit, 3) more than one Council manages the fishery, but the fishery has been split into different management units based on identified boundaries between jurisdictions. The following sections include examples that illustrate the range of fishery management governance approaches for fisheries that span multiple Council jurisdictions. The examples are not intended to be a comprehensive accounting of every cross-jurisdictional stock or species.

In addition to these broad approaches, Councils have adopted processes at the committee or Council level to help address cross-jurisdictional issues. To facilitate sharing of information and receiving input from fishermen outside a Council's jurisdiction, some Councils and/or their committees include members from other Councils as liaisons. These committee level liaisons provide cross-Council communication, technical expertise, and input at the committee level as they often have voting rights within committees but not at the Council level. For example, SAFMC has included members of the MAFMC and NEFMC as liaisons on its Dolphin (*Coryphaena hippurus*) and Wahoo (*Acanthocybium solandri*) Committee. Similarly, MAFMC has added two liaisons from NEFMC on its Atlantic Mackerel (*Scomber scombrus*), Squid (*Doryteuthis pealeii* and *Illex illecebrosus*) and Butterfish (*Peprilus triacanthus*) Committee. Some Councils also have liaisons at the full Council level to increase cross-Council communication about management activities. Council level liaisons regularly provide a report about their 'home' Council activities while also providing information on the activities of the 'away' Council to their 'home' Council.

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<sup>10</sup> For the majority of this paper, references to management by a Council also includes Secretarial management of Atlantic HMS under MSA sections 302(a)(3) and 304(g).

The importance of these liaisons will increase as stock distributions continue to expand and cross-Council communication becomes even more vital.

For cross-jurisdictional species, there is also the need to determine who is responsible for the relevant scientific advice. The MSA requires a scientific and statistical committee (SSC) to provide its Council with scientific advice for fishery management decisions, including, for example, recommendations for acceptable biological catch and maximum sustainable yield.<sup>11</sup> The National Standard 2 Guidelines provide guidance on SSC scientific evaluation and advice to its Council,<sup>12</sup> but there is no specific guidance on coordination between Councils' SSCs when stocks or species are managed by more than one Council, and coordination can vary. For example, scientific advice for monkfish (*Lophius americanus*), which is jointly managed between NEFMC and MAFMC, is provided by the SSC associated with the lead Council (NEFMC). In contrast, scientific advice for yellowtail snapper (*Ocyurus chrysurus*) requires agreement from both the SAFMC's and GMFMC's SSCs.

### **3.1 Individual Council or Secretary Manages a Stock that Occurs in Multiple Council Jurisdictions**

One approach to manage cross jurisdictional stocks is for one Council to manage a stock as a single management unit across its entire range. This approach reduces the need to coordinate between Councils, which can be time consuming given different meeting schedules and other factors. A key tenet in the Council process is stakeholder input, and one challenge with this approach is gaining stakeholder input throughout the range of the stock. To address this challenge, some Councils include members from other Councils as liaisons on the Council or on fishery committees (see above). In addition, Councils often attempt to gather stakeholder input from across the range of the management plan by either offering virtual meetings or in-person meetings within the adjacent jurisdiction.

#### **3.1.1 Examples**

- **Atlantic Highly Migratory Species (tunas, sharks, swordfish, and billfish)** range across multiple Council jurisdictions and, as required under MSA sections 302(a)(3) and 304(g), are managed directly by the Secretary of Commerce (through NMFS Highly Migratory Species Division).
- **Dolphin (mahi mahi) and wahoo** are distributed in tropical and subtropical waters throughout the Atlantic, Indian, and Pacific Oceans.<sup>13</sup> U.S. landings in the Atlantic

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<sup>11</sup> 16 U.S.C. § 1852(g)(1)(B)

<sup>12</sup> see 50 C.F.R. § 600.315(c)

<sup>13</sup> <http://www.fishbase.org/>

Ocean range from the Caribbean, north to New England and west to Texas.<sup>14</sup> Currently, the SAFMC manages the fishery off the Atlantic Coast, which occurs within the jurisdictions of NEFMC, MAFMC, and SAFMC.

- In 1997, SAFMC requested authorization from NMFS to develop an FMP that would provide management of the stocks in the EEZ in the Atlantic, Gulf of Mexico, and Caribbean.
  - In 1998, NMFS designated SAFMC, GMFMC, and CFMC to prepare a joint FMP (with MAFMC and NEFMC serving in an advisory capacity).
  - After delays in implementing the joint FMP, NMFS agreed to a 2002 SAFMC request that it be allowed to withdraw from preparing the joint FMP, and be given authority to create an FMP to manage dolphin and wahoo only along the U.S. Atlantic Coast (MAFMC and NEFMC would remain in their advisory roles).<sup>15</sup> NMFS asked four Councils (CFMC, GMFMC, MAFMC, and NEFMC) to comment on the proposal and three of the four impacted Councils supported the proposal (the fourth did not respond). Although NMFS noted that a joint FMP would better meet MSA requirements to manage stocks throughout their ranges, NMFS ultimately approved the change based on the following two reasons. First, the SAFMC's primary objectives for implementing regulations were to address social and economic issues that were not present in the Gulf and Caribbean (e.g., concerns about localized depletion, conflicts between sectors, and maintaining stability in the fishery). Second, the Gulf and Caribbean Councils identified no need for management in their respective areas of jurisdiction. Ninety percent of Gulf landings were from the west coast of Florida, and the State of Florida's regulations limited the potential for user group conflicts. Catches and landings in the Caribbean were minimal.
- **Atlantic mackerel, squid, and butterfish** are managed by the MAFMC in all U.S. federal waters off the East Coast. The stocks were originally managed via separate FMPs created in 1978 by the MAFMC in consultation with NEFMC and SAFMC, before being combined into one FMP in 1983. The stocks are managed in state waters in parallel via the Atlantic States Marine Fisheries Commission (ASMFC; see below). **Chub mackerel** (*Scomber colias*) was added to the FMP in August 2020, but management for this stock only covers the NEFMC and MAFMC jurisdictions.

### 3.2 More than One Council Jointly Manages a Fishery

Another approach is to manage a fishery as a single management unit through one FMP jointly developed and adopted by two or more Councils. In most situations, the Councils

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<sup>14</sup> <https://www.fisheries.noaa.gov/foss>, and <https://www.fisheries.noaa.gov/national/sustainable-fisheries/fisheries-united-states>

<sup>15</sup> See 68 FR 4447, January 29, 2003

concerned are required to agree on management measures before they can be implemented. Given that decision making is still usually done at separate Council meetings, through separate Council processes, this approach often requires increased time and resources. In an extreme example, the SAFMC and GMFMC each had to vote separately seven times on submission of Amendment 20B of the Coastal Migratory Pelagics FMP to NMFS before the same actions and alternatives were approved by both Councils.<sup>16</sup> In order to avoid this challenge in the future, the FMP now allows framework adjustments<sup>17</sup> to be developed and approved for fisheries within one Council's jurisdiction without needing approval from the other Council (see below).

### 3.2.1 Examples

- **Atlantic Monkfish** are found from North Florida to Canada<sup>18</sup>, and are managed jointly by MAFMC and NEFMC<sup>19</sup> under the Atlantic Monkfish FMP.
  - During 1991, both the MAFMC and NEFMC requested approval from NMFS to develop an FMP for monkfish.
  - At the suggestion of NMFS, the Councils convened a joint committee, which recommended a joint management plan for monkfish. The Councils worked together to create the management measures and were formally notified by NMFS of their joint management responsibility in February of 1998.
  - NEFMC took the lead because of a connection between the monkfish and groundfish fisheries (i.e., monkfish is primarily caught as bycatch in groundfish, scallop, and northeast skate fisheries, all managed by the NEFMC).
  - Reasons for needing a monkfish FMP included recent declines in survey indices, declining size of tails being landed, potential for shifts in effort due to management restrictions on other species, evidence of an expanding directed fishery, and a rapidly growing market for monkfish tails and livers.
- The **Coastal Migratory Pelagic** species Spanish mackerel (*Scomberomorus maculatus*) and king mackerel (*S. cavalla*) are found in the Western Atlantic from Canada to Mexico or South America<sup>20</sup>, and are managed by SAFMC and GMFMC through the joint Coastal Migratory Pelagic FMP.

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<sup>16</sup> Information from Council document "Reorganizing Management for Gulf of Mexico and Atlantic Coastal Migratory Pelagic Species- Options Paper", October 2015 available here: <https://gulfcouncil.org/wp-content/uploads/C%20-%205%20CMP%2028%20Options%20Paper%20090815.pdf>.

<sup>17</sup> Framework adjustments typically implement recurrent, routine, or foreseeable actions in an expedited manner. Examples include certain FMP procedures for setting annual specifications and taking various inseason management actions, such as quota adjustments, in-season closures, and trip limit or bag limit adjustments.

<sup>18</sup> <http://www.fishbase.org/>

<sup>19</sup> 1998 Monkfish FMP

<sup>20</sup> <http://www.fishbase.org/>

- Both Spanish and king mackerel have two migratory groups (Gulf migratory group or Atlantic migratory group) that are largely managed independently by the appropriate Council. Even though the fishery is officially managed through a “joint FMP”, the Councils manage their migratory groups independently and each Council generally approves the other Council’s management decisions. Amendment 8 (1986) clarified that each Council could develop and approve framework amendments without approval from the other Council. Because the distribution of king and Spanish mackerel range north through New York, the SAFMC has the authority to manage these species within the jurisdictions of both the SAFMC and MAFMC (with cooperation from the MAFMC).
- In 2015, the GMFMC prepared an options paper that considered reorganizing management for Gulf of Mexico and Atlantic coastal migratory pelagic species. The paper included an alternative that separates management into separate FMPs: an Atlantic Coastal Migratory Pelagics FMP and a Gulf Coastal Migratory Pelagics FMP. For this to proceed, the SAFMC would have to approve development and further work on this joint amendment, which has not occurred.

### **3.3 Separate Council Plans**

A third approach is for multiple Councils to manage stocks separately. This approach can be further divided into situations where the jurisdictional boundaries coincide with stock distributions (Approach 3a), and situations where a single stock is managed separately across Councils (Approach 3b). Where appropriate, separate management of distinct stocks by separate Councils can be an effective and efficient way to manage a species.

Approach 3a: When the biological range of individual stocks matches Council jurisdictional boundaries, Councils often create separate FMPs for each stock and Council. However, there are many cases where the biological break between stocks (e.g., boundary between two genetically distinct stocks) does not match the location of a jurisdictional boundary. One way of dealing with this situation is for the Councils to identify a species-specific “management boundary” that is based on the biological break between stocks and is thus different from the normal jurisdictional break between Councils (see black sea bass and hogfish examples below).

Approach 3b: There are examples where a single stock with a range that spans multiple Council jurisdictions is managed under separate FMPs adopted by different Councils. While this approach provides direct control by each Council within its area of jurisdiction, it can increase the resources needed for management, and may result in decreased management efficiency and success as actions taken by one Council can impact management by other

Councils. For example, variable regulations could result in differential biological impacts in the separate jurisdictions for the same stock.

### 3.3.1a Examples of Governance Approach 3a. Separate Council Plans Based On Separate Stocks

- **Black Sea Bass** (*Centropristis striata*) are found from Canada to South FL and into the Gulf of Mexico.<sup>21</sup>
  - North of Cape Hatteras, NC, the fishery is managed in parallel by ASMFC and the MAFMC's Summer Flounder, Scup and Black Sea Bass FMP (see Council-State shared management below).
  - South of Cape Hatteras, NC, the fishery is managed under the South Atlantic Snapper-Grouper Fishery (but this does not include management in the Gulf of Mexico, where individual states manage the fishery).
  - Since Cape Hatteras, NC is the biological boundary between the two stocks<sup>22</sup>, the Councils also use Cape Hatteras as the management boundary for black sea bass between SAFMC's and MAFMC's areas of jurisdiction<sup>23</sup>, rather than the normal jurisdictional boundary at the NC - VA border, as laid out in MSA. As NC is a member on both Councils, it has management input on both sides of the boundary.
- **Hogfish** (*Lachnolaimus maximus*) are found from Canada to South America, including the northern Gulf of Mexico.<sup>24</sup> Hogfish are currently managed separately under the South Atlantic Snapper-Grouper FMP and the Gulf of Mexico Reef Fish FMP.
  - Recent stock assessments determined there are three genetically distinct hogfish stocks: an Atlantic stock in the SAFMC's area of jurisdiction, a Florida Keys/East Florida stock, which includes hogfish in both Councils' jurisdictions, and a Gulf of Mexico stock in the GMFMC's jurisdiction.
  - The management boundary between the Gulf and the Florida Keys/East Florida stock is just south of Cape Sable, FL, which is north of the boundary between the GMFMC and SAFMC. Therefore, there is a small section of the GMFMC jurisdiction that is managed by the SAFMC (fishermen are required to follow South Atlantic management measures in this area).
  - In 2017, the GMFMC redefined its hogfish management to include just the Gulf of Mexico stock; the SAFMC was designated as the Council to manage the

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<sup>21</sup> <http://www.fishbase.org/>

<sup>22</sup> 1991 Amendment 9 to Mid-Atlantic Summer Flounder FMP

<sup>23</sup> 1983 South Atlantic Snapper-Grouper FMP

<sup>24</sup> <http://www.fishbase.org/>



Florida Keys/East Florida stock, including the portion extending into the GMFMC's area of jurisdiction.

- **Other examples:** Many snapper-grouper stocks with ranges that span multiple Council jurisdictions are managed separately between CFMC, GMFMC and SAFMC. Pacific cod (*Gadus macrocephalus*), rex sole (*Glyptocephalus zachirus*) and sablefish (*Anoplopoma fimbria*) are managed under separate groundfish FMPs by the North Pacific Fishery Management Council (NPFMC) and the Pacific Fishery Management Council (PFMC).

### 3.3.1b Examples of Governance Approach 3b. Separate Council Plans for One Stock

- **Yellowtail snapper, mutton snapper (*Lutjanus analis*), and black grouper (*Mycteroperca bonaci*)** are distributed from Massachusetts south to Brazil, including parts of the Gulf of Mexico.<sup>25</sup> They are managed separately through the Gulf of Mexico Reef Fish FMP and the South Atlantic Snapper-Grouper FMP. For each species, scientific analyses show there is a single stock that occurs across both areas.<sup>26</sup>
  - Currently, Scientific and Statistical Committees (SSCs) of the GMFMC and SAFMC must agree on an acceptable biological catch (ABC) based on the most recent stock assessment. Then, the ABC is divided according to a jurisdictional apportionment identified previously in the 2011 Comprehensive ACL Amendment for the South Atlantic and the 2011 Generic ACL/AM Amendment for the Gulf of Mexico. The jurisdictional allocations are based 50% on catch history from 1986/1990/1993<sup>27</sup>-2008 and 50% on catch history from 2006-2008.

### 3.3.1c Examples of a Mixed Approach of 3a and 3b

- **Pacific Highly Migratory Species (tunas, sharks and swordfish)<sup>28</sup>** are managed separately under PFMC's West Coast Highly Migratory Species FMP and the Western Pacific Fishery Management Council's (WPFMC) Fisheries Ecosystem Plan for Pelagic Fisheries of the Western Pacific. The population structure for many of these species is unknown. However, the current science<sup>29</sup> suggests some species have separate stocks between the U.S. West Coast and U.S. Pacific Islands (e.g., yellowfin tuna [*Thunnus albacares*], skipjack tuna [*Katsuwonus pelamis*], and striped marlin [*Kajikia audax*]), while other species have one stock across the entire Pacific Ocean (e.g., Pacific bluefin tuna [*Thunnus thynnus*], and blue shark [*Prionace glauca*]).

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<sup>25</sup> <http://www.fishbase.org/>

<sup>26</sup> SEDAR 3, 15A, and 19, respectively

<sup>27</sup> Starting date differs based on available data: 1986 for black grouper, 1990 for mutton snapper, and 1993 for yellowtail snapper.

<sup>28</sup> Distributions depend on the species in question.

<sup>29</sup> U.S. West Coast HMS FMP Appendix B: Status of Management Unit Stocks

- In December 1994, WPFMC requested sole responsibility for managing pelagic fisheries in the Pacific, but the PFMC opposed this approach.
- In 1998, NMFS Southwest Regional Office proposed an approach so that each Council could manage its respective geographical areas independently through an amendment to the WPFMC FMP. The proposal called for both Councils to vote on an action if it affects the other Council and for NMFS to mediate if there were any disagreements. WPFMC did not support this approach.
- In 2003, PFMC finalized its Pacific HMS FMP. The WPFMC declined the invitation to participate.
- International Regional Fishery Management Organizations (e.g., the Inter-American Tropical Tuna Commission, and the Western and Central Pacific Fisheries Commission) are also engaged in the management of these highly migratory species. These organizations seek consensus among the member nations on conservation and management measures for highly migratory species fisheries. The measures are binding for the members. For example, as a member nation, the United States government implements internationally adopted measures through regulations that apply to the U.S. fleets fishing both on the high seas and in federal waters. A 2007 memorandum of understanding clarifies the roles of the three Councils<sup>30</sup>, the Department of Commerce, and the Department of State with regard to international efforts by the United States to manage these species.

#### **4.0 A COUNCIL SHARES MANAGEMENT WITH A STATE OR INTERSTATE COMMISSION**

Many fisheries cross the boundary between federal and state jurisdictions as well as between states. Governance for these fisheries through states and interstate commissions follows a complex and different set of mandates than those followed by the Councils. In most cases, NMFS and the states coordinate to implement consistent management measures in federal and state waters. Coordinated or parallel management across NMFS and the states can take multiple forms. For instances where vessels have dual permits (permit from the state and federal), vessels must abide by the more restrictive regulation regardless of where the vessel fishes. Examples of coordinated management between NMFS and the States include: 1) Council FMPs and either state or Interstate Marine Fisheries Commission (Commission)<sup>31</sup> FMPs that implement complimentary regulations. 2) Commission FMPs

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<sup>30</sup> PFMC, NPFMC and WPFMC

where the Commission makes recommendations to the states and NMFS to implement consistent regulations.

#### 4.1 Examples of Complimentary Regulations between NMFS and States or Commissions

- **Bluefish** (*Pomatomus saltatrix*) range in the Atlantic Ocean from Canada to Argentina<sup>32</sup>. Even though the range includes the jurisdictions of three fishery management Councils, MAFMC manages the species with ASMFC in parallel Commission and Council FMPs that are coordinated through joint meetings of the two governance bodies.
  - Fishermen petitioned MAFMC to develop an FMP for bluefish in the 1970's.
  - A draft bluefish FMP prepared by MAFMC in cooperation with ASMFC, NEFMC, and SAFMC was completed in 1984, but was rejected by NMFS.
  - A second plan was prepared by MAFMC and ASMFC (this was agreed to by NEFMC and SAFMC), and approved by NMFS in 1990.
  - Annual fishery specifications are determined jointly between MAFMC and ASMFC, and regulations apply throughout the range. The commercial fishery is controlled through state-by-state quotas based on historic landings from 1981-1989, while the recreational fishery is managed using bag limits, minimum sizes and other management measures.
- **Other examples:** Blue and black rockfish (*Sebastes mystinus* and *S. melanops*) have parallel Council and State FMPs through Alaska and the NPFMC. Summer Flounder (*Paralichthys dentatus*), Scup (*Stenotomus chrysops*) and Black Sea Bass are managed through parallel Council and Commission FMPs through MAFMC and ASMFC. Spiny dogfish (*Squalus acanthias*) is managed through a joint Council plan with the NEFMC and MAFMC, with the MAFMC as the lead Council. The ASMFC has a separate but parallel FMP for dogfish. For spiny dogfish, there have been specifications processes where all three bodies recommended different quotas or possession limits. The Federal FMP is structured such that, if that occurs, in limited circumstances, NMFS may implement any specifications not explicitly rejected by either Council.

#### 4.2 Examples of NMFS Implementing Complimentary Regulations to Match Commission Regulations

- **Atlantic cobia** (*Rachycentron canadum*) occurs worldwide in tropical and subtropical waters.<sup>33</sup> Scientists believe there are two stocks within US waters: one along the Atlantic coast north of Georgia (Atlantic Cobia Group) and the other along the east coast of

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<sup>32</sup> <http://www.fishbase.org/>

<sup>33</sup> *Ibid*

Florida and in the Gulf of Mexico.<sup>34</sup> Both stocks of cobia were originally managed as part of the Gulf of Mexico and South Atlantic Joint FMP for Coastal Migratory Pelagic Resources. In 2016 and 2017, the ASMFC initiated and completed an FMP for Atlantic cobia. In 2019, the Atlantic Cobia Group were removed from the Coastal Migratory Pelagics FMP because greater than 87% of the recent landings were from state waters, and NMFS implemented comparable regulations under the Atlantic Coastal Fisheries Cooperative Management Act to replace the existing MSA-based regulations in Atlantic Federal waters. The purpose was to facilitate improved coordination of management of Atlantic cobia in state and Federal waters, thereby more effectively constraining harvest, preventing overfishing, and decreasing adverse socio-economic effects to fishermen.

- **Other examples:** American Lobster (*Homarus americanus*) and striped bass (*Morone saxatilis*), have FMPs under the ASMFC, and NMFS implements regulations consistent with the ASMFC FMP but does not have a federal FMP.

## 5.0 FISHERIES EXPANDING INTO NEW JURISDICTIONS

Management and governance become even more complicated when fisheries historically found primarily in one Council jurisdiction shift or expand their distribution into another Council jurisdiction. Governance structures and regulations may be limited to the historical jurisdiction, creating potentially unregulated fisheries in the new area if the historical regulations are for a defined management area or are only applicable in that Council's jurisdiction. There can also be conflict if access is not adjusted to reflect new stock distributions, and this can be compounded if fishermen from the expanded area are not included in management decisions for the fishery.

### 5.1 Example

- **Blueline tilefish** (*Caulolatilus microps*) is a deepwater species found in the western Atlantic from Campeche, Mexico, to Hudson Canyon, off the coast of New York/New Jersey, including the eastern Gulf of Mexico<sup>35</sup>.
  - Blueline tilefish was historically regulated only under the South Atlantic Snapper-Grouper FMP as the Mid-Atlantic area had very low historical landings. As described below, the MAFMC added management for the blueline tilefish in its jurisdiction in 2017.
  - In 2014, in response to a new stock assessment that showed the stock was overfished, the SAFMC implemented new restrictions on harvest in the South

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<sup>34</sup>[http://www.asmfc.org/species/cobia#:~:text=Cobia%20\(Rachycentron%20canadum\)%20are%20distributed,tropical%20and%20warm%2Dtemperature%20waters.&text=Two%20stocks%20are%20recognized%20in,through%20the%20Gulf%20of%20Mexico.](http://www.asmfc.org/species/cobia#:~:text=Cobia%20(Rachycentron%20canadum)%20are%20distributed,tropical%20and%20warm%2Dtemperature%20waters.&text=Two%20stocks%20are%20recognized%20in,through%20the%20Gulf%20of%20Mexico.)

<sup>35</sup> <https://www.fishwatch.gov/>

Atlantic blueline tilefish fishery which led to a rapid, 20-fold increase in the unregulated landings of blueline tilefish north of the Virginia/North Carolina border (outside the authority of the SA Snapper-Grouper FMP).

- It was unclear if the blueline tilefish stock had recently expanded its range to the north, or if the stock had been present in the north, but was not previously harvested.
- Virginia, Maryland, and New Jersey enacted regulations in 2015, and Delaware in 2016, which apply to vessels landing blueline tilefish in their states. The measures were designed to proactively prevent a large directed commercial fishery and constrain fishing mortality in the recreational fishery for blueline tilefish that emerged in the early 2000s.
- In June 2015, NMFS published an emergency rule to temporarily control harvest in the Mid-Atlantic that implemented a commercial trip limit and a recreational trip possession limit.
- Initial genetic analyses of blueline tilefish in the Atlantic suggested there is a single coast-wide stock. However, there were not sufficient data to complete a coast-wide stock assessment for the species. Thus, separate stock assessments were completed for the data poor stock North of Cape Hatteras, and the relatively more data rich stock South of Cape Hatteras.
- In late 2017, NMFS published a final rule implementing permanent regulations for blueline tilefish north of the NC/VA border by adding blueline tilefish to the existing MAFMC golden tilefish FMP.
- As of 2021, blueline tilefish are managed in the South Atlantic under the Snapper Grouper FMP and in the Mid-Atlantic under the Tilefish FMP.

## 6.0 MOVING FORWARD AND LEARNING FROM OTHERS

NMFS expects the management and governance challenges associated with fisheries that cross Council jurisdictions to increase in the near future for two main reasons. First, many important commercial and recreational fish stocks have shifted their distributions,<sup>36</sup> and more are predicted to follow.<sup>37</sup> The distribution of fish stocks is dynamic as the stocks shift, expand, or contract in response to environmental conditions, biological conditions (predators, prey, competitors, etc.), and condition of the stock (overfished, rebuilt). Conversely, the jurisdictions of the Councils are static as described under MSA section 302(a)(1).<sup>38</sup> As more

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<sup>36</sup> Nye et al. 2009. Changing spatial distribution of fish stocks in relation to climate and population size on the Northeast United States continental shelf. *Marine Ecology Progress Series* 393: 111-129

<sup>37</sup> Morely et al. 2018. Projecting shifts in thermal habitat for 686 species on the North American continental shelf. *PlosOne* 13(5): e0196127.

<sup>38</sup> 16 U.S.C. § 1852(a)(1)

species or stocks shift their distributions across jurisdictional boundaries, there will be a need for NMFS, the Councils, and Interstate Commissions, as appropriate, to adapt management and governance in response to these changes. Miller et al.<sup>39</sup> claim “The governance systems in place for marine fisheries and for the marine environment, more broadly, will be critical in determining the extent to which these resources can be managed sustainably [in a changing climate].”

Second, management of marine fish stocks has been steadily transitioning toward ecosystem based fisheries management (EBFM)<sup>40</sup> and considering trade-offs between interacting fisheries. NMFS anticipates jurisdictional issues may arise when management for interacting species<sup>41</sup> occurs within separate jurisdictions. For example, fishermen are concerned that increased abundances of black sea bass (managed by MAFMC and ASMFC) off Northeastern states will decrease abundances of American lobster (managed by ASMFC) and cod (managed by NEFMC) as black sea bass are thought to prey on small lobster and cod.<sup>42</sup> Trade-offs exist where decreasing fishing pressure on prey species may result in a higher abundance and sustainability of the predator species, or vice versa (increased fishing pressure on the predator increases abundance of the prey).

Moving forward, NMFS and the Councils have a number of approaches in place for managing species and stocks that exist in more than one jurisdiction that could be built on. The challenge is taking what has been learned from the past, adding in new ideas where appropriate, and continuing to adapt while moving forward. Starting cross-jurisdictional discussion on the challenges and approaches for addressing cross-jurisdictional predator-prey dynamics or for adapting to changes in fish stock distributions before changes occur can help reduce conflict later. Some Councils are already promoting such discussions by using Council liaisons to promote cross-jurisdictional communication as discussed above in the second paragraph under “Existing Governance Approaches”. Another approach that several Councils are increasingly employing is a scenario planning approach to anticipate and plan for potential responses to future conditions. And finally, there are additional lessons from the literature that could offer additional tools for fisheries managers to address cross-jurisdictional governance challenges. Most of the literature focuses on challenges associated with stocks that are shifting their distribution in response to environmental changes;

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<sup>39</sup> Miller et al. 2013. Governing Marine Fisheries in a changing climate: a game-theoretic perspective. *Canadian Journal of Agricultural Economics* 61: 309-334 (see page 309).

<sup>40</sup> EBFM, as defined by NMFS policy (see <https://www.fisheries.noaa.gov/resource/document/ecosystem-based-fisheries-management-policy>), “is a systematic approach to fisheries management in a geographically specified area that contributes to the resilience and sustainability of the ecosystem; recognizes the physical, biological, economic, and social interactions among the affected fishery-related components of the ecosystem, including humans; and seeks to optimize benefits among a diverse set of societal goals.”

<sup>41</sup> The main interaction is generally predator-prey dynamics, but competition could also be included.

<sup>42</sup> Dubik et al. 2019. Governing fisheries in the face of change: Social responses to long-term geographic shifts in a U.S. fishery. *Marine Policy* 99: 243-251.

however, similar approaches could be employed to also address jurisdictional issues associated with EBFM (e.g., predator-prey dynamics).

The three East Coast Councils (NEFMC, MAFMC, SAFMC) are planning to implement a scenario planning process to discuss options for managing stocks that shift their distribution across Council boundaries. Scenario planning is a structured process for identifying uncertainties and determining options that will meet management goals across multiple plausible future conditions (Frens and Morrison 2020).<sup>43</sup> By providing an opportunity to explore not one, but many plausible futures, it can help managers understand the limitations of current systems that may not be nimble enough to respond to change and can be used to develop robust strategies in a context of uncontrollable and uncertain environmental, social, political, economic, or technical factors. It has substantial utility in providing space to view problems from different perspectives and discuss novel solutions and reach compromises. Oteros-Rozas (2015)<sup>44</sup> reviewed 23 scenario planning efforts and found that the process enhanced stakeholder engagement, provided diversity and equity in decision making, and fostered creativity and social innovations from stakeholders.

Solving cross-jurisdictional fisheries conflicts is not new, and there is a lot of literature devoted to theory and implementation. Most of the literature on shifting fish distributions highlights the importance of cooperative management across governance entities, and the need for trans-boundary agreements<sup>39, 45,46</sup> that are adaptable as conditions change.<sup>39,42,46</sup> Most of these papers focus on situations where stocks shift across international boundaries. Within the United States, the governance questions associated with shifting stock distributions are under entities created via the MSA, making cooperation easier. However, the more complicated international examples can provide relevant ideas and approaches. These authors suggest that a lack of agreements or agreements with limited adaptability can lead to non-cooperative management, unsustainable fishing, and expensive litigation.

Pinsky et al. (2018)<sup>45</sup> note the governance challenges associated with stocks shifting across jurisdictional boundaries is world-wide and could lead to extensive overfishing, declining sources of nutritional, livelihood, and economic opportunities, and “political conflicts that could spill over into other, nonfishery areas of international politics.” They believe these challenges can be addressed through adaptable agreements between states.

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<sup>43</sup> Frens, K., and W. Morrison. 2020. Scenario Planning, an Introduction for Fisheries Managers. Available here: <https://www.fisheries.noaa.gov/resource/document/scenario-planning-introduction-fishery-managers>

<sup>44</sup> Oteros-Rozas et al. 2015. Participatory scenario planning in place-based social-ecological research: insights and experience from 23 case studies. *Ecology and Society* 20(4): 32.

<sup>45</sup> Pinsky et al. 2018. Preparing ocean governance for species on the move. Policy must anticipate conflict over geographic shifts. *Science* 360: 1189-1191.

<sup>46</sup> Ojea et al. 2020. Adaptation of fishing communities to climate-driven shifts in target stocks. *One Earth* 2: 544-556.

Miller et al. (2013)<sup>39</sup> suggest creativity is needed to design agreements that incentivize compliance across all participants and are flexible to natural fluctuations in abundance and distribution. Agreements may need to include other factors (other fish stocks, side payments, money for research, etc.) to incentivize cooperation between countries or parties.<sup>39,45</sup> For example, a 1999 agreement between the United States and Canada on salmon management included “implicit side payments” or endowments to fund research and enhancement activities.<sup>39</sup> Tools that quantitatively predict which species will shift their distributions (e.g., see Morely et al. 2018<sup>37</sup>), or tools that qualitatively describe multiple plausible futures (e.g., see Frens and Morrison 2020<sup>43</sup>) could be useful when planning and designing cross-jurisdictional agreements. The agreements could also include the creation of an agreed upon mechanism for addressing unresolved conflicts before they become intractable. For example, Australia has had success using external “arbitration panels” to solve tricky allocation issues (Kaufmann and Geen, 1998).<sup>47</sup> The same idea could be applied to conflicts over governance (e.g., as proposed in 1978; see Appendix B). Creating these inter-jurisdictional agreements, while resource intensive, may end up saving resources over the long run if extended conflicts or litigation are reduced.<sup>47</sup> Timing for these agreements is also important. If many changes have already occurred, compromises and agreements on the way forward may be harder to reach.

Many of the ideas mentioned above were also suggested during a 2014 East Coast Climate Change and Fisheries Governance Workshop<sup>48</sup> organized by the MAFMC in coordination with NMFS, NEFMC, SAFMC, and ASMFC. The workshop report includes recommendations to 1) increase cross-jurisdictional communication, 2) expand opportunities for cross-Council representation (through the use of Council liaisons, membership on committees and advisory panels, etc.), 3) explore scenarios and plan for a wide range of potential futures, and 4) identifying management triggers and thresholds for actions. The report notes:<sup>49</sup> “Managers will need to consider the optimal time horizon for responding to climate change impacts, and avoid chasing noise while also considering tipping points and the potential consequences of inaction. Predetermined thresholds and/or triggers that initiate an action or examination of an issue can help ensure timely response.”

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<sup>47</sup> Kaufmann, B. and G. Geen, 1998. Quota Allocation and Litigation: An Economic Perspective. *Marine Resource Economics* 13:143-157.

<sup>48</sup> <https://www.mafmc.org/workshop/climate-change-governance>

<sup>49</sup> *Ibid*, page 9



## **7.0 CONCLUSION**

In conclusion, trans-boundary fisheries are not new and NMFS and the eight Councils have a strong record of managing such fisheries sustainably using existing authorities despite the scientific and governance complexities. The case studies presented here document multiple approaches for addressing cross-jurisdictional governance issues. There are a variety of ways to answer these governance questions, with pros and cons to the various approaches. Factors to consider include: the necessary time and resources, stakeholder interest, biological factors, and the need for coordination.

New challenges due to shifting distributions of fish stocks will increase the need for and complexity of successful cross-jurisdictional governance of marine resources. In addition, the movement towards EBFM and the growing interest in climate-ready fisheries create new opportunities and expectations among stakeholders to manage fisheries more holistically. Past experience managing trans-boundary fisheries, new tools such as scenario planning, and ideas identified in the peer-reviewed literature, such as the importance of inter-jurisdictional agreements that incorporate flexibility to adapt to possible future changes, all offer important insights to guide NMFS and the Councils through these changes.

## APPENDIX A – RELEVANT MSA MANDATES

**Section 302(a)(1): REGIONAL FISHERY MANAGEMENT COUNCILS** – establishes the Councils and sets forth responsibilities and procedures. 16 U.S.C. § 1852(a)(1).

**Sections 302(a)(3) and 304(g): ATLANTIC HIGHLY MIGRATORY SPECIES (HMS)** – “The Secretary shall have authority over any highly migratory species fishery that is within the geographical area of authority of more than one of the following Councils: New England Council, Mid-Atlantic Council, South Atlantic Council, Gulf Council, and Caribbean Council.” 16 U.S.C. § 1852(a)(3). HMS are defined as tuna species, marlin, oceanic sharks, sailfishes and swordfishes. *See* 16 U.S.C. § 1801(21). Requirements for preparing and implementing an FMP for Atlantic HMS are set forth at 16 U.S.C. § 1854(g).

### **Section 304(f)(1): FISHERIES UNDER AUTHORITY OF MORE THAN ONE COUNCIL.—**

(1) “Except as provided in paragraph (3) [Atlantic HMS], if any fishery<sup>50</sup> extends beyond the geographical area of authority of any one Council, the Secretary may—

(A) designate which Council shall prepare the fishery management plan for such fishery and any amendment to such plan; or

(B) may require that the plan and amendment be prepared jointly by the Councils concerned.

No jointly prepared plan or amendment may be submitted to the Secretary unless it is approved by a majority of the voting members, present and voting, of each Council concerned.” 16 U.S.C. § 1854(f)(1).

### **Section 306: STATE JURISDICTION –**

**Section 306(a)(1)** clarifies that nothing in the MSA “shall be construed as extending or diminishing the jurisdiction or authority of any State within its boundaries.” 16 U.S.C. § 1856(a)(1).

**Section 306(a)(3)** provides that a State may regulate a fishing vessel outside the boundaries of the State when:

- (A) The fishing vessel is registered under the law of the State, and:
  - i. there is no FMP or other applicable Federal fishing regulations for the fishery in which the vessel is operating; or
  - ii. the State’s laws and regulations are consistent with the FMP and applicable Federal fishing regulations.

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<sup>50</sup> MSA defines fishery as: (A) “one or more stocks of fish which can be treated as a unit for purposes of conservation and management and which are identified on the basis of geographical, scientific, technical, recreational, and economic characteristics; and (B) any fishing for such stocks.” 16 U.S.C. § 1801(13).

- (B) The federal FMP delegates management of the fishery to a State and the State's laws and regulations are consistent with such fishery management plan. 16 U.S.C. § 1856(a)(3)

**Section 306(b)(1)** authorizes the Secretary (through NMFS) to regulate a fishery within the boundaries of a State, under certain prescribed circumstances. There must be an MSA FMP for the fishery; fishing covered thereunder occurs predominantly within and beyond the EEZ; and the State has taken action, or omitted to take action, the results of which will “substantially and adversely affect the carrying out of such fishery management plan.” 16 U.S.C. § 1856(b)(1)(A)-(B). If the State requests a hearing, the Secretary shall conduct the hearing prior to taking action. 16 U.S.C. § 1856(b)(3).

#### **Intercouncil Fisheries, 50 C.F.R. § 600.110**

- Provides that for joint plans, different management measures can be developed for specific geographic areas, but the FMP should address the entire geographic range of the stock(s).
- Clarifies that in cases of joint plans, one Council is required to be designated the “lead” for drafting the FMP or amendments and other documents required to be submitted to the Secretary.
- Specifies that none of the Councils involved in a joint plan may withdraw without Secretarial approval, and if Councils cannot agree on a management approach within a reasonable timeframe, the Secretary may designate a single Council to prepare the FMP or may issue the FMP under Secretarial authority.

#### **National Standards (NS) and National Standard Guidelines-**

- **General introduction to NS guidelines (50 C.F.R. § 600.305):**
  - “A stock or stock complex may be identified in more than one FMP. In this situation, the relevant Councils should choose which FMP will be the primary FMP in which reference points for the stock or stock complex will be established. In other FMPs, the stock or stock complex may be identified as “other managed stocks” and management measures that are consistent with the objectives of the primary FMP can be established.” 50 C.F.R. § 600.305(c)(6).
  - “When considering adding a stock to an FMP, no single factor is dispositive or required.... In many circumstances, adequate management of a fishery by states, state/Federal programs, or another Federal FMP would weigh heavily against a Federal FMP action.” 50 C.F.R. § 600.305(c)(3).
- **National Standard 3 states:** “To the extent practicable, an individual stock of fish shall be managed as a unit throughout its range, and interrelated stocks of fish shall be managed as a unit or in close coordination.” 16 U.S.C. § 1851(a)(3).
- **NS3 guidelines (50 C.F.R. § 600.320) provide:**

- “The geographic scope of the fishery, for planning purposes, should cover the entire range of the stocks(s) of fish, and not be overly constrained by political boundaries.” 50 C.F.R. § 600.320(b).
- “Cooperation and understanding among entities concerned with the fishery (e.g., Councils, states, Federal Government, international commissions, foreign nations) are vital to effective management. Where management of a fishery involves multiple jurisdictions, coordination among the several entities should be sought in the development of an FMP. Where a range overlaps Council areas, one FMP to cover the entire range is preferred.” 50 C.F.R. § 600.320(c).
- “The term ‘management unit’ means a fishery or that portion of a fishery identified in an FMP as relevant to the FMP’s management objectives.” 50 C.F.R. § 600.320(d).
- “The choice of a management unit depends on the focus of the FMP’s objectives, and may be organized around biological, geographic, economic, technical, social, or ecological perspectives.” 50 C.F.R. § 600.320(d)(1).
- “A less-than-comprehensive management unit may be justified if, for example, complementary management exists or is planned for a separate geographic area or for a distinct use of the stocks, or if the unmanaged portion of the resource is immaterial to proper management.” 50 C.F.R. § 600.320(e)(2).
- “Where state action is necessary to implement measures within state waters to achieve FMP objectives, the FMP should identify what state action is necessary, discuss the consequences of state inaction or contrary action, and make appropriate recommendations. The FMP should also discuss the impact that Federal regulations will have on state management activities.” 50 C.F.R. § 600.320(e)(3).
- **National Standard 1 states:** “Conservation and management measures shall prevent overfishing while achieving, on a continuing basis, the optimum yield from each fishery for the United States fishing industry.” 16 U.S.C. § 1851(a)(1).
- **NS1 guidelines (50 C.F.R. § 600.310) provide:**
  - “For stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments should include an ACL for the overall stock that may be further divided. For example, the overall ACL could be divided into a Federal-ACL and state-ACL. However, NMFS recognizes that Federal management is limited to the portion of the fishery under Federal authority... When stocks are co-managed by Federal, state, tribal, and/or territorial fishery managers, the goal should be to develop collaborative conservation and management strategies ..., and scientific capacity to support such strategies, to prevent overfishing of shared stocks and ensure their sustainability.” 50 C.F.R. § 600.310(f)(4)(iii).

- “For stocks or stock complexes that have harvest in state or territorial waters, FMPs and FMP amendments must, at a minimum, have accountability measures (AMs) for the portion of the fishery under Federal authority. Such AMs could include closing the exclusive economic zone (EEZ) when the Federal portion of the annual catch limit (ACL) is reached, or the overall stock's ACL is reached, or other measures.” 50 C.F.R. § 600.310(g)(6).

## **APPENDIX B – PROPOSED ARBITRATION BOARD FROM 1978 MEMORANDUM**

A 1978 memorandum discussing a disagreement between the SAFMC and GMFMC on the Council boundary for migratory sharks outlines the formation of an arbitration board to solve disputes. Details from that memorandum are:

- A three-person arbitration board will be selected by both Councils from outside the Councils’ geographical areas.
- Each Council will develop a position paper and submit this to the arbitration board and to the other Council.
- Each Council will then comment on the other’s position paper, and submit this to the board.
- The arbitration board will examine the documents mentioned and make a recommendation to both Councils.
- Both Councils will agree beforehand to be bound by the arbitrators’ decision and make no outside effort to influence the decision.
- The arbitrators’ decision would then be jointly submitted as a recommendation to the Secretary.

## **APPENDIX C– POTENTIAL ISSUES FOR COUNCIL AGREEMENTS**

Below are potential issues that could be covered in a joint-Council agreement. This is by no means an exclusive or exhaustive list, rather it is intended to help the reader envision the types of issues that could be tackled.

- How will Councils use existing monitoring and/or catch data to identify when permanent distribution shifts have occurred and are at a magnitude that need resolution? What options exist for enhancing our understanding of predator/prey dynamics and other species interactions?
- Is there an advantage to identifying a threshold for taking action? (e.g., low levels of landings of species outside their normal range should not lead to over-reactions, and real shifts in landings should not be ignored). Similarly, when do predator/prey interactions need to be considered?

- For example, the Councils could clarify a general threshold for taking action, such as when the catch of a species in the adjacent jurisdictions increases significantly and entails at least xx percent (or more) of catch in X of the last Y years, or when a prey species of concern encompasses more than Z% of a predator's diet.
- Once the threshold is exceeded, what actions will be taken, how will science, management and governance be shared? Questions to consider include: Will there be shared governance? Who will complete the stock assessment? Will composition of Council planning committees be updated to include representatives from the jurisdictions (states and Councils) where the species have expanded? How should management account for trade-offs between fishing for predators and fishing for prey (especially if the prey is found in a different jurisdiction)?
  - For example, when looking at shifting distribution of a target stock, a decision tree based on landings data could have three zones of response.
    - Low levels of landings in adjacent jurisdiction require no changes.
    - Medium levels of landings in an adjacent jurisdiction are managed by extending the management of the applicable Council to cover these landings.
    - High levels of landings in the adjacent jurisdiction for a certain number of years results in a shift toward joint management.
- How will disagreements be resolved? It might be useful to articulate ahead of time how disagreements will be resolved.
  - For example, the Councils could agree on an arbitration process they will follow if conflicts cannot be resolved and attempts at agreements or compromises have not resulted in a successful outcome. This is not a new idea. For a simple process, see Appendix B for details of the 1978 memorandum between the SAFMC and GMFMC that outlined an arbitration process. The SAFMC has also referenced the U.S. Air Force base realignment procedure<sup>51</sup> as another example process to consider.

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<sup>51</sup> <https://www.acq.osd.mil/brac/docs/BRAC-2005-Commission-Report.pdf>,  
<https://fas.org/sgp/crs/natsec/R45705.pdf>