

MID-ATLANTIC FISHERY MANAGEMENT COUNCIL

Richard B. Robins, Jr.
Chairman

Lee G. Anderson
Vice Chairman

800 North State Street, Suite 201
Dover, Delaware 19901-3910
Tel: 302-674-2331
Toll Free: 877-446-2362
FAX: 302-674-5399
www.mafmc.org

Christopher M. Moore, Ph.D.
Executive Director

MEMORANDUM

DATE: September 27, 2011

TO: Council

FROM: Jessica Coakley, Staff *JMC*

SUBJECT: Amendment 17 to the Summer Flounder, Scup, and Black Sea Bass (SFSCBSB) FMP

This memo details the alternatives that the Fishery Management Action Team (FMAT) developed for the Council to consider for Amendment 17 to the SFSCBSB. The amendment is being developed to consider spatial/regional management of the black sea bass recreational fishery. The alternatives proposed for black sea bass would require changes to the Commission's FMP as well as the Council's FMP. Therefore, the Council will discuss these alternatives with the Commission's SFSCBSB Board in December, at which time the Board can consider development of a complementary document (Amendment or Addendum) to enable a regional or state-based approach to recreational management.

The FMAT developed alternatives for state and regional management, which are in large part modeled after the summer flounder conservation equivalency process. However, as noted below, the FMAT has raised a number of issues relative to the alternatives that they believe the Council should consider.

Is there a biological basis for managing black sea bass state-by-state?

- The FMAT noted that previous genetic work on black sea bass suggests there may be two stocks, with one North and one South of Hatteras. Michael Burton (NMFS-SEFSC) has done more recent genetic work on black sea bass.
- Moser and Shepherd (2009) describe differences in movements and distribution from tagging studies. There are no differences in fish growth rates North to South within the management unit (Gary Shepherd, pers. comm.). There are differences in catch rates between geographically distinct states. These differences are less clear between adjacent states.
- The FMAT stated that state-by-state management of black sea bass does not have a biological basis. As such, the broader the region (coastwide) the more biologically-based the approach, the smaller the region (state-by-state) the more politically-based the approach.

Is summer flounder conservation equivalency the appropriate model for black sea bass?

- Summer flounder conservation equivalency is not perfect (e.g., data and implementation challenges) and there are additional data considerations with black sea bass that potentially make it less suitable for such a management system.

- It also remains unclear to the FMAT how well summer flounder conservation equivalency will function in conjunction with the ACLs and AMs requirements under the federal process.

Allocation Issues

- Fish must be allocated to each state to identify state-specific harvest limits to implement conservation equivalency.
 - Current data/assessment does not support a biologically-based allocation.
 - Allocations will need to be based on a year, or average of years catch and landings.
- State summer flounder harvest limit allocation using 1998 base-year has caused concerns for some states.

Data Issues

- Recreational catch and landing estimates for black sea bass are less precise than those for summer flounder. Using black sea bass data at region, state, or fishing mode levels may further reduce the certainty in developing appropriate management measures.
- Having all states adjust regulations each year (similar to summer flounder) does not provide stability to the system and makes it nearly impossible to evaluate performance/effectiveness of past management measures.
- The introduction of MRIP will likely alter the accuracy/precision of recreational estimates of catch and landings. This may affect data considerations for black sea bass.

Are minimum size regulations appropriate for black sea bass?

- The current manner in which minimum size, possession limit, and seasons are being applied to black sea bass may not be the most appropriate.
- Black sea bass are protogynous hermaphrodites, which change sex from female to male. Born as females, most fish will change sex to males between the ages 2 to 5 (Musick and Mercer 1977). The factors that lead to the sex change in black sea bass have not been proven, although it has been speculated that the relative scarcity of males in a spawning group (harem) may be the stimulus for a female to switch sex. There is limited information on black sea bass but many other reef fishes (e.g., grouper, some wrasses, hogfish, etc.) are protogynous hermaphrodites and have more extensive research on this reproductive mode that can be considered by analogy. Examination of other protogynous hermaphrodites is consistent with the understanding that black sea bass are harem fish, with a dominant male defending territory against other conspecific males, and courting and fertilizing females of its territory.
- Hepell et al. (2006) suggests that minimum size regulations may not be appropriate for protogynous hermaphrodites.
- Minimum size regulations are one of the core tools to control retention (landings) in the recreational fishery and these measures are intended to:
 - Prevent the retention of immature fish (not reproductive; unwise biologically to land fish before they have opportunity to reproduce) and increase the average size of the fish harvested and reduce F such that female spawning stock biomass (SSB) per recruit can be maximized (i.e., allow females multiple opportunities to spawn and maintain SSB)
 - Simply put, minimum size helps maintain SSB for fish species with non-hermaphroditic life histories (e.g., gonochoristic such as summer flounder and scup).
 - This is not the case for black sea bass; large black sea bass are predominately male, with females and small males at the smaller sizes.

Given the unusual life history, how should black sea bass be managed?

- Recreational fishery seasonal closures that coincide with peak spawning periods may prevent disruption of black sea bass reproductive activities.
- Spawning generally occurs after fish have migrated into coastal habitats in late spring to early summer (Steimle, et al. 2007).
- Reproductive studies (Munoz et al., 2010) suggest that spawning areas subject to fishing pressure may result in less productive spawning success for protogynous hermaphrodites.
- Hepell et al. (2006) suggest management should focus on maintenance of sex ratios and stock size and concluded that protogynous hermaphrodites should be managed with a conservative approach that integrates catch and effort controls with spatial closures.

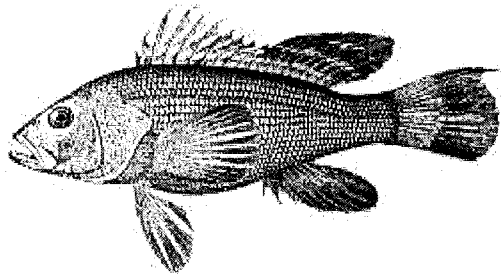
FMAT recommendations and questions

- The FMAT requests further input on the objectives of the spatial/regional management strategies the Council wants to consider. What is the specific problem the Council is trying to solve beyond an increase in catch rates in Northern states when compared to Southern states?
- Is the Council interested in further examination of state-by-state measures or only regional approaches to narrow the scope of further work in the Amendment?
- Does the Council want the FMAT to move forward with approaches to allocation for each of the alternatives based on "base-years"?
- Does the Council want to explore alternative management systems for black sea bass? These may include work to identify potential spawning time/area closures, potential lowering of the minimum fish size to enable more balanced sex ratios in the landings, and examination of the present possession (bag) limit.
- Does the Council want the FMAT to explore restrictions on data disaggregation and use under the alternatives?
- In addition, the FMAT noted that the Council may want to give consideration to the overall management approaches for the black sea bass fisheries (commercial and recreational).

Literature Cited:

- Hepell, S.S., S.A. Hepell, F.C. Coleman and C.C. Koenig. 2006. Models to compare management scenarios for a protogynous fish. *Ecological Applications* **16**: 238-249.
- Moser, J. and G.R. Shepherd. 2009. Seasonal Distribution and Movement of Black Sea Bass (*Centropristis striata*) in the Northwest Atlantic as Determined from a Mark-Recapture Experiment. *Journal of Northwest Fisheries Science*. **40**:17-28.
- Munoz R.C., Burton M.L., Brennan K.J., Parker R.O. (2010) Reproduction, habitat utilization and movements of Hogfish (*Lachnolaimus maximus*) in the Florida Keys, USA: Comparisons from fished vs. unfished habitats. *Bulletin of Marine Science* **86**: 93-116.
- Musick, J. A. and L. P. Mercer. 1977. Seasonal distribution of black sea bass, *Centropristis striata*, in the Mid-Atlantic Bight with comments on the ecology of fisheries of the species. *Transactions of the American Fisheries Society* **106**(1):12-25.
- Steimle, F.W, C. A. Zetlin, P. L. Berrien, D. L. Johnson, and S. Chang. 2007. Essential Fish Habitat Source Document: Scup, *Centropristis striata*, Life History and Habitat Characteristics. NOAA Technical Memorandum NMFS-NE-200

**AMENDMENT 17 TO THE
SUMMER FLOUNDER, SCUP, AND BLACK SEA BASS
FISHERY MANAGEMENT PLAN**



Draft Purpose and Need and Alternative Overview

October 2011

**Mid-Atlantic Fishery Management Council
in cooperation with
the National Marine Fisheries Service**

**Draft adopted by MAFMC: DD MONTH YYYY
Final adopted by MAFMC: DD MONTH YYYY
Final approved by NOAA: DD MONTH YYYY**

**A Publication of the Mid-Atlantic Fishery Management Council pursuant to
National Oceanic and Atmospheric Administration Award No. NA10NMF4410009**



3.0 TABLE OF CONTENTS

4.0 INTRODUCTION AND PURPOSE AND NEED3

5.0 MANAGEMENT ALTERNATIVES3

5.1 ALTERNATIVE 1 - NO ACTION (COASTWIDE).....3

5.2 ALTERNATIVE 2 - CONSERVATION EQUIVALENCY.....3

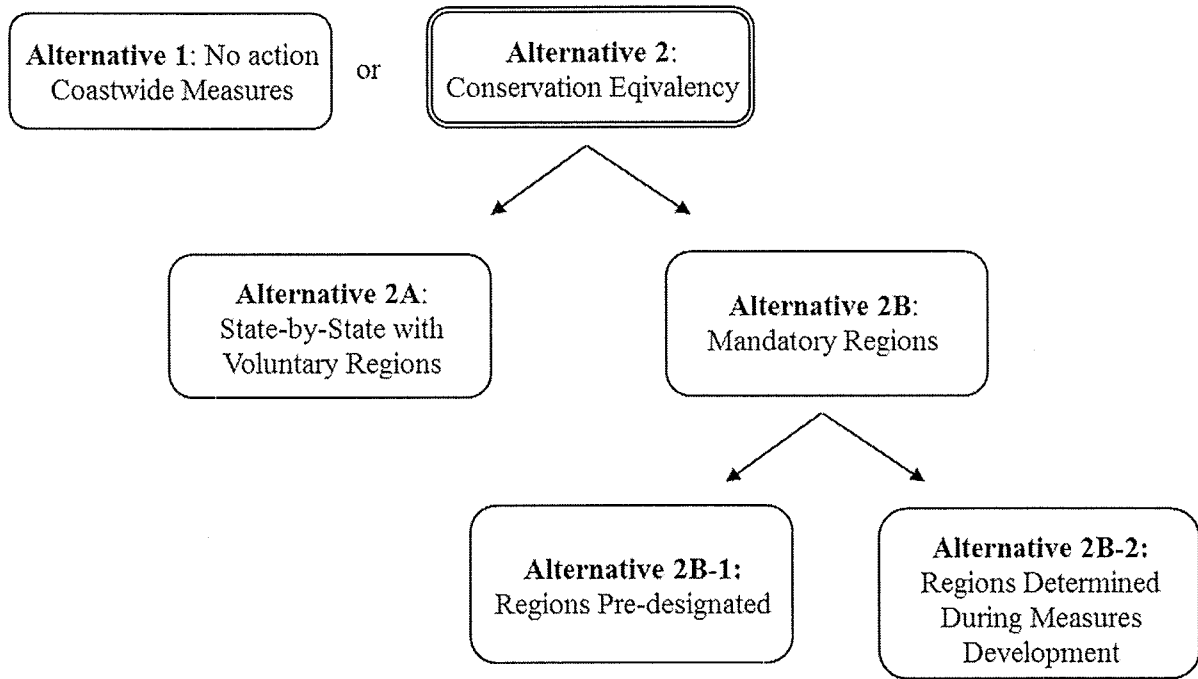
5.2.1 *Alternative 2A: State-By-State With Voluntary Region Formation*3

5.2.2 *Alternative 2B: Mandatory Regions*4

5.2.2.1 Alternative 2B-1 Regions Pre-Designated.....4

5.2.2.2 Alternative 2B-2 Regions Determined As Part of the Measures Development Process5

Alternatives Flowchart



4.0 INTRODUCTION AND PURPOSE AND NEED

The purpose of this amendment is to develop management measures for the black sea bass recreational fishery. Currently, the recreational fishery is managed under coastwide management measures (i.e., minimum fish size, per-angler possession limits, and fishing seasons) for Federal waters. More discreet management approaches are desired to better address the observed regional differences in catch rates and their impact on the recreational fishery, to better ensure that consistent measures can be made available across both state and Federal waters, and to ensure that the objectives of the Summer Flounder, Scup, and Black Sea Bass FMP and the requirements of the Magnuson Stevens-Act (MSA) continue to be met. The need for this amendment relates to a desire by the Council and Atlantic States Marine Fisheries Commission's (Commission) to expand the suite of management tools available for management of the black sea bass recreational fishery.

5.0 MANAGEMENT ALTERNATIVES

5.1 Alternative 1 - No Action (Coastwide)

- No action taken to modify the process applied through the FMP to manage the black sea bass recreational fishery in Federal waters.
- Current two-step process for the recreational fishery is maintained.
 - First, the recreational harvest limit is recommended in August.
 - Second, management measures are recommended in December.
- The Council and Commission's Summer Flounder, Scup, and Black Sea Bass Board (Board) will meet in December under joint rules and recommend coastwide management measures (i.e., minimum size, season, and possession limit) for the fishing year.
 - Coastwide in Federal waters under the Federal FMP.
 - Coastwide in state waters under the Commission's FMP.

5.2 Alternative 2 - Conservation Equivalency

5.2.1 Alternative 2A: State-By-State With Voluntary Region Formation

- Current two-step process for the recreational fishery maintained.
 - First, the recreational harvest limit is recommended in August.
 - Second, management measures are recommended in December.
- The Council and Commission's Board will meet in December under joint rules and recommend whether to:
 - A) Require all states to develop state-specific conservation equivalent management measures under the Commission's process, which may include voluntary region formation, to achieve state (or voluntary regional) harvest limits, or,

- B) Use coastwide measures to achieve the coastwide recreational harvest limit, as already described in the FMP (see no action alternative 1).
 - In addition, a non-preferred coastwide measure and precautionary default measure will be recommended.
- Commission's timeline for conservation equivalency development would be similar to the summer flounder timeline: Commission's technical committee reviews measures in January, Commission's Board approves measures in February, and Board submits measures to NMFS in April/May.
- State-specific harvest limits would be established under conservation equivalency using a to-be-determined allocation system.
- Voluntary region formation would involve the voluntary pooling of state-specific harvest limits to form a region of adjacent states. All states in the region must implement identical management measures through the Commission's process. Same as voluntary regional tool under summer flounder.
- The Council would recommend conservation equivalency to NMFS along with a coastwide non-preferred and precautionary default measures through specifications. The NMFS Regional Administrator (RA) will review the Commission proposed conservation equivalent measures and may waive the regulations in Federal waters in lieu of the measures implemented in state waters should the Commission-developed measures provide the same level of conservation as federal coastwide measures required for the fishing year.

5.2.2 Alternative 2B: Mandatory Regions

5.2.2.1 Alternative 2B-1 Regions Pre-Designated

- Fixed regions are permanently established in the state and Federal FMPs (e.g., MA-NY, NJ-NC)
- Two-step process for the recreational fishery.
 - First, the recreational harvest limits for each region are recommended in August.
 - Second, management measures for each region are recommended in December.
- The Council and Commission's Board will meet in December under joint rules and recommend identical management measures for each region (i.e., common minimum size, season, and possession limit). In addition, a non-preferred coastwide measure and precautionary default measure will be recommended.
- Region-specific harvest limits would be established under conservation equivalency using a to-be-determined allocation system.
- The Council would recommend the regional conservation equivalent measures to NMFS along with a coastwide non-preferred and precautionary default measures through specifications. The NMFS RA will review the Commission proposed conservation equivalent measures and may waive the regulations in Federal waters in lieu of the measures implemented in state waters should the

Commission-developed measures provide the same level of conservation as federal coastwide measures required for the fishing year.

5.2.2.2 Alternative 2B-2 Regions Determined As Part of the Measures Development Process

- Current two-step process for recreational fishery maintained.
 - First, the recreational harvest limit is recommended in August.
 - Second, management measures recommended in December.
- The Council and Commission's Board will meet in December under joint rules and recommend:
 - A non-preferred coastwide measure and precautionary default measure.
 - States are required to develop mandatory regions
- Commission's timeline for conservation equivalency development would be similar to the summer flounder timeline: Commission's technical committee reviews measures in January, Commission's Board approves measures in February, and Board submits measures to NMFS in April/May.
- Mandatory region formation would involve the pooling of state-specific harvest limits to form a region of at least two states. All states in the region must implement identical management measures (i.e., common minimum size, season, and possession limit) through the Commission's process.
- State-specific harvest limits would be established under conservation equivalency using an allocation system.
- The Council would recommend conservation equivalency to NMFS along with a coastwide non-preferred and precautionary default measures through specifications. The NMFS RA will review the Commission proposed conservation equivalent measures and may waive the regulations in Federal waters in lieu of the measures implemented in state waters should the Commission-developed measures provide the same level of conservation as federal coastwide measures required for the fishing year.