

# DECISION DOCUMENT

## Striped Mullet Fishery Management Plan

### Amendment 2



This document was developed to help the MFC track previous activity and prepare for upcoming actions for Striped Mullet FMP Amendment 2.

December 15, 2023

## Background

The 2022 stock assessment indicated the striped mullet stock is overfished and overfishing is occurring. The North Carolina Fishery Reform Act of 1997 requires the State to implement management to end overfishing and to achieve a sustainable harvest within a 10-year time period. To achieve sustainable harvest within this time frame management measures estimated to achieve a 20—33% reduction in total removals from 2019 landings are required.

Amendment 2 to the Striped Mullet Fishery Management Plan is being developed to address the overfished status of the North Carolina striped mullet stock. The recently adopted Supplement A to Amendment 1 to the Striped Mullet FMP implemented management measures to end overfishing with a season closure. Amendment 2 will contain additional management measures that will replace the supplemental management.

### Review of Supplement A to Amendment 1 Decisions and Discussion

In September 2022, the DEQ Secretary determined that it was in the long-term interest of the striped mullet stock to develop temporary management through a Supplement. The Division developed the Striped Mullet Fishery Management Plan Amendment 1 Supplement A to address the overfishing status of the stock while the Division works on comprehensive management to address sustainable harvest in Amendment 2. At its May 2023 business meeting, the Marine Fisheries Commission approved the following season closures:

<b>Region</b>	<b>Closure Dates</b>
North of the Highway 58 Bridge	November 7 – December 31
South of the Highway 58 Bridge	November 10 – December 31

The management adopted in Supplement A is temporary and will be replaced with management adopted in Amendment 2. While a season closure may still be part of long-term management for the species, other options will be explored and could be used in combination to achieve the necessary harvest reductions.

Sustainable harvest primarily focuses on reductions in the commercial fishery, where most striped mullet harvest occurs. In 2019, recreational striped mullet harvest accounted for 1.7% of total harvest while the commercial fishery accounted for 98.3% of the total harvest. Likewise, from 1994 to 2019 the recreational striped mullet harvest accounted for 4.2% of total harvest. While management options are proposed for the recreational fishery to improve the status of the stock, recreational harvest reductions are not quantifiable due data limitations.

Several management tools are available to achieve sustainable harvest in the striped mullet fishery, including combinations of management measures. All are discussed fully in Appendix 2 and Appendix 3 of Amendment 2 to the Striped Mullet FMP. References to those documents are included in the discussion of the management options below.

## Amendment Timing (Grey indicates a step is complete.)

	September – October 2022	Division holds public scoping period
	November 2022	MFC approves goal and objectives of FMP
Developed Temporary Management	November 2022 – May 2023	Supplemental Management <i>(Supplement A to Striped Mullet FMP Amendment 1 Adopted)</i>
	November 2022 – June 2023	Division drafts FMP
	July 2023	Division held workshop to review and further develop draft FMP with the Striped Mullet FMP Advisory Committee
	August – October 2023	Division updates draft plan
	November 2023	MFC Reviews draft and votes on sending draft FMP for public and AC review
You Are Here	<b>December - January 2024</b>	<b>Public Comment Period and MFC Advisory Committees meet to review draft FMP</b>
	February 2024	MFC selects preferred management options
	March-April 2024	DEQ Secretary and Legislative review of draft FMP
	May 2024	MFC votes on final adoption of FMP
	TBD	DMF and MFC implement management strategies

## Goal and Objectives

The goal of Amendment 2 is to manage the striped mullet fishery to achieve a self-sustaining population that provides sustainable harvest using science-based decision-making processes. The following objectives will be used to achieve this goal.

### Objectives:

- Implement management strategies within North Carolina that sustain and/or restore the striped mullet spawning stock with adequate age structure abundance to maintain recruitment potential and prevent overfishing.
- Promote the restoration, enhancement, and protection of critical habitat and environmental quality in a manner consistent with the Coastal Habitat Protection Plan, to maintain or increase growth, survival, and reproduction of the striped mullet stock.

- Use biological, social, economic, fishery, habitat, and environmental data to effectively monitor and manage the fishery and its ecosystem impacts.
- Advance stewardship of the North Carolina striped mullet stock by promoting practices that minimize bycatch and discard mortality.

## Management Options, Ordered by Issue

### Sustainable Harvest

*The intent of these management options is to allow for traditional use of striped mullet in the commercial fishery while meeting sustainable fishery requirements. They are predicted to reduce harvest of striped mullet in ways that are quantifiable using existing data. The data used to quantify harvest reductions are collected from commercial fishermen through the trip ticket and the Division’s fish house sampling programs. Because they are quantifiable, they are used to meet the legal requirements of the Fisheries Reform Act to address overfishing and rebuild overfished stocks. Because harvest reductions from the recreational fishery are not quantifiable, sustainable harvest options are specific to the commercial fishery, where most striped mullet harvest occurs.*

A 21.3 to 35.4% reduction in commercial harvest relative to commercial landings in 2019 is needed to rebuild the striped mullet spawning stock biomass to a sustainable level. Because of low recruitment observed in recent years (p.45 of FMP, Figure 2.1), the **Division recommends a conservative reduction of 35.4% to increase the probability of rebuilding success.**

#### Option 1: Size Limit Options (Striped Mullet FMP Amendment 2, p. 48)

*On its own, implementation of a minimum size limit set at the L50, or the length at which 50% of the population are mature, for striped mullet would be unlikely to meet sustainability objectives and would eliminate the bait fishery for finger mullet. A maximum size limit, focused on the spawning season (October-December), would have a more direct impact on the spawning stock however it would negatively affect the roe fishery, the most valuable portion of the commercial striped mullet fishery. Slot limits should not be considered because it would exclude harvest of both “finger mullet” for bait as well as large roe mullet. Implementing a minimum or maximum size limit would need to be accompanied by corresponding changes to minimum or maximum mesh sizes used in gill nets to reduce dead discards. This would likely impact other small mesh gill net fisheries targeting other species. To read full discussion of size limits, see p. 48 in draft Amendment 2.*

- Status Quo – Manage fishery without minimum or maximum size limits (0% Reduction)*
- Minimum Size Limit and 3.25 ISM Minimum Gill Net Mesh Size*

Example Size Limit Options (Inches FL)	
Minimum	Percent Reduction

13.5	27.2
14.0	37.2

c. *Maximum Size Limit and 3.75 or 4.0 ISM Maximum Gill Net Mesh Size*

Example Size Limit Options (Inches FL)	
Maximum	Percent Reduction
15.0	39.8
15.5	28.4

d. *Seasonal Maximum Size Limit and 3.75 or 4.0 ISM Maximum Gill Net Mesh Size*

Example Size Limit Options (Inches FL)	
Oct-Dec Maximum	Percent Reduction
14.5	51.4
15.0	27.0

Option 2. Season Closure Options (Striped Mullet FMP Amendment 2, p. 55)  
*Season closures, specifically end of year season closures, are considered an effective and efficient management option to end overfishing of the striped mullet stock and rebuild SSB. To read full discussion of seasonal closures see p.55 in Amendment 2.*

2.a No Season Closure (0% Reduction)

	Season Closure	Reduction
2.b*	October 29 - December 31	33.7
2.c	November 7 - December 31	22.1

\*Adding one more closure day exceeds the minimum 35.4% reduction necessary to reach the SSB Target.

	Season Closure		Reduction
	North	South	
2.d	Oct. 28-Dec. 31	Oct. 30-Dec.31	35.6
2.e	Nov. 7-Dec. 31	Nov. 10-Dec. 31	21.7

Option 3: Trip limits (Striped Mullet FMP Amendment 2, p. 57)

*Unless otherwise specified all trip limit options are daily trip limits and applied to a commercial fishing operation regardless of the number of persons, license holders, or vessels involved. Yardage limits on runaround gill nets in tandem with trip limits could be helpful in minimizing discards but would affect other fisheries. To read full discussion of trip limits see p.57 in Amendment 2.*

Table 2.10. Percent harvest reduction from 2019 commercial landings based on various daily trip limits and time periods.

Trip Limit (lb)	Reduction (%)		
	Jan-Sept, Dec	Oct-Nov	Total
50	33.1	50.4	83.4
75	30.3	47.8	78.1
100	27.9	45.5	73.5
150	24.3	41.7	66.0
200	21.3	38.5	59.8
300	16.8	33.3	50.2
400	13.6	29.4	42.9
500	11.0	26.1	37.2
600	9.0	23.4	32.4
1,000	3.8	15.5	19.3
1,100	3.0	14.1	17.1
1,250	2.1	12.3	14.4
1,500	1.2	10.0	11.2
1,750	0.7	8.2	9.0
2,000	0.4	6.8	7.2
2,500	0.1	4.8	4.9

Option 4: Day of week closures (Striped Mullet FMP Amendment 2, p. 59)

*To read full discussion of day of week closures see p.59 in Amendment 2.*

Table 2.11. Percent of harvest by day of week or combination of days, 2019 and 2017-2021.

Day(s) of Week	2019 Landings	Landings (%)	2017-2021 Landings	Landings (%)
Sunday	162,709	11.9	780,061	10.4
Monday	209,707	15.4	1,201,290	16.1
Tuesday	247,756	18.2	1,273,991	17.0
Wednesday	190,343	14.0	1,148,997	15.4
Thursday	191,313	14.0	1,038,243	13.9
Friday	173,090	12.7	1,048,743	14.0
Saturday	187,294	13.7	984,763	13.2

Saturday-Sunday	350,003	25.7	1,764,823	23.6
Friday-Sunday	523,093	38.4	2,813,566	37.6
Saturday-Monday	559,710	41.1	2,966,113	39.7
Friday-Monday	732,800	53.8	4,014,856	53.7

Table 2.12. Percent of commercial landings by day of week for each month, 2017-2021.

Month	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
January	8.5	18.2	18.7	16.4	15.2	13.5	9.5
February	8.6	14.7	20.6	13.8	15.2	14.1	13.1
March	9.7	20.2	15.8	15.8	17.1	14.2	7.1
April	11.0	13.7	15.1	17.6	16.2	12.0	14.4
May	11.7	10.4	17.4	19.0	14.0	13.1	14.3
June	10.9	16.3	15.4	14.4	12.8	17.0	13.2
July	10.1	16.0	15.5	15.9	16.8	15.3	10.4
August	9.1	19.6	14.4	13.4	15.4	17.4	10.7
September	14.3	14.3	14.2	15.1	13.2	12.5	16.4
October	10.8	16.7	19.1	15.0	11.4	11.4	15.5
November	9.7	14.7	17.9	16.0	15.1	15.3	11.4
December	10.2	18.1	10.0	14.8	15.2	19.3	12.5

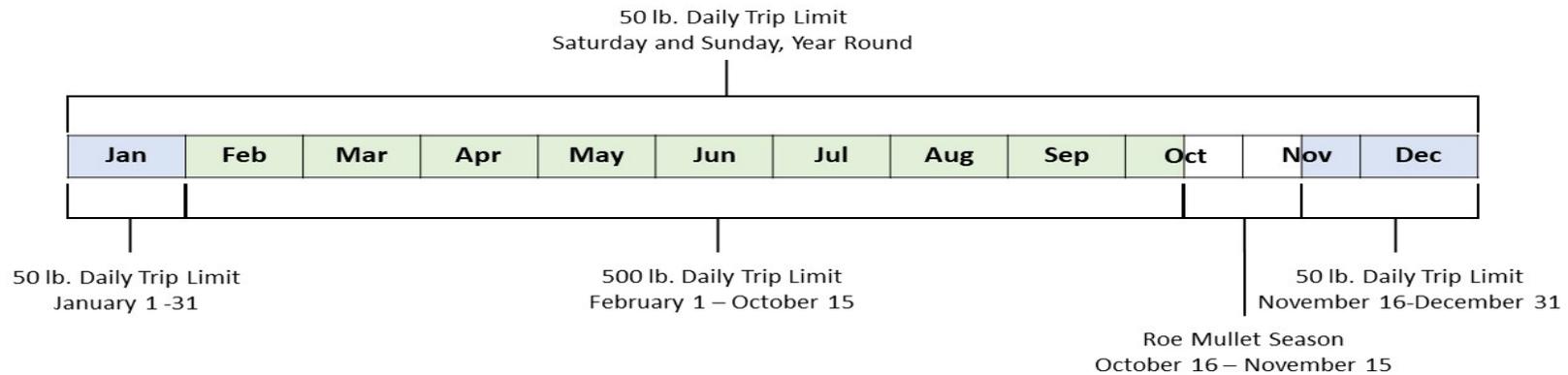
Option 5: Combination of Measures (Striped Mullet FMP Amendment 2, p. 60)

Table 2.13. Management measure combinations to end overfishing and achieve sustainable harvest, compared to 2019 commercial landings. Unless otherwise specified all options for day of week closures or day of week reduced trip limits are applied year-round. All trip limit options are daily trip limits and applied to a commercial fishing operation regardless of the number of persons, license holders, or vessels involved.

Option	Season Closure	Daily Trip Limit (lb.)	Day of Week Closure	% Reduction	% Reduction with 30k Stop Net Cap
5.a*	.	.	Sat-Sun	25.7	24.0
5.b	Dec 1-Dec 31	Jan-Sep 1,000; Sat-Sun 50 lb	.	28.1	26.4
5.c*	.	Jan-Sep 1,000	Sat-Sun	28.5	26.9
5.d	Dec 1-Dec 31	Jan-Oct 15 1,000; Sat-Sun 50 lb	.	28.9	27.3
5.e	Nov 12-Dec 31	1,000	.	29.1	27.5
5.f*	.	Jan-Oct 15 1,000 lb	Sat-Sun	29.3	27.7
5.g	.	Jan-Oct 15 and Dec 500; Sat-Sun 50 lb	.	31.3	29.8
5.h	Dec 1-Dec 31	Jan-Sep 1,000	Sat-Sun	31.8	30.2
5.i	.	Jan-Dec 100 lb; Feb-Sep 500 lb; Sat-Sun 50 lb	.	32.4	30.9
5.j	Dec 1-Dec 31	Jan-Oct 15 1,000	Sat-Sun	32.6	31.1
5.k	Nov 8-Dec 31	1,000	.	34.6	33.1
5.l	.	Jan-Dec 50 lb; Sat-Sun 50 lb; Feb-Oct 15 500 lb	.	34.6	33.2
5.m	.	Jan-Oct 15 and Dec 500	Sat-Sun	35.4	33.9
5.n <sup>+</sup>	.	Jan1-31 and Nov16-Dec31 50 lb., Sat-Sun 50 lb, Feb1-Oct15 500lb	.	36.9	35.5
5.o	.	Jan-Dec 100 lb; Feb-Sep 500 lb	Sat-Sun	36.5	36.0
5.p	Nov 12-Dec 31	1,000	Sat	38.6	37.2

DMF Recommendation

\*Endorsed by Striped Mullet FMP AC  
<sup>+</sup>DMF Recommendation



Option 6: Stop Net Fishery Management (Striped Mullet FMP Amendment 2, p. 63)

- a. Status Quo – Manage stop net fishery with management measures applied to the rest of the fishery
- b. Stop Net Specific Catch Cap - DMF recommends an annual catch cap for the stop net fishery of 30,000 lbs. DMF recommends the stop net season open annually on October 15 and be allowed through December 31 or whenever the 30,000 lb catch cap is reached. Consistent with requirements for spotted seatrout, this will require daily reporting of landings by the stop net crew and notification of when the net will be struck.

Option 7: Seasonal Catch Limit (Striped Mullet FMP Amendment 2, p. 64)

- a. Status Quo – Manage fishery without Seasonal Catch Limit
- b. Implement Statewide Seasonal Catch Limit
- c. Implement Regional (North/South) Seasonal Catch Limit

Option 8: Area Closures (Striped Mullet FMP Amendment 2, p. 68)Option 9: Limited Entry (Striped Mullet FMP Amendment 2, p. 69)

Option 10: Adaptive Management Framework (Striped Mullet FMP Amendment 2, p. 72)  
*If adaptive management is adopted as part of Amendment 2, the specifications would apply to the commercial and recreational fisheries for mullet.*

- 1) Update the stock assessment at least once in between full reviews of the FMP, timing at discretion of the division.
  - a. If current management is not projected to meet management targets (management targets are SSB remaining between  $SSB_{Threshold}$  and  $SSB_{Target}$ , and  $F$  remaining between  $F_{Threshold}$  and  $F_{Target}$ ), then management measures shall be adjusted via an adaptive management update and implemented using the Fisheries Director's proclamation authority to reduce harvest to a level that is projected to meet the  $F_{Target}$  and  $SSB_{Target}$ .
  - b. If management targets are being met, then new management measures would not be needed, or current management measures could possibly be relaxed provided projections still meet the management targets. When management targets are met, a striped mullet industry workgroup will be convened to discuss the possibility of "guard rail management" to maintain a sustainable harvest for the striped mullet stock.
- 2) Quantifiable management measures that may be adjusted using adaptive management include:
  - a. Season closures
  - b. Day of week closures
  - c. Trip limits

- d. Gill net yardage or mesh size restrictions in support of the measures listed in a-c
- 3) Use of the Director's proclamation authority for adaptive management to meet management targets is contingent on:
  - a. Consultation with the Northern, Southern, and Finfish advisory committees
  - b. Approval by the Marine Fisheries Commission

Upon evaluation by the division, if a management measure adopted to achieve sustainable harvest (either through Amendment 2 or a subsequent revision) is not working as intended, then it may be revised or removed and replaced provided it conforms to steps 2 and 3 above.

## Recreational Fishery

*The intent of these management options is to allow traditional use of striped mullet in the recreational fishery while supporting sustainability objectives. Due to recreational fishery data collection methods and recreational fishery practices it is not possible to calculate harvest reductions from the proposed management options. While recreational harvest currently accounts for only a small percentage of the striped mullet harvest, there is concern that the reduced availability of commercially harvested bait could lead to a significant shift in directed recreational harvest. The proposed options will reduce the potential for that type of shift and therefore support meeting the sustainability objectives successfully.*

### Option 1. Recreational Vessel and Bag Limit (Striped Mullet FMP Amendment 2, p. 81)

DMF Recommendation

- a. Status Quo
- b. Reduce Recreational Bag Limit (50 fish)
- c. Reduce Recreational Bag Limit (50 fish) and Implement Vessel Limit (100 fish)
- d. Bag Limit (10, 15, 20, 25, etc.) for Fish Over 8-Inches
- e. Seasonal (October-December) Bag Limit (10, 15, 20, 25, etc.) for Fish Over 8-Inches

### Option 2. For Hire Vessel and Bag limit (Striped Mullet FMP Amendment 2, p. 83)

DMF Recommendation

- a. Reduce Recreational Bag Limit (50 fish), Implement Vessel Limit (100 fish), and Implement For Hire Vessel Limit (500 fish, etc.)
- b. Reduce Recreational Bag Limit (50 fish) with an Exception for For Hire Vessel Operations to Possess a Bag Limit for the Number of Anglers They are Licensed to Carry (Including in Advance of a Trip).

- c. Reduce Recreational Bag Limit (50 fish) and Implement Vessel Limit (100 fish) with an Exception for For Hire Vessel Operations to Possess a Bag Limit for the Number of Anglers They are Licensed to Carry (Including in Advance of a Trip).
- d. Mirror Option 1 management decision

### Next Steps

The MFC approved draft Amendment 2 for public and MFC Advisory Committee review and comment. The draft will now go out for public review from December 18, 2023-January 17, 2024, and will be taken to the Northern, Southern and Finfish MFC Advisory Committees in January 2024 for review and potential votes on management recommendations. The outcome of the comment period and AC review will be presented to the MFC during their February business meeting.

At their February business meeting the MFC will review the public comment, AC recommendations and will select their preferred management options.