



Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 27, 2022
To: Council and Board
From: Karson Cisneros, Council staff
Subject: 2023 Bluefish Specifications

On Monday, August 8, the Council and Board will review previously adopted bluefish 2023 specifications and recreational management measures and recommend revisions as needed. Materials listed below are provided for the Council and Board's consideration of this agenda item.

As noted below, one material is behind another tab, and some will be available on the [August 2022 Meeting Page](#) at a later date.

- 1) Advisory Panel meeting summary from August 1, 2022
- 2) Monitoring Committee meeting summary from July 27, 2022
- 3) July 2022 Scientific and Statistical Committee meeting report (*see Tab 15*)
- 4) Staff memo on 2023 bluefish recreational measures dated July 20, 2022
- 5) Staff memo on 2023 bluefish specifications dated July 12, 2022
- 6) June 2022 Advisory Panel Fishery Performance Report
- 7) 2022 Bluefish Data Update
- 8) 2022 Bluefish Fishery Information Document
- 9) Public comments received through July 29, 2022



Bluefish Joint Advisory Panel Webinar Meeting Monday, August 1, 2022

MAFMC Advisors in attendance: Steve Heins (NC), Willy Goldsmith (DC), Phil Simon (NJ), Mike Waine (NC), Paul Lane (NC), Eric Burnley (DE), William Mandulak (NC)

ASMFC Advisors in attendance: Peter Fallon (ME), Charlie Locke (NC)

Other attendees: Karson Cisneros (MAFMC Staff), Dustin Colson Leaning (ASMFC Staff), Alan Bianchi (NC DMF), Chris Batsavage (Council and Board Member), Michael Celestino (NJ DEEP), Thomas Newman, Cynthia Ferrio (GARFO), Michelle Duval (Council Member)

The Advisory Panel (AP) met via webinar on August 1st, 2022, to provide comments on bluefish recreational management measures for 2023. AP feedback at this meeting will inform the Council and Board's August 8th bluefish recreational management measures discussions.

Summary

Four advisors voiced support for status quo recreational management measures in 2023. The rationale for supporting status quo measures included stability, recent overages, the disparate discard estimates, and the unknowns related to the upcoming research track stock assessment.

An advisor asked what percent of for-hire trips landed the full 5 fish bag limit and whether trips had increased in recent years. Staff responded that they can follow up with that information. This advisor added that they had heard mixed feedback from the AP in the past on whether the for-hire sector should have an increased bag limit. They felt that any liberalization considered by the Council and Board should make the private and for hire bag limits equal, not further divergent between the modes. They added that they did not understand the justification for further discrepancies between the bag limits and do not feel that the argument that the for-hire fleet is such a small component of the fishery justifies giving a conservation pass on a resource that's in rebuilding. Furthermore, they would like to see divergent measures by mode explored further through the sector separation amendment as part of the [recreational reform initiative](#). Another advisor added that they agreed with these comments.

Advisors asked clarifying questions related to the variable recreational dead discard estimation methodologies, the monitoring committee (MC) discussion, and whether there is a good sense of the level of noncompliance in the recreational fishery. Staff did not have a multiyear analysis of noncompliance available but noted that when conducting bag limit analyses using MRIP data, anglers kept up to 15 bluefish on trips in 2021. More work needs to be done to quantify the levels of noncompliance in this fishery over time.

An advisor asked if the MC was recommending both an RHL liberalization and status quo recreational measures. Staff responded that the MC did recommend an RHL that is higher than 2021 recreational harvest, however given the level of management uncertainty the MC discussed, they did not recommend liberalization of measures.

One advisor commented that management doesn't fit the for-hire and private sector equally and different states and regions have different management needs. Regulations in one region should not take away from business in another region.

One advisor asked whether the MC discussed the large difference in total catch in 2010 compared with recent years while the stock biomass remains similar. They added that they thought that if catch had been reduced to zero, there would still be the same biomass. Staff responded that the MC did not specifically discuss this.

In terms of next steps, an advisor asked when and how the research track assessment results would be shared with the AP. Staff responded that they can distribute information to the AP in advance of the public meetings for the peer review and that staff would also plan to update the AP on assessment results at their June fishery performance report meeting next year. They also asked whether there is any intention to adjust 2023 specifications as a result of the June management track assessment. Staff responded that no midyear adjustments are anticipated resulting from the assessment.



Mid-Atlantic Fishery Management Council

800 North State Street, Suite 201, Dover, DE 19901

Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org

Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman

Christopher M. Moore, Ph.D., Executive Director

Bluefish Monitoring Committee Meeting Summary

Wednesday, July 27, 2022

Monitoring Committee Attendees: Amy Zimney (SC DNR), Cynthia Ferrio (GARFO), Eric Durell (MD DNR), Michael Celestino (NJ DFW), Karson Cisneros (Council staff), Jim Gartland (VIMS), Joshua McGilly (VMRC), Rich Wong (DNREC), Tony Wood (NEFSC), Rachel Sysak (NY DEC), Nicole Lengyel Costa (RI DMF), Sam Truesdell (MA DMF), Dustin Colson Leaning (ASMFC), David Behringer (NC DMF), Kurt Gottschall (CT BMF), Joseph Munyandorero (FL FWC)

Additional Attendees: Chris Batsavage (Council and Board member), Alan Bianchi (NC DMF), Brooke Lowman (VMRC), James Fletcher (United National Fisherman's Association), Julia Beaty (Council staff), Mike Waine (American Sportfishing Association), Nichola Meserve (Board member), Greg DiDomenico (Lund's Fisheries), Megan Ware (Board Member)

The Monitoring Committee (MC) met via webinar on Wednesday, July 27, to review the previously implemented bluefish catch and landings limits, commercial and recreational measures for 2023 and recommend any changes if needed. At the meeting, the MC reviewed the Scientific and Statistical Committee (SSC) recommendation, staff memos, recent fishery performance, and the fishery information document to assist the MC in their deliberations. Briefing materials considered by the MC are available at: <https://www.mafmc.org/council-events/2022/bluefish-monitoring-committee-meeting>

Summary

Compliance and outreach

MC members discussed the benefits of increasing outreach and education efforts on best practices for fishing and handling of fish. For example, encouraging the use of circle hooks and educating anglers on the drawbacks of treble hooks could increase survival of released bluefish. Outreach could achieve voluntary improvements to bluefish survival without implementing any mandates. MC members also agreed that outreach could be useful in increasing compliance with current regulations. Based on 2021 Marine Recreational Information Program (MRIP) data, some anglers are keeping more than the current bag limit, and staff discussed that this has occurred in the past under the 15 fish bag limit as well. A MC member suggested evaluating the rate of noncompliance with the bag limit before and after the bag limit was reduced. The MC agreed that this type of analysis could be helpful in the future to inform the Council and Board on the impacts of the bag limit change.

Discard mortality estimates

The MC discussed the discrepancy between the two approaches used to estimate discards in the recreational fishery; both methods assume a 15% mortality rate. The approach that the Greater Atlantic Regional Fisheries Office (GARFO) and the Council have used in recent years to monitor the recreational fishery uses the MRIP estimated mean weight (by year, state, and wave) of harvested fish (A+B1) times the number of released fish (MRIP-B2s by year, state, and wave; referred to as the 'GARFO method'). The second approach is used in the stock assessment and applies a length-weight

relationship to released fish size composition data from the MRIP, American Littoral Society tag releases, and volunteer angler surveys from Connecticut, Rhode Island, and New Jersey and is scaled by the MRIP B2 releases (referred to as the 'NEFSC method'). The MC discussed that this will be the last year that these two differing methodologies will be used. GARFO staff have indicated that moving forward, they will use the discard estimates resulting from the ongoing research track assessment, similar to what is done for other species. Through this assessment, recreational discard estimation is being improved upon through the addition of more data and by applying differing discard weights by region and will undergo peer review in early December. One MC member voiced some concerns over the science center methodology and felt that the MC may be the best group to decide between the different methods of calculating discards. The stock assessment scientist on the MC noted that the NEFSC method is currently the only peer reviewed method available, and the two estimates will be much more in line with each other with the improved regional data. In addition, the stock assessment scientist noted that the discard mortality rate is also being reevaluated. Upon hearing these updates, the MC member commented that they felt more confident in the recreational discard estimates coming out of the research track stock assessment which will be available next year.

Overall Management Uncertainty

The MC discussed management uncertainty for both sectors, and noted that through the recent bluefish amendment, management uncertainty can now be considered at the sector specific ACL/ACT level. They voiced some frustration that each year they discuss specific concerns and areas of uncertainty, however they struggle to quantify the amount of uncertainty to provide a buffer between the ACL and ACT. Given the desire to be better prepared to quantify management uncertainty that is applied as a buffer to the ACL, the MC felt it would be useful to have a specific meeting, potentially in spring 2023, to discuss quantitative approaches to applying uncertainty buffers. This meeting could also be used to update the MC on the December peer-review of the research track assessment.

Commercial Fishery

The commercial fishery has stayed within their coastwide quota in recent years and MC members did not voice concerns over the currently implemented quota. One MC member discussed that there is some uncertainty related to potentially increasing commercial discards but the best information we have now suggests that those are probably minor. Another MC member had concerns that in their state of Rhode Island, as the commercial sector has had reduced commercial quotas, there have been reports of an increase in commercial discards. They added that Rhode Island is looking to implement a state waters observer program, with the hope of starting a pilot program next year for the state waters gillnet fleet to get a better handle on the fishery. One MC member felt that there may be regional increases in discards, however, their sense was that commercial discards are still fairly low on a coastwide level.

Given these considerations, the MC recommended maintaining the previously implemented 2023 commercial ACT equal to the Commercial ACL with no buffer for management uncertainty and no changes to the commercial quota (Table 1).

Recreational Fishery

The MC discussed that recreational catch has not been constrained to the catch limits in recent years, leading to overages and pound for pound paybacks in 2020 and 2021 (applied to 2022 and the upcoming 2023 specifications). Given the information available, the discrepancy in estimating dead discards may be a contributing factor to these overages and GARFO may be using an underestimate, while the truth may be in between the GARFO and NEFSC methods. One mitigating factor against the

overages is that the ABC is increasing and if catch remains similar to 2021 in 2023, there may not be another overage.

Another cause for concern for some MC members was the noncompliance that is occurring with the current bag limits, potentially adding to management uncertainty related to constraining catch. Another MC member felt that because the noncompliant recreational harvest is captured in the MRIP estimates, it is not necessarily a big source of uncertainty (as it relates to quantifying catch) and has been accounted for in the harvest estimates and paybacks.

An additional concern discussed was that the last assessment used data through 2019 for projections through 2023 so we are further away from that terminal year of data with a track record of overages, leading to more uncertainty. For this reason, one MC member commented that it seemed there is more uncertainty this year than previous years.

Given all of these concerns, a MC member proposed an uncertainty buffer equal to 10% of the 2021 GARFO dead discard estimate of 6.64 million pounds, which would result in a buffer of 0.66 million pounds. This would be applied to the recreational ACL to derive a more precautionary ACT. This MC member discussed that, though imperfect, this addresses the source of uncertainty related to the GARFO estimate that is thought to be underestimating discards. Although it is hard to quantify, this number may be more appropriate than doing nothing to address the recreational uncertainty that has been discussed. They noted that doing nothing is particularly concerning given multiple years of overages. Another MC member agreed with this idea, noting that if no buffer is added, there appears to be potential for liberalization between recent harvest and the 2023 adjusted RHL, which may be a risky management decision and may decrease the chance for fishery stability in the future if more paybacks are needed. GARFO staff clarified that this calculation of 10% added to the GARFO discards could be applied as an uncertainty buffer, however it would not make sense to revise the 2021 discard estimate for catch accounting and paybacks since it is not a specific estimate derived from the data.

Multiple MC members voiced concerns over the justification for that specific percentage. One MC member added that they are not very concerned about the GARFO discard estimate and they were in favor of keeping the management measures status quo. Other MC members were in favor of the idea of an uncertainty buffer and felt it was a valid discussion, however, they did not feel that there was enough justification of a specific calculation to apply a buffer value at this meeting. One MC member also noted that this level of uncertainty may not be an issue next year due to the results of the new assessment, especially if the NEFSC and GARFO use the same discard estimate within the stock assessment and catch accounting moving forward.

Another MC member said they are supportive of status quo limits and measures at this meeting but supported developing an uncertainty metric in the future which uses RHL overages as a way to inform the level of management uncertainty. An MC member agreed with this and thought applying the percentage that results from the overage is an objective percentage and may be more justified than the 10% approach. Ultimately, the MC did not feel comfortable applying this method for the 2023 fishing year. The MC thought this method could have merit in the future with potentially more years of data under the same bag limits.

Although two MC members preferred an uncertainty buffer be applied, overall, the MC recommended keeping the previously implemented 2023 recreational ACT equal to the recreational ACL (Table 1).

Several MC members felt unable to recommend a specific uncertainty buffer, however they felt that recreational measures should remain status quo. This was partially due to uncertainty in the discard estimates, and some members felt this was maintaining a middle ground. One MC member observed that this is similar to implementing an uncertainty buffer and asked for clarification from those who did not support the uncertainty buffer but did support status quo measures. One MC member noted that they did not want to increase the chances of an ACT overage based on a more arbitrary number, though it was clarified that an ACT overage would not trigger a pound for pound payback as the accountability measure. Another member indicated that adding an uncertainty buffer of 10% of the 2021 GARFO discard estimate was not a precedent that they felt comfortable setting.

RHL and Recreational Management Measures

The MC agreed with the staff recommendation of using 2021 recreational harvest as expected 2023 harvest because it is the first full year of the 5 fish (for-hire) and 3 fish (private anglers) bag limits that are currently in place. They also agreed with the adjusted RHL calculated from the required pound for pound payback and the staff recommended 2021 GARFO discard value as a proxy for 2023 discards, resulting in an adjusted RHL of 14.11 million pounds (Table 1).

MC members commented that status quo recreational measures would contribute to management stability which may not be an option next year when setting measures for 2024 and beyond. It was discussed that because of the varying potential changes to data inputs and aspects of the bluefish assessment model that occur in a research track assessment, there may need to be management changes in 2024 in response to the best available information on the stock. Another MC member added that harvest can vary across years under the same bag limit so multiyear averages are helpful, and since we only have 2021 harvest under the current bag limits, more years of these measures can help us understand the overall impacts of the bag limit change from 15 fish to 5 and 3 fish.

Another MC member discussed that given the recent overages and uncertainty concerns related to 2023, they did not support the liberalizations that had been requested by some members of the for-hire sector. They also acknowledged the frustration of some in the private angler sector with the current measures being split by sector within the recreational fishery. There is currently a recreational sector separation amendment under consideration as part of the [recreational reform initiative](#) by the Council and Board which can evaluate challenges related to these different stakeholder groups and develop a more formal approach to divergent measures by sector.

Overall, the MC recommended status quo measures and no MC members voiced support for liberalizations or restrictions in recreational management measures for 2023 (Table 1).

Public Comments

One member of the public commented that uncertainty buffers have been put into place for fisheries where the commercial sector is dominant. For example, they have been used for butterfish and Atlantic mackerel so the methodologies used for these fisheries may be helpful to inform how to calculate management uncertainty.

Another member of the public asked what recreational bag, size and season the MC would consider after applying an uncertainty buffer and wondered how that plays out when management makes these

micromanaging adjustments. The member of the public asked if the MC retrospectively evaluates how management measure changes impact fishing mortality. They commented that they do not believe that there is enough certainty in the data to successfully implement changes to recreational measures to achieve a 10% reduction in harvest, for example.

A member of the public asked whether the MC had addressed that the bluefish population goes in cycles. They recommended that the MC members research their local newspapers over the past 30-40 years to understand these cycles. They added that this level of micromanagement isn't accomplishing anything for the bluefish stock. They also recommended mandatory hook sizes to catch less small fish.

Table 1: Original 2023 bluefish specifications (left) and adjustments (right) to the RHL based on the 2021 recreational ACL overage payback and Monitoring Committee recommended updated 2021 discard information. Measures are in millions of pounds.

Management Measure	Year		Basis
	2023 (original)	2023 (adjusted)	
OFL	45.17	45.17	Stock assessment projections
ABC	30.62	30.62	Derived by SSC; Follows the rebuilding plan through NEFSC projections
ACL	30.62	30.62	Defined in FMP as equal to ABC
Comm. ACL=ACT	4.29	4.29	ABC x 14% sector allocation, no adjustment for management uncertainty
Rec. ACL=ACT	26.34	26.34	ABC x 86% sector allocation, no adjustment for management uncertainty
Recreational AMs	0	5.59	2021 rec. ACL overage payback
Comm. Discards	0	0	Value used in assessment
Rec. Discards	4.19	6.64	MC recommend adjusting from 2020 GARFO estimate (original), to 2021 GARFO estimate (adjusted)
Commercial Quota	4.29	4.29	Comm. ACT minus discards
RHL	22.14	14.11	Rec. ACT minus discards and AM payback
Possession limit	3: private 5: for-hire	3: private 5: for-hire	2023 implemented, and 2023 MC rec.



Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 20, 2022
To: Dr. Chris Moore, Executive Director
From: Karson Cisneros, Staff
Subject: Review of 2023 Bluefish Recreational Management Measures

Introduction and Background

In August 2021, the Council and Board set 2022-2023 annual catch targets (ACTs), total allowable landings (TALs), commercial quotas, recreational harvest limits (RHLs), and other associated management measures (Final Rule 2/2/2022, 87 FR 5739). In December 2021, the Council and Board set recreational management measures for 2022-2023, maintaining the 3 fish possession limit for private angler modes and a 5 fish possession limit for the for-hire modes (Table 1). The Monitoring Committee is tasked with reviewing the currently implemented 2023 recreational ACTs, RHLs and recreational management measures and recommending any changes if warranted.

This memo describes recent recreational fishery performance and several considerations related to 2023 recreational management measures. Notably, recreational landings and dead discards in 2021 resulted in an ACL overage and accountability measures are triggered for 2023 (Table 3). Bluefish recreational accountability measures require a pound for pound overage payback when the stock is overfished. To make a recommendation on recreational management measures for 2023, the MC needs to compare expected recreational harvest to a payback adjusted RHL for 2023 to recommend if any changes in measures are warranted.

Recent Fishery Performance

In 2021, MRIP estimated recreational landings were 12.46 million pounds and dead discards were 6.64 million pounds (based on the GARFO discard methodology; Table 1, Figure 1). Since 2018, recreational landings have dropped to the lowest values of the time series with a 2018-2021 average harvest of 13.72 million pounds.

Recreational catch and harvest estimates by state for 2021 are provided in Table 2. The greatest catches occurred in Florida with 13.88 million fish, followed by North Carolina with 4.52 million fish, New York with 3.57 million fish, and New Jersey with 2.90 million fish. The greatest harvest of bluefish by weight in 2021 occurred in Florida with 3.55 million pounds, followed by New

Jersey with 3.36 million pounds, New York with 2.35 million pounds and North Carolina with just over 1 million pounds. Average weights, based on dividing MRIP landings in weight by landings in number for each state, suggest that bluefish size tends to increase along the north Atlantic coast.

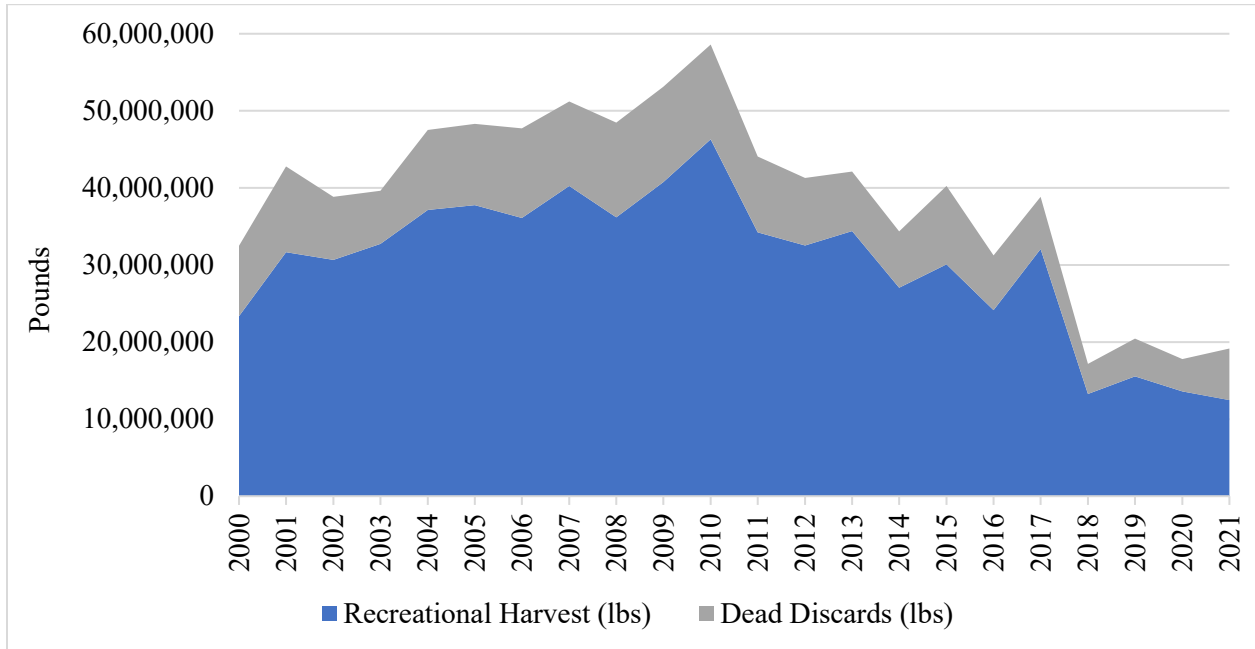


Figure 1: Recreational bluefish harvest and dead discards in pounds from 2000-2021 using MRIP estimates and GARFO discard methodology.

Table 1: Summary of bluefish recreational harvest and management measures, 2016-2023. In 2019, recreational landings were provided using new MRIP estimates while the RHL was developed using old MRIP estimates so cannot be directly compared.

Management Measures	RHL	Rec. Harvest, Old MRIP	Rec. Harvest, New MRIP	RHL Overage/underage	Rec. Bag Limit (# fish)	
2016	11.58	9.54	24.16	-2.04	15	
2017	9.65	9.52	32.07	-0.13	15	
2018	11.58	3.64	13.27	-7.94	15	
2019	11.62	--	15.56	--	15	
2020*	9.48	--	13.58	+ 4.10	3: Private*	5: For-Hire*
2021	8.34	--	12.46	+ 4.12	3: Private	5: For-Hire
2022	13.89	--	--	--	3: Private	5: For-Hire
2023	22.14	--	--	--	3: Private	5: For-Hire

* The bag limit reductions from 15 to 3/5 fish were not implemented by all states until mid-late 2020.

Table 2: MRIP estimates of 2021 bluefish recreational harvest, total catch, and average weight.

State	Harvest			Catch	Total Released	Dead Discards
	Pounds	Number	Average Weight ¹ (pounds)	Number	Number	Number
ME	3,633	673	5.4	6,104	5,431	815
NH	3,796	698	5.4	698	-	-
MA	833,962	116,547	7.2	855,041	738,494	110,774
RI	718,950	140,504	5.1	774,409	633,905	95,086
CT	206,429	263,966	0.8	1,180,092	916,126	137,419
NY	2,353,527	861,060	2.7	3,565,667	2,704,607	405,691
NJ	3,357,809	921,667	3.6	2,895,008	1,973,341	296,001
DE	8,460	14,019	0.6	179,562	165,543	24,831
MD	117,545	105,711	1.1	316,949	211,238	31,686
VA	153,199	216,317	0.7	719,804	503,487	75,523
NC	1,031,761	982,391	1.1	4,521,724	3,539,333	530,900
SC	107,268	172,528	0.6	722,532	550,004	82,501
GA	12,870	13,811	0.9	136,588	122,777	18,417
FL	3,553,572	2,373,891	1.5	13,875,822	11,501,931	1,725,290
Total	12,462,781	6,183,783	-	29,750,000	23,566,217	3,534,932

¹ Average weight is the pounds harvested divided by the number of fish harvested. Recreational dead discards are calculated as 15% of total recreational discards.

Dead Discard Estimation

Last year, the MC discussed the two approaches used to characterize discards in the recreational fishery. ¹ The Greater Atlantic Regional Fisheries Office (GARFO) and the Council have used an approach that uses the MRIP estimated mean weight (by year, state, and wave) of harvested fish (A+B1) times the number of released fish (MRIP-B2s by year, state, and wave) and an assumed 15% release mortality. The MC generally agreed that this estimate does not fully capture recreational fishery dynamics because this approach uses the mean weight of harvested fish, not discards, and the length frequency data suggests that released fish tend to be larger than retained fish. The second approach uses the NEFSC discard estimates, which applies a length-weight relationship to released fish data from the MRIP, American Littoral Society tag releases, and volunteer angler surveys from Connecticut, Rhode Island, and New Jersey. However, this

¹ A summary of the past MC discard discussion can be found in the [August 2021 briefing materials](#) on page 6.

sampling approach does not characterize the entire coast, which adds to the uncertainty in these estimates.

2021 Recreational Catch Accounting

In 2021, MRIP reported the recreational fishery landed 12.46 million pounds compared to the 8.34 million pounds RHL. The dead discard estimate from GARFO for 2021 is 6.64 million pounds. Recreational landings and dead discards in 2021 result in an ACL overage and accountability measures are triggered for 2023. Bluefish recreational accountability measures require a pound for pound overage payback when the stock is overfished. For example, due to a recreational ACL overage in 2020, a pound for pound payback was applied to the 2022 recreational ACT (along with recreational discards) to derive the RHL.

Table 3: Bluefish recreational estimates for 2021 catch accounting in millions of pounds. Landings, dead discards (GARFO methodology), and catch were provided by GARFO on July 19, 2022. Recreational ACL overage was calculated by Council staff.

2021 Recreational Value	Millions of Pounds
Landings	12.46
Dead discards	6.64
Catch	19.10
Rec. ACL	13.51
Rec. ACL overage	+5.59

2023 Payback Adjusted RHL

Adjusted RHLs that incorporate the accountability measure (AM) payback and updated 2021 discards are shown in Table 4. When the 2022 and 2023 RHLs were set in 2021, the 2020 GARFO discard estimate was used as a proxy for expected discards for both 2022 and 2023. Given the disparate discard methodologies, Table 4 illustrates an adjusted 2023 RHL based on the 2021 NEFSC discards and 2021 GARFO discards. Next year, GARFO has indicated that they will use the estimate resulting from the research track assessment that is scheduled for peer review in December 2022, and there will no longer be two different estimates to consider. The discard estimation methodology resulting from the ongoing research track assessment may differ from that used by the NEFSC in recent years.

From 2001-2019, the recreational bag limit was set at 15 fish. As a result of the 2019 operational assessment, the bluefish stock was designated as overfished with overfishing not occurring. For 2020, the recreational sector was projected to land 13.27 million pounds, which exceeded the RHL by 28.56%. Therefore, the Council and Board approved recreational management measures to constrain harvest to the reduced RHL, which included a 3-fish bag limit for private and shore modes and a 5-fish bag limit for the for-hire mode. These bag limit reductions were not implemented by all states until mid-late 2020. In addition, MRIP used data from 2018 and 2019 to fill in COVID-19 related data gaps in 2020. Because of this, there are imputed 2020 data using years that had a 15 fish bag limit. Given these considerations, 2021 discards may be more indicative of 2023 fishery conditions and expected 2023 discards than 2020 discards.

For the above reasons, staff recommend using 2021 GARFO discard estimates as expected discards for the updated 2023 RHL, resulting in a payback adjusted RHL of 14.11 mil lb. Staff recommend no changes to the recreational ACL or ACT.

Table 4: Adjusted calculations of the 2023 RHL accounting for the 2021 AM payback and using either NEFSC or GARFO discards as a proxy for expected 2023 discards.

2023 RHL Calculations	Millions of Pounds	% Difference from 2021 Harvest
Rec. ACL=ACT	26.34	n/a
Unadjusted RHL	22.14	
2021 overage payback	5.59	
Adjusted RHL with 2021 NEFSC Discards	8.15	-34.60%
Adjusted RHL with 2021 GARFO Discards	14.11	+13.24%

2023 Expected Recreational Harvest

As mentioned in the previous section, COVID-related MRIP imputations used 2018 and 2019 data to estimate 2020 harvest, which were years where the 3 and 5-fish bag limits were not in place. Therefore, the 2020 data may not reflect a harvest estimate that takes into consideration the smaller bag limits. In addition, last year’s projections for 2021 based on 2020 harvest and waves 1-3 in 2021 overestimated 2021 harvest by about 2.8 million pounds.

The first full year of the currently implemented recreational management measures of a 3 fish bag limit for private and shore modes and a 5 fish bag limit for the for-hire mode was 2021. Because of this, staff recommend using 2021 recreational harvest of 12.46 million pounds as the expected harvest in 2023, for comparison with the 2023 RHL. In future years, multi-year averages can be used if recreational measures remain similar across those years.

2023 Recreational Management Measures

In December 2021, the Council and Board requested that the MC analyze the impacts of increasing the for-hire sector bag limit from a 5 fish limit to a 7 fish bag limit. Three sets of percent change in harvest relative to status quo measures using three methodologies are presented in Table 5. The MC discussed that viewing all three methods could be a useful comparison of the potential impacts of bag limit liberalizations given that various assumptions are required for each. All methods use the 2021 MRIP survey microdata available for download.² Method one assumes that anglers who caught the full bag limit at 5 fish would retain the higher bag limits. This method may overestimate harvest if all anglers that kept 5 fish would not keep 7 if allowed. However, it may underestimate harvest by not making any changes to the number of anglers who kept 6 fish. The second method calculates the percent reduction in harvest and assumes that the percent liberalization would be equal to that reduction. A third method assumes a log linear relationship between the bag limit and percent change in harvest. Under this modeling approach, harvest still increases as bag limits liberalize, however the rate of increase tapers, which may better describe the data. This method was used for summer flounder bag limit liberalizations by some states in 2022.

² <https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads>

Under these methodologies, increasing the bag limit from 5 fish to 7 fish for the for-hire sector would yield a 0.20% to 0.39% increase to overall expected recreational harvest. This small percentage is largely due to the for-hire sector making up only 6% of harvest in 2021.

Table 5: Three sets of calculations estimating the percent change in harvest relative to status quo bag limits by sector. Negative numbers indicate a reduction in harvest and positive numbers indicate an increase in harvest.

Percent liberalization or reduction: method 1					
Bag Limit	3	4	5	6	7
Private Angler	Status quo	8.03%	16.07%	24.10%	32.14%
For Hire	-0.30%	-0.10%	Status quo	0.10%	0.20%
Total	-0.30%	7.93%	16.07%	24.20%	32.34%
Percent liberalization or reduction: method 2					
Bag Limit	3	4	5	6	7
Private Angler	Status quo	8.03%	27.05%	66.77%	*
For Hire	-0.30%	-0.10%	Status quo	0.10%	0.30%
Total	-0.30%	7.93%	27.05%	66.87%	0.30%
Percent liberalization or reduction: method 3					
Bag Limit	3	4	5	6	7
Private Angler	Status quo	7.97%	13.54%	18.08%	21.92%
For Hire	-0.38%	-0.12%	Status quo	0.25%	0.39%
Total	-0.38%	7.85%	13.54%	18.33%	22.31%

*This methodology would require calculating a reduction based on a negative bag limit so cannot be used for liberalizations over a 6 fish bag limit.

A member of the MC and a few members of the AP discussed the consideration of a minimum size limit to complement an increased bag limit and achieve harvest similar to status quo. However, given that the size of bluefish available to anglers can vary across the coast, and the importance of the snapper fishery (small bluefish) to some states, size limits may be a more appropriate tool for individual states to consider. Similarly, seasonal availability varies by state so coastwide seasonal closures to allow for increased bag limits are currently not recommended for consideration.

Staff recommendations are shown in Table 6. Staff recommend no changes to the current recreational management measures that were set for 2022-2023 for the following reasons:

The difference between the two discard estimates for 2021 result in an estimated 13% liberalization (GARFO discards) or a 35% reduction (NEFSC discards) needed in 2021 harvest compared to the 2023 RHL. While staff recommend using the GARFO methodology for 2023 for consistency with the estimates used to set measures and evaluate ACLs, the NEFSC methodology has been discussed as the more scientifically sound approach, though it lacks comprehensive data inputs. The ongoing bluefish research track assessment is addressing this issue and the peer reviewed approach from that assessment will be used by GARFO moving forward. If the current NEFSC discard estimates were used to adjust the RHL, restrictions to the bag, size, or season for bluefish would be needed to achieve the 2023 RHL.

Bluefish recreational measures were set in 2021 for 2022-2023, and the Council and Board have indicated that setting measures for two years can increase stability and predictability. In June 2022 the Council and Board took final action on the Harvest Control Rule (HCR) which changes the recreational fisheries management programs for summer flounder, scup, black sea bass, and bluefish, however the new process will not be used for bluefish until the stock is declared rebuilt. Although it is not required to implement the HCR in 2023 for bluefish, the ability to maintain status quo measures without a predicted overage (using the GARFO discards) aligns with the intent of stability in recreational management measures.

There is currently only one full year of data to assess the impacts of the bag limit change from 15 fish to 5 fish (for-hire) and 3 fish (private angler). A comparison of 2018-2019 average harvest (15 fish bag) to 2021 harvest (3/5 fish bag) shows a 1.95 million pound decrease in harvest. Several other factors may influence harvest including availability of the fish and economic considerations for anglers, so multi-year averages of harvest may be more informative.

The ongoing bluefish research track assessment is evaluating new data and approaches used to assess the stock and is scheduled for peer-review in December 2022. The results of the research track assessment are expected to be available for an updated management track assessment to set measures in 2024-2025. Through this process, a new set of biological reference points and updated stock status will be available that may result in liberalizations or restrictions to recreational management measures. Because of this, recommending changes to recreational measures may be more appropriate with the updated stock information that is expected to be available next year.

Table 6: Original 2023 bluefish specifications (left) and adjustments (right) to the RHL based on the 2021 recreational ACL overage payback and staff recommended updated 2021 discard information. Measures are in millions of pounds.

Management Measure	Year		Basis
	2023 (original)	2023 (adjusted)	
OFL	45.17	45.17	Stock assessment projections
ABC	30.62	30.62	Derived by SSC; Follows the rebuilding plan through NEFSC projections
ACL	30.62	30.62	Defined in FMP as equal to ABC
Comm. ACL=ACT	4.29	4.29	ABC x 14% sector allocation, no adjustment for management uncertainty
Rec. ACL=ACT	26.34	26.34	ABC x 86% sector allocation, no adjustment for management uncertainty
Recreational AMs	0	5.59	Adjusted to estimated 2021 rec. ACL overage payback
Comm. Discards	0	0	Value used in assessment
Rec. Discards	4.19	6.64	2020 GARFO estimate (original), 2021 GARFO estimate (adjusted)
Commercial Quota	4.29	4.29	Comm. ACT minus discards
RHL	22.14	14.11	Rec. ACT minus discards and AM payback
Possession limit	3: private 5: for-hire	3: private 5: for-hire	2023 implemented, and 2023 staff rec.



Mid-Atlantic Fishery Management Council
800 North State Street, Suite 201, Dover, DE 19901
Phone: 302-674-2331 | FAX: 302-674-5399 | www.mafmc.org
Michael P. Luisi, Chairman | P. Weston Townsend, Vice Chairman
Christopher M. Moore, Ph.D., Executive Director

MEMORANDUM

Date: July 12, 2022
To: Dr. Chris Moore, Executive Director
From: Karson Cisneros (Coutre), Staff
Subject: Review of 2023 Bluefish Specifications

Executive Summary

The Magnuson-Stevens Act (MSA) requires each Council's SSC to provide ongoing scientific advice for fishery management decisions, including recommendations for ABC, preventing overfishing, and achieving maximum sustainable yield. The Council's catch limit recommendations for the upcoming fishing year(s) cannot exceed the ABC recommendation of the SSC. In addition, the Monitoring Committee (MC) established by the Fishery Management Plan (FMP) is responsible for developing recommendations for management measures designed to achieve the recommended catch limits. The SSC recommends ABCs that addresses scientific uncertainty, while the MC recommends ACTs that address management uncertainty and management measures to constrain catch to the TALs.

A management track assessment for bluefish was conducted in June 2021. The assessment incorporates data through 2019, including the revised time series (1985-2019) of recreational catch provided by the Marine Recreational Information Program (MRIP).

The Council and Board approved the Bluefish Allocation and Rebuilding Amendment at their June 2021 meeting. The rebuilding portion of the Amendment includes a 7-year constant fishing mortality plan that began in 2022. Projections will be rerun every two years through the Northeast Fisheries Science Center (NEFSC) assessment process to ensure adequate rebuilding progress is being made. A research track assessment is currently scheduled for late in 2022 (currently ongoing), which will be followed by a management track assessment in June 2023 with data through 2022 to inform the 2024-2025 specifications package.

In July 2021, the SSC recommended 2022-2023 bluefish ABCs using the total catch value from the 7-year constant rebuilding fishing mortality as an OFL proxy and accounting for scientific uncertainty associated with the OFL proxy. This resulted in an ABC of 25.26 million pounds (11,460 mt) for 2022 and 30.62 million pounds (13,890 mt) for 2023. In August 2021, the Council and Board set 2022-2023 annual catch targets (ACTs), total allowable landings (TALs), commercial quotas, recreational harvest limits (RHLs), and other associated management measures (Final Rule 2/2/2022, 87 FR 5739).

The SSC should review the previously adopted 2023 ABC to consider if changes are needed. Staff recommend no changes to the 2023 ABC of 30.62 million pounds (13,890 mt) for bluefish.

Staff recommend no changes to the 2023 implemented commercial ACL, ACT, and quota and no changes to the 2023 recreational ACL and ACT. Bluefish recreational accountability measures require a pound for pound overage payback when the stock is overfished. Staff recommend using 2021 GARFO recreational discard estimates (as soon as available) as expected discards for the updated 2023 RHL. A separate recreational management measures memo will outline staff recommendations for 2023 recreational management measures, based on the payback-adjusted RHL, to be discussed by the MC at their July 2022 meeting.

Table 1. Currently implemented 2022 and originally projected 2023 bluefish specifications.
Note: The 2023 recreational accountability measures, expected discards, and RHL will likely be adjusted based on official GARFO recreational discard estimates and resulting payback values. These estimates have not yet been released.

Management Measure	Year				Basis
	2022		2023		
	mil lb.	mt	mil lb.	mt	
Overfishing Limit (OFL)	40.56	18,399	45.17	20,490	Stock assessment projections
ABC	25.26	11,460	30.62	13,890	Derived by SSC; Follows the rebuilding plan through NEFSC projections
ACL	25.26	11,460	30.62	13,890	Defined in FMP as equal to ABC
Commercial ACL	3.54	1,604	4.29	1,945	ABC x 14%
Commercial Management Uncertainty	0	0	0	0	Derived by the Monitoring Committee
Commercial ACT	3.54	1,604	4.29	1,945	(ACL – Management Uncertainty)
Recreational ACL	21.73	9,856	26.34	11,945	ABC x 86%
Recreational Management Uncertainty	0	0	0	0	Derived by the Monitoring Committee
Recreational ACT	21.73	9,856	26.34	11,945	(ACL – Management Uncertainty)
Recreational AMs	3.65	1,656	0	0	2022 based on 2020 ABC overage
Commercial Discards	0	0	0	0	Value used in assessment
Recreational Discards	4.19	1,901	4.19 ¹	1,901 ¹	2020 GARFO-estimated (MRIP) discards ¹
Commercial TAL	3.54	1,604	4.29	1,945	Commercial ACT - commercial discards
Recreational TAL	13.89	6,298	22.14	10,044	Recreational ACT - recreational discards and rec. AM for 2022
Combined TAL	17.42	7,903	26.43	11,989	Commercial TAL + Recreational TAL
Transfer	0	0	0	0	No transfer while overfished or overfishing
Commercial Quota	3.54	1,604	4.29	1,945	Commercial TAL +/- transfer
RHL	13.89	6,298	22.14	10,044	Recreational TAL +/- transfer

¹Staff recommend revising recreational discards to the 2021 GARFO estimate once available.

Recent Catch and Landings

Recreational harvest, dead discards, and commercial landings from 2000-2021 are presented in Figure 1. Recreational landings were 12.46 million pounds in 2021, a 1.12 million pound decrease compared with 2020, and the lowest harvest for the time series. This coincides with lower effort,

as the number of recreational trips¹ in 2021 (7,409,375) is the second lowest reported in the 2000-2021 period. Recreational catch and harvest and commercial landings by state are shown in Table 2. In 2019, the Council and Board approved recreational management measures to constrain harvest to the RHL, which included going from a 15 fish bag limit across all modes to a 3-fish bag limit for private and shore modes and a 5-fish bag limit for the for-hire mode. The recreational management measures were not implemented by all states until mid-late 2020. The first full year of these more restrictive bag limits was 2021.

Commercial landings were 2.07 million pounds in 2021, a 0.09 million pound decrease compared with 2020. Similar to recreational harvest, 2021 commercial harvest represents the lowest commercial landings in the time series. Commercial bluefish harvest identified through the dealer database (cfders) was comprised of gillnet (59%), followed by unknown gear (26%), otter trawl/bottom fish (7%), handline (5%) and other (3%).

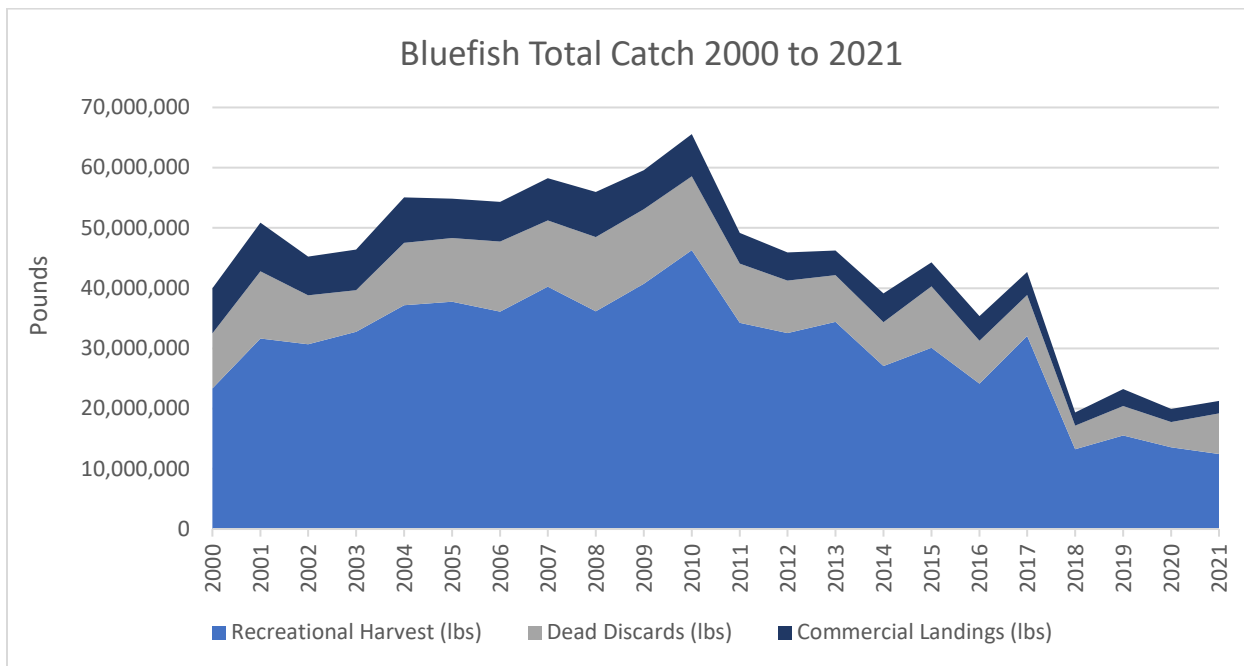


Figure 1. Bluefish total catch (recreational harvest, recreational dead discards and commercial landings) from 2000-2021. Source: MRIP and dealer data). Commercial discards are thought to be negligible.

¹ Estimated number of recreational fishing trips where the primary or secondary target was bluefish, Maine – Florida's East Coast. Source: MRIP.

Table 2. MRIP estimates of 2021 bluefish recreational harvest, total catch, and average weight.

State	<i>Recreational</i>						<i>Commercial</i>
	Harvest			Catch	Released Alive	Dead Discards ²	Landings
	Pounds	Number	Ave. Wt. ¹ (lbs)	Number	Number	Number	Pounds
ME	3,633	673	5.4	6,104	5,431	815	0
NH	3,796	698	5.4	698	-	-	0
MA	833,962	116,547	7.2	855,041	738,494	110,774	223,723
RI	718,950	140,504	5.1	774,409	633,905	95,086	254,607
CT	206,429	263,966	0.8	1,180,092	916,126	137,419	33,648
NY	2,353,527	861,060	2.7	3,565,667	2,704,607	405,691	324,186
NJ	3,357,809	921,667	3.6	2,895,008	1,973,341	296,001	230,157
DE	8,460	14,019	0.6	179,562	165,543	24,831	2,171
MD	117,545	105,711	1.1	316,949	211,238	31,686	3,065
VA	153,199	216,317	0.7	719,804	503,487	75,523	44,626
NC	1,031,761	982,391	1.1	4,521,724	3,539,333	530,900	851,860
SC	107,268	172,528	0.6	722,532	550,004	82,501	0
GA	12,870	13,811	0.9	136,588	122,777	18,417	0
FL	3,553,572	2,373,891	1.5	13,875,822	11,501,931	1,725,290	102,623
Total	12,462,781	6,183,783	-	29,750,000	23,566,217	3,534,932	2,070,666

¹ Average weight is the pounds harvested divided by the number of fish harvested. ²Recreational dead discards are calculated as 15% of total recreational discards.

Discard Estimates

There are currently two methods used to estimate recreational bluefish discards that result in very different estimates (e.g., 2019 GARFO estimated = 4,880,759 pounds, 2019 NEFSC estimated = 15,414,721 pounds). Discard estimate methodologies are being evaluated in the ongoing bluefish research track assessment and the peer reviewed methodology resulting from the assessment is expected to be used throughout the management process in the future. The first approach, which is used by GARFO for catch accounting, applies the MRIP estimated mean weight (by year, state and wave) of harvested fish (A+B1) times the number of released fish (MRIP-B2s by year, state and wave) and an assumed 15% release mortality. Previously, the Monitoring Committee generally agreed that this estimate does not fully capture recreational fishery dynamics because this approach uses the mean weight of harvested fish, not discards, and the length frequency data suggests that released fish tend to be larger than retained fish. The second approach, which is used by the NEFSC in the bluefish stock assessment, incorporates a length-weight relationship for released fish data from the MRIP, American Littoral Society tag releases, and volunteer

angler surveys from Connecticut, Rhode Island, and New Jersey. However, this sampling approach does not characterize the entire coast, which adds to the uncertainty in these estimates. The constant F-rebuilding projections used to inform the 2022-2023 ABCs incorporated the 2020 GARFO estimated discards.

Stock Status and Biological Reference Points

In June 2021, a bluefish management track assessment, which included revised bluefish MRIP estimates and commercial landings through 2019 indicated the bluefish stock is still overfished and overfishing is not occurring. This update builds upon the 2019 operational assessment with data through 2018 that first indicated the stock was overfished and overfishing was not occurring.

The biological reference points for bluefish revised through the 2021 management track assessment include an updated fishing mortality threshold of $F_{MSY} = F_{35\%}$ (as the F_{MSY} proxy) = 0.181, and a biomass reference point of $SSB_{MSY} = SSB_{35\%}$ (as the SSB_{MSY} proxy) = 444.74 million lbs (201,729 mt). The minimum stock size threshold ($1/2 SSB_{MSY}$) is estimated to be 222.37 million lbs (100,865 mt); Table 3. SSB in 2019 was 211.07 million lbs (95,742 mt), 47.5% of the SSB_{MSY} proxy reference point (Figure 2 and Table 3).

Fishing mortality on the fully selected age 2 fish was estimated to be 0.172 in 2019, 95% of the updated fishing mortality threshold reference point F_{MSY} proxy = $F_{35\%} = 0.181$ (Figure 3). There is a 90% probability that the fishing mortality rate in 2019 was between 0.140 and 0.230.

Table 3. Summary of changes in biological reference points and terminal year SSB and F estimates resulting from SAW/SARC 60 process to the 2019 operational assessment and 2021 management track assessment.

	SAW/SARC 60 (2015) Biological Reference Points and most recent update stock status results (data through 2014)	Bluefish Operational Assessment (2019) Biological Reference Points and stock status results (data through 2018)	Bluefish Management Track Assessment (2021) Biological Reference Points and stock status results (data through 2019)
Stock Status	Not Overfished, Not Overfishing	Overfished, Not Overfishing	Overfished, Not Overfishing
SSB_{MSY}	223.42 million lbs (101,343 mt)	438.10 million lbs (198,717 mt)	444.74 million lbs (201,729 mt)
½ SSB_{MSY}	111.71 million lbs (50,672 mt)	219.05 million lbs (99,359 mt)	222.37 million lbs (100,865 mt)
Terminal year SSB	2014: 258.76 million lbs (86,534 mt) 85% of SSB _{MSY}	2018: 200.71 million lbs (91,041 mt) 46% of SSB _{MSY}	2019: 211.07 million lbs (95,742 mt) 47.5% of SSB _{MSY}
F_{MSY}	0.190	0.183	0.181
Terminal year F	2014: 0.157 83% of F _{MSY}	2018: 0.146 80% of F _{MSY}	2019: 0.172 95% of F _{MSY}

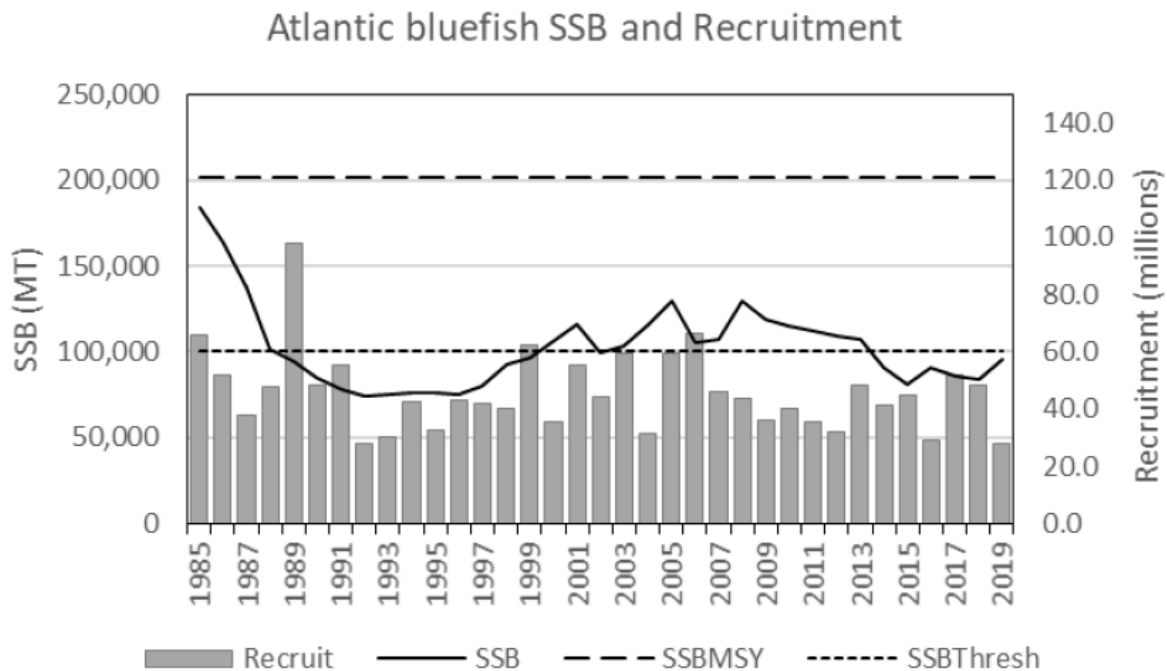


Figure 2. Atlantic bluefish spawning stock biomass (SSB; solid black line) and recruitment at age 0 (R; gray vertical bars) by calendar year. The horizontal dashed line is the updated SSB_{MSY} proxy = SSB_{35%} = 201,729 MT, and the dotted black line is the SSB_{Threshold} = 100,865 MT.

Atlantic bluefish total catch and Fishing Mortality

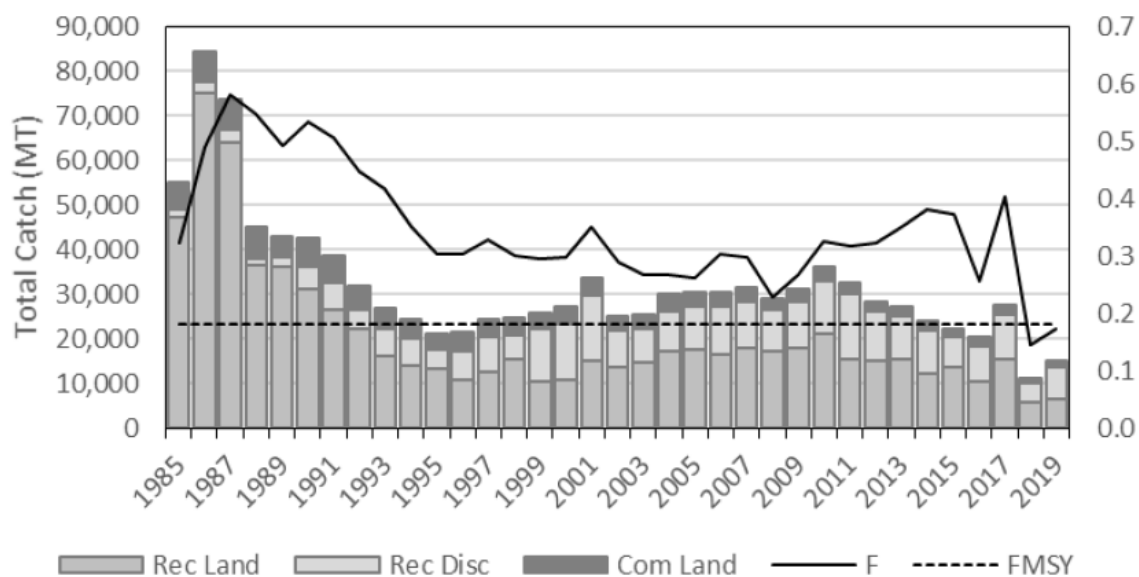


Figure 3. Total fishery catch (metric tons; MT; solid line) and fishing mortality (F, peak at age 3; squares) for Atlantic bluefish. The horizontal dashed line is the updated F_{MSY} proxy = $F_{35\%}$ = 0.181.

The 2021 management track assessment indicated the bluefish stock has experienced a decline in SSB over the past decade, coinciding with an increasing trend in F. Recruitment has remained fairly steady, fluctuating just below the time-series mean of 46 million fish. Both commercial and recreational fisheries have had lower catches in recent years. These lower catches are possibly a result of availability.

Review of Prior SSC Recommendations

In July 2021, the SSC recommended new ABCs for 2022-2023, which incorporated the results of the 2021 management track stock assessment. To make this recommendation, the SSC reviewed 2020 fishery performance and materials from the management track assessment.

The SSC also discussed the Council-approved rebuilding schedule, including the treatment of the rebuilding F proposed by the Council and its implications for generating ABCs. The Council’s rebuild policy is to achieve rebuilding within a seven-year period commencing in 2022. A constant F strategy was selected such that biomass in 2028 has a 50% chance of exceeding the Bmsy proxy rebuilding target. Given the basis for the rebuilding, the SSC determined that the constant F for rebuilding in seven years (denoted as $F_{rebuild,7} = 0.154$) should be treated as a Fmsy proxy. As such, the usual Council risk policy, P* criteria, and OFL CV process should apply. Failure to include scientific uncertainty through the direct application of $F_{rebuild,7}$ alone could generate instances where the probability of overfishing exceeded 0.5 between 2022 and 2028. Accounting for scientific uncertainty and the resulting lower ABCs should also increase the chance (i.e., greater than 50%) of exceeding the Bmsy target to rebuild the stock within the seven year timeframe.

The SSC recommended that a CV of 100% be applied to the OFL estimate as an appropriate ABC and noted that the chief uncertainty for Bluefish relates to patterns in the revised MRIP estimates.

The SSC also discussed the most significant sources of uncertainty, ecosystem considerations, and research recommendations to reduce uncertainty. These discussions can be found summarized here: <https://www.mafmc.org/s/July-2021-SSC-Report.pdf>.

Staff Recommendation for 2023 ABC

Staff recommend maintaining the previously implemented 2023 ABC for bluefish of 30.62 million pounds (13,890 mt). In 2022, a research track assessment is ongoing and scheduled for peer review in December 2022. This assessment may change the overall model used to assess bluefish, and in turn update all biological reference points and the resulting rebuilding plan. This assessment will ultimately inform the 2024-2025 specifications package.

Sector Specific Catch and Landings Limits

The flow chart in Figure 4 on page 9 was used to derive the sector specific catch and landings limits shown in Table 1. No transfers between sectors occur when the stock is overfished.

Recreational

In 2021, MRIP reported the recreational fishery landed 12.46 million pounds compared to the 8.34 million pounds RHL. This RHL overage along with recreational discards likely results in an ACL overage, in which case accountability measures will be triggered. Official 2021 recreational discard estimates are not yet available from GARFO, however they are expected to be released before the August Council and Board meeting. Bluefish recreational accountability measures require a pound for pound overage payback when the stock is overfished. A separate recreational management measures memo will outline staff recommendations for 2023 recreational management measures, based on a payback-adjusted RHL, to be discussed by the MC at their July 2022 meeting.

Commercial

In 2021, the commercial fishery landed 2.07 million pounds compared to the 2.77-million-pound quota and commercial discards are assumed to be zero. Staff recommend no changes to the 2023 implemented commercial ACL, ACT, and quota.

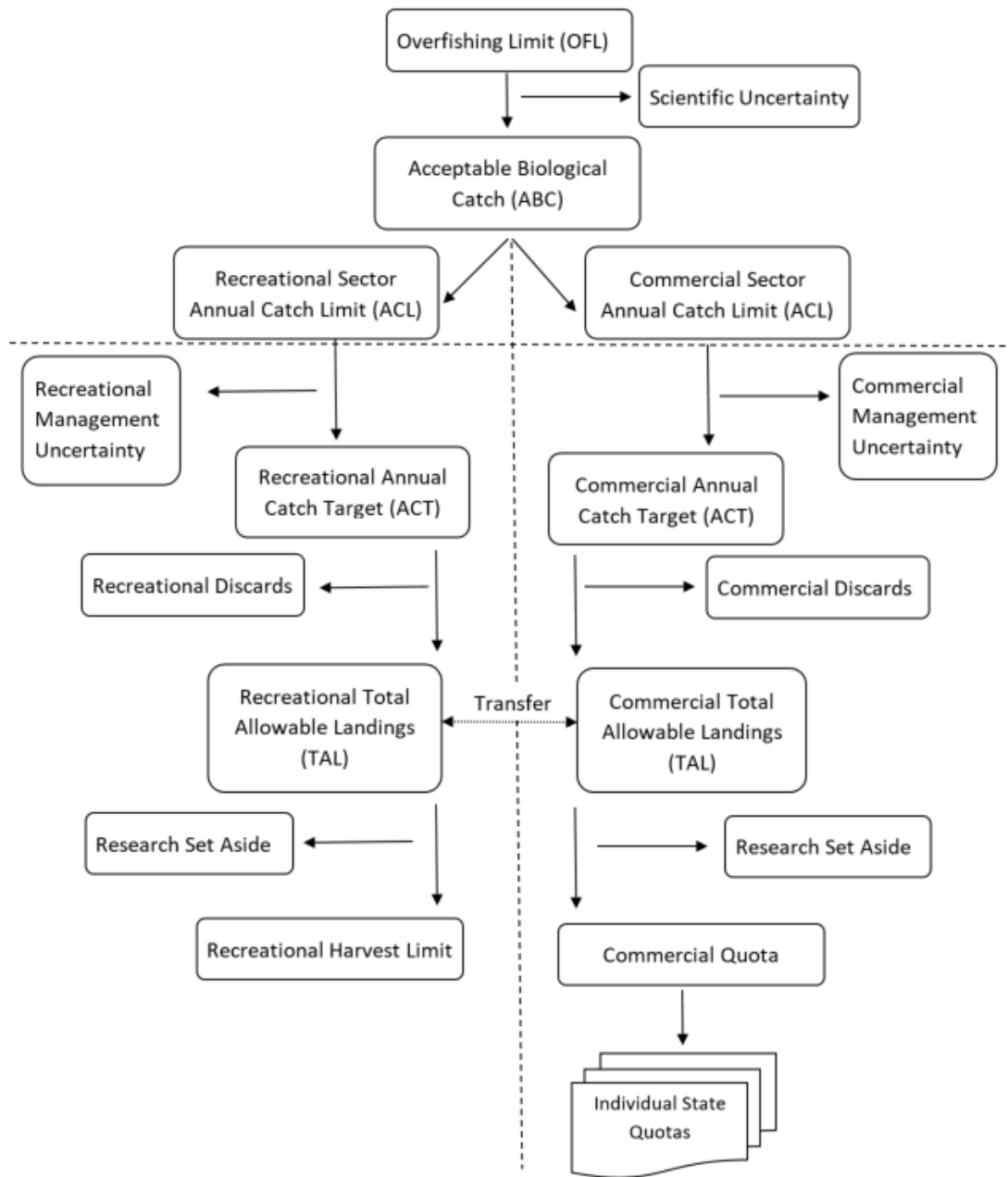


Figure 4. Bluefish flow chart from the Bluefish Allocation and Rebuilding Amendment, which includes sector specific management uncertainty. The research set aside program is currently discontinued so no further calculations are needed from the sector specific TALs to the RHL and commercial quota.



Bluefish Fishery Performance Report

June 2022

The Mid-Atlantic Fishery Management Council's (Council) and the Atlantic States Marine Fisheries Commission's Bluefish Advisory Panels (AP) met via webinar on June 22, 2022 to review the Fishery Information Document and develop the following Fishery Performance Report. The primary purpose of this report is to contextualize catch histories by providing information about fishing effort, market trends, environmental changes, and other factors. A series of trigger questions listed below were posed to the AP to generate discussion of observations in the bluefish fishery. Please note: Advisor comments described below are not necessarily consensus or majority statements.

MAFMC Advisory Panel members present: Victor Hartley (NJ), Phil Simon (NJ), William Mandulak (NC), Jim Kaczynski (RI), Michael Plaia (CT), Steve Heins (NC), Eric Burnley (DE)

ASMFC Advisory Panel members present: Peter Fallon (ME), John LaFountain (RI)

Others present: Dustin Colson Leaning (ASMFC Staff), Cynthia Ferrio (GARFO Staff), Cynthia Jones (MAFMC SSC), Maureen Davidson (MAFMC), Joe Cimino (MAFMC), Chris Batsavage (MAFMC), Abby Tyrell (NMFS), and Karson Coutre (MAFMC Staff).

Trigger questions

1. What factors have influenced recent catch (markets/economy, environment, regulations, other factors)?
2. Are the current fishery regulations appropriate? How could they be improved?
3. What would you recommend as research priorities?
4. What else is important for the Council to know?

Environmental Factors Influencing Catch

The bluefish recreational fishery is unusual because it is almost exclusively catch and release except for those fishing for snappers. When the regulations changed from a 15 fish bag limit to a 3 fish bag limit, there was not a big impact on angler behavior. The current regulations are not the primary factor impacting how many people fish and how often they fish for bluefish. Reduced bag limits are not going to limit fishing mortality and regulations are not going to help this stock. It looks like the spawning stock biomass has remained fairly steady over time, especially since the 1980s, based on the recent operational assessment graph.

Recreational catch has been relatively flat since the big drop off after 2017. Generally, anglers fishing from shore and beaches do not keep a lot of bluefish. Last November there were quite a

few bluefish and they were in the 3-5 pound range.

Bluefish are a pelagic fish, and the fish that move inshore are a spillover for bluefish that are looking for additional forage. In New Jersey, fishing mostly on party or charter boats, the bluefish showed up late this year, normally they come much earlier.

In Rhode Island, the commercial and recreational fishing started out very strong last year and then it fell off on the latter half of the year, especially gillnetting. Giant bluefin tuna moved inshore in the fall and scared off the smaller bluefish, which could have affected landings. This year bluefish seems like a strong stock. People are reaching their quotas quickly.

For the New Jersey for-hire sector, fishing out of Point Pleasant, bluefish is not a catch and release fishery. In this area we saw plenty of bluefish last year, while this year the bluefish came in a little late. Fall bluefish fishing is pretty good, and most boats switch to striped bass at this time, while bluefish become more of a secondary target. They may have come in late this year because menhaden came in late. The bluefish are definitely plentiful.

In Maine, bluefish were historically important for the for-hire trips, especially in August when other species' seasons close. Maine is the northern end of the range and as the population has decreased, there have been very few bluefish in Maine and New Hampshire for the past five years. In Massachusetts there were more bluefish in the fall last year, especially on the south side of the cape. North of Massachusetts it would be beneficial for us if the bluefish population would come back.

A bluefish dealer and smokehouse owner in Rhode Island purchases bluefish up and down the coast and used to see big bluefish prior to 2018. In North Carolina and New Jersey, they used to see bigger fish but now they are seeing much smaller fish, which has been true up and down the coast. The exception is this year, when up and down the coast they started getting really big fish. An environmental shift has likely caused big bluefish to go offshore and come up north more and that is reflected in the allocations. Northern states have been getting more fish. In the Rhode Island area, when the tuna moved in close to shore it affected the inshore gillnetters and it had been a while since that had been seen. Those fishing 10-11 miles south of Block Island were catching a ton of bluefish and were only restricted by the quota. They would limit out very quickly and the commercial coastwide quota was underharvested last year due to allocations not being updated yet. In the fall, bluefish were coming by RI offshore.

In the Delaware and Maryland area, we aren't seeing tiny snappers and jumbos, but we have a good supply of fish at 28 inches in Maryland. Bluefish have been in the surf, and even going up into estuaries. There is now a fishery that had not been there for the past few years. The local fishing pier had a good run with them as well.

Looking at the fishing literature, not necessarily the scientific literature, bluefish have been very cyclical. Given that, we should sit back and see what happens. In Long Island Sound there have been plenty of bluefish so maybe the population is on the upswing.

The state of Florida accounts for so much of the bluefish catch recreationally, their dead discard

estimate is more dead fish than we catch in New York and New Jersey. Do we know what is going on there? No advisors from Florida were present to comment on this.

One advisor commented that Connecticut's average weight for bluefish seems difficult to believe. Other AP members commented that the snapper fishery is very common in Connecticut and the high number of snappers can explain the low average weight per fish.

Market/Economic Conditions and Management Issues

The assumed discard mortality rate seems high, however in general treble hooks make it harder to release bluefish so choosing to fish with a single hook may increase survival.

No AP members from Florida were present, however, one advisor noted that they have heard anglers are upset about the minimum size limit in Florida.

One advisor asked how Marine Recreational Information Program (MRIP) data was collected during COVID-19 and what the impact was on the intercept surveys. In response, staff discussed the use of imputed MRIP estimates for certain states/waves of 2020.

Another advisor asked about the implications of the 2021 recreational harvest estimate being over the recreational harvest limit (RHL). Staff discussed that the Monitoring Committee and Council and Board would consider that when setting 2023 recreational measures. However, staff also pointed out that the 2023 RHL is higher than in recent years, which may offset the effect of an overage payback.

Five AP members supported an increase in bag limit for the for-hire sector. Four specified that this could be supported with implementation of a minimum size for this sector. One advisor did not support different bag limits across modes. Additional context is included in the comments below:

The party boats are getting decimated in New Jersey. There used to be 3-4 in Barnegat Bay and now there is only one and it may be gone soon. The party boats should be supported if possible.

The for-hire fleet would like to see a bag limit of 7 fish with a minimum size.

The bag limit should be increased and a minimum size could be increased for the for-hire industry. They fish further offshore and their clients are looking at how much protein they can bring home. A bigger bag limit allows people to bring more home so they will want to take the trips.

In the Gulf of Mexico there is sector separation between private and for-hire modes with different regulations. The more robust for-hire reporting can allow for a better managed fishery and opportunities to have higher bag limits or different size limits informed by better data.

Regarding the recreational bag limit, everyone should have the same bag limit across modes. It is not fair or equal to have them different for the for-hire and private sectors.

Two advisors supported investigating a minimum size (regardless of bag limit) in order to help protect the stock. A small but reasonable size limit would allow kids to still catch fish but the stock would benefit from protecting younger year classes.

Research Priorities

More research is needed on release mortality and single hook lures should be promoted along with a circle hook requirement.

It would be beneficial to research the cyclical nature of bluefish, however that may take generations.

More research is needed on the impact of the snapper fishery on the stock. What is the impact of removing a lot of these small bluefish from the future population?

Email Comments

From: Capt. TJ Karbowski [mailto:tedkarbowski@yahoo.com]
Sent: Thursday, July 7, 2022 4:47 AM
To: Dustin C. Leaning <DLeaning@asmfc.org>
Subject: [External] Re: Bluefish Fishery Performance Report Draft

Good morning.

I read through quickly. In my opinion as a 6 pack charter vessel. not a party boat. The current bag is completely fine. We CATCH a ton of blues. We release about 90%.

Small baitfish such as sand eels and silversides you will find plenty of smaller blues.

When menhaden are around you will find the larger (alligator) bluefish. No big bunker= No big blues.

Thank you,
Capt. TJ Karbowski
Rock & Roll Charters
Clinton, CT
203.314.3765
<https://rockandrollcharters.com/>

Atlantic Bluefish Data Update for 2022

National Marine Fisheries Service
Northeast Fisheries Science Center
166 Water St.
Woods Hole, MA 02543

Commercial bluefish landings data were provided directly by the Atlantic Coastal Cooperative Statistics Program (ACCSP). Commercial landings in 2020 were 1,112 MT (2.45 million lbs), and slightly decreased to 1,090 MT (2.40 million lbs) in 2021, which was 80% of the 2021 commercial quota (1,255 MT, 2.77 million lbs). Estimated recreational landings in 2020 were 6,160 MT (13.58 million lbs), and decreased to 5,653 MT (12.46 million lbs) in 2021, which was 131% of the 2021 recreational harvest limit (4,301 MT, 9.48 million lbs). Total recreational discards (assuming 15% mortality, and calculated using NEFSC methodology from SARC60) were 3,747 MT = 8.3 million lbs in 2020, and 5,709 MT = 12.6 million lbs in 2021. Total bluefish catch in 2020 was 11,019 MT (24.29 million lbs), and in 2021 was 12,452 MT (27.45 million lbs), Figure 1).

A recreational catch-per-unit-effort index was updated through 2021 from the MRIP intercept data. This index is an important index incorporated into the stock assessment and shows a slight increase from the 2020 estimate. In addition, the NEFSC Fall bottom trawl survey was updated through 2021, noting that there is no survey value for 2017 due to incomplete sampling (vessel issues) and no information for 2020 due to COVID. The 2021 NEFSC fall index value of 1.54 is an increase from the 2019 value of 1.13, which was the lowest of the time-series (Figure 2). The NEFSC fall survey length frequency distributions show a typical peak of smaller fish centering around 20 cm and the historical bi-modal pattern was not present in 2021 (Figure 3).

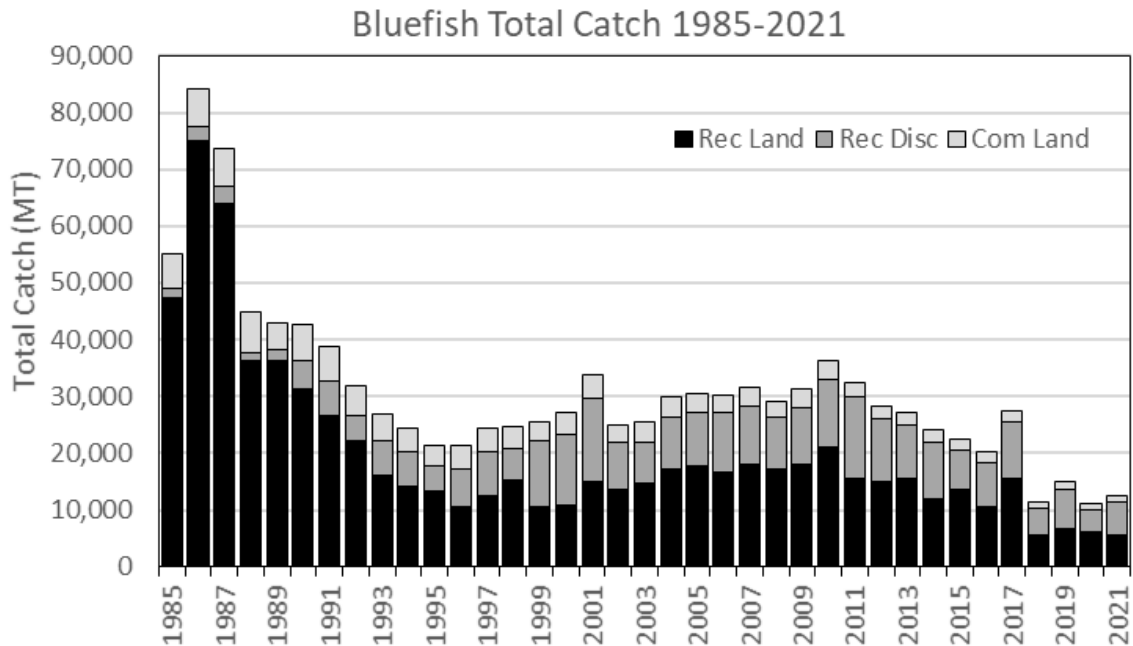


Figure 1. Atlantic bluefish fishery total catch.

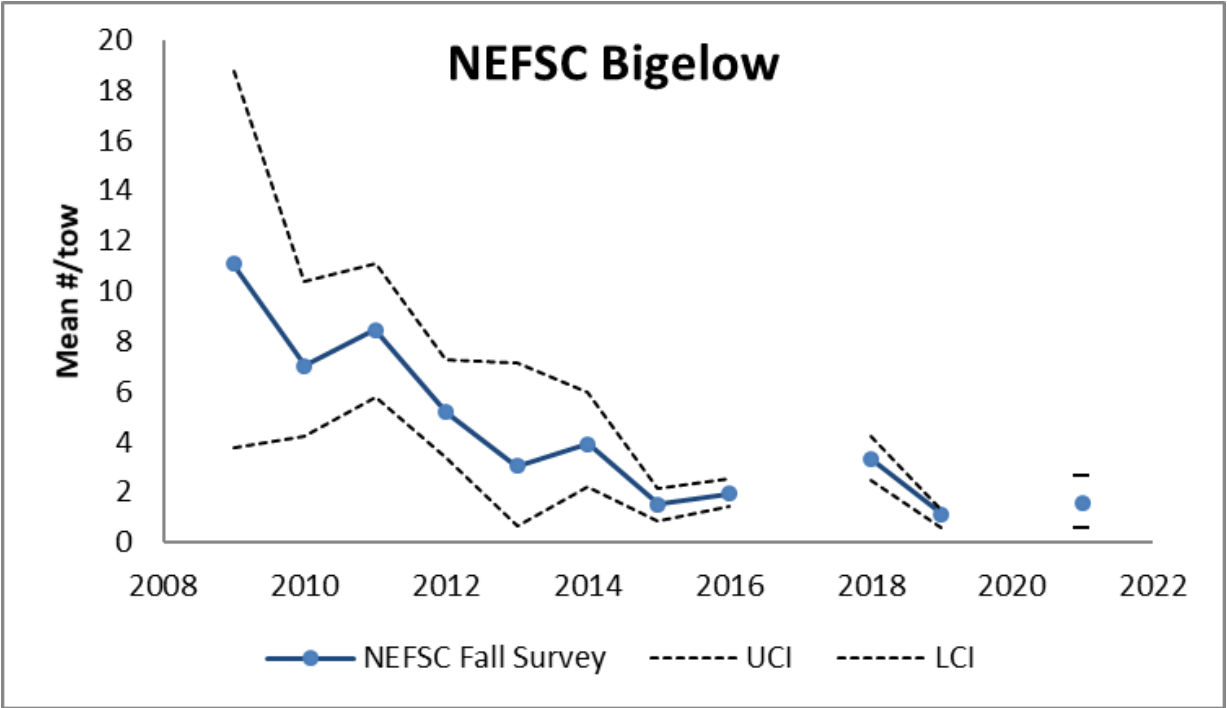
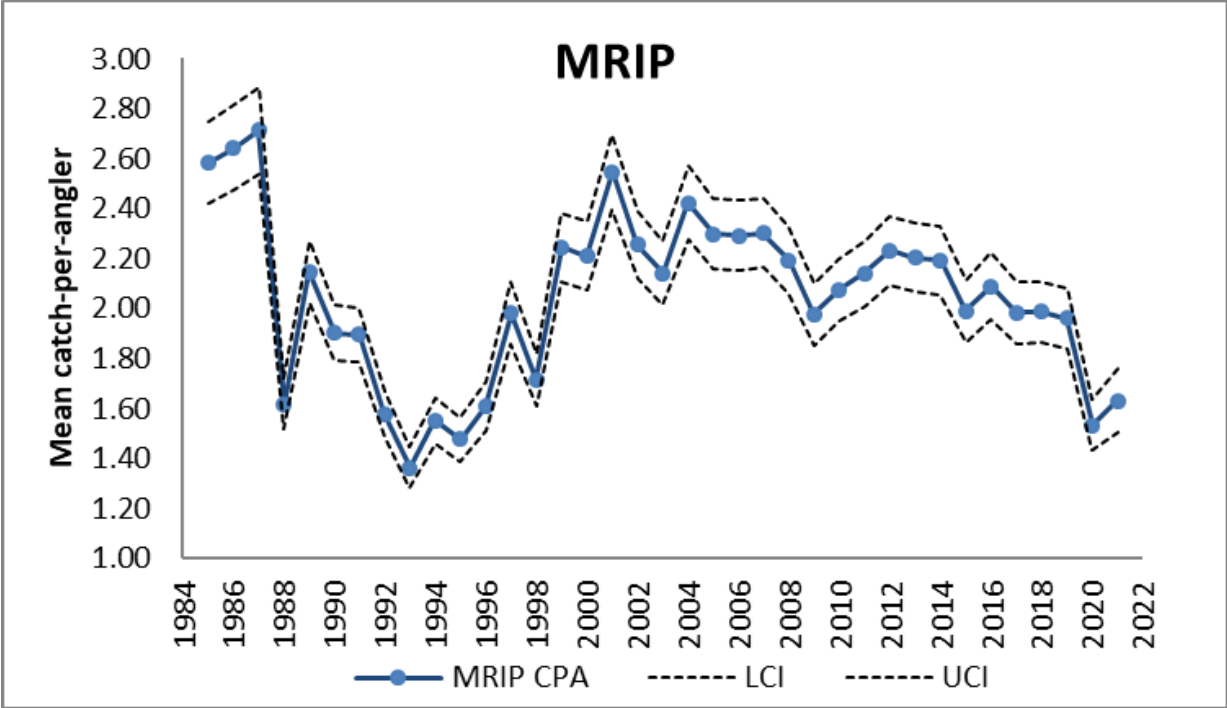


Figure 2. A. MRIP CPUE index and B. NEFSC trawl survey index for bluefish. The Bigelow did not sample southern strata in 2017 and there was no 2020 survey due to COVID.

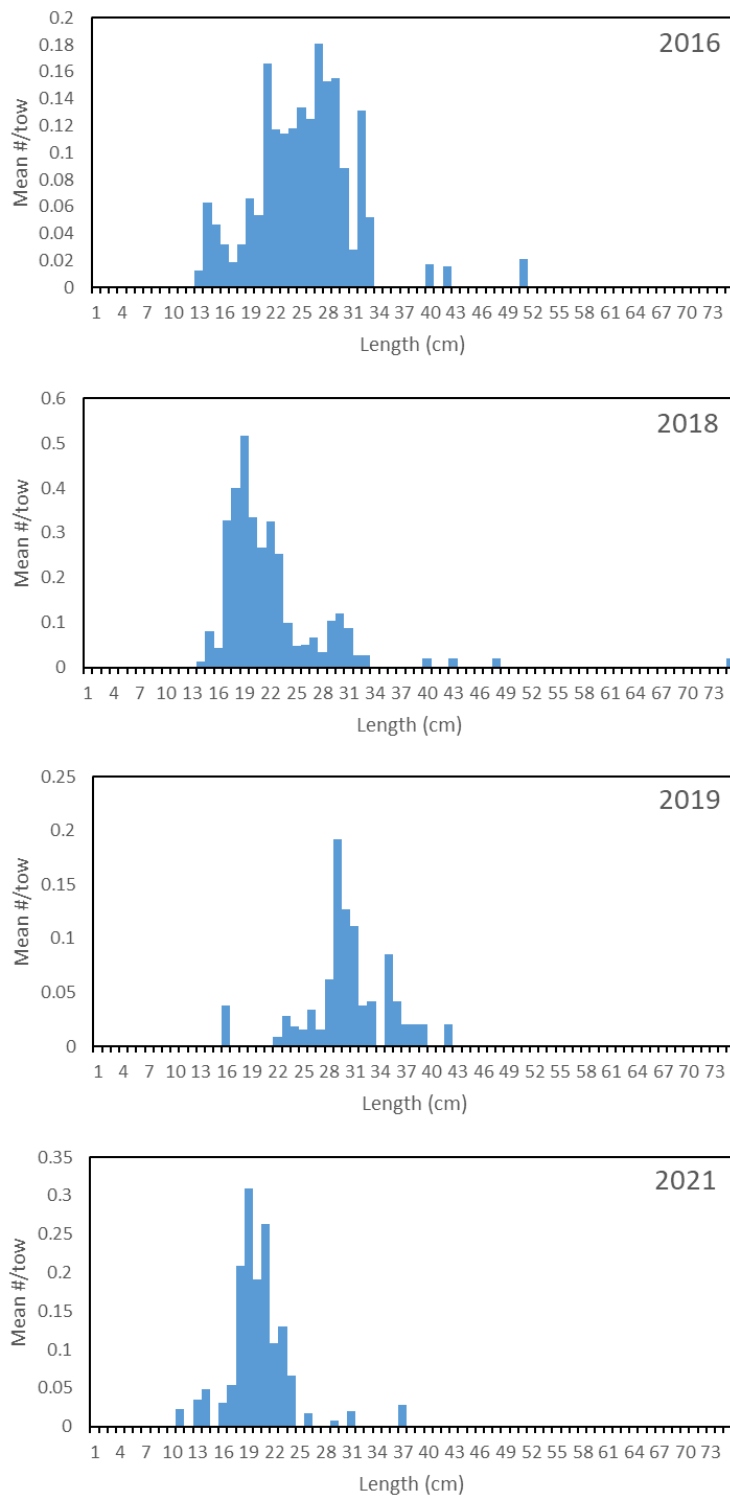


Figure 3. Northeast Fisheries Science Center (NEFSC) fall trawl survey indices at length. There is no valid fall 2017 or 2020 index for bluefish.



Bluefish Fishery Information Document

June 2022

This Fishery Information Document provides a brief overview of the biology, stock condition, management system, and fishery performance for bluefish with an emphasis on 2021. Data sources for Fishery Information Documents are generally from unpublished National Marine Fisheries Service (NMFS) survey, dealer, vessel trip report (VTR), permit, and Marine Recreational Information Program (MRIP) databases and should be considered preliminary. For more resources, including previous Fishery Information Documents, please visit <http://www.mafmc.org/bluefish/>.

Key Facts

- According to the 2021 Management Track Assessment, bluefish is overfished and overfishing is not occurring. The bluefish stock entered a rebuilding plan in 2022 to rebuild the stock. A research track assessment will undergo peer review in late 2022.
- Recreational landings were 12.46 million pounds in 2021, a 1.12 million pound decrease compared with 2020.
- Recreational dead discards in 2021 were 3.53 million fish, which represents a slight increase compared with 3.20 million fish in 2020.
- Commercial landings were 2.07 million pounds in 2021, a 0.09 million pound decrease compared with 2020.

Basic Biology

Bluefish are found worldwide in tropical and subtropical waters, but in the western North Atlantic range from Nova Scotia and Bermuda to Argentina. Bluefish travel in schools of like-sized individuals and undertake seasonal migrations, moving into the Middle Atlantic Bight (MAB) during spring and then south or farther offshore during fall. Within the MAB they occur in large bays and estuaries as well as across the entire continental shelf. Juvenile stages have been recorded in all estuaries within the MAB, but eggs and larvae occur in oceanic waters (Able and Fahay 1998). Bluefish have fast growth rates and reach lengths of 3.5 ft and can weigh up to 27 pounds (Bigelow and Schroeder 1953). Bluefish live to age 12 and greater (Salerno et al. 2001).

Bluefish eat a wide variety of prey items. The species has been described by Bigelow and Schroeder (1953) as “perhaps the most ferocious and bloodthirsty fish in the sea, leaving in its

wake a trail of dead and mangled mackerel, menhaden, herring, alewives, and other species on which it preys."

Bluefish born in a given year (young of the year) typically fall into two distinct size classes suggesting that there are two spawning events along the east coast. Studies suggest, however, that spawning is a single, continuous event, but that young are lost from the middle portion resulting in the appearance of a split season (Smith et al. 1994). As a result of the bimodal size distribution, young are referred to as spring-spawned or summer-spawned. In the MAB, spring-spawned bluefish appear to be the dominant component of the stock.

Status of the Stock

2021 Management Track Assessment

In June 2021, a bluefish management track assessment, which included revised bluefish MRIP estimates and commercial landings through 2019 indicated the bluefish stock is still overfished and overfishing is not occurring. This update builds upon the 2019 operational assessment with data through 2018 that first indicated the stock was overfished and overfishing was not occurring.

The biological reference points for bluefish revised through the 2021 management track assessment include an updated fishing mortality threshold of $FMSY = F35\%$ (as the $FMSY$ proxy) = 0.181, and a biomass reference point of $SSBMSY = SSB35\%$ (as the $SSBMSY$ proxy) = 444.74 million lbs. The minimum stock size threshold ($1/2 SSBMSY$) is estimated to be 222.37 million lbs. SSB in 2019 was 211.07 million lbs.

Fishing mortality on the fully selected age 2 fish was estimated to be 0.172 in 2019, 95% of the updated fishing mortality threshold reference point $FMSY$ proxy = $F35\% = 0.181$. There is a 90% probability that the fishing mortality rate in 2019 was between 0.140 and 0.230.

The 2021 management track assessment indicated the bluefish stock has experienced a decline in SSB over the past decade, coinciding with an increasing trend in F . Recruitment has remained fairly steady, fluctuating just below the time-series mean of 46 million fish. Both commercial and recreational fisheries have had lower catches in recent years. These lower catches are possibly a result of availability. Anecdotal evidence suggests larger bluefish stayed offshore and inaccessible to most of the recreational fishery during the past few years.

2022 Research Track Assessment

There is an ongoing bluefish research track stock assessment which will undergo peer review in late 2022. Research track assessments evaluate new datasets that can either inform or be used in new or existing stock assessment models. The goal is to develop an improved stock assessment for bluefish that can be used for future management track assessments.

Management System and Fishery Performance

Management

The Mid-Atlantic Fishery Management Council (Council or MAFMC) and the Atlantic States Marine Fisheries Commission (ASMFC) work cooperatively to develop fishery regulations for bluefish off the east coast of the United States. The Council and Commission work in conjunction with the National Marine Fisheries Service (NMFS), which serves as the federal implementation and enforcement entity. This cooperative management endeavor was developed because a significant portion of the catch is taken from both state waters (0-3 miles offshore) and federal waters (3-200 miles offshore, also known as the Exclusive Economic Zone or EEZ). The management unit for bluefish is the U.S. waters in the western Atlantic Ocean.

The Bluefish Fishery Management Plan (FMP) was implemented in 1990 and established the Mid-Atlantic Fishery Management Council's management authority over the fishery in federal waters. Amendment 1, implemented in 2000, addressed stock rebuilding and created the Bluefish Monitoring Committee which meets annually to make management measure recommendations to the Council. Amendment 3 incorporated the development of annual catch limits (ACLs) and accountability measures (AMs) into the specification process and Amendment 4 modified recreational accountability measures to accommodate uncertainty in recreational management and catch estimation. The original FMP and subsequent amendments and frameworks are available at: <http://www.mafmc.org/fisheries/fmp/bluefish>.

Until 2022, the annual catch limit was split 83 percent and 17 percent into recreational and commercial limits, respectively, and the discarded component of that catch was deducted to arrive at recreational and commercial total allowable landings (TAL). Additionally, landings above the expected recreational harvest could be "transferred" from the recreational to the commercial fishery as long as the final commercial quota did not exceed 10.5 million pounds. In June 2021, the Council and ASMFC's Bluefish Board took final action on the Bluefish Allocation and Rebuilding Amendment. This action allocates 14 percent of the fishery annual catch limit to the commercial fishery and 86 percent to the recreational fishery, which is a 3-percentage point shift to the recreational sector from the prior allocations. This amendment also adjusted the commercial state quota allocations and allows bi-directional quota transfers. Amendment documentation is available at: <https://www.mafmc.org/actions/bluefish-allocation-amendment>.

The Council's SSC reviews stock assessment results and the Advisory Panel's fishery performance report and sets the ABCs on a two year cycle with a review occurring between those two years. The Council's Bluefish Monitoring Committee develops and recommends specific coastwide management measures (commercial quota, recreational harvest limit) that will achieve the catch target and makes further adjustments to total catch as needed based on management uncertainty. Finally, the Council and Board meet jointly to develop recommendations to be submitted to the NMFS.

Table 1. Summary of bluefish catch, harvest, and management measures, 2013 – 2022 (Values are in millions of pounds). 2019 is the transition year for when recreational landings are reported using only new MRIP estimates. In 2019, recreational landings were provided using new MRIP estimates while the RHL was developed using old MRIP estimates so cannot be directly compared. In 2020 onward, the new MRIP estimates were used in setting the RHL and estimating catch and landings.

Management Measures	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
ABC	27.47	24.43	21.54	19.45	20.64	21.81	21.81	16.28	16.28	25.26
TAL	23.86	21.08	18.19	16.46	18.19	18.82	19.33	12.25	12.25	17.43
Comm. Quota	9.08	7.46	5.24	4.88	8.54	7.24	7.71	2.77	2.77	3.54
Comm. Landings ¹	4.12	4.77	4.02	4.1	3.64	2.20	2.78	2.16	2.07	--
Rec. Harvest Limit	14.07	13.62	12.95	11.58	9.65	11.58	11.62	9.48	8.34	13.89
Rec. Harvest, Old MRIP	16.46	10.46	11.67	9.54	9.52	3.64	--	--	--	--
Rec. Harvest, New MRIP	34.40	27.04	30.10	24.16	32.07	13.27	15.56	13.58	12.46	--
Rec. Possession Limit (# fish)	15	15	15	15	15	15	15	3: Private 5: For- Hire	3: Private 5: For- Hire	3: Private 5: For- Hire
Total Landings	20.58	15.23	15.69	13.64	13.16	5.84	18.34	15.74	14.53	--
Overage/Underage	-3.28	-5.85	-2.5	-2.82	-5.03	-12.98	N/A*	+3.49	+2.28	--
Total Catch ²	24.06	17.96	18.65	16.09	15.65	6.96	23.50	19.93	21.25 ³	--
Overage/Underage	-3.41	-6.47	-2.89	-3.36	-4.99	-14.85	N/A*	+3.65	+4.97	--

¹Dealer data (cfders) was used to generate commercial landings. ²Recreational discards were calculated assuming MRIP mean weight of fish harvested by state in a given year multiplied by the MRIP B2s and assumed discard mortality rate of 15%. ³A previous version of this document reported a lower catch value due to a calculation error, 2021 catch data are preliminary.

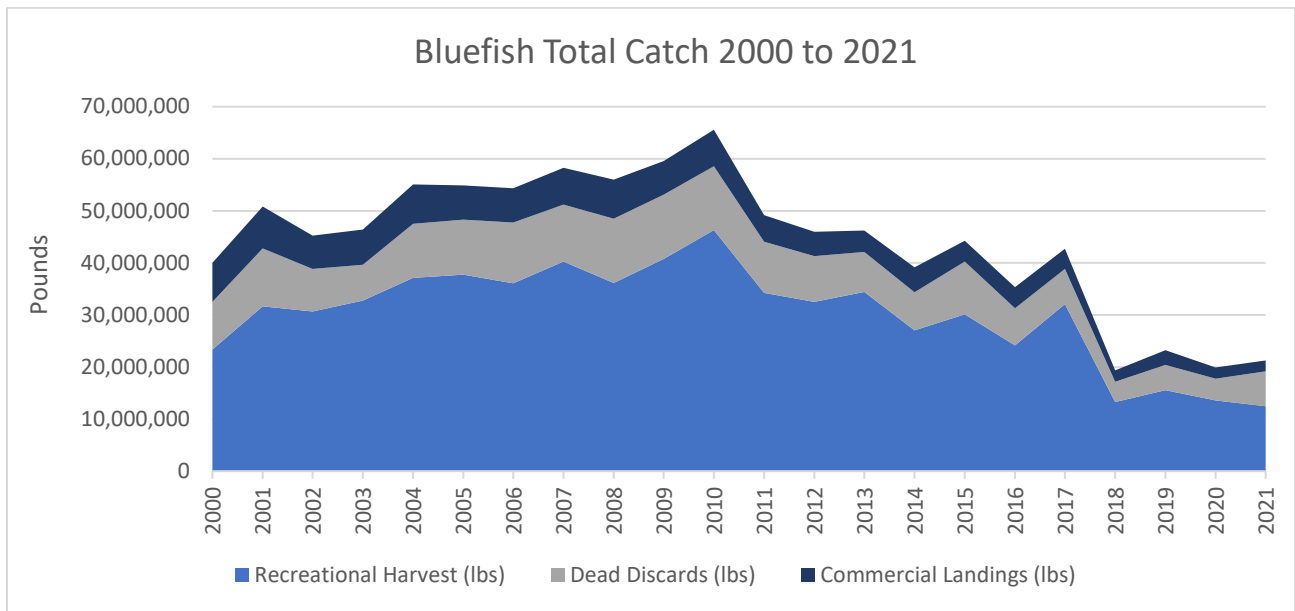


Figure 2. Bluefish catch (landings and dead discards), 2000-2021. Recreational dead discards are calculated as the average weight of a harvested fish by year and state multiplied by the B2s and 15% discard mortality rate (Source: MRIP and Dealer data – cfders). Commercial discards are thought to be negligible.

Fishery Performance Relative to Management Measures

The recreational and commercial landings relative to specified management measures through 2022 are provided in Table 1. In 2021, MRIP reported the recreational fishery landed 12.46 million pounds compared to the 8.34 million pounds RHL. This RHL overage will be reviewed by the Monitoring Committee and Council and Board, as well as the Greater Atlantic Regional Fisheries Office to identify if/how accountability measures will be triggered. In 2021, the commercial fishery landed 2.07 million pounds compared to the 2.77-million-pound quota.

Recreational Fishery

In July 2018, MRIP released revisions to their time series of recreational catch and landings estimates based on adjustments for a revised angler intercept methodology and a new effort estimation methodology (i.e., a transition from a telephone-based effort survey to a mail-based effort survey). The revised estimates of catch and landings are several times higher than the previous estimates for shore and private boat modes. All recreational estimates in this document reflect revised MRIP estimates except where otherwise noted.

Recreational harvest estimates for 2020 were impacted by temporary suspension of shoreside intercept surveys due to the COVID-19 pandemic. NMFS used imputation methods to fill gaps in 2020 catch data with data collected in 2018 and 2019.

Trends in recreational trips associated with targeting or harvesting bluefish from 2012 to 2021 are provided in Table 2. During the past ten years, the lowest annual estimate of bluefish trips

was 7.17 million (2018) and the highest annual estimate of bluefish trips was 12.82 million in 2012. Over the last 5 years (2017-2021), the number of bluefish trips averaged 8.95 million trips.

Table 2. Number of bluefish recreational fishing trips, landings per trip, harvest, catch and releases for the past 10 years, ME-FL.

Year	bluefish trips ¹ (N)	Rec. landings per trip	Recreational Harvest (N)	Recreational Harvest (lbs)	Released (N)	Catch (N)
2012	12,817,838	1.45	18,578,838	32,530,917	32,079,529	50,658,367
2013	9,353,805	2.14	19,975,051	34,398,327	33,519,613	53,494,664
2014	12,441,771	1.73	21,510,651	27,044,276	33,583,115	55,093,766
2015	9,406,704	1.46	13,725,106	30,098,649	28,423,854	42,148,960
2016	10,626,957	1.40	14,899,723	24,155,304	27,629,023	42,528,746
2017	9,952,090	1.39	13,845,806	32,071,432	28,317,327	42,163,133
2018	7,169,536	1.43	10,245,710	13,270,862	20,682,992	30,928,703
2019	8,250,853	1.47	12,137,290	15,555,889	26,494,646	38,631,936
2020	8,745,993	1.07	9,336,222	13,581,218	21,345,604	30,681,826
2021	7,409,375	0.83	6,183,783	12,462,781	23,566,217	29,750,000

¹ Estimated number of recreational fishing trips where the primary target was bluefish or bluefish were harvested regardless of target

From the early 1980s to the early 1990s, recreational landings declined about 70% (avg. 1981-1983 = 156.34 million pounds; avg. 1991-1993 = 46.14 million pounds). Recreational landings continued to decline at a slower rate until reaching a low level in 1999-2000 but have since grown to a peak of over 46 million pounds in 2010. Since 2018, recreational landings have dropped to the lowest values of the time series with a 2018-2021 average harvest of 13.72 million pounds. In 2021, landings were 12.46 million pounds. From 2000 to 2010 landings were relatively stable, however, recreational landings have been trending downward since 2010 (Figure 2). Commercial discards are insignificant and are not estimated in the current assessment.

Recreational catch and harvest by state for 2021 are provided in Table 3. The greatest catches (includes discards) occurred in Florida with 13.88 million fish, followed by North Carolina with 4.52 million fish, and New York and New Jersey with over 2 million fish.

The greatest harvest of bluefish by weight in 2021 occurred in Florida with 3.55 million pounds, followed by New Jersey with 3.36 million pounds, New York with 2.35 million pounds and North Carolina with just over 1 million pounds. Average weights, based on dividing MRIP landings in weight by landings in number for each state, suggest that bluefish size tends to increase along the north Atlantic coast.

Table 3. MRIP estimates of 2021 bluefish recreational harvest, total catch, and average weight.

State	Harvest			Catch	Total Released	Dead Discards
	Pounds	Number	Average Weight ¹ (pounds)	Number	Number	Number
ME	3,633	673	5.4	6,104	5,431	815
NH	3,796	698	5.4	698	-	-
MA	833,962	116,547	7.2	855,041	738,494	110,774
RI	718,950	140,504	5.1	774,409	633,905	95,086
CT	206,429	263,966	0.8	1,180,092	916,126	137,419
NY	2,353,527	861,060	2.7	3,565,667	2,704,607	405,691
NJ	3,357,809	921,667	3.6	2,895,008	1,973,341	296,001
DE	8,460	14,019	0.6	179,562	165,543	24,831
MD	117,545	105,711	1.1	316,949	211,238	31,686
VA	153,199	216,317	0.7	719,804	503,487	75,523
NC	1,031,761	982,391	1.1	4,521,724	3,539,333	530,900
SC	107,268	172,528	0.6	722,532	550,004	82,501
GA	12,870	13,811	0.9	136,588	122,777	18,417
FL	3,553,572	2,373,891	1.5	13,875,822	11,501,931	1,725,290
Total	12,462,781	6,183,783	-	29,750,000	23,566,217	3,534,932

¹ Average weight is the pounds harvested divided by the number of fish harvested. Recreational dead discards are calculated as 15% of total recreational discards.

Figure 3 presents new MRIP estimates of landings by mode since 2000 and indicates that the recent primary modes landing bluefish are shore mode and private boats. Based on recreational harvest in 2021, landings from shore represented 66% of overall landings, followed by private rental mode at 29% and the for-hire sector at 6%. Over the last five years (2017-2021), ~67% of the total bluefish landings came from shore, ~29% from private/rental boats, and ~4% from for-hire boats. In 2021, 926 federal for-hire permits were issued for bluefish.

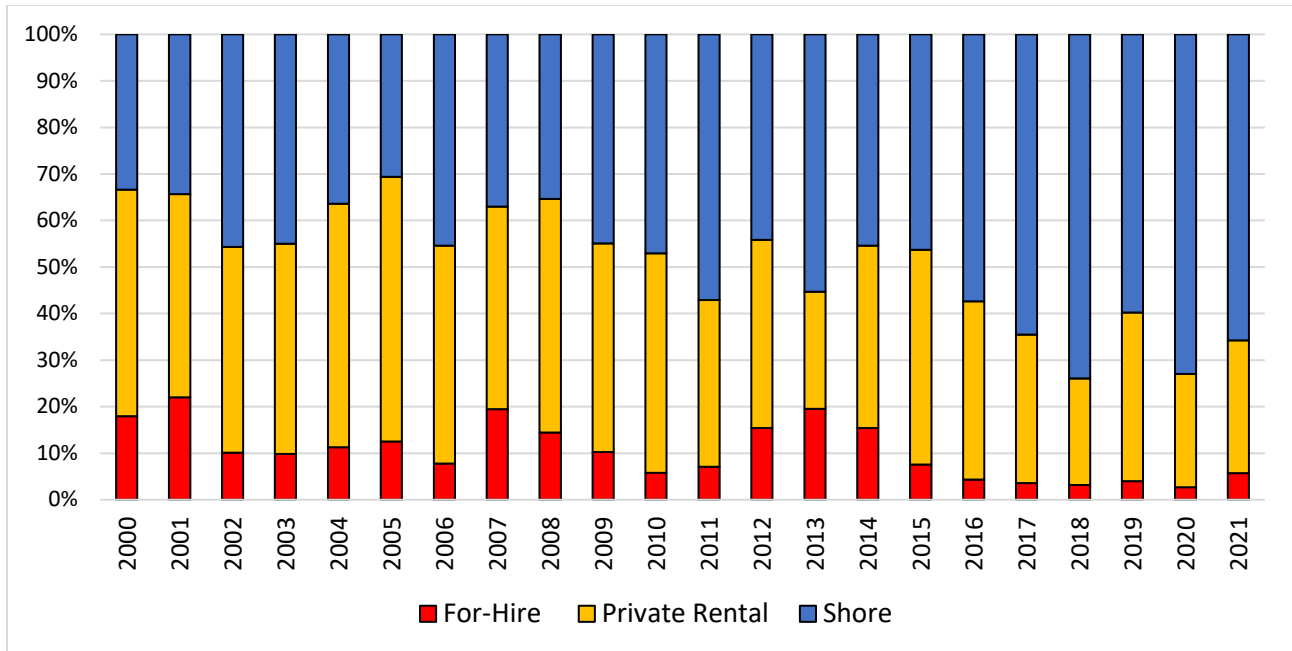


Figure 3. Bluefish recreational harvest (pounds) by mode on the Atlantic Coast, 2000-2021. Source: MRIP.

MRIP classifies catch into three fishing areas: inland, nearshore ocean (< 3 mi), and offshore ocean (> 3 mi). In 2021, the majority of coastwide bluefish harvest occurred in nearshore ocean waters at 62%, followed by 35% from inland waters, and 3% from offshore waters. Inland and nearshore ocean are considered state waters while offshore ocean (>3 miles) is federal waters, therefore 97% of bluefish harvest by weight occurred in state waters in 2021. Over the last five years (2017-2021), 37% of the total bluefish landings came from inland waters, 59% from nearshore ocean, and 4% from offshore ocean.

In the recreational fishery, bluefish released alive (B2) are estimated by MRIP. To calculate discard mortality¹, a 15% mortality rate is applied to the B2 value. In 2021, there were 3.53 million bluefish dead discards, which represents a slight increase compared with 3.20 million fish in 2020 however there is an overall downward trend from the 2001 peak of 6.37 million bluefish dead discards (Figure 4).

¹ To estimate discards in pounds, multiply the number of dead discards times the average weight of fish in a given year. For more detailed results, which are used in Table 2, characterize the average weight of a bluefish by state and mode using the MRIP query tool: <https://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/queries/index>.

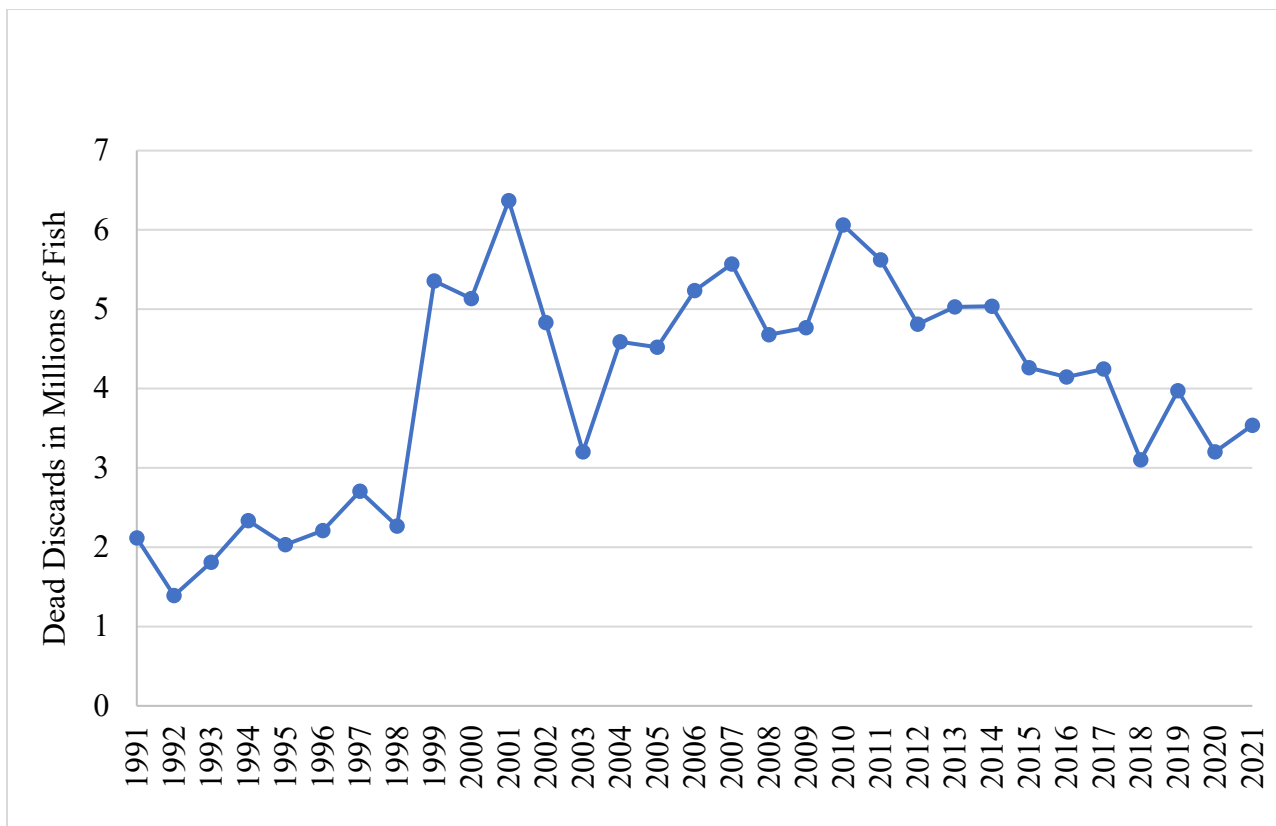


Figure 4. Bluefish dead discards in numbers of fish (all areas and modes combined) from 1991-2021. Fish released alive (B2) are assumed to have a 15% mortality rate. Source: MRIP.

Commercial Fishery

Federal permit data indicate that 2,291 commercial bluefish permits were issued in 2021. A subset of federally permitted vessels was active in 2021 with dealer reports identifying 248 vessels with commercial bluefish permits that landed bluefish. Of the 141 federally permitted bluefish dealers in 2021, there were 119 dealers who bought bluefish.

In 2021, the commercial fishery landed 2.07 million pounds. Dealer data for 2021 indicate that most of the bluefish commercial landings were taken by gillnet (59%), followed by unknown gear (26%), trawl/dredge (7%), handline (5%), and other (3%).

Across states, 2021 commercial landings were the highest in North Carolina with 0.85 million pounds of bluefish landed, followed by New York at 0.32 million pounds and Rhode Island at 0.25 million pounds (Table 4). VTR catch data was used to identify all NMFS statistical areas that accounted for at least 5 percent of the total bluefish catch (Table 5). Six statistical areas accounted for approximately 86% of the VTR-reported catch in 2021. The highest percentage of catch was from statistical area 612 with the most trips targeting bluefish conducted in statistical area 611. A map of the proportion of bluefish catch by statistical area based on federal VTR data is shown in Figure 5.

Table 4. Commercial landings by state for 2021 based on dealer data (cfders). Note that state only commercial landings from North Carolina and Florida are not always present in the cfders database. Final commercial catch accounting will be made available by GARFO prior to setting specifications.

State	2021 Landings (Pounds)
ME	0
NH	0
MA	223,723
RI	254,607
CT	33,648
NY	324,186
NJ	230,157
DE	2,171
MD	3,065
VA	44,626
NC	851,860
SC	0
GA	0
FL	102,623
Total	2,070,666

Table 5. Statistical areas that accounted for at least 5 percent of the total bluefish catch. Source: VTR database.

Statistical area	Pounds of bluefish caught	Percent of 2021 commercial bluefish catch	Number of trips
612	141,311	27%	382
539	136,954	26%	688
611	53,380	10%	968
636	44,208	8%	13
613	42,194	8%	526
537	37,134	7%	334

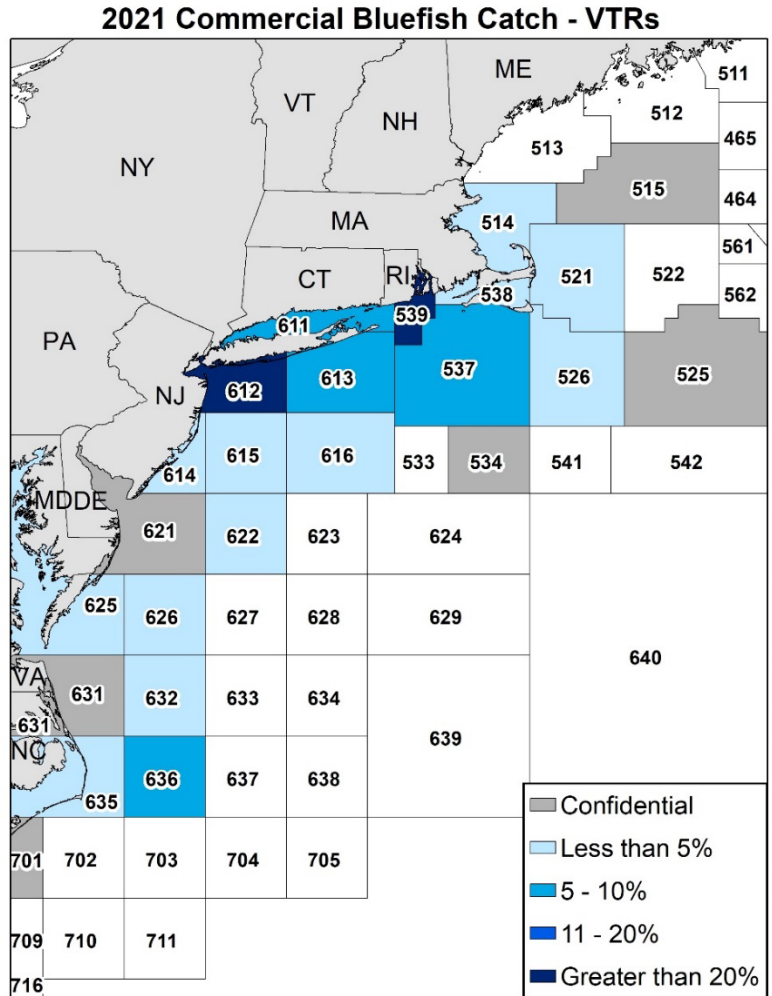


Figure 5. Proportion of bluefish catch by NMFS Statistical Area in 2021 based on federal VTR data. The amount of catch not reported on federal VTRs (e.g., catch from vessels permitted to fish only in state waters) is unknown.

The top commercial landings ports for bluefish in 2021 are shown in Table 6. Six ports qualified as "top bluefish ports," i.e., those ports where 100,000 pounds or more of bluefish were landed. Wanchese, NC landed the most commercial bluefish with over 350,000 pounds landed. The ports and communities that are dependent on bluefish are described in Amendment 1 to the FMP (available at <http://www.mafmc.org/fisheries/fmp/bluefish>). Additional information on "Community Profiles for the Northeast US Fisheries" can be found at http://www.nefsc.noaa.gov/read/socialsci/community_profiles/.

According to dealer data, commercial vessels landed about 2.07 million pounds of bluefish valued at approximately \$1.94 million in 2021. Average coastwide ex-vessel price of bluefish was \$0.89 per pound in 2021, a \$0.05 increase from the previous year (2020 price = \$0.84 per pound). A time series of bluefish revenue and price is provided in Figure 6.

Table 6. Bluefish landings in pounds for top ports (landings > 100,000 pounds) based on NMFS 2021 dealer data (cfders).

Port	Pounds	% of total commercial bluefish landings	# vessels
Wanchese, NC	352,350	17%	<10
Hatteras, NC	306,615	15%	<10
Point Judith, RI	201,228	10%	96
Montauk, NY	140,827	7%	83
Point Pleasant, NJ	129,975	6%	28
Boston, MA	124,787	6%	<10

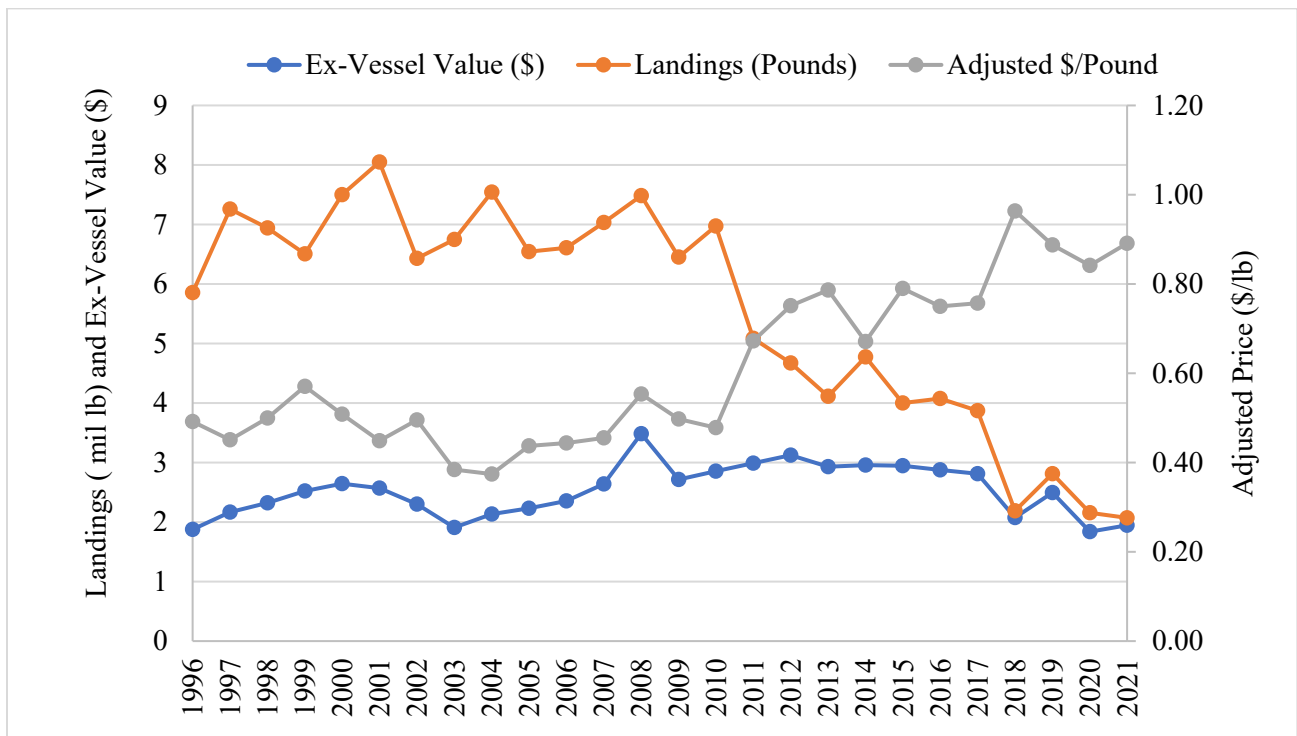


Figure 6. Bluefish commercial landings (in millions of pounds), ex-vessel value, and price per pound (adjusted to 2021 real dollars) from 1996-2021.

The commercial bluefish fishery is primarily prosecuted with gillnets and handlines, although there are other small localized fisheries, such as the beach seine fishery that operates along the Outer Banks of North Carolina. Many of these fisheries do not fish exclusively for bluefish, but target a combination of species including croaker, mullet, Spanish mackerel, spot, striped bass, and weakfish. Given the mixed-species nature of the bluefish fishery, incidental catch of non-target species is not directly attributable to the bluefish fishery.

References

- Able, K.W. and M.P. Fahay. 1998. The first year in the life of estuarine fishes in the Middle Atlantic Bight. Rutgers University Press, New Brunswick, NJ. 342 p.
- Bigelow, H.B. and W.C. Schroeder. 1953. Fishes of the Gulf of Maine. U.S. Fish Wildl. Serv., Fish. Bull. 53. 577 p.
- Salerno, D.J., J. Burnett, and R.M. Ibara. 2001. Age, growth, maturity and spatial distribution of bluefish, *Pomatomus saltatrix* (Linnaeus), off the northeast coast of the United States, 1985-96. J. Northwest Atl. Fish. Sci., 29: 31-39.
- Smith, W., P. Berrien, and T. Potthoff. 1994. Spawning patterns of bluefish, *Pomatomus saltatrix*, in the northeast continental shelf ecosystem. Bull. Mar. Sci. 54(1): 8-16.
- NEFSC (Northeast Fisheries Science Center). 2015. 60th Northeast Regional Stock Assessment Workshop (60th SAW) Assessment Report. NEFSC Reference Document 15-08; 870 pp.
- Wood, T. 2014. Bluefish 2014 Stock Assessment Update Data and Model Update Through 2013. Coastal/Pelagic Working Group, Northeast Fisheries Science Center, National Marine Fisheries Service, Woods Hole, MA. 37 p.
- NEFSC (Northeast Fisheries Science Center). 2019. Atlantic Bluefish Operational Assessment for 2019, Northeast Fisheries Science Center, National Marine Fisheries Service, Woods Hole, MA.
- NEFSC (Northeast Fisheries Science Center). 2021. Atlantic Bluefish Management Track Assessment for 2021, Northeast Fisheries Science Center, National Marine Fisheries Service, Woods Hole, MA.
- Personal communication (MRIP query) from the National Marine Fisheries Service, Fisheries Statistics Division. Accessed June 2022. Available at:
<https://www.st.nmfs.noaa.gov/recreational-fisheries/data-and-documentation/queries/index>.
- Unpublished NMFS Vessel Trip Report, Dealer, and Permit data.

From: [Mary Sabo](#)
To: [Coutre, Karson](#)
Subject: FW: Form Submission - Contact Info - Bluefish
Date: Thursday, April 28, 2022 11:17:00 AM

From: Squarespace <form-submission@squarespace.info>
Sent: Wednesday, April 27, 2022 12:04 PM
To: Mary Sabo <msabo@mafmc.org>
Subject: Form Submission - Contact Info - Bluefish

Sent via form submission from [Mid-Atlantic Fishery Management Council](#)

Name: Buddy Aiken

Email Address: aikenbud@gmail.com

Subject: Bluefish

Message: I'm an avid saltwater fisherman and I'm very concerned about the Bluefish population. There haven't been any Bluefish in New England waters for over 10 years. The south has very low population of bluefish as well. We had severe Cod fish depletion a few years ago but when the new laws took affect, they came back in heavy numbers. This is what the bluefish need. I want future populations to have the same opportunity as I did many years ago to hear that drag rip. Please STOP the netting and pole fishing for 2 years and then create strong laws to keep the population high.

Does this submission look like spam? [Report it here.](#)

From: James Fletcher
To: Coutre, Karson; Didden, Jason
Subject: BLUEFISH SCIENCE / CYCLES
Date: Wednesday, July 27, 2022 1:01:13 PM

ASK: committee members to research local news papers for stories on blue fish over last 50 years, see if cycles become apparent. Thus some restrictions are NOT BASED ON SCIENCE! THINK OUT SIDE OF GROUP THINK FOR SCIENCE BASED MANAGEMENT! THANK YOU!

--

United National Fisherman's Association James Fletcher Director 123
Apple Rd Manns Harbor NC 27953 land 252-473-3287 cell 757-435-8475