



The Commonwealth of Massachusetts

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Massachusetts Black Sea Bass For-hire Fishery Conservation Equivalency Proposal

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Overview

The Massachusetts Division of Marine Fisheries (DMF) submits this conservation equivalency proposal to extend the end of the state’s for-hire recreational black sea bass season in 2020 to account for days closed to for-hire fishing at the beginning of the season due to the COVID-19 pandemic (Table 1). Two alternatives are presented: one extends the season 53 days (Option A) and one extends the season 13 days (Option B). The methods followed for Option A best represent expected values for a conservationally equivalent exchange for days lost in the beginning of the season; however, the MRIP data have high PSEs. Option B uses lower PSE data instead as a proxy.

Table 1. Massachusetts status quo and proposed rules for recreational black sea bass fishing aboard for-hire vessels in 2020 via conservation equivalency due to COVID-19 for-hire activity closure.

	Season	Daily Bag Limit	Minimum Size Limit
Status Quo	May 18 – September 8	5 fish	15”
Option A	May 25–October 31	5 fish	15”
Option B	May 25 – Sep 21	5 fish	15”

Introduction

Under executive order of the Governor of Massachusetts in response to the COVID-19 pandemic, for-hire fishing activity was prohibited in Massachusetts during March 24–May 24, 2020.¹ For-hire fishing operators were authorized to resume operations on May 25, 2020, provided they comply with specific conditions and safety standards.² DMF submits this conservation equivalency proposal to amend the Massachusetts black sea bass for-hire fishing season in response to this closure of the for-hire fishery. Private recreational fishing, while likely impacted by social distancing measures, was not prohibited during the same period.

The ASMFC’s Summer Flounder, Scup, and Black Sea Bass Management Board discussed the potential for states to make regulatory adjustments in response to COVID-19 impacts at its May 6 meeting. This proposal follows the first approach described by ASMFC leadership during the Board’s meeting: to request a conservationally equivalent season extension for a delayed opening of a fishery. It applies standard, previously approved methods and data to support the proposal.

¹ Executive Order closing non-essential services: <https://www.mass.gov/doc/march-23-2020-essential-services-and-revised-gatherings-order/download>. List of essential services: <https://www.mass.gov/info-details/covid-19-essential-services>

² Phase 1 Re-opening Guidelines: <https://www.mass.gov/doc/for-hire-and-charter-fishing-application-of-guidelines-5-18-20/download>

DMF may seek additional modification to 2020 recreational fishery measures (private and/or for-hire) following expected forthcoming guidance from ASMFC about potentially accounting for COVID-19 impacts on harvest during the open fishing season. The Commonwealth's phased re-opening plan is expected to continue to have grave impacts on for-hire activity for the foreseeable future. Given that the timing of this guidance is uncertain, and in order to provide for-hire fishery participants—both business operators and prospective clients—with as much advance notice as possible of changes in fishing access, DMF is submitting this proposal to revise the for-hire season under the first approach so that it may be reviewed by the Board as soon as possible.

Analysis

On December 10, 2019, the Summer Flounder, Scup, and Black Sea Bass Management Board approved status quo recreational black sea bass management measures in state and federal waters for 2020. This meant a May 18–September 8 open season, 5 fish limit, and 15" minimum size limit for Massachusetts. As a consequence of the Governor's for-hire fishery closure, the Massachusetts for-hire fishery missed seven open fishing days of the 2020 recreational black sea bass season (i.e., May 18–May 24).

MRIP data for the past two years were used to estimate lost for-hire harvest due to the fishery closure and determine the conservationally equivalent number of days that could be added to the end of the season for for-hire activity (Tables 2–3). The average daily harvests per wave were calculated for both the most recent year (2019) and a two-year average (2018–2019). The premise of the analysis was to add an equivalent of seven Wave 3 days (the number of days lost) to the end of the season during Wave 5. Notably, Wave 3 had the highest daily catch rates, meaning that the equivalent number of Wave 5 days was larger than seven in all cases. Two options for season extensions are given below (Option A and Option B). Note that 2018 and 2019 are the only recent years in which the fishery was open during Wave 5 to provide harvest data. Less than a quarter of Wave 5 was open in either year which helps explain the high PSE values. During Wave 5 in 2018, 47 intercepts encountered black sea bass and 19 intercepts encountered black sea bass during 2019.

Option A

This option compares daily harvest rates in Wave 3 to rates in Wave 5 to determine the number of equivalent Wave 5 days to add at the end of the season (Tables 2–3). Using the 2-year average approach, closing seven days in Wave 3 provides for opening 65 days at Wave 5 harvest. This is more than the number of days that could possibly be opened in Wave 5 (53 days remaining). Massachusetts has no Wave 6 data with which to produce a daily harvest rate, but it can be assumed to be—at most—equal to Wave 5 given declining seasonal availability of black sea bass and fishing effort. Extending equally into Wave 6 would result in a conservationally equivalent season of May 25–November 12. Using 2019 data alone, closing seven days in Wave 3 provides for opening 39 days at Wave 5 harvest. This would result in a conservationally equivalent season of May 25–October 17.

Under Option A, DMF is proposing a season extension until October 31 to account for the seven lost days in May. This is mid-way between the 2-year and 1-year approaches' results. The Technical Committee has in recent years supported an averaging approach for seasonal revisions through conservation equivalency (which would provide for additional open days). However, opening in Wave 6 is not anticipated to provide much benefit to the industry and could provide for spurious MRIP harvest estimates with few intercepts. This choice also recognized the high PSE values for the Wave 5 harvest estimates used for analysis. Extending the season further into Wave 5 should help improve the precision of the estimates.

While the Wave 3:5 exchange rates are substantial, differential harvest between the waves is not unexpected. The commencement of the recreational black sea bass season in Massachusetts in mid-May is much anticipated, with large aggregations of fish available nearshore and favorable weather producing high effort and high catch rates. Delayed season openings in several other northeast states until mid-June further drives for-hire business in May and early June in Massachusetts. Harvest rates in Wave 5 are also not anticipated to be constant throughout the proposed season extension, but rather drop off steeply with declining local availability of fish and fishing effort at the onset of fall. While there are no data that explicitly describe the expected harvest rates through the end of Wave 5 (the fishery has not been open), weekly harvest rates across modes are typically near annual lows at the beginning of Wave 5 (Figure 1). Also of note is that for-hire activity contributes less than 15% to the state’s total recreational black sea bass harvest on average for 2017–2019.

Option B

An alternative approach is also proposed as a strategy to avoid using the Wave 5 data with high PSEs. The assumption under this approach is that Wave 4 daily catch rates during 2018 and 2019 serve as representative proxies for the Wave 5 rates during 2020. The Wave 4 data had lower PSEs than Wave 5 (55.2 in 2018 and 34.1 in 2019; Table 2). The Option B analysis estimated that 13 additional days could be added to the end of the season using the average 2018-2019 daily harvest rates and 8 days could be added using the 2019 rates alone (Table 3). Massachusetts proposes 13 additional open days under Option B, representing the average daily harvest rate from 2018 and 2019; in the past, averaging years has been supported. The Option A proposed extension of 53 days was between the 2018/2019 average daily harvest rate and the 2019 rate alone (Tables 2 and 3). Option A did not propose to use the 2018/2019 average because there was little benefit to the fishery of remaining open into November and because the end of a wave was a convenient marker for closing the fishery; these factors did not apply to the Option B proposal.

Summary

Options A and B represent alternative approaches for extending Massachusetts’ for-hire fishing season during Wave 5 by the equivalent of seven Wave 3 days that were closed due to the Covid-19 pandemic. Option A used the most applicable expected values for a conservationally equivalent season extension (i.e., Wave 5 data), however the PSEs were higher than traditionally acceptable for management. Option B had lower PSEs and instead assumed Wave 4 daily harvest rates to be a useful proxy for Wave 5 rates. The proposed season extension under Option A is 53 days (May 25th – Oct 31st) and under Option B is 13 days (May 25th – Sep 21st).

Table 2. Massachusetts wave-specific daily for-hire harvest rates, # of fish (MRIP query date 5/18/20)

	Wave 3	Wave 4	Wave 5
2018 For-hire Harvest, # fish (PSE)	36,083 (22.2)	13,659 (55.2)	455 (80)
# Open Days (May 19–Sep 12)	43	62	12
Daily Harvest Rate	839	220	38
2019 For-hire Harvest, # fish (PSE)	30,685 (24.1)	34,040 (34.1)	1,001 (106)
# Open Days (May 18–Sep 8)	44	62	8
Daily Harvest Rate	697	549	125
2018–2019 Avg. Daily For-hire Harvest	768	385	82
2019 Avg. Daily For-hire Harvest	697	549	125

Table 3. Calculation of conservationally equivalent for-hire season lengths for Options A and B.

	Exchange Rate	Days added in Wave 5 to account for 7 fewer days in Wave 3	Resulting Season Length
<i>Option A (Waves 3:5 Exchange Rate)</i>			
Two-year Average	9.424	65	May 25 – November 12
Most Recent Year	5.574	39	May 25 – October 17
Proposed	-	53	May 25 – October 31
<i>Option B (Waves 3:4 Exchange Rate)</i>			
Two-year Average	2.00	13	May 25 – Sep 21
Most Recent Year	1.27	8	May 25 – Sep 16
Proposed	-	13	May 25 – Sep 21

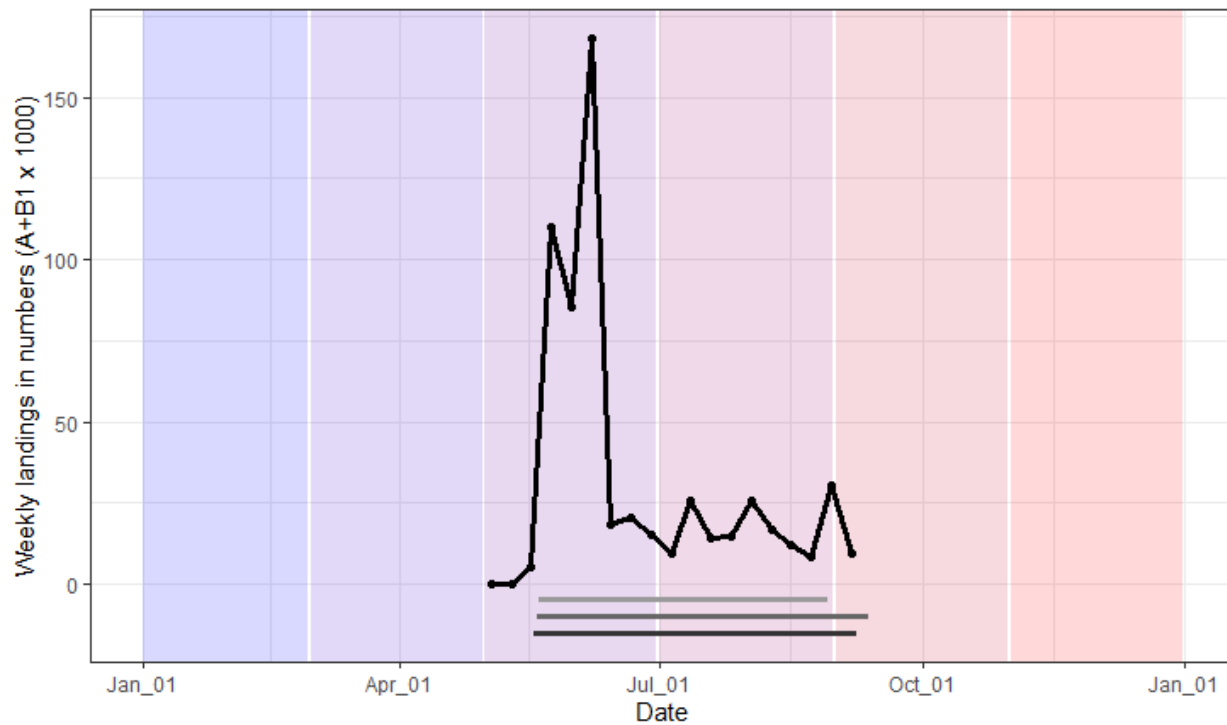


Figure 1. Average black sea bass harvest in numbers (given in thousands) by week over 2017-2019. Horizontal lines at the bottom of the figure indicate the season length in 2017 (top), 2018 and 2019 (bottom). Vertical rectangles indicate waves. Note that the harvest quantities provided are across all modes to increase the sample size.

Appendix 1.

Methods. The steps below outline the methodology used in this proposal for calculations leading to a conservationally equivalent season extension. Subscripts in the table below refer to the Option A approach; for Option B the reference to Wave 5 can be replaced with Wave 4.

Steps	Equation		Definitions
(1) Calculate the average daily harvest rate by wave for each year by dividing the total harvest in numbers in each year and wave by the number of days that were open in that year and wave.	$r_{w,y} = \frac{h_{w,y}}{d_{w,y}}$	$r_{w,y}$ w y $h_{w,y}$ $d_{w,y}$	Average daily harvest rate by wave and year. wave. Year. Total harvest in numbers during wave w of year y . Number of open days during wave w of year y .
(2) Calculate the average of the average daily harvest rates by wave across all years in the set.	$\bar{r}_w = \frac{1}{Y} \sum_{y=1}^Y r_{w,y}$	\bar{r}_w Y	Average harvest rate by wave over all y years Total number of years
(3) Calculate the exchange rate – the ratio of average daily harvest rate in wave 3 to average daily harvest rate in wave 5.	$x_{w3w5} = \frac{\bar{r}_{w=3}}{\bar{r}_{w=5}}$	x_{w3w5}	Exchange rate ratio (waves 3:5)
(4) Determine the number of additional days in wave 5 that account for the days lost during wave 3 (7 days were lost).	$\tilde{d}_{w5} = 7x_{w3w5}$	\tilde{d}_{w5}	Number of additional days during wave 5