Amendment 50

Catch Level Adjustments, Rebuilding Schedule, and Allocations for Red Porgy

Decision Document

March 2021

Background

In 1991, Amendment 4 to the Fishery Management Plan for the Snapper Grouper Fishery of the South Atlantic Region (Snapper Grouper FMP) indicated the Red Porgy stock was undergoing overfishing and was overfished. Amendment 4 established an initial rebuilding plan and the associated final rule (56 FR 56016, October 31, 1991) implemented a minimum size limit for Red Porgy. The rebuilding plan was put into effect in 1991 with a target time to rebuild of 10 years. The stock was assessed in 1999 (Vaughan 1999), and based on the findings the stock was determined to be subject to overfishing and overfished. In an emergency rule published September 3, 1999 (64 FR 48324), the National Marine Fisheries Service (NMFS) prohibited the harvest and possession of Red Porgy in or from the exclusive economic zone off the southern Atlantic states. NMFS extended the prohibition on harvest and possession of Red Porgy through August 28, 2000 (65 FR 10039; February 25, 2000).

History of Red Porgy Stock Status

Assessment	Overfished	Overfishing
SEDAR 1 2002	X	
SEDAR 1 Update 2006	X	
SEDAR 1 Update 2012	X	
SEDAR 60 2020	X	X

The Red Porgy stock in the South Atlantic was the first stock assessed through the Southeast Data, Assessment, and Review (SEDAR) process in 2002. The findings of the assessment indicated the stock was overfished but not undergoing overfishing. The final rule for Amendment 12 to the Snapper Grouper FMP (65 FR 51248, August 23, 2000) closed commercial harvest during the Red Porgy peak spawning season, reduced the commercial trip limit, and reduced the recreational bag limit; and the amendment specified a new 18 year rebuilding plan, which was the maximum recommended timeframe based on the formula: T_{MIN} (10 years) + one generation time (8 years, based on data used in the assessment). The rebuilding schedule began with the implementation of the no harvest emergency rule on September 3, 1999 (64 FR 48324) and ended on December 31, 2017. The findings from subsequent update assessments in 2006 and 2012 resulted in the same determinations. The stock has not rebuilt despite management efforts throughout its management history.

The most recent assessment followed a standard approach with data through 2017 (SEDAR 60 2020) and incorporated the revised estimates for recreational catch (Fishing Effort Survey). The findings of the assessment indicated that the South Atlantic Red Porgy stock is overfished and undergoing overfishing (**Figure 1**). The Council's Scientific and Statistical Committee (SSC) reviewed the assessment during their April 2020 meeting and found that the assessment represented the best scientific information available. The Council received the results of the assessment and the SSC's recommendations at their June 2020 meeting and directed staff to begin work on a plan amendment to end overfishing as well as address rebuilding and allocations, etc. for review at the September 2020 meeting.

The Council received notification from NMFS (via letter dated June 12, 2020) of the status of the Red Porgy stock in the South Atlantic and indicated management has not made adequate progress in rebuilding the population. Following notification that a stock is undergoing overfishing and overfished, the Magnuson-Stevens Fishery Conservation and Management Act requires the Council to develop a fishery management plan amendment with actions that end overfishing immediately and rebuild the affected stock. The Council has two years to develop an amendment; hence, the statutory deadline would be June 12, 2022.

At the September 2020 meeting, the Council reviewed an options paper including potential actions in this document and requested input from the Snapper Grouper Advisory Panel (AP) on possible changes to management measures. At the December 2020 meeting, the Council received the AP recommendations, reviewed the draft actions/alternatives, and requested additional information to inform their discussions on potential management measures.

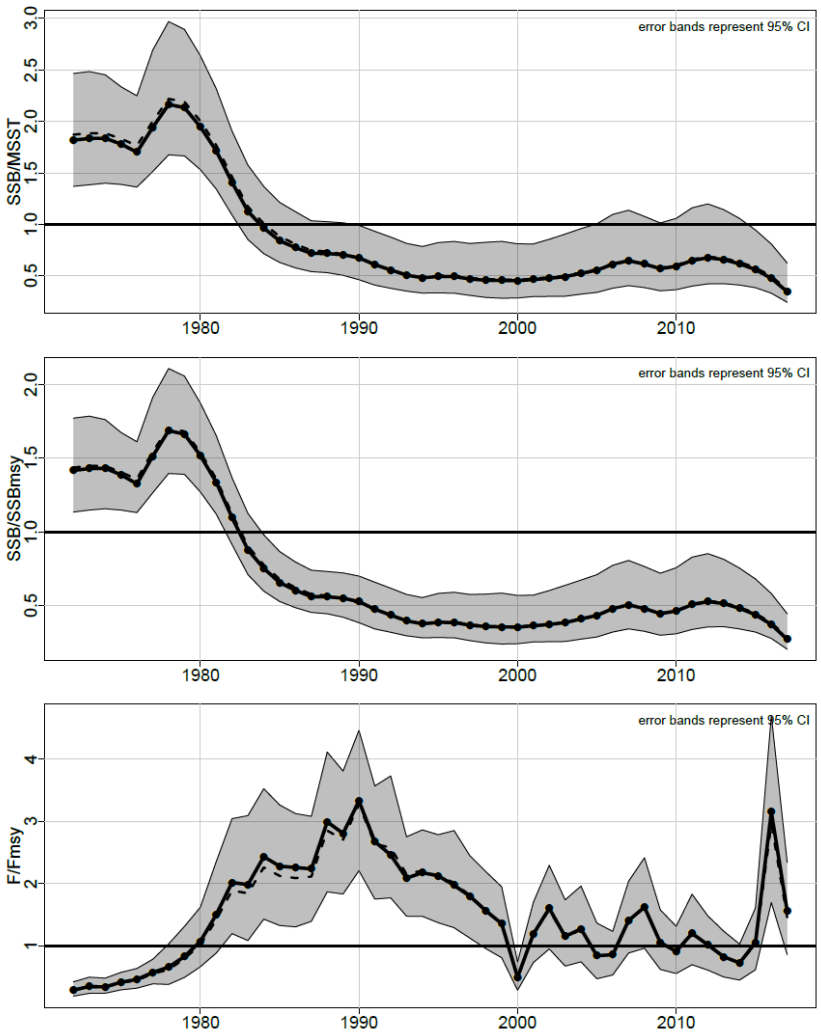

Figure 1. Estimated time series of spawning sock biomass (SSB) and fishing mortality (F) relative to benchmarks. Top: SSB relative to the minimum stock size threshold (MSST), if less than 1 stock is overfished. Middle: SSB relative to SSB_{MSY}, if less than 1 stock is overfished. Bottom: F relative to F_{MSY}, if > 1 stock is undergoing overfishing.

Management actions in this amendment

Action 1: Establish a rebuilding schedule for Red Porgy
Action 2: Revise the Red Porgy total annual catch limit
Action 3: Revise the Red Porgy sector allocations and sector annual catch limits
Action 4: Revise the Red Porgy recreational annual catch target
NEW Action 5: Modify Red Porgy commercial management measures
NEW Action 6: Modify Red Porgy recreational management measures
NEW Action 7: Modify Red Porgy commercial accountability measures
NEW Action 8: Modify Red Porgy recreational accountability measures

Amendment timing

September 2020	Review options paper and provide guidance to staff
December 2020	Review draft amendment and approve for scoping
Feb 3 & 4, 2021	**Conduct scoping hearings**
March 2021	**Review scoping comments, review preliminary analyses, and provide guidance to staff**
June 2021	Review modifications to the amendment, select preferred alternatives, and approve for public hearings
Jul-Aug 2021	Conduct public hearings
September 2021	Review public comment and approve all actions
December 2021 or March 2022	Review final draft amendment and consider approval for formal review
Mid to late 2022	Regulations effective

Scoping Comments

A scoping document and accompanying presentation were posted on the Council's website on January 20, 2021 and comments were accepted until February 5, 2021. One comment was received online (view comments HERE). Scoping hearings were held on February 3 and 4, 2021 via webinar. No comments were offered during the webinar hearings.

Draft Purpose and Need

Purpose for Action

The *purpose* of this fishery management plan amendment is to revise the rebuilding schedule, acceptable biological catch, sector allocations and annual catch limits, and recreational catch target for South Atlantic Red Porgy based on the results of the most recent stock assessment, and modify management and accountability measures.

Need for Action

The *need* for this fishery management plan amendment is to end overfishing of South Atlantic Red Porgy, rebuild the stock, and achieve optimum yield while minimizing, to the extent practicable, adverse social and economic effects.

Committee Action:

REVIEW PURPOSE AND NEED STATEMENTS AND MODIFY AS NEEDED

Acceptable Biological Catch and Overfishing Limit

The Scientific and Statistical Committee (SSC) reviewed the Red Porgy stock assessment (SEDAR 60 2020) at their April 2020 meeting. The SSC found that the assessment was conducted using the best scientific information available, was adequate for determining stock status and supporting fishing level recommendations and addressed uncertainty consistent with expectations and available information. The SSC recommended revising the overfishing limit (OFL) based on projections under a fishing mortality rate that would produce maximum sustainable yield ($F = F_{MSY}$) and recommended the $F = 75\% F_{MSY}$ scenario be used to set the acceptable biological catch (ABC) for Red Porgy. Both projections used average recruitment from the last three assessment years instead of long-term recruitment. The findings of SEDAR 60 indicated average recruitment showed a declining trend throughout the time series and has been below the recruitment levels corresponding to MSY for most of the past three decades (**Figure 2**).

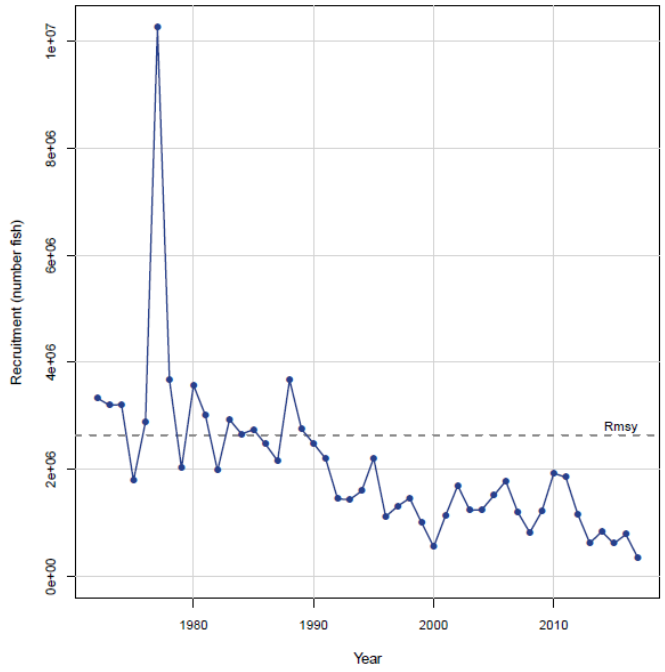

Figure 2. Estimated recruitment of age-1 fish. Horizontal dashed line indicates Rmsy (Source: SEDAR 60 2020).

The updated OFL and ABC values are based on **landed catch in pounds whole weight (lbs ww)** and are highlighted in blue (**Table 1**).

Table 1. South Atlantic Red Porgy OFL and ABC recommendations (in pounds and numbers of fish) based on management starting in 2022 (SEFSC, September 2020). NOTE: Catch levels in numbers of fish were included in the SSC's recommendations; hence, they are provided here for completeness.

OFL Recommendations		
Year	**Landings (lbs ww)**	**Numbers of Fish**
2022	97,000	62,000
2023	102,000	65,000
2024	107,000	67,000
2025	110,000	69,000
2026	113,000	71,000
ABC Recommendations		
Year	**Landings (lbs ww)**	**Numbers of Fish**
2022	75,000	47,000
2023	81,000	51,000
2024	87,000	54,000
2025	91,000	57,000
2026	95,000	59,000

Note: The SSC had a difficult time implementing the ABC control rule because Red Porgy has made little to no progress towards rebuilding given low recruitment in recent years. The projections indicate the ABCs will have only a very minor impact on stock rebuilding. If recruitment continues to be low, the productivity of the stock and the benchmark reference points will need to be reevaluated.

Proposed Actions

Action 1. Establish a rebuilding timeframe for Red Porgy

Alternative 1 (No Action). The Red Porgy stock in the South Atlantic was under an 18-year rebuilding timeframe that was expected to rebuild the stock by the end of 2017. Red Porgy did not rebuild and currently is not under a rebuilding plan.

Alternative 2. Establish the rebuilding timeframe to equal the shortest possible time to rebuild in the absence of fishing mortality (T_{MIN}). This would equal 11 years with the rebuilding period ending in 2032. 2022 would be Year 1.

Alternative 3. Establish the rebuilding timeframe to equal T_{MIN} + one generation. This would equal 18 years. 2022 would be Year 1.

Alternative 4. Establish the rebuilding timeframe to equal T_{MIN} times two. This would equal 22 years. 2022 would be Year 1.

Alternative 5. Establish the rebuilding timeframe to equal the time estimated to rebuild the stock with a 50% probability of success while maintaining fishing mortality at 75% of the Maximum Fishing Mortality Threshold (MFMT) during the rebuilding period. For Red Porgy, 75%MFMT = 75%F_{MSY}. This would equal 26 years with the stock reaching a 50% probability of rebuilding success in 2047. 2022 would be Year 1.

Discussion:

- Under **Alternative 2**, the Red Porgy annual catch limit (ACL) would be zero. This alternative assumes that fishing mortality is zero and discards are eliminated. Therefore, it can be expected that under this scenario rebuilding will take longer than 11 years. Under this scenario, a 51.4% probability of rebuilding would be achieved in 2032. This projection assumed current fishing mortality from 2018 through 2021.
- Under **Alternative 3**, the generation time for Red Porgy is approximately 7 years (N. Klibanski, SEFSC 2020).
- **Alternative 5** is based on the maximum time allowed for rebuilding (T_{MAX}). Catch levels under this scenario exceed the current recommendation for ABC. Under this scenario, a 51.1% probability of rebuilding success would be achieved in 2047. This projection assumed current fishing mortality from 2018 through 2021.

Committee Action:

REVIEW RANGE OF ALTERNATIVES UDER ACTION 1, MODIFY AS NECESSARY, AND APPROVE FOR ANALYSIS.

Action 2. Revise the Red Porgy total annual catch limit and optimum yield

Alternative 1 (No Action). The current annual catch limit and optimum yield for Red Porgy are equal to the acceptable biological catch (328,000 pounds whole weight).

Preferred Alternative 2. Revise the annual catch limit and optimum yield for Red Porgy to equal the updated acceptable biological catch based on the results of the latest stock assessment (SEDAR 60 2020). The 2026 annual catch limit would remain in place until modified.

Year	Total ACL (lbs ww)
2022	75,000
2023	81,000
2024	87,000
2025	91,000
2026	95,000

Alternative 3. Revise the total annual catch limit and optimum yield for Red Porgy and set equal to 90% of the updated acceptable biological catch. The 2026 annual catch limit would remain in place until modified.

Year	Total ACL (lbs ww)
2022	67,500
2023	72,900
2024	78,300
2025	81,900
2026	85,500

Alternative 4. Revise the total annual catch limit and optimum yield for Red Porgy and set equal to 80% of the updated acceptable biological catch. The 2026 annual catch limit would remain in place until modified.

Year	Total ACL (lbs ww)
2022	60,000
2023	64,800
2024	69,600
2025	72,800
2026	76,000

Discussion:

- Per the guidance provided at 50 CFR §600.310(f)(4)(iv), the Council has chosen to specify optimum yield (OY) for Red Porgy on an annual basis and set it equal to the ACL.
- The Council selected **Alternative 2** as preferred to facilitate subsequent analyses. Preliminary analyses for other actions are based on catch levels under this alternative.

Committee Action:

REVIEW RANGE OF ALTERNATIVES UNDER ACTION 2, MODIFY AS NECESSARY, AND APPROVE FOR ANALYSIS.

Action 3. Revise the Red Porgy sector allocations and sector annual catch limits

Note: The revised total annual catch limit in Alternatives 1 (No Action) through 3 reflects Alternative 2 in Action 2: ABC=ACL=OY with implementation in 2022.

Alternative 1 (No Action). The Red Porgy total annual catch limit is allocated 50% to the commercial sector and 50% to the recreational sector. The commercial annual catch limit is split into two seasons with 30% allocated to season 1 (January through April) and 70% allocated to season 2 (May through December).

Year	Commercial ACL (lbs ww)			Recreational ACL (lbs ww)
	Total	Season 1 quota	Season 2 quota	
2022	37,500	11,250	26,250	37,500
2023	40,500	12,150	28,350	40,500
2024	43,500	13,050	30,450	43,500
2025	45,500	13,650	31,850	45,500
2026	47,500	14,250	33,250	47,500

Alternative 2. Apply the current allocation formula: Annual catch limit = ((mean landings 2006-2008)*0.5)) + ((mean landings 1986-2008)*0.5). This would result in a commercial allocation of 51.43% and a recreational allocation of 48.57% using revised recreational landings estimates from the Fishing Effort Survey.

Year	Commercial ACL (lbs ww)			Recreational ACL (lbs ww)
	Total	Season 1 quota	Season 2 quota	
2022	38,573	11,572	27,001	36,428
2023	41,658	12,497	29,161	39,342
2024	44,744	13,423	31,321	42,256
2025	46,801	14,040	32,761	44,199
2026	48,859	14,658	34,201	46,142

Alternative 3. Remove sector allocations and manage under the total annual catch limit.

Year	Total ACL (lbs ww)
2022	75,000
2023	81,000
2024	87,000
2025	91,000
2026	95,000

Discussion:

- Allocations need to be reviewed since the recreational landings stream changed in the new assessment. Landings estimates now conform to the new Fishing Effort Survey.

- Sector allocations for Red Porgy were implemented through Amendment 15B to the FMP (SAFMC 2009). An equal allocation was selected because it was closest to status quo at the time (2001-2003 landings were 51% recreational and 49% commercial). The Council discussed having to adjust the total allowable catch if the commercial sector was allocated greater than 50% due to higher commercial discard mortality.

- The current allocations formula was adopted through the Comprehensive ACL Amendment (SAFMC 2011) for unassessed snapper grouper species. The same formula has also been used to allocate the total ACL for some assessed species (i.e., golden Tilefish). The allocations formula was not used to establish Red Porgy sector allocations.

- The Council is currently developing an Allocation Decision Tool that will help determine what data should be evaluated when making allocation decisions and help identify important issues when discussing sector allocations in the future.

IPT Recommendations/Comments:

- If the Council were to remove sector allocations (**Alternative 3**), a new action for revising the accountability measures would be required. The current accountability measures are based on the sector ACLs (in addition to the combined ACL).

Committee Action:

REVIEW RANGE OF ALTERNATIVES UNDER ACTION 3, MODIFY AS NECESSARY, AND APPROVE FOR ANALYSIS.

Action 4. Revise the Red Porgy recreational annual catch target

Alternative 1 (No Action). The Red Porgy recreational annual catch target is 117,555 pounds whole weight and is determined using the existing formula (annual catch target = recreational annual catch limit x (1-mean Proportional Standard Error over the previous 5 years)).

Alternative 2. Revise the Red Porgy recreational annual catch target based on a revised recreational annual catch limit and updated proportional standard error estimates for 2015-2019.

Year	Rec ACT (lbs ww)
2022	20,753
2023	22,413
2024	24,073
2025	25,180
2026	26,287

Alternative 3. Remove the existing recreational annual catch target and do not specify a new recreational annual catch target for Red Porgy.

Discussion:

- The current Red Porgy recreational annual catch target (ACT) was based on the previous ACL values and exceeds the SSC recommended ABC for the stock.

- The Red Porgy ACT and formula were implemented through the Comprehensive ACL Amendment to the FMP (SAFMC 2011).

- Recreational ACTs are not currently used to trigger regulatory action in the South Atlantic and are not codified in the regulations.

- Under **Alternative 2**, the average proportional standard error (PSE) for 2015-2019 is 44.66%. Estimates based on recreational ACL=50% (Alternative 1 of Action 3) of total ACL (Preferred Alternative 2 in Action 2). Average PSE value includes the PSE value associated with 2018 recreational landings estimates, which was approximately 80%.

IPT Recommendations/Comments:

- The Council may want to consider removing recreational ACTs for all Snapper Grouper species as they are not codified nor used to trigger regulation action. If the Council were to consider such action, it could be included in Amendment 49 to the FMP (Greater Amberjack) as that amendment has fewer actions and is not bound by a statutory deadline.

Committee Action:

REVIEW RANGE OF ALTERNATIVES UDER ACTION 4, MODIFY AS NECESSARY, AND APPROVE FOR ANALYSIS.

NEW Action 5. Modify Red Porgy commercial management measures

Alternative 1 (No Action). The commercial trip limit for Red Porgy in the South Atlantic exclusive economic zone is 60 fish from January 1 through April 30 and 120 fish from May 1 through December 31.

Alternative 2. Reduce the commercial trip limit for Red Porgy from January 1 – April 30 to:

Sub-alternative 2a. 15 fish per trip
Sub-alternative 2b. 20 fish per trip
Sub-alternative 2c. 30 fish per trip
Sub-alternative 2d. 45 fish per trip

Alternative 3. Reduce the commercial trip limit for Red Porgy from May 1 – December 31 to:

Sub-alternative 3a. 15 fish per trip
Sub-alternative 3b. 20 fish per trip
Sub-alternative 3c. 30 fish per trip
Sub-alternative 3d. 45 fish per trip
Sub-alternative 3e. 60 fish per trip

Discussion:

- Refer to **Appendix 1** for additional details.

Preliminary Decision Tool: https://data.safmc.net/SERO_SG50_DecisionTool/

- Commercial landings of Red Porgy in the South Atlantic averaged 78% of the commercial ACL from 2015 through 2019 (127,235 lbs ww, **Table 2**).

Table 2. Commercial landings of Red Porgy from 2014 through 2019 and percentage of the commercial ACL landed each year.

Previous Landings (lbs ww)		Proposed ACLs (lbs ww)		
Year	**Past Landings (lbs ww)**	**Year**	**ABC=ACL and Allocation is 50%**	**ABC=ACL and Allocation is 51.43%**
2019*	104,608	2022	37,500	38,573
2018	126,209	2023	40,500	41,658
2017	126,761	2024	43,500	44,744
2016	124,914	2025	45,500	46,801
2015	153,681	2025	47,500	48,859

Source: SEFSC Commercial ACL data (7/7/20)
* 2019 data are preliminary

- Current commercial regulations: 14-inch (total length) minimum size limit and trip limit of 60 fish from January 1 to April 30 and 120 fish from May 1 through December 31.

Commercial ACL is allocated 30% to January-April and 70% to May-December (effective February 2020).

- The percent number of trips harvesting Red Porgy from 2015 through 2019 shows greater than 50% of trips are estimated to have harvested less than 30 fish during a trip (**Figure 3**).

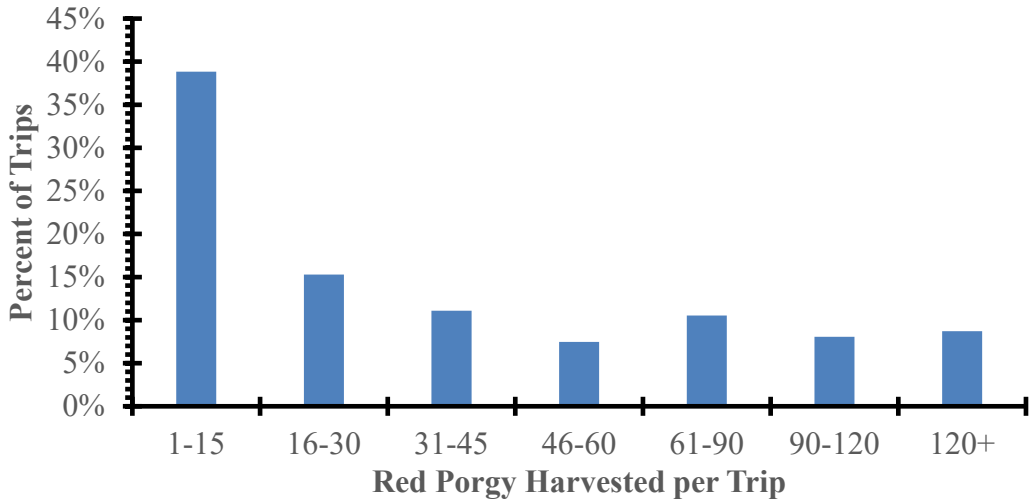

Figure 3. The percent of commercial trips (n=5,669) harvesting red porgy (numbers of fish) by bin from 2015 through 2019. Source: SEFSC Commercial Logbook [May 26, 2020].

- The estimated reductions from projected landings for potential trip limits are shown in **Table 3.**

Table 3. The predicted percent change in landings from either the 60-red porgy (January-April) or 120-red porgy (May-December) trip limits.

Current Trip Limit (# of red porgy)	Potential Trip Limit (# of red porgy)	Change in Landings
60	45	-15%
60	30	-35%
60	20	-52%
60	15	-62%
120	60	-25%
120	45	-36%
120	30	-51%
120	20	-64%
120	15	-71%

- Predicted landings with 95% confidence interval based on data from 2017 through 2019 with the current trip limits are shown in **Figure 4.**

- January-March landings were backfilled using mean 2017-2019 May landings using the mean ratio of May landings to January-April landings from 1986-1999 (the final year the fishery was open January-April until 2020).

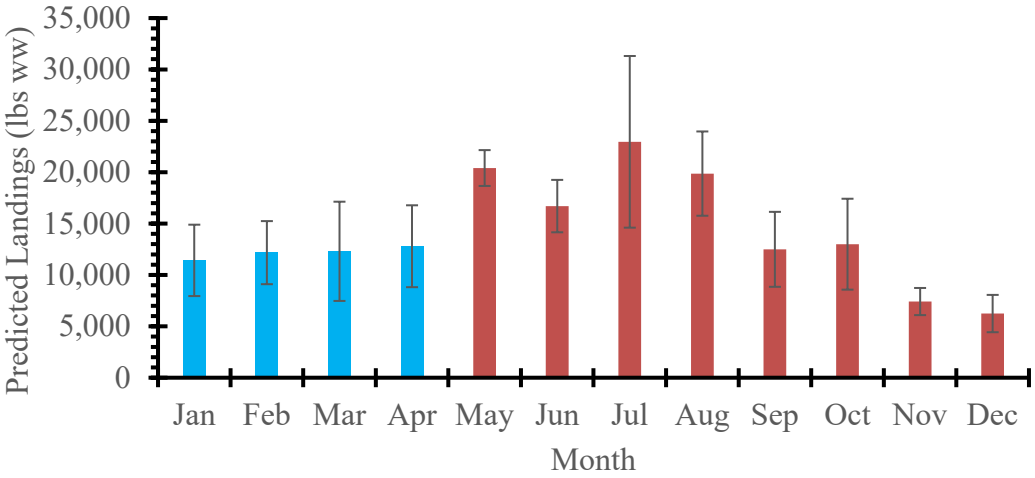

Figure 4. Predicted monthly Red Porgy landings (lb ww) with 95% confidence interval based on data from 2017 through 2019 with the current trip limits. The values for January through April (blue) are projected values since landings were not allowed during these months until 2020.
Source: SEFSC Commercial ACL file [October 9, 2020].

- Predicted season length for the commercial sector under a range of trip limits and assuming the total ACL is set at the recommended ABC for 2022 and current sector allocations are retained is shown in **Table 4**.

Table 4. The projected 2022 closure dates of Red Porgy by season with different trip limit options. Note, 30% of the ACL (37,500 lb ww) is allocated to the January-April season and 70% to the May-December season.

Season	ACL (lbs ww)	Trip Limit (# of red porgy)	Closure Date	Season Length (95% CI)
January 1 – April 30	11,250	60 - Current	January 31	24 – 42 Days
January 1 – April 30	11,250	45	February 5	28 – 48 Days
January 1 – April 30	11,250	30	February 14	36 – 61 Days
January 1 – April 30	11,250	20	February 28	47 – 86 Days
January 1 – April 30	11,250	15	March 15	58 – 107 Days
May 1 – December 31	26,250	120 - Current	June 11	38 – 48 Days
May 1 – December 31	26,250	60	June 27	52 – 66 Days
May 1 – December 31	26,250	45	July 6	61 – 80 Days
May 1 – December 31	26,250	30	July 23	74 – 105 Days
May 1 – December 31	26,250	20	August 20	92 – 156 Days
May 1 – December 31	26,250	15	September 27	116 – 244 Days

Committee Action:

APPROVE INCLUSION OF ACTION 5 FOR ANALYSIS. REVIEW RANGE OF ALTERNATIVES, MODIFY AS NECESSARY, AND APPROVE.

NEW Action 6. Modify Red Porgy recreational management measures

NOTE: Can select more than one preferred alternative/sub-alternative.

Alternative 1 (No Action). The recreational bag limit for Red Porgy in the South Atlantic exclusive economic zone is 3 per person per day, or 3 per person per trip, whichever is more restrictive. Recreational harvest is allowed year-round until the recreational annual catch limit is met or is projected to be met.

Alternative 2. Reduce the recreational bag limit for Red Porgy to:

Sub-alternative 2a. 1 fish per person per day, or 1 fish per person per trip, whichever is more restrictive.

Sub-alternative 2a. 2 fish per person per day, or 2 fish per person per trip, whichever is more restrictive.

Alternative 3. Establish a recreational fishing season for Red Porgy. Recreational harvest would be allowed during:

Sub-alternative 3a. January-April

Sub-alternative 3b. May-June

Sub-alternative 3c. July-August

Others?

Alternative 4. Establish a recreational vessel limit for Red Porgy as:

Sub-alternative 4a. 10 fish per vessel

Sub-alternative 4b. 15 fish per vessel

Others?

Discussion:

- Refer to **Appendix 1** for more detailed information.

Preliminary Decision Tool: https://data.safmc.net/SERO_SG50_DecisionTool/

- Recreational landings of Red Porgy in the South Atlantic from 2015 through 2019 are shown in **Table 5**.

Table 5. Recreational landings (lbs ww) of Red Porgy from 2015 through 2019.

Previous Landings (lbs ww)		Proposed ACLs (lbs ww)		
Year	Landings (lbs ww)	Year	ABC=ACL and Allocation is 50%	ABC=ACL and Allocation is 48.57%
2019	45,821	2022	37,500	36,428
2018	387,053	2023	40,500	39,342
2017	145,645	2024	43,500	42,256
2016	581,889	2025	45,500	44,199
2015	162,639	2026	47,500	46,142

Source: SEFSC (7/14/20).
Note: Dataset includes headboat landings. Estimates are calculated from the current MRIP-FES survey.

- Current recreational regulations: 14-inch (total length) minimum size limit and 3 Red Porgy per person/day or 3 per/person/trip, whichever is more restrictive.

- Recreational landings are collected in two-month increments called waves (e.g., January and February = wave 1, March and April = wave 2, etc.). Red Porgy recreational landings by two-month wave and predicted future landings are shown in **Figure 5**. Future landings were determined from taking an average of the landings from 2015 through 2017 and 2019. Landings from 2018 were excluded due to a PSE greater than 75 indicating a very imprecise estimate.

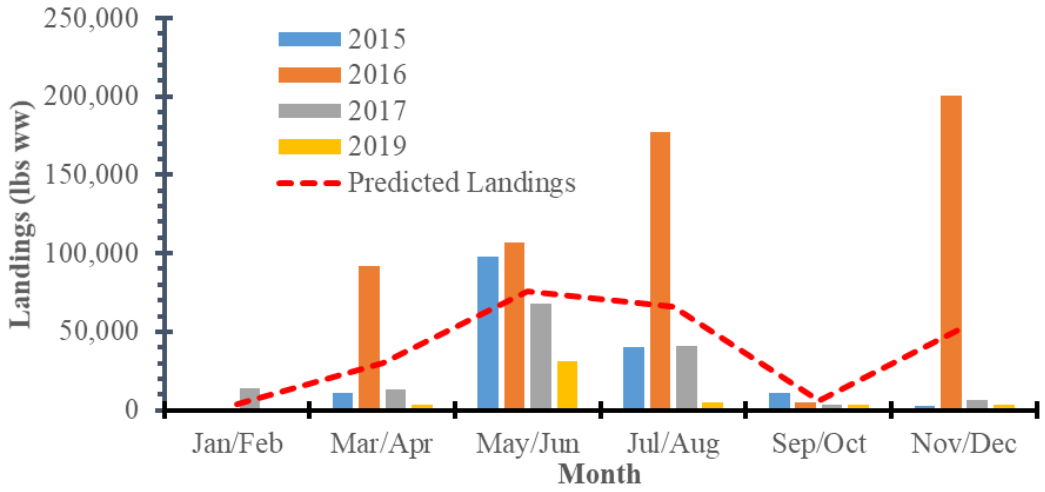

Figure 5. South Atlantic Red Porgy recreational landings by two-month wave and predicted future landings. Source: SEFSC MRIP FES Recreational ACL Dataset [September 16, 2020].

- The number of Red Porgy caught per angler on a given trip was collected by Marine Recreation Information Program (MRIP) and the Southeast Region Headboat Survey (SRHS) using data from 2017 through 2019 and is shown in **Figure 6**.

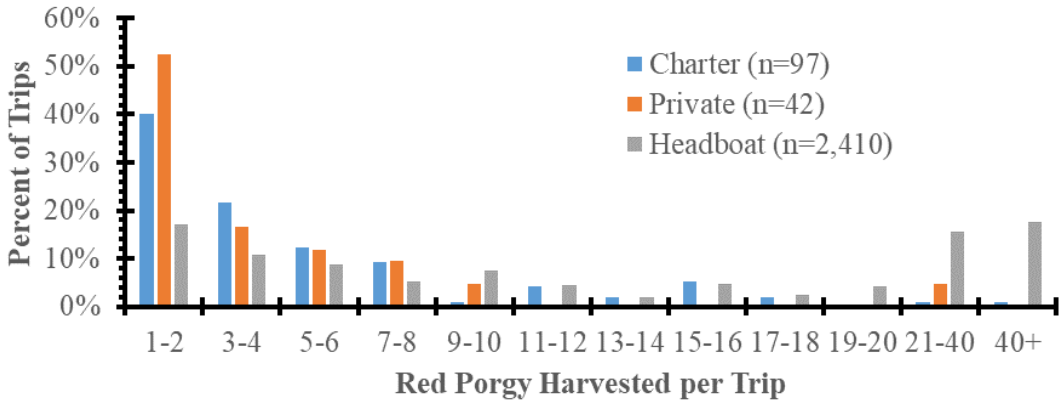

Figure 6. The percent of trips harvesting Red Porgy for private, charter, and headboat modes by bin from 2015 through 2019. Sources: MRIP-FES survey data available at https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads. SRHS CRNF file [July 10, 2020].

- **Table 6** shows the percent change in Red Porgy landings for each potential bag limit by mode and overall. Note that the total percent change is weighted by the contribution of each mode's landings to overall Red Porgy landings. The percent change in red porgy landings for each potential trip limit and bag limit combination by mode and overall is shown in **Table 7**.

Table 6. The percent change in Red Porgy landings by for each potential bag limit by mode and overall. Note, the total percent change is weighted by the contribution of each mode's landings to overall Red Porgy landings.

Mode	2-red porgy bag limit	1-red porgy bag limit
Charter	-4%	-12%
Private	-10%	-32%
Headboat	-6%	-28%
Overall	-9%	-29%

Table 7. The percent change in Red Porgy landings by for each potential trip limit and bag limit combination by mode and overall. Note that the total percent change is weighted by the contribution of each mode's landings to overall red porgy landings. Green cells indicate a small decrease while red cells indicate a larger decrease in predicted landings.

Trip Limit	15-fish			10-fish		
Bag Limit	**3-fish**	**2-fish**	**1-fish**	**3-fish**	**2-fish**	**1-fish**
Charter	-6%	-10%	-19%	-20%	-22%	-29%
Private	-13%	-34%	-50%	-20%	-34%	-50%
Headboat	-62%	-62%	-64%	-71%	-71%	-72%
Overall	-16%	-34%	-48%	-25%	-36%	-50%

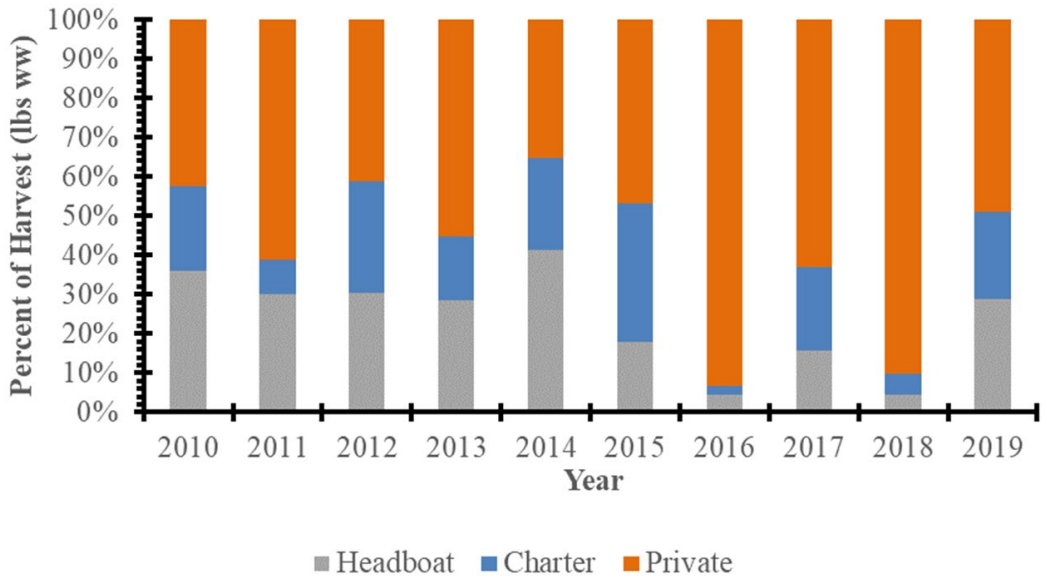

Figure 7. The percent of Red Porgy harvest (lbs ww) by mode from 2010 through 2019.

- Predicted season length for the recreational sector under a range of bag limit and trip limit options and assuming the total ACL is set at the recommended ABC if current sector allocations are retained is shown in **Table 8**.

Table 8. The projected closure dates of Red Porgy for different bag limit and vessel limit options with 95% confidence interval (CI).

ACL (lbs ww)	Bag Limit	Trip Limit	Closure Date	Season Length (95% CI)
37,500	3-fish	None	May 4	Mar 24 – Jun 23
37,500	2-fish	None	May 7	Mar 27 – Jun 29
37,500	1-fish	None	May 16	Apr 6 – No Closure
37,500	3-fish	15-fish	May 10	Mar 31 – No Closure
37,500	2-fish	15-fish	May 19	Apr 10 – No Closure
37,500	1-fish	15-fish	June 1	Apr 23 – No Closure
37,500	3-fish	10-fish	May 14	Apr 4 – No Closure
37,500	2-fish	10-fish	May 21	Apr 12 – No Closure
37,500	1-fish	10-fish	June 3	Apr 25 – No Closure

Committee Action:

APPROVE INCLUSION OF ACTION 6 FOR ANALYSIS. REVIEW RANGE OF ALTERNATIVES, MODIFY AS NECESSARY, AND APPROVE.

NEW Action 7. Modify Red Porgy Commercial Accountability Measures

Alternative 1. (No Action). If commercial landings reach or are projected to reach the commercial annual catch limit, commercial harvest is closed for the remainder of the fishing year. If commercial landings exceed the commercial annual catch limit, and the total annual catch limit is exceeded during the same fishing year, and Red Porgy are overfished, the commercial annual catch limit is reduced in the following fishing year by the amount of the commercial annual catch limit overage in the prior fishing year.

Alternative 2. If commercial landings reach or are projected to reach the commercial annual catch limit, commercial harvest is closed for the remainder of the fishing year. If commercial landings exceed the commercial annual catch limit, and the total annual catch limit is exceeded during the same fishing year the commercial annual catch limit is reduced in the following fishing year by the amount of the commercial annual catch limit overage in the prior fishing year, regardless of stock status.

Others??

Discussion:

- **Alternative 2** would retain the current in-season accountability measure (AM) and a payback would be triggered if the ACL is exceeded regardless of stock status (currently payback is triggered if the stock is overfished).

IPT Recommendations/Comments:

- An action to modify commercial AMs would be needed if the Council were to remove sector allocations (**Alternative 3** under **Action 3**). The Council may want to retain the existing.

Committee Action:

APPROVE INCLUSION OF ACTION 7 FOR ANALYSIS. REVIEW RANGE OF ALTERNATIVES, MODIFY AS NECESSARY, AND APPROVE.

NEW Action 8. Modify Red Porgy Recreational Accountability Measures

Alternative 1 (No Action). If recreational landings reach or are projected to reach the recreational annual catch limit, recreational harvest of Red Porgy is closed for the remainder of the fishing year, regardless of stock status, unless National Marine Fisheries Service determines that no closure is necessary based on the best scientific information available.

If recreational landings exceed the recreational annual catch limit, then during the following fishing year recreational landings will be monitored for a persistence in increased landings. If the total annual catch limit is exceeded and Red Porgy are overfished, the length of the recreational fishing season and the recreational annual catch limit are reduced by the amount of the recreational annual catch limit overage.

If no recreational season is implemented under Action 6
Alternative 2. For the Red Porgy recreational sector, National Marine Fisheries Service will annually announce the recreational fishing season start and end dates in the *Federal Register* and by other methods, as deemed appropriate. The fishing season will start on (date) and end on the date National Marine Fisheries Service projects the recreational annual catch limit will be met.

If Council chooses to retain Rec ACT under Action 4.
Alternative 3. For the Red Porgy recreational sector, National Marine Fisheries Service will annually announce the recreational fishing season start and end dates in the *Federal Register* and by other methods, as deemed appropriate. The fishing season will start on (date) and end on the date National Marine Fisheries Service projects the recreational annual catch target will be met.

Others??

IPT Recommendations/Comments:

- Announcing the recreational season in the same year (**Alternative 2**) increases the administrative burden to the agency by requiring an in-season package annually.

- Under **Alternative 3**, the recreational ACT would need to be retained and codified in the regulations (none of the recreational ACTs for snapper grouper species are currently codified or used in management).

Committee Action:

APPROVE INCLUSION OF ACTION 8 FOR ANALYSIS. REVIEW RANGE OF ALTERNATIVES, MODIFY AS NECESSARY, AND APPROVE.

Appendix 1

Analyses for Amendment 50
Jeff Pulver – Southeast Regional Office LAPP/DM Branch

Analyses are for the potential 2022 Annual Catch Limit (ACL) of 75,000 pounds (lbs) whole weight (ww) with 50% allocated to the commercial sector and 50% to the recreational sector.

Commercial Trip Limits

The Southeast Fisheries Science Center (SEFSC) Commercial Logbook dataset (5/26/20) was used to examine trip limits in the commercial sector of the South Atlantic red porgy fishery. Currently, the fishery has a 60-red porgy trip limit from January-April that was implemented in 2020 and a 120-red porgy trip limit from May-December that was implemented in 2006. Beginning in 2000, harvest was restricted from January-April until February 2020. From 2015 through 2019, the Commercial Logbook had 5,669 trips recorded that captured red porgy in the South Atlantic. The Commercial Logbook provides landings at the trip-level in pounds, but the potential red porgy trip limits are in numbers of fish. Because landings are in pounds, it was necessary was also necessary to evaluate Commercial Trip Interview Program (TIP, accessed September 2020) data to determine potential impacts of the trip limit alternatives. The TIP data is not a comprehensive sample of the fish landed on a given trip, and thus cannot be directly used for determination of trip limit impacts. Instead, TIP data can be used to calculate a mean individual weight from representative samples from commercial trips intercepted to estimate the number of fish landed in Commercial Logbook reported trips. Data were stratified by state using data from 2015-2019, and Florida and Georgia data were pooled because no Georgia TIP data were very available. The mean weights in pounds whole weight (lbs ww) were determined from TIP data using measured weights when available in either round (whole) weight or gutted weight with head on, using a conversion factor of 1.04 for gutted to whole weight. When measured weights were unavailable, meristic conversions were used to convert measured length (total, standard, or fork length) to total length in mm, and then to convert total length to whole weight in pounds using conversion factors found in Table 1 of SEDAR-1 Update (2006). These conversions were not updated in SEDAR 60 (2020), the most recent red porgy stock assessment. The mean weight of commercially harvested red porgy used to convert landings in pounds to numbers of fish were 1.72 for North Carolina, 2.20 for South Carolina, and 2.08 for Florida and Georgia. The percent of trips harvesting red porgy from 2015 through 2019 shows greater than 50% of trips are estimated to have harvested less than 30 fish during a trip (**Figure 1**). Trips estimated to have harvested greater than 120 red porgy were normalized to 120 fish when estimating potential trip limit reductions. Estimated reductions from projected landings for potential trip limits are shown in **Table 1**.

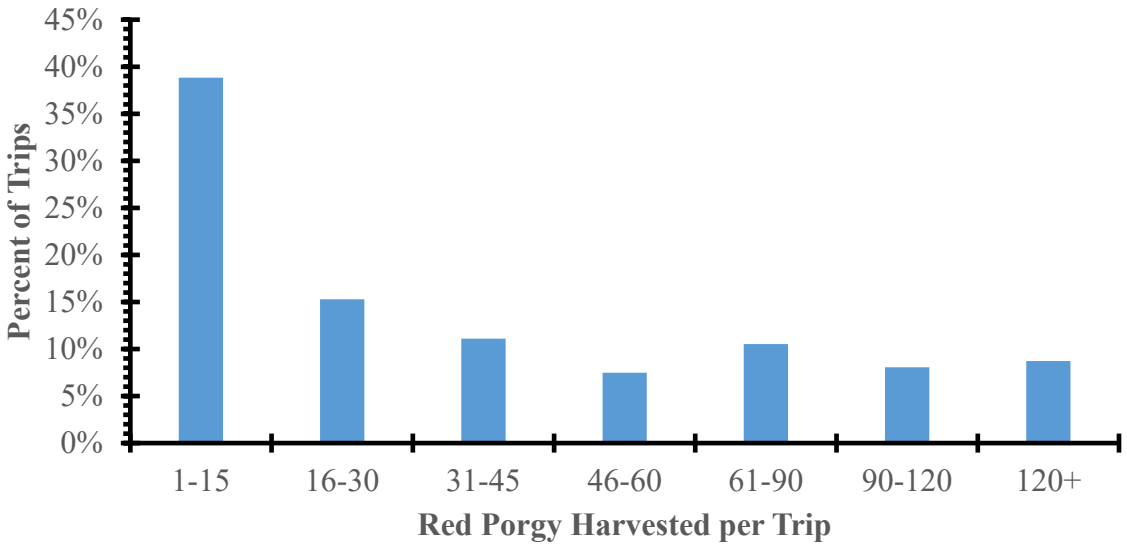

Figure 1. The percent of commercial trips (n=5,669) harvesting red porgy (numbers of fish) by bin from 2015 through 2019. Source: SEFSC Commercial Logbook [May 26, 2020].

Table 1. The predicted percent change in landings from either the 60-red porgy (January-April) or 120-red porgy (May-December) trip limits.

Current Trip Limit (# of red porgy)	Potential Trip Limit (# of red porgy)	Change in Landings
60	45	-15%
60	30	-35%
60	20	-52%
60	15	-62%
120	60	-25%
120	45	-36%
120	30	-51%
120	20	-64%
120	15	-71%

Commercial Season Length

Landings data for South Atlantic red porgy were obtained from the SEFSC commercial ACL dataset (10/9/20). Future landings were determined by taking an average of the most recent three years of complete data for each month, as the most recent data are believed to be the best approximation of future harvest (**Figure 2**). Landings for January through April were extrapolated from mean 2017-2019 May landings using the mean ratio of May landings to January-April landings from 1986-1999 (the final year the fishery was open January-April until 2020). The variances from the ratios and recent landings were summed for the January through April landings prediction. Regulatory Amendment 27 became effective February 26, 2020

opening the January through April fishing season for the first time since 1999. There were likely confounding effects due to social distancing measures, but March 2020 preliminary landings were approximately 8,500 lbs ww and April landings were approximately 5,250 lbs ww. Season lengths were projected using daily catch rates with upper and lower 95% confidence intervals for the commercial ACL with the different trip limit options (**Table 2**).

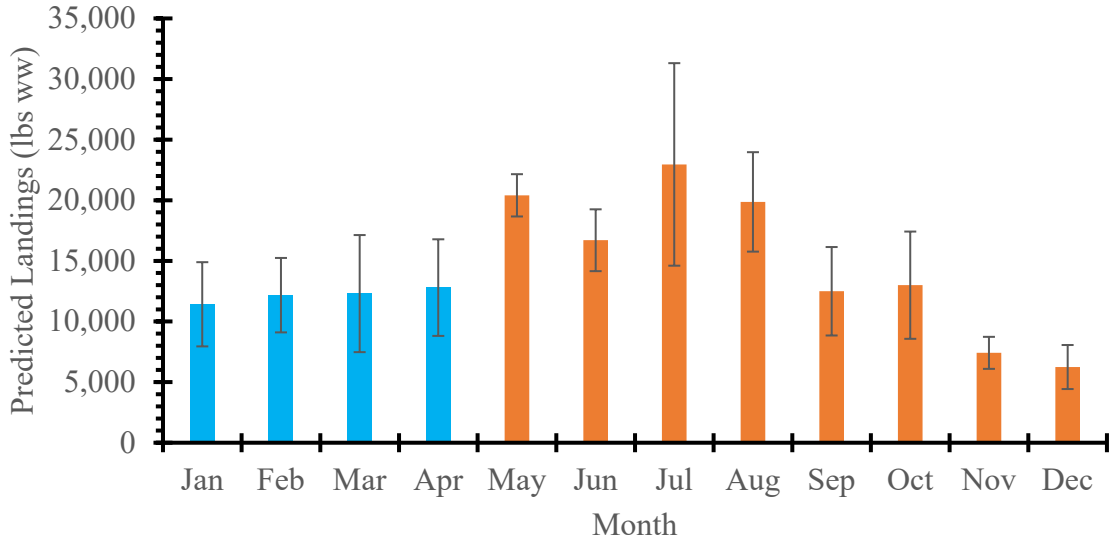

Figure 2. The predicted monthly red porgy landings (lbs ww) based current trip limits and 95% confidence interval. Source: SEFSC Commercial ACL file [October 9, 2020].

Table 2. The projected 2022 closure date of red porgy by season with different trip limit options and 95% confidence interval (CI). Note that 30% of the ACL (37,500 lbs ww) is allocated to the January-April season and 70% to the May-December season.

Season	ACL (lbs ww)	Trip Limit (# of red porgy)	Closure Date	Season Length (95% CI)
January 1 – April 30	11,250	60 - Current	January 31	24 – 42 Days
January 1 – April 30	11,250	45	February 5	28 – 48 Days
January 1 – April 30	11,250	30	February 14	36 – 61 Days
January 1 – April 30	11,250	20	February 28	47 – 86 Days
January 1 – April 30	11,250	15	March 15	58 – 107 Days
May 1 – December 31	26,250	120 - Current	June 11	38 – 48 Days
May 1 – December 31	26,250	60	June 27	52 – 66 Days
May 1 – December 31	26,250	45	July 6	61 – 80 Days
May 1 – December 31	26,250	30	July 23	74 – 105 Days
May 1 – December 31	26,250	20	August 20	92 – 156 Days
May 1 – December 31	26,250	15	September 27	116 – 244 Days

Recreational Bag Limit

The number of red porgy caught per angler on a given trip was collected by Marine Recreation Information Program (MRIP) and the Southeast Region Headboat Survey (SRHS) using data from 2015 through 2019 (**Figure 3**). Analyses could only examine catch per trip and not per person per day due to data limitations. The most recent five years of data was used instead of three years due to low sample sizes for the private mode. The MRIP system classifies recreational catch into three categories:

- Type A - Fish that were caught, landed whole, and available for identification and enumeration by the interviewers.
- Type B - Fish that were caught but were either not kept or kept but not available for identification.
    - Type B1 - Fish that were caught and filleted, released dead, given away, or disposed of in some way other than Types A or B2.
    - Type B2 - Fish that were caught and released alive.

Type A and B1 catches were used for bag limit analyses. Type A catch represents the total catch of all anglers on a fishing trip. However, some or all of the anglers contributing to the A catch are also interviewed to report type B1 catch, and those may be recorded on an individual basis.

The B1 catch was aggregated for each fishing party and the total catch per angler was then determined by summing the total Type A and Type B1 catch (AB1) for each trip and then dividing it by the number of anglers in the fishing party. Percent reductions in harvest were estimated for bag limits ranging from one to two red porgy per person from the current 3-red porgy per angler in place since 2006. If AB1 catch per angler was greater than the bag limit being analyzed and less than or equal to the three-red porgy per angler bag limit, the value was re-set to the new bag limit ($AB1_{bag\ limit}$), otherwise no changes to the catch were made. Four outliers with very high harvest per angler were normalized to three fish per angler for the analysis.

The following formulas were used to estimate reductions in harvest resulting from bag limits:

$$\textit{If AB1 catch} <= \textit{bag limit, then harvest} = A + B1$$
$$\textit{If AB1 catch} > \textit{bag limit, then harvest} = AB1_{bag\ limit}$$

Reductions for SRHS bag limits were calculated in a similar manner as described above, except no B1 catch data were available. If the catch per angler was greater than the bag limit being analyzed, the value was re-set to the bag limit, as described above. If the catch per angler was less than the bag limit being analyzed, then no change to the catch was made. Percent reductions associated with bag limits were estimated relative to the status quo of the 3-fish bag limit, by mode of fishing. **Table 3** provides the percent reductions for bag limits of two and one red porgy per angler. The impact of bag limits varied by mode: the largest reductions were observed in the private mode with smaller reductions observed in the charter and headboat modes.

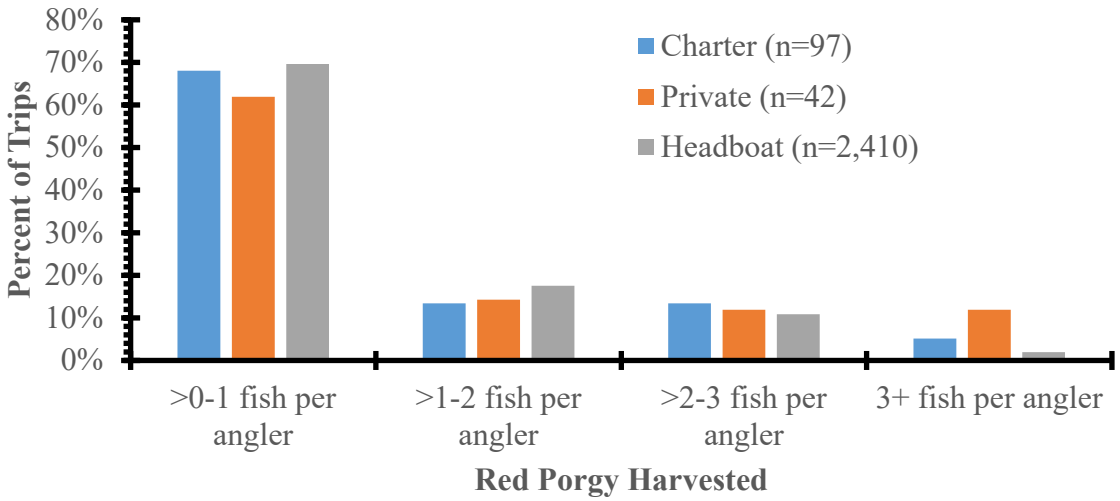

Figure 3. The percent of trips harvesting red porgy for private, charter, and headboat modes by bin from 2015 through 2019. Sources: MRIP-FES survey data available at https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads. SRHS CRNF file [July 10, 2020].

Table 3. The percent change in red porgy landings by for each potential bag limit by mode and overall. Note, the total percent change is weighted by the contribution of each mode's landings to overall red porgy landings.

Mode	2-red porgy bag limit	1-red porgy bag limit
Charter	-4%	-12%
Private	-10%	-32%
Headboat	-6%	-28%
Overall	-9%	-29%

Recreational Trip/Vessel Limit

Currently, there is no recreational trip or vessel limit in place for red porgy. Analyses could only examine catch per trip and not per person per day due to data limitations. The number of red porgy caught on a given trip was collected by MRIP and the SRHS using data from 2015 through 2019 (**Figure 4**). Similar to the bag limit analysis, percent reductions in harvest for trip limits of 15 and 10 red porgy per trip were estimated. If catch per trip was greater than the trip limit being analyzed, the value was re-set to the new trip limit; otherwise, no changes to the catch were made. Reductions for SRHS trip limits were calculated in a similar manner as described above. Percent reductions associated with trip limits were estimated in combination with the bag limit alternative previously analyzed, by mode of fishing and overall. **Table 4** provides the percent reductions for trip limits of 15 and 10-fish per trip with the three different bag limit options. The impact of trip limits varied by mode: the largest reductions were observed in the headboat mode with smaller reductions observed in the charter and private modes. From 2010 through 2019, headboats have captured on average 24% (range 4-41%) of the annual recreational harvest (**Figure 5**).

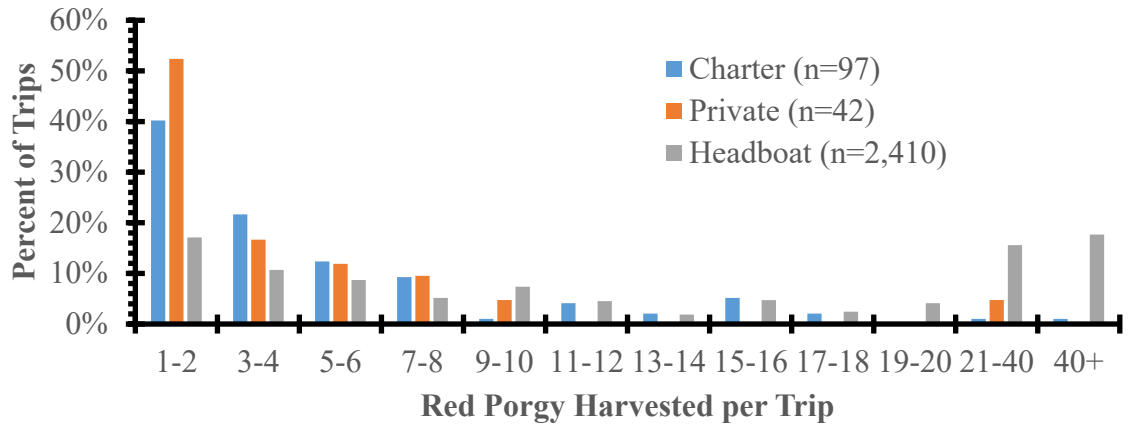

Figure 4. The percent of trips harvesting red porgy for private, charter, and headboat modes by trip bin from 2015 through 2019. Sources: MRIP-FES survey data available at https://www.fisheries.noaa.gov/recreational-fishing-data/recreational-fishing-data-downloads. SRHS CRNF file [July 10, 2020].

Table 4. The percent change in red porgy landings by for each potential trip limit and bag limit combination by mode and overall. Note that the total percent change is weighted by the contribution of each mode's landings to overall red porgy landings. Green cells indicate a small decrease while red cells indicate a larger decrease in predicted landings.

Trip Limit	15-fish			10-fish		
Bag Limit	**3-fish**	**2-fish**	**1-fish**	**3-fish**	**2-fish**	**1-fish**
Charter	-6%	-10%	-19%	-20%	-22%	-29%
Private	-13%	-34%	-50%	-20%	-34%	-50%
Headboat	-62%	-62%	-64%	-71%	-71%	-72%
Overall	-16%	-34%	-48%	-25%	-36%	-50%

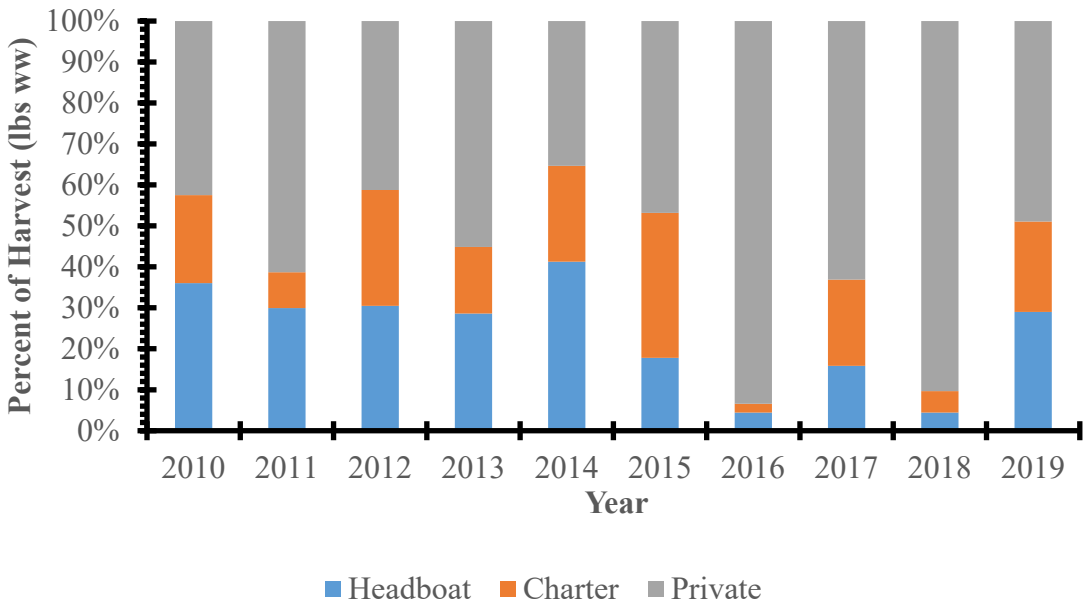

Figure 5. The percent of red porgy harvest (lbs ww) by mode from 2010 through 2019.

Recreational Season Length

Landings data for South Atlantic red porgy were obtained from the SEFSC recreational ACL dataset (9/16/20). The current ACL is being tracked using MRIP Coastal Household Telephone Survey (CHTS) equivalent landings. However, this analysis uses MRIP Fishing Effort Survey (FES) data to match the same currency (MRIP FES) as the most recent assessment (SEDAR 60). The data set also contains landing from the SRHS. Future landings were determined from taking an average of the landings from 2015 through 2017 and 2019. **Landings from 2018 were excluded due to a proportional standard error (PSE) greater than 75 indicating a very imprecise estimate.** Recreational landings are collected in two-month increments called waves (e.g., January and February = wave 1, March and April = wave 2, etc.). Landings and a prediction of future landings by wave are shown in **Figure 6**. Season lengths were projected with cumulative landings and upper and lower 95% confidence intervals for the recreational ACL of 37,500 lbs ww. The predicted closure date for the recreational ACL span from May 4 for the 3-red porgy bag limit with no trip limit to June 3 for the 1-red porgy per angler bag limit with a 10-fish trip limit (**Table 5**). There is considerable uncertainty in the predictions indicated by the large confidence intervals. The recreational decision tools have the added option of opening or closing waves for projecting season length.

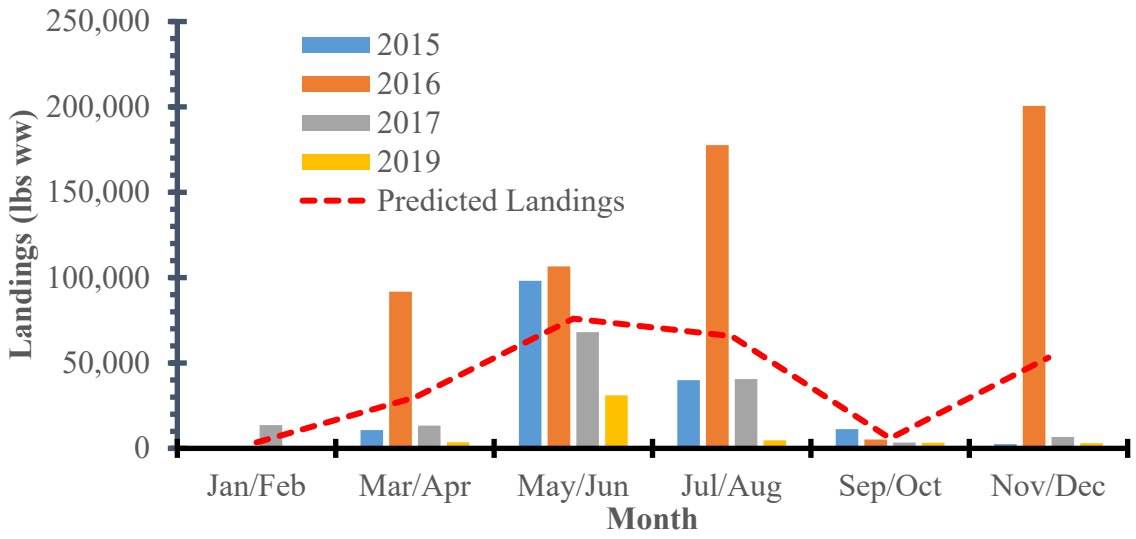

Figure 6. South Atlantic red porgy recreational landings by two-month wave and predicted future landings. Source: SEFSC MRIP FES Recreational ACL Dataset [September 16, 2020].

Table 5. The projected closure dates of red porgy for different bag limit and trip limit options with 95% confidence interval (CI).

ACL (lbs ww)	Bag Limit	Trip Limit	Closure Date	Season Length (95% CI)
37,500	3-fish	None	May 4	Mar 24 – Jun 23
37,500	2-fish	None	May 7	Mar 27 – Jun 29
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37,500	1-fish	15-fish	June 1	Apr 23 – No Closure
37,500	3-fish	10-fish	May 14	Apr 4 – No Closure
37,500	2-fish	10-fish	May 21	Apr 12 – No Closure
37,500	1-fish	10-fish	June 3	Apr 25 – No Closure

Decision Tools

Decision tools were developed for both the commercial and recreational sectors to examine different management options when predicting season length. The commercial decision tool was developed in R statistical software (**Figure 7**) and the recreational decision tool was developed in both Microsoft Excel using drop-down menus for inputting desired management measures (**Figure 8**) and R statistical software (**Figure 9**). The recreational decision tools allow users to close different waves and examine the effect on predicted season length.

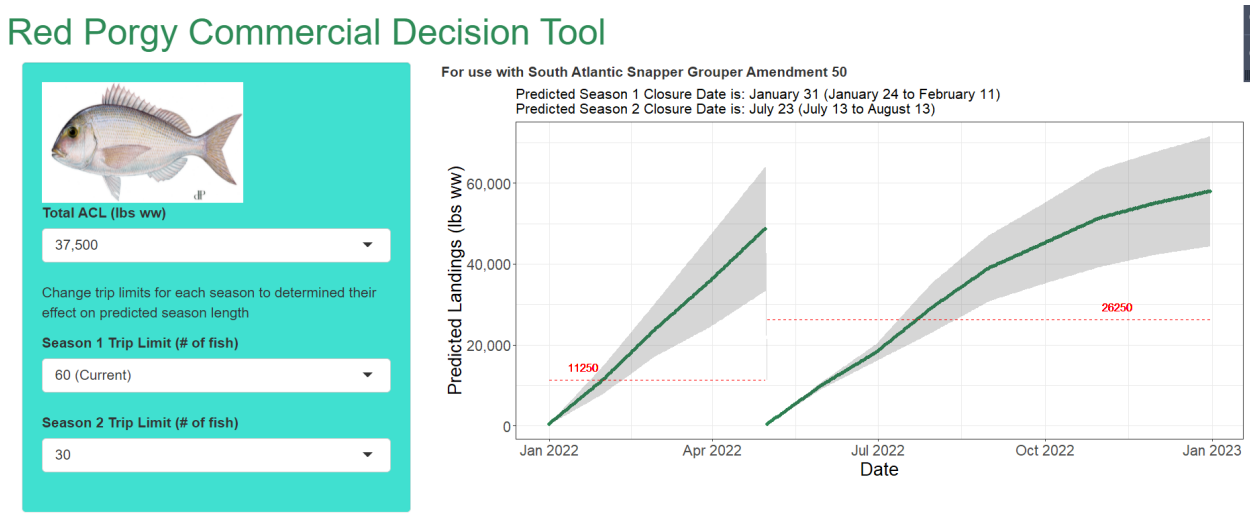

Figure 7. A screenshot of the commercial decision tool developed in R statistical software.

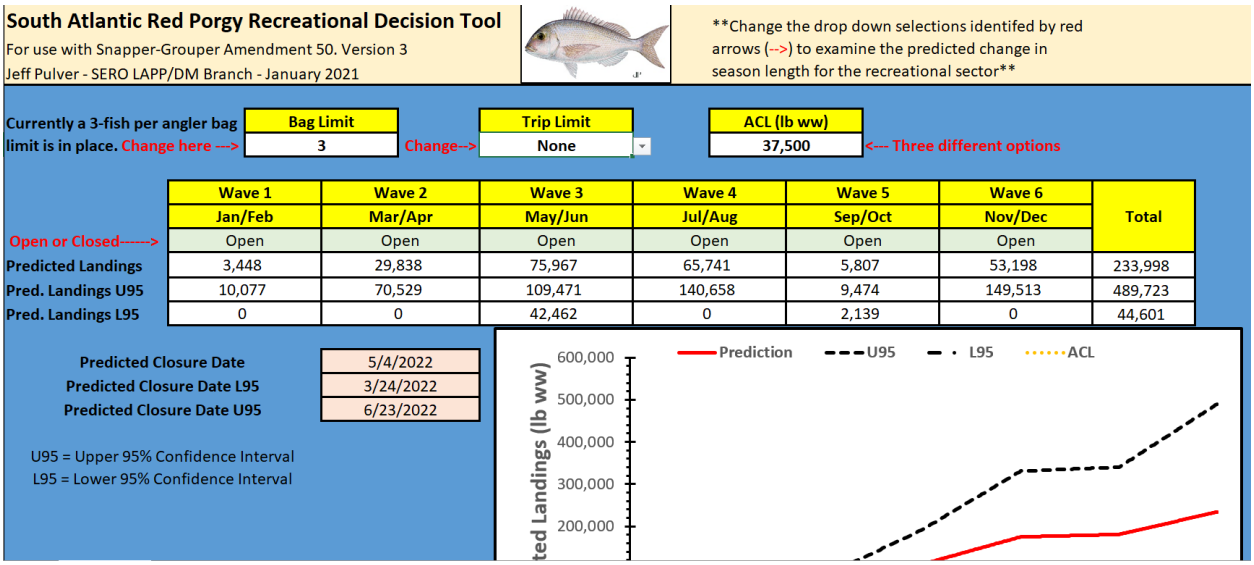

Figure 8. A screenshot of the recreational decision tool developed in Microsoft Excel.

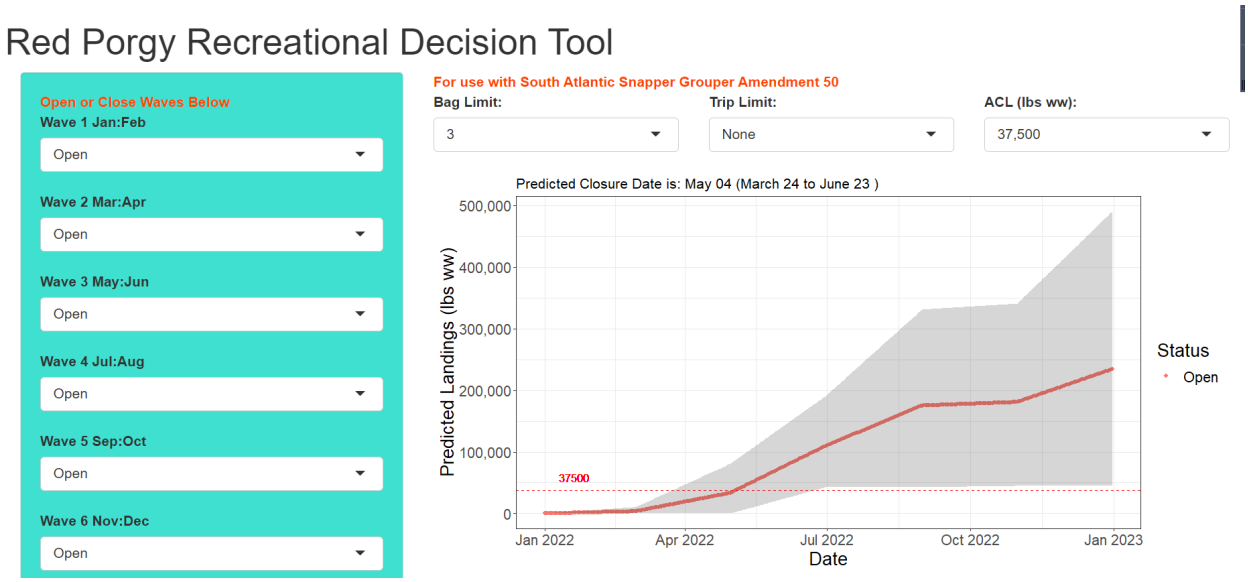

Figure 9. A screenshot of the recreational decision tool developed in R statistical software.