



Summer Flounder, Scup, and Black Sea Bass Monitoring Committee: January 26, 2017 2017-2019 Black Sea Bass Specifications and 2017 Black Sea Bass Recreational Measures

Monitoring Committee Attendees: Bob Glenn (MA DMF), Greg Wojcik (CT DEEP), John Maniscalco (NY DEC), Peter Clarke (NJ F&W), Jason McNamee (RIDEM), Rich Wong (DNREC), Steve Doctor (MD DNR), Katie May Laumann (VMRC), Gary Shepherd (NMFS NEFSC), Kiley Dancy (MAFMC Staff), Brandon Muffley (MAFMC Staff), Kirby Rootes-Murdy (ASMFC Staff), Emily Gilbert (NMFS GARFO);

Other Attendees: Rob O'Reilly (VMRC; Council Demersal Committee Chair), Kevin Chu (NMFS GARFO), Purcie Bennett-Nickerson (Pew)

The Monitoring Committee met on Thursday, January 26, 2017 in Baltimore, MD to recommend 2017-2019 black sea bass Annual Catch Limits (ACLs), Annual Catch Targets (ACTs), commercial quotas, and recreational harvest limits, based on the January 25 recommendations of the Scientific and Statistical Committee (SSC). In addition, the Monitoring Committee developed recommendations for 2017 recreational management measures for black sea bass.

Black Sea Bass Catch and Landings Limits for 2017-2019

The Monitoring Committee reviewed the SSC recommendations for 2017-2019 and the associated staff recommendations for ACLs and ACTs (Table 1). While most of the Committee supports setting three-year specifications, the group agrees that catch and landings limits should be revisited each year. The Committee notes that the Council may wish to request an assessment update in 2018 to update 2019 specifications. This is due to the decline in the highly influential 2011 year class combined with the potentially large 2015 year class, which is not considered in the assessment since recruitment is measured as age-1 fish. A 2018 assessment update may also be able to incorporate the revised Marine Recreational Information Program (MRIP) catch time series resulting from the revised effort estimation methodology. In addition, the Monitoring Committee plans to closely evaluate actual 2017 discards compared to projected discards, given the substantial recommended increase in quotas in 2017. In general, the Monitoring Committee notes that the group should further evaluate how to consider expected changes in discards resulting from changes in quota. The Committee considered adjusting the projected commercial discards for 2017 due to the expectation that discards will decrease with an increase in quota. However, the Committee notes the uncertainty associated with the discard estimates, as well as a potential for increased discards of undersized fish due to a potentially large 2015 year class. Therefore, the Committee believes that the 3-year average used as a basis for discard projections is appropriate to account for this uncertainty.

The Committee agrees with the staff recommendation of no reduction in catch from the recreational and commercial ACLs, such that the ACTs are set equal to the ACLs. The Committee notes that commercial landings have been very close to the commercial quotas over the last five years (2011 – 2015) with less than a 2% percent difference on average between

landings and the quota over this time. The Committee believes the calculation for projecting commercial discards for 2017 is appropriate given changes to the commercial quota while accounting for stock dynamics. Discard projections and apportionments for 2018 – 2019 will be re-considered by the Committee next year. Therefore, the Committee does not recommend any reduction in the commercial ACL to the commercial ACT.

The recreational fishery has had a history of large overages since 2012 and overages are projected to occur again in 2016. However, the Committee notes that these recreational overages occurred when the black sea bass stock was rapidly expanding and availability to recreational anglers was very high. At the same time, due to the lack of an approved stock assessment for black sea bass the recreational harvest limits were set at levels not reflective of the large and increasing stock abundance. With the new benchmark stock assessment information, analysis indicates that recreational harvest limits during the last few years would have been significantly higher (i.e. approximately double those implemented) if they had been set using the recent assessment model, and overages would likely not have occurred to the same degree. Catch limits were not scaled appropriately with biomass prior to 2017 making consideration of performance difficult. The Technical and Monitoring Committees will continue to evaluate management uncertainty in the recreational fishery, the predictability and uncertainty in recreational catch estimates, and the influence of recreational regulations on harvest. The Monitoring Committee recommends no reduction in the recreational ACLs to the recreational ACTs.

The Committee agrees with the staff justification for not applying the recreational or commercial Accountability Measures (AMs) triggered in 2017 for 2015 overages. However, the group is supportive of the framework action initiated by the Council to revise the current commercial AMs, and recommends that this action be expanded to also cover summer flounder and scup.

Black Sea Bass 2017 Recreational Measures

Based on the SSC recommended Acceptable Biological Catch (ABC) and the Monitoring Committee's agreement with the staff-recommended recreational ACL and ACT for 2017, the resulting recommended recreational harvest limit (RHL) for 2017 is 4.29 million pounds (1,945 MT). This represents a 52% increase from the 2016 RHL and the highest limit since RHLs were first implemented in 1998. However, preliminary recreational data indicate that black sea bass harvest is projected to be 4.67 million pounds in 2016, the highest landings since 1995. When evaluating the 2016 projected harvest compared to the Monitoring Committee-recommended RHL of 4.29 million pounds, an approximate 8% reduction in landings would be needed in 2017. Current data available is preliminary and only through Wave 5, with Wave 6 projected based upon 2015 proportions of landings by wave. In the event that harvest totals change significantly when complete preliminary (mid-February) and/or final (mid-April) data is released, additional adjustments (up or down) may be required but this will be difficult to accomplish at the state level given the timing of fishing seasons and state regulatory processes.

The 2016 recreational harvest estimate in weight is the highest since 1995; while landings in number of fish have been relatively stable for the last three years (within 8% of each other). The Committee notes that increased harvest in weight is largely driven by the 2011 year class that continues to grow and increase the average weight of landed fish (Figure 1). Even if recreational removals, in numbers, remained constant or declined, the total removals by weight are expected to

continue to increase. These changes in the size/weight of sea bass continue to confound the current adjustments under ad-hoc regional management, which are typically made in numbers of fish and don't necessarily account for changes in fish weight.

The Monitoring Committee supports the continuation of ad-hoc regional management for the recreational fishery in 2017, but has a number of concerns with this strategy. It has not constrained harvest estimates in recent years but this is likely due to low catch limits, high fish availability in the north, and MRIP estimate variability. Measures adopted by states after repeated reductions in recent years have resulted in large regional differences between the Northern and Southern Regions, and disparate measures among states in the Northern Region. Complex sets of measures, including splits by mode, season, and sector, continue to be implemented, contrary to previous recommendations of the Monitoring and Technical Committees. A new approach that prioritizes consistency, from both an analytical and regulatory perspective, is recommended. The Committee noted the differences in the fishery between the Southern Region (DE-NC) and Northern Region (NJ-MA) such as the availability in numbers and size of fish, the small contribution (approximately 4%) of southern states harvest to the coastwide harvest, and the difference in harvest from state vs. federal waters. Since the implementation of ad hoc regional management, the Southern Region measures have aligned with the implemented federal measures each year. **The Committee agrees with the staff recommendation that federal measures should remain *status quo* in 2017, with a 12.5-inch minimum size, a 15-fish possession limit, and open seasons from May 15 – September 19 and October 22 – December 31.**

The Committee also recommends the preliminary 8% reduction estimated for 2017 not be applied and recreational management measures for Northern Region states remain *status quo*. The Committee's rationale and justification for status quo is as follows:

- Harvest by recreational fisheries is believed to be heavily dependent upon fish availability so a declining population should result in declining harvest. The 2016 benchmark stock assessment indicates that spawning stock abundance is projected to decline by approximately 15% between 2016 and 2017. With that decline, the Monitoring Committee expects a corresponding decline, albeit not one-to-one, in availability to recreational anglers. Therefore, under the same recreational measures the Committee expects recreational harvest to be stable or decline in 2017 due to lower availability.
- Fishing mortality has been declining over the last four years and was 25% below Fmsy-proxy in 2015, indicating that the management measures that have been in place have controlled fishing mortality and allowed the stock to grow.
- As additional justification for status quo measures, the Committee notes that the recreational harvest estimates are statistics generated by a statistical sampling program and therefore each annual estimate of harvest is not just an average point estimate but also contains uncertainty around the average estimate. This uncertainty estimate is generated by MRIP and is represented as a percent standard error. Given this uncertainty, the Committee believes that holding accountability to a single point estimate of this statistically derived quantity is not a correct usage of the information. Figure 2 below shows the estimated recreational harvest relative to the implemented recreational harvest limits, with the error surrounding those recreational harvest estimates represented as 95% confidence limits.

These confidence limits are calculated by taking the proportional standard error (PSE), converting it back to a standard error, and then applying the following equation:

$$95\% \text{ confidence limits} = \text{mean} \pm (1.96 * \text{standard error})$$

- The Committee proposes that in any given year, if the error around the harvest estimate in the current year overlaps with the RHL for the following year, status quo be a preferred option for the following year's management. The Committee wishes to stress that this procedure is valid in both directions. In other words, the Committee is recommending status quo for 2017, but the Committee would also have recommended status quo in 2003 and 2009 as well, years where the average harvest estimates were moderately below the recreational harvest limit and under previous evaluations would have allowed for some level of liberalization. This accountability to not just evaluate the average estimate but the 95% confidence interval around that estimate will promote stability in recreational measures from year to year, and will limit making small surgical predictive adjustments in ways that the data do not support.
- The Committee recommends using this calculation of uncertainty each year, and further suggests that this procedure not be used in years when the PSE exceeds 20, therefore a PSE of 20 will represent a maximum level of imprecision to allow for this procedure.
- The Committee notes the implementation of the 95% confidence limits is a first evaluation at utilizing this approach to assess the uncertainty in the single point harvest estimate and its relation to the RHL. Other statistics or descriptors of the variance may be more appropriate to prevent adjustments in measures when there are relatively minor differences between the projected harvest point estimate and the RHL (e.g. 68% confidence interval or straight application of the MRIP generated PSE). Evaluating the trade-offs between stability in management measures and the risks associated to the population and fishery need to be considered. The Committee will continue to further refine this approach and determine most appropriate evaluation to apply to this process. Its worth noting, that utilizing either the 95% confidence interval approach or the MRIP generated PSE (assuming the preliminary 2016 PSE estimate of 8.7%) would result in the same conclusion of *status quo* for 2017.
- There is another layer of uncertainty that exists in setting management measures year to year. This has to do with the retrospective performance of the specifications. Figure 2 shows the performance of projecting harvest from year t to year t+1 versus the recreational harvest limit. Accounting for this uncertainty is more difficult than for the annual precision of the final estimate, but the Committee commits to looking in to new ways of setting specifications that explicitly account for both uncertainty in management strategies chosen as well as providing more information to managers on trade-offs and relative risk from these choices. This will take time and will manifest itself as a management strategy evaluation for recreational black sea bass
- Another layer of support for the lack of risk associated with remaining at status quo in 2017 came from the benchmark assessment process. During this process, various iterations of recreational harvest levels were introduced to test the sensitivity of population and fishing mortality projections to those scenarios. It was found during this sensitivity testing that the

harvest needed to be inflated by 15% or greater before any impacts were seen in fishing mortality, and only minor impacts were seen in the estimated biomass levels. This is due to the fact that the recreational harvest is only one component of the overall removals, and it takes a significant increase to impact the overall population dynamics. The Committee will commit to running some simulations with the approved stock assessment to quantitatively prove that a small buffer can be allowed on the terminal year estimate of the recreational harvest without endangering stock status if warranted or desired.

The Committee believes the approach above comports with National Standard 2 (NS2) for the following reasons:

- The guidelines for NS2 state that it is meant to “elevate the importance of evaluating the uncertainty and associated risk of the scientific information to inform fishery management decisions”. Previous processes ignored the uncertainty associated with using the MRIP estimates as a point estimate. This leads to instability and large management changes from year to year, thus increasing the risk of management uncertainty thereby inflating its potential for negatively impacting the fishery. The new procedure outlined above explicitly incorporates the uncertainty in the estimated recreational harvest limit and uses the information as intended by the MRIP program, potentially promoting more stability in management from year to year.
- NS2 promotes objectivity as one of its main criteria for best scientific information available (BSIA). The guideline for NS2 state “Scientific information should be accurate, with a known degree of precision, without addressable bias, and presented in an accurate, clear, complete, and balanced manner” (50 CFR 600.315). The approach outlined above meets this criteria by acknowledging the uncertainty in the MRIP statistical estimate, and accounting for it explicitly in the setting of measures to achieve the RHL. Additionally on the topic of balance, the development of a set of control rules for usage of MRIP annual estimates allows for the balanced use of this information from year to year, keeping from adjusting harvest up or down from year to year when the uncertainty in the estimate does not support that accountability.
- NS2 also promotes transparency and openness in its BSIA. The guidelines for NS2 state “Scientific information products should describe data collection methods, report sources of uncertainty or statistical error, and acknowledge other data limitations” (50 CFR 600.315). The process as outlined above acknowledges the statistical nature of the annual MRIP estimates and accounts for the limitations of both the data source and the ability to account for the variability in the annual specification setting process when the envelope of uncertainty is larger than the difference between the mean estimate value and the recreational harvest limit.
- The committee contends that this procedure does not violate the prohibition of exceeding the RHL. The statistical estimate of MRIP annual harvest amounts have uncertainty around them, and this leads to an inability to say with any confidence that the estimate is different from not just the point estimate, but the interval around that estimate. This is a basic principal of statistics and is why the National Standards highlight uncertainty as such an important aspect of fisheries science and management.

The Monitoring Committee notes that similar to issues emerging with summer flounder, there are grave concerns regarding the ability to forecast harvest estimates the following year based upon

harvest estimates from the prior year. Factors influencing actual harvest (fish availability, angler effort, etc.) combined with MRIP estimate variability make the outcome highly uncertain. Greater regulatory consistency across states and/or regions combined with multi-year stability is likely to improve this process. Forcing recreational fisheries to react to annual targets does not allow for consistency or the ability to evaluate factors influencing harvest. The current system does not acknowledge the timing, resolution, or variability of harvest estimates. The regular incorporation of confidence limits to develop lower and upper bounds around point estimates to be used when determining if management changes are necessary is the first logical step towards greater efficacy. **Taking advantage of the successful stock assessment, the Monitoring Committee intends to further develop this idea and perhaps combine it with a biological reference point based control rule.**

If the 2016 recreational harvest estimates are higher than projected or it is determined that the 8% reduction is required, the Committee recommends making any necessary adjustments in the state measures in the Northern Region (Massachusetts through New Jersey). The Committee did indicate that New Jersey's recreational fishery does not fit into either region and should be considered a separate region for any modifications to management measures. **If** the 8% reduction is required and the adjustments to the Northern Region states measures **do not** address the required reduction, a backup set of measures would need to be implemented that would be expected to constrain landings to the RHL. If the ad-hoc regional measures developed through the Commission's process do not address the required reduction, **then** the Committee recommends backup coastwide measures including a 15-inch TL minimum size, a 3 fish possession limit, and an open season from June 15-September 15. These measures represent some of the most restrictive size, possession, and seasonal limit across all states.

The Committee also discussed a number of items to be considered within the Council/ASMFC amendment or framework/addendum processes to modify the FMP. The National Standard 1 guidelines state that if an ACL is exceeded more than once in a four year period, the "system of ACLs and AMs should be re-evaluated, and modified" to "improve its performance and effectiveness."¹ The recreational black sea bass ACL has been exceeded in each of the past 4 years by an average of approximately 48 percent and its likely to be exceeded again in 2016; therefore, the Council should consider changes to the ACL and AM system to comply with this provision of the National Standard guidelines. The Committee also discussed potentially managing black sea bass based on fishing mortality rates instead of hard quotas and harvest limits. This management strategy would be similar to the approach taken by the ASMFC for some of their fisheries, most notably striped bass. Fishing mortality is a robust approach to evaluate the performance of the fishery and the response of the stock and could minimize the wide shifts in management measures. **The Monitoring Committee recommends that the Council and Board continue with the development of the initiated amendment to the FMP to explore alternative approaches to managing the recreational black sea bass fishery, in order to simplify and clarify the recreational process and regulatory framework for black sea bass, and reconcile inconsistencies in the Council and Commission FMPs.**

¹ 50 CFR 600.310(g)(4)

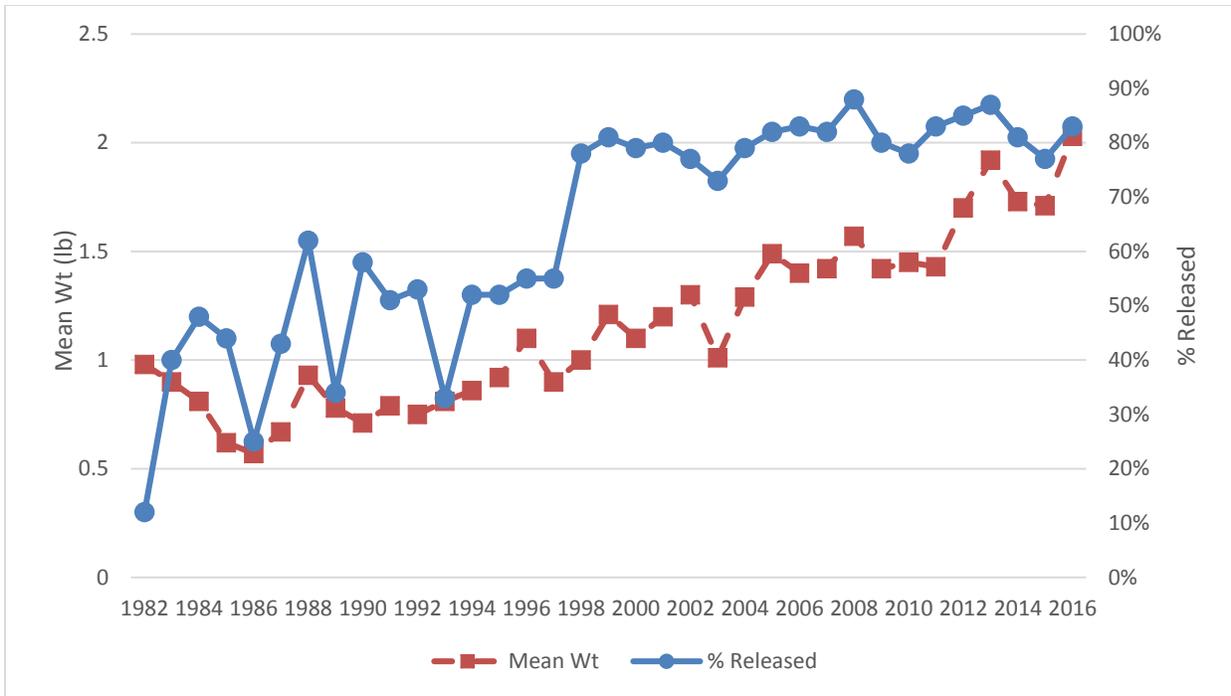


Figure 1. The average weight of recreationally harvested black sea bass and the percent of recreationally caught sea bass that are released.

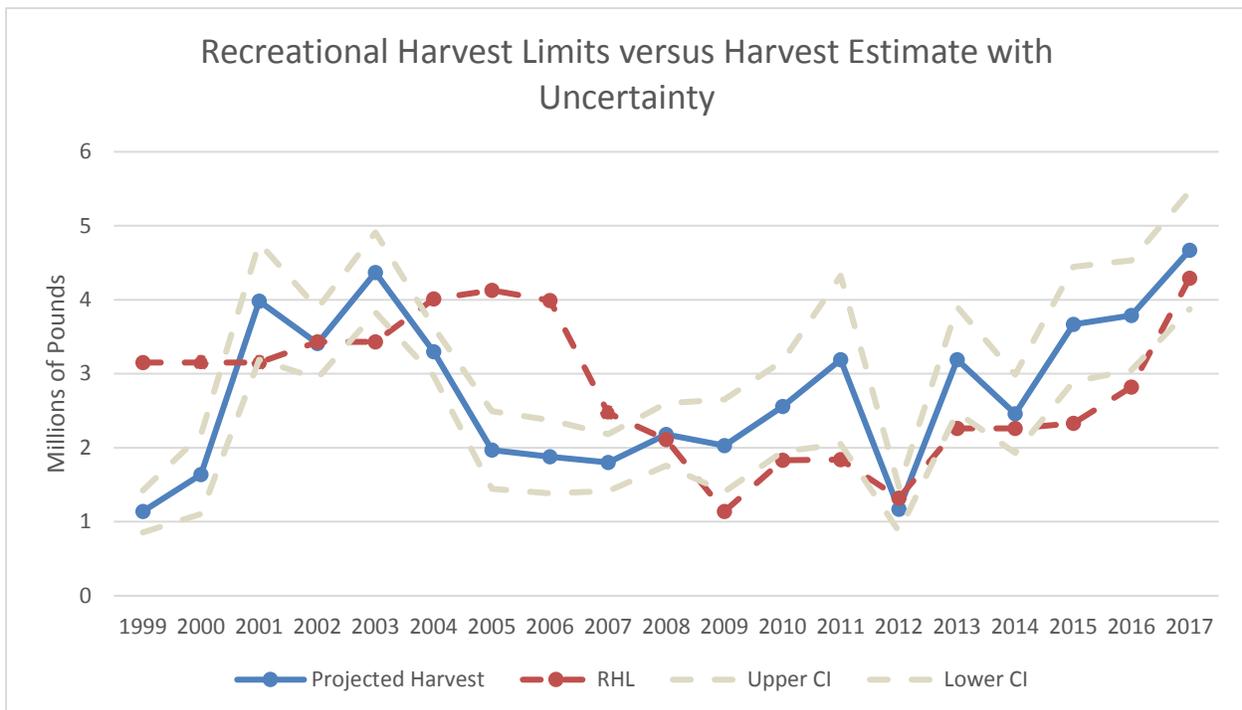


Figure 2: Recreational harvest limits since 1998 versus the recreational harvest estimates from the prior year. 95% confidence limits are represented around the harvest estimates and come from the actual years precision estimate.

Table 1: Staff-recommended multi-year catch and landings limits for black sea bass for 2017-2019.

Management Measure	2017		2018		2019		Basis
	mil lb.	mt	mil lb.	mt	mil lb.	mt	
OFL	12.05	5,467	10.29	4,669	9.18	4,163	Stock assessment projections
ABC	10.47	4,750	8.94	4,057	7.97	3,617	Stock assessment projections/staff recommended application of Council risk policy
ABC Landings Portion	8.41	3,814	7.18	3,258	6.40	2,904	80.3% of ABC, based on average 2013 – 2015 % landings portion of total catch
ABC Discards Portion	2.06	936	1.76	799	1.57	713	19.7% of ABC, based on average 2013 – 2015 % discards portion of total catch
Commercial ACL	5.09	2,311	4.35	1,974	3.88	1,760	49% of ABC landings portion (per FMP allocation) + 47.2 % of ABC discards portion
Commercial ACT	5.09	2,311	4.35	1,974	3.88	1,760	Commercial ACL, less deduction for management uncertainty
Projected Commercial Discards	0.97	442	0.83	377	0.74	336	47.2% of ABC discards portion, based on 2013-2015 average % discards by sector
Commercial Quota	4.12	1,869	3.52	1,596	3.14	1,423	Commercial ACT, less discards
Recreational ACL	5.38	2,439	4.59	2,083	4.10	1,858	51% of ABC landings portion (per FMP allocation) + 52.8 % of ABC discards portion
Recreational ACT	5.38	2,439	4.59	2,083	4.10	1,858	Recreational ACL, less deduction for management uncertainty
Projected Recreational Discards	1.09	494	0.93	422	0.83	376	52.8 % of ABC discards portion, based on 2013-2015 average % discards by sector
Recreational Harvest Limit	4.29	1,945	3.66	1,661	3.27	1,481	Recreational ACT, less discards