

8. SEDAR 55 VERMILION SNAPPER ASSESSMENT REVIEW

8.1 Documents

Attachment 12. SEDAR 55 SAR, Vermilion Snapper
Attachment 13. Assessment Overview Presentation

8.2 Presentation

Assessment Overview: Dr. Kevin Craig, SEFSC

8.3 Overview

The Committee is asked to review the Vermilion Snapper Standard assessment prepared through SEDAR 55 and provide fishing level recommendations (Attachment 12). Vermilion Snapper was last assessed in the 2012 Update to SEDAR 17, where the stock was found to be not in an overfished state and not undergoing overfishing. The major reasons for performing a Standard assessment were to consider using a new distribution for fitting age and length comps, known as the Dirichlet Multinomial, and to include the new SERFS video fishery independent index of abundance.

8.4 Action

- Review assessment
 - Does the assessment address the ToRs to the SSCs satisfaction?
 - *The SSC agrees that the SEDAR 55 assessment addresses the ToRs to its satisfaction.*
 - Does the assessment represent Best Scientific Information Available?
 - *The SSC agrees that the SEDAR 55 assessment represents BSIA and is usable for management.*
 - Does the assessment provide an adequate basis for determining stock status and supporting fishing level recommendations?
 - *The SSC agrees that the SEDAR 55 assessment provides an adequate basis for determining stock status and for supporting fishing level recommendations.*
- Identify, summarize, and discuss assessment uncertainties
 - Review, summarize, and discuss the factors of this assessment that affect the reliability of estimates of stock status and fishing level recommendations.
 - *The steepness profile was flat, so steepness was fixed in the base run at 0.69. This is nearly equal to the steepness value used in the prior assessment (steepness = 0.71).*
 - *Using the geometric mean fishing mortality estimate of the last 3 years may bias the results or remove the actual trend in fishing mortality.*
 - *However, this is a convention that has been adopted by the SSC and is assumed to be more appropriate than the arithmetic mean, or the terminal year value given the reduced reliability in that terminal F value.*
 - *The headboat index drops dramatically in 1992, when there is a management change, and most likely does not track the population abundance as it did prior to that time.*
 - *There was an issue fitting the CVID index, especially at the end of the time series. However, it was determined this was most likely due to differing signals in the age comps vs. the index. As such, no upweighting of the CVID index was done, to make sure that recruitment signals captured by the age comps remained in the model. The SSC agreed that this was an appropriate approach.*
 - Describe the risks and consequences of the assessment uncertainties with regard to status and fishing level recommendations.

- Are methods of addressing uncertainty consistent with SSC expectations and the available information?
 - *Yes. Numerous sensitivity analyses were conducted addressing uncertainties.*
 - *An MCB analysis was also performed, encompassing uncertainty in key parameters and input data.*
- List (in order of the greatest contribution to risk and overall assessment uncertainty) and comment on the effects of those assessment factors that most contribute to risk and impact status determinations and future yield predictions.
- Provide fishing level recommendations
 - Apply the ABC control rule and complete the fishing level recommendations table.
 - *ABC Control Rule*
 - *Dimension I Assessment Information: Tier 2 (2.5%)*
 - *Dimension II Uncertainty Characterization: Tier 2 (2.5%)*
 - *Dimension III Stock Status: Tier 1 (0%)*
 - *Dimension IV Risk Analysis: Tier 2 (5%)*
 - *Correction Factor: 10%*
 - *P* = 40%*
 - *Projections should be run for 5 years (to 2023).*
 - Comment on any difficulties encountered in applying the Control Rule, including any required information that is not available.
 - *The SSC reviewed the PSA score and found the previously used value still appropriate to use in the ABC CR.*
- Provide advice on monitoring the stock until the next assessment
 - What indicators or metrics should the council monitor and could the SSC use to evaluate the stock until the next assessment?
 - *Age/Length Comps in the landings and the fishery independent surveys.*
 - *Discards, specifically to monitor recruitment.*
 - *Relationship between landings and ACL (If ACL is consistently not met and landings are far below the ACL, there may be a problem with population abundance).*
 - Is there a recommended trigger level for these metrics? How should the Council respond if a trigger is activated?
 - *If ACL is consistently not met and landings are far below the ACL, there may be a problem with population abundance or recruitment.*

- *Age and Length comps do not show evidence of R.*
- Provide research recommendations and guidance on the next assessment
 - Review the included research recommendations, and indicate those most likely to reduce risk and uncertainty in the next assessment.
 - *Because Vermillion Snapper is a schooling species that swims above the bottom, a sonar index could provide valuable information.*
 - Provide any additional research recommendations the SSC believes will improve future stock assessments.
 - *Try using video and trap data to look at changes in catchability. For instance, if Vermilion Snapper is seen on video, but not caught in the traps, are there environmental variables that may drive that process?*
 - *Consider dropping the HB index or truncating it at 1992 when the index changes suddenly in response to management changes.*
 - *Investigate the apparent disconnect between the CVID index and the chevron trap age compositions.*
 - *Investigate the feasibility of a juvenile index.*
 - *Examine reasons for the large disconnect between the signal coming from the age comps vs. the length comps.*
 - *Examine whether the size at age variability is a population phenomenon (high level of among individual variation in growth) or is being driven by spatial differences in size at age.*
 - Provide guidance on the next assessment, addressing its timing and type.
 - *The SSC recommendations should be in place for no more than 5 years until the next assessment.*
 - *The type of assessment will depend on what new data are available in 5 years.*

SSC RECOMMENDATION:

Table 3. Vermilion Snapper Recommendations

Criteria	Deterministic		Probabilistic	
SSB/SSB _{MSY}	1.13		1.16	
Overfished evaluation (SSB/MSST)	1.51		1.54	
Overfishing evaluation	0.609		0.564	
MFMT (F _{MSY})	0.41		0.44	
SSB _{MSY} (Units)	18.3		17.2	
MSST (Units)	13.7		12.9	
MSY (1000 lbs.)	1,305.5		1,339.6	
Y at 75% F _{MSY} (1000 lbs.)	1,288.2		1,324.6	
ABC Control Rule Adjustment	10%			
P-Star	40%			
M	0.22			
OFL RECOMMENDATIONS				
Year	Landed LBS	Discard LBS	Landed Number	Discard Number
2019	1,810,000	163,000	1,788,000	232,000
2020	1,614,000	157,000	1,643,000	227,000
2021	1,486,000	154,000	1,563,000	225,000
2022	1,412,000	153,000	1,525,000	223,000
2023	1,371,000	152,000	1,497,000	222,000
ABC RECOMMENDATIONS				
Year	Landed LBS	Discard LBS	Landed Number	Discard Number
2019	1,579,000	166,000	1,559,000	235,000
2020	1,478,000	163,000	1,492,000	233,000
2021	1,408,000	162,000	1,454,000	233,000
2022	1,362,000	161,000	1,433,000	232,000
2023	1,336,000	161,000	1,419,000	232,000