

Scientific and Statistical Committee's Groundfish Subcommittee Report on 2023 Stock Assessments and Harvest Specifications

Pacific Fishery Management Council
Via Webinar

September 26, 2023

Overview

The Groundfish Subcommittee (GFSC) of the Scientific and Statistical Committee (SSC) met on September 26, 2023, to discuss the updated quillback rockfish rebuilding analyses, harvest specifications for 2025 and beyond resulting from 2023 stock assessments and revisions to specifications from prior assessments to address errors. A list of GFSC attendees is provided in Appendix 1. An overview of the GFSC deliberations and recommendations are provided to inform SSC discussions regarding endorsement of harvest specifications for 2025 and beyond.

Review of the Quillback Rockfish Rebuilding Analyses

Dr. Brian Langseth of the Northwest Fisheries Science Center (NWFSC) presented the rebuilding analysis for quillback rockfish in waters off California. The rebuilding analysis is required because the 2021 data-moderate stock assessment estimated depletion was at 14% in 2021, which is below the Minimum Stock Size Threshold (MSST) of 25%. The rebuilding analysis assumed the Groundfish Management Team (GMT) recommended annual removals for 2021-2024 of 15.8, 18.11, 11.12, and 10.62 mt. The Council requested an alternative analysis with an alternative removal value for 2024 of 6.32 mt to account for restrictions in harvest already put into place. This alternative was provided as an Appendix. The analyses used the SSC default rebuilding analysis software, Rebuilder software version 3.12j (December 2021). The GFSC concluded that the rebuilding analysis was conducted correctly in accordance with the [Terms of Reference \(TOR\) for the Groundfish Rebuilding Analysis for 2023-2024](#). No additional sensitivity runs were requested by the subcommittee.

All applicable types of alternative rebuilding strategies as specified in the TOR were evaluated, along with several others. Strategies specified in the TOR include 1) eliminate all harvest ($F=0$); 2) apply the harvest rate that would generate the current year annual catch limit (ACL) strategies; 3) apply the harvest control rule from the current rebuilding plan; 4) apply the harvest rate that is estimated to lead to a 50% probability of recovery by alternative target years, 5) apply the default harvest policy based on the specified sigma and P^* , and 6) applying the acceptable biological catch (ABC) harvest rate based on the specified sigma and P^* . An additional type of strategy evaluated a range of spawning potential ratio (SPR; i.e., ratio of spawning potential per recruit under a given fishing regime, relative to the spawning potential per recruit with no fishing) values from 0.5 to 0.9. The results of strategy 2 were not reported because it resulted in an SPR value of less than 0.5. Strategies based on an existing rebuilding plan were also not done because no rebuilding plan is currently in place.

All runs assumed full attainment of allowable catch and included uncertainty and starting values based on the high and low states of nature from the 2021 stock assessment, specified by alternative natural mortality values. The model also included uncertainty in recruitment deviations with a σ_R of 0.6. The rebuilding reference points were calculated using the 2021 base model from the stock assessment. The rebuilding plan was set to start in 2025, with an estimated minimum time for rebuilding of 20 years ($T_{MIN}= 2045$), and a mean generation time of 26 years, which resulted in a maximum time to rebuild (T_{MAX}) of 2071. The range of strategies represent an expected range of rebuilding years.

The alternative analysis (Appendix B) that reduced the 2024 removal value to 6.32 mt to reflect inseason regulation changes implemented to reduce removals resulted in similar outcomes. The minimum and maximum times to rebuild were shortened by one year to 2044 and 2070 respectively. In the alternative analysis, a strategy with $SPR = 0.50$ allowed rebuilding within the maximum time allowed, whereas that strategy in the original analysis was not viable because rebuilding could not be achieved before the T_{MAX} .

The GFSC discussed some aspects of the 2021 California quillback stock assessment and rebuilding analysis relevant to the 2023 rebuilding analyses. The 2021 assessment was reviewed and endorsed by the SSC as best scientific information available for use in management and the Council adopted the assessment after several discussions in SSC statements and GFSC reports reflected in the record for Council meetings in June 2021 ([Agenda Item G.5.a Supplemental SSC Report](#)), September 2021 ([Agenda Item C.6.a Supplemental SSC Report 1](#)), and November 2021 ([Agenda Item E.2.a Supplemental SSC Report 1](#)). Those reports characterize the SSC's conclusions about the assumptions, strengths and limitations of the 2021 assessment. The 2021 rebuilding analysis was also reviewed and approved by the SSC in November 2021. The 2023 rebuilding analyses incorporates the higher removals observed in 2021-2022 than were assumed in the 2021 analysis and two more years of ABC buffers applied (2023-2024) before the rebuilding plan would be implemented, which results in longer estimated times to rebuilding in the current analysis compared to 2021.

The GFSC considers the rebuilding analysis to reflect the best scientific information available to inform management, while noting the issues with the assessment on which it is based identified in GFSC and SSC reports cited above. The GFSC discussed the implications of the rebuilding analyses for 2025-2026 harvest specifications and notes that for 2025 the $SPR=0.5$ rate will equate to the overfishing limit (OFL). However, the 2026 OFL and ABC will depend on the values chosen for 2025, similar to OFL and ABC values for many recently adopted assessments.

Review of Revised Harvest Specifications for Vermilion Rockfish

The GFSC received a presentation from Dr. Jason Cope (NWFSC) on the revised harvest specifications for vermilion rockfish in Washington and Oregon, which were calculated using a weighted sigma given the assignment of each stock to different categories. The 2021 stock assessment for Washington was designated a category 2 with $\sigma=1.0$ and the 2021 stock assessment for Oregon was designated a category 1 with $\sigma=0.5$. Buffers were selected using a weighted sigma based on the OFL for each stock. The GFSC endorsed this process (see [Agenda Item H.3. June 2023](#)) and the revised harvest specifications.

Review of Revised Harvest Specifications for Rex Sole

The GFSC received revised harvest specifications for rex sole that included the provision of the OFL and the derivation of the ABC using a P^* of 0.4 for both 2025 and 2026. The September 2023 draft stock assessment document contained a projections table based on P^* of 0.45 (Table vii, pg xiv), which was not the default harvest control rule (HCR) of P^* using 0.4. The GFSC discussed and endorsed the revised harvest specifications.

Review of Revised Harvest Specifications for Dover Sole

The GFSC received revised harvest specifications for Dover sole that addressed the constant catch default harvest control rule (50,000 mt) in 2025 and beyond being higher than the OFL based on the current estimated biomass. In September 2023, Agenda Item G.6, Supplemental Revised Attachment 1 reported the $ACL=ABC$, which was not the default HCR. The Council requested revised projections based on constant catch ACL removals for 2023-2024 at 50,000 mt for the default $p^*=0.45$, which were provided for GFSC review. The GFSC agreed to revisit this topic during its Nov 1 meeting after the GMT has had a chance to discuss alternative HCRs at their work session in October.

Review of Revised Harvest Specifications for Oregon Black Rockfish

The GFSC received revised harvest specifications for Oregon black rockfish, which updated the catch values for 2023 and 2024 to estimates of current projected mortality of 466 mt each year, rather than full ACL attainment. The GFSC discussed the revised calculations and endorsed the resulting harvest specifications for use in management.

Review of Harvest Specifications for Remaining Species

The GFSC is scheduled to meet on November 1, 2023 from 3-5 PM to review harvest specifications for chilipepper rockfish, yellowtail rockfish North of $40^{\circ}10'$, and vermilion rockfish in California. In addition, Dover sole harvest specifications will be reviewed if necessary.

Appendix 1. SSC Subcommittee Members in Attendance

Dr. Cheryl Barnes, Oregon State University/ODFW, Newport, OR

Dr. John Budrick (Chair), California Department of Fish and Wildlife, San Carlos, CA

Dr. John Field, National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA

Dr. Chris Free, University of California Santa Barbara, Santa Barbara, CA

Dr. Owen Hamel, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA

Dr. Kristin Marshall, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA

Dr. Tommy Moore, Northwest Indian Fisheries Commission, Forks, WA

Dr. Jason Schaffler, Muckleshoot Indian Tribe, Auburn, WA

Dr. Tien-Shui Tsou, Washington Department of Fish and Wildlife, Olympia, WA