Catch only Rebuilding Projection: Status of Yelloweye Rockfish (*Sebastes ruberrimus*) Along the U.S. West Coast in 2023

#### John R. Wallace

Northwest Fisheries Science Center

U.S. Department of Commerce

National Oceanic and Atmospheric Administration National Marine Fisheries Service

2725 Montlake Boulevard East Seattle, Washington 98112-2097

[john.wallace@noaa.gov](mailto:john.wallace@noaa.gov)

August 24, 2023

This document provides an extension of the 2017 rebuilding analysis for Yelloweye Rockfish (*Sebastes ruberrimus*). Updated catches for years 2017–2022 were derived from GEMM reports (Table 1). The projected 2023 and 2024 catches were provided by the Groundfish Management Team (GMT). For years 2025 and beyond, the rebuilding model projected catches were assumed equal to the SPR of 65% estimated removals. All catches are representative of total mortality equaling landings plus discards by year.

Starting in 2021, scientific uncertainty buffer fractions have been based on the number of years since the last assessment; here built upon a Category-1 assessment conducted in 2017 with a legacy buffer implementation. Using a SPR of 65% starting in 2019, the historical buffer fraction used in 2019 and 2020 (P\* = 0.40, sigma = 0.36), and the new time-varying buffer fractions (P\* = 0.40, sigma = 0.5) along with previous and updated OFLs, ABCs, and ACLs are all given in Table 1. Note that in 2017 the buffer between the OFL in the rebuilding paper and ABC in the rebuilding runs was a fixed value of ~0.96, based upon a planned 4.4% reduction for category 1 assessments in the 2019-2020 management cycle.

This catch-only rebuilding analysis projection predicts a greater than 50% chance of rebuilding by 2028.

**Potential Future Council Action:**

The adopted 2023-24 harvest specifications were incorrect and a technical correction action is being considered at the September Council meeting (Agenda Item G.8., Supplemental REVISED Attachment 1, September 2023).

**Table 1. Catch only rebuilding based projections through 2034.**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Year | OFLs from 2017 (mt) | Updated OFL Projection (mt) | ABC from applying buffer column to 2017 OFL (mt) | Updated ABC Projection (mt) | Assumed ACL Catch in 2017 (mt) | Updated ACL Projection (mt) | Actualized Total Mortality (mt) | Buffer^ (Based on years since assessment) | Spawning Output (millions of eggs) | Percent. of Unfished Spawning Output |
| 2017 | 56.9# |  | 47.4# |  | 20.0 |  | 19.25 | ~~-~~ | 323.1 | 28.4% |
| 2018 | 57.5# |  | 47.9# |  | 20.0 |  | 18.22 | ~~-~~ | 337.2 | 29.6% |
| 2019 | 81.2 |  | 74.1 |  | 47.4 |  | 29.45 | *0.913* | 351.7 | 30.9% |
| 2020 | 83.5 |  | 76.2 |  | 48.8 |  | 18.24 | *0.913* | 365.6 | 32.1% |
| 2021 | 85.7 |  | 73.4 |  | 50.0 |  | 18.35 | 0.856 | 380.9 | 33.4% |
| 2022 | 87.7 |  | 74.4 |  | 51.2 |  | 35.22 | 0.848 | 396.4 | 34.8% |
| 2023 | 89.6 |  | 75.3 |  | 52.3 |  | 42.95\* | 0.840 | 410.2 | 36.0% |
| 2024 | 91.2 |  | 75.9 |  | 53.3 |  | 42.95\* | 0.832 | 422.8 | 37.1% |
| 2025 | 92.8 | 105.8 | 76.5 | 87.2 | 54.2 | 55.8 |  | 0.824 | 434.9 | 38.2% |
| 2026 | 94.3 | 108.3 | 77.0 | 88.5 | 55.0 | 56.6 |  | 0.817 | 444.9 | 39.1% |
| 2027 | 95.6 | 110.9 | 77.3 | 89.7 | 55.8 | 57.4 |  | 0.809 | 454.0 | 39.9% |
| 2028 | 96.9 | 113.5 | 77.6 | 90.9 | 56.6 | 58.1 |  | 0.801 | 462.2 | 40.6% |
| 2029 | 98.2 | 115.9 | 78.0 | 92.0 | 57.3 | 58.8 |  | 0.794 | 469.8 | 41.2% |
| 2030 | 99.4 | 118.4 | 78.1 | 93.0 | 58.0 | 59.5 |  | 0.786 | 476.7 | 41.9% |
| 2031 | 100.5 | 120.7 | 78.3 | 94.0 | 58.7 | 60.1 |  | 0.779 | 483.2 | 42.4% |
| 2032 | 101.6 | 123.2 | 78.3 | 95.0 | 59.3 | 60.8 |  | 0.771 | 489.3 | 43.0% |
| 2033 | 102.6 | 125.5 | 78.4 | 95.9 | 59.9 | 61.3 |  | 0.764 | 495.1 | 43.5% |
| 2034 | 103.7 | 127.9 | 78.5 | 96.8 | 60.6 | 61.9 |  | 0.757 | 500.6 | 44.0% |

# Council adopted values

^ Using time-varying buffers starting with their implementation in 2021

\* GMT projections of total mortality