

Groundfish Management Team Report on Quillback Rockfish Removals Calculation for the  
 Quillback Rockfish Rebuilding Analysis

The Groundfish Management Team (GMT) is tasked to provide removal (i.e., mortality) assumptions for the current harvest specification cycle (i.e., removals for 2023-24) by the Pacific Fishery Management Council (PFMC or Council) Groundfish Stock Assessment Terms of Reference (ToR). As part of those duties during the 2023 assessment cycle, the GMT provided to the Northwest Fisheries Science Center (NWFSC) removal estimates for quillback rockfish off of California to facilitate the required rebuilding analysis. This task was completed on August 15, 2023 by the GMT. In September, the Council recommended an alternative quillback rockfish removal estimate in California waters for 2024 that was lower compared to the GMT provided value. The quillback rockfish rebuilding analysis under [Agenda Item E.2 Attachment 1, November 2023](#) has included alternative rebuilding analyses based on the two varying removal assumptions. A rebuilding plan for quillback rockfish will require a single agreed upon removal value for 2024. The GMT provides the following information that details the process used to project the anticipated removals for 2021-2024 (Table 1) based on existing data and management measures currently in place for the deadline of August 15, 2023.

**Table 1. Estimated quillback rockfish mortality off of California for 2021 through 2024 by fishery sector in metric tons (mt); provided to the NWFSC on 8/15/2023.**

<b>California Specific-Sector</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2024</b>
OA Fixed Gear	0.08	6.10	5.32	5.32
Nearshore	4.94	2.47	2.05	1.75
Directed Pacific Halibut	0.00	0.28	0.28	0.28
Catch Shares	0.00	0.00	0.00	0.00
Catch Shares EM	0.00	0.01	0.01	0.01
LE Fixed Gear DTL	0.00	0.00	0.00	0.00
Limited Entry Sablefish	0.00	0.00	0.00	0.00
Midwater Hake	0.00	0.00	0.00	0.00
Incidental	0.01	0.01	0.01	0.01
Research	0.00	0.00	0.00	0.00
Other Fisheries	0.01	0.01	0.01	0.01
California Recreational	10.55	9.23	3.45	3.25
<b>Total</b>	<b>15.58</b>	<b>18.11</b>	<b>11.12</b>	<b>10.62</b>

## **Commercial Quillback Removals 2021-2024 Analysis**

### *2021 Removals*

The 2021 commercial removals were taken from the draft Groundfish Expanded Mortality Multiyear (GEMM) ([Agenda Item G.1.b NWFSC Report 2, September 2023](#)). Quillback rockfish mortality is reported north and south of 40° 10' N. lat., which is how they are managed at present as a species within the nearshore complex. In order to project anticipated removals of quillback rockfish south of 42° N. lat., total mortality from the GEMM north of 40° 10' N. lat. was partitioned to isolate the mortality from the area between 42° N. lat. and 40°10' N. lat. The GMT applied a five-year landing by sector average (2017-2021) to apportion quillback rockfish to Oregon and California. No apportionment was necessary for quillback rockfish south of 40°10' N. lat as that area is completely in California. The estimated mortality for 42° N. lat. and 40°10' N. lat was added to the mortality for south of 40°10' N. lat. to derive a California-only mortality estimate of 15.58 mt for 2021.

### *2022 Removals*

For 2022, the GMT asked the West Coast Groundfish Observer Program (WCGOP) to provide a percentage of all quillback rockfish observations between 42° N. lat. and 40° 10' N. lat. so that the north of 40° 10' N. lat. grouping could be partitioned based on the observations in 2022. This was done because of the management changes that happened north of 42° N. lat. and the increases that were seen to the discard data in 2022. Considering the change in discard from 2021, the nearshore and Open Access (OA) fixed gear we did not use the same five-year average as 2021 projections. Instead, the WCGOP provided a percent of the observed quillback rockfish discards per OA fixed gear (87%), nearshore (47%), and directed Pacific halibut (69%) sectors on WGCOP observed trips that were between 42° N. lat. and 40° 10' N. lat. These percentages were applied to the total quillback rockfish north of 40°10' N. lat. mortality. No apportionment was necessary for quillback rockfish south of 40°10' N. lat. as that area is completely in California. The estimated mortality between 42° N. lat. and 40°10' N. lat. was added to the mortality south of 40°10' N. lat. to derive a California-only mortality estimate of 18.11 mt for 2022.

### *2023 Removals*

The 2023 value assumed a quillback rockfish retention was prohibited in California starting in September 2023 and through the rest of 2024 based on discussion with California Department of Fish and Wildlife (CDFW). The GMT assumed that the change to zero retention for quillback rockfish would not affect general fishing behavior.

To project California 2023-2024 nearshore removals we used 2023 landings in PacFIN through present and supplemented with known nearshore removals from 2022 to estimate mortality between August to December.

Landings from September to December in 2022 were used as a proxy for discard at sea given the move to zero retention. The appropriate depth dependent nearshore mortality rates were applied to these proxy values. All other sectors (those without landings) used the same method of the 2022 projection, either a raw observed percentage of between 42° N. lat. and 40° 10' N. lat. provided by WCGOP (OA fixed gear, Pacific halibut) or by a five-year landings average applied to the GEMM 2022 removals (catch shares, LE sable, LE Fixed Gear DTL, Other fisheries). No apportionment was necessary for quillback rockfish south of 40°10' N. lat. as that area is

completely in California. The estimated mortality between 42° N. lat. and 40°10' N. lat. was added to the mortality south of 40°10' N. lat. to derive a California-only mortality estimate of 11.12 mt total for 2023.

#### *2024 Removals*

The removal projection for 2024 was made under the assumption that there would be no retention of quillback rockfish in 2024. The GMT did not make any assumptions as to other fishery changes as there was no information to support what management action(s) may be taken in the future and how they would impact quillback rockfish mortality. In brief, the GMT used a similar process for 2024 as was used for 2023, except the assumption that the zero-retention provision would remain in effect for 2024 and all catch would be discarded. Therefore, the Council adopted depth dependent mortality rates were applied to the 2023 nearshore quillback rockfish landings, which were used as proxy for 2024 anticipated mortality due to discarding. All other sectors (those without landings) used the same method of the 2022 projection, either a raw observed percentage of between 42° N. lat. and 40° 10' N. lat. provided by WCGOP (OA fixed gear, Pacific halibut) or by a five-year landings average applied to the GEMM 2022 removals (catch shares, LE sable, LE Fixed Gear DTL, Other fisheries). The estimated mortality between 42° N. lat. and 40°10' N. lat. was added to the mortality south of 40°10' N. lat. to derive a California-only mortality estimate of 10.62 mt total for 2024.

### ***Recreational Quillback Removals***

#### *2023 Removals*

For 2023, the GMT used California Recreational Fisheries Survey (CRFS) estimates through June plus Anticipate Catch Values (ACV) provided by CDFW through August 6<sup>th</sup>, and then RecFISH model outputs through the end of the season with the assumption that fishing would occur seaward of 50 fathoms after September 1.

#### *2024 Removals*

For 2024, CDFW adjusted the projected 2023 mortality to account for a full season of prohibition retention of quillback rockfish statewide and shifting the seaward of 50 fathoms fishery to begin in mid-August rather than the start of September.