DRAFT INFORMATIONAL CANARY ROCKFISH EXPLORATORY ALLOCATION ANALYSIS: EXCERPTED SECTION FROM GROUNDFISH MANAGEMENT TEAM OVERWINTER ANALYSIS

Executive summary

At the November 2023 Pacific Fishery Management Council (Council) meeting, the Groundfish Management Team (GMT) was directed to examine modifying the canary rockfish allocation structure for the 2025-26 harvest specifications and management measure process. To inform the Council of their overwinter progress, the GMT provides this excerpted section from the analytical document the Council will receive as part of their April 2024 briefing book materials.

The 2023 canary rockfish stock assessment (Agenda Item G.2, Attachment 10, September 2023) found the stock is in the precautionary zone, which reduces the annual catch limits (ACL) from the 2023-24 levels. The reduced ACL will result in lower allocations to the trawl/non-trawl fisheries; including to the recreational sector. The GMT examined the following options at the sector and sub-sector levels for canary rockfish allocation structure modifications: Given the complexity of allocation decisions, the GMT requests guidance from the Council on the current options presented in this document.

Trawl/non-trawl allocation proportions:

- **Option 1 Status Quo:** 72.3 percent trawl, 27.7 percent non-trawl
- **Option 2:** 67.3 percent trawl, 32.7 percent non-trawl
- **Option 3:** 59.8 percent trawl, 40.2 percent to non-trawl

At-sea set-aside:

- **Option 1 Status Quo**: 36 mt
- **Option 2**: 30 mt
- **Option 3**: 20 mt (the 2023 mortality and the long-term maximum)

Commercial non-trawl and recreational non-trawl sharing arrangement:

- **Option 1 Status Quo**: The commercial non-trawl sector receives 36 percent of the non-trawl allocation.
- **Option 2**: The commercial non-trawl sector receives 31 percent of the non-trawl allocation, and the additional 5 percent is redistributed to the state recreational sectors.

State-specific recreational shares:

- **Option 1 Status Quo**: Shares are based on the status quo proportions of the collective recreational share.
    - 19.2% WA recreational
    - 28.9% OR recreational
    - 51.9% CA recreational
- **Option 2**: Shares are based on each state's highest three years of catch since 2017.

- 20.2% WA recreational
- 34.4% OR recreational
- 45.4% CA recreational

1.1 Background

Canary rockfish is a valuable target stock for both commercial and recreational fisheries off the U.S. West Coast. Canary rockfish are caught in both trawl and non-trawl fisheries. The population off the U.S. West Coast was declared overfished in 2000 and a rebuilding plan was implemented in 2002 as part of Amendment 16-2 (69 FR 19347). The stock was declared rebuilt in 2015 (Thorson and Wetzel 2015).

Canary rockfish are allocated on a biennial basis for all directed groundfish fisheries and sectors. Sector-specific allocations or shares (e.g., trawl/non-trawl/commercial/recreational) are developed or adjusted each biennial cycle to meet the unique needs of each fishery. The allocations to each sector have evolved over time since it was declared rebuilt. Canary rockfish was considered to be rebuilding during the development of the 2015-16 harvest specifications and management measures process (PFMC and NMFS, 2014), though retention remained prohibited in all fisheries. The two-year trawl/non-trawl allocation in that biennium was 53.3 percent to 46.7 percent, respectively; however, it is important to note these allocations were set to account for bycatch only. However, after the 2015 stock assessment the Council adopted inseason action that allowed retention at low levels for the 2015-16 biennium.

During the 2017-18 biennium, the Council recommended modest harvest opportunities to allow retention of canary rockfish due to its rebuilt status (82 FR 9634). Revising the two-year allocations for the trawl/non-trawl sectors was a main focus of the 2017-18 biennium due to the increased ACL. The revisions were able to facilitate the re-emergence of the mid-water non-whiting trawl fishery and provide additional target opportunity for non-trawl fisheries. The non-trawl and at-sea sector allocations were set at a fixed tonnage. The remaining yield was allocated to individual fishing quota (IFQ) to reduce bycatch constraints and support re-emergence of the mid-water trawl rockfish fishery (which mainly targets widow and yellowtail rockfishes, which co-occur with canary rockfish). These changes provided for a year-round opportunity to turn regulatory discards into retained catch, while still maintaining precautionary limits to keep target effort low.

In the 2019-20 biennium, the Council recommended a two-year trawl/non-trawl allocation of 72 percent to 28 percent, respectively; these percentage values were based on the tonnage proportions from the 2017-18 biennium (82 FR 9634, February 7, 2017). The purpose of converting both sector allocations to fixed percentages was to ensure that increases or decreases in available yield applied to both sectors, rather than just the IFQ sector. The two-year trawl/non-trawl allocation for canary rockfish has remained at the 72/28 fixed percentage ratio since the 2019-20 biennium (83 FR 63970, December 12, 2018).

The 2023 stock assessment of canary rockfish estimated that the stock is in the precautionary zone, i.e., between 25 to 40 percent of unfished spawning output (Langseth et al., 2023). The 2025-26 ACLs are reduced 57 percent compared to 2023. Thus, under the 2025-26 ACLs, the status quo allocation percentages result in reductions in the trawl/non-trawl allocations, which carry through to the allocations for the commercial non-trawl, recreational, and IFQ fisheries, relative to 2023-24 amounts (Table 1). At the November 2023 meeting, the Council tasked the GMT with

considering and developing potential adjustments to canary rockfish allocation schemes to minimize impacts to the directed 2025-26 groundfish fisheries.

Table 1. Trawl/non-trawl allocations, mortality, and attainments for canary rockfish from 2011-2026. 2025 and 2026 allocations are based on status quo management measures. Source: GEMM total mortality for 2017-2022 years, PacFIN for 2023 landings data and 3 year-average of discard mortality from the GEMM.

Category		2017	2018	2019	2020	2021	2022	2023[a/]	2025	2026
ACL		1,714	1,526	1,450	1,368	1,338	1,307	1,338	571	573
Off-the-top		247	59	67	67	69	69	69	63	63
Fishery HG		1,467	1,467	1,383	1,301	1,269	1,238	1,269	508	510
(trawl %)		72.3%	72.3%	72.3%	72.3%	72.3%	72.3%	72.3%	72.3%	72.3%
Trawl Allocation		1,060	1,060	1,000	941	917	895	918	367	369
Trawl Mortality		249	449	427	340	374	498	530	-	-
Trawl Attainment		23%	42%	43%	36%	41%	56%	58%	-	-
--At-sea Allocation/ Set-aside b/	CP	2.1	0.9	1.7	0.4	6	6	20	-	-
	MS	4.5	4.7	3.3	0.5					
--IFQ Allocation		242	443	422	339	368	492	510	-	-
(non-trawl %)		27.7%	27.7%	27.7%	27.7%	27.7%	27.7%	27.7%	27.7%	27.7%
Non-Trawl Allocation		406	406	383	360	351	343	352	141	141
Non-Trawl Total Mortality		130	122	139	151	178	186	184	-	-
--Non-nearshore + Nearshore Mortality		5	4	5	13	31	31	28	-	-
		8	8	11	13					
--WA Rec. Mortality		5	5	14	8	39	37	25	-	-
--OR Rec. Mortality		28	44	39	61	40	56	57	-	-
--CA Rec. Mortality		83	62	71	56 [c/]	70	63	74	-	-
Non-Trawl Attainment		32%	30%	36%	42%	51%	54%	52%	-	-

a/ Mortality estimates for all commercial sectors are estimated using 2023 landings data from PacFIN plus the recent three-year average discard mortality estimate from the GEMM.

b/ Prior to 2021, canary rockfish was managed with separate sector-specific allocations for the Mothership and Catcher-Processor sectors in the at-sea fishery. In the 2021-22 biennium, those were combined into a single at-sea set-aside.

c/ Data from 2020 pulled from GEMM will be incomplete due to CRFS not producing estimates from April-June of that year. When CDFW has provided comprehensive mortality for that year they typically include the average proxy values for the April-June time period. 46 mt shown in the GEMM and an average proxy value of 10 mt was added to the GEMM value for a more accurate value.

1.2 Importance to Groundfish Fisheries

When developing or adjusting allocation schemes, the needs of each fishery sector should be considered to minimize negative impacts to communities and existing groundfish fishery participants to the extent practicable, including investments, economic dependence, and intrinsic value. Any allocative decision the Council makes should be considered through the lens of Magnuson-Stevens Conservation and Management Act (MSA) guidelines for National Standard (NS) 4 regarding fair and equitable allocations and NS 8 regarding the importance of fishery resources to fishing communities.

Canary rockfish is important to both groundfish trawl and non-trawl fisheries for different reasons. The trawl fishery largely relies on canary rockfish quota to cover incidental catch while harvesting their target species (e.g., sablefish, Dover sole, Pacific whiting), while many non-trawl fisheries, including recreational, directly target canary rockfish or rely on it as an important component of overall revenue and economic value. The following sections highlight the relative importance and utilization of canary rockfish to each West Coast groundfish fishery.

1.2.1 Commercial Trawl Fishery

The U.S. West Coast trawl fishery comprises the at-sea Pacific whiting sectors (Mothership [MS] and Catcher Processor [CP]) and the Shorebased IFQ sector (hereafter "IFQ"). The allocation to the trawl sector is reduced by a set-aside for the at-sea sectors, which is used to track canary rockfish bycatch mortality in the at-sea sectors. Prior to 2021, canary rockfish was managed with formal sector-specific allocations for the CP and MS at-sea sectors, but the Council chose to modify the allocations into a single combined at-sea set-aside as part of the 2021-22 biennial management measures package[1]. The remainder of the trawl allocation is distributed to the IFQ sector. Each IFQ participant receives canary rockfish quota pounds based on each account's quota share (percentage) of the entire IFQ allocation.

Canary rockfish are not considered a target species in the trawl fishery but are often caught incidentally across all target strategies, so canary rockfish quota pounds are valuable to the fishery in that they allow vessels to utilize their target species by covering any incidental catch. Since 2015, roughly one-third to one-half of total IFQ canary rockfish landings is landed by bottom trawl vessels, whereas roughly one-third is landed by the shoreside Pacific whiting sector. An increasing proportion of IFQ vessels targeting midwater rockfish (predominantly widow and yellowtail rockfishes) are landing canary rockfish, reaching up to 43 percent of all IFQ landings in 2022.

1.2.2 Commercial Non-Trawl Fishery

The U.S. West Coast non-trawl fishery comprises the nearshore and non-nearshore sectors which are further categorized as limited entry fixed gear (LEFG) and open access (OA). LEFG and OA operate in different depths and under different federal and state regulations. Fishing in federal waters is managed with LEFG trip limits and OA trip limits. Since canary rockfish was declared rebuilt, there has been development of a non-trawl mid-water shelf fishery that has been targeting yellowtail rockfish, widow rockfish, and canary rockfish. The Council increased the opportunity for that fishery via the 2023-2024 biennial process by allowing vessels to use non-bottom contact

[1] See additional detail to be provided in April on how at-sea set-asides are managed.

gear to fish to OA trip limits within the non-trawl rockfish conservation area (RCA). Starting January 1, 2024, via Amendment 32 (A32), LEFG is allowed to harvest to LEFG trip limits. A32 also allowed the OA and LEFG sectors to fish an additional 4,600 square miles in the previously closed Non-Trawl RCA. Additionally, A32 reopened the Cowcod Conservation Areas (CCAs), which is an area where commercial canary rockfish occurred pre-CCAs. The increases in non-nearshore opportunity since 2017 has led to a shift in proportion of canary rockfish caught in the non-nearshore versus nearshore as well as an overall increase in canary mortality in both sectors.

It is anticipated that canary rockfish catch will be higher in 2024 than previous years from the nearshore and non-nearshore sectors combined. There are at least two factors that indicate high catch levels. The first is that non-nearshore effort is expected to remain at or exceed 2023 levels due to recent management changes at the coastwide level (A32). The second is the recent restrictions implemented on the nearshore fishery off of California to mitigate quillback rockfish impacts. The restrictions will likely expand the already growing commercial non-nearshore non-trawl targeting shelf rockfish.

1.2.3 Recreational Fisheries

1.2.3.1 Washington

Historically, black rockfish has been the central target species in the Washington recreational groundfish fishery. While this remains true, black rockfish harvest guidelines (HG) decreased 35 percent from 2011 through 2024. To ease pressure on black rockfish and other nearshore rockfish N of 40° 10' N. lat. component species, management measures were modified in recent biennia to support a shift in recreational groundfish effort to other "healthy" species including lingcod, yellowtail rockfish, and canary rockfish.

Although canary rockfish was declared rebuilt in 2015, Washington Department of Fish and Wildlife (WDFW) took gradual steps to expand recreational fishery access through 2021. In 2017 a one-canary rockfish bag-limit was implemented for Marine Areas 1 and 2 (Columbia River and south coast, respectively), followed by a coastwide two-canary rockfish bag-limit in 2018. Beginning in 2019 the sub-limits were removed, and canary rockfish catch was subject only to the seven rockfish daily limit. Similarly, depth restrictions and area closures originally put in place to reduce impacts on yelloweye rockfish and canary rockfish were relaxed incrementally by marine area beginning 2018 through 2021. Maximum opportunity for canary rockfish – in that further measures to increase access were not anticipated – was achieved in 2021. However, depth restrictions and area closures that remain to protect yelloweye rockfish continue to reduce encounters with canary rockfish. As a result of this gradual increase in canary rockfish opportunity, mortality in the Washington recreational fishery has increased from roughly 2-5 mt prior to 2019, up to 23-40 mt since 2021 (Table 2).

Table 2. Washington recreationally caught canary rockfish total mortality in metric tons from 2015 - 2023. (Source: RecFIN, December 2023)

Year	Mortality (mt)
2015	2.2
2016	2.9
2017	5.3

Year	Mortality (mt)
2018	4.9
2019	14.1
2020	8.7
2021	40.2
2022	37.7
2023	25.5

1.2.3.2 Oregon

The Oregon recreational fishery slowly eased canary rockfish fishing restrictions in response to canary rockfish being declared rebuilt following the 2015 stock assessment. In 2015 a sub-bag limit of one canary rockfish was incorporated into the marine fish daily bag limit. As part of the 2017-18 biennium, the Oregon canary rockfish sub-bag limit was removed and a 10 fish limit was implemented. The marine bag limit has remained at 10 fish per angler in federal regulation; however, Oregon has been more precautionary with marine bag limits, which have ranged from four to seven fish per angler since 2015.

In 2018, in response to an increase of recreational anglers on the nearshore reefs, the recreational longleader gear fishery was approved by the Council. This fishery allows anglers to harvest mid-water rockfish offshore with a higher bag limit. This bag limit was 10-fish from October of 2017 through 2022 before increasing to 15-fish in 2023. The longleader bag limit for 2024 is 12-fish per angler in both state and federal regulations. For this higher bag limit (12-fish) to apply, canary rockfish, as well as a list of nine other semi-pelagic rockfish, are the only species allowed for retention when using this gear type outside of the 40-fathom regulatory line. The goal of this fishery is to relieve angling pressure from the nearshore reefs by enticing anglers to fish offshore on prolific mid-water rockfish species (i.e., widow and yellowtail rockfishes). Table 3 shows the increased pressure put on the primary three species of rockfish encountered in the longleader fishery since 2017.

Table 3. Total mortality (including discarded dead) of Oregon recreationally caught canary rockfish, widow rockfish, and yellowtail rockfish in metric tons. Source: RecFIN

Year	Canary Rockfish (mt)	Widow Rockfish (mt)	Yellowtail Rockfish (mt)
2014	3.0	2.0	11.4
2015	14.3	2.3	22.1
2016	9.7	0.5	7.7
2017	28.2	1.7	14.0
2018	43.6	7.4	35.6
2019	38.7	5.3	30.4
2020	60.6	5.8	38.4
2021	39.9	3.5	27.9
2022	55.7	4.2	51.7
2023	56.9	8.2	83.2

1.2.3.3 California

The California recreational fishery took a conservative approach with canary rockfish, slowly relaxing restrictions in response to canary rockfish being declared rebuilt following the 2015 stock assessment. Canary rockfish remained prohibited until 2017 when a sub-bag limit of one canary rockfish was incorporated into the Rockfish, Cabezon, and Greenling (RCG) daily bag limit. The canary rockfish sub-bag limit increased to two fish in 2018 and increased to three fish in 2019. As part of the 2021-22 biennium, the California canary rockfish sub-bag limit was removed. Table 4 shows the general trend of canary rockfish in the California recreational fishery since 2015. Retention increased substantially following limited retention of canary rockfish in 2017. As the recreational bag limit was fully liberalized, canary rockfish mortality was higher than under prohibition but somewhat variable between recent years with an average of 68.4 mt between 2017-2023.

Table 4. Canary rockfish mortality in California recreational fisheries from 2015 through 2023 Source: RecFIN 2/12/2024.

Year	Mortality (mt)
2015	26.9
2016	23.7
2017	83.4
2018	61.8
2019	71.4
2020	56.4 a/
2021	69.6
2022	62.6
2023	73.7 b/

a/ Data from 2020 pulled from RecFIN will be incomplete due to CRFS not producing estimates from April-June of that year. When CDFW has provided comprehensive mortality for that year they typically include the average proxy values for the April-June time period. 46.3 mt is shown in RecFIN and an average proxy value of 10.1 mt was added to the RecFIN value for a more accurate value.
b/ RecFIN does not include December 2023 CRFS estimates as of 2/12/2024. Dec 2023 CRFS estimate was added to 67.2 mt currently in RecFIN.

1.3 Options

Figure 1 below shows the status quo allocation structure of canary rockfish. The fishery HG is divided into the trawl and non-trawl allocations, which are then divided into the respective sectors within trawl and non-trawl. A fixed amount is established for the at-sea set-aside with the remainder allocated to the IFQ fishery. Within the non-trawl allocation, sector-specific shares are divided amongst the commercial non-trawl and state recreational fisheries, and action is not necessary when one or more of these shares is exceeded. However, the states work together to keep catches within the respective shares and coordinate to respond in the event a share is exceeded in order to avoid exceeding the non-trawl allocation. The GMT developed options for alternative allocation schemes at every level of Figure 1: the trawl/non-trawl allocation proportions, the at-sea set-aside, and the within non-trawl sharing arrangement.

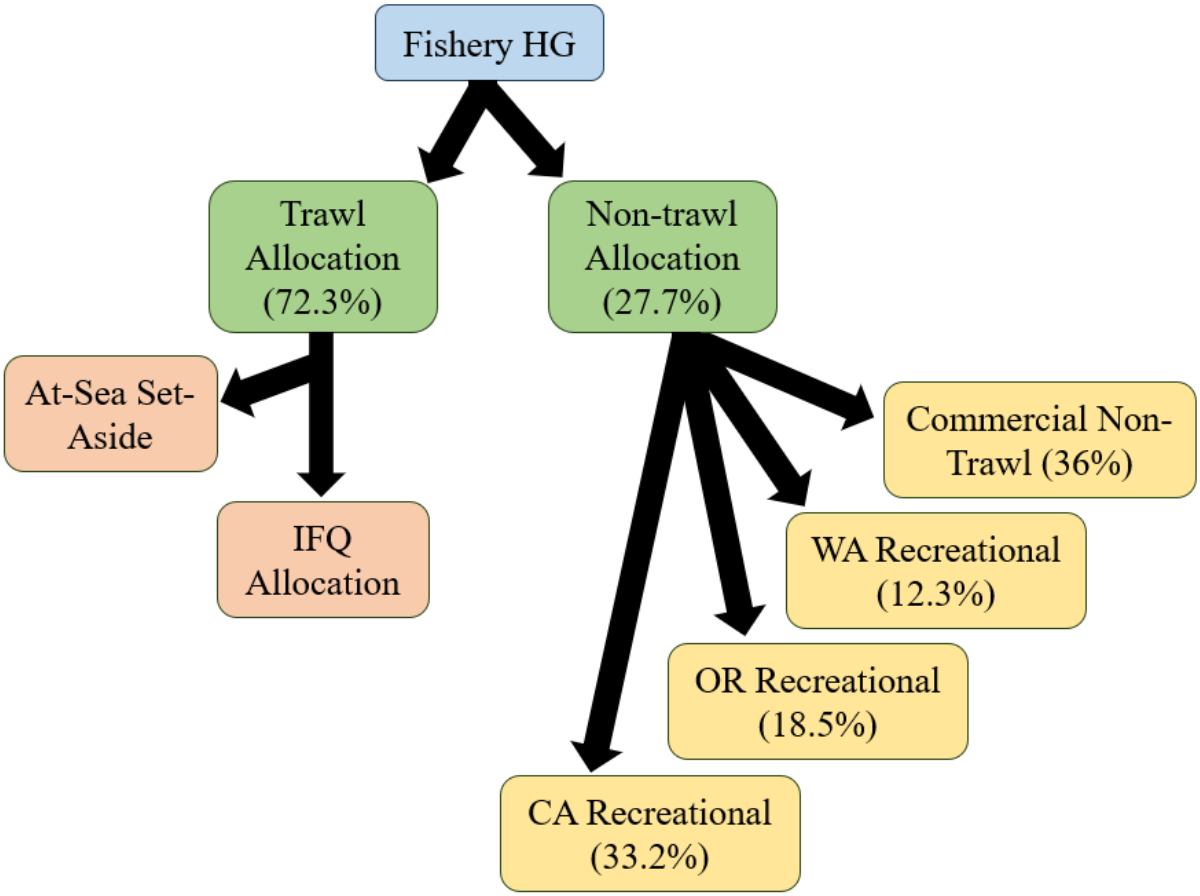

Figure 1. Status Quo allocation scheme for canary rockfish, under the Fishery Harvest Guideline (HG).

The GMT developed the following range of options for the Council to consider, based on four different decision points that can be made independent of each other. However, they will all affect the outcome of how individual sectors are managed.

1.3.1 Council Decision Points:

1. The trawl/non-trawl allocation proportions,
2. At-sea set-aside options,
3. Commercial non-trawl and recreational non-trawl sharing arrangement, and
4. Individual states' recreational sharing arrangement in relation to each other.

1.3.2 Trawl/Non-trawl Allocation

- **Option 1 Status Quo:** maintain status quo trawl and non-trawl allocation percentages (72.3 percent trawl, 27.7 percent non-trawl)
- **Option 2:** 67.3 percent of the fishery HG is allocated to trawl and 32.7 percent to non-trawl (i.e., 5 percentage points are transferred from trawl to non-trawl)
- **Option 3:** 59.8 percent of the fishery HG is allocated to trawl and 40.2 percent to non-trawl (i.e., 12.5 percentage points are transferred from trawl to non-trawl)

At the November 2023 Council meeting, the Council tasked the GMT with "develop[ing] any alternative options for Council consideration in March and/or April," for the canary rockfish trawl/non-trawl allocations (November 2023 Motions in Writing). Given the importance of canary rockfish to non-trawl fisheries and greater expected vessel-level constraints compared to trawl vessels, the GMT analyzed a range of options that would transfer some percentage of the trawl proportion to the non-trawl proportion. Beyond Status Quo, the GMT analyzed two additional options: Option 2 that would transfer 5 percentage points and Option 3 that would transfer 12.5 percentage points of the trawl allocation percentage to non-trawl. During our overwinter analysis, the GMT originally explored including a fourth option that would transfer 20 percentage points from trawl to non-trawl, but the team removed that option from the range, because the IFQ fishery was projected to exceed the IFQ allocation under this option (103-104 percent). In addition, the IFQ fishery is expected to experience cumulative impacts from allocation reductions of multiple high value species in 2025-26, which could shift targeting effort to an unknown degree. The 20 percent Option would have severely restricted this fishery's ability to shift flexibly amidst target species reductions. Thus, 12.5 percentage points was originally developed as Option 3, because it was considered a middle ground option between the original two bookends of 5 percent and 20 percent (excluding Status Quo). The GMT did not include in the range any options that would transfer some of the non-trawl proportion to trawl, because our analyses and industry communication indicate that non-trawl fisheries are likely to be impacted to a greater extent by canary rockfish limit reductions than trawl fisheries.

1.3.3 At-sea Set-aside

- **Option 1 Status Quo:** 36 mt
- **Option 2:** 30 mt
- **Option 3:** 20 mt

From 2002 to 2022, canary rockfish mortality in the at-sea Pacific whiting sectors has been 6 mt or less annually; however, mortality increased to 20 mt in 2023. With canary rockfish ACL reductions in 2025-26 and the expectation that the IFQ allocations in 2025 and 2026 would be lower than recent mortality under status quo management, the Council tasked the GMT with analyzing two options that would lower the at-sea set-aside by 6 mt (Option 2) or 16 mt (Option 3). Option 3, at 20 mt, reflects the amount that the sectors caught in 2023 and therefore also reflects the long-term maximum mortality of the sectors, combined. Option 2 was included in the range, because canary rockfish bycatch may continue to increase if recent fishing practices progress through 2026 in response to Pacific whiting aggregation patterns and salmon bycatch; furthermore, the at-sea set-aside for canary rockfish was recently lowered in the 2021-22 biennium.

1.3.4 Commercial Non-Trawl Share

- **Option 1 Status Quo:** The commercial non-trawl sector receives 36 percent of the non-trawl allocation.
- **Option 2:** The commercial non-trawl sector receives 31 percent of the non-trawl allocation, and the additional 5 percentage points are redistributed to the state recreational sectors.

The Council's motion in November 2023 tasked the GMT with "analyz[ing] all allocation and management schemes for canary rockfish including alternatives for the commercial non-nearshore

and nearshore shares" (November 2023 Motions in Writing). The Status Quo allocation scheme for sectors within the non-trawl allocation is set up such that the commercial non-trawl (nearshore and non-nearshore, combined), Washington recreational, Oregon recreational, and California recreational sectors are given informal shares (i.e., percentages) of the non-trawl allocation.

Currently, the commercial non-trawl sector receives 36 percent of the non-trawl allocation. The GMT developed Option 2 that differs from status quo in that it would transfer 5 percentage points from the commercial non-trawl sector to the three state-specific recreational sectors. Thus, the commercial non-trawl sector would receive 31 percent of the non-trawl allocation under Option 2. The GMT developed Option 2 because there is significant uncertainty in future mortality from the commercial non-trawl fishery, and Option 2 is expected to provide that sector enough allocation to cover the average of the last few years. However, this uncertainty stems from concentrating effort in the non-nearshore fishery due to recent management changes at the coastwide level (A32) and action taken in California to mitigate quillback rockfish impacts that concentrates commercial non-trawl effort into the Non-Trawl RCA (with gear that targets midwater rockfish). These factors make it difficult to project the magnitude of difference between current and future mortality. Simultaneous to those actions, trip limits were reduced in November 2023 through inseason action. Recreational HGs for each state share are expected to be lower than those sectors' respective recent average mortality without any canary rockfish restrictions.

1.3.5 Recreational Shares

- **Option 1 Status Quo:** The state-specific sectors receive the following proportions of the collective recreational share[2] of the non-trawl allocation, which are based on the status quo proportions of the collective recreational share:
    - 19.2% WA recreational
    - 28.9% OR recreational
    - 51.9% CA recreational
- **Option 2:** The state-specific sectors receive the following proportions of the collective recreational share[3] of the non-trawl allocation, which are calculated based on each state's highest three years of catch since 2017. The three highest years for each state was chosen to reflect the highest potential fishing capacity of each state's recreational fishery as a whole when unrestricted, as each state eased up fishing restrictions in response to a higher canary HG on different timelines:
    - 20.2% WA recreational
    - 34.4% OR recreational
    - 45.4% CA recreational

Within the non-trawl allocation, each of the states' recreational sectors receive some share of the non-trawl allocation. The GMT structured the recreational share options based on the proportion of each state to the collective recreational share, not accounting for commercial non-trawl. In other words, the proportions shown under Option 1 Status Quo and Option 2 above sum to 100 percent for each option. Those proportions would be applied to the collective recreational share of the non-

[2] 64 percent or 69 percent of the non-trawl allocation, based on the commercial non-trawl share decision

[3] 64 percent or 69 percent of the non-trawl allocation, based on the commercial non-trawl share decision

trawl allocation, either 64 percent or 69 percent, depending on the option chosen under the commercial non-trawl decision. Therefore, each state's resulting share of the total non-trawl allocation will vary depending on the Council's decision for both the commercial non-trawl share and the recreational shares.. Action is not required if a sector-specific share is expected to be or is exceeded, but the states manage themselves to the sector-specific shares and coordinate to collectively keep total non-trawl mortality within the non-trawl allocation.

1.4 Impacts

The resulting 2025 allocations and shares under each of the trawl/non-trawl allocation scheme options are shown in Table 5. The 2026 canary rockfish ACL (573 mt) would be 0.35 percent higher than the 2025 ACL (571 mt), so impacts are expected to be very similar in both 2025 and 2026. Trawl/non-trawl allocation Option 2 would transfer 5 percentage points from the trawl allocation to the non-trawl allocation, lowering the 2025 trawl allocation by 25 mt, and Option 3 would transfer 12.5 percentage points, lowering the trawl allocation by 64 mt. The non-trawl allocation would increase by those exact amounts for the respective Options. The status quo canary rockfish at-sea set-aside of 36 mt is assumed in Table 5, there are alternative options that would lower the at-sea set-aside to 30 mt or 20 mt. Under either of those alternative at-sea set-aside options, the resulting IFQ allocation would be higher than those shown in Table 5 under all trawl/non-trawl allocation options, and therefore IFQ impacts would be lower.

Table 5. 2025 canary rockfish allocations and non-trawl shares under each of the trawl/non-trawl allocation options. a/ compared to status quo

ACL (mt)	**571**		
Off-the-top (mt)	**63**		
Fishery HG (mt)	**508**		
2025-26 Allocation Option	**Option 1 SQ**	**Option 2**	**Option 3**
Canary Transferred from Trawl to Non-Trawl (mt) a/	**0.0**	**25.4**	**63.5**
Trawl %	72.3%	67.3%	59.8%
Trawl Allocation (mt)	367.3	341.9	303.8
--At-sea (SQ; mt)	36.0	36.0	36.0
--IFQ (mt)	331.3	305.9	267.8
Non-Trawl %	27.7%	32.7%	40.2%
Non-Trawl Allocation (mt)	140.7	166.1	204.2
--Non-nearshore + Nearshore (36%)	50.7	59.8	73.5
--WA Rec (12.3%)	17.3	20.4	25.1
--OR Rec (18.5%)	26.0	30.7	37.8
--CA Rec (33.2%)	46.7	55.2	67.8

1.4.1 Trawl Fishery

Trawl/non-trawl allocation Options 2 and 3 would lower the 2025 trawl allocation by 25 mt and 64 mt, respectively, assuming the status quo at-sea set-aside of 36 mt. As noted previously, there are also options to lower the at-sea set-aside for canary rockfish, which is deducted from the trawl allocation before allocating the remainder to the Shorebased IFQ fishery (hereafter "IFQ"). The at-sea fishery would not be impacted by the trawl/non-trawl allocation options, because the at-sea set-aside is a fixed amount. Across all variations of trawl/non-trawl allocation options and at-sea set-aside options, the 2025 IFQ allocation would range from 268 mt under allocation Option 3 and at-sea set-aside Option 1 Status Quo (SQ) to 348 mt under the Option 1 Status Quo allocation proportions and at-sea set-aside Option 3 (Table 6). Those allocations would be 575 mt and 495 mt lower, respectively, than the No Action 2023 IFQ allocation of canary rockfish. The IFQ fishery is projected to attain 84 percent of the canary rockfish allocation under trawl/non-trawl allocation Option 3 and at-sea set-aside Option 1 (SQ), the lowest possible allocation. Under the highest possible allocation, trawl/non-trawl allocation Option 1 (SQ) and at-sea set-aside Option 3, the IFQ fishery is projected to attain 95-96 percent of the canary rockfish.

Table 6. The 2025 canary rockfish IFQ allocation under all combinations of the trawl/non-trawl allocation options and at-sea set-aside options.

At-sea Set-aside Option	Trawl/Non-trawl Allocation Options		
	Option 1 Status Quo (72.3% / 27.7%)	**Option 2 (67.3% / 32.7%)**	**Option 3 (59.8% / 40.2%)**
	2025 IFQ Allocation		
Option 1 Status Quo (36 mt)	331.6	305.9	267.8
Option 2 (30 mt)	337.3	311.9	273.8
Option 3 (20 mt)	347.3	321.9	283.8

Canary rockfish mortality in the IFQ fishery was less than 50 mt each year prior to 2017, because the IFQ allocation was also less than 50 mt each year during that time (Figure 2). From 2016 to 2017, the IFQ allocation increased from 44.5 mt to 1,014.1 mt, a 22-fold increase (Table 8). IFQ mortality in 2017 was also 12 times larger than in 2016. As a result of several shelf stocks being declared rebuilt and increased opportunity, a midwater rockfish fishery that primarily targets yellowtail and widow rockfishes emerged. That fishery has steadily grown over the years, increasing catch of yellowtail rockfish north of 40° 10′ N. lat. by an average of 26 percent per year since 2016. Canary rockfish is often caught incidentally to target species catch in the midwater rockfish fishery, as well as the shoreside whiting and bottom trawl fisheries, the latter of which mainly targets petrale sole as well as Dover sole, thornyheads, and sablefish (DTS).

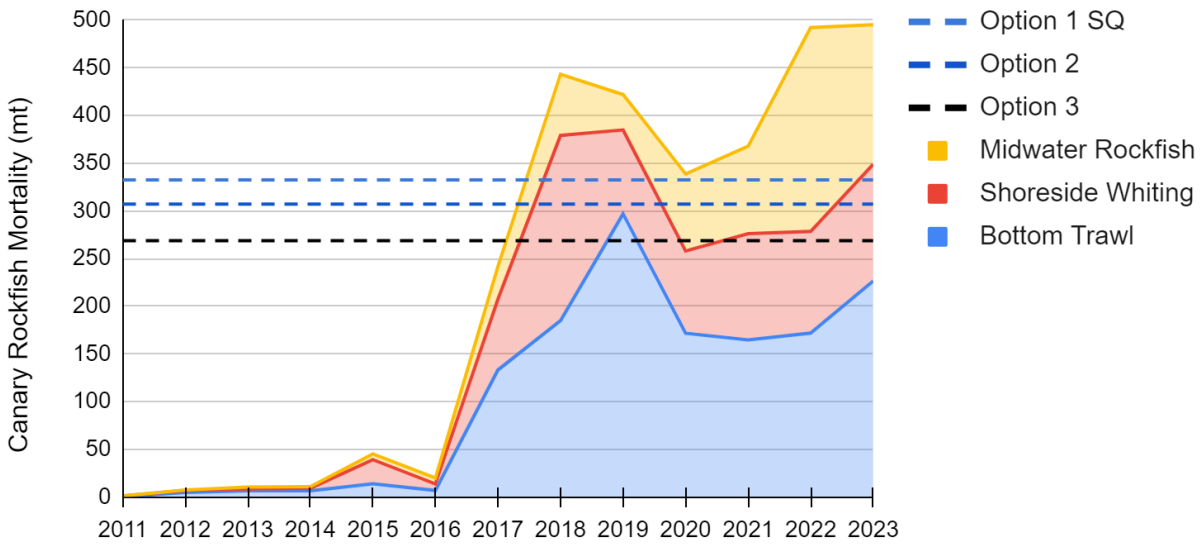

Figure 2. Canary rockfish mortality in the IFQ fishery by sector, 2011-2023. Dashed lines reflect the 2025 IFQ allocations under each of the trawl/non-trawl allocation options, assuming the status quo at-sea set-aside of 36 mt. Source: 2011-2022 mortality data are derived from the GEMM, and 2023 mortality estimates are pulled from PacFIN based on landings in 2023 combined with average discard mortality from 2020-2022

In 2023, 72 percent of all IFQ quota share accounts (QSA) received a percentage (quota share; QS) of the canary rockfish IFQ allocation in the form of quota pounds (QP), which are used to cover any incidental catch of canary rockfish. With canary rockfish IFQ allocation reductions in 2025-26 under all possible management measures, the ten individual QSAs with the largest share of canary rockfish are expected to receive an average of 60 percent less quota in 2025 under Option 1 Status Quo and 68 percent less under Option 3 (the most restrictive option), compared to 2023 (Table 7). Compared to the status quo allocation scheme, those same ten accounts would receive, on average, 1,512 lbs. less under Option 2 and 3,792 lbs. less under Option 3. With such substantial QP allocation reductions, demand for QPs could increase, thereby increasing the price of QPs as well as the amount of trading of QPs in order to cover incidental catch events.

Table 7. Canary rockfish quota pounds (QP) that would be allocated in 2025 to the single quota share (QS) accounts with the largest and smallest 2023 QS percentage, as well as 2025 QP allocations based on the averages of the largest 10 and smallest 10 QSA percentages. QP Allocations are shown across each of the trawl/non-trawl allocation options, and the status quo at-sea set-aside of 36 mt is assumed in all cases. Source: NOAA IFQ Quota Share Account Balance Data

	Account with Single Largest 2023 QS Percentage	Avg. of Largest Ten 2023 QS Percentage Accounts	Avg. of Smallest Ten 2023 Non-Zero QS Percentage Accounts	Account with Single Smallest 2023 Non-Zero QS Percentage
2023 QS Percent	4.9%	2.7%	0.2%	0.001%
2023 QP Allocated (lbs.)	90,805	49,805	2,947	21.0
Trawl/Non-Trawl Option	**QP (lbs.) Allocated in 2025 per Account**			
Option 1 Status Quo	35,908	19,786	1,466	7.3
Option 2	33,164	18,274	1,354	0.0
Option 3	29,026	15,994	1,185	0.0
Difference between largest and smallest QP allocated	6,882	3,792	281	7

After IFQ allocations increased 22-fold in 2017, the weighted average of canary rockfish QP prices dropped from $1.14-$3.09 prior to 2017 down to less than $0.70 in 2018, 2019, and 2022 (Table 8). There was not enough data to provide a weighted average in 2017, 2020, 2021, or 2023. Only three trades of canary rockfish QP were made in 2022, while IFQ mortality was at its second highest that year, second only to the following year. It is likely that allocation reductions in 2025-26 will drive canary rockfish QP prices back up, but whether they will reach up to $3 per pound, as was the case prior to 2017, is difficult to predict. The 2025-26 allocations will still be several hundreds of metric tons higher than the pre-2017 IFQ allocations. Higher QP prices result in higher costs for individual vessels to cover their incidental catch of canary rockfish, which drives down net profits. Trades of canary rockfish QP are also likely to increase in 2025-26 compared to 2022 (3 trades), as vessels seek out additional QP to cover incidental catch.

Table 8. Canary rockfish IFQ allocation, annual quota pound price, and total number of quota pound trades, 2011-2023. Source: NOAA IFQ Quota Pound Price Data

Year	Canary Rockfish IFQ Allocation (mt)	Canary Rockfish QP Price ($USD)	Total Number of Canary Rockfish QP Trades
2011	25.9	$1.21	4
2012	26.2	$1.49	15
2013	39.9	$3.09	12
2014	41.1	$2.12	17
2015	43.2	$1.14	29
2016	44.5	$1.35	17
2017	1,014.1	*Not enough data*	
2018	1,014.1	$0.67	14
2019	953.6	$0.30	12
2020	894.3	*Not enough data*	
2021	881.0	*Not enough data*	
2022	858.6	$0.66	3
2023	842.5	*Not enough data*	

If vessels are unable to acquire canary rockfish QP to cover bycatch due to the high cost and demand of QPs in the market, their ability to harvest their target species may be limited. Based on the following analysis, it seems likely that midwater trawl vessels (i.e., shoreside whiting and midwater rockfish fisheries) will be impacted by canary rockfish allocation reductions more than bottom trawl vessels in the IFQ fishery. It may be easier for bottom trawl vessels to avoid canary rockfish when low QP availability necessitates it, compared to midwater trawl vessels. However, canary rockfish are still marketable in the IFQ fishery. Bottom trawl landings of canary rockfish fetch a higher price per pound than midwater trawl landings, so even if bottom trawl vessels are able to avoid canary rockfish to maintain target species harvest, there would still be economic losses associated with the inability to catch and sell incidental canary rockfish. In 2023, the average price per pound of canary rockfish was $0.46 in bottom trawl landings and $0.28 in midwater trawl landings. In 2023, bottom trawl landings brought in $235,396 in ex-vessel revenue from canary rockfish, and midwater trawl landings brought in $167,258 in ex-vessel revenue.

While midwater rockfish attainment trends cannot be compared before and after 2017–the fishery first emerged around 2017–attainment trends in the shoreside whiting fishery indicate that lower canary rockfish allocations may limit the sector's ability to fully utilize their Pacific whiting allocation, especially when their whiting allocation is relatively high. With the exception of 2015 and 2016, the shoreside whiting fishery's Pacific whiting catch generally fluctuates in concert with the initial IFQ allocation of Pacific whiting, prior to tribal reapportionment (Table 8). However, initial allocation attainments were 52 percent in 2015 and 68 percent in 2016, record lows for the

sector at a time when the Pacific whiting allocation was increasing from just over 700 mt in 2014 up to roughly 1,000 mt in 2017. It seems the sector was unable to take advantage of the Pacific whiting allocation increases until 2017, when Pacific whiting catch increased substantially alongside the canary rockfish allocation (Figure 3). It is worth noting that initial allocation attainments in the shoreside whiting fishery were 75 percent in 2022 and 63 percent in 2023. This means there are possibly other factors that could drive lower than full attainment in 2025-26 other than the canary rockfish allocation. Shoreside whiting industry members at the December 2023 Joint Technical Committee meeting of the hake treaty implementation process noted that Pacific whiting harvest in 2023 was unpredictable and variable in both time and space, making it challenging for them to attain their allocation.

Even so, with whiting allocations[4] continuing to be higher than those prior to 2017, reductions in the canary rockfish IFQ allocation could limit the shoreside whiting sector's ability to attain their initial whiting allocations in 2025-26. Compared to 2015 and 2016, shoreside whiting vessels were able to land twice as much Pacific whiting per week in 2017 and 2018 when they were not compelled to avoid bycatch of species with low allocations like canary rockfish. Bottom trawl vessels, on the other hand, were able to land relatively comparable amounts per week of one of their target species, petrale sole, before and after 2017. Bottom trawl attainment of the petrale sole IFQ allocation was 96 percent prior to 2017 alongside modest petrale sole allocation increases each year, indicating that bottom trawl vessels are likely able to maintain optimal harvest levels of petrale sole even under low canary rockfish allocations. Given the similarity in gear types used between the shoreside whiting and midwater rockfish fisheries, it is likely that midwater rockfish vessels will be impacted by canary rockfish allocation reductions to a similar degree as shoreside whiting vessels, or possibly to a greater degree given that canary rockfish is a co-occurring species with yellowtail and widow rockfishes.

[4] Pacific whiting allocations for all three sectors of the Pacific whiting fishery (Catcher-Processor, Mothership, and Shoreside) are determined on an annual basis after the Pacific whiting TAC is set through the U.S.-Canada treaty process.

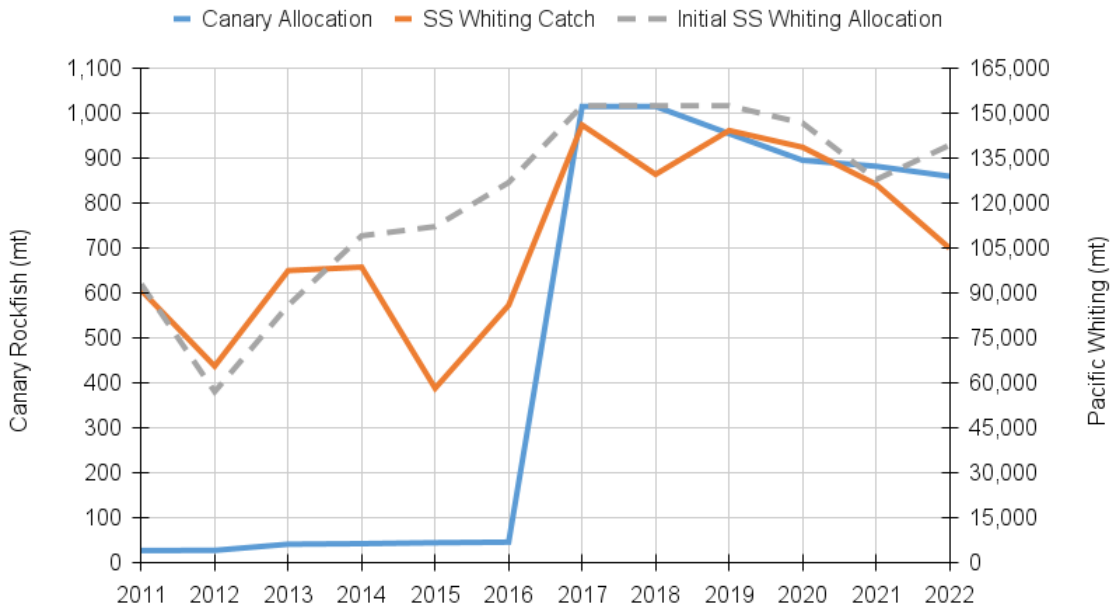

Figure 3. Pacific whiting catch and initial allocation in the shoreside whiting fishery of the IFQ program, compared to the canary rockfish IFQ allocation, 2011-2022. Source: allocations are from PacFIN Report GMT016 and Pacific whiting catch (i.e., mortality) is from the GEMM.

Annual vessel limits (AVLs) are a management tool in the IFQ fishery that limit the amount of QPs a single vessel can have tied to its vessel account in a single year and are calculated as a percentage of the total IFQ allocation, with different percentages for each IFQ species (50 CFR 660.140(e)(4)(i)). The current canary rockfish AVL is 10 percent of the IFQ allocation, which means that no vessel can have more than 10 percent of the canary rockfish allocation in its vessel account in a single year. With expected allocation reductions in 2025-26, the AVL would also decrease accordingly, which could limit individual vessels from catching the total amount of canary rockfish they have in recent years, in addition to QP availability limitations.

Expected 2025 AVLs under all trawl/non-trawl allocation options and at-sea set-aside options are shown in Table 9. Possible 2025 AVLs range from 59,039 to 76,566 lbs., with a difference of 17,527 lbs. between the highest and lowest. Figure 4 groups each of the top 30 vessels in the IFQ fishery that caught the most canary rockfish in 2023 into groups of three, based on 2023 canary rockfish catches. For example, Group 1 is made up of the top three IFQ vessels that caught the most canary rockfish in 2023. Within each group, catches are averaged across the three vessels. Only Group 1, which caught nearly twice as much canary rockfish as Group 2, would be unable to catch the amount of canary rockfish they did in 2023, across all nine possible 2025 AVLs. Out of the top nine catching vessels (i.e., Groups 1-3), four vessels are bottom trawl vessels and may be able to actively avoid canary rockfish with few impacts to their target species harvest.

Table 9. Canary rockfish AVLs (lbs.) in 2025 across the three trawl/non-trawl allocation options and three at-sea set-aside options.

At-sea Set-aside Option	Trawl/Non-trawl Allocation Options		
	Option 1 Status Quo (72.3% / 27.7%)	Option 2 (67.3% / 32.7%)	Option 3 (59.8% / 40.2%)
	2025 IFQ AVL for Canary Rockfish (lbs.)		
Option 1 Status Quo (36 mt)	73,105	67,439	59,039
Option 2 (30 mt)	74,361	68,761	60,632
Option 3 (20 mt)	76,566	70,966	62,567

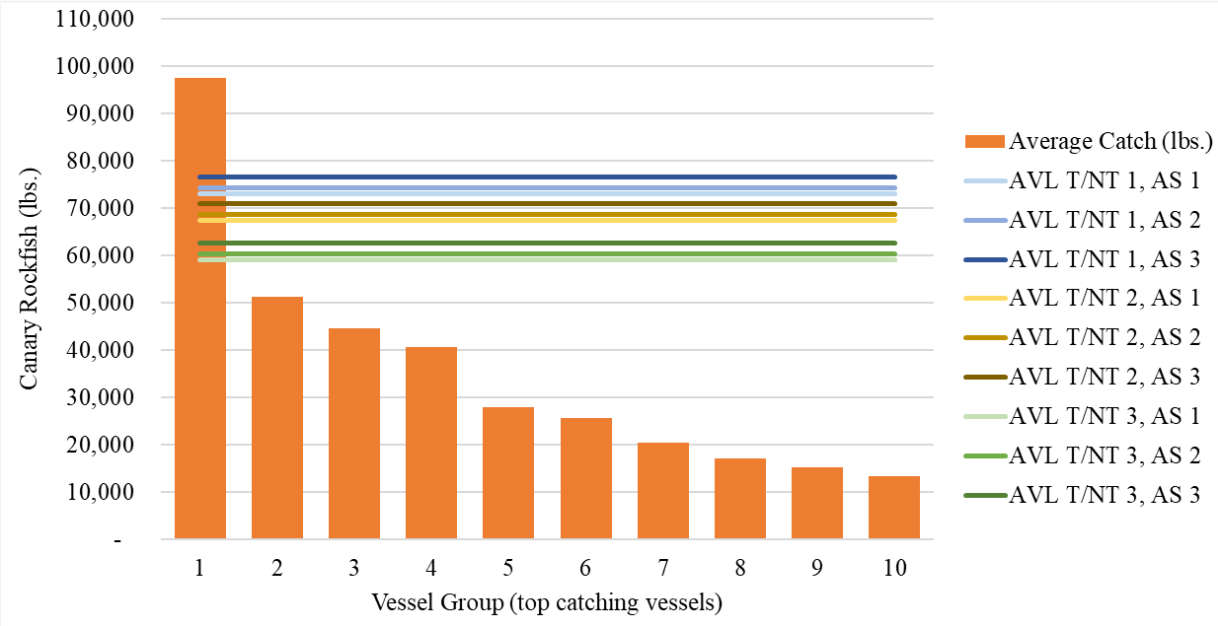

Figure 4. 2023 vessel-level catch of canary rockfish north of 40° 10′ N. lat., averaged across 3 IFQ vessels within each Vessel Group, compared to the 2025 and 2026 AVLs under trawl/non-trawl allocation ("T/NT") Options 1 (SQ), 2, and 3 for and at-sea set-aside ("AS") Options 1 (SQ), 2, and 3. The top 30 IFQ vessels that caught the most canary rockfish were placed in the ten vessel groups, with Group 1 catching the most out of all IFQ vessels. Source: NOAA Pacific Coast Groundfish IFQ Database Viewer

1.4.2 Non-Trawl Fishery

In addition to the trawl/non-trawl allocation, the Council can also choose to modify the informal sharing arrangement within the non-trawl allocation. There are two decision points for the Council to consider pertaining to the non-trawl allocation. The first is the decision about whether to reallocate commercial shares to the recreational sector and the second is how to partition the collective recreational share to the three states. Since restrictions on canary rockfish have been lifted, there has been more mortality in all non-trawl sectors (Figure 5).

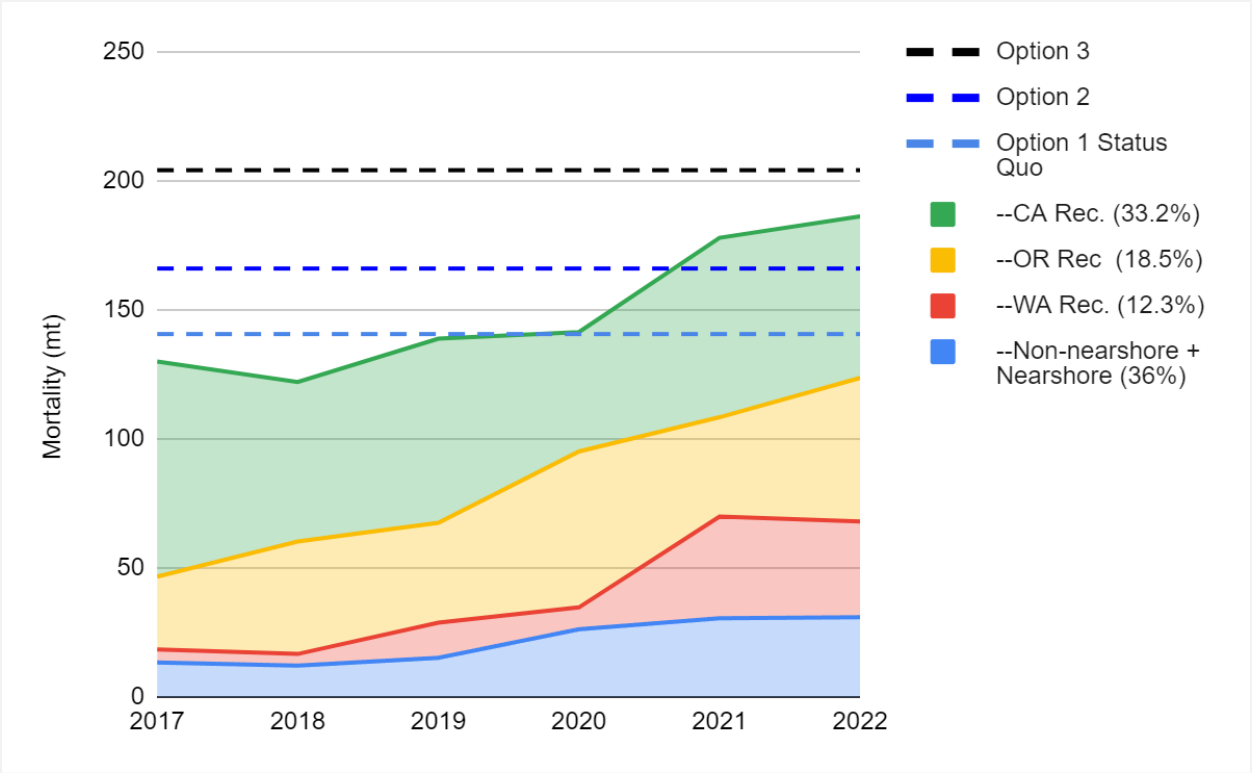

Figure 5. Non-Trawl mortality since 2017 showing expansions in all sectors through 2022. Options represent trawl/ non-trawl allocation options. Source: GEMM

1.4.2.1 Commercial Non-Trawl Fishery

It is important to note the distinction between how canary rockfish are utilized by the trawl and non-trawl sectors. Canary rockfish is largely incidentally caught in the trawl sector and QPs are used to cover incidental catch while targeting other species. Whereas in the non-trawl fisheries, there is a directed fishery targeting canary rockfish, which is projected to distribute a possible $394,159 to 339 vessels in 2024 (Table 10). In 2016-2022, commercial non-trawl canary rockfish landings have increased by 37 percent, signifying an emerging market prior to any changes implemented in 2023 (Figure 6).

This fishery is both an LE and OA fishery but growth has increased in the OA portion because of new opportunities to fish pole gear and non-bottom contact hook-and-line gear (50 CFR 660.330(b)(3)) within the Non-Trawl RCA (Figure 6). In general, the trajectory of canary rockfish mortality in all non-trawl fisheries has been increasing. The expectation is that LE participation will continue to increase in the midwater shelf fishery, especially given the restrictions in California based on quillback rockfish. However, this claim cannot be definitively determined at this time.

Prior to 2020, the nearshore sector made up the larger component of canary rockfish mortality, however since 2016 the non-nearshore component has been increasing and surpassed the nearshore sector mortality in 2021 for the first time since 2012. Non-nearshore mortality is expected to continue to increase when compared to the nearshore sector (peach vs. blue and green bars, Figure 6). After 2020, the majority of the landings were made in the non-nearshore fishery. Since 2012,

there has been an increase in fixed gear fishery effort, and mortality of targeting canary rockfish. However, these landings plateaued in 2022. There was a small decrease in fixed gear landings in 2023, the majority of which were in California (Table 1). There was a large downturn in effort and landings in November and December 2023. The reason for this decrease is unclear, though it could have been due to the September 2023 inseason actions. These actions restricted opportunity in the fishery which could have resulted in corresponding decreases in mortality. Overall, 2022 and 2023 seem to be anomalous years for OA in California, with the expectation being that this fishery will be increasing from 2024 onwards.

Canary rockfish landings are expected to increase due to actions taken for 2023 and 2024 that concentrated effort in the non-nearshore fishery due to recent management changes at the coastwide level (A32) and the California level (i.e., closures/gear-specific trip limits related to mitigating quillback rockfish impacts, and from opening the CCA). It is anticipated that 2024 will be the highest year on record for mortality of canary rockfish from the nearshore and non-nearshore sectors combined (even with the inseason trip limit reductions in November 2023).

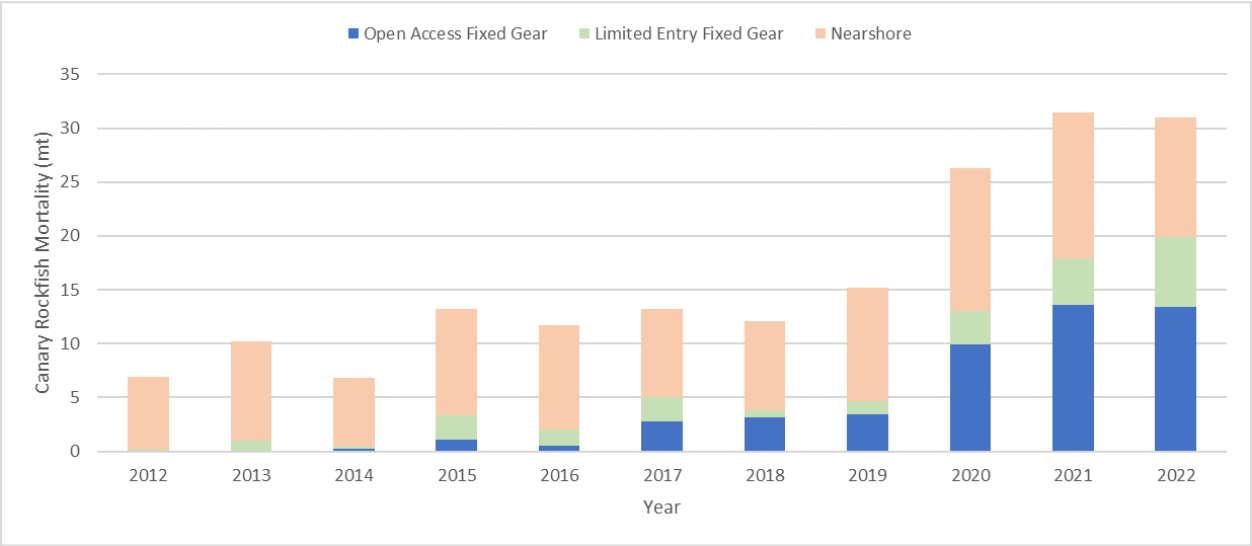

Figure 6. Canary rockfish mortality (mt) by sector of the commercial non-trawl allocation, 2011-2022. Source: GEMM

Increases in canary rockfish mortality is anticipated to extend to the 2025-26 biennium. Two model scenarios were used to attempt to quantify this concentrated effort: 1) a status quo trip limit scenario that does not account for effort shifts and 2) a scenario where the effort was increased by 20 percent and additional pounds were added to those vessels that had greater than 10 pounds per trip period (Table 10). The 20 percent increase used in the model was a conservative approach and does not imply that growth could not exceed 20 percent. Both models also account for trip limit reductions (LEFGN -25 percent, LEFGS -12.5 percent, OAN -50 percent, OAS -25 percent) that were taken in November 2023 for the 2024 year as a precautionary measure to account for the potential effort expansion. There is an estimated loss in exvessel revenue associated with the November 2023 action to each vessel in 2024 and beyond: LEFGN - $6,761, LEFGS - $7,992, OAN -$13,929, OAS - $11,281.

The standard GMT trip limit model, which does not account for any new entrants into the fishery, projected a value of 31.9 mt, and this projection falls below all of the allocation options outlined below (Table 10 and Table 11). However, this value does not represent any of the concentrated effort with either A32 or actions off of California. The second model which accounts for increased effort (due to participants coming into the fishery as other closures and restrictions in California happen, as well as A32) projected a value of 63.3 mt (Table 10).

The first decision that would change the commercial non-trawl allocation is the trawl/non-trawl allocation. In the following paragraph impacts will be between the trawl/non-trawl allocations under the status quo commercial/recreational allocation (50.7 mt or $287,517 in projected exvessel revenue under both status quo options Table 12. This status quo option is below the projected 63.3 mt and would likely result in further restrictions to the commercial non-trawl fleet, which has taken proactive measures to decrease mortality starting in January 2024. The Option 2 trawl/non-trawl allocation scheme would provide 59.8 mt to the commercial sector, which is likely to allow for fewer restrictions throughout the year, and is an increase from status quo for both allocation decisions of 9.1 mt and a potential gain of $51,606 in exvessel revenue. The Option 3 trawl/non-trawl allocation scheme would result in 73.5 mt being allocated to the commercial sector and a potential gain of $129,297 in exvessel revenue. However, as stated above the magnitude of potential effort concentration and shift into the midwater shelf fishery cannot be quantified at this time and action would likely be done inseason when the GMT has a better understanding of the fishery dynamics.

The second decision point is based on commercial/recreational shares of the non-trawl allocation, all comparisons in this paragraph will be under Option 2 therefore will be compared to 43.6 mt. The Option 2 trawl/non-trawl allocation scheme would provide 51.5 mt to the commercial sector and is an increase from of 7.9 mt and a potential gain of $44,800 in exvessel revenue. However, the second decision point change between commercial/recreational results in a potential 8.3 mt decrease in commercial and a corresponding $47,069 of potential lost revenue. The Option 3 trawl/non-trawl allocation scheme would provide 63.3 mt to the commercial sector, which might cover some of the increase in effort and is an increase from of 19.7 mt and a potential gain of $111,718 in exvessel revenue. The decision point change between commercial/recreational results in a potential 10.2 mt decrease in commercial and a corresponding $59,752 of potential lost revenue.

Applying Option 2 of the commercial/recreational sharing arrangement to either Status Quo Option 1 or Option 2 of the trawl/non-trawl allocation options would further restrict the commercial non-trawl sectors where the GMT expects to have concentrated effort in this midwater shelf fishery as a result of the management actions taken in 2023 and 2024. However, as previously stated, the Option 2 trawl/non-trawl allocation scheme would increase the commercial non-trawl share from status quo for both allocation decisions, but Option 2 of the commercial/recreational share would still likely require additional restrictions, and effectively the allocation would be the same (a difference of <1 mt). Unless Option 3 is chosen for the trawl/non-trawl allocation, it is likely that additional reductions to trip limits will need to be implemented inseason.

Table 10. Canary rockfish trip limit projection comparison, modeled with and without the effort concentration described in the background section above. LEFG and OA individual vessel landings per period were scaled up and participation was modeled to increase by 20 percent.

Trip Limit Area	Sector	Trip Limit Projection (mt)	Projected Ex-vessel Revenue	Number of Vessels	Increased Effort Trip Limit Projection (mt)	Projected Ex-vessel Revenue	Projected Number of Vessels
North of 40° 10′ N. lat.	LEFG	4.9	$12,204	26	6.3	$17,863	33
	OA	11.2	$57,357	126	25.3	$131,372	151
South of 40° 10′ N. lat.	LEFG	3.7	$21,608	15	5.8	$41,021	85
	OA	12.1	$100,164	114	25.9	$203,903	137
	Total	**31.9**	**$191,334**	**281**	**63.3**	**$394,159**	**339**

Under Option 1 (status quo), 36 percent non-trawl allocation, both Option 1 and Option 2 trawl/non-trawl allocation options would set the commercial non-trawl allocation under the projected value, indicating even further reductions in trip limits will have to take place (Table 11). Trip limit reductions could result in regulatory discarding when participants are targeting other midwater stocks (e.g., yellowtail rockfish, bocaccio rockfish). Trawl/non-trawl Option 3 is the only option that would potentially account for the effort concentration described above and also provide relief to the recreational sector. The difference between the non-trawl commercial sharing options shown in Table 11 would be from 7 mt to 10.2 mt to be shared among the three states, which represents a potential loss in ex-vessel revenue of between $42,000 and almost $60,000 if the commercial non-trawl sector fully attained their allocation.

If canary rockfish allocation structures are changed, additional trip limits may need to be analyzed. However, as previously mentioned, the magnitude of the change in effort is hard to predict, and therefore, a more appropriate route might be inseason action once the effects of these actions can be monitored.

Table 11. Comparison between commercial non-trawl Option 1 SQ (36 percent of the non-trawl allocation) and Option 2 (31 percent of the non-trawl allocation) across the various trawl/non-trawl allocations (Status Quo Option 1, Option 2-5 percent, and Option 3-12.5 percent).

Non-trawl Commercial Sharing Options	Trawl/Non-trawl Allocation Options		
	Status Quo Option 1	Option 2 - 5%	Option 3 - 12.5%
Trawl %	72.3%	67.3%	59.8%
Trawl Allocation	367.3	341.9	303.8
Difference from SQ	-	-25.4	-63.5
Non-Trawl %	27.7%	32.7%	40.2%
Non-Trawl Allocation	140.7	166.1	204.2
--Non-nearshore + Nearshore Option 1 Status Quo (36%)	50.7	59.8	73.5
--Non-nearshore + Nearshore Option 2 (31%)	43.6	51.5	63.3
Difference from SQ	-7.0	-8.3	-10.2
Potential loss in ex-vessel revenue	$42,029	$47,069	$59,752

Table 12. Potential ex-vessel revenue associated with the various trawl/non-trawl allocation options as well as the commercial sharing options. Bold values indicate the potential exvessel revenue that would be an increase from the status quo options. The red indicates a potential exvessel revenue that would incur a loss for the status quo options. Although it should be noted that the Option 2 x Option 2 value and the status quo x status quo value have a difference of less than 1 mt which is effectually the same allocation.

Non-trawl Commercial Sharing Options	Trawl/Non-trawl Allocation Options		
	Status Quo Option 1	Option 2 - 5%	Option 3 - 12.5%
--Non-nearshore + Nearshore Option 1 Status Quo (36%)	$287,517	**$339,123**	**$416,814**
--Non-nearshore + Nearshore Option 2 (31%)	**-$247,253**	**$292,053**	**$358,970**

1.4.2.2 Recreational Fisheries

The non-trawl sector allocation is divided into sector-specific shares among the non-trawl commercial fisheries and between the states' recreational fisheries. Action is not required if a sector-specific share is expected to be or is exceeded; however, each state manages their recreational fishery to the sector-specific state shares and coordinates to collectively keep total non-trawl mortality within the total non-trawl allocation. There are two options in the range to

determine how each state recreational share receives the remainder of the non-trawl allocation (i.e., the collective recreational share) after allocating either 31 or 36 percent to the commercial non-trawl sector. Option 1 (SQ) would apply proportions of the collective recreational share that are based on status quo (2023-24) proportions. Option 2 would apply proportions based on each state's highest three years of mortality (Table 13). The three highest years for each state was chosen to reflect the highest potential fishing capacity of each state's recreational fishery as a whole when unrestricted, as each state eased up fishing restrictions in response to a higher canary HG on different timelines and to different degrees.

Table 13. Recreational canary rockfish mortality estimates from the highest three years of catch since 2017 for each state recreational sector, which are used to calculate the recreational share Option 2 proportions applied to the collective recreational share. Source: 2011-2022 recreational mortality estimates are from the GEMM, and 2023 mortality is derived from each state's own final season estimates.

State Rec. Sector	Highest 3 Years of Canary Rockfish Mortality (mt) - Year in Parentheses			Average Mortality from Highest 3 Years (mt)	Proportion of Total Averaged Mortality a/
WA	39 (2021)	37 (2022)	25 (2023)	34	20.2%
OR	61 (2020)	56 (2022)	57 (2023)	58	34.4%
CA	83 (2017)	71 (2019)	74 (2023)	76	45.4%
Total				168	

a/ This proportion would then be applied to the remaining 64 or 69 percent of the non-trawl allocation, after allocating 36 or 31 percent, respectively, to the commercial non-trawl sector.

Table 14 shows the range of possible shares each state recreational fishery could receive in 2025 across all trawl/non-trawl allocation, commercial/recreational, and within recreational shares options. There are 12 possible shares in the range for each state, ranging from 17.3 to 28.5 mt for Washington recreational, 26.0 to 48.5 mt for Oregon recreational, and 46.7 to 64.0 mt for California recreational.

Table 14. With a Fishery HG of 508 metric tons of canary rockfish available for harvest in 2025, this table provides the amount of quota each state's recreational fishery will be allocated depending on the option selected.

Trawl / Non-Trawl	Commercial / Recreational	Recreational State Shares	Washington	Oregon	California
Status Quo: Option 1 (72.3% Trawl, 27.7% Non-Trawl)	Status Quo: Option 1 (36% Comm, 64% Rec)	Status Quo: Option 1	17.3 mt (19.2%)	26.0 mt (28.9%)	46.7 mt (51.9%)
		Option 2	18.2 mt (20.2%)	31.0 mt (34.4%)	40.9 mt (45.4%)
	Option 2 (31% Comm, 69% Rec)	Status Quo: Option 1	18.6 mt (19.2%)	28.1 mt (28.9%)	50.4 mt (51.9%)
		Option 2	19.6 mt (20.2%)	33.4 mt (34.4%)	44.1 mt (45.4%)

Trawl / Non-Trawl	Commercial / Recreational	Recreational State Shares	Washington	Oregon	California
Option 2 (67.3% Trawl, 32.7% Non-Trawl)	Status Quo: Option 1 (36% Comm, 64 Rec)	Status Quo: Option 1	20.4 mt (19.2%)	30.7 mt 28.9%)	55.2 mt (51.9%)
		Option 2	21.5 mt (20.2%)	36.6 mt (34.4%)	48.3 mt (45.4%)
	Option 2 (31% Comm, 69% Rec)	Status Quo: Option 1	22.0 mt (19.2%)	33.1 mt 28.9%)	59.5 mt (51.9%)
		Option 2	23.2 mt (20.2%)	39.4 mt (34.4%)	52.0 mt (45.4%)
Option 3 (59.8% Trawl, 40.2% Non-Trawl)	Status Quo: Option 1 (36% Comm, 64% Rec)	Status Quo: Option 1	25.1 mt (19.2%)	37.8 mt 28.9%)	67.8 mt (51.9%)
		Option 2	26.1 mt (20.2%)	45.0 mt (34.4%)	59.3 mt (45.4%)
	Option 2 (31% Comm, 69% Rec)	Status Quo: Option 1	27.1 mt (19.2%)	40.7 mt 28.9%)	73.1 mt (51.9%)
		Option 2	28.5 mt (20.2%)	48.5 mt (34.4%)	64.0 mt (45.4%)

Washington Recreational

Recreational fisheries in Washington are primarily constrained by yelloweye rockfish although in recent years closer attention to catch of nearshore species (e.g., black rockfish, copper rockfish, quillback rockfish) has become necessary to ensure catch does not exceed HGs. Because preliminary 2025-2026 expectations for canary rockfish harvest limits reduce the Washington canary recreational HG by 58 percent or from 41 to 17 mt (rounded) compared to the previous biennium, canary rockfish will also need to be considered when structuring the recreational fishery.

Fishery utilization of Washington's recreational canary rockfish HG reflects the precautionary approach to ease restrictions and the growing dependence on this species. Prior to 2021, the recreational fishery average catch did not exceed 30 percent utilization because regulations limited access. In contrast, the fishery achieved 92 percent in 2021, 88 percent in 2022 and 62 percent in 2023 of the HG when canary rockfish specific sub-bag daily limits were no longer in effect and following the opening of two Yelloweye Rockfish Conservation Areas (YRCAs) (Table 15). As restrictions progressively eased, not only did anglers enjoy opportunity to retain canary rockfish generally and especially in the lingcod deepwater fishery and the Pacific halibut fishery but pressure on nearshore stocks eased. In 2023 black rockfish accounted for 54 percent of total recreational rockfish mortality compared to 74 percent in 2019. However, reduced canary rockfish opportunity in the upcoming biennium may moderate or reverse this trend if new management measures direct angler effort back to black rockfish which concurrently will see HGs in 2025 and 2026 (226 and 223 mt, respectively) decrease 16-18 percent compared to the 2024 HG (271 mt).

Management measures will be needed to reduce canary encounters and retention or ensure the Washington HG is not exceeded under the allocation options. Management measures such as bag limits, depth restrictions, and area closures have been effective tools for minimizing encounters and keeping catch within state specific HG. Affected fisheries include the bottomfish fishery, both the deepwater lingcod fishery and nearshore fishery which account for approximately 60 percent of canary rockfish catch and the halibut fishery which accounts for about 30 percent annually.

Table 15. Washington recreational canary rockfish harvest guidelines (HGs), total mortality (mt), harvest guideline attainment and daily canary rockfish bag limits, 2017 - 2026.

	2017	**2018**	**2019**	**2020**[a/]	**2021**[b/]	**2022**	**2023**	**2024**	**2025**	**2026**
WA Rec. HG	50.0	50.0	47.0	44.0	43.0	42.0	41.0	40.8	17.1	17.2
WA Rec. Total Mortality	5.0	4.5	13.7	7.8	39.5	37.1	25.5	31.3[c/]		
Percent HG utilization	10%	9%	29%	18%	92%	88%	62%	76%		
Daily limit	1 [d/]	2	No sublimit; subject to 7 rockfish daily limit							
Depth Restriction										
Marine Area 1	Deepwater lingcod closure [d/]									
Marine Area 2	YRCAs closed [f/]				YRCAs open					
	Deepwater lingcod closure [d/]									
Marine Area 3 and 4	C-Shaped YRCA closed									

a/ North coast (Marine areas 3 and 4) ports at La Push and Neah Bay were closed entirely in 2020.

b/ La Push opened to the public July 19, 2021; Neah Bay remained closed.

c/ Projected estimate.

d/Canary rockfish were only added to the daily bag limit for Marine areas 1 and 2 (Columbia River and south coast, respectively).

e/Specific provisions varied across years modifying period in effect and species retention.

f/South Coast YRCA and Westport Offshore YRCA

Oregon Recreational

The recreational bottomfish fishery off Oregon is structured around the most commonly caught species (i.e., black rockfish and lingcod), prohibited species (i.e., yelloweye rockfish and quillback rockfish), and species that annually approach harvest guidelines (i.e., nearshore rockfish and cabezon). For the 2025-2026 biennium, canary rockfish will be added to the list of species that will influence bag limits, sub-bag limits and potentially depth restrictions, as the expected HG will be reduced by more than half from the previous biennium. Attainment levels have increased since 2017 and have exceeded 90 percent attainment in 2020 and 2023 (Table 16).

Table 16. The Oregon recreational fishery total mortality (mt), harvest guideline (mt) and percent attainment of canary rockfish 2017-2024. Projections are included for 2024. Proposed harvest guidelines are included for 2025-2026. Sources: GEMM (2017-2022), RecFIN (2023) and MORG (2024).

	2017[a/]	**2018**[b/]	**2019**	**2020**[c/]	**2021**[d/]	**2022**[e/]	**2023**[f/]	**2024**[g/]	**2025**	**2026**
OR Rec. HG	75.0	75.0	70.9	66.7	65.0	63.4	62.3	62.9	26.0	26.1
OR Rec. Total Mortality	28.2	43.6	38.7	60.6	39.9	55.7	56.9	62.2		
Percent HG Utilization	38%	58%	55%	91%	61%	88%	91%	99%		
Depth restriction [h/]	Apr - Sep		May - Sep	Jun - Aug		Jul - Aug	NA			
Marine bag limit [i/]	7	5			6	5				
longleader bag limit [j/]	10						15	12		

a/ Rockfish closed to fishing September 18, 2017. Offshore rockfish allowed with longleader gear October 1, 2017.

b/ Daily bag limit reduced to four July 1 through September 18 for 2018. First full year of the new longleader fishery.

c/ Daily bag limit increased to seven July 1 through December 31 for 2020.

d/ Daily bag limit reduced to five May 10 through September 18 for 2021.

e/ Daily bag limit reduced to four September 6 through December 31 for 2022.

f/ Longleader bag limit reduced to 10 January 1 through February 28 and again September 5 through December 31 for 2023.

g/ Projections for 2024 based on MORG.

h/ Season depth restriction set at 30-fathoms for 2017-2018 and at 40-fathoms 2019-2022. Depth restriction removed in 2023.

i/ Marine bag limit includes all groundfish species other than lingcod, salmon, steelhead, Pacific halibut, flatfish, surfperch, sturgeon, striped bass, pelagic tuna and mackerel species, and bait fish such as herring, anchovy, sardine, and smelt; of which no more than one may be cabezon.

j/ Longleader fishing must take place seaward of the 40-fathom regulatory line with the following rockfish allowed for retention: blue, bocaccio, canary, chilipepper, deacon, greenstriped, redstripe, silvergray, widow, and yellowtail rockfishes.

Given the lower anticipated HG, a sub-bag limit will be necessary to reduce canary rockfish impacts from the Oregon recreational fishery. Sub-bag limits will likely start at a five-fish bag limit, though a smaller sub-bag limit, and/or no retention, may be a necessary inseason action. Canary rockfish are caught both in the longleader fishery (inception 2018) and the traditional bottomfish fishery, they are also encountered and harvested during other recreational fishing such as halibut and salmon fishing impacting more than just bottomfish anglers.

During the 2025-2026 biennium, the HG of black rockfish will also be reduced for Oregon recreational anglers. The lower HG will limit nearshore fishing opportunities for Oregon recreational anglers, potentially increasing angler participation in the longleader fishery. With both canary rockfish (offshore) and black rockfish (nearshore) HGs reduced, depth restrictions might not be an option for management as this would only put more pressure on the other resource.

California Recreational

For the 2025-26 biennium, the canary rockfish ACL will see a 55.5 percent decrease due to updated stock assessment results. The status quo California recreational HG for 2025 and 2026 is 46.7 mt and 46.9 mt, respectively. California recreational catch of canary rockfish catch in 2023 is estimated at 73.7 mt (Table 17). While there are significant changes occurring to California fishing season structures, related primarily to quillback rockfish, it is reasonable to assume that under the status quo canary rockfish allocation structure, California recreational canary rockfish catches in 2025 and 2026 would be similar to those of 2023, resulting in the California recreational HG being exceeded by roughly 32.3 mt.

2025-26 recreational seasons off California are still being developed. In the final alternative that is adopted, it is anticipated that seasons will be different from 2023. The main difference being opportunity offered only shoreward of the 20 fm RCA line (state waters only) and fisheries operating seaward of the 50 fm RCA line. It is unknown at the writing of this document what impact these new season structures will have on canary rockfish catch and effort. However, it is reasonable that eliminating fishing between the 20 to 50 fm depths will have an impact on canary rockfish catch and effort as the fishery typically operated less than 50 fathoms but still saw abundant canary catch. Significant changes to season structures are difficult to model. It is unknown if this change in season structure will lower overall effort or simply shift existing effort to the shelf where canary rockfish are one of the primary targets. If season structure alone will not keep California canary rockfish under the California recreational HG, then additional management measures such as bag or sub-bag limit reductions will need to be considered.

Table 17. California recreational canary rockfish harvest guideline (HG), total mortality, harvest guideline attainment and daily canary rockfish bag limits.

	2017	2018	2019	2020	2021[b/]	2022	2023
CA Rec. HG	135	135	127.3	119.7	116.75	113.89	111.7
CA Rec. Total Mortality	83.44	61.8	71.4	56.4	69.6	62.6	73.7
Percent HG utilization	62%	46%	56%	47%	60%	55%	67%
Daily limit	1	1->2 [a/]	2->3 [b/]	3	No sub limit; subject to 10 RCG daily limit		

a/ Canary sub-bag limit was increased from 1 to 2 fish via inseason change effective April 14, 2018.
b/ Inseason changes effective June 1, 2019, increased canary sub-bag limit from 2 to 3 fish (statewide)

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