

CALIFORNIA DEPARTMENT OF FISH AND WILDLIFE REPORT ON PRELIMINARY PREFERRED MANAGEMENT ALTERNATIVES FOR 2023-2024

The California Department of Fish and Wildlife (CDFW) offers the following recommendations for Council consideration as preliminary preferred alternative (PPA) management measures for the 2023-2024 biennium. CDFW met remotely with stakeholders on January 27, February 24, March 23, and March 30, 2022, to discuss harvest specifications and management measure options and to solicit input in order to develop preferred alternatives for sport and commercial fisheries.

CDFW anticipates further discussion will be needed with stakeholders between now and June to inform the Council's final actions, specifically on California recreational measures. CDFW also anticipates the need for these discussions to continue beyond June, and that inseason actions during 2023 and 2024 may be appropriate to address newly-available fishery data and discard mortality rates, or unforeseen events as they arise in the new biennium.

State and Federal Management Jurisdiction

Overwinter discussions with the National Marine Fisheries Service (NMFS) indicated a need to further specify which management measures are intended for use in federal waters and/or state waters as NMFS only has management jurisdiction over federal waters. CDFW has routinely taken action through its state rulemaking process to ensure state regulations for groundfish are consistent with the federal regulations for groundfish to allow for ease of enforcement, and reduced angler confusion. The state rule implementing the Council's recommended management measures into regulations for 2023-24 is expected to be effective on or around January 1, 2023.

Cowcod ACT Limit South of 40° 10' N. Lat.

CDFW supports a PPA that removes the precautionary 50 mt ACT, as described in Groundfish Management Team (GMT) Report 1 ([F.4.a, GMT Report 1, April 2022](#)). CDFW supports the status quo trawl (36 percent) and non-trawl (64 percent) allocation proportions for cowcod, utilizing a 50:50 sharing arrangement within the non-trawl sectors (Limited Entry and Open Access [LE/OA] and recreational), and setting ACTs for each non-trawl sector. Retention in the non-trawl sector will continue to be prohibited, except for California Commercial Passenger Fishing Vessels (CPFV) participating in CDFW's Cowcod Exempted Fishery Permit.

Commercial Fishery

Copper and Quillback Rockfish

CDFW supports a PPA maintaining the 2022 sub trip limits of 75 lbs. per 2 months for copper rockfish and 75 lbs. per 2 months for quillback rockfish within the Minor Nearshore Rockfish trip limits in the area between 42° and 40° 10' N. lat. and 75 lbs. per 2 months for copper rockfish and 75 lbs. per 2 months for quillback rockfish within the Deeper Nearshore Rockfish trip limits south of 40°10' N. lat. (i.e., status quo) for the 2023-24 management cycle. CDFW agrees with the points made in Section 2.8.2 of [Agenda Item F.4., Attachment 2, April 2022](#) regarding the contributing factors that would inherently keep mortality of copper and quillback rockfish to a minimum. Those factors include the limited closed class of participants in the Deeper Nearshore

fishery and the effort shift toward other species covered under the Deeper Nearshore Fishery permit as a means to continue providing product to the live-fish market. Furthermore, CDFW supports maintaining status quo trip limits until sufficient discard mortality data are collected to better inform trip limit models. As noted in Section 2.8.2 and in [Agenda Item E.7.a Supplemental CDFW Report 2, November 2021](#), there is a high degree of uncertainty in the projected impacts as the modeling likely over projected the estimated discard mortality. Therefore, maintaining status quo trip limits is advisable until data become available to better inform managers of the effects of the sub-trip limits, at which time adjustments to the sub-trip limits could be considered through inseason action.

Lastly, CDFW sees merit in the continuation of these minimal retention sub-trip limits for copper and quillback rockfish to allow for fishery-dependent data collection, specifically biological data. It is extremely important for future stock assessments to maintain the flow of data as data gaps would add to greater uncertainty in the results of future assessments.

Non-Bottom Contact Hook-and-Line Gear Allowance in the Non-Trawl RCA

CDFW supports a PPA of Option 1 as described in Section 11.1, [Agenda Item F.4. Attachment 2, April 2022](#). Under Option 1 vessels in the commercial non-trawl sectors (Open Access, Limited Entry Fixed Gear, and IFQ Gear Switchers) would be allowed to use non-bottom contact hook-and-line gear within the NT-RCA. Use of vertical hook-and-line gear anchored to the bottom, dinglebar, and longline gear would remain prohibited within the NT-RCA. Additionally, CDFW is encouraged by the efforts from NMFS, Enforcement, and Industry to further refine the definitions pertaining to the allowable gear types and trip declarations. CDFW looks forward to the outcome of this collaboration and the updates to the analytical document in June.

Recreational Fishery

Recreational Fishery Season Structure

CDFW proposes the following range of recreational groundfish fishery season structure scenarios for the 2023-24 biennium as a PPA. This PPA was crafted following discussions with interested stakeholders and the Management Measures have all been analyzed within the draft Integrated Alternatives Analytical document ([Agenda Item F.4. Attachment 2, Pacific Coast Groundfish Fishery 2023-2024 Harvest Specifications and Management Measures, April 2022](#)). CDFW will continue to work with the Groundfish Advisory Subpanel (GAP) members and other industry representatives to solidify recommendations in preparation of final action at the June Council meeting.

All of the scenarios depicted below would be a substantial departure from the status quo, in that all of them result in a significant reduction in fishing time in nearshore waters of 50 percent or more. The severe reductions are necessary to incorporate the best scientific information available from the 2021 stock assessments and rebuilding analyses completed for quillback and copper rockfishes off California. Under status quo, California's nearshore waters in each of the five Groundfish Management Areas are open between eight and ten months of the year. The proposed 2023-2024 season structure scenarios all propose a reduced range of nearshore fishing opportunities that span from a minimum of two to a maximum of five months, depending on the area. CDFW has been working with stakeholders over winter to examine possible alternatives to mitigate for the severe losses in nearshore fishery opportunities that are necessary to reduce catch

and bycatch of these two nearshore rockfish species, such as an offshore fishery as described in [Agenda Item E.9.a Supplemental CDFW Report 1, March 2022](#).

Projected impacts (mt) under these Scenarios were calculated using the established RecFISH catch projection model and are highly uncertain. Projections include impacts for quillback and copper rockfish under 1-fish and 0-fish (no retention) sub-bag limits as described in the Bag Limits section of this document. See Model and Catch Projection Uncertainty section of this document for additional information.

Scenario 1

Seasons would be uniform with opening and closing season dates and depth constraints across all Management Areas (statewide) (Table 1). The fishery would be closed Jan-Feb, open seaward of the 50 fm RCA line (referred to as the “offshore” fishery) from Mar-May and Oct-Dec, and open in all depths from Jun-Sept. During the offshore fishery months, retention of nearshore rockfish, cabezon, and greenling is prohibited.

Lingcod is open in the same months and depths as the Shelf/Slope rockfish. Scorpionfish, sanddabs, “other flatfish,” Petrale sole, Starry flounder, leopard shark, and “other groundfish” are open year-round at all depths.

Table 1. Statewide season structure for 23-24 under CDFW Scenario 1.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nearshore rockfish, cabezon and greenlings	Closed					Open All Depths				Closed		
Shelf and slope rockfish, lingcod	Closed		>50 fm			Open All Depths				>50 fm		
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrable Sole and Starry Flounder	Open All Depths											

Table 2. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 1. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, and are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	14.5
Quillback rockfish	
N 40°10' N. lat.	2.3[1.3]
S 40°10' N. lat.	3.5[2]
Copper rockfish	
N 40°10' N. lat.	3.1[1.2]
S 40°10' N. lat.	105.9[72.1]
Cowcod (S 40°10' N lat)	7.8
Canary rockfish	116.5

Scenario 1a

This scenario is the same as Scenario 1, except for no offshore fishery opportunities (Table 3).

Table 3. Statewide season structure for 23-24 under CDFW Scenario 1a.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RCG complex and lingcod	Closed					Open All Depths				Closed		
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 4. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 1a. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	11.7
Quillback rockfish	
N 40°10' N. lat.	2.3[1.3]
S 40°10' N. lat.	3.5[1.9]
Copper rockfish	
N 40°10' N. lat.	3.1[1.2]
S 40°10' N. lat.	89.3[55.4]
Cowcod (S 40°10' N lat)	3.0
Canary rockfish	80.0

Scenario 2

Seasons would be uniform with opening and closing season dates and depth constraints across all Management Areas (statewide) (Table 5). The fishery would be closed Jan-Feb, open seaward of the 50 fm RCA line (referred to as the “offshore” fishery) from Mar-June and Sept-Dec, and open in all depths for July and August only. During the offshore fishery retention of nearshore rockfish, cabezon, and greenling is prohibited.

Lingcod is open in the same months and depths as the Shelf/Slope rockfish. Scorpionfish, sanddabs, and other flatfish, Petrale sole, Starry flounder, leopard shark, and “other groundfish” are open year-round at all depths.

Table 5. Statewide season structure for 2023-24 under Scenario 2.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nearshore rockfish, cabezon and greenlings	Closed						Open All Depths		Closed			
Shelf and slope rockfish, lingcod	Closed	>50 fm					Open All Depths		>50 fm			
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrале Sole and Starry Flounder	Open All Depths											

Table 6. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 2. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	12.3
Quillback rockfish	
N 40°10' N. lat.	1.7[1]
S 40°10' N. lat.	2.0[1.1]
Copper rockfish	
N 40°10' N. lat.	2.1[0.8]
S 40°10' N. lat.	67.6[50.2]
Cowcod (S 40°10' N lat)	7.4
Canary rockfish	93.7

Scenario 2a

This scenario is the same as Scenario 2, except for no offshore fishery opportunities (Table 7).

Table 7. Statewide season structure for 2023-24 under Scenario 2a.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RCG complex and lingcod	Closed						Open All Depths	Closed				
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrале Sole and Starry Flounder	Open All Depths											

Table 8. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 2a. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	7.9
Quillback rockfish	
N 40°10' N. lat.	1.7[1.0]
S 40°10' N. lat.	1.9[1.1]
Copper rockfish	
N 40°10' N. lat.	2.1[0.8]
S 40°10' N. lat.	45.3[27.8]
Cowcod (S 40°10' N lat)	1.3
Canary rockfish	51.1

Scenario 3

Seasons would be uniform with opening and closing season dates and depth constraints across all Management Areas (statewide) (Table 9) and offers all-depth fishing between the Memorial Day and Labor Day holiday weekends. The fishery is closed Jan-Mar, open seaward of the 50 fm RCA line April 1- May 26 in 2023 and April 1- May 24 in 2024, and from September 5 in 2023 and September 3 in 2024 through December 31, and open in all depths from May 27 in 2023 and May 25 in 2024 (Memorial Day holiday weekend) through September 4 in 2023 and September 2 in 2024 (Labor Day holiday weekend). In all areas of the state, during months that an offshore fishery is active, retention of nearshore rockfish, cabezon, and greenlings is prohibited.

Lingcod is open in the same months and depths as the Shelf/Slope rockfish. Scorpionfish, sanddabs, and other flatfish, Petrале sole and Starry flounder, leopard shark, and “other groundfish” are open year-round at all depths.

Table 9. Statewide season structure for 2023-24 under Scenario 3. The all-depth fishery for rockfish, cabezon, greenlings and lingcod is open from May 27 in 2023 and May 25 in 2024 (Memorial Day holiday weekend) through September 4 in 2023 and September 2 in 2024 (Labor Day holiday weekend).

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nearshore rockfish, cabezon and greenlings	Closed				Open All Depths				Closed			
Shelf and slope rockfish, lingcod	Closed			>50 fm	Open All Depths				>50 fm			
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 10. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 3. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	12.6
Quillback rockfish	
N 40°10' N. lat.	2.1[1.2]
S 40°10' N. lat.	3.3[1.8]
Copper rockfish	
N 40°10' N. lat.	2.7[1.0]
S 40°10' N. lat.	88.7[55.3]
Cowcod (S 40°10' N lat)	6.4
Canary rockfish	96.9

Scenario 3a

This scenario is the same as Scenario 3, except for no offshore fishery opportunities (Table 11).

Table 11. Statewide season structure for 2023-24 under Scenario 3a. The all-depth fishery for RCG and lingcod is open from May 27 in 2023 and May 25 in 2024 (Memorial Day holiday weekend) through September 4 in 2023 and September 2 in 2024 (Labor Day holiday weekend).

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
RCG and lingcod	Closed				Open All Depths				Closed			
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 12. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 3a. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	10.3
Quillback rockfish	
N 40°10' N. lat.	2.1[1.2]
S 40°10' N. lat.	3.2[1.8]
Copper rockfish	
N 40°10' N. lat.	2.7[1.0]
S 40°10' N. lat.	67.4[41.6]
Cowcod (S 40°10' N lat)	2.3
Canary rockfish	72.8

Scenario 4

Seasons differ north and south of Pigeon Point (37°11' N. lat.).

In the Northern Management Area (42° N. lat. to 40°10' N. lat.), the Mendocino Management Area (40°10' N. lat. to 38°57.5' N. lat.), and the San Francisco Management Area (38°57.5 N. lat. to 37°11' N. lat.) the fishery is closed Jan-Mar, open seaward of the 50 fm RCA line (the offshore fishery) from Apr-Jun, and Dec, and open in all depths from July-Nov (Table 13).

In the Central Management Area (37°11' N. lat. to 34°27' N. lat.) and the Southern Management Area (34°27' N. lat. to US/Mex border) the fishery is closed Jan-Feb, open seaward of the 50 fm RCA line (the offshore fishery) from Mar-April, and Oct-Dec, and open in all depths from May-Sept (Table 14).

In all areas of the state, during months that an offshore fishery is active, retention of nearshore rockfish, cabezon, and greenlings is prohibited.

Lingcod is open in the same months and depths as the Shelf/Slope rockfish. Scorpionfish, sanddabs, and other flatfish, Petrale sole and Starry flounder, leopard shark, and “other groundfish” are open year-round at all depths.

Table 13. Season structure in the Northern, Mendocino, and San Francisco Management Areas for 2023-24 under Scenario 4.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nearshore rockfish, cabezon and greenlings	Closed						Open All Depths				Closed	
Shelf and slope rockfish, lingcod	Closed			>50 fm			Open All Depths				>50 fm	
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 14. Season structure in the Central and Southern Management Areas season structure for 2023-24 under Scenario 4.

Species	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Nearshore rockfish, cabezon and greenlings	Closed				Open All Depths						Closed	
Shelf and slope rockfish, lingcod	Closed	>50 fm			Open All Depths						>50 fm	
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 15. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 4. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	14.8
Quillback rockfish	
N 40°10' N. lat.	2.3[1.4]
S 40°10' N. lat.	3.2[1.7]
Copper rockfish	
N 40°10' N. lat.	3.0[1.1]
S 40°10' N. lat.	129.1[80.9]
Cowcod (S 40°10' N lat)	8.0
Canary rockfish	122.3

Scenario 4a

This scenario is the same as Scenario 4, except for no offshore fishery opportunities (Tables 16 and 17).

Table 16. Season structure in the Northern, Mendocino, and San Francisco Management Areas for 2023-24 under Scenario 4a.

Species	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
RCG and lingcod	Closed						Open All Depths				Closed	
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 17. Season structure in the Central and Southern Management Areas season structure for 2023-24 under Scenario 4a.

Species	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
RCG and lingcod	Closed				Open All Depths						Closed	
California scorpionfish	Open All Depths											
California sheephead, ocean whitefish	TBD											
Leopard shark	Open All Depths											
Other federal groundfish	Open All Depths											
Pacific sanddabs and “other flatfish”	Open All Depths											
Petrale Sole and Starry Flounder	Open All Depths											

Table 18. Projected recreational impacts (mt) of select groundfish off California for 2023-24 under Season Structure Scenario 4a. Quillback and copper rockfish projected impacts are shown for a 1-fish bag outside of brackets, and 0-fish bag (no retention) are shown inside brackets. Data are from CDFW, are preliminary and subject to change.

Species	Projected Impact (mt)
Yelloweye rockfish	11.7
Quillback rockfish	
N 40°10' N. lat.	2.3[1.4]
S 40°10' N. lat.	3.1[1.7]
Copper rockfish	
N 40°10' N. lat.	3.0[1.1]
S 40°10' N. lat.	106.9[66.8]
Cowcod (S 40°10' N lat)	3.8
Canary rockfish	96.5

Sub-Bag Limits

Quillback rockfish – CDFW does not have a recommended sub-bag limit PPA for quillback rockfish at this time, but did analyze impacts under each Scenario above under status quo (1-fish) and no retention (0-fish) sub-bag limits.

Copper rockfish – CDFW does not have a recommended sub-bag limit PPA for copper rockfish at this time, but did analyze impacts under each Scenario above under status quo (1-fish) and no retention (0-fish) sub-bag limits.

Vermilion rockfish – CDFW supports a PPA that is the status quo vermilion rockfish sub-bag limit of 4-fish within the 10-fish RCG daily bag and possession limit. CDFW expects the status quo bag limit, changes to season structure as described above, and inseason catch tracking and monitoring will provide the necessary management tools to keep vermilion rockfish mortality from exceeding the species-specific ACL or OFL contribution to the minor shelf rockfish complex.

No Retention of Select Species During Offshore Fisheries

During offshore groundfish fisheries, as proposed in Scenarios 1, 2, 3, and 4 in the Recreational Fishery Season Structure section of this document, retention of nearshore rockfish (defined as black rockfish, blue rockfish, black and yellow rockfish, brown rockfish, China rockfish, copper rockfish, calico rockfish, gopher rockfish, kelp rockfish, grass rockfish, olive rockfish, quillback rockfish, and treefish), cabezon, and greenlings would be prohibited. It is expected most nearshore rockfish, cabezon, and greenlings would not be encountered, or only encountered rarely in the directed groundfish fishery occurring seaward of 50 fm. Prohibiting retention of all nearshore rockfish, cabezon, and greenlings during the times the offshore groundfish fishery is open but the nearshore groundfish fishery is closed is critical for effective enforcement of the nearshore groundfish fishery closure.

It is expected this element of the regulations would be implemented via state rule as most nearshore waters inside 50 fathoms fall within the state waters jurisdictional line.

Bycatch of Nearshore Rockfish in State Managed Fisheries

Recreational fisheries for several other non-groundfish species occur statewide or in certain portions of the state. Many of these fisheries are state managed. Anglers participating in these other recreational fisheries may retain groundfish on the same trip but must abide by all applicable groundfish regulations. The groundfish impacts that occur in the non-groundfish recreational fisheries are currently accounted for within the California recreational groundfish fishery impacts, as mortality estimates are produced for individual groundfish species irrespective of the regulations, or whether groundfish was a primary or secondary target, or if the fishery was closed.

CDFW does expect incidental release mortality of nearshore groundfish species in conjunction with these state-managed fisheries when the nearshore groundfish fishery is closed in the 2023-24 biennium. However, there is little data to inform analysis because past fishing regulations have generally allowed groundfish targeting and retention at times and in areas when these fisheries are prosecuted.

Non-groundfish fisheries for which mortality of groundfish occurs includes but is not limited to California sheephead, ocean whitefish, yellowtail, white seabass, California halibut, Pacific halibut, sandbasses, and ocean salmon. An estimate of groundfish bycatch in non-groundfish fisheries is not available as the California Recreational Fisheries Survey (CRFS) program does not generate estimates of bycatch in species specific target fisheries. Estimates are made at the trip type level, and trip types are generalized as bottomfish, salmon, HMS, and inshore. Analysis of CRFS sample data is included in the Integrated Alternatives Analytical document ([Agenda Item F.4. Attachment 2, Pacific Coast Groundfish Fishery 2023-2024 Harvest Specifications and Management Measures, April 2022](#)) and found:

- On average a minimum 0.2 mt of quillback rockfish statewide could be expected as bycatch from anglers targeting lingcod, with at least some trace amounts of quillback rockfish in the Pacific halibut and California halibut fisheries.
- At least 5.6 mt of copper rockfish bycatch occurs annually in non-RCG fisheries in California in the Southern Management Area, where state-managed nearshore non-groundfish fishery activity is highest.
- Actual bycatch of quillback and copper rockfish in these non-groundfish fisheries is expected to be substantially higher than the projected minimum values provided here but cannot currently be quantified.

Model and Catch Projection Uncertainty

The anticipated mortality of select groundfish species in the California recreational fishery under various season structure options is projected using the RecFISH model. The model was developed in 2004, with subsequent augmentation of monthly catch by depth and time parameters. RecFISH allows projection of catch by depth and season length independently, in each of the five California groundfish management areas. The RecFISH model is a catch-based model as opposed to an effort-based model and has been previously reviewed by the SSC.

While the RecFISH model is the best available science, there are some known uncertainties which are explained here. For some species, few data are available to inform the model, which is particularly the case for species with deeper depth distributions, such as the shelf and slope rockfish species, or species for which retention is prohibited or encounters are infrequent. For these species and depth bins projected impacts may vary substantially from actual impacts. Recreational fishing regulations off California have allowed virtually no recreational fishing activity in deep water for more than 20 years.

The model assumes that the management measures, fishing behavior, and ocean conditions during the historic period will be representative of the current fishery. It also assumes the management measures, fishing behavior, and ocean conditions during the historic period and current fishery will be representative of those under proposed management measures. If significant changes to management measures are made to the fishery, or if large shifts in angler behavior or ocean conditions occur, substantial changes to actual fishery impacts may result, which the model cannot predict.

The historic catch data informing the model for 2023-24 are from 2017-2019, and January-October 2021. During these times, the bag limit for copper and quillback rockfish was 10 fish within the 10-fish RCG daily bag and possession limit. In November 2021, the Council recommended and NMFS approved reductions to bag limits for quillback and copper rockfishes from 10-fish to 1-fish within the RCG daily bag and possession limit, effective January 1, 2022. The projections of total mortality produced in November 2021 are likely overestimates of total mortality, however no new catch information has become available since that time to update projected mortality. As the 2022 fisheries progress, new information will become available. Unfortunately, this information will not be available in time to inform the recommendations that must be made at the April and June Council meetings on the season structure and additional management measures for 2023-24. The greatest sources of model projection uncertainty include:

- The reductions in 2022 from a 10-fish to a 1-fish bag in the RCG complex for quillback and copper rockfish is not something the model predicts well. Copper rockfish was a target species during the time period used in the projection model, not a species to avoid. This change will impact angler behavior in ways the model cannot predict.
- The model is inherently uncertain whenever significant changes to regulations are made. The management measures proposed by CDFW in this report are a radical departure from past and current management measures and introduce the greatest source of uncertainty to projecting impacts as fishing would occur in completely new areas that haven't been accessed by the recreational fishery in two decades.
- New depth dependent mortality release rates are in development by the GMT and are expected to be available for use in management later in 2022. It is expected application of these new rates will change the discard mortality in both the formal monthly CRFS estimates, and subsequently in the RecFISH model catch projections.

Inseason Monitoring and Management Response

For the reasons discussed above, CDFW believes the catch projections provided are highly uncertain, and for quillback and copper rockfish are expected to be over-projections. CDFW tracks groundfish mortality inseason on a weekly and/or monthly basis to ensure that mortality remains within allowable limits. Several rockfish species of concern (yelloweye rockfish, copper rockfish, quillback rockfish, and black rockfish) are tracked on a weekly basis using CRFS field reports. Beginning in 2022, the list of species was expanded to include quillback and copper rockfish as a result of new stock status information. Data on observed and released fish from the weekly CRFS reports are converted into an anticipated catch value (ACV) in metric tons using catch and effort data from previous years. Weekly ACV data are used as "proxy" values to approximate catch during the five-to-eight-week lag time between when data are collected and when CRFS catch estimates become available. ACVs have proven to be an effective and reliable tool to closely monitor recreational inseason mortality on a weekly basis. The Council might be most familiar with CDFW's ACV methodology because of its application to inseason Pacific halibut quota monitoring, but the approach originated out of the need to track overfished species attainment (yelloweye and cowcod) in California's recreational groundfish fisheries many years ago.

CDFW also performs monthly tracking of non-overfished species (i.e., vermilion, and canary rockfish) using CRFS estimates produced throughout the year. These species tend to be encountered at a much higher frequency than yelloweye rockfish and quillback rockfish- thousands of fish per week as opposed to tens of fish. The volume of data associated with these species makes it much more challenging to summarize and track on a more frequent basis than monthly, so CDFW prioritizes the use of ACV methodology to only those species that are constraining or need close monitoring to ensure catches stay within allowable limits, such as yelloweye and Pacific halibut. Monthly tracking has proven effective at keeping catches of the remaining species within allowable limits. Inseason tracking reports are provided by CDFW to the Council at each Council meeting. To date, CDFW's weekly and monthly tracking processes have been an effective and reliable tool to closely monitor recreational inseason mortality and provides timely and accurate information to apply inseason adjustments, such as changes to depth limits, season length, or bag limits, to fisheries if needed.

The CDFW-proposed PPAs within this document were developed to reduce total mortality of quillback rockfish and copper rockfish, in response to best scientific information newly available in 2021. Both quillback rockfish and copper rockfish continue to be managed within the Minor Nearshore Rockfish complexes both north and south of 40°10' N. lat., and species within complexes are managed to the complex ACL. If mortality of these species inseason reaches or is projected to exceed ACTs, or other harvest limits, fishery managers may confer to consider the risk to the resource and the socioeconomics of the fishery to determine if inseason management action is warranted to slow or stop further mortality from occurring. CDFW also reaffirms its commitment to keeping mortality of yelloweye rockfish, the only remaining rebuilding stock in the FMP, within the California recreational HG by using the inseason monitoring and reporting methods described above.