

## GROUND FISH MANAGEMENT TEAM REPORT ON PRELIMINARY STOCK ASSESSMENT PLANS AND TERMS OF REFERENCE

The Groundfish Management Team (GMT) reviewed the documents in the advanced briefing book and received an overview from Dr. Jim Hastie and Dr. Chantel Wetzel of the National Marine Fisheries Service (NMFS) Northwest Fisheries Science Center (NWFSC) and John DeVore of the Pacific Fishery Management Council (Council).

### **2023 preliminary recommendations of species to be assessed**

The GMT's recommended list of species to assess in 2023 is shown in Table 1. These include a combination of the top-ranking species from NMFS' assessment prioritization analysis ([Agenda Item E.8. Supplemental REVISED Attachment 3, March 2022](#)) and lower ranked species that the GMT identified as possibly being higher priority for assessment due to a range of factors. The GMT recognizes that the number of recommendations are likely to exceed age reading and assessor capacity, especially given that several recommended assessments may require separate area models, hence a prioritization is provided. Additionally, going forward the Scientific and Statistical Committee (SSC) recommended that future data-moderate assessments be subject to a stock assessment review (STAR) panel. The NWFSC indicated that four data-moderate assessments could potentially be reviewed together within a single STAR panel, especially if the species selected has similar life-history and data. In response the GMT has identified four species that may facilitate a data-moderate assessment. Finally, we also explain why we do not recommend a full or update assessment for yelloweye rockfish in 2023, but rather a catch-only update for 2023, although yelloweye rockfish was on the Council's 2020 motion on guidance for assessment prioritization in 2023.

**Table 1. The GMT’s recommended species to be assessed in 2023, the NMFS rank for each species, and the possible assessment area.**

Priority	Species	GMT recommendation	NMFS Rank <sup>2</sup>	Assessment Area
Top	Black rockfish <sup>1</sup>	<b>Full Assessment</b>	1	State or region specific
	Petrable sole	<b>Full Assessment</b>	3	Coastwide
	Rougeye rockfish	<b>Full Assessment</b>	27	Coastwide
	Quillback rockfish <sup>1</sup>	<b>Full Assessment</b>	4	State or region specific
	Copper rockfish <sup>1</sup>	<b>Full Assessment</b>	29	State or region specific
Alternative	Yellowtail rockfish <sup>1</sup>	<b>Full Assessment</b>	11	State or region specific
	Longspine thornyhead	<b>Data-Moderate</b>	44	Coastwide
	Shortspine thornyhead	<b>Data-Moderate</b>	37	Coastwide
	English sole	<b>Data-Moderate</b>	29	Coastwide
	Rex sole	<b>Data-Moderate</b>	23	Coastwide
Other	Cowcod	<b>Catch Only Update</b>	65	South of 40° 10’ N. Lat.
	Pacific spiny dogfish	<b>Catch Only Update</b>	40	Coastwide
	Yelloweye rockfish	<b>Catch Only Update</b>	10	Coastwide

<sup>1</sup>The assessment will most likely have multiple assessment areas along the U.S. West Coast which will require the Council to take action prior to or by September 2023 to amend the FMP to define the management areas.

<sup>2</sup>[Agenda Item E.8., Supplemental REVISED Attachment 3, March 2021](#)

## **Rationale for selection of species to be assessed in 2023**

### *Black Rockfish: Full Assessment*

Black rockfish are a highly important species off of the West Coast. There is new acoustic survey data that is supplemented with underwater video and hook and line data available in Oregon that could be used to better inform the assessment of this area. **Full assessments are recommended coastwide acknowledging that the species will likely have regional assessment areas** (i.e., assessed in 2015 on a state basis).

The GMT notes that if this species is included in the final selection by the Council, action will need to be taken to amend the Groundfish Fishery Management Plan (FMP) assuming there will once again be area assessments, similar to 2015, such that the 2023 stock status determinations could be adopted by NMFS. This applies to any species selected for assessment in 2023 that will have multiple assessment areas across the West Coast (e.g., copper and quillback rockfishes).

### *Petrable Sole: Full Coastwide Assessment*

The last full assessment of petrale sole was conducted in 2013 with subsequent update assessments being conducted in 2015 and 2019. Since the last assessment in 2013, there is a new recruitment driver relationship that could be used in the next full assessment to better inform petrale sole recruitment within the model. Given the commercial and Tribal importance of this species, and that it will have been ten years since the last full assessment, **the GMT recommends a full assessment in 2023.**

#### *Rougheye/Blackspotted Rockfish: Full Coastwide Assessment*

Rougheye/blackspotted rockfish was not ranked high (#26) within the 2023 NMFS assessment prioritization but the GMT recommends that it should be considered since the last assessment was conducted in 2013, meaning that we are now at the end of the 10-year projection to set overfishing limits (OFLs) and acceptable biological catch (ABCs). Rougheye/blackspotted rockfish has had high recent attainment (i.e., evaluating total mortality between 2018-20) and future catches are projected to be constrained by the 2024 Annual Catch Limit (ACL) which could impact the at-sea Pacific whiting and individual fishing quota (IFQ) trawl fisheries. Additionally, there is likely to be new genetic information which could help inform the proportion of the stock that is rougheye versus blackspotted rockfishes off of the West Coast. If blackspotted rockfish are determined to be only a small proportion of the catch relative to rougheye rockfish, this information could allow the assessment to be classified as a category 1, rather than a category 2, similar to the assessment of vermilion/sunset rockfish between Point Conception and the California/Oregon in 2021 (e.g., the 2013 assessment was classified as a category 2 assessment). **The GMT recommends a full assessment for rougheye/blackspotted rockfish in 2023.**

#### *Quillback Rockfish: Full Assessment*

**The GMT recommends a full assessment of quillback rockfish to be conducted in 2023.** This species was identified as a high priority based on the results of the 2021 length-based data-moderate assessment. Having the opportunity to incorporate all available data for an assessment would allow stakeholders to have increased confidence in the assessment results and any resulting management actions. A full assessment would allow for the inclusion of additional data relative to the 2021 length-based data-moderate assessment, although the additional data available by 2023 that could support a full assessment may be fairly limited, especially relative to full assessments of similar nearshore rockfish species. Some of the additional data sources that could be evaluated for inclusion in a full assessment are:

- Age Data: There were limited otoliths available for ageing collected by commercial and recreational fisheries in California ([Agenda Item E.8 Attachment 2, page 191](#)) prior to 2021; however, California Department of Fish and Wildlife (CDFW) has increased fisheries data collection across nearshore stocks which would result in additional data from 2021 and 2022. There are existing age data and additional otoliths that could be read collected within Oregon and Washington waters that could be incorporated in area-specific full assessments.
- Fishery-Dependent Indices of Abundance: Depending upon the available data, indices of abundance from commercial and/or recreational fisheries could be estimated.
- Fishery-Independent Indices of Abundance: Quillback rockfish were observed in Remote Operated Vehicle (ROV) surveys conducted in California waters (see [Appendix 9.6 in the 2021 assessment of quillback rockfish in California waters](#)) between 2013-2015; however,

the limited number of observations (e.g., 235 observations) may preclude the use of these data in a full assessment but a more detailed analysis should be conducted to understand the potential of these data. The California Collaborative Fisheries Research Program (CCFRP) has observed quillback rockfish north of San Francisco and could be evaluated to create indices of abundance using data starting in 2017. Additionally, CCFRP may provide additional otoliths for ageing. ODFW's new acoustic survey data that is supplemented with underwater video and hook and line data available in Oregon that could be used to better inform the assessment of this area. While the survey was focused on black rockfish, there could be useful information and data for quillback rockfish.

- Future workshops: The SSC is currently planning a workshop to examine spatial issues in stock assessments. The results of this workshop could provide new pathways for future nearshore assessments to account for closed areas (e.g., Marine Protected Areas off California). Data from ROV, acoustic, and other closed area surveys may provide additional insights on this topic.

#### *Copper Rockfish: Full Assessment*

**The GMT recommends a full assessment of copper rockfish to be conducted in 2023.** The 2021 data-moderate assessment estimated that the portion of the species south of Point Conception was below the management threshold (25 percent of unfished spawning biomass). Given the importance of copper rockfish to recreational fisheries off the West Coast, conducting a full assessment would allow all available data to inform future management. Across the coast there are several additional data sources that could be used in a 2023 full assessment. Age data from recreational and commercial fisheries along with survey ages from both the NWFSC Hook & Line survey and the CCFRP would be available for use. Additionally, there may be both fishery-dependent from commercial and or recreational fisheries and fishery-independent indices of abundance (e.g., CCFRP and ROV) that could be evaluated for use in a full assessment. Similar to quillback rockfish, future assessments of copper rockfish may benefit from the outcome of the spatial issues in stock assessment workshop scheduled for later this year.

#### *Yellowtail Rockfish: Full Assessment*

**The GMT recommends a full assessment of yellowtail rockfish, although ranked as a lower priority relative to the previously discussed species.** Yellowtail rockfish was last assessed in 2017. At that time only yellowtail rockfish north of 40° 10' N. lat. resulted in an SSC endorsed full assessment (i.e., the model for the species south of 40° 10' N. lat. was withdrawn by the stock assessment team due to model instability). Current coastwide mortality of yellowtail rockfish between 2018-2020, on average, is only approximately 50 percent of the OFL, however, effort may be moving onto the shelf due to other Council actions, which could result in increased catches, especially south of 40° 10' N. lat. where changes in non-trawl RCAs could allow additional access to where yellowtail rockfish are commonly encountered.

#### *Length-Based Data-Moderate Assessments – a general note*

Dr. Jim Hastie at the NWFSC indicated that up to four species with data-moderate assessments may be able to be reviewed within a single STAR panel if some of the species selected had similar life-histories and available data sources. This information guided the GMT's selection of the four species identified for potential data-moderate assessment in 2023.

### *Longspine and Shortspine Thornyhead: Length-Based Data-Moderate Assessment*

**The GMT recommends a catch, length, and index data-moderate assessments for both longspine and shortspine thornyhead in 2023, although ranked as lower priority depending upon stock assessment capacity.** Assessments of longspine and shortspine thornyhead were last conducted in 2013 and are now at the end of their 10-year projections to set OFLs and ABCs. Longspine and shortspine thornyhead otoliths currently are unable to be read for age determination, preventing the inclusion of age data within an assessment. The 2013 stock assessments for these species relied primarily on catches, indices of abundance, and length composition data and align well within the Terms of Reference for possible data-moderate assessments using catch, index of abundance, and length data. Additionally, both species are well observed in the NWFSC West Coast Groundfish Bottom Trawl (WCGBT) survey and have the potential of having informative indices of abundance that could inform a data-moderate stock assessment.

### *English and Rex Sole: Length-Based Data-Moderate Assessment*

**The GMT recommends a catch, length, and index data-moderate assessments for both English and rex sole in 2023, although ranked as lower priority depending upon stock assessment capacity.** Both English and rex sole were last assessed in 2013 as index-based data-moderate assessments, meaning that both of these assessments are at the end of their 10-year projections to set OFLs and ABCs. Both English and rex sole are well observed by the NWFSC WCGBT survey which could provide informative indices of abundance along with length composition data. One clear advantage of applying a catch, length, and index data-moderate assessment compared to an index-only data moderate assessment would be the ability to estimate annual recruitment variation which can be a key driver of population dynamics of flatfish stocks.

### *Yelloweye rockfish*

The GMT believes that there continues to be a low probability of the assessment results diverging from the projections provided in the 2017 full assessment and rebuilding analysis of yelloweye rockfish which estimated a 50 percent probability of rebuilding in 2027. **The GMT recommends not doing a full assessment of yelloweye rockfish in 2023**, because no new data streams have become available since the last assessment, and there have not been changes in the existing data streams that would significantly alter the assessment outcomes or warrant structural changes to the model. That said, the GMT would be supportive of a catch only update for yelloweye rockfish to allow tracking on the impact of recent removals relative to the rebuilding status.

## **Catch-Only Updates for 2023**

The primary purpose of catch-only projections would be to more accurately reflect the current status of the stock and update harvest limits, primarily by including actual removals rather than assuming the full ACL was caught. Incorporating this lower actual catch would increase future ACLs. As a reminder, catch-only projections maintain all the parameters of the most recent assessment (i.e., either full or update) and only update assumed removals based on the realized total mortality in years since the last assessment.

### *Cowcod South of 40° 10' N. Lat.*

The most recent full assessment of cowcod indicated that the stock was rebuilt, however there was some uncertainty in that assessment and the risk of alternative future harvest levels. A catch-only update will not resolve the uncertainty around the estimated current stock status; however, a catch-only update could be conducted in 2023 to help provide reassurances that even though cowcod is rebuilt, management measures and total mortality have been precautionary. **Therefore, the GMT recommends a catch-only update for cowcod in 2023.**

#### *Pacific spiny dogfish*

A full assessment of Pacific spiny dogfish was conducted in 2021 which projected ACLs in 2023 and beyond that are expected to be increasingly constraining to particularly the groundfish trawl fishery, the primary source of Pacific spiny dogfish mortality ([Agenda Item E.2, Attachment 6, November 2021](#)). If the ACL is exceeded or projected to be exceeded, the Council could close areas important to the fishery. Only 48 percent of the Pacific spiny dogfish ACL was attained in 2021, and 2022 attainment could be similarly low. If that is the case, a catch-only update could update the projected ACLs based on realized catches and potentially alleviate some of the pressure on the at-sea and shorebased IFQ trawl sectors. **Therefore, the GMT recommends a catch-only update for Pacific spiny dogfish in 2023.**

#### *Yelloweye rockfish*

In between full assessments of yelloweye rockfish, catch only updates have been provided to show how mortality has been tracking compared to the OFLs/ACLs and removal assumptions. This could help show that we are still on track towards the rebuilding time estimated in the 2017 rebuilding analysis (i.e., the year associated with 50 percent probability of rebuilding was estimated to be 2027). **The GMT recommends a catch-only update for yelloweye rockfish in 2023.**

### **2025 stock assessment tentative guidance**

The new stock assessment prioritization process adopted in 2018 also includes Council guidance for a tentative list of species to assess in 2025. The primary purpose of this tentative list is to provide more planning time for age readers and to better rectify potential issues with data inputs or model structure. Below are species that the GMT has preliminarily identified for assessments in 2025.

#### *Sablefish*

Sablefish is a valuable groundfish species and, based on the stock status estimated in the most recent update assessment conducted in 2021 and the changes in the pre-specified management risk tolerance ( $P^*$ ) over the last couple of cycles, **the GMT recommends that this stock be closely monitored by doing regular assessments. A full assessment of sablefish in 2025 should be considered a high priority.**

#### *Yelloweye rockfish*

The most recent rebuilding analysis of yelloweye rockfish estimated a 50 percent probability of the stock being rebuilt in 2027. Due to the importance of rebuilding this stock, and to track continued progress toward that rebuilding, the **GMT recommends either a full or update assessment for yelloweye rockfish in 2025.** The results of a catch-only update of yelloweye rockfish conducted in 2023 would likely provide additional insight on how the species is tracking

relative to the rebuilding target year. If there is concern that yelloweye rockfish may not have yet rebuilt to the management target in 2025, an update assessment could be a way to formally evaluate the rebuilding status, while providing additional capacity for other assessments.

### *Other 2025 Priorities*

Any species that the GMT has identified as priority for 2023 (Table 1) that are not selected for assessment in 2023, **the GMT recommends that those then be considered as preliminary priority for assessment in 2025.** The Council may also consider conducting a Pacific spiny dogfish catch-only update in 2025, in addition to a 2023 catch-only update, to incorporate any changes in trawl-based catches as a result of the Pacific Whiting Utilization action item currently being considered for January 2023 implementation.

### **Assessment Prioritization Process**

The GMT appreciates the in-depth analysis conducted by the NWFSC on assessment prioritization. The assessment prioritization process includes several factors that incorporate State and or industry input (e.g., Tribal subsistence scores, recreational importance by state). Since the importance of particular species may change across time, the GMT encourages future check-ins with the States, industry members, and the Tribes to ensure the applied weights and species-importance scoring continues to reflect current fishery conditions.

### **Terms of reference**

The GMT agrees with the SSC Groundfish Subcommittee's recommendations on the stock assessment process from the January 2022 Groundfish Stock Assessment Process Review Workshop ([Agenda Item E.8 Attachment 6](#)). The SSC captured feedback from the GMT on how to improve future stock assessment processes. The GMT agrees with the SSC that, in the future, data-moderate assessments would benefit from a STAR panel review.

### **Future Items for Consideration**

There continues to be interest in assessing Pacific cod. However, Pacific cod off the U.S. West Coast is at the southern end of the range for that species, with the bulk of the species' distribution off British Columbia and Alaska. Therefore, coordinating a regional or transboundary assessment may be the most appropriate assessment option. The GMT recognizes that the workload to create the needed partnerships, coordinate efforts, and agreements across management agencies to conduct a transboundary assessment of Pacific cod would be significant. However, the importance of Pacific cod to both Tribal and recreational fisheries along the northern U.S. west coast justifies the need for this effort.

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