SCIENTIFIC AND STATISTICAL COMMITTEE REPORT ON GROUNDFISH MANAGEMENT - ADOPT STOCK ASSESSMENTS

The Scientific and Statistical Committee (SSC) reviewed the benchmark stock assessments and Stock Assessment Review (STAR) panel reports for copper rockfish in California, black rockfish in Washington, Oregon, and California; canary rockfish and petrale sole; and data-moderate assessments for rex sole and shortspine thornyhead. The SSC also reviewed recommendations from the SSC's Groundfish Subcommittee (GFSC) from their review of a limited sablefish update assessment and catch-only projections for widow rockfish and yelloweye rockfish. The SSC offers the following recommendations.

Copper rockfish in California (North+South) assessment and STAR report

The 2023 benchmark assessment of copper rockfish in California included two sub-area models split at Point Conception, California (34° 27′ N. lat.), with similar structure but additional sources of information relative to the two data-moderate assessments developed in the 2021 assessment cycle. Both models were well-developed and well-documented, and the model results were robust to a fairly broad range of alternative model structures. The results of both models were also consistent with the results of the 2021 data moderate assessments. The California-wide stock status, when the results of both models were combined, estimated that spawning output was 36.6 percent of the unfished level, in the precautionary zone, below the 40 percent management target level but above the minimum stock size threshold (MSST). However, relative spawning output in the southern model was considerably less than that in the north. The SSC recommends that efforts to keep catches proportional to regional biomass would be appropriate to avoid worsening localized depletion. The SSC endorses the 2023 full benchmark assessments of copper rockfish in California north and south of Point Conception as providing the best scientific information available (BSIA) and suitable for informing management decisions. The SSC endorses both sub-area assessments as the BSIA. The SSC recommends that both assessments be assigned to category 1 with a sigma of 0.5. The SSC recommends that the next copper rockfish assessment in California be an update, unless new data or research is available.

Rex sole assessment and STAR report

The 2023 rex sole assessment was a length-based data-moderate assessment. Rex sole was last assessed in 2015 using an index-based data-moderate approach. The current assessment was structured into a single area with two fleets and used fishery-independent data from the Triennial survey and West Coast Groundfish Bottom Trawl Survey (WCGBTS). The current assessment estimates the stock is at 76.1 percent of unfished spawning output in 2023, above the 25 percent management target level, consistent with the result of the 2013 assessment. Major uncertainties included natural mortality, growth, and WCGBTS catchability (q). Research and data needs include additional age data to inform growth and longevity along with ageing error. There is also a need to better understand catchability for WCGBTS and update maturity, fecundity, and other biological information. The SSC endorses the 2023 stock assessment as BSIA and recommends a category 2 designation with a default sigma of 1.0. The SSC recommends that the next assessment

be a full assessment assuming additional age data is available to inform growth and improved methods are developed for estimating the WCGBTS q.

Shortspine thornyhead assessment and STAR report

The 2023 shortspine thornyhead assessment was a length-based data-moderate assessment. It covered the entire U.S. West Coast and uses fishery-dependent length compositions and discard data as well as length compositions and indices of abundance from the Triennial survey and WCGBTS. Changes from the most recent assessment in 2013 included reducing the number of fishing fleets to three, including length data from the surveys and fishery, and updating estimates of catchability, growth, maturity, fecundity, and natural mortality. The current assessment estimates that the relative spawning output of the stock is in the precautionary zone, below the management target of 40 percent of unfished levels at 39.4 percent in 2023. Although recruitment has been relatively stable, spawning output declined considerably from the 1970s to the late 2010s. Major uncertainties included insufficient age composition data and a lack of reliable ageing methods, both of which reduce confidence in estimates of growth, maturity, and natural mortality. There was also a lack of concurrence among model-based and design-based indices in the latter portion of the time series (2021 and 2022). Information about habitat associations, movement, and stock structure is lacking. The SSC endorses the 2023 stock assessment as BSIA and recommends a category 2 designation with a default sigma of 1.0. The SSC recommends that the next assessment be an update assessment unless new ageing information becomes available.

Black rockfish in Washington assessment and STAR report

The 2023 benchmark assessment for black rockfish off Washington resulted in a relative spawning output of 45.1 percent, above the management target of 40 percent. The model had reasonable fits to data and lacked notable retrospective patterns. A major improvement since the 2015 assessment was a more refined assignment of historical catches to Oregon and Washington. Unfished recruitment (R_0) was the axis of uncertainty for the decision tables. There were no substantial changes to the assessment following STAR Panel review. The SSC endorses this assessment as BSIA, recommends that the stock be assigned to a category 1 with default sigma of 0.5, and supports an update for the next assessment.

Black rockfish in Oregon assessment and STAR report

The 2023 benchmark assessment for black rockfish off Oregon had reasonable fits to data and lacked notable retrospective patterns. Major modifications from the 2015 assessment were the improvement of ageing error estimates, a shift from biological to functional maturity, and addition of an absolute estimate of abundance from Oregon Department of Fish and Wildlife's acoustic-visual (AV) survey. Catchability (q) for the acoustic-visual survey represented the axis of uncertainty for decision tables. Research recommendations include a continuation of the AV survey, which currently provides a single year of data and cannot be used to infer trends in absolute abundance. Relative spawning output was 45.2 percent, above the management target of 40 percent. The SSC endorses this assessment as BSIA, recommends that the stock be assigned to category 1 with default sigma of 0.5, and supports a benchmark assessment the next time this stock is assessed to address tensions between length composition and AV survey data.

Black rockfish in California (North+Central) assessment and STAR report

The 2023 benchmark stock assessment for black rockfish in California consisted of two sub-area models for northern and central areas to approximate spatial and temporal variation in size composition, exploitation history, recruitment, and other factors affecting population dynamics. The northern model represents the portion of the stock in U.S. waters from Point Arena (38° 57.5′ N. lat.) to the California-Oregon border (42° N. lat.) and the central model includes U.S. waters off from Point Arena to the U.S.-Mexico border. Black rockfish are rare south of Point Conception (34° 27′ N. lat.), thus data informing the central model are primarily from the region between Point Conception and Point Arena. Natural mortality is the primary source of uncertainty of the assessment. The two sub-area assessments estimate 2023 OFL contributions to be 203.8 mt in the northern area and 48.5 mt in the central area. Statewide, following the stock definition in Amendment 31 for black rockfish, the stock is at 37.7 percent of unfished spawning output in 2023, in the precautionary zone, below the 40 percent management target level but above the MSST. The relative spawning output trajectory was very similar to that estimated in the 2015 assessment and has shown recent increases. The current assessment is technically sound, draws upon multiple fishery-dependent and -independent data sources, and results in robust estimates of depletion. The SSC supports the modeling approach and the basis for the decision table. The SSC endorses the 2023 sub-area assessments of black rockfish in California as BSIA. The SSC recommends that both sub-area assessments be assigned category 1 with a default sigma of 0.5. The SSC recommends the next assessment be a full assessment to account for migration rates between the northern and central areas and spatially-explicit life history data, if available.

Canary rockfish assessment and STAR report

The 2023 benchmark assessment for canary rockfish encompassed a single area along the U.S. West Coast. This is a modification from the stock assessment conducted in 2015, which was spatially-explicit and reflected distinct areas for CA, OR, and WA. Five fleets per state and three fishery-independent indices of abundance (Triennial survey, WCGBTS, and rockfish pre-recruit surveys) were included in the model, most with sex-specific selectivity. Natural mortality was updated to be age-invariant. The relative spawning output is estimated to be 35.1 percent, placing it in the precautionary zone between the management target of 40 percent and the MSST of 25 percent. This assessment estimates a lower ratio of current to unfished biomass (depletion) than the 2015 assessment and suggests that the stock never achieved the rebuilding target. Sensitivity analyses indicate that differences between the 2015 and 2023 assessment models were primarily due to how natural mortality and selectivity were parameterized. The SSC supports the modeling approach and agrees that the model fits the data well. The SSC endorses the 2023 stock assessment as BSIA, supports a category 1 designation for canary rockfish with a default sigma of 0.5, and recommends that the next assessment be an update assessment unless new information becomes available to redefine natural mortality and/or steepness.

Petrale sole assessment and STAR report

The 2023 petrale sole benchmark stock assessment modeled a single stock with fisheries stratified as north (Washington and Oregon) and south (California). The last full assessment was in 2013, with update assessments in 2015 and 2019. Historical catches were updated for Washington state, and these combined with reductions in more recent discard estimates were key contributing factors to changes in stock biomass relative to past assessments. The fraction of unfished spawning output

is estimated to be 33.6 percent in 2023, which is above the management target of 25 percent for flatfish stocks. The primary axis of uncertainty is female natural mortality. Spawning output is projected to decline in the future but remains above the MSST under all projections from the high and low states of nature. This decline is due to poor recruitment in recent years, which contrasts with the high recruitment event from 2006 to 2008 that resulted in rebuilding of the stock from overfished conditions. An environmental index of recruitment for petrale sole was developed but required additional review and was not included in the base model. The SSC supports the modeling approach, agrees that the model fits the data well, and agrees with the conclusions of the 2023 petrale sole assessment. The SSC endorses the 2023 stock assessment of petrale sole as BSIA, recommends the stock assessment be designated as category 1 with a default sigma of 0.5, and suggests that the next assessment be an update assessment.

Sablefish limited update assessment

The 2023 stock assessment update for sablefish was motivated by observations of high recruitment in 2020 and 2021 in the WCGBTS, which observes age-0 and age-1 sablefish. The update was limited in scope and included ages from the WCGBTS, but not from the commercial fishery. The assessment incorporates an environmental index for recruitment, which was also updated. The assessment estimates the stock is 63 percent of unfished biomass in 2023, above the 40 percent management target. Fishery information and anecdotal accounts regarding high bycatch of small sablefish support the existence of one or more strong cohorts entering the population. However, there is greater uncertainty in the strength of these recent year-classes than for older year-classes with more years of observations to verify the year-class strength. The SSC endorses the 2023 sablefish update assessment as BSIA. The SSC recommends the stock assessment be designated as a category 1 assessment with a default sigma of 0.5. The SSC recommends that the next sablefish assessment be a full assessment given the uncertainty and limited observations of recent cohorts, additional age data from the fishery, and the potential effects of density dependence at high abundance.

Catch-only projections for Widow rockfish and Yelloweye rockfish

The SSC discussed the catch-only projections for widow rockfish and yelloweye rockfish and had no technical concerns. The widow rockfish catch-only projection was based on the 2019 update assessment. Given the small differences in actual versus assumed catch, the percent of unfished spawning biomass in 2025 only increased slightly from 75.6 percent to 81.1 percent with the updated values, and the acceptable biological catch increased from 10,533 mt to 11,237 mt. The yelloweye rockfish catch-only projection was based on the 2017 rebuilding analysis. Differences between actual versus assumed catch were small and there was a corresponding small increase in the 2025 projected acceptable biological catch from 76.5 to 87.2 mt. The rebuilding target of 40 percent unfished spawning biomass is projected to be reached in 2028. The SSC endorses both catch projections as BSIA.

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