SUMMARY MINUTES

Scientific and Statistical Committee

Pacific Fishery Management Council
Hilton Vancouver Washington
Cedar Room
301 W Sixth Street
Vancouver, WA 98660
Phone: 360-993-4500

March 4-6, 2025

Members in Attendance

Dr. Cheryl Barnes, Oregon State University and Oregon Department of Fish and Wildlife, Newport, OR
Dr. John Budrick, California Department of Fish and Wildlife, San Carlos, CA
Dr. Tim Copeland, Idaho Department of Fish and Game, Boise, ID
Dr. John Field, National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA
Dr. Chris Free, University of California Santa Barbara, Santa Barbara, CA
Dr. Owen Hamel, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. Michael Hinton, San Diego, CA
Dr. Dan Holland, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. Galen Johnson, Northwest Indian Fisheries Commission, Olympia, WA
Dr. Tommy Moore, Northwest Indian Fisheries Commission, Forks, WA
Dr. André Punt, University of Washington, Seattle, WA
Dr. Matthew Reimer, University of California Davis, Davis, CA
Dr. William Satterthwaite, National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA
Dr. Jason Schaffler (SSC Chair), Muckleshoot Indian Tribe, Auburn, WA
Dr. Tien-Shui Tsou, Washington Department of Fish and Wildlife, Olympia, WA

Members Absent

None

SSC Recusals for the March 2025 Meeting		
SSC Member	**Issue**	**Reason**
Dr. Galen Johnson	C.2 Review of 2024 Fisheries and 2025 Stock Forecasts	Dr. Johnson supervises co-authors who contributed model documentation materials.
Dr. John Field	C.2 Review of 2024 Fisheries and 2025 Stock Forecasts	Dr. Field supervises a co-author.
Dr. Will Satterthwaite	C.2 Review of 2024 Fisheries and 2025 Stock Forecasts	Dr. Satterthwaite is a co-author of the SI forecast method and is supervised by a co-author of multiple forecasts.
Dr. John Budrick	H.4 Final Assessment Methodologies	Dr. Budrick is an author of the California remotely operated vehicle (ROV) review topic.

SSC Administrative Matters

Dr. Jason Schaffler (SSC Chair) called the meeting to order. Mr. Merrick Burden briefed the Scientific and Statistical Committee (SSC) on their tasks at this meeting and answered questions from SSC members.

The March 2025 SSC agenda was approved, including revisions to continue Agenda Item H.6 SSC discussion the morning of March 5 to ensure it is completed; to Agenda Item H.4 adding a presentation by Dr. Budrick on California ROV follow-up analyses, with a change of rapporteur to Chris Free with assistance of Tommy Moore leading the discussion for the in-person meeting room. Minor edits were made to the November 2024 SSC Minutes and adopted as final. The March 2025 briefing book version of the November 2024 SSC Minutes will be updated to reflect SSC approved changes, and the final document will be posted to the SSC minutes archive website.

Subcommittee assignments were reviewed, with no changes noted.

Open discussion included the request to provide any potential themes or topics from the PFMC SSC to consider in planning the next Council Coordination Committee's (CCC) Scientific Coordination Subcommittee meeting (SCS9).

Per suggestion in March 2024, a public comment period was conducted at the beginning of each day to allow for relevant public comments to be made and considered prior to the SSC taking up an Agenda Item.

E. Salmon Management

2. Review of 2024 Fisheries and Summary of 2025 Stock Forecasts

The Scientific and Statistical Committee (SSC) discussed the Review of 2024 Ocean Salmon Fisheries (Supplemental Attachment 2) and Preseason Report I for 2025 (Supplemental Attachment 3). The SSC appreciates the work of the Salmon Technical Team (STT) in compiling

the reports and participating in a joint discussion. The SSC was provided with a draft of the Sacramento River fall Chinook (SRFC), Klamath River fall Chinook (KRFC), and Willapa Bay natural Coho forecasts only three business days ahead of the SSC meeting. The SSC had only one business day to review the Preseason Report I, preventing comprehensive review.

The Council sets annual catch limits (ACLs) for SRFC, the indicator stock for the Central Valley fall Chinook complex, KRFC, the indicator stock for the Southern Oregon/Northern California Chinook complex, and Willapa Bay natural Coho. Preseason Report I provides the ACLs for these stocks (Table V-5). The SSC found the calculations of the three acceptable biological catches (ABCs) and corresponding ACLs correct based on the forecasts for all three stocks. The SRFC forecast model (Figure II-4) shows a concerning pattern in residuals, with recent returns tending to be lower than forecasts. Alternate forecast methodologies or data ranges should be explored.

KRFC, for which a rebuilding plan was completed during 2019, continues to meet the criteria for overfished status. The Queets River spring/summer Chinook stock was declared overfished in 2023, a rebuilding plan was adopted in November of 2024, and the stock now meets the criteria for "not overfished-rebuilding" status. No Chinook or Coho stocks were determined to be subject to overfishing, although most exploitation rates were only available through 2022.

The SSC strongly recommends that salmon forecasts used in the PFMC process include standardized measures of uncertainty and that detailed methodologies producing salmon forecasts be made available. The SSC notes that a published paper by Satterthwaite and Shelton (2023) presented an approach for quantifying bias and uncertainty in forecasts for several PFMC-managed salmon stocks. The approach described in that paper has the potential to address evaluation of and possible revisions to forecasts. The SSC recommends exploring this and/or other frameworks for systematically using the forecast performance information in Preseason Report I to identify forecasts that the STT or agencies may want to focus on for possible improvement.

SSC Notes

Documentation of the Sacramento Index (SI) could be improved in the future, for example, by giving more explicit detail on what goes into calculating the autocorrelated error term.

*From COP 4: "*The SSC requires good documentation and ample review time in order to provide the best possible scientific advice to the Council on scientific merit. Analysis or report authors should be responsible for ensuring materials submitted to the SSC are technically comprehensive, clearly documented, and complete. If there is any uncertainty on the part of authors regarding SSC expectations, authors should clarify assignments and expectations of materials to be reviewed with the SSC Chair. In order that there be adequate time for careful review, documents and materials destined for review by the SSC or any of its subcommittees must be received at the Council office at least two weeks prior to the meeting at which they will be discussed and reviewed, unless otherwise approved by the Executive Director. The Council staff will then provide copies to appropriate SSC members. If this deadline cannot be met, it is the responsibility of the author to contact the SSC Chair prior to the two-week deadline, so appropriate arrangements, rescheduling, and cancellations can be made in a timely and cost-effective manner. This deadline applies to all

official SSC activities and meetings*." A proposed alternative to the OPITT OPI-H Coho forecast was posted to the briefing book after the SSC meeting began its discussion of Agenda Item E.2, and authors had not followed COP 4 to discuss late review with the SSC Chair. The SSC did not have adequate time for a comprehensive review of the report at this meeting.*

Noting when forecast methods change on forecast evaluation tables and figures would be helpful for interpreting performance.

The harvest control rule (HCR) for SRWC was developed based on a management strategy evaluation (MSE) analysis for just the Upper Sacramento population (when it was the only one in existence) but the forecast now includes the recently reintroduced Battle Creek "jump start" population. The disconnect between the basis of HCR and current forecast currency should be considered.

Two changes to the Fishery Regulation Assessment Model (FRAM) were appended to the Preseason-I report. From cursory review, the SSC agrees with the Co-managers that these probably do not merit a full methodology review but did not have adequate time to review. Future methodology review items may want to include a check for how to ensure that approved changes are implemented correctly. These items were available to staff prior to the Briefing Book deadline and shared with the SSC Salmon Subcommittee two weeks prior to the March SSC meeting. However, they were only very recently made available for full SSC review as appendices to the Preseason-I report, which was delayed in publication until the Saturday prior to the Tuesday SSC meeting. Materials for SSC review should be prioritized and can be provided through alternate mechanisms to ensure adequate review time.

Multiple public comments have been given about forecast performance in recent years; being explicit about uncertainty can help the public (and Council and advisory bodies) to manage expectations about forecast performance.

H. Groundfish Management

6. Phase 2 Stock Definitions

The Scientific and Statistical Committee (SSC) reviewed the proposed framework and analysis in support of a range of alternatives for the Phase 2 stock definitions process. Todd Phillips (Council staff) provided an overview of the Phase 1 and Phase 2 processes, results of the analysis in Attachment 1, and the range of alternatives to define stocks for the species listed in Group A. The first step in Phase 2 is to identify which of the 86 species currently listed in the Pacific Coast Groundfish Fishery Management Plan (FMP) belong in Group A. Initial Group A designations were based on the percent of fishery mortality that has occurred in federal waters. Attachment 1 displayed these percentages by species, state, and fishing sector (i.e., recreational or commercial). The 50% state-federal threshold that was initially proposed to make conclusions about predominance in federal waters was reduced to 25% as a way to account for past, present, and/or future uncertainty. The SSC concurs with the adoption of a state-federal threshold that recognizes

the limitations associated with analyzing data from a time period when fishing effort was highly constrained to shoreward federal waters, given that many closed areas have since reopened to fishing activities. The SSC notes that rationale for the specific state-federal threshold used in the analysis was not well documented and there was little indication of the sensitivity of results to the 25% value.

The SSC discussed the first step in the Phase 2 process and provide a few considerations for the Council at this time. Although commercial catch data were analyzed as weight or biomass, recreational data could not easily be converted from numbers to biomass. Using numbers instead of weights for recreational data may lead to misinterpretations of catch ratios for many stocks, given that many of these species tend to move into deeper waters as they get larger. Thus, catches within state waters typically consist of smaller individuals, leading to likely underestimates of recreational mortality in the EEZ. The SSC notes that there are additional data sources that could substantially improve mortality estimates for some recreational fisheries, especially for species with inconsistent results between recreational and commercial sectors. Although recreational catches for Washington lack fine-scale geographic information, a considerable portion of the recreational catch for some species (e.g., black rockfish) occur in federal waters and are underrepresented in the analysis. Data from Oregon should be cautiously used as a proxy for Washington given differences in bathymetry within the EEZ. This is especially true for nearshore species.

The SSC notes that Attachment 1 recognizes that the "mixed mortality" between state and federal waters "present a unique challenge". This statement is particularly true with respect to the successful implementation of monitoring, management, and assessment. It is not likely that the consequences and challenges to monitoring and assessment of removal from the FMP can be adequately evaluated or meaningfully predicted.

The SSC discussed the proposed range of alternatives for stock definitions pertaining to the species listed in Group A (Table 34) and recommend the following modifications:

1) Darkblotched rockfish: Add Option 2 and Option 3 to account for genetic differences between Washington and northern California.
2) Flag rockfish: Option 2 is not supported by the scientific literature review because any evidence of stock structure is likely a consequence of misidentifying redbanded rockfish as flag rockfish north of Heceta Bank, Oregon. The SSC recommends consideration of only Option 1 (coastwide).
3) Greenspotted rockfish: Add Option 2 to account for differences in growth rates and exploitation histories north and south of Point Conception, California. These differences were represented by two area models in the 2011 stock assessment.

Single stocks with state-based boundaries (e.g., "California only" or "California/Oregon") may benefit from a coastwide stock definition to allow for potential northward shifts in distribution as environmental conditions continue to change. Thus, the SSC recommends that species with no

evidence of stock structure but limited ranges should be delineated as "Coastwide". For example, bronzespotted rockfish was identified as "Coastwide or California only" in the range of alternatives but the SSC recommendation would be "Coastwide".

The SSC recommends against state-specific inclusion or exclusion of species in the FMP due to considerable uncertainty in the information used to define stock structure. Additionally, conclusions about spatial population structure in Attachment 1 should be updated from "N" (no population structure) to "U" (unknown population structure) for big skate, bocaccio, Pacific hake, and splitnose rockfish. These species were identified as having "limited" information relative to spatial population structure and show evidence of spatial variation in key life history traits.

The SSC also discussed the species listed in Group B and supports the movement of lingocd and vermilion rockfish (OR) to Group A.

- Lingcod: Using numbers instead of weights for recreational catches likely underestimates lingcod mortality in federal waters. Additionally, the SSC anticipates that recent redistributions of fishing effort from access to previously closed areas will increase commercial and recreational retention of lingcod in the EEZ.
- Vermilion rockfish (OR): As previously described, the SSC does not recommend state-specific inclusion or exclusion of species in the FMP due to considerable uncertainty in the information used to assess stock structure.

For Step 2 of Phase 2, the SSC recommends careful consideration and analysis of additional data to inform decisions for the following species:

1) Quillback and copper rockfishes: Similar to lingcod, larger individuals tend to occupy deeper waters and the fishery may have been compressed to the nearshore relative to the potential future distributions of effort. Visual survey data span state and federal waters in California and may provide context for stock structure and potential shifts in the distribution of fishing effort as spatial management constraints are lifted. Moreover, previous delineations of stock structure were based on general concepts (e.g., that nearshore species tend to exhibit spatial population structure) rather than direct evidence.
2) Sand sole and starry flounder: Historical exploitation rates were far greater in the commercial sector relative to recreational fisheries but the decision to assign sand sole and starry flounder to Group B was based on recent and very modest recreational catches. The SSC recommends that the Council consult with the Groundfish Management Team (GMT) and Groundfish Advisory Program (GAP) to identify whether nearshore flatfish trawl fisheries are likely to increase in the future.
3) Black rockfish: The available information to inform stock structure for black rockfish is contradictory (e.g., adult movement rates) or lacking (e.g., spatial variation in life history traits) and thus highly uncertain. There is some recent evidence to suggest population connectivity along the U.S. West Coast (see the 2023 stock assessments for details).

Ecosystem component (EC) designations are intended for species that do not require conservation or management but are identified in the FMP to achieve ecosystem-based fishery management objectives. Analysts should consider results of the productivity–susceptibility analysis (PSA) that was conducted in 2011 (Cope et al. 2011) when evaluating candidates for EC designation. In the absence of new or additional information, the SSC recommends that only those species identified by Cope et al. (2011) as having low vulnerability be considered for EC designation. The SSC recommends that none of the species identified as having high vulnerability be considered for EC designation. In some cases, *de minimis* landings for more vulnerable species may be a consequence of historical fishing pressure. For example, life history data and historical catch trends for bronzespotted rockfish suggest that this species has a very vulnerable life history and was likely to have been depleted during the 1970s and 1980s. Similarly, rosy rockfish has a moderate degree of vulnerability and catches in the EEZ are likely to exceed the state-federal threshold in the near future.

The SSC would like to reiterate that the Council may want to reconsider stock definitions periodically, as new scientific information becomes available. This is particularly important given that the lack of evidence for multiple stocks does not necessarily reflect evidence of a single coastwide stock. The Council should consider adopting FMP language so that it is relatively straightforward to change stock definitions as new information becomes available.

SSC Notes

Although the data were not made available for this analysis, including Treaty data may change the category designation for tiger rockfish off Washington.

There are several potential sources of data that could be used to convert numbers to weights for a more appropriate state-federal comparison of recreational data. In California, estimates in weight for the recreational fishery stratified by state and federal waters are available for direct comparison to numbers of fish. Additionally, there are historical and contemporary onboard observer data from the California recreational party boat fishery and Ocean Recreational Boat Survey [ORBS] data from Oregon.

The Exclusive Economic Zone (EEZ) off central Washington includes areas less than 30 fathoms, where recreational fisheries occur. Differences in bathymetry in the EEZ relative to the Oregon coast make it problematic to apply ratios of catch inside vs. outside the EEZ from Oregon to Washington.

A clarification on how landings are treated when fish are caught in WA but landed in OR would be useful for future analyses.

A minor revision for Table 34 would be to move "Range = CA" from bocaccio to bronzespotted rockfish, which seemed to reflect a typographical error.

The distribution of catch reflects recent depth restrictions. As depth restrictions are liberalized with the rebuilding of yelloweye rockfish, greater access may shift the distribution of effort and thus catch. In California, the Coastal and Marine Ecological Classification Standard (CMECS) produced by NMFS provides comprehensive mapping of the nearshore habitat (<300 ft) in state and federal waters. The analysis of CMECS seafloor data relative to the depth contours reflects the primary depth distributions of various species and may provide further perspective on the relative distributions of nearshore species across their full depth range. This data source may also be available for Washington, potentially facilitating improved analyses there.

Preliminary details regarding bronzespotted rockfish were provided to the Council in the form of a SWFSC briefing in the March 2007 briefing book (pg 57, Agenda Item E.2.b Attachment 3, March 2007). The Dick and MacCall (2010) technical memorandum that is the basis for OFL contributions for most data-limited species documents cumulative bronzespotted rockfish landings of nearly 1600 tons between 1916 and 2009 and estimated landings that declined from 60-80 tons per year (almost exclusively in the Southern California Bight) to 1-3 tons per year between 1980 and 1989, well before major declines in the overall Southern California rockfish fishery.

Notes from September 2024 statement worth reminding analysts about (some with updates):

Data from visual surveys led by Mary Yoklavich cross the state/federal boundary. These data were recently posted online. The 2014-2015 EFH process used these data and some drop camera data. Summary information from these datasets has been provided to some of the analysts, noting that the Yoklavich dataset alone includes over 1900 lingcod and 340 copper rockfish observations over a range of depths, most with length information associated. Slightly less than half of both the survey data and the observations originate from the EEZ.

Habitat information could be folded into recreational data analyses. Future analyses should include habitat and Habitat Committee members in the discussion. Joe Bizarro put together a database of habitat data which could be useful for Northern California, whereas the information is not as good for Southern California.

Note that if California CPFV observer data are to be used, these data are confidential and analysts would need to have a data sharing agreement from CDFW. These data have been vetted and organized by Melissa Monk, SWFSC, to support stock assessments. Although the most robust data are from the early 2000s to the present, it is worth noting that a historical database focused on central California CPFV fisheries exists from the late 1980s to the late 1990s (the "Deb Wilson-Vandenberg" database). These data were collected prior to implementation of considerable depth restrictions and could also be used to provide context for the distribution of fishing effort and catch prior to the Groundfish Fishery Disaster declaration in 2000. Documentation of this dataset is available in Monk, M., Miller, R.R., Field, J.C., Dick, E.J., Wilson-Vandenberg, D. and Reilly, P.N., 2016. Documentation for California Department of Fish and Wildlife's onboard sampling of the rockfish and lingcod commercial passenger fishing vessel industry in northern and central California (1987-1998) as a relational database. NOAA-TM-NMFS-SWFSC-558. https://repository.library.noaa.gov/view/noaa/9092.

If a species with somewhat low proportions in federal waters tends to co-occur with a species that is primarily caught in federal waters, that could affect designation.

Examination of the percent of yield at B_{MSY} in each complex from contributing stocks can be undertaken to provide additional perspective on which species contribute very low proportions of aggregate yield, as a criterion for selection as EC species.

Black rockfish meet 7 out of the 10 criteria listed in 600.305C, suggesting sufficient need for conservation and management (movement from Group B to Group A).

For black rockfish off of California, both recent and historical tagging studies (summarized in the 2023 stock assessment) demonstrate that some black rockfish move considerable distances and that there is a general pattern of movement from many central California habitats to northern California and Oregon habitats. Thus, there is conflicting evidence or limited information with which to evaluate black rockfish stock structure, especially off California. This is consistent with the research and data needs recommendation from the 2023 Oregon black rockfish assessment, in which an exact quote is "Stock structure for black rockfish is a complicated topic that needs further analysis. How this is determined (e.g., exploitation history, genetics, life history variability, biogeography, etc.) and what this means for management units needs to be further refined. This is a general issue for all nearshore stocks that likely have significant and fine-scale stock structure among and within states, but limited data collections to support small-scale management."

The estimates of mortality in weight for the California recreational fishery are stratified by state and federal waters for use in direct analysis and comparison to numbers of fish. Caveats to bear in mind are that the location of catch inside and outside of federal waters is self-reported as compared to the onboard CPFV data, which is observed. Also consider that the location of catch requested by samplers at dockside are for the majority of the fish caught and some of the catch may have been caught in state or federal waters but ascribed to one or the other. This may not be an issue for a large proportion of trips that fish only in one or the other, but is a caveat worthy of mention in analysis of the estimated weight of fish inside and outside of federal waters off California in both MRFSS and CRFS era data collection. The current analysis of numbers of fish represent an intermediate step in the generation of catch estimates by weight, and are subject to the same potential uncertainties relative to having been caught in state and federal waters.

Cope JM, DeVore J, Dick EJ, Ames K, Budrick J, Erickson DL, Grebel J, Hanshew G, Jones R, Mattes L, and Niles C. 2011. An Approach to Defining Stock Complexes for U.S. West Coast Groundfishes Using Vulnerabilities and Ecological Distributions. North American Journal of Fisheries Management. 31:589-604.

F. Ecosystem Management

1. 2024-25 California Current Ecosystem Status Report and 2025 Science Review Topics

The Scientific and Statistical Committee (SSC) met with representatives of the California Current Integrated Ecosystem Assessment (CCIEA) team, Andrew Leising (Southwest Fisheries Science Center) and Mary Hunsicker (Northwest Fisheries Science Center). The SSC's discussion with the CCIEA team covered three topics: 1) the 2024-2025 California Current Ecosystem Status Report (Agenda Item F.1.a CCIEA Report 1) and 2) the Ecosystem Status Report (ESR) topics for SSC review in 2025 (Agenda Item F.1.a Supplemental CCIEA Team Report 4), 3) the SSC Ecosystem-based Management Subcommittee (SSCES) report on their November 5, 2024 meeting.

Review of the 2024-2025 CCIEA Ecosystem Status Report (ESR)

The ESR includes important information on environmental, biological, social, and economic indicators and provides an ecosystem perspective on U.S. West Coast fish stocks, fisheries, and coastal communities for the Council process. The SSC commends the CCIEA team's work in producing another excellent and useful report and presentation for the Council and appreciates their ongoing efforts to improve the report. The SSC raised no major issues with the report or presentation but made a small number of suggestions (included in SSC notes) to improve clarity of findings, particularly with regard to interpreting uncertainty and whether changes in indicators or trends were statistically significant.

SSC Ecosystem-based Management Subcommittee (SSCES) Report from November 2024

The SSC reviewed the SSCES report from its meeting held via webinar on November 5, 2024, and discussed the report with SSCES Chair Tommy Moore (Northwest Indian Fisheries Commission). The SSCES reviewed two topics in November: a.) a coastwide index of abundance for krill and b.) a Dungeness crab megalopae index. Kristin Marshall (Northwest Fisheries Science Center) chaired the meeting. The SSC agrees with the SSCES and supports using the krill indicator in the Ecosystem Status Report and encourages further development of both the indicator and potential connections to other ecosystem components. The SSC concurs with the SSCES that there is potential for this indicator to be helpful in advancing our understanding of krill and other ecosystem components connected to krill, and it recommends that a more comprehensive review of the strengths and weaknesses of various krill indicators be considered in the future. The SSC concurs with the SSCES support for the inclusion of the megalopae index in future ESRs as an indicator of forage availability but notes that more work is needed to evaluate the role of megalopae as forage and how well the megalopae index represents forage availability. It was noted that density-dependent mortality of megalopae after settlement may moderate the impact of high settlement rates on subsequent forage availability.

Review of Potential topics for SSCES / CCIEA in Summer 2025

The CCIEA team proposed two topics for review by the SSCES summer or fall of 2025: 1) incorporation of new data types (and indices) from glider surveys along the U.S. west coast, and

2) recent efforts to modernize and streamline the ESR by moving certain methodological components to an appendix and online "living" document. The SSC is supportive of reviewing the first topic, provided that the CCIEA team provides concrete examples of new data types and their potential uses that the SSCES can review. If examples are not available, a workshop rather than an SSCES review might be more appropriate for identifying and developing new indices using these new data types. The SSC finds the second topic to be a valuable effort, but less appropriate for review specifically by the SSCES. The EWG and the Council itself would be better placed to comment on the editorial design of the ESR and whether to include technical methods in the report or in a separate appendix. In lieu of the second topic, the CCIEA team suggested that the SSCES consider a review of short reports on ESR indicators tailored to specific stocks to support the development of risk tables and updates to existing risk tables. The focus of the review would be on indicators supporting the ecosystem and environmental considerations column of the risk tables. The SSC is supportive of this, provided that the review is focused on technical aspects of the topic within the scope of the CCIEA and avoids broader issues regarding the use of risk tables in management. Around two hours would be needed for each topic, so the review could likely be held as a half-day webinar or with a half-day meeting prior to the September SSC meeting.

SSC Notes

Attempt to be consistent in use of terms such as "similar to" and "generally lower" in the report. This could be achieved by the CCIEA team providing the contributors with a guide on how to interpret these terms.

Figure 3.10 - consider revising the text stating that the juvenile biomass of Dover sole and Shortspine thornyheads are "generally at low abundance" or provide a justification for this statement other than the trends in Fig. 3.10.

Pg 62, last para. Provide an example (ideally within the PFMC process) of where changes in productivity have influenced "estimated reference points used in harvest setting" (or delete the text).

Pg 63, 2nd last para. The process for tracking changes in anchovy abundance would be the survey rather than the sardine assessment process itself.

Continue to add measures of uncertainty into the measures reported. For example, Fig. K.6 could benefit from confidence intervals by year.

Figs L.3 and L.4. Do these plots provide proportions of total prey items, the proportion of total prey biomass, or the proportion of stomachs with each prey type (e.g, the percent frequency of occurrence). Interpretation of plots of proportions can be challenging given that proportions need to sum to one.

The SSC also discussed adding an additional topic to the SSCES ESR review on potential changes to the fishery diversification indices that may be needed if access to Alaska revenue data is lost

due to personnel changes at the Alaska Fisheries Science Center. The SSC did not recommend that review unless and until it becomes clear changes will be needed.

H. Groundfish Management

4. Final Assessment Methodologies

The Scientific and Statistical Committee (SSC) discussed the Accepted Practices Guidelines for Groundfish Stock Assessments in 2025 and 2026 (Agenda Item H.4.a, SSC Groundfish Subcommittee Report 1) that were developed by the SSC's Groundfish Subcommittee (GFSC) during a meeting on December 2-3, 2024. The GFSC considered three topics in its December meeting: 1) current approaches used to address spatial closures in stock assessments, 2) methodologies and resulting estimates of abundance from the remotely operated vehicle (ROV) survey conducted along the California coast, and 3) other needed revisions to the Accepted Practices Guidelines. John Field (Southwest Fisheries Science Center) provided a summary of the GFSC report (Agenda Item H.4.a, SSC Groundfish Subcommittee Report 2) and John Budrick (California Department of Fish and Wildlife [CDFW]) provided an update on revisions to the ROV survey methodologies (Agenda Item H.4.a Supplemental CDFW Report 1).

The GFSC revisions to the Accepted Practices Guidelines for 2025 and 2026 included the addition of text on risk table guidance, the citation of the review on addressing spatial closures in stock assessments, and other minor changes. No explicit guidance on the use of ROV abundance indices was added, given that it is still in the early stages of development and has not yet been widely applied and reviewed in the assessment process.

The SSC does not suggest substantive changes to the version of the Accepted Practices Guidelines in the Briefing Book (Agenda Item H.4.a. SSC Groundfish Subcommittee Report 1), though a few minor edits will be made. The SSC endorses the Accepted Practices Guidelines for Groundfish Stock Assessments in 2025 and 2026, including the minor revisions.

The SSC appreciates CDFW's work on the ROV survey and endorses its potential use in stock assessments, though decisions over use will need to be made on a species-by-species basis and are ultimately up to the stock assessment team (STAT). The ROV survey could be used to produce estimates of the number (or biomass) of animals in the surveyed area (absolute abundance) or of trends in abundance (relative abundance). However, providing estimates of absolute abundance is more challenging analytically. They would also be expected to be subject to additional uncertainties compared to relative indices of abundance and would require further development and review before their use in an assessment. The SSC requested additional revisions be made to the ROV survey methodologies. In addition, the SSC highlights that any estimates or indices must be provided by the STAR Panel 2 data deadline of March 31st, 2025 to be considered in the California quillback rockfish stock assessment.

SSC Notes

The groundfish risk tables will be created as a pilot project this year but are not expected to be used officially in management.

We have been using three approaches for weighting composition data for decades but several new approaches are now available (e.g. from Noel Cadigan's lab) that might be useful to examine.

We will continue to use the same steepness value (0.72) for rockfish species in cases where it is not estimated in the assessment, but updates or alternative approaches for developing steepness priors remains a research need.

ROV survey requests:

- *A high priority issue is to justify the use of super years by examining differences among the constituent years before pooling those data. This is challenging because the same places were not sampled in the same years but could focus on places where there was spatiotemporal overlap in the survey.*
- *Even the absolute indices of abundance should be treated as relative indices for reasons such as (1) site selection is non-random because MPAs are not located randomly; (2) there are differences in the depth of reefs surveyed and the depth of reefs expanded to and depth-based stratification requires use of proxy data from other strata given limited sample size.*
- *Look at whether the DHARMa residuals were conditional or unconditional on the random effects and understand how to do this properly with random effects.*
- *Plot the predictions and residuals spatially and figure out where the high predictions are and where the residuals are positive or negative.*
- *Consider a hierarchical bootstrap where transects are nested within sites. The current bootstrap procedure might be positively biased if the estimate of variance does not account for clustering.*

Any ROV indices or results not provided to the California quillback rockfish STAT prior to the data deadline should not be presented at the STAR panel.

With respect to not explicitly providing accepted practices guidelines specific to the ROV survey data, the SSC discussed that any advice would be premature given the many remaining uncertainties, and would be better subsequent to additional review of the requests made by the GFSC in the December 2024 meeting and the SSC in this March 2025 meeting. The SSC also noted that many less widely used and unique datasets, such as the CalCOFI larval abundance data used as indices of spawning output for cowcod and bocaccio, do not have explicit guidelines developed regarding how the data are developed or used.

The Accepted Practices Guidelines should be more explicit in defining the data stewards' responsibility to provide catch or landings data to the STAT (Paragraph 2 under Landings Data).

This could also be made more clear in the TOR. As it reads now, if the STAT asks if the landings data is correct and the data steward indicates that they are incorrect or problematic but does not provide an alternative that they deem correct, or as best estimates, then there is no clear way forward.

The Acceptable Practices Document should be modified to state that non-randomly collected age data should be stratified by length (page 7/Growth section).

Very minor edits to be made to Accepted Practices document:

- *Pg 1, Last para, last line, "increase ANALYSTS demand"*
- *Pg 2, 2nd para, line 7, "closures WILL results"*
- *Pg 2, 4th para, line 11, "examples include" (no need for "helpful")*
- *Pg 2, Last para, line 5, "assessments, it does"*
- *Pg 4, 2nd para, line 1, Delete the "floating p"*
- *Pg 9, last bullet point, "Conduct research" - delete the "Recommendation to"*

J. Administrative Matters
3. Membership Appointments and Council Operating Procedures
   a. Membership Appointments (SSC Closed Session)

Dr. Galen Johnson will serve as the SSC Vice-chair to complete this term, filling the role vacated by Dr. Andrew (Ole) Shelton.

C. Administrative Matters
6. Future Council Meeting Agenda and Workload Planning

The Scientific and Statistical Committee (SSC) discussed workload planning and has the following updates to its November 2024 statement under this agenda item.

The groundfish Pre-Assessment Data Workshop 3 (virtual) for rougheye/blackspotted rockfish and sablefish is scheduled for March 18, 2025.

The SSC anticipates conducting its April 2025 meeting remotely and anticipates meetings on Wednesday, April 9th and Thursday, April 10th.

Stock Assessment Review (STAR) Panel 1 will cover the yellowtail rockfish North 40°10'N. Lat. benchmark assessment on May 19-23, 2025 in Seattle, WA. The schedule will be for a full day on Monday and half days thereafter. The STAR Panel will be John Budrick (chair), one Center for Independent Experts (CIE) reviewer, Tommy Moore (SSC), and one additional reviewer with knowledge of West Coast groundfish stock assessments has been requested. Representatives from

the Groundfish Management Team (GMT) and Groundfish Advisory Subpanel (GAP) are requested.

The SSC Groundfish Subcommittee should meet in-person in Rohnert Park, CA to review update stock assessments for widow rockfish and yelloweye rockfish on June 11, 2025, the day prior to the full SSC at the June 2025 Council meeting. Representatives from the GMT and GAP are requested.

The SSC notes that Salmon Council Operating Procedure (COP) 15 edits are shaded on the June 2025 Year-at-a-Glance (J.4 Attachment 1) and could be completed should the Council request.

STAR Panel 2 will cover benchmark assessments for chilipepper rockfish and California quillback rockfish on June 23-27, 2025 in Santa Cruz, CA. The STAR Panel will be Cheryl Barnes (chair), two CIE reviewers, and one additional reviewer with knowledge of West Coast groundfish assessments has been requested. Representatives from the GMT and GAP are requested.

STAR Panel 3 will cover rougheye/blackspotted rockfish and sablefish on July 14-18, 2025 in Seattle, WA. The STAR Panel will be John Field (chair), two CIE reviewers, and Chris Free (SSC). Representatives from the GMT and GAP are requested.

The SSC Economics Subcommittee proposes conducting a review of the Trawl Catch Share Program Review in advance of the September 2025 Council meeting so that final action can address findings of the SSC Economics Subcommittee and the SSC. This review could occur in the summer of 2025.

The SSC Groundfish Subcommittee should meet to review stock assessments, catch-only projections, rebuilding analyses [if needed], and to prepare harvest specifications before the September 2025 Council meeting. The SSC suggests a 1.5 or 2 day virtual meeting on August 12-13, 2025.

If further review and discussion of groundfish stock assessments not recommended by STAR Panels and rebuilding analyses (if needed) is warranted, the SSC Groundfish Subcommittee meeting (commonly referred to as “mop-up”) is anticipated during the week of Sept 29-Oct 3, 2025. Depending upon the degree of complexity of any review materials, this meeting could potentially have a hybrid (in-person and online) format.

The SSC proposes the SSC Salmon Subcommittee hold a Salmon Methodology Review with participation from the Salmon Technical Team (STT), and any other appropriate advisory bodies or subcommittees in the first week of October 2025, pending proposal and selection of final topics and completion of materials, at a time and place to be determined.

The SSC Ecosystem Subcommittee anticipates conducting its annual review of Ecosystem Status Report Science Topics in Fall 2025 (virtual), pending proposals by the California Current Integrated Ecosystem Assessment team in March 2025 (Agenda Item F.1).

The SSC proposes the Coastal Pelagic Species (CPS) Subcommittee conduct a review of the new SWFSC/NWFSC integrated survey in early 2026 to identify any issues or additional analyses to be conducted prior to use of the results from the survey in CPS stock assessments.

Given the considerable workload for the STT and the short window for review of the Pre-Season Report I by the SSC in March, scheduling additional review of this document for accuracy as well as potential trimming or consolidation of material could be completed outside of the March Council meeting. For example, the SSC (or SSC Salmon Subcommittee) could give a comprehensive review of Pre-Season Report I sometime between April and November, and both the SSC (or SSC Salmon Subcommittee) and STT might jointly or separately review what material could be removed to ease the workload while still delivering necessary information.

Proposed Workshops and SSC Subcommittee Meetings for 2025 and Beyond *Italic items are noted as potential or preliminary* *Shaded rows indicate newly added items since the prior statement*							
	Workshop/Meeting	**Potential Dates**	**Sponsor/ Tentative Location**	**SSC Reps.**	**Additional Reviewers**	**AB Reps.**	**Council Staff**
1	Pre-Assessment Data Workshop 3: Rougheye/Blackspotted Rockfish Sablefish	March 18, 2025	Council/Virtual	Groundfish Subcommittee	NA	GMT GAP	Bellman
2	Groundfish STAR Panel 1: Yellowtail Rockfish North of 40°10'N.Lat.	May 19-23, 2025	Seattle, WA/ Hybrid	Budrick – Chair, Moore - Reviewer	CIE (TBD*)*	GMT GAP	Bellman
3	*Groundfish Subcommittee Review:* *Update Stock Assessments*	*June 11, 2025 (day prior to full SSC)*	*Council/ Rohnert Park, CA*	*Groundfish Subcommittee*	*NA*	*GMT* *GAP*	*Bellman*
4	Groundfish STAR Panel 2: Chilipepper Rockfish Quillback Rockfish - California	June 23-27, 2025	Santa Cruz, CA/ Hybrid	Barnes – Chair	CIE (TBD), *Invited Reviewer (TBD)*	GMT GAP	Bellman
5	Groundfish STAR Panel 3: Rougheye/Blackspotted Rockfish Sablefish	July 14-18, 2025	Seattle, WA/ Hybrid	Field – Chair, Free - Reviewer	CIE (TBD)	GMT GAP	Phillips/ Bellman
6	*Economic Subcommittee Meeting:* *Trawl Catch Share Program Review*	*Summer 2025*	*Virtual*	*Economics Subcommittee*	*NA*	*GMT* *GAP*	*Bellman*
7	*Groundfish Subcommittee Meeting:* *Stock Assessment/Rebuilding Review and Prepare Harvest Specifications*	*August 12-13, 2025*	*Council/Virtual*	*Groundfish Subcommittee*	*TBD*	*GMT* *GAP*	*Bellman*

Proposed Workshops and SSC Subcommittee Meetings for 2025 and Beyond *Italic items are noted as potential or preliminary* *Shaded rows indicate newly added items since the prior statement*							
Workshop/Meeting		**Potential Dates**	**Sponsor/ Tentative Location**	**SSC Reps.**	**Additional Reviewers**	**AB Reps.**	**Council Staff**
8	*Further Review of Groundfish Stock Assessments/Rebuilding Analyses*	*Sept 29-Oct 3, 2025 (After Sept CM)*	*Council/ Hybrid: Location TBD*	*Groundfish Subcommittee*	*TBD*	*GMT GAP*	*Bellman*
9	*Salmon Methodology Review*	*October 2025*	*Council/ Portland, OR*	*Salmon Subcommittee*	*TBD*	*STT*	*Bellman/ Forristall*
10	*Ecosystem Subcommittee Review: Ecosystem Status Report Science Topics*	*Fall 2025*	*Council/Virtual*	*Ecosystem Subcommittee*	*TBD*	*EWG EAS*	*Bellman*
11	*CPS Methodology Review: SWFSC/NWFSC Integrated Survey*	*Early 2026*	*TBD*	*CPS Subcommittee*	*TBD*	*CPSMT CPSAS*	*Bellman/ Bernaus*

SSC Notes

We had a discussion on how to note substantive contributions from non-subcommittee members during subcommittee meetings. The consensus was to acknowledge substantive contributions in narrative report text rather than generate a list of all attendees who were not subcommittee members.

From November 2024 statement:
"The SSC discussed the potential external review of PFMC stock assessment processes. The SSC suggests that any review of the assessment development and review process would be better informed if the reviewers had the opportunity to participate in most if not all of the key activities within this process, particularly with respect to the STAR Panel reviews, which the SSC regards as a fundamental strength of the PFMC assessment review process. The SSC recommends that if this review moves forward, it does so with a measured pace, and includes scope for the review body to participate in data workshops and STAR Panels, with any report or recommendations to be delivered after conclusion of the review panels and adoption of the 2025 assessments."

SSC Administrative Matters

10. Research and Data Needs – Development of Preliminary Recommendations

The SSC conducted an exercise to develop their preliminary recommendations for research and data needs, scheduled for the April 2025 Council meeting. SSC Subcommittee chairs generated starting documentation of proposed preliminary recommendations, which where applicable, reflected outcomes of outreach with various Council Advisory Bodies, review of prior and updated research and data need proposals (2018; database), FMP language, and materials from the November 2024 Council meeting Agenda Item D.3. Preliminary research and data needs were complied into a single document and structured under each Challenge category from November 2024. The draft documentation will be finalized and submitted for the April 2025 Advanced Briefing Book, for consideration by the Council.

SSC Subcommittee Assignments

Salmon	Groundfish	Coastal Pelagic Species	Highly Migratory Species	Economics	Ecosystem-Based Management
Galen Johnson	**John Field** (Chair)	**André Punt**	**Michael Hinton**	**Dan Holland**	**Tommy Moore**
John Budrick	**Cheryl Barnes** (Vice-Chair)	John Budrick	Cheryl Barnes	Chris Free	Cheryl Barnes
Owen Hamel	John Budrick	John Field	John Field	Michael Hinton	John Field
Tommy Moore	Chris Free	Owen Hamel	Dan Holland	André Punt	Chris Free
Will Satterthwaite	Owen Hamel	Michael Hinton	André Punt	Matthew Reimer	Dan Holland
Jason Schaffler	Tommy Moore	Will Satterthwaite	Matthew Reimer		Galen Johnson
Tien-Shui Tsou	André Punt	Tien-Shui Tsou			André Punt
	Jason Schaffler				Matthew Reimer
	Tien-Shui Tsou				Will Satterthwaite

Bold denotes Subcommittee Chairperson

ADJOURN

PFMC
04/13/25