SUMMARY MINUTES

Scientific and Statistical Committee

Pacific Fishery Management Council
Sacramento
DoubleTree by Hilton Sacramento
2001 Point West Way
Sacramento, CA 95815
Telephone: 916-924-4900
March 3-5, 2026

Members in Attendance

Dr. Cheryl Barnes, Oregon State University and Oregon Department of Fish and Wildlife, Newport, OR
Dr. Aaron Berger, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
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. André Punt, University of Washington, Seattle, WA
Dr. Matthew Reimer, University of California Davis, Davis, CA
Dr. Alberto Rovellini, University of Washington, Seattle, WA
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
Dr. Cisco Werner, Silver Spring, MD

Members Absent

None

SSC Recusals for the March 2026 Meeting		
SSC Member	**Issue**	**Reason**
Dr. Owen Hamel	D.6 Adopt Stock Assessments	Internal reviewer on assessment and author supervisor

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 2026 SSC agenda was approved after discussion of the Groundfish Stock Assessment Review Report was cancelled. Several minor edits in italic notes were made prior to November 2025 SSC minutes being adopted as final. The March 2026 briefing book version of the November 2025 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 modifications as follows:

- Dr. Theresa Tsou will transition off of serving on the Salmon Subcommittee.
- Dr. Cisco Werner will be part of the Ecosystem Subcommittee.

Open discussion included comments about the importance of publicly available information and announcements of any revisions to materials already posted to the briefing book as well as questions and concerns regarding information being provided to the public with enough time to review and attend to provide public comment if desired. There was also a broader discussion on how stocks could be managed with a different framing of the Magnuson-Stevens Act (MSA) that may be less conventional yet effective and in line with regulatory guidance and legislative requirements. Finally, there was a brief discussion and acknowledgement of the use of emerging technologies in synthesis and process evaluations to inform decision making processes and the need for ongoing conversations around expectations.

Per suggestion in March 2024, a public comment period continued to be conducted at the start of each day's meeting or strategically placed in the Agenda to allow for relevant public comments to be made and considered prior to the SSC taking up an Agenda Item.

I. Administrative Matters

2. Membership Appointments (SSC Closed Session)

C. Salmon Management

2. Review of 2025 Fisheries and Summary of 2026 Stock Forecasts

The Scientific and Statistical Committee (SSC) discussed the Review of 2025 Ocean Salmon Fisheries (C.2 Supplemental Attachment 2) and Preseason Report I (Pre-I) for 2026 (Supplemental Attachment 3). The SSC was provided with draft excerpts from Pre-I covering Sacramento River fall Chinook (SRFC), Klamath River fall Chinook (KRFC), and Willapa Bay natural Coho forecasts four days before the SSC meeting. There were unanticipated challenges modelling SRFC and KRFC, so a full draft of the report was not provided until the first day of the SSC meeting, and the SSC statement is based on that version of the document. The SSC was already in session when it received Pre-I, preventing meaningful review and discussion.

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. Pre-I provides the ACLs for these stocks (Table V-5). The SSC's review is based on the preliminary version posted on the first day of the SSC meeting. The SSC understands that the forecasts were made using the previously endorsed methods and found the calculations of the acceptable biological catches (ABCs) and corresponding ACLs based on the preliminary forecasts for all three stocks to be arithmetically correct. After the review, a revised forecast was made and communicated to the SSC, though the reason for the change was not conveyed. Given the short review period, fluctuations in the forecast, and unknown reasons for these changes, the SSC does not have the information necessary to endorse the specific values of the ABCs.

The Salmon Technical Team joined the SSC to discuss SAFE and Pre-I. The SSC appreciates the work of the STT in compiling the reports and participating in a joint discussion. Jon Carey, STT vice-chair, summarized changes to the posted SAFE and Pre-I documents. The STT found some minor errors in the initially posted Review of 2025 Ocean Salmon Fisheries that were corrected and the tables and text were updated. KRFC now meets criteria to be classified as not overfished-rebuilding. No stocks were found to be overfished or experiencing overfishing currently, though the SSC notes that the most recent exploitation rate estimates are from 2023 for some stocks. There was discussion of the exploitation rates reported in Table V-4, which are calculated differently for stocks using the Pacific Salmon Commission Chinook Technical Committee method versus the models used for California stocks, and this difference should be documented in the reports. In addition, many reference points are based on highly dated analyses.

The SSC strongly recommends that detailed methodologies producing salmon forecasts be made available and that forecasts include standardized measures of uncertainty. 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 and will be discussed under the Risk Management agenda item in September. The SSC recommends exploring this and/or other frameworks for systematically using the forecast performance information in Pre-I to identify forecasts that are especially uncertain and that the STT or agencies may want to focus on for possible improvement.

The SSC briefly discussed an informational correction of the record concerning S_{MSY} values for Oregon Coastal Chinook stocks that were presented for context but were not used in the derivation of the F_{msy} proxy for Sacramento River Fall Chinook (November 2024 Agenda Item F2, Attachment 2). Values associated with capacity of Oregon Coastal stocks contained a mathematical error that does not affect the F_{MSY} values. The F_{MSY} values presented for those stocks were correct and those stocks were not used to derive the proxy value.

SSC Notes

- *Based on the November 2024 Salmon Methodology Review, the Council adopted a new F_{MSY} proxy value for Sacramento River Fall Chinook (SRFC) based on the median of estimates for Klamath River Fall Chinook and Rogue River Fall Chinook, as presented in November 2024 Agenda Item F2, Attachment 2. For additional context, that report also presented F_{MSY}, S_{MSY}, and S_{MP} (the escapement maximizing production) estimates for an additional 18 stocks, including 16 Oregon Coastal Stocks. None of those other 18 stocks were included in the calculation of the F_{MSY} proxy for SRFC, and all of the F_{MSY} values for those stocks were reported correctly given the reported values of alpha ("productivity") in their respective source documents. However, the SSC is now aware that there was a coding error (specifically, inadvertent use of log base 10 rather than the natural logarithm) in the implementation of the formula used to calculate beta from S_{UEQ} (spawning escapement at unfished equilibrium) as reported in the source document for the Oregon Coastal stocks, and this affects calculations of S_{MP} and S_{MSY} for those stocks. Corrected values of beta, S_{MP}, and S_{MSY} for those stocks are provided below for the record, noting that they reflect use of the rounded values of alpha ("productivity") and the point estimates of S_{UEQ} ("capacity") provided in the source document. Metrics of the central tendency of posterior distributions from full Bayesian analyses applied to the raw data would be expected to differ slightly from these point estimates.*

Stock	*alpha*	*beta*	S_{MSY}	S_{MP}	F_{MSY}
Nehalem	*6.5*	*0.000099*	*6,967*	*10,060*	*0.69*
Tillamook	*5.2*	*0.000112*	*5,683*	*8,929*	*0.64*
Nestucca	*4.4*	*0.000077*	*7,623*	*12,920*	*0.59*
Salmon	*3.9*	*0.000444*	*1,247*	*2,252*	*0.55*
Siletz	*8.5*	*0.000254*	*2,956*	*3,937*	*0.75*
Yaquina	*12.8*	*0.000339*	*2,425*	*2,950*	*0.82*
Alsea	*9.1*	*0.000189*	*4,043*	*5,291*	*0.76*
Siuslaw	*7.2*	*0.000081*	*8,881*	*12,407*	*0.72*

South Umpqua	*7.7*	*0.000277*	*2,637*	*3,610*	*0.73*
Coos	*6.4*	*0.000171*	*4,028*	*5,848*	*0.69*
Coquille	*6.0*	*0.000107*	*6,292*	*9,346*	*0.67*
Floras	*8.2*	*0.00139*	*535*	*719*	*0.74*
Sixes	*4.8*	*0.000415*	*1,481*	*2,410*	*0.61*
Elk	*2.0*	*0.000238*	*1,323*	*4,202*	*0.31*
North Umpqua Spring	*5.0*	*0.000193*	*3,243*	*5,181*	*0.63*
South Umpqua Spring	*5.7*	*0.00364*	*181*	*275*	*0.66*

- *Calendar year exploitation rates that reflect adult-equivalent impacts summed over the life cycle when calculations are done by the Pacific Salmon Commission, but exploitation rates are calculated differently for Sacramento River Fall Chinook and Klamath River Fall Chinook, which use models that consider only impacts from the most recent year of fishing on escapement in the current year.*
- *Table V-4 exploitation rates for Chinook Technical Committee stocks are calendar year exploitation rates (ERs), which capture effects of current year fisheries on escapement in this year and, in absence of future fisheries, in potential future escapements. These are different from brood year exploitation rates that look at how total escapement (across years) from a specific brood year is reduced by the cumulative effect of fishing across years. Although long-term averages of these metrics will be similar, the report needs to be clear on the difference and on the meaning of the ERs presented. In addition, both methods differ from what is done for SRFC and KRFC, which only considers the impact of current-year fishing on current year escapement. Metrics derived from stock recruit analyses only make sense in a lifecycle context (Brood Year ER or Calendar Year ER).*
- *There is concern about reference point staleness. Many were derived years ago under different conditions. These need to be validated with recent data.*
- *Comparison of pre-season forecast to post-season estimates is useful but changes in methodology need to be noted for proper interpretation.*
- *Automation was helpful for producing the CC ESR on a shorter timeline. This would be helpful with SAFE and Pre-I reports. The STT is exploring how to implement automation but needs to work through context-dependent details.*

E. Ecosystem Management

1. California Current Ecosystem Annual Status Report and 2026 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), Mary Hunsicker (Northwest Fisheries Science Center), and Amanda Phillips (Northwest Fisheries Science Center). The SSC's discussion covered: 1) the 2025-2026 California Current Ecosystem Status Report (ESR; Agenda Item E.1.a CCIEA Report 1), and 2) the proposed topics for SSC review during 2026 (Agenda Item E.1.a Supplemental CCIEA Report 2).

Review of the 2025-2026 CCIEA Ecosystem Status Report

The ESR includes important information on environmental, biological, social, and economic indicators to provide an ecosystem and socioeconomic perspective on U.S. West Coast species, fisheries, and coastal communities. The SSC commends the CCIEA team's report and found the summaries in the infographics (Box 1.1 and Appendix B) particularly relevant to informing the Council community on recent information. The SSC raised no major issues with the report or presentation and made a small number of suggestions to improve clarity of findings, which were provided to the CCIEA team.

The SSC discussed how information contained in the ESR can be used in the Council process. The ESR provides a broader ecosystem context for considering uncertainty associated with estimates from stock assessments and other analyses that support Council decisions. The SSC recognizes the value of ecosystem information within ESRs, which informed the risk tables for the 2025 groundfish stock assessments, and supports continued development of the risk tables as one additional mechanism for using ESR information. Through the risk tables, ESRs may inform changes to sigma and/or P^*. Short-term forecasts contained in ESRs could also be used to inform other tactical management decisions, such as ramp-downs and in-season adjustments. ESRs could also inform long-term strategic decisions of the Council.

Review of Potential topics for SSC / CCIEA meeting in Fall 2026

The CCIEA proposed three potential topics for review by the SSC Ecosystem Subcommittee in Fall 2026: 1) changes to fishery diversification indices and potential implications for other human wellbeing indicators, 2) recent changes in Pacific Decadal Oscillation (PDO) expression and PDO-ecosystem relationships relevant to the Council process, and 3) consideration of additional indicators to support groundfish management. The SSC expressed support for all three topics and the CCIEA indicated material for all topics would be ready for review.

SSC Notes

- *Figure 3.2. It would be useful to show the CVs for krill abundance in future iterations of the ESR.*
- *Section E.3.1. The wording refers to density, but it would help to clarify that these projections are not intended to reflect changes in density estimates but rather in species distributions (which the center of gravity summarizes nicely in most cases).*
- *Document length may deter the public from consulting the ESR. The visual summaries were appreciated. Another proposed solution was to have two versions of the ESR document:*

one with only the main text and figures, and a complete version with appendices and supplemental figures.

- *Short-term forecasts from physical models produced later in the year (e.g., April) are more reliable than those produced in January because they assimilate more data; as such, interim updates to the forecasts throughout the year may be useful in informing in-season adjustments. Providing this information to the Council at a later meeting (e.g., June or September) could be useful.*

- *Automation of producing the report's text and figures facilitated operating on a truncated timeline due to delays in receiving some of the data after the Federal government lapse in appropriations. This also allows CCIEA analysts to produce and update forecasts as data become available.*

- *The SSC discussed whether the ESR could be used to incorporate information from sources of traditional and local ecological knowledge, such as reports of catches of species not commonly encountered that occur outside the season in which surveys occur.*

- *STAR Panel participants and the SSC found development of risk tables useful for evaluating uncertainty in category 1 stock assessments. Continuing to develop risk tables for Category 2 and 3 stocks will further refine risk table application.*

- *Changes to NOAA staffing and funding over the past year have resulted in some content being cut from the ESR compared to previous years.*

- *Elucidating changes to the PDO index is of high importance as that index is used in the salmon stoplight tables and in some forecast models.*

- *Changes in the expression of the PDO index are being evaluated in other regions / jurisdictions in the Pacific Ocean, including by the NPFMC and PICES. Exchanging information with participants involved in this work may benefit the review of Topic 2.*

- *Where possible, comparing indices produced as part of the Topic 3 work with stock assessment output would be beneficial (e.g., young-of-year indices vs recruitment estimates). This could be done focusing on the species that will be prioritized for the next assessment cycle.*

D. Groundfish Management

4. Widow Rockfish Alternative Harvest Control Rule: Problem Statement, Range of Alternatives

The Scientific and Statistical Committee (SSC) reviewed the provided and proposed model projections for alternative harvest control rules for widow rockfish and associated documents (Agenda Items D.4 Attachment 1, D.4 Attachment 2, D.4 Attachment 3, D.4.a NMFS Report 1, D.4.a WDFW Report 1). Jessi Waller (Council staff) was available to provide context and answer questions.

The SSC notes that the proposed alternative control rules produce overfishing limits (OFLs) and/or acceptable biological catches (ABCs) larger than those recommended by the default control rule and will be subject to review by NOAA Fisheries for consistency with National Standard 1. The SSC emphasizes that its discussion and resulting requests are specific to widow rockfish in the 2027-28 management cycle and do not reflect general recommendations regarding increasing flexibility in harvest specifications (Agenda Item F.5.a Supplemental SSC Report 1, November 2025). In particular, the SSC's discussion and recommendations would differ for a stock estimated to be below the proxy B_{MSY} reference point. More broadly, the SSC cautions that the frequent use of *ad hoc* harvest control rules would add workload and result in the use of harvest policies that have not been tested for their ability to meet management objectives through management strategy evaluation.

The SSC's discussion primarily focused on requests for modifying and expanding these projections to more thoroughly compare the alternative harvest control rules in terms of risk of overfishing or falling below the management target. The SSC recommends that, for any alternatives recommended by the Council, the Council request the NWFSC to make several additions and revisions to the model projections to better characterize the risk-catch tradeoffs among the alternative harvest control rules for widow rockfish. The recommended revisions are the following:

- To help with comparisons, the control rules should be revised to use a constant annual catch limit (ACL) from 2029 to 2036, where the value of the ACL is that which leads to the stock reaching a consistent target in 2036.
- For each projection, calculate the annual probabilities of biomass falling below the target and limit thresholds for rockfish. The latter provides a metric to quantify the risk of substantial economic impacts resulting from the alternative harvest policies, as stocks below the limit threshold require rebuilding plans.
- Conduct these projections using the base model and the low state of nature model. Projections for the high state of nature are unnecessary because it will be at less risk of overfishing than the base model for any given scenario.
- Once these projections are available in April, the SSC will determine a method for deriving the OFL, if separate OFLs and ABCs are needed.

SSC notes

$B_{45\%}$ is an appropriate target for 2036 as it is close to the equilibrium level under a $F_{50\%}$ harvest policy. In addition, under Attachment 2, all alternatives end up in 2036 between $B_{44\%}$ and $B_{45.2\%}$, while the standard projection in the assessment arrives at $B_{46.1\%}$

The use of constant catch for 2029-2036 eases direct comparisons among the catch-and-risk tradeoffs of alternative control rules by simplifying the characterization of long-term opportunity when evaluating alternatives that take different short-term paths to achieve the same status.

Standard calculation of ABCs should include time-varying sigma even for constant MSY-based OFLs, as uncertainty in stock status increases over time in all scenarios.

The ad hoc control rules have specified a specific catch amount and could be treated as both an OFL and an ABC. If legal advice indicates separate OFL and ABCs are required, where the ABC is calculated using P and sigma, with some maximum allowable P*, then it seems appropriate to treat the pre-specified catches as OFLs, determine a sigma that is compatible with the theoretical basis in that OFL (e.g., what is uncertainty in equilibrium MSY), and then let the Council establish ABCs based on legally acceptable P*.*

It could be instructive to calculate an effective P by looking at the ABC from the alternative HCR and calculating a P* that would yield that ABC given the OFL and sigma coming out of our default approach (so probably P*>0.5 for some alternatives).*

The global scientific standard for evaluating the expected performance of alternative harvest control rules relative to benchmark management quantities, as requested for widow rockfish, is the use of closed-loop simulation analyses such as management strategy evaluations. Such analyses are typically extensive and would not fit into the requested turnaround.

D. Groundfish Management

6. Initial Harvest Specifications for 2027-28

The Scientific and Statistical Committee (SSC) reviewed the projections for the 2027-28 groundfish harvest specifications under the alternative harvest control rules (D.6 Attachment 1, Table 4, D.6 Attachment 2, Table 1, D.6 Attachment 3, Table 1, D.6 Attachment 4, Table 1, D.6 Attachment 5, Table 1) that were not completed in time for the November 2025 meeting due to the Federal furlough. The SSC found all calculations to be correct and endorses the resulting OFLs and ABCs for use in management. For yellowtail rockfish, the small difference between the ABC and OFL represents a greater than usual risk of biological overfishing if the full ABC were to be caught. However, attainment is expected to be low so the risk of actual catch resulting in overfishing is likely to be low.

Notes:

The buffers for 2027 and 2028 in attachment 3 reflect the difference between the OFLs and the alternative ABCs and not the conventional sigma and P-based buffer.*

D. Groundfish Management

8. Initial Stock Assessment Plan for 2027 and 2029

The Scientific and Statistical Committee (SSC) discussed initial planning and prioritization for groundfish stock assessments to be completed during 2027 and 2029. Chantel Wetzel and Kristin Marshall (Northwest Fisheries Science Center) summarized the stock assessment prioritization process and National Marine Fisheries Service (NMFS) preliminary recommendations for 2027 stock assessments, and addressed questions about NMFS recommendations, data availability, and the prioritization tool.

Although the NMFS prioritization tool provides a useful set of rankings to support prioritization, it is not prescriptive and other considerations that can impact the priority, timing, and feasibility of assessments. Agenda Item D.8.a NMFS Report 1 provides the preliminary list of the assessments recommended by NMFS, in order of priority. The list includes nine benchmark (seven species, two with up to two area-assessments) and two update assessments (two species, one with four area-assessments). NMFS anticipates ageing and assessment capacity will be sufficient for four to six benchmark assessments and zero to two update assessments, so not all of the recommended benchmark assessments can be undertaken during 2027. NMFS also has the capacity to undertake catch-only projections, but recommends projections only be requested when the attainment of Annual Catch Limits (ACLs) has been high and a fishery or sector is constrained.

The SSC generally concurs with the NMFS recommendations. Table 1 (below) provides SSC recommendations for the type and timing of the assessments recommended in the NMFS Report 1 as well as the initial ranking and number of areas to be assessed for each species. The SSC notes that no more than two species with considerable ageing workload (i.e., in terms of difficulty and/or number of unread age structures) should be assessed during this cycle given the overall anticipated ageing workload.

In addition, the SSC made the following observations that may affect the prioritization and timing of the recommended assessments:

1. Lingcod was prioritized by the Council for assessment during 2024. The SSC supports this as a high priority for assessment during 2027. Lingcod will require two benchmark assessments, north and south of 40° 10` N, and substantial ageing work. The relative difficulty involved in ageing lingcod could strain ageing capacity if benchmark assessments are undertaken for both redbanded rockfish and Pacific spiny dogfish during 2027.
2. Redbanded rockfish was prioritized by the Council for assessment during 2024, and the SSC supports this as a high priority for assessment during 2027. NWFSC and Washington Department of Fish and Wildlife (WDFW) ageing labs staff have trained on redbanded rockfish in anticipation of an upcoming assessment and expect sufficient capacity to support an assessment during 2027. WDFW has thousands of unaged otoliths for redbanded rockfish collected from fisheries.
3. Greenspotted rockfish was last assessed during 2011 and has a target assessment frequency of 8 years. The 2011 assessment included two modeled areas. It is unclear whether this would be necessary in a new benchmark, which could be done as a single model. The SSC

supports greenspotted rockfish as a high priority for assessment during 2027. Substantial ageing work would be needed for an age-based assessment, but an assessment fit primarily to length compositions may be appropriate.

4. Yellowtail rockfish (South) is on the list of recommended assessments because yellowtail rockfish south of 40° 10` N was not assessed at the same time as yellowtail rockfish north of 40° 10`N in 2025. The SSC has previously recommended that species with multiple area-based assessments be undertaken at the same time. For yellowtail rockfish, there is clear genetic evidence of two stocks, which may reduce the importance of concurrent assessments. If a southern assessment is to be undertaken alone, having only one cycle between the two assessments would be preferred.

5. Pacific spiny dogfish was prioritized by the Council for assessment during 2024. WDFW has been investigating alternative ageing methods for this species, but that work has not been completed and cannot contribute to an assessment during 2027. In addition, a planned workshop on ageing spiny dogfish has not happened, nor has work on evaluating harvest control rules for elasmobranchs. Ongoing work related to dogfish movement (OSU; Oregon State University) may be available for a 2027 or 2029 assessment.

6. Widow rockfish has been prioritized by the Council for a 2027 benchmark assessment. The 2025 update assessment has been subject to considerable additional work and review since August 2025, amounting to products that are similar to a benchmark assessment. A new assessment is unlikely to substantially improve our understanding of stock status with only routine updates to existing data. New data sources could include fishery-dependent catch per unit effort (CPUE) indices and an index based on eDNA (environmental DNA) data from the Pacific hake acoustic-trawl survey, but these are not yet fully developed and would require methodology reviews. A methodology review for the fishery-dependent CPUE indices is planned, though not yet scheduled, and the use of the proposed methodology may not be approved for use in assessments. An eDNA index is under development but it is unlikely to undergo methodology review in time for an assessment during 2027. Even if these new indices are available for an assessment, it is unclear if they will change the perspective on the stock. Although widow rockfish displays aspects of spatial stock structure that could be important for quantifying regional differences in stock status, the research and development requirements to explore the feasibility of a spatial stock assessment is unlikely to be complete by 2027. The SSC recommends delaying a new assessment for widow rockfish until 2029.

7. Bocaccio are difficult to age, particularly for those sampled along the Southern California Bight, where most of the biomass is concentrated. The 2015 assessment was the first to include age data, which enabled estimation of natural mortality and improved growth estimates. A lack of newly completed age reads should not substantially impact the ability to conduct an assessment.

8. Petrale sole was recommended by NMFS as a candidate for an update assessment. It was last assessed during 2023, and the SSC recommended the next assessment be an update. This is a high priority due to its commercial importance and relatively high attainment.

9. Vermilion/sunset rockfish was recommended by NMFS as a candidate for an update assessment. This stock was last assessed during 2021, and the SSC and STAR Panel recommended that the next area-based assessments be benchmarks. In addition, developing models for four areas would represent more work than a typical update, which may create a capacity concern for 2027.

10. The SSC identified greenstriped rockfish and longspine thornyhead as potential alternatives for benchmark stock assessments in 2027.

Fourteen species have stock assessments that will be at least ten years old by 2027. Longer intervals between assessments increase uncertainty which is reflected in the application of time-varying sigma in the calculation of ABC buffers. They also contribute to the possibility of changes in stock status, given the large amounts of additional data, substantial changes in fishery dynamics, and recent advancements in assessment methodologies. NMFS is investigating simpler assessment methods, in particular for species with lower OFL attainment, and intends to provide a long-term plan for stock assessment prioritization that may address some of these issues.

Table 1: The SSC's recommended stock assessment priorities with additional information regarding the recommended type and timing of assessment and likely number of models/stocks. Asterisks denote species that are expected to increase ageing workload. The "NOAA Rank" column reports the ranking from the online prioritization tool.

Species	NOAA Rank	Last Assessed	Next Assessment	Recommended assessment type	Likely number of models
2027 recommendations					
Bocaccio*	2	2017	2027	Benchmark	1
Greenspotted rockfish*	3	2011	2027	Benchmark	1-2
Lingcod*	5	2021	2027	Benchmark	2
Redbanded rockfish*	8	NA	2027	Benchmark	1
Yellowtail rockfish South	20	NA	2027	Benchmark	1
Petrale sole	1	2023	2027	Update	1
2027 alternatives					
Greenstriped rockfish	10	2009	2027	Benchmark	1
Longspine thornyhead	11	2013	2027	Benchmark	1
2029 recommendations					
Widow rockfish	12	2025	2029	Benchmark	1
Pacific spiny dogfish*	44	2021	2029	Benchmark	1
Vermilion/Sunset rockfish	6	2021	TBD	Benchmark	4

SSC Notes

Data deadlines could range from February 22nd to May 3rd depending upon the selected STAR panel weeks. Having at least three weeks between STAR panels is desirable. Based on deadlines, Council meetings, and Federal holidays during 2027, a summary of scheduling widow rockfish for potential STAR panels are provided below:

- *May: There are two weeks in May 2027 that a STAR panel could be held (May 17 - 21 and 24 - 28) corresponding to data deadlines ranging from February 22nd - March 1st.*
- *June: There are two weeks in June 2027 that a STAR panel could be held (June 7 - 11 and June 28 - July 2) corresponding to data deadlines of March 15th and April 5th. However, the two potential weeks fall either the week before or the week after the Council meeting, which would create workload challenges for Council staff and participating advisory body members.*
- *July: There are three weeks in July 2027 that a STAR panel could be held (July 12 - 16, 19 -23, and 26 - 30) corresponding to data deadlines ranging from April 19th - May 3rd.*

One of the links to the prioritization tool that was provided by NMFS requires a CAC card.

A coordination meeting with state agencies among ageing labs for ageing efforts is needed to support planning and prioritization.

WDFW has many redbanded rockfish ages in addition to NMFS aged otoliths.

WDFW will not have new ageing information for spiny dogfish as it is still working on its development of new ageing methods.

Although a fishery-dependent CPUE index for widow rockfish could be useful, the SSC finds more value in fishery-independent indices that adequately sample the species of interest.

Methods for generating eDNA-based abundance indices for widow rockfish and other US West Coast species are currently being developed, and will be proposed for methodology review in the future but likely not in time for inclusion in the 2027 assessment cycle.

Bocaccio - The age reader who developed the age determination criteria and provided ages to the 2015 assessment has retired.

During 2024 assessment prioritization, it was noted that commercial age data for yellowtail rockfish in the southern area collected after 2004 would be necessary information to help assess current population age structure and annual recruitment during recent years. There are some additional data available now, but waiting two more years would allow for a more focused effort to inventory age data, so it may be preferable to delay this assessment to 2029, and conduct it concurrently with an assessment for the northern area.

Considering the problems experienced with changing the treatment of discard data in the widow rockfish assessment, the possibility of similar issues with petrale sole should be considered before recommending an update that would not be able to address problems with data streams. However, it is less likely there will be issues with fitting discard data for petrale sole because discards are low and the last assessment was conducted relatively recently.

From the list of stocks with assessments more than 10 years old, the SSC recommends particular consideration be given to the need for new assessments for greenstriped rockfish (which was ranked #10 by the prioritization tool), longspine thornyhead (ranked #11), splitnose rockfish (#24),

aurora rockfish (#29), darkblotched rockfish (#30), blackgill rockfish (#38), and yelloweye rockfish (#48).

D. Groundfish Management

9. 2027-28 Stock Assessment Terms of Reference – Scoping

The Scientific and Statistical Committee (SSC) discussed scoping for the development of revisions to the three Terms of Reference (TOR) that guide the stock assessment process (Agenda Item D.9): the groundfish stock assessment review process, groundfish rebuilding analysis, and the methodology review process for groundfish and coastal pelagic species. The SSC focused scoping on the stock assessment review process at this meeting because considerable changes to the other TORs were not anticipated.

John Field presented the SSC Groundfish Subcommittee (GFSC) Process Review report (see SSC materials in the March 2026 Briefing Book) from the 2025-26 stock assessment cycle. A revised groundfish stock assessment review process TOR should reduce process rigidity while maintaining its structure and function. The SSC recommends that the following major components be addressed as part of a revision to this TOR that will be reviewed by the Council in June 2026.

11. **Reconsider the organizational structure and streamline TORs and other documentation related to the stock assessment review process.** This includes integrating stock assessment reporting standards being developed by NOAA, which are aimed as streamlining and standardizing stock assessment reports (see Draft Guidelines). The Pacific Fishery Management Council may need to diverge from (or influence changes to) standardized NOAA reporting guidelines. The current TOR could be reorganized by removing unnecessary introductory text and highly specific items that are not broadly applicable. Streamlining would also involve identifying the most appropriate document for describing the various roles and responsibilities of all parties involved in the stock assessment review process, which could continue to be part of the TOR or integrated into Council Operating Procedures (COP).

12. **Describe the intended purpose of executive summaries, risk tables, and other sections of stock assessment reports to guide content and access.** Identify which information is needed for external review versus management advice and when/where that information should be provided.

13. **Outline timelines required for sufficient coordination (e.g., data sharing), review, and adoption of stock assessments.** This would involve an overview that describes the timing, frequency, and function of preassessment workshops, technical review, and public engagement. Timelines should prevent or minimize temporal overlap between assessment reviews. Considerations regarding timelines should involve whether each level of review (e.g., STAR Panel, GFSC, and SSC) is necessary to provide robust scientific advice for Council decisions. Better adherence to data deadlines is needed and could be supported by identifying a role (e.g., STAR Panel chair or supervisor of the STAT) for decisions about whether data submitted after the established deadline can be accommodated.

14. **Identify a potential process and criteria for "off-ramps" (i.e., deferring an update or a benchmark assessment) and/or "on-ramps" (i.e., upgrading an update assessment to a benchmark).** This is an important consideration for future assessment cycles. The absence of a formal process has resulted in some assessments having been "off-ramped" by not being advanced within a STAR Panel or informally "on-ramped" leading to multiple supplemental reviews. Including preassessment data workshops for update assessments might provide one such opportunity to postpone or upgrade an update to a benchmark assessment. The TOR should identify who can approve such changes (e.g., Executive Director in consultation with Science Center Directors). There are potential risks if an assessment estimates a major change in stock status or productivity, but is subsequently off-ramped.

15. **Describe the avenues and expectations for effective stakeholder engagement in stock assessment prioritization, preassessment workshops, technical stock assessment reviews, and Council decision-making processes.** This would involve identifying the specific opportunities for stakeholder engagement and the type of engagement that would be most appropriate and/or beneficial at each step in the process. It will involve effectively communicating these engagement opportunities and strategies to stakeholders. Additional communication improvements should be identified (e.g., Q&A documents), as well as the resources to effectively implement such improvements.

16. **Consider merging the TORs for groundfish and coastal pelagic species (CPS), to the extent possible.** Examples include using more general terminology (e.g., 'SSC subcommittee' instead of 'GFSC') and moving groundfish- or CPS-specific details to appendices.

17. **Identify the infrastructure needed to effectively host all guidance documents, reports, and ancillary files (e.g., 'r4ss' outputs).** All documents should be co-located with hyperlinks or some other organizational structure that is maintained in perpetuity to maximize transparency.

SSC Notes

The SSC does not expect considerable changes to be proposed for the Groundfish Rebuilding Analysis TOR or the Methodology Review Process for groundfish and coastal pelagic species TOR, although both will be reviewed.

I. Administrative Matters

3. Future Council Meeting Agenda and Workload Planning

The Scientific and Statistical Committee (SSC) discussed workload planning and has the following updates to its November 2025 statement under this agenda item.

The SSC notes that the April 2025 meeting format has been modified, based on the complexity of the agenda items needed for discussion. The SSC plans to meet remotely on Friday, April 3 from 8:30 a.m. until business for the day is complete and in person in Portland, Oregon on Monday, April 6 and Tuesday, April 7.

The SSC requests that the Economics subcommittee meet for a one day webinar during May 2026 to review a Community Resilience Decision Tool being developed by Northern Economics.

The SSC requests that the Groundfish Subcommittee meet in late summer to review a revised version of the Terms of Reference for Groundfish Stock Assessments. This meeting could be online or paired with the in-person methodology review of fishery-dependent indices of abundance for groundfish stock assessments.

An eDNA-based index of abundance, which has been developed for the Pacific hake stock assessment, has been informally proposed for application to widow rockfish and other groundfish species. The SSC requests a meeting to review this methodology. If an eDNA index is available, the SSC requests pairing its review with the methodology review for fishery-dependent indices of abundance for groundfish assessments.

The SSC requests that the Ecosystem and Economics subcommittees hold a one day webinar during August or September or one day hybrid meeting ahead of September SSC meeting to review future topics for the California Current Integrated Ecosystem Assessment Ecosystem Status Report.

A benchmark assessment for Pacific sardine is scheduled for early 2027 (in-person), but could be particularly challenging if the stock is redefined to encompass all sardine in US waters. In addition, there is no harvest control rule for Pacific sardine based on this stock structure hypothesis.

An update assessment for Pacific mackerel is scheduled for early 2027 as an online meeting.

Proposed Workshops and SSC Subcommittee Meetings for 2026 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**
Special Project #2: Community Resilience Decision Tool Review	*May 2026*	*Council/Webinar*	*Economics Subcommittee*	*N/A*	*GMT GAP*	*Gilly Lyons*
Groundfish Terms of Reference	*Late summer*	*Council/TBD*	*Groundfish Subcommittee*	*N/A*	*GMT GAP*	*Diana Perry*
Groundfish Harvest Specifications Specifications Flexibility Topic Review	*TBD (late summer, early fall)*	*Council*	*Groundfish and Economics Subcommittees*	*N/A*	*N/A*	*Jessi Waller*
Sacramento River Fall Chinook Peer Review	*June 2026*	*California/ Council/Hybrid*	*Salmon Subcommittee*	*CIE/TBD*	*STT SAS*	*Angela Forristall*
Groundfish Methodology Review - Standardization of the commercial fishery-dependent indices	*Summer 2026*	*Council/TBD*	*Groundfish and Economics Subcommittees*	*TBD*	*GMT GAP*	*Diana Perry*
Groundfish Methodology Review - eDNA index of abundance for use in groundfish stock assessments	*Summer or Fall 2026*	*Council/TBD*	*Groundfish Subcommittee*	*TBD*	*GMT GAP*	*TBD*
Salmon Methodology Review	*October 2026*	*Council/TBD* *In person preferred*	*Salmon Subcommittee*	*TBD*	*STT*	*Angela Forristall*
Ecosystem Status Report Science Topics Review (2026 topics)	*Fall 2026*	*Council/TBD*	*Ecosystem and Economics Subcommittees*	*TBD*	*EWG EAS*	*Gilly Lyons*
Sardine stock assessment (benchmark)	*Early 2027*	*Council/TBD*	*STAR Panel*	*CIE/TBD*	*CPSMST CPSAS*	*Katrina Bernaus*
Pacific mackerel stock assessment (update)	*Early 2027*	*Online*	*CPS Subcommittee*	*TBD*	*CPSMST CPSAS*	*Katrina Bernaus*

SSC Subcommittee Assignments

Salmon	Groundfish	Coastal Pelagic Species	Highly Migratory Species	Economics	Ecosystem-Based Management
Jason Schaffler	**Cheryl Barnes** (Co-Chair)	**André Punt**	**Michael Hinton**	**Dan Holland**	**Chris Free**
John Budrick	**Aaron Berger** (Co-Chair)	Aaron Berger	Cheryl Barnes	Chris Free	Cheryl Barnes
Tim Copeland	John Budrick	John Budrick	Aaron Berger	Michael Hinton	Tim Copeland
Owen Hamel	John Field	John Field	John Field	André Punt	John Field
Galen Johnson	Owen Hamel	Owen Hamel	Dan Holland	Matthew Reimer	Dan Holland
Will Satterthwaite	André Punt	Michael Hinton	André Punt		Galen Johnson
	Alberto Rovellini	Tien-Shui Tsou	Matthew Reimer		André Punt
	Jason Schaffler	Cisco Werner	Cisco Werner		Matthew Reimer
	Tien-Shui Tsou				Alberto Rovellini
					Will Satterthwaite
					Cisco Werner

Bold denotes Subcommittee Chairperson

ADJOURN

PFMC
03/XX/26