SUMMARY MINUTES

Scientific and Statistical Committee

Pacific Fishery Management Council
Via Webinar
April 6 and 7, 2021

Members in Attendance

Dr. John Budrick, California Department of Fish and Wildlife, Belmont, CA
Mr. Alan Byrne, Idaho Department of Fish and Game, Boise, ID
Dr. Fabio Caltabellotta, Oregon State University, Corvallis, OR
Dr. John Field, National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA
Dr. Marisol Garcia-Reyes, Farallon Institute, Petaluma, CA
Dr. Melissa Haltuch, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. Owen Hamel, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. Michael Harte, Oregon State University, Corvallis, OR
Dr. Dan Holland, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. Galen Johnson, SSC Chair, Northwest Indian Fisheries Commission, Olympia, WA
Dr. Kristin Marshall, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. André Punt, University of Washington, Seattle, WA
Dr. William Satterthwaite, National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA
Dr. Jason Schaffler, Muckelshoot Indian Tribe, Auburn, WA
Dr. Ole Shelton, National Marine Fisheries Service Northwest Fisheries Science Center, Seattle, WA
Dr. Cameron Speir, National Marine Fisheries Service Southwest Fisheries Science Center, Santa Cruz, CA
Dr. Tien-Shui Tsou, Washington Department of Fish and Wildlife, Olympia, WA
Dr. Will White, Oregon State University, Corvallis, Oregon

Members Absent

None.

SSC Recusals for the April 2021 Meeting		
SSC Member	**Issue**	**Reason**
None.		

A. Call to Order

Dr. Galen Johnson called the meeting to order at 0800. Mr. Chuck Tracy briefed the Scientific and Statistical Committee (SSC) on the meeting and the Pacific Fishery Management Council's (Council's or PFMC's) expectations for the items on the SSC agenda.

D. Salmon Management

2. Methodology Review Preliminary Topic Selection

The Scientific and Statistical Committee (SSC) met with the Salmon Technical Team (STT) and the Salmon Model Evaluation Workgroup (MEW) represented by Dr. Michael O'Farrell (Southwest Fisheries Science Center) and Ms. Angelika Hagen-Breaux (Washington Dept. of Fish and Wildlife, WDFW) to discuss possible methodology review topics for 2021.

Items proposed for review by the STT and MEW are listed below with the responsible party listed in parentheses:

1. Complete the Willapa Bay coho forecast methodology review. In the March 2020 review, the SSC endorsed the Willapa Bay coho forecast for one-time use in 2020 and identified numerous potential improvements. (STT and WDFW);
2. Review Oregon Production Index, Hatchery (OPIH) forecast. Many recent forecasts have been higher than the postseason abundance estimates and the SSC could not find a clear record of previous reviews. (STT and Oregon Production Index Technical Team [OPITT]);
3. Review Sacramento River Fall Chinook (SRFC) conservation objective and consider a natural-area escapement goal as recommended in the rebuilding plan for this stock, and by the Southern Resident Killer Whale Work Group and the STT. (STT, California Dept. of Fish and Wildlife, U.S. Fish and Wildlife Service, and National Marine Fisheries Service);
4. Update Fisheries Regulation Assessment Model (FRAM) documentation. Various components in FRAM were changed over time and the previous documentation is not fully reflective of the current model. Considering the workload of MEW members, the MEW plans to prioritize updating the overview section in time for a 2021 review. The MEW is also planning for a FRAM workshop in October 2021 for new members and agency staff. It was noted that the old FRAM documentation which was previously on the Council website is not currently available. (MEW); and
5. Evaluate FRAM postseason performance. While there are numerous aspects of FRAM performance that should eventually be reviewed, for 2021 the MEW proposes to do a comparison of recent postseason FRAM runs to the Pacific Salmon Commission's Chinook

Technical Committee exploitation rate analysis (CTC ERA) estimates. Evaluating this comparison will require clear documentation. (MEW).

The SSC recommends a high priority for the topics listed above and proposes the following additional topics to be considered:

6. The SSC Salmon Subcommittee should go through the salmon fishery management plan and clarify the SSC's role in reviewing salmon forecasts and other models and analyses informing the management process. (SSC);
7. Explore methods to quantify uncertainty in forecasts and to incorporate the uncertainty into the management process;
8. In March 2021, Preseason Report 1 revealed that there was a recent change in the marine survival component of the Queets coho forecast that has not been reviewed by the SSC. In March 2021, the SSC recommended a table tracking changes in forecasting methods over time be included in Preseason Report 1 (see the March 2021 SSC report). The SSC is unclear on its role in reviewing every change to forecasts for stocks that do not have acceptable biological catches, so addressing item number 6 would provide clarity on the priority for this item; and
9. Due to COVID-19, there were gaps in the marking and/or tagging of juvenile fish with coded-wire tags in 2020, which may affect implementation of harvest models in future years as these cohorts recruit to the fishery.

E. Coastal Pelagic Species Management

2. Exempted Fishing Permits (EFPs) for 2021-2022 - Final Action

The Scientific and Statistical Committee (SSC) received late notice requesting final comment on the three Exempted Fishing Permit (EFP) proposals. The SSC usually does not review late requests; however, some members were able to read through the proposals and offer comments. Particular emphasis was placed on the California Wetfish Producers Association EFP proposals for collecting biological samples from a limited directed Pacific sardine fishery (Agenda Item E.2, Attachment 3) and obtaining additional point sets to validate the aerial survey estimates of biomass for the nearshore area (Agenda Item E.2, Attachment 2). The SSC confirmed its April 2019 and November 2020 conclusions that continuation of the collection of age-composition data was useful, particularly if the data helped to inform the age composition of the aerial survey estimate of abundance.

The SSC supports the three EFPs moving forward and commends the applicants for their dedication to the continued research needed to improve assessment of the Northern Subpopulation of Pacific Sardine and the Central Subpopulation of Northern Anchovy.

SSC Notes:

Given the structure of the current assessment, age composition for the limited fishery will not provide a strong basis for estimating recent recruitment.

4. Pacific Sardine Assessment, Harvest Specifications, and Management Measures – Final Action

The Scientific and Statistical Committee (SSC) reviewed the 2021 stock assessment catch-only projection for the Northern Subpopulation (NSP) of Pacific Sardine. Dr. Peter Kuriyama (SWFSC) presented the catch-only projection on behalf of the Stock Assessment Team (Agenda Item E.4, Attachment 1) and Dr. Kevin Hill was also present and answered questions. The catch-only projection was based on the February 2020 benchmark assessment and included updated catches for the model year-semesters 2019-1 (calendar year July-December 2019), 2019-2 (January-June 2020) and 2020-1 (July- December 2020), as well as an assumption about fishing mortality for model year-semester 2020-2 to enable estimation of 1+ biomass for 1 July 2021. The SSC notes that there was an error in Tables 1 and 2 of the documentation, which are corrected in Agenda Item E.4, Supplemental Attachment 2. The error did not affect the model outcome and the catch-only projection was otherwise implemented correctly and followed the Terms of Reference (TOR).

The assessment for Pacific sardine for 2021 is based on a catch-only projection because an acoustic trawl method (ATM) survey did not take place during 2020. Unlike benchmark and update assessments, catch-only projections do not use any new data other than catches and consequently should not update the parameters of the population dynamics model. Instead, a catch-only projection involves updating historical catches and projecting the current model forward with the catches that have taken place since the end of the last assessment. Given the high natural mortality rate of Pacific sardine, most of the fish in the estimate of 1+ biomass on July 1, 2021 are inferred from the stock-recruitment relationship rather than being estimated from data (unlike the case for groundfish stocks, which are generally long-lived).

The catch for the MexCal season 2 fishery (Mexico, Southern California, Central California) for January-June 2020 in the catch-only projection was nearly three times larger than the preliminary catch estimate used in the 2020 benchmark assessment (33,070 mt vs. 11,819 mt; noting that the 11,819 value was assumed from 2018-2). This implies that the total catch for that year was larger than the total population size expected from the 2020 benchmark assessment. This led the model to estimate a fishing mortality rate (F) for January-June 2020 at the maximum allowed by the software. Consistent with the approach used in the 2020 benchmark, this F value was assumed to be constant in the forecast. However, this is considerably higher than the fishing mortality rate from the 2020 benchmark assessment and would have been higher had the model not hit the upper limit assumed for the fishing mortality rate parameter. Moreover, to enable the assumed catches to be taken at all, the model needed to nearly triple the assessment model estimate of 2019 recruitment. This was not expected for a catch-only projection and indicates that updated catches are not consistent with the results of the 2020 benchmark assessment. More importantly, by their nature, catch-only projections are intended to inform how new information on catches impacted abundance following the end of the period modeled in the original assessment. This catch-only projection does not accomplish that objective since inflating unobserved recruitment estimates to account for an increase in the estimated catch is not informative about abundance.
As a result, although the Stock Assessment Team followed the TOR and did everything they could to develop an appropriately implemented model (including considerable sensitivity analyses), the SSC cannot endorse the catch-only projection as the basis for management advice. Consequently,

the SSC recommends adoption of the 2020 OFL (5,525 mt) from the 2020 benchmark assessment. The SSC also endorses the use of last year's biomass estimate and E_{MSY} for management purposes. The resulting ABC values as a function of P* can be found in row "$ABCtier_3$" in Table 3 of Agenda Item E.4, Supplemental Attachment 2. The SSC recognizes that the decision to return to the 2020 benchmark values does not fix the challenges associated with the inconsistencies between the 2020 model and the recent catch estimates. Consequently, the SSC recommends that this be considered a category 3 assessment for the purposes of calculating a sigma.

According to the TOR for Stock Assessment Reviews "For CPS, if an assessment is found not to be acceptable for use in management, a full assessment would be considered the following year." By 2022 new survey data should be available from the July 2021 ATM survey, there will be additional aerial survey data by CDFW, and there will be new age compositions from the incidental fishery. However, this new information may not resolve the data conflicts evident in the 2021 catch-only projection. The SSC notes there is an increasingly critical need to revisit many of the assumptions that have been informing sardine assessment and management over the past several years.

There are several urgent research priorities to consider revisiting to better inform the next benchmark assessment. The SSC strongly recommends that these issues be addressed in time for the next benchmark assessment. This includes reconsideration of the model used to assign both catches and surveyed fish to the northern and southern subpopulations, as the SSC notes that the probability of errors in those assignments are likely to change with population size, and the model may be extrapolating beyond the range of the data with which it was created (e.g., calibrated at high northern subpopulation sardine abundance and applied when abundance is much lower). Additionally, the reviews of the ATM survey in 2011 and 2018 identified several research priorities that could potentially better inform survey catchability (q) and the SSC continues to recommend the use of the aerial survey data (as coordinated with the ATM survey and with appropriate biological sampling) to inform the catchability of the ATM survey. The SSC continues to recommend further evaluation of a survey-based assessment approach through a management strategy evaluation, which should include a fallback approach should the survey not occur in a given year. The value for E_{MSY} based on the CalCOFI temperature index suggests a productive stock but this is not evident from recent assessments, suggesting the need to re-evaluate the best way to calculate E_{MSY} for the northern subpopulation sardine stock. Finally, alternative indices of abundance and alternative means of projecting recruitment merit consideration for inclusion in future benchmark assessments. Most of these research items should also inform assessment efforts for the Central Subpopulation of Northern Anchovy.

With respect to progress towards rebuilding the Northern Subpopulation of Pacific Sardine, the SSC notes that U.S. catches are well below both the ACL and the ACT and that the U.S. fishery has implemented catch restrictions. However, due to the lack of an accepted updated biomass estimate, the SSC is unable to report further on rebuilding progress in relation to changes in biomass.

SSC Notes:

Key for converting times:

Calendar Y-S;	*Model Y-S;*	*Calendar dates*
2018-2;	*2018-1;*	*July-December 2018*
2019-1;	*2018-2;*	*January-June 2019*
2019-2;	*2019-1;*	*July-December 2019*
2020-1;	*2019-2;*	*January-June 2020*
2020-2;	*2020-1;*	*July-December 2020*
2021-1;	*2020-2;*	*January-June 2021*

The total catch by calendar year in Mexico are well known, about 150,000 mt in 2020 - the uncertainty is with respect to the apportionment to the northern versus southern subpopulations.

The subpopulation apportionment model has not been revisited since the Demer and Zwolinkski manuscript (2014, ICES J. Mar. Sci 71: 328-335), which in turn was based on data from 2006-2011, and should be either re-evaluated or recalibrated using more recent data. The SSC noted that in the original analysis there was an error proportion estimated (the probability of a fish from the northern subpopulation being assigned to the south, and vice versa), but that with subsequent declines in the northern subpopulation the probability of an incorrect subpopulation assignment has likely changed as well.

For future reviews and discussions, the SSC should discuss how to interpret models in which the Fs hit the bounds (and perhaps what the bounds should be?). The difference between an F of 4 and an F of 10 may not be that great with respect to proportion of biomass removed, but how should we interpret this with respect to the instantaneous nature of F and the somewhat more discrete nature of growth and recruitment processes by modeled time steps? There are deeper issues related to models with high F rates that will require some further consideration.

That said, for historical context, MacCall estimated fishing mortality rates by age (for ages 2, 3 and 4) in his cohort analysis of the waning days of the early sardine fishery as high as 2.4 (for age 4+ sardines in 1958). A large fraction of the F estimates between 1955 and 1964 were greater than 1 in his model (1979; CalCOFI Reports 20: 72-82).

In their presentation the STAT provided an updated CalCOFI SST analysis to account for missing values. However, that analysis was not included in the original report. Subsequently the point was made that the E_{MSY} is essentially unchanged regardless of which analysis is used. Consequently, the STAT's revised analysis may be considered for future assessments. Similarly, for the purposes of establishing a HG, it does not matter if we use this year's E_{MSY} or last year's E_{MSY} since they are both >0.2, and fraction is bounded at 0.2. In general, there is increasing discomfort with the HCR, as it continues to suggest we are in a high productivity state when the data are clearly indicating otherwise.

Although not yet in the model, it was noted that extrapolating the recent aerial survey (reported in CDFW reports) in the nearshore would indicate that there is additional biomass not accounted for in the current nearshore estimates (based on the assessment results and assumed catchability). Although these data could not be used in this year's catch-only projection (based on the TOR), the EFP data should be incorporated in the next full assessment if feasible, as accounting for

nearshore biomass becomes increasingly critical at low abundance levels based on the current management approach.

In its April 2020 review of the full assessment, the SSC notes discussion of incorporating inshore biomass estimates included the following: "Since no age composition data were available for the aerial survey, and aerial survey was not performed in all years, the STAT and STAR panel agreed on option (4); in 2019 the AT survey saw 0.73 of the combined biomass estimate. This was applied as the value of Q for 2015-2019, as one cannot assume a constant proportion of total biomass in the inshore, which should represent a larger proportion as the population declines. Changes in the AT survey over time to try to get more inshore should have the opposite effects, so further analysis could be undertaken. One hypothesis supporting this approach is that there is consistently 10-15,000 mt in the inshore, and varying amounts outside, and thus through 2014 the population was large enough that Q was close to 1. Simpler to apply a single change."

The STAT discussed the need to better model the variance around catch estimates, particularly when we are relying on catch data from a fishery outside of US waters. Currently, catch values are input with low standard deviations, better modeling of catch uncertainty is anticipated for future benchmark assessments. It was noted that in the absence of conflicting signals in the data (e.g., survey data), better accounting for catch uncertainty may not have made much of a difference in this update.

The SSC has general concerns regarding how pragmatic an intensive annual assessment and management process is when a stock is at low abundance levels and data collection is limited. The result is likely to be too much effort expended on implementing volatile management responses.

The table 4 caption should be annotated to ensure that it is clear that the difference between tables 1 and 4 is with respect to U.S landings is that all U.S. landings are reported in table 1, versus northern subpopulation landings only in table 4.

An SSC note from the April 2020 sardine assessment statement remains relevant: "In determining categories, should bias or asymmetric uncertainty be considered? The P- sigma approach essentially assumes that the OFL is lognormally distributed. Given that P* is constrained to be ≤0.5, it may be more important to properly characterize just the left-hand side of this distribution. This topic should be considered in TOR discussions."*

H. Administrative Matters

1. Research and Data Needs Update

The Scientific and Statistical Committee (SSC) received a presentation from Mr. John DeVore (Pacific Fisheries Management Council, PFMC) regarding the proposed design and implementation of the PFMC's Research and Data Needs Database, then discussed some aspects of how the database could be managed. The prototype of this database was described in the November 2020 Briefing Book (Informational Report 3). It is modeled after a database used by the North Pacific Fishery Management Council (NPFMC) with fields adjusted for PFMC needs and populated with items from the 2018 PFMC Research and Data Needs document. The SSC discussion focused on three topics: (A) the process for adding new items to the database, (B) the ranking system for prioritizing research projects in the database, and (C) the frequency with which the database should be reviewed and updated.

The SSC recommends that the Research and Data Needs database be curated by the SSC. Additions to the database could arise from within the SSC (e.g., during the stock assessment review process) or be proposed to the SSC by other Council Advisory Bodies. Within the database, the SSC agreed that projects should be prioritized based on whether they have a 'high' priority for having a substantial impact on management decisions, with others left unranked. Further, the SSC recommends that the number of 'high priority' projects on the list at any given time be kept relatively small, so that it is a meaningful prioritization system. The SSC also discussed the possibility of accounting for the time sensitivity of each high priority item, distinguishing between urgent and longer-term needs. The SSC further recommends that the database be updated with new prioritized projects more often than the current 5-year re-evaluation cycle, at regularly scheduled intervals. This will allow more efficient responses to emerging needs. Council Operating Procedure 12 (COP12) currently mandates a 5-year cycle but allows exceptions for out-of-cycle updates, so the SSC proposal would not necessarily require updating COP12 at this time.

SSC Notes:

The SSC discussed reviewing and making additions and deletions to the database on 1, 2, and 3 year cycle frequencies but there was not consensus at this time.

Logistically it will reduce confusion and potential duplication if only SSC and Council staff are able to adjust the database. However, the SSC agreed that the priority rankings set by the SSC should take account of the opinion of the Advisory Body that put forward a project.

There was broad support for moving to a system that merely identifies the highest priority projects (e.g., 'High' and 'Not high', or "Need to know/Would be nice to know") as opposed to High/Medium/Low.

One option is simply to have new projects added to the database as they arise (e.g., when suggested in a STAR Panel report). However, it was noted that it can be difficult to evaluate relative priority for individual projects one-at-a-time. Thus, there was support for placing new projects in a preliminary status of some sort (a 'parking lot'), perhaps flagged as such, and unranked, in the database. Then the SSC could periodically evaluate the collection of new proposals at an annual (or multi-year) frequency. This process should include evaluating whether existing projects in the database should be removed (if completed or no longer appropriate) or reprioritized in light of new information. It was also suggested that the prioritization process could be streamlined by allowing it to be primarily a subcommittee process rather than involving the full SSC.

The SSC also noted that after the database is deployed, there should be an evaluation of how well it is being used by the broad potential user base, particularly academic researchers.

4. Membership Appointments and Council Operating Procedures

The Scientific and Statistical Committee (SSC) discussed the changes proposed by the Coastal Pelagic Species (CPS) Management Team (CPSMT) to the Council Operating Procedure (COP) 26 for conducting methodology and data reviews for Coastal Pelagic Species (Agenda Item H.4.a, CPSMT Report 1). Currently, any CPS methodology review proposals are scheduled on the November meeting agenda and the agenda item is often cancelled at the start of the Council meeting since no proposals were submitted. The CPSMT revision outlines a schedule for the methodology reviews that require notification prior to the September meeting so the Council can

consider the request(s) at the November meeting. The proposed COP 26 revision contains the schedule and outlines responsibilities of the parties to conduct the review for approved methodology proposals. The COP 26 revision also clarifies the process for reviewing existing methodologies. The SSC supports the proposed revisions to COP 26. However, the COP would benefit from clarification of the roles of "proponents" of a methodology review and the "analysts" who will do the work to be reviewed.

SSC Notes:

In the schedule on pg. 4, the June Council meeting should be edited to read "Council considers MRP report and the SSC review. The Council considers approving the methodology review".

5. Future Council Meeting Agenda and Workload Planning

The Scientific and Statistical Committee (SSC) discussed future meetings and workload planning during their April 6-7, 2021 meeting. The SSC proposes one new half-day virtual meeting for the SSC salmon subcommittee prior to the June council meeting. This meeting would scope a proposed SSC-generated report (as suggested in Agenda Item D.2.a, Supplemental SSC Report 1) to summarize and clarify the role of the SSC in reviewing and endorsing forecasts and management models used in salmon management as described in the Fishery Management Plan.

The SSC notes the pre-assessment workshops for upcoming groundfish assessments were well attended and highlights workshop reports are or soon will be available on the Council website on the groundfish stock assessment page. The full list of Committee of Independent Expert reviewers for the Stock Assessment Review (STAR) Panels were announced and dates were assigned for some upcoming subcommittee meetings. Please see the attached table for meeting details.

The Pacific Sablefish Transboundary Assessment Team (PSTAT) public workshop to solicit feedback on the ongoing range-wide sablefish management strategy evaluation (MSE) will be held Tuesday, April 27 and Wednesday, April 28. Registration, Agenda, and background materials for this workshop are available at: https://www.pacificsablefishscience.org/2021-mse-workshop. The registration deadline is 5 p.m. PDT, Friday April 16.

The SSC understands there is an intent to meet in person in September with an option for some to attend via a remote connection. The SSC reiterates the importance of having an option to meet via webinar given the uncertainties with the continuing pandemic.

Proposed Workshops and SSC Subcommittee Meetings for 2021							
Workshop/Meeting		**Potential Dates**	**Sponsor/ Tentative Location**	**SSC Reps.**	**Additional Reviewers**	**AB Reps.**	**Council Staff**
1	Sablefish MSE Workshop	April 27-28	Council/Webinar	Haltuch +	PSTAT	GMT GAP	DeVore
2	Groundfish STAR Panel 1 Dover Sole & Data-Moderate Assessment of Spiny Dogfish	May 3-7	Council/Webinar	Tsou (Chair) Caltabellotta	Cieri, Cadigan	Roberts Richter	DeVore Phillips
3	SSC Groundfish Subcommittee Review of Sablefish Update & and Data Moderate Assessments of Copper Rockfish, Quillback Rockfish, & Squarespot Rockfish	June 21-22	Council/Webinar	Groundfish Subcommittee Members (Marshall and Haltuch - Chairs)	NA	Mandrup & Roberts Richter	DeVore Phillips
4	SSC Economics and Groundfish Subcommittees	May or June, TBD	Council/Webinar	Economics and Groundfish Subcommittee Members	NA	GMT GAP	DeVore Seger
5	SSC Salmon Subcommittee (Tentative)	May or June, TBD	Council/Webinar	Salmon Subcommittee Members	NA	NA	DeVore Ehlke
6	Groundfish STAR Panel 2 Lingcod	July 12-16	Council/Webinar	Field (Chair) White	Cieri, Dichmont	Mattes Richter	Phillips DeVore

7	Groundfish STAR Panel 3 Vermilion & Sunset Rockfishes	July 26-30	Council/Webinar	Budrick (Chair)	Cieri, Medley, Hicks	Mandrup Richter	DeVore Phillips
8	SSC Groundfish Subcommittee Review of Assessments and Prioritizing Mop-up Tasks	Aug. 17, 9 a.m. - 1 p.m.	Council/Webinar	Groundfish Subcommittee Members	NA	GMT Richter	DeVore
9	7th National Meeting of the Scientific Coordination Subcommittee of the Council Coordination Committee	3-5 days (TBD) Week of Aug. 9	NPFMC/Webinar	4 TBD	NA	NA	DeVore
10	SSC Ecosystem Subcommittee	September 8	Council/ Spokane, WA	SSC Ecosystem & Salmon Subcommittee Members	CCIEA Team	EWG EAS	DeVore Dahl
11	Groundfish Mop-up STAR Panel, if needed	September 27-October 1	Council/Webinar	TBD	Cieri	GMT Richter	DeVore
12	Salmon Methodology Review	October TBD	Council/TBD	Salmon Subcommittee members	NA	STT MEW	Ehlke
13	CSNA STAR Panel	Nov. 30 – Dec. 3	Council/TBD	Punt (Chair) & CPS Subcommittee Members TBD	2 CIE	CPSMT CPSAS	Griffin DeVore
14	Proposed Workshop for Conducting Nearshore ROV Surveys	TBD	Council/TBD	TBD	TBD	GMT GAP	DeVore

15	Post-mortem Review of the Groundfish Assessment Process	Fall/Winter 2021 After Assessment Cycle, TBD	Council/TBD	Groundfish Subcommittee Members	TBD	GMT Richter	DeVore

SSC Subcommittee Assignments, April 2021

Salmon	Groundfish	Coastal Pelagic Species	Highly Migratory Species	Economics	Ecosystem-Based Management
Alan Byrne	**John Budrick**	**André Punt**	**Michael Harte**	**Cameron Speir**	**Kristin Marshall**
John Budrick	Fabio Caltabellotta	John Budrick	Fabio Caltabellotta	Michael Harte	John Field
Owen Hamel	John Field	Alan Byrne	John Field	Dan Holland	Marisol Garcia-Reyes
Michael Harte	Melissa Haltuch	John Field	Marisol Garcia-Reyes	André Punt	Melissa Haltuch
Galen Johnson	Owen Hamel	Marisol Garcia-Reyes	Dan Holland		Michael Harte
Will Satterthwaite	Kristin Marshall	Owen Hamel	Kristin Marshall		Dan Holland
Jason Schaffler	André Punt	Will Satterthwaite	André Punt		Galen Johnson
Ole Shelton	Jason Schaffler	Tien-Shui Tsou			André Punt
Cameron Speir	Tien-Shui Tsou	Will White			Will Satterthwaite
Tien-Shui Tsou	Will White				Ole Shelton
					Cameron Speir

Bold denotes Subcommittee Chairperson.

ADJOURN