

Minutes of the Joint Plan Teams for the Groundfish Fisheries of the Gulf of Alaska (GOA) and Bering Sea Aleutian Islands (BSAI)

North Pacific Fishery Management Council
605 W 4th Avenue, Suite 306
Anchorage, AK 99501

November 13 -17, 2017

| BSAI Team | | GOA Team | |
|-------------------|----------------------|--------------------|----------------------|
| Dana Hanselman | AFSC ABL (co-chair) | Jim Ianelli | AFSC REFM (co-chair) |
| Grant Thompson | AFSC REFM (co-chair) | Jon Heifetz | AFSC ABL (co-chair) |
| Diana Stram | NPFMC (Coordinator) | Jim Armstrong | NPFMC (coordinator) |
| Kirstin Holsman | AFSC REFM | Sandra Lowe | AFSC REFM |
| Jennifer Cahalan* | Pacific States | Chris Lunsford | AFSC ABL |
| Chris Siddon | ADF&G | Dan Lew | AFSC REFM |
| Alan Haynie | AFSC REFM | Nate Nichols | ADF&G |
| Jane Sullivan* | ADF&G | Obren Davis | NMFS AKRO |
| Brenda Norcross | UAF | Jan Rumble | ADF&G |
| Mary Furuness | NMFS AKRO | Paul Spencer | AFSC REFM |
| Cindy Tribuzio | AFSC ABL | Kresimir Williams* | AFSC RACE |
| Allan Hicks | IPHC | Craig Faunce | AFSC FMA |
| | | | |

*initial meeting

Administrative

September Team meeting: The September Plan Team meeting will be held September 18-21, 2018.

November Team meeting: The November Team meeting will be held November 13-16, 2018 at the Alaska Fisheries Science Center, Seattle.

Documents and presentations: All documents provided prior to or during the meeting as well as presentations given during the meeting were posted to the [Council's Granicus agenda](#)

Web broadcast/adobe connect: During the initial part of the meeting, Council staff tested an Adobe-connect access point so online listening could be made available. Due to connectivity problems this failed. There were also difficulties in hearing speakers using available equipment. It was noted that the AFSC was upgrading their meeting room hardware and that future meetings should have better capabilities for remote access.

Introductions: The Joint meeting of the Gulf of Alaska (GOA) and Bering Sea Aleutian Islands (BSAI) Groundfish Plan Teams convened Monday November 13 at 8:00am at the Alaska Fisheries Science Center in Seattle, Washington. Introductions were made. New Plan Team members were welcomed (Jennifer Cahalan, Jane Sullivan on the BSAI Team and Kresimir William on the GOA Team). The Joint

Groundfish Plan Teams adopted a revised agenda where the BSAI Team will convene their meeting starting Tuesday the 14th in order to allow the Team to attend the GOA cod discussion Monday afternoon.

Team procedures

Grant Thompson provided an overview of existing Team policies on documentation/deadlines and writing minutes and a suggestion from the Joint Team co-chairs and coordinators for some revisions thereto. No objections from Team members were raised to the revisions, which are as follow (where “editors” refers to Team members who are editing the minutes, and “pseudo-recommendations” refers to sentences embedded in the main text of the minutes beginning with phrases such as “The Team agrees,” “The Team supports,” “The Team endorses,” “The Team requests,” “The Team suggests,” etc.):

Team actions will be characterized simply by the combination of stand-alone paragraphs with bold font, and may use any verb that the rapporteur and editors feel is appropriate (i.e., use of “recommends” is no longer required).

Rapporteurs and editors may include in the main text any number of sentences taking the form of what were formerly known as pseudo-recommendations, with the understanding that these do not constitute Team actions and confer no responsibility for a response or any other action from analysts or anyone else (i.e., they may only reflect the opinion of the last person who wrote/edited those sentences, even if the text itself implies otherwise).

Assessment analysis planning

Diana Stram summarized some actions pertaining to assessment prioritization that were taken at the January Joint Team meeting, the February SSC meeting, the September Joint Team meeting, and the October Council meeting. In February 2017, the SSC requested the following three analyses:

1. An evaluation of how projected OFL-to-ABC buffers should increase in the intervening years between full assessments.
2. Development of a framework for evaluating the costs and benefits of changing the target frequency for the affected stocks and complexes
3. A more quantitative evaluation of the potential risks of changing the target frequency of the GOA flatfish stocks to a four-year cycle.

None of these have been conducted and the AFSC has adopted the new schedule. In October, the Council wanted clarification on how the proposed assessment schedule as presented was different from the January proposal, to which the Team coordinators responded that it is consistent with February SSC recommendations. The Council also expressed concern about how it could grant “conditional acceptance” of the revised schedule without the SSC-proposed analyses being completed. They requested that the Teams re-examine the tasking above, leading to this discussion and the following recommendation:

The Teams recommend that a workshop be convened, involving members (to be named) of the Groundfish Plan Teams, the Social Science Planning Team, and the SSC, along with the GOA flatfish assessment authors, to examine existing work that pertains to the costs and benefits of different assessment frequencies or either of the other requested analyses.

While a comprehensive analysis of the benefits and costs of all assessment frequencies would be ideal, a full-blown methodology appropriate for all species will be extremely time-consuming. Regarding the recommendation to evaluate the OFL/ABC buffer impacts, it is unclear how much effort should be focused in this process and how this effort connects to ongoing activities, such as the SSC’s and Council’s February request for “more rapid progress on innovative decision tables or decision theoretic approaches to management.”

The Teams would like to receive clarification from the SSC regarding the scope of the three analyses that were requested in February in the context of assessment prioritization.

Central tendency measures

Grant Thompson presented on central tendency measures as they pertain to model averaging. There is a long-standing request from the SSC to incorporate model averaging as an alternative to selection of a single model. The presentation laid out a framework for evaluating the merits of both the mean and the median as measures of the central tendency of a population of models. Which measure of central tendency is most useful will depend on the fundamental treatment of uncertainty by the assessment (suite of models being considered). From a frequentist perspective, the use of percentiles makes sense, and percentiles are perceived to be easily understood by non-scientists. Under a Bayesian perspective, the moments of the distribution are important, and the mean (the first moment) is a sensible central tendency measure.

If the goal is to make inferences about the population of distributions (i.e., the population of possible models), then the mean is a better measure of central tendency (see table below). Both approaches can be easily reported.

| | Inferences about the Sample | Inferences about the Population |
|-------------------------|-----------------------------|---------------------------------|
| Frequentist Perspective | Median | Mean |
| Bayesian Perspective | Mean | Mean |

The Teams recognized that there are fundamentally two questions here: 1) How do we estimate the true distribution of models (model outcomes)? and 2) How do we measure central tendency of that true distribution? The Teams noted that the SSC posed only the second question to the Teams.

The Teams concluded that the choice of central tendency measure depends on the task at hand and the approach taken and that, in the context of model averaging, the choices involved in assembling the suite of models are likely more important than the choice of central tendency measure.

Relative to the issue of presenting results from model averaging, the Teams noted that, unless clearly prescribed, the process may be overly complex and may suffer from a lack of transparency for the annual specifications process.

Sablefish

The Alaska sablefish presentation was given by Dana Hanselman. There were no changes to the assessment model. The 2014 year class was estimated to be larger than expected and these fish were encountered in abundance in the AFSC longline survey and in the fishery. This year-class has a relatively low selectivity in the survey which may affect the magnitude of the estimate. However, the GOA trawl survey has catchability (q) equal to 1.0 by age two. This year class was present in the WGOA/AI/BS, CGOA regions in large numbers, but slightly lower (in relative terms) in the EGOA.

Dana noted that recruitment estimates at age 2 may be poorly correlated to subsequent year-class estimates. For example, the 2008 year-class was initially estimated to be very abundant at age 2, but subsequent estimates of that year-class have declined to be closer to average. However, for highly abundant year-classes, estimates mostly remain consistent over time and, if anything, usually start low (nearer average), then increase as more observations at different ages accumulate.

Prior to this year, total biomass and spawning biomass have been declining; with the new estimate of the 2014 year class, the model trend sharply increases.

A new appendix describing an Ecosystem-Socioeconomic Profile (ESP) was included in this year's assessment. Of note: the ex-vessel value by age tends to increase with age until about 7 years old (in \$ per kg) and on a per-recruit basis the age at maximum value was estimated to be around age 9. This suggests that catching the younger sablefish may be less optimal than if allowed to grow to a larger size. Over time, the first wholesale price/lb has been increasing since 2013; consequently, overall revenues have stayed steady, despite declining catch.

Discussion points included the following (these are comments/questions made/asked by individuals present at the meeting and do not necessarily reflect Team consensus):

- Record high 2014 year-class based on one year of longline survey age compositions (10x higher than average)
- GOA trawl survey did not see it as strongly in 2017, based on size compositions, but showed evidence of potential year classes after 2014.
- Spawning biomass is lower than last year.
- The 2014 year class would normally be included in the recruitments used to calculate reference points next year, but is not yet included this year.
- Length-weight data are treated as exogenous to model (applied to mean length given growth curves by sex). Perhaps empirical annual weights-at-age from the fishery could be used directly instead.
- Are we witnessing a true shift in productivity of the population?
- Dome-shaped fishery selectivity may be why the model is not predicting the 60 cm+ fish.
- The economic value information is a good illustration of how economic information can be helpful in informing the assessment and arguments for ABC.
- Maturity-at-age should be monitored and updated.
- The new "ESP" appendix was a helpful addition.
- Does the Canadian assessment show a strong 2014 year-class too? Response: Unsure, but inquiries have been made.
- The confidence interval around the 2014 year class estimate is relatively precise. Might time-varying selectivity affect these estimates?
- A P* approach could be used instead of fixing the 2014 year class at the 1977 level to account for uncertainty and provide a range of values that can be evaluated for setting ABC.

Due to concerns about the magnitude of the 2014 year-class estimate, Dana proposed setting the estimate equal to the 1977 year-class (4x average instead of 10x average). Using this value results in ABC estimates changing from ~25,000 t down to ~15,000 t.

A Team member inquired why the whale depredation adjustment is needed, since the author already proposed an ad hoc reduction that is much larger than what would be proposed due to mortality arising from whales. It was noted that the study on depredation that formed the basis for the adjustment has been published and was accepted for use in the assessment in 2016. Dana argued that it was important to keep it in the process rather than returning to it in the future, which might be perceived (incorrectly) as setting a new precedent. The Teams concurred with this suggestion.

The Teams agree with the authors' adjustments using the estimate of the 1977 year class in place of the 2014 year class estimate to make modified ABC recommendation. The authors' recommended ABC was accepted and the stock remains in Tier 3b but is expected to be in Tier 3a (above $B_{40\%}$) soon if the 2014 year class is large.

There was some discussion on apportionment strategies, and changes in harvest behavior in the BS may require a need to reassess apportionment. It was noted that this is reassessed each year. Research into

apportionment will need to account for socioeconomic considerations. The author-recommended apportionments remain the same as last year, so the ABC increase is the same (proportionally) over all of the areas. This was accepted by the Teams.

The Teams recommended that further evaluations of selectivity options be pursued.

Economic SAFE

Stephen Kasperski introduced the section with an overview of the socioeconomic work undertaken at the AFSC (<https://www.afsc.noaa.gov/REFM/Socioeconomics/Default.php>). Steve introduced a new AFSC anthropologist, Sarah Wise, and indicated that an additional position is to be filled shortly. A review of the AFSC's Economic and Social Sciences Research program was conducted during July 2017. The review panel's comments have been received, and the AFSC is finalizing the responses to those comments, which will be posted on its website soon (https://www.afsc.noaa.gov/program_reviews/2017/default.htm).

Steve also provided information about the Council's Social Science Planning Team (SSPT), which was created in 2016 by the Council and is intended to focus on medium- and long-term improvements in social science data collection, research priorities, and analytic methods and cuts across FMPs and specific programs. The first public meeting of the SSPT was held Tuesday, November 14.

Ben Fissel presented on the Economic SAFE. At the time of the meeting, it had not been completed due to recent data updates but was scheduled to be finalized by November 20. The Economic SAFE will be similar to past years' and will include revised economic data tables that were presented in September 2017. The Economic SAFE will include Alaska-level summaries of catch, ex-vessel value and real revenue, first wholesale production and real revenue, summarized discards and PSC, and vessel counts. BSAI and GOA tables will present effort, ex-vessel, and first wholesale information. In addition, the assessment includes Pacific halibut tables that include information on catch; PSC; ex-vessel value and price; first wholesale production, price, and value; and effort (vessel counts, days fished, and crew days).

Economic performance reports (EPRs) have been prepared for Atka mackerel, pollock, Pacific cod, flatfish, and rockfish in the BSAI; and pollock, Pacific cod, flatfish, and rockfish in the GOA. Most of these are incorporated as appendices in the relevant stock assessments. Additionally, economic information has been incorporated into the Ecosystem-Socioeconomic Profile (ESP) presented in Appendix 3C of the sablefish assessment.

The economic data from the Economic SAFE through 2016 will soon be available on the AFSC website, and a web application is expected to be launched in January that will provide another means to access the data.

The Economic SAFE contains updated estimates for 2016. Overall, the 2016 trends indicate total catch was up 2.5% since 2015 and fairly stable, while value was stable across both regions and sectors. Wholesale value was up 4% over 2015, while ex-vessel value went down approximately 4%.

Value, price, and quantity indices were presented. Values in BSAI fisheries increased compared to 2015 in the pollock, Pacific cod, flatfish, and Atka mackerel fisheries, while values decreased in the rockfish fishery. In GOA fisheries, values decreased for the Pacific cod fishery, but increased for the GOA rockfish, sablefish, and flatfish fisheries. There was no appreciable change in the value of the pollock fishery compared to 2015.

The Pacific cod EPR was presented as an example of the type of economic information being produced in these reports. These include information on fishery-specific price, quantity, and value information by gear type and area; first-wholesale product quantities, prices, and values; and market-level information on imports, exports, and global supplies.

The Teams thanked Ben for providing the EPRs and noted their utility to assessment authors and Council staff. The author was asked for clarification on “production” versus harvest, which is presented in EPRs (e.g., in the POP assessment). In addition, there was a discussion of ex-vessel value versus first wholesale price as measures of “value”, though it was pointed out that the absence of cost information of harvesting and processing preclude the measurement of the net economic benefits of harvested fish and processed products, respectively, which are the appropriate measures of value.

SSC “general recommendation” on indicators of decline and ecosystem status

Grant Thompson reported on the following SSC recommendation: (1) *“The SSC recommends that, for those sets of environmental and fisheries observations that support the inference of an impending severe decline in stock biomass, the issue of concern be brought to the SSC, with an integrated analysis of the indices involved. To be of greatest value, to the extent possible this information should be presented at the October Council meeting so that there is sufficient time for the Plan Teams and industry to react to the possible reduction in fishing opportunity.”* and (2) *“The SSC also recommends explicit consideration and documentation of ecosystem and stock assessment status for each stock, perhaps following the framework suggested below, during the December Council meeting to aid in identifying areas of concern.”* (A 2x2 “thumbs up/down” table of “Ecosystem Assessment status” and “Stock assessment status” was attached to the SSC recommendation as an example for task #2.)

Grant suggested two steps in a potential way forward: (1) list some questions that will need to be answered when responding to the SSC’s recommendation and (2) form a workgroup to develop a process to address SSC’s recommendation. Grant provided tentative lists of questions to be addressed by the envisioned workgroup:

For task #1:

- Who will make the determination that some set(s) of environmental and fisheries observations “support the inference of an impending severe decline in stock biomass?”
- What form should the “integrated analysis” take?
- Who should conduct the integrated analysis?

For task #2:

- Should the “thumbs” table be used to accomplish task #2?
 - If “yes,” then:
 - Who will make the “thumb” determinations with respect to stock assessment status and ecosystem assessment status?
 - What criteria will be used to make the “thumb” determinations?
 - Is “stock assessment status” supposed to correspond to either of the status determinations that we are required to make under the MSFCMA and, if not, how can readers be made to understand that the same term is being used to refer to two different things?
 - If “no,” then how should task #2 be accomplished?
 - Would the anticipated “Ecosystem-Socioeconomic Profiles” suffice and, if so, will they be ready in time?

Discussion on this topic included the feasibility/need to connect individual assessments to the ecosystem information in the ecosystem status reports (ESR). Various people speculated that the information needed for the two tasks exists already, in which case the question would be how to connect ecosystem information to individual assessments and how to elevate those issues that are most pressing.

It was generally agreed that these issues could be addressed by a workgroup that was comprised of ecosystem report leads, stock assessment authors, and possibly fisheries ecosystem plan team members.

The Teams recommended that the coordinators and co-chairs work with the FEP Team through chairs Kerim Aydin and Diana Evans to appoint a workgroup that will develop a process for responding to the SSC recommendation (both task #1 and task #2), which should include addressing the questions and issues identified in these minutes, with the understanding that the workgroup will need to obtain Joint Team approval of the process in sufficient time to meet the deadlines identified in the SSC recommendation.