



# North Pacific Fishery Management Council

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## Joint Groundfish Plan Teams MINUTES

September 19-20, 2022 – Alaska Fishery Science Center Seattle, WA

BSAI Team		GOA Team	
Steve Barbeau	AFSC REFM (co-chair)	Jim Ianelli	AFSC REFM (co-chair)
Kalei Shotwell	AFSC REFM (co-chair)	Chris Lunsford	AFSC ABL (co-chair)
Cindy Tribuzio	AFSC ABL (vice-chair)	Sara Cleaver	NPFMC (coordinator)
Diana Stram	NPFMC (coordinator)	Kristan Blackhart	NMFS OS&T
Caitlin Allen Akselrud	AFSC RACE	Obren Davis	NMFS AKRO
Mary Furuness	NMFS AKRO	Craig Faunce	AFSC FMA
Allan Hicks	IPHC	Lisa Hillier	WDFW
Lisa Hillier	WDFW	Pete Hulson	AFSC ABL
Kirstin Holsman	AFSC REFM	Sandra Lowe	AFSC REFM
Phil Joy	ADF&G	Nat Nichols	ADF&G
Andy Kingham	AFSC FMA	Andrew Olson	ADF&G
Beth Matta	AFSC REFM	Jan Rumble	ADF&G
Andrew Seitz	UAF	Paul Spencer	AFSC REFM
Michael Smith	AFSC REFM	Marysia Szymkowiak	AFSC REFM
Jane Sullivan	AFSC ABL		

### Administrative/Intro/Council updates

The Joint meeting for the Groundfish Plan Teams (“Teams”) began on Monday, September 19, 2022 at 9:00am PDT at the AFSC. Participation was both in person and offered remotely via Zoom. Roughly 70 people attended the meeting, but attendance varied throughout the meeting. All documents provided prior to or during the meeting as well as presentations given during the meeting were posted to the Teams’ [electronic agenda](#). All presentations are linked in the header for each agenda item in this report.

*Council updates:* Diana Stram and Sara Cleaver provided an overview of Team roles and responsibilities, current Council activities as well as an update on Council process changes that are still under consideration. Some of these may affect the timing of Plan Team meetings and harvest specifications process and feedback from the Teams is sought on this effort. It was noted that no decisions are being made by the Council at this time. There was some discussion about moving the September meeting to August, however it was noted that survey data gets processed in August and an earlier meeting would preclude any survey presentations to the Teams and the public, and also impact resulting ESR updates. The Teams noted that there are plans to improve efficiency within the Teams and some of these plans may assist in some of the timing issues faced by the Teams and turning documents over to the SSC in a timely manner.

Diana Stram updated the Teams on the work of the Climate Change Taskforce (CCTF) and noted that the Council and committees will be reviewing the Climate Readiness Synthesis (CRS) report from the CCTF’s efforts under the first objective in the work plan. She noted that the report will be distributed to the Teams for informal review and comments as desirable and a presentation will be made at an appropriate time to the Joint Teams on CCTF progress. Kirstin Holsman (co-Chair of CCTF) suggested that the Joint Teams consider formation of a workgroup of Plan Team members, CCTF members and

others (stock assessment authors, SSC) to provide recommendations on inclusion of climate change information in future stock assessments, building upon Section 2 of the CRS report. The Teams requested that Kirstin and Diana work together to develop a draft terms of reference for this workgroup for distribution and discussion in November prior to recommending the formation of such a workgroup. It was noted further in BSAI discussions that two potential assessment case studies for this workgroup could be EBS pollock and yellowfin sole.

*Future meetings:* The November Groundfish Plan Team meetings will be held November 14-18, 2022. Tentative dates for 2023 meetings are: September 19-22 and November 13-17.

*Additional items:* The Teams discussed the history of various Plan Team workgroups (recruitment, data limited, stock structure, etc) and that the policy would be to continue to recommend the formation of workgroups as issues arise.

## Spatial Management Policy Papers

Diana Stram provided an overview of the NPFMC policy on spatial management. Included was a document that summarized Plan Team and SSC recommendations along with a timeline on spatial management issues pertinent to the BSAI blackspotted/rougheye (BS/RE) rockfish stock ([BS/RE Spatial Issues](#)). Two applications of this policy have occurred recently, BSAI BS/RE stock structure concerns and concerns over the current grouping of the GOA Demersal Shelf Rockfish (DSR) subgroup within the Other Rockfish (OR) complex. Despite very different issues and a defined four-step policy process, the policy has not provided enough direction to resolve the spatial management issues in either case. As a result, the prescribed timelines and goals the policy lays out have lapsed and the Council has not taken action. Team discussion and public comment illustrated the need for resolution, whether additional research is warranted to resolve questions or if redefining the policy is needed to identify a threshold for triggering an action when an impasse occurs. The Teams continue to have concerns about the application of the spatial management policy for both issues and look forward for additional direction from the Council on how to interpret the policy to better address spatial management issues. Further discussion of the OR/DSR issue was on the GOA Groundfish Plan Team agenda.

## AFSC Stock Prioritization

Chris Lunsford gave a presentation on the status, prioritization, and future direction of the AFSC stock assessment enterprise. Chris updated the Teams on the status of the stock assessment enterprise, including number of assessments, frequency, increases in complexity, and increases in requests from the Teams and the SSC. For 2022, the AFSC will be unable to complete full assessments for BSAI skate complex and BSAI flathead sole. These two may be done as partials". The partial assessment planned for BSAI Alaska plaice may not be completed. This is due to unexpected turnover and staffing issues.

The current assessment frequency status was compared to pre-2017 before stock prioritization. Ongoing improvements and initiatives such as reproducibility, transferability, transparency, and automation were reviewed. Chris noted that assessment and review capacities are at their limits throughout the entire process and there was a need to balance efficiencies, workload, and need for information, with staff resources. He proposed revisiting stock prioritization with the 2017 stock prioritization analysis as a starting point for assessing ways of reducing overall annual workloads. Candidate stocks for reduced assessment frequency were proposed for 2023.

The Teams discussed the pros and cons of several proposals for consideration, including rolling over specifications for stocks that have trivial changes to harvest specifications (ABC, OFL) for an assessment

cycle. This would alleviate the need for going through the entire Team and SSC review process for that assessment cycle and streamline the specification process for those stocks. What defined a trivial amount was up for discussion and would likely be dependent on the state of the stock and the magnitude of potential changes.

The Team noted that this policy would not provide efficiencies for assessment authors, as the same amount of work would be required to determine the level of change for projected biological reference points. Streamlining the projection code and processes could potentially accomplish the same efficiencies. Members of the audience expressed concern about determining a threshold level, and the need for flexibility to respond to changes with off-cycle assessments. The Teams acknowledged that the [Spencer et al. \(2019\)](#) vulnerability analysis could provide useful context for eastern Bering Sea groundfish species and that a new vulnerability assessment for Gulf of Alaska groundfish species was in production.

The Team pointed out that from an author perspective, partial assessments, projections, etc. are a lower priority for time savings and increased efficiency for authors. Addressing other areas of focus and priorities (e.g., full assessments, SAFE Guidelines, etc.) could provide greater benefits. The Teams agreed and pointed out the need to consider vulnerability and the need to be proactive with climate ready assessments.

The discussion moved to the North Pacific assessment and review process, and the distinction between full and benchmark assessments. The Teams pointed out that the effort for reviewing a benchmark versus a full assessment is the same. The current challenge is the amount of material to review (in a compressed time frame), and the review bodies' resources. Further, the need to be prepared to address climate shocks which require increased assessments and monitoring should be balanced with reductions in assessment frequency.

The Teams agreed that the SAFE Guidelines should be revisited. SAFE chapters have become large, complex, and contain increasing amounts of scientific information and responses to comments. They are unwieldy and difficult to navigate. The Teams pointed out that the level of review should align with the number of changes in annual updates. Few significant or trivial changes do not require a full review effort. The Teams discussed the need to engage industry in these conversations. Target species and priorities shift, and the industry wants to be prepared for changes to ABC/OFLs. Careful consideration should be given to decreased frequencies for high value stocks. The Teams further pointed out that any changes in the system would need to have flexibility built in to be responsive to climate change, sudden shifts in distribution, unexplained mortality events, etc.

The Teams noted that the AFSC will be moving forward in 2023 with the following:

- Review of the 2017 stock prioritization process and metrics,
- Consideration of additional stocks for reduced frequency,
- Revisitation of SAFE Guidelines and consideration of an intermediate option between a partial and full assessment
- Clarification and modification of requirements for partial and full assessments, and
- Consideration of off-year requirements.

## [Ecological and Socioeconomic Profiles \(ESP\) update](#)

Kalei Shotwell provided an update on ESPs, noting that there has been some data streamlining and reorganizing with the program.

Review of ESPs has been done in September to provide information for stock assessment authors, and the Teams find these updates useful. The Teams discussed earlier timing, to give more time for stock assessments to review and incorporate results. Kalei commented that this would be more difficult because of data transmission from surveys and other information that are incorporated into the ESPs. Previously, the full ESP draft was presented in November but with that timing, it was hard to incorporate into stock assessments, so it was moved earlier. There was support from the Teams for the schedule of full ESPs in September and report cards in November.

One Team member noted that data quality has improved a lot. The Teams appreciate the help that AKFIN has provided for this project. Also, the Teams agreed that having National ESP Program updates is helpful and Kalei noted that there have been good ideas that come forward from the National Program that our region may want to use.

## Ecosystem Status Report (ESR) Climate Overview

Ivonne Ortiz provided an overview of the Ecosystem Status Report (climate and physical information) for the EBS, AI, and GOA, including recent extreme events. The ESR authors and the Teams acknowledged and expressed concern for communities and colleagues in the Northern Bering Sea and Yukon regions that continue to experience multiple sequential extremes events this year. It is important to also note that Rob Suryan's presentation included biological indices that are included in each region's ESR. The Teams noted between these two presentations that while conditions in the EBS and GOA have improved in terms of long-term warming, biologically the systems appear to be more similar to "warm" or Marine Heatwave (MHW) systems. Specifically, Ivonne presented multiple indices for the EBS that indicate sea ice extent and surface water temperatures are cooler than in MHW years, closer to the long-term mean. However, the thickness of the ice is much reduced and spring melt occurred earlier (with warmer than average surface temperatures in the spring). The Teams noted that this may explain the reduced lipid-rich large zooplankton indices presented by Rob Suryan and the Teams discussed that the ESR authors could explore the linkage between physical conditions in the EBS and the productivity of the system (e.g., sea ice and spring melt productivity).

The Teams noted that the AI continues to have a moderate MHW (as in 2021, 2020), especially the western AI and that the spatial extent of the MHW was up to 75% in the Western AI for multiple time periods over the last few years which may impact juveniles in surface waters. The Teams also noted the long-term warming trend in air temperature in the EBS, with temperatures well above average for the past six years with a notable exception in May 2022 which was the first cold anomaly in the last 6 years. The Teams noted this is consistent with the long-term SST time-series that illustrate long-term warming trends in the AI (in both winter and summer) and in the GOA in summer (but not winter in that time-series). The Teams support continued presentation of long-term climate trends as they are important for providing context of recent MHW conditions and potential impacts of climate change.

The Teams acknowledge the immense effort of the ESR authors to collate and synthesize a broad array of environmental indices into a succinct summary that is useful for context of advice. The Teams commend the ESR authors on the compilation of such information towards management relevant information. The Teams support continued presentation of the ESR to the Plan Teams.

## Forage Species

David McGown presented an overview of the 2022 Forage Fish Species Congress held earlier this year, which focused on the major scientific goals and knowledge gaps by region, and recommendations for future research priorities. The steering committee hopes to present to the Council's Ecosystem Committee

in December or later. The steering committee has proposed a session on North Pacific forage species at next year's PICES meeting, but they are awaiting a response.

The Teams highlighted a few points:

- Delineating how different species distributions are affected by environmental data would be useful.
- Forage species information is also critical for setting up multispecies models.
- Separating information by northern and southern Bering Sea would be useful to evaluate the potential for divergent carrying capacity related to climate change.
- Being able to reconstruct a time series would be helpful for multivariate approaches.

**The Teams recommended that the forage fish workshop requested by the Council occur after the BSAI forage fish assessment in 2023 to better coincide with the assessment cycle.**

### Recruitment Processes Alliance Update

Rob Suryan presented an overview of the 2022 ecosystem surveys in the BS and GOA with the goal of providing the most recent information on ecosystem conditions affecting fish recruitment processes and highlighting some current projects. Many people from across divisions and agencies were involved. The Bering Sea showed typically warm year responses of fewer larger copepods and large catches of age-0 pollock and juvenile sockeye. Age-0 Pacific cod were seen in the BS ecosystem surveys, which is unusual. In the GOA, more large and small copepods were observed along with more age-0 Pacific cod and age-0 pollock. Fish condition studies are planned for each area to determine effects on survival. A discussion of starvation in sablefish larvae revealed that sablefish larvae metabolize their yolk sac slowly and are eating while the yolk sac is present. Experiments on starvation resiliency will be repeated at higher temperatures to mimic warming conditions that sablefish may experience.

During Team discussion it was hypothesized that the ice melting faster could be due to it being thinner in 2020. This may have resulted in less ice algae and thus a decline in large copepods. It was noted that information from the ecosystem surveys are currently presented in the ESRs. The Teams noted that future survey presentations should include a summary slide with ESP-specific indicators.

### Fishing Effects on Essential Fish Habitat (EFH)

Molly Zaleski and Scott Smeltz presented an overview of the Essential Fish Habitat (EFH) 5-year review with a focus on the fishing effects (FE) evaluation. Following the presentation, the Teams discussed the presented maps and noted that impact evaluation primarily focused on the adult life stage for species-specific EFH areas. Species Distribution Maps (SDMs) based on the adult life stage were endorsed by both the SSC and stock assessment authors in 2016, but a decision should be made during the next 5-year review cycle on whether to incorporate additional species-specific life stages. The Teams agreed that the 2022 FE evaluation incorporated newly available information and supported the continued conclusion that adverse effects of fishing activity on EFH are minimal and temporary in nature for all species. Questions were raised over how to evaluate FE on data limited stocks. Authors presented information for 5 GOA groundfish species where FE were unable to be determined due to insufficient data. The Teams commented that it was unclear how to proceed for stocks with little to no data informing the models and the need for an option for the stock assessment authors to note that models may not be appropriate for some data limited stocks. **The Teams recommended that the SSC provide input on the process for the evaluation of FE on data limited stocks.** Stock assessment authors noted that in some cases data were insufficient to provide conclusive evaluations. For species where the authors reported insufficient



information, the Teams and authors recommended that the complex map be used as a proxy for the individual species EFH maps for the FE assessment.

Spiny dogfish was highlighted as one of the stocks identified as lacking data for FE evaluation. **The Teams and authors recommended an evaluation of fishing effects on GOA spiny dogfish EFH using the FE model and the 50% CEA from the new EFH map and providing this analysis for the SSC meeting.** The Teams discussed and emphasized the value of the longline data set. **The Teams recommended incorporating survey longline (both the AFSC and IPHC longline surveys) data into SDMs where appropriate to evaluate the value of using these data for FE evaluations.** The Teams recognized that substantial work went into this evaluation and noted its value to stock assessment authors.

## AFSC Longline Survey

Kevin Siwicke presented an informational update on the 2022 AFSC longline survey of the GOA and AI (the Bering Sea is surveyed in odd years and was not covered in this year's survey). Overall, preliminary relative population numbers for sablefish continued an increasing trend. An investigation of hook competition was presented for continuity, but there was uncertainty surrounding the interpretation of the results. The Teams asked if changes in abundance for some species could be indicative of species moving out of the survey range. Whale interactions with survey gear continued at similar rates to previous years, while subsurface temperatures recorded during the survey remained higher than average.

During the 2022 survey, scientists conducted a comparison study between hook-and-line and slinky pot gear types; the results showed catch rates and length comps between the two gears to be comparable across depths. The Teams discussed the results of this gear comparison study. Project collaborators noted that the correlation coefficient between the two gears was surprisingly high and the presence of smaller fish in the slinky pots on day 1 was to be expected because the escape rings on the pots were closed; it was further noted that this effect was more related to depth, rather than gear. The Teams asked about the magnitude of bycatch in the slinky pots. Project collaborators noted higher bycatch on the hooks but low overall bycatch levels in the project area which was mud habitat utilized by sablefish and not many other species. Another question focused on gear equivalency (i.e., how it was determined that 90 skates = 120 pots). Kevin noted that catch rates are standardized for the analysis, but the number of pots was increased for the study this year to try to improve the equivalency. The Teams noted that industry catch rates are better with slinky pots than hook-and-line gear, so these results are surprising; further discussion with industry was suggested.

Additional Team discussion centered around interpolation methods used for calculating relative population numbers when areas are not sampled (e.g., Bering Sea in even years). Methods are based on sablefish and may be inconsistent for other species, and comparisons may be inappropriate. The Teams noted that methods to interpolate the Bering Sea and Aleutian Islands in off-years may affect how other stocks should be interpreted. Analysts for these stocks should be aware.

## Whale Depredation Estimates

Megan Williams presented an analysis of whale depredation on sablefish fishery catch. This analysis built upon work from previous years and was updated with recent observer data. The 2017 GAM model was updated with new data resulting in an increase in estimated sperm whale depredation. When binning the data in five-year intervals, the increase in sperm whale depredation was consistent across years. A second model for the proportion of sets depredated showed that sperm whales and killer whales tended to depredate on sets on larger boats and deeper sets more often. Overall, a small amount of the total mortality can be attributed to whale depredation, but depredation rates are regional. For example, most killer whale depredation occurs in the west.

It was noted that there was an increase in the use of pots in the central GOA and perhaps this resulted in a redistribution of depredation to other areas. The Teams suggested that would be a good topic for additional work.

The Teams noted there was a considerable decrease in total sablefish mortality due to whales in 2021, likely attributed to an increase in pot gear. Even though the whale depredation rates were similar, there was a smaller amount of effort using hook-and-line gear, resulting in lower overall sablefish depredation mortality.

Megan noted that the magnitude of depredation compared to the quota has been very small (less than 1%). Annual updates to the model may be unnecessary due to the limited amount of mortality. However, if data were lacking to inform the model and pot gear catch continues to increase, it may be worthwhile to provide stability and simplicity in how the estimates were applied. Additionally, the ESP could be an appropriate place to document changes in depredation. Stakeholders were interested in further research, possibly with a coarser analysis to accommodate the sparse data.

The Teams noted that observer coverage between CPs and CVs differ, and lumping data would be more indicative of rates from CPs. The Teams stressed the importance of evaluating whether current observer coverage is enough to parse differences between the two sectors.

## Sablefish CPUE Standardization

Matthew Cheng presented recent developments in standardizing fishery-dependent Catch-Per-Unit-Effort (CPUE) across gear types for sablefish. The current assessment uses observer and logbook data for the hook-and-line fishery, however, the pot fishery for sablefish has been increasing in recent years and should be taken into account in the CPUE index. Further, the current assessment does not leverage the logbook pot data that is available to supplement the observer data, which is projected to decrease due to implementation of electronic monitoring. Two model structures were presented, one that included both the pot and hook-and-line fisheries and another that only included the hook-and-line fishery. Results from each model agreed well with the current CPUE index used in the assessment, except for trends in recent years. The Teams concluded that the combined hook-and-line and pot index should be considered for use in the 2023 assessment, but how to calculate uncertainty and how the assessment may deal with selectivity are currently unknown. The Teams asked whether the CPUE trend could change over time as the fleet gains experience fishing sablefish with pots, as well as whether vessel effects were considered in the models. The author noted that it is difficult to ID vessels, as different vessel codes have been used in the observer and logbook data, but when vessel ID was investigated as a random effect there was no significant improvement in the model. The Teams noted that a bootstrap approach could be used to quantify the uncertainty in the CPUE index. The Teams also noted that the relative difference in catchability between hook-and-line and pot gear could be further evaluated through this analysis. The Teams commended Matt for his work and look forward to reviewing a possible sablefish assessment configuration that includes this combined gear index.

## Pacific Sleeper Shark Stock Structure and Model Updates

Cindy Tribuzio provided a presentation on the Pacific sleeper shark stock structure template in the GOA and BSAI and an exploration of data-limited assessment models in response to previous Teams and SSC requests. Key findings of the stock structure template include declines in fishery and survey catch since the early 2000s, contracted spatial extent in both the fishery and survey, high vulnerability to depletion due to low productivity life history characteristics (e.g., generation time likely exceeding 50 years), no significant genetic stock structure but potential for demographic structure, and identification of a potential nursery habitat in the Bering Sea. Also, most of the Pacific sleeper sharks caught in Alaska are immature.

These findings suggest a need for improved monitoring and the author provided several recommendations for the Teams to consider regarding expanded monitoring and improvements to the stock assessment.

The author presented alternative models to bring forward in November using the Only Reliable Catch Data (ORCS) model that uses analyst-evaluated scores for a number of stock attributes that are then averaged to determine the stock status as underexploited, fully exploited or overexploited. A base and ORCS model alternative would be presented for Pacific sleeper shark in the BSAI and GOA. The constant catch models were not recommended as they assume catch is known without error and do not take into account accessory information.

The Teams agreed with the author's recommendations regarding the stock structure template.

**Specifically, the author recommended and the Teams concurred with:**

- 1. Retaining observer at-sea length measurements and expand list of shark species codes,**
- 2. Separating the Pacific spiny dogfish ABC from the other shark species in the GOA,**
- 3. Developing fishery -dependent and -independent indices for use in stock assessment**
- 4. Continuing to expand biological studies of Pacific sleeper sharks to inform catch models**
- 5. Creating a more efficient combined (BSAI and GOA) stock assessment document for Alaska sharks.**

**The Teams also agree with the author's recommendation to bring forward the status quo assessment approach and the ORCS catch model as alternatives for sleeper sharks in November.**

The author proposed an alternative approach for the other/unidentified sharks in the BSAI and GOA and spiny dogfish in the GOA to account for extreme and rare catch events. **The Teams agreed with the authors recommendation to bring the alternative approach forward in November.**

The Teams discussed current efforts to reach out to the observer program regarding potential change in protocols, using logbooks to record more information, and a special project to use machine learning to speciate sharks in the fixed-gear electronic monitoring strata. Since a sibling pair was found in the eastern Bering Sea, it was suggested by a member of the audience that close-kin mark recapture may be a way to expand to an estimate of population size. The Teams further discussed the benefits of combining the stock assessment and that there was precedent in the Alaska skate stock assessments for splitting separate species within a single stock assessment report. It was noted by an industry stakeholder that making "smaller boxes" could just introduce additional pathways for the industry to "trip up" - and that there may be benefit to first focus on better monitoring and investigating the spatial distribution of the catch before shifting to smaller management units.

The Teams also discussed that the Tier 6 designation has typically been applied to stocks that historically were not targeted and also did not have a reliable estimate of biomass. A member of the public noted that these sharks are not targets and are already discarded when caught and that it was unclear what the impacts to the industry would be with these changes. The Teams also discussed the benefit of the ORCS catch model to lower risk of exploitation and that the methodology was similar to the risk table. The Teams discussed the need to maintain consistency with the National Standards and have separate OFLs and ABCs for each FMP in the combined document.

## **State-Space Configurations**

Giancarlo M. Correa presented *Incorporating length information and growth estimation in the Woods Hole Assessment Model (WHAM)*. He presented the utility and limitations of the current model as well as new expansions to that model. The Teams raised the possibility that these new approaches, which allow



climate linked assessments to be conducted rapidly and propagate errors correctly and easily, are transformative. **The Teams recommended that a workshop proposed by the author around this approach and applications be conducted in the Spring.** Case studies that could be included at the workshop were subsequently discussed (e.g., the SEATTLE multispecies model and projection model for Matthieu Veron, postdoc working with Cody Szuwalski).

## Random Effects-Tier 4-5 Considerations

Jane Sullivan provided a presentation on a consensus version of the random effects model (called the 'rema' package in R) for Tier 4/5 and apportionment. The Teams discussed additional features available in 'rema', including estimation of additional observation error in the models, model comparison using AIC, calculation of weighted AIC to investigate relative contributions of individual parameters, potential priors on process error based on life history, the addition for covariates to the model, and the potential correlation of additional observation error among different indices. Jane indicated that there is much potential for future expansion and exploration, and the aim of this version was to provide a starting point for replacing the various random effects model approaches in ADMB. The Teams commended the work. Several users of the software noted that they found the new approach easy to use and well documented.

**The Teams recommended that stock assessment authors transition from the ADMB random-effects survey smoother to this package which implements the same model with several improvements.**

The Teams also supported future developments for this package, including model validation work and continued exploration of implementing the Tweedie distribution for data with zeros.

## Economic SAFE

Ben Fissel presented the September draft of the Economic SAFE Report. Ben is leaving the NOAA AFSC and this will be his last presentation of the Econ SAFE. The Teams acknowledged Ben's many years of service and great contributions towards producing the Econ SAFE and the EPR sections within the individual stock chapters.

The report updates available economic information for 2021; as always there is a one-year delay in most economic data. Ben will provide a more comprehensive presentation of trends at the November Plan Team meeting. The Economic and Social Science Research Program (ESSR) at AFSC is working on backfilling his responsibilities. ESSR will continue to produce the Econ SAFE as usual, but ESSR is in the process of finding a person to take the lead on the Econ SAFE going forward. Ben provided a brief summary of groundfish economic activity. The content of the September Econ SAFE draft will be similar to previous years, inclusive of the executive summary, the economic data tables and economic indices.

The discussion started with a question about how people will complete their ESPs without economic information. Ben responded that they do not anticipate any changes in the delivery of their services and expertise. The discussion continued around the 10 ESPs and Economic Performance Reports (EPRs) made by Ben. These documents usually end up in the appendix in other reports, but people usually blend the economic information to make them useful across different contexts. Stakeholders find great value in AKFIN and its ability to help people obtain the data in these reports directly. The discussion then turned towards the importance of the economic expertise offered by Ben and ESSR. Ben responded that ESSR will continue to be responsive to questions, but ESSR could also use more feedback on what information stakeholders find value in and really need. There was a question about low cod prices, but Ben responded that cod prices were not that low, it was more an issue with lower volumes. The final question in the discussion was about COVID surveys and existing efforts to measure the impact of COVID. Ben

explained that there was an external COVID survey implemented outside of ESSR, but the survey samples are limited. Cost information collections may be useful as well in measuring the impact of COVID, but with the existing cost information available to ESSR, the impact of COVID has been tough to disentangle from other phenomena.

The Teams suggested that the Council poll how different people use the Economic SAFE report; specifically, to find which items are most useful. This transition phase provides an opportunity to explore new ways of presenting information.

## **Genomic Update on Pollock and Cod**

Sara Schall presented the latest results on this work. One question raised was whether there was consistency between satellite tagging results and the genetics studies. Some tagged individuals have been sequenced and future work will integrate these results. The Teams noted that examining parallel studies in demography along with the new genetic analyses will be included when the next stock structure analyses are requested. This should coincide with the combined results of the tagging and genetics studies and may be appropriate in the next couple of years. The Teams support this study and it should remain a high priority. They also noted that the next stock structure report should include information from the GOA and BSAI combined.

## **Adjourn**

The Joint Plan Team meeting adjourned at 5pm Pacific time.