NORTH PACIFIC FISHERY MANAGEMENT COUNCIL
Angel Drobnica, Chair | Diana Evans, Executive Director
1007 W. 3rd Avenue, Suite 400, Anchorage, AK 99501
Phone 907-271-2809 | www.npfmc.org

Report from the BSAI Groundfish Plan Teams

September 10-11, 2026

BSAI Groundfish Plan Team Members:

Steve Barbeaux	AFSC REFM (co-chair)	Kirstin Holsman	AFSC REFM
Kalei Shotwell	AFSC REFM (co-chair)	Andy Kingham	AFSC FMA
Cindy Tribuzio	AFSC ABL (vice chair)	Beth Matta	AFSC REFM
Diana Stram	NPFMC (coordinator)	Andrew Seitz	UAF
Lukas DeFilippo	AFSC	Jane Sullivan	AFSC ABL
Allan Hicks	IPHC	Steven Whitney	NMFS AKRO
Lisa Hillier	WDFW		

Introduction

The Bering Sea Aleutian Islands (BSAI) Groundfish Team met at the Alaska Fisheries Science Center, Seattle, WA from September 10-11, 2026 to review information to inform the 2027 specifications process. All Team members were present as well as between 20-60 members of the public, state and agency staff in-person or online throughout the meeting.

EBS Bottom Trawl Survey

Duane Stevenson presented results and updates from the 2026 Eastern Bering Sea (EBS) bottom-trawl survey. The 2026 survey included the EBS shelf only and completed all 350 stations in the standard sampling area. The Northern Bering Sea (NBS) survey was not conducted in 2026. The NBS survey is currently conducted every other year so that alternate years can be used for field work associated with bottom-trawl survey modernization; both the EBS and NBS surveys are scheduled for 2027.

Bottom temperatures in 2026 were substantially colder than in recent years. The area of the cold pool, defined as water ≤2°C, was the largest since 2012 and extended into Bristol Bay and toward the Alaska Peninsula. However, the area of very cold water was considerably smaller than during the cold periods of the early 2000s.

Survey staff described a change in the calculation of trawl effort associated with net-mensuration sensors and the Marport-to-NetMind correction was discontinued Recalculation of the 2024 and 2025 survey data resulted in changes of approximately 3–4% to those biomass indices, and future effort estimates using the digital sensors will be calculated without the correction. Consequently, the Team discussed the importance of assessment authors obtaining the complete updated survey time series each assessment year rather than simply appending the newest survey observation to previously downloaded data. Survey staff noted that explanatory language describing the sensor and effort-calculation change has already been developed and can be provided for use in stock assessment documents.

Biomass indices for most major species were stable or increased in 2026. The principal exception was Alaska skate, which continued a multiyear declining trend and was noted as potentially concerning. The pollock biomass index increased by approximately 50% from 2025 and the survey observed an increased number of small pollock. The Team discussed the recent volatility in the pollock bottom-trawl survey index and whether it could reflect changes in horizontal or vertical availability rather than changes in total population biomass. Work is underway to evaluate vertical availability using acoustic information in

conjunction with bottom-trawl data. The pollock assessment author noted that uncertainty associated with horizontal and vertical availability is represented through process error in the assessment model, moderating the impacts to some extent.

The Team discussed progress and the timeline for modernization of the Bering Sea bottom-trawl survey and initial field work was started in 2026. The current optimistic target for transitioning to a fully redesigned Bering Sea bottom-trawl survey is approximately 2031, although survey staff emphasized that this schedule remains uncertain and dependent on available vessel time and staffing. GAP has also been seeking additional analytical capacity, including postdoctoral support, for development of the survey design. Conducting the NBS survey in alternate years limits the vessel time available for gear-development and comparison work and contributes to the extended modernization timeline.

The Team discussed incorporating deepwater tows into the redesigned Bering Sea survey. The current intent is for the unified survey design to extend to at least 400 m and thereby include the upper continental slope. Survey staff also hope to conduct test tows as deep as approximately 600 m to evaluate the feasibility of sampling at greater depths. Covering the expanded geographic area and depth range will be logistically challenging, and current staffing and vessel resources are insufficient to add routine deepwater sampling before implementation of the redesigned survey.

EBS Acoustic Surveys

Abigail McCarthy presented preliminary results from the 2026 MACE Eastern Bering Sea acoustic-trawl survey (ATS), and Nate Lauffenburger presented the 2026 acoustic vessel-of-opportunity (AVO) index derived from acoustic data collected during the EBS bottom-trawl survey. The ATS is generally conducted biennially, while the AVO provides an annual index of midwater pollock backscatter from the bottom-trawl survey and therefore provides information during years when the ATS is not conducted.

The preliminary ATS estimate for the core survey area was approximately 3.6 million metric tons and 13 billion pollock. The survey observed more juvenile pollock than in recent survey years, with a presumed age-2 component that was the largest observed since the 2012 year class. Relatively few pollock were observed in the northern survey extension. The ATS results remained preliminary and were expected to change somewhat after incorporation of bottom-trawl information from near the seafloor.

There are no concurrent midwater trawls during the bottom-trawl survey, the size composition associated with AVO backscatter is not directly observed. In 2026, however, the spatial distributions from the AVO and ATS were similar despite the surveys not sampling individual locations at exactly the same time. The 2026 AVO observation also fell within the historical relationship between AVO backscatter and ATS biomass, and addition of the 2026 observation did not appreciably change that relationship.

The Team discussed the temporal and spatial overlap between the ATS and bottom-trawl surveys. The survey staff replied that both surveys occur over approximately the same seasonal period, from late May through early August, but they progress across the survey area at different rates and therefore do not sample the same locations simultaneously. The Team noted that the overlap in 2026 provided a useful opportunity to compare the ATS and AVO observations directly.

The Team discussed ATS midwater-trawl methodology, particularly how targeted trawls are used in areas of both high and low acoustic backscatter. The survey staff responded that midwater trawls are not used to calculate CPUE; rather, catch species and length frequencies are associated with acoustic backscatter to characterize the observed signal. In areas with very little backscatter, longer trawls may be required to characterize the small amount of signal present. The nearest appropriate trawl is used to assign species and length composition to acoustic observations, with bottom-trawl data also used to characterize near-

bottom backscatter when those data become available. The Team also discussed how tow duration is determined. The survey staff replied that the midwater trawl is equipped with a downward-facing sweepsounder to observe when fish go into the net, along with the backscatter, to set tow lengths. This approach has been used consistently over the survey time series.

The Team discussed whether AVO backscatter should be compared with ATS abundance in numbers rather than biomass because AVO lacks length-composition data. The survey staff responded that biomass has historically been used for the comparison and was considered less sensitive than numbers to changes in population size structure. The discussion noted that backscatter per individual is strongly dependent on fish length, making conversion to numbers particularly sensitive to size composition, whereas the relationship with biomass is more direct.

The Team expressed appreciation for the substantial effort by the MACE and GAP teams required to conduct the ATS and bottom-trawl surveys and produce the AVO index, including additional acoustic calibrations aboard the bottom-trawl survey vessels. The Team also recognized the considerable effort required to process and disseminate survey products rapidly for use in assessments.

The Team discussed the spatial distribution of juvenile pollock. Although the typical pattern is for juvenile pollock to be more abundant in the northwestern portion of the survey area, smaller fish have also been observed east of 170°W, including during the 2024 survey. The 2026 occurrence east of 170°W was therefore somewhat unusual but not unprecedented.

A member of the public asked whether the increase in pollock biomass was being driven primarily by the strong 2018 year class. Because ATS ages were not yet available, the survey team cautioned against assigning specific ages solely from length. The ATS length distribution indicated contributions from multiple size groups, including abundant 20–30 cm fish as well as larger adults, while preliminary ages from the 2026 bottom-trawl survey continued to show the 2018 year class prominently. A member of the public also asked about the availability of herring catches in the ATS and survey staff replied that they track herring catch through the survey time series and indicated that historical data could be provided upon request. The Team discussed the potential for obtaining acoustic-survey information from the western Bering Sea. The survey team noted that there had historically been productive collaboration and data exchange with Russian scientists, but access and collaboration have been limited in recent years; potential requests for access continue to be considered.

EBS Pollock

Jim Ianelli presented the EBS pollock assessment, which reviewed model developments including the transition from ADMB Model 23.0 to Rceattle Model 26.0, retrospective patterns, age-composition diagnostics, and survey selectivity.

The Team discussed the relatively strong retrospective pattern in Model 26.0 and noted that a similar pattern occurred across the other models examined, although the magnitude of Mohn's rho differed among models. The analysis indicated that the absence of the 2020 bottom trawl survey (BTS), followed by the 2021 BTS observations, contributed substantially to the retrospective pattern. The Team discussed whether the sensitivity to the missing survey year represented a model robustness issue or reflected the influence and interannual variability of the BTS data. The author considered the pattern more indicative of a data issue than a model-specific problem.

The Team discussed how time-varying selectivity and the way observations enter the model could contribute to the retrospective pattern. Rceattle provides flexibility for treating time-varying processes as random effects, which may allow further evaluation of these effects. The Team specifically discussed the

treatment of age-1 BTS selectivity. Age-1 availability is currently given substantial flexibility through a lightly penalized selectivity parameter, and the Team discussed evaluating alternative treatments, including changing the penalty or making age-1 selectivity time invariant, to determine the effect on the retrospective.

The Team also discussed whether environmental conditions, changes in distribution or ecosystem structure, and the observed volatility of the BTS biomass index could contribute to the retrospective pattern. The 2021 BTS index was below average following an above-average 2019 observation, and the Team noted the substantial recent interannual variability in the survey. The author agreed that this could indicate that some of the retrospective behavior originates in variability in the observations rather than model structure. The Team noted that uncertainty intervals for the retrospective estimates overlapped substantially, particularly in terminal years.

The Team discussed an approach for more directly distinguishing model-related from data-related causes of the retrospective pattern. Under the proposed self-test, observations would be simulated from Model 26.0, the model would be refitted to each simulated dataset, and retrospective peels would then be conducted on each simulated realization. Because the generating model is known in the self-test, consistent retrospective patterns in the simulated datasets would indicate that the model or estimation process itself can generate the pattern, whereas an absence of comparable retrospective patterns would provide evidence that the observed data are an important cause. The Team also discussed examining retrospective changes in selectivity as part of this analysis.

The Team discussed the age-composition OSA diagnostics. Although the aggregate fits were considered good and no diagnostic issue was viewed as sufficient to preclude use of Model 26.0 for management, the OSA residuals showed patterns indicating potential data-weighting and temporal-fit issues. The Team discussed differences between internally calculated OSA residuals in Rceattle and residuals calculated externally for the RTMB implementation, noting that the internal approach is more appropriate as development moves toward state-space models. The Team considered further investigation of age-composition weighting a priority and noted the need for clear documentation of the weighting used in the November assessment.

The Team discussed the transition from the accepted ADMB Model 23.0 to Rceattle Model 26.0. The bridge between the models was considered thorough, and the resulting population trajectories were very similar. The Team noted advantages of continuing development in Rceattle, including active staff expertise, computational efficiency, support for state-space methods and DSEM, and compatibility with ongoing assessment development. The Team supported the author's direction of bringing Model 26.0 forward for management use while retaining Model 23.0 as the comparison model during the transition.

The Team briefly discussed the treatment of survey catchability. The author clarified that catchability itself is not time varying; rather, the model combines constant q with time-varying selectivity, which changes survey availability through time. This topic was presented primarily for awareness rather than as a request for a specific model change.

The Team also discussed ongoing exploratory work on sex-ratio patterns and possible connections between portions of the Bering Sea and Gulf of Alaska. These analyses were considered future research and were not expected to be incorporated into the November assessment. The Team expressed interest in continued development of material that could contribute to an EBS pollock Ecosystem and Socioeconomic Profile (ESP), recognizing that this work is being developed concurrently with assessment responsibilities.

The Team recommended that Model 26.0 be brought forward for management use in the November assessment and that Model 23.0 also be presented to provide continuity and comparison during the transition to Rceattle. The Team explicitly supported the author's proposed direction, with discussion identifying Models 23.0 and 26.0 as the models to be carried forward.

The Team recommended evaluating alternative treatments of age-1 BTS selectivity, including the selectivity penalty and a time-invariant alternative, to assess their influence on the retrospective pattern.

The Team recommended extending the Model 26.0 self-test by conducting retrospective peels on simulated datasets generated from the fitted model to help distinguish retrospective behavior arising from model structure from that associated with the observed data. The Team also recommended examining retrospective patterns in the time-varying selectivity estimates.

The Team recommended presenting retrospective results from Models 23.0 and 26.0 side by side in November.

The Team recommended further examining the influence of BTS index volatility, and other potential data or ecosystem-related causes, on the retrospective pattern.

The Team recommended clearly documenting the age-composition weighting used in Model 26.0 and prioritizing further evaluation of data weighting given the patterns evident in the OSA diagnostics.

The Team recommended continued development of material that could contribute to a future EBS pollock ESP, as resources allow.

Greenland Turbot

Meaghan Bryan presented preliminary results of the BSAI Greenland turbot stock assessment, including model changes intended to follow stock assessment best practices, alternative models beginning in 1977, and a Tier 5 REMA model. The Team greatly appreciated the extensive amount of work and the numerous data and model configurations examined by the authors, as well as their careful consideration of the substantial data limitations and conflicts affecting this stock. The Team also appreciated ongoing work with the Age and Growth Program to produce additional age information.

The Team discussed the persistent tension between the survey indices and length composition data. Francis reweighting substantially downweighted the length composition data, particularly survey length compositions, and improved the fit to the AFSC longline survey while reducing the influence of length compositions on recruitment estimates. The Team recognized that the AFSC longline survey currently provides the primary fishery-independent information on the adult population, while the EBS shelf survey provides particularly important information on younger fish and recruitment. The Team also noted that the models recommended for November continued to exhibit retrospective patterns, particularly Model 25.3a, and considered this an important source of uncertainty when evaluating models for management advice.

The Team discussed the treatment of recruitment autocorrelation and whether its use should be considered alongside other modeling best practices such as annually varying input sample sizes and Francis reweighting. Recruitment autocorrelation was originally included in the Greenland turbot assessment because the early portion of the model otherwise tended to concentrate recruitment into a few very large events that were required to support the historical catch rather than being directly informed by

composition data. The Team suggested sensitivity runs with and without recruitment autocorrelation would be useful for future model development, but not necessary for the November assessment.

The Team discussed model formulations that had a later start year (1977), which indicated a different hypothesis of a historically large low productivity stock as compared to a historically small high productivity stock in the current long time-series models which begin in 1945. . The Team found this contrast informative because it illustrates uncertainty in the initial scale and productivity of the stock. However, the authors encountered greater instability and parameters reaching bounds in the later-start models and therefore did not recommend those models for November. The Team agreed that the later-start hypothesis remained useful for future investigation.

Given the uncertainties of the Tier 3 model and the tension between the survey indices and length compositions, the Team discussed the benefits and challenges of bringing forward Tier 4, Tier 5, and other less data-intensive assessment approaches. A Tier 4 approach would retain more biological information than Tier 5 but depends strongly on maturity and fishery selectivity assumptions. The current maturity ogive is old, although new maturity samples have been collected and an updated maturity ogive is expected for the next full assessment. The Team therefore considered Tier 4 and other intermediate approaches useful avenues for future work rather than additions to the November workload.

The Tier 5 REMA model incorporated the available survey information from 5 different survey elements and produced a biomass trend similar in recent years to the Tier 3 assessment. The Team discussed whether all available survey series were necessary or whether a smaller set of informative indices could provide a more appropriate Tier 5 assessment. In particular, discussion focused on the information provided by the AFSC longline survey for the adult population and the Bering Sea slope portion of that survey. The Team also discussed the REMA scaling parameters and survey grouping and agreed that the implementation should receive additional review before November. The Team emphasized that consideration of Tier 5 in November would be on an interim basis for management advice while additional data are developed and would not represent a permanent change in assessment tier.

The Team discussed the importance of additional age information. Existing ages are available from the EBS shelf and slope bottom trawl surveys, although the authors noted that the slope survey age distributions require further investigation before they are incorporated into the model. The Team discussed the importance of selecting representative archived fishery otolith collections given limited ageing capacity. The authors also noted that Greenland turbot otoliths are not currently collected by the AFSC longline survey and planned to explore the feasibility of future collection.

Members of the public emphasized the importance of deepwater slope information, noting that Greenland turbot are more prevalent at greater depths but that collocated rockfish species can constrain fishing in those same areas. The Team reiterated the importance of data from deepwater stations for this and other deepwater stocks. Survey staff noted that competing survey priorities, gear limitations at deep and hard-bottom stations, and the timing of survey redesign make renewed slope sampling unlikely in the near term.
The authors also noted that an Ecosystem and Socioeconomic Profile had been initiated to develop a more comprehensive view of available information, including data not currently used in the assessment, with initial application to the risk table.

Plan Team recommendations specific to November:

The Team recommended that the November assessment clearly document how the AFSC longline survey indices are calculated and used in the Tier 3 and Tier 5 approaches, including the historical

interpolation of the longline survey RPNs and how the revised survey design affects treatment of survey years.

The Team recommended bringing forward Models 25.0, 25.3a, and 25.4a as candidate Tier 3 models for management advice in November. Models beginning in 1977 were not recommended for November because of model instability but remained informative exploratory models for future consideration. The three recommended models match the authors' proposed November set of models.

The Team recommended bringing forward an updated Tier 5 REMA model for potential consideration as an interim basis for management advice while additional data are developed. The Team emphasized that this would not constitute a permanent change in assessment tier. Before November, the Team recommended consulting with AFSC staff familiar with REMA to determine the best methods for parameterizing REMA, including scaling structure and whether a reduced set of the most informative surveys would be appropriate.

The Team recommended that the research/data-gaps section of the November stock assessment identify the information needed to improve the assessment and support future Tier 3 or alternative assessment approaches. This should include priorities for obtaining additional age data, criteria for selecting representative archived otolith samples within available ageing capacity, the potential for future longline-survey otolith collection, and the importance of deepwater survey information.

Plan Team recommendations for the future (i.e. not in this assessment cycle):

The Team recommended that when developing future models to continue considering best practices such as calculated input sample sizes that vary across years and Francis reweighting, and to also investigate the use of recruitment autocorrelation in other assessments and whether there is utility in a sensitivity test with and without it.

The Team recommended exploring Tier 4 and other alternative data limited assessment methods that are less complex than the current Tier 3 assessment but retain more available information, such as length data, than a Tier 5 assessment. This work was recommended for future assessment cycles rather than November.

The Team reiterated its appreciation to the authors for the extensive effort devoted to this assessment and for addressing or attempting to address the many Team and SSC comments accumulated over multiple assessment cycles.

Yellowfin Sole

Ingrid Spies presented model development for the BSAI yellowfin sole stock assessment. The assessment was reviewed by the Center for Independent Experts (CIE) in June 2026, with the review focused on the transition from the ADMB model to Stock Synthesis (SS3), the appropriate assessment tier, treatment of growth and survey data, and the use of environmental covariates in survey catchability. The CIE generally supported the transition to SS3. Two reviewers supported use of a Tier 3 control rule, while one considered Tier 1 adequate if reference points were treated as model-dependent and evaluated alongside Tier 3 proxies and appropriate sensitivities. The authors proposed moving forward with the assessment in SS3 using a Tier 3 control rule.

The three models presented for consideration were Model 25.0, the updated SS3 base model; Model 25.0a, which additionally used the sampleISS approach to determine input sample sizes for survey age compositions; and Model 25.0b, which built on 25.0a but used EBS bottom temperature rather than

survey start date as the environmental covariate for survey catchability. Model 25.0b provided the best fit to the survey index and the lowest overall likelihood among models with complete 2025 data, although the authors noted that SDNR values below one could indicate some overweighting of the data. The author therefore preferred bringing all three models forward to November while continuing to evaluate data weighting and diagnostics.

The Team discussed the use of environmental information in the survey index and assessment. The current assessment model incorporates the survey bottom temperature. The Team discussed the potential value of examining the cold pool as an environmental covariate, as well as continued consideration of whether environmental information may effectively enter both the survey-standardization and catchability components. This work was considered appropriate for a future assessment rather than the November 2026 assessment.

The Team discussed the empirical weight-at-age approach and the apparent increase in weight at older ages in recent years. Fishery weight-at-age is derived from the available catch, age, and length information, with approximately 600 yellowfin sole aged from the fishery annually; consequently, relatively few observations may be available at the oldest ages. The Team discussed future exploration of growth modeled as a function of temperature, which could provide an alternative way to represent environmentally driven growth variation. The authors noted that the current empirical weight-at-age approach may already capture much of this variation, and this work was explicitly identified as future work rather than a change for the current assessment cycle.

The Team also noted that one CIE reviewer raised concerns about potential vessel effects in the EBS bottom trawl survey. Survey staff reported that vessel effects have been investigated and concluded that there were no observed consistent vessel effects, and therefore no additional vessel-effect correction was proposed for the current assessment.

The Team expressed appreciation for the clear presentation and extensive model development and noted that the assessment benefited from the CIE review and subsequent model evaluation.

The Team recommended bringing forward Models 25.0, 25.0a, and 25.0b for consideration in the November assessment using Tier 3 reference points.

EBS Pacific Cod

Steve Barbeaux presented proposed model changes and exploratory analyses for the EBS Pacific cod stock assessment, with work focused on the population plus group and development of a split-sex model. The Team thanked the authors for a thorough report and a succinct yet informative presentation.

The Team discussed whether age 14 was an appropriate plus group and whether the plus-group and split-sex analyses should be evaluated jointly rather than independently. Since the updated methodology for Pacific cod ageing began, no Pacific cod older than age 14 have been observed. The author noted that the age-20 plus group is based on ages from the previous, and now invalid, ageing method. The Team discussed whether a plus group should extend beyond the maximum observed age to represent fish that could occur in an unfished population, as well as whether sex-specific differences in growth at older ages could interact with the choice of plus group.

The Team discussed natural mortality in the context of the split-sex model. The exploratory split-sex model used the same natural mortality for males and females because the life-history invariant estimates are informed by maximum age and the observed maximum age is the same for both sexes. The author noted that other natural-mortality formulations had been explored but were not presented. Discussion

included both sex-specific and age-specific natural mortality. Exploratory age-varying formulations suggested a U-shaped pattern, with higher natural mortality at young and older ages, and the Team noted the potential interaction between age-varying natural mortality and dome-shaped selectivity.

The Team also discussed seasonal patterns in fishery sex composition and possible sex-specific movement. One hypothesis discussed was that males may arrive at spawning aggregations before females and therefore be more vulnerable to the winter trawl fishery early in the season. The tagging studies did not determine sex when fish were tagged; however, genetic samples are available and could potentially be used to identify sex of tagged individuals. The Team discussed using those data to evaluate whether sex-specific movement contributes to observed seasonal sex-ratio patterns and to divergent movement behavior among tagged fish.

Public discussion included questions about the Pacific cod ageing backlog and whether reducing effort devoted to model-based survey age compositions could allow additional Pacific cod otoliths to be aged. The Age and Growth Program is separate from the Groundfish Assessment Program, so reducing effort on model-based age-composition estimation would not directly increase ageing capacity. The discussion clarified that an ageing backlog exists, but sufficient 2025 ages had been completed to support the assessment, with remaining survey and fishery age information expected to be available for the November assessment.

The Team encouraged continued exploration of whether genetic information from tagged fish can be used to identify sex-specific movement patterns and evaluate whether those patterns help explain temporal variation in sex composition.

The Team recommended continued exploration of split-sex assessment models and alternative natural mortality parameterizations, including sex-specific and age-specific formulations. The Team noted that these issues should be considered together with selectivity because alternative natural mortality assumptions may affect the need for dome-shaped selectivity.

The Team recommended Models 24.1 and 26.1 for review as final assessment models for management advice in November, recognizing that the only difference between these two models is the plus-group and they are likely to be very similar.

AI Bottom Trawl Survey

Suzanne McDermott presented results from the 2026 biennial Aleutian Islands (AI) bottom-trawl survey. The survey was conducted from May 30 through August 8 and completed 372 stations from 447 attempted tows. The survey also implemented new hardware and software for effort-data collection. Survey data were finalized in late August and made rapidly available through standard AFSC data products for use by assessment authors. Survey findings revealed that surface temperatures were cooler than the 20-year average, whereas bottom temperatures increased to near-average levels, with distinct warming and localized hypoxia observed in the Western Aleutians.

The Team discussed an apparent increase through time in the proportion of survey hauls with positive catches for several species. The survey staff explained that this was the first year tracking presence/absence data in this format and have planned further analysis to determine if the trend is driven by stock abundance or spatial dynamics. The Team discussed whether it could reflect increasing abundance, changes in spatial distribution, or other factors, and noted that further examination of the pattern could be informative.

The Team discussed the new dissolved oxygen information and whether hypoxic conditions might affect species distributions or survey catches. Survey staff noted that deeper stations naturally tend to have lower dissolved oxygen and pointed to new multi-region research estimating groundfish responses to dissolved oxygen and temperature using spatiotemporal models (Indivero et al. 2025; Indivero et al., *in review*). The Team also discussed the potential value of comparing the AI survey observations with other available dissolved oxygen time series.

The Team discussed how species-identification changes affect comparisons with long-term mean biomass. Alaska skate and leopard skate were not considered distinct species prior to 2010, making a long-term mean calculated across the entire survey time series potentially misleading for Alaska skate. Survey staff noted that that would be updated for future presentations.

The Team also discussed whether biomass should be presented relative to the long-term mean or relative to the previous biennial survey. Members of the public noted that the change from the previous survey is useful for interpreting current conditions, while survey staff noted that the shift toward comparison with the long-term mean had been made in response to previous Team feedback and can be useful for species with highly variable survey estimates. Survey staff indicated that future presentations could potentially provide both comparisons.

The Team discussed a pronounced shift toward smaller fish in the rougheye/blackspotted rockfish complex beginning shortly after 2012. The complex is overwhelmingly composed of blackspotted rockfish in the survey data. A Team member noted that the timing of the size shift coincided with changes in commercial fishery topping-off practices. Survey staff were not aware of any change in survey methods or station selection that would explain the change in size composition.

The Team expressed strong appreciation for the AI survey crew and analysts, particularly for the rapid processing and availability of survey data and for substantially revising the presentation in response to previous Team requests. The Team noted the addition of presence/absence information, spatial figures, long-term comparisons, and other revised graphics as particularly useful improvements.

Bogoslof Pollock

Jim Ianelli presented the operational update assessment for the Bogoslof pollock. This is a Tier 5 stock and there is no new survey data to inform harvest advice. David Bryan provided an informal overview of ongoing research efforts, which includes exploration of size-based spawn timing and the survey timing. The Team discussed the potential for changes in the sex-ratio on the spawning grounds due to the potential size-based spawn timing and how that may impact the sex ratio observed by the survey. The survey group noted that there is a request to fund a 2028 survey for this stock.

The Team agrees with the authors' recommended Tier 5 model and harvest recommendations.

Harvest Projections

Melissa Haltuch presented harvest projections for stocks that did not receive a full or updated assessment in 2026. Stock assessments were not conducted in 2025, which resulted in a revaluation of the stock assessment schedule, hence some of these harvest projections were brought forward out of cycle to ensure that management advice is available. The Team clarified that a harvest projection updates catch assumptions and projected quantities but does not refit or update the underlying assessment model.

The Team discussed ways to make future harvest-projection presentations clearer to readers. In particular, statements indicating "no reduction in ABC" should specify that this means no reduction from the

maximum permissible ABC, and descriptions of recent spawning-biomass trends should be clearly distinguished from projected biomass, which depends on catch and recruitment assumptions. The Team supported including a brief explanation of the harvest-projection process in future presentations.

The Team also discussed the assessment schedule for Kamchatka flounder. The full assessment originally scheduled for 2026 was moved to 2027. The intent is to shift Kamchatka flounder from an even-year to an odd-year biennial assessment cycle, with subsequent full assessments in 2029 unless stock conditions warrant an earlier assessment. The SSC had previously been informed of this change.

The Team agreed with the authors' recommended ABCs and OFLs from the 2026 harvest projections.

Proposed Harvest Specifications

The Team recommends a rollover of the 2026 specifications for purposes of 2027-2028 proposed specifications.

General Discussion

At the end of the meeting, the Team held a general discussion on Team membership and expertise, communication of upcoming assessments and CIE reviews, and ways to provide Team members and the public with background information on assessment methods and modeling platforms. The discussion emphasized providing information earlier in the year so reviewers have time to become familiar with new methods rather than receiving substantial methodological background immediately before a meeting.

Age and Growth capacity: The Team discussed continuing limitations in Age and Growth Program capacity and emphasized the importance of age data to stock assessments. Recent assessment reviews have identified age information as a limiting data source, and reduced ageing capacity can directly affect the ability of assessments to identify recruitment and characterize population age structure. The Team noted that losses of experienced age readers and unfilled positions have reduced the number of samples that can be processed for some stocks. The Team emphasized the importance of maintaining ageing capacity and of communicating assessment schedules early enough in the year for the Age and Growth Program to plan and prioritize anticipated workloads.

Plan Team expertise: The Team discussed gaps in current membership and the types of expertise that would be useful as assessment methods and data sources evolve. Council staff had contacted ADF&G regarding representation on the BSAI Team and planned to follow up as ADF&G staffing capacity allowed. The Team identified survey expertise, particularly familiarity with surface-trawl and other survey programs, as valuable for interpreting information that is not routinely incorporated into stock assessments. The Team noted that field schedules could make participation by survey personnel challenging.

The Team also discussed the potential value of economics, ecology/modeling, and lower-trophic-level and oceanographic expertise as assessments increasingly incorporate environmental and ecosystem relationships. In particular, the Team distinguished lower-trophic/oceanographic linkages as an area where additional expertise could complement existing food-web expertise. Marine mammal and protected-resources expertise were also discussed. However, the Team noted that membership should reflect expertise that is likely to be used regularly enough to justify participation throughout the meeting; marine mammal and protected-resources representatives had previously participated but withdrew when they determined that the Team was not the most useful venue for their time. The Team also noted the value of participation by scientists outside the immediate assessment programs, including university, non-

agency, and inter-regional reviewers, who can provide independent perspectives and improve communication.

Communication and CIE reviews: The Team discussed the need for more direct communication about upcoming CIE reviews. The CIE schedule is necessarily flexible and depends on assessment progress, major methodological milestones, fishing intensity, time since the previous review, and available funding. Public in-person CIE reviews are already publicly noticed and announced through the Council process, while desk reviews are conducted through document exchange and do not include a public meeting. Nevertheless, the Team agreed that direct notification would make it easier for Team members to participate in relevant in-person reviews. AFSC staff agreed to notify the Teams by email as upcoming CIE reviews become known, and Council staff agreed to revisit whether appropriate reviews could also be posted on the Council calendar.

The Team also discussed broader annual communication about upcoming assessment work. Assessment planning information is already contained in the stock assessment planning memo and has been included in SAFE and Team materials, but members noted that simply placing information in a shared folder was insufficient if reviewers were not notified that it was available. The Team supported more proactive communication early in the year and discussed providing a year-ahead update in the winter or spring describing major assessments, methodological changes, reviews, and other work expected during the year.
Information repository: The Team discussed establishing a centralized information resource so Team members, SSC members, industry, and the public could learn about assessment methods and modeling platforms before assessment documents are released. The intent is to provide links to foundational documentation and vignettes for tools such as SPoRC and Rceattle, diagnostic methods such as one-step-ahead residuals, and other commonly used assessment methods. This would allow reviewers to refresh their understanding of methods before the assessment cycle rather than learning a new platform during the few days available to review an assessment document.

The Team discussed including recorded seminars, think-tank presentations, worked examples, and other training resources in addition to software documentation. The resource could also identify previous independent or CIE reviews of modeling platforms so reviewers can distinguish evaluation of the underlying code base from review of a particular stock-assessment implementation. The Team noted that this distinction is increasingly important as assessments move from a common Stock Synthesis framework toward a smaller number of shared R/TMB-based platforms. Links to previous code or CIE reviews were specifically identified as useful information to include.

The Team supported beginning with a simple shared resource document and subsequently developing a public-facing web resource. During the discussion, a webpage was created for this purpose: https://noaa-afsc.github.io/NPFMC-Plan-Team/. The Team emphasized that the eventual resource should function as an accessible webpage rather than requiring users to understand or navigate GitHub directly, which could create a barrier for some members of the public. The resource would be maintained and updated as methods evolve and could improve transparency and facilitate broader external peer review by university scientists and others outside the Council process.