

Draft SSC Report December 2024



**ESRs; General Comments; JGPT
and BSAI Groundfish**

C1/C2 Ecosystem Status Reports (ESRs)

- The SSC ***finds*** no major concerns from 2024. Noteworthy items include poor condition of many fish species in the Southeastern Bering Sea, continued east (good) to west (poor) conditions in the Aleutian Islands, and continued return to pre-heatwave conditions for the Gulf of Alaska.
- The SSC ***appreciates*** the new Northern Bering Sea report cards and the important contrasts between the two regions throughout the report.
- The SSC ***supports*** current efforts to develop integrated metrics to track changes in ecosystem states, including dynamic factor analysis in the GOA and Dynamic Structural Equation Models in the Bering Sea.

C1/C2 Groundfish Harvest Specifications

General Comments

- The SSC noted its concerns over numerous losses of survey data, in particular the longline survey that provides important information for assessments of sablefish, Greenland turbot and rockfish stocks.
- With the potential loss of the summer acoustic trawl survey, the SSC **requests** AFSC scientists consider ways to replace this data stream
- The SSC **requests** the GPT's synthesize information on the assumptions used for harvest specifications projections to develop consistent advice across stocks
 - Important for stocks with climate-induced changes in biological characteristics or those with time-varying demographic or selectivity parameters

C1/C2 Groundfish Harvest Specifications

General Comments

- The SSC **highlights** the “what if we are wrong” approach as a useful exercise to quantify potential risks associated with model misspecification
- The SSC **encourages** further consideration of the information content of the stock-recruitment relationships for other Tier 1 stocks

C1/C2 Groundfish Harvest Specifications

Socioeconomic Information for setting TACs

- The SSC received and discussed “C1/C2 Social and Economic Information to Inform Groundfish TAC setting” that included a brief description of existing products that provide socioeconomic information relevant to TAC setting.
- The SSC appreciates the responsiveness to earlier comments and the progress that has been made toward incorporating social, economic, and community information into ESRs, ESPs, and ACEPO.
- The SSC recommends that a remote meeting of the SSC Economic and Socioeconomic (ESE) subgroup occur soon to help plan the June 2025 agenda item on this topic and identify/align the work efforts between now and then.

C1/C2 Groundfish Harvest Specifications

Socioeconomic Information for setting TACs

- The SSC views the core function of the ESE subgroup will be mapping the use of economic, social, and community information in Council decision-making onto both the Council's annual process and the analytic products that support the decision-making process.
- Overarching goals of this process include providing relevant socioeconomic information to the Council for use in decision making
 - In a timely manner
 - At a scale appropriate to decisions being informed
 - Through a process that is transparent, coordinated, consistent, and predictable for the public
 - And achievable within the constraints of staff capacity

C1/C2 Groundfish Harvest Specifications

Overview

- Alaska wide - 1 update assessment (sablefish), 2 ecosystem reports (forage species; grenadier)
- BSAI - 9 full; 9 update assessments; harvest projections (October); catch reports
- No stocks were subject to overfishing and, for Tier 1 - 3 stocks, none are overfished or approaching an overfished state
 - ABCs were exceeded for the blackspotted/rougheye complex in 2021, 2023 and 2024.
 - ABC was exceeded for the other rockfish complex in 2024
- SSC-recommended harvest specifications for the BSAI differed from the Joint GPT and BSAI GPT recommendations (**bold** in table) for:
 - Sablefish and Greenland turbot

C1/C2 Groundfish Harvest Specifications

Highlighted in presentation

Sablefish
Multi-species model (CEATTLE)
EBS pollock
EBS Pacific cod
AI Pacific cod
Greenland turbot
Black-spotted/rougheye
Shortraker
Other rockfish

Will present if the Council wishes

AI pollock
Bogoslof pollock
Yellowfin sole
Kamchatka flounder
Northern rock sole
Flathead sole
AK plaice
Other flatfish
Pacific ocean perch
Atka mackerel
Forage fish
Grenadiers

C1/C2 BSAI/GOA Groundfish Harvest Specifications

Sablefish

- Update assessment using accepted model (23.5)
- Total biomass is leveling off, while spawning stock biomass continues to increase rapidly as a series of strong year classes matures.
- Stock is in Tier 3a
 - spawning biomass is projected to be at 73% of the unfished biomass in 2025.
- The SSC **recommends** using model 23.5 to specify the OFL and maxABC, in agreement with Plan Team

C1/C2 BSAI/GOA Groundfish Harvest Specifications

Sablefish

- The SSC **recommends** a 5% reduction from maxABC (different from Plan Team) due to an elevated concern in the 'stock assessment' category of the risk table
 - Cancellation of 2024 longline survey
 - No bottom trawl survey in the GOA in 2024 (off-year)
 - No update to fishery CPUE since 2022
 - Reports of low catch rates in the fishery across regions
- The SSC **agrees** with the Plan Team on area apportionments
- The SSC highlights the following **recommendations**:
 - Work to resolve mismatch between observed and predicted size and age compositions.
 - Consider observer-based fishery CPUE index

C1/C2 BSAI/GOA Groundfish Harvest Specifications

Sablefish ESP

- The SSC ***supports*** the evolving socio-economic section of the ESP
 - Excellent example for other ESPs
- The SSC ***supports*** further refinement of indices
 - Develop replicable process for in-season data on social and economic conditions
 - Identifying a measure of fishery cost (e.g. effort, CPUE)
 - Continued development of social/distributional indicators, which could benefit from including social scientists and economists

C1 BSAI Groundfish Harvest Specifications

Multispecies Model (CEATTLE)

- Modeling the dynamics of, and interactions among, three species in the EBS: Walleye pollock, Pacific cod, and arrowtooth flounder (since 2016)
- The SSC **supports** separate SAFE chapter (rather than appendix to pollock assessment) to enhance its utility
- The SSC **supports** continued work with ESP and assessment teams to incorporate information from CEATTLE into individual assessments .
- The SSC **suggests** separating two main purposes of the model:
 - focus on informing single-species assessments during the annual specifications cycle
 - communicate results from medium- and long-term projections as appropriate for strategic planning (e.g. climate workplan, PSEIS).

C1 BSAI Groundfish Harvest Specifications

EBS Pollock

- Full stock assessment, no changes to the previous model beyond adding new data through 2024
- Biomass remains high due to the strength of the 2018 year-class
- Current stock biomass is estimated to be above the B_{msy} proxy
- The SSC ***recommends*** model 23.0 in agreement with the authors and the Plan Team

C1 BSAI Groundfish Harvest Specifications

EBS Pollock

- The SSC **agrees** with the authors and Plan Team in moving this stock from Tier 1 to Tier 3 (currently Tier 3a)
 - Tier 1 requires a reliable point estimate of B_{MSY} and probability density function for F_{MSY}
 - Despite the large amount of high quality data, estimation of productivity remains highly uncertain without the use of informative priors of the stock-recruitment function
- This change is not intended to be precautionary, nor does it reflect any shortcomings of the data collection program or stock assessment modelling

C1 BSAI Groundfish Harvest Specifications

EBS Pollock

- The SSC **agrees** with the PT and author recommended harvest specifications.
 - no reduction from maxABC
- The SSC **supports** the continued evaluation of catch stability and historical fishery performance, as well as the provision of a decision table to evaluate alternative harvest levels for consideration during the TAC setting process
- The SSC **recommends** efforts to
 - move the assessment to a state-space framework
 - estimate the proportion of the stock in Russian waters
 - explore the use of spectroscopy-based ages in the assessment

C1 BSAI Groundfish Harvest Specifications

EBS Pacific Cod

- Full assessment, annual cycle
 - Several recommended Updates to input data
- Stock is estimated at $B_{38\%}$ for 2025
- Tier 3b, SSB below $B_{40\%}$ but above $B_{35\%}$
- The SSC ***recommends*** model 24.1, in agreement with authors and Plan Team

C1 BSAI Groundfish Harvest Specifications

EBS Pacific Cod

- The SSC **agrees** with the PT and author recommended harvest specifications, resulting in ~9% decrease in ABC from 2024
 - No reduction from maxABC, in agreement with author and PT
- The SSC appreciates the inclusion of the “What if we are wrong?” analysis comparing harvest recommendations under Model 24.1, if M24.3 dynamics are correct

C1 BSAI Groundfish Harvest Specifications

EBS Pacific Cod

- The SSC ***recommends***
 - Continued exploration of implications of climate-driven changes in distribution on survey catchability and variation in M
 - Prioritizing research on how to address lack of genetic separation between the WGOA and EBS management areas, highlighting that options may include a spatially-explicit model (requiring movement data), or redefinition of stock boundaries and post-hoc ABC apportionment (as in, e.g., sablefish)
 - Other technical recommendations

C1 BSAI Groundfish Harvest Specifications

EBS Pacific Cod ESP

- The SSC ***recommends***
 - Multispecies model projections may be used in place of current year estimates, if time preparation times do not align
 - Exploration of economic indicators (% of TAC harvested) and community indicators (number of vessels participating by gear type)
 - Explore refined prey availability indices and spawning habitat metrics.
 - Consideration of a CPUE-weighted temperature index, similar to Sablefish ESP, if not redundant with other indicators
 - Address export market competition impacts (e.g., Russian cod)

C1 BSAI Groundfish Harvest Specifications

AI Pacific Cod

- Full operational assessment.
- Both Tier 5 and Tier 3 assessments presented.
- AI bottom trawl survey was conducted in 2024.
 - Pacific cod biomass in 2024 was the lowest in time series, but was close to 2022 biomass.
- Model changes to better fit data
 - Recent block of increased natural mortality attributed to MHW
 - Change in growth curve

C1 BSAI Groundfish Harvest Specifications

AI Pacific Cod

- The SSC ***recommends*** model 24.1, in agreement with the assessment authors and PT.
 - Model 24.1 had the lowest retrospective pattern, and best model fits.
 - Elevates the stock from Tier 5 to Tier 3.
- Results from Model 24.1 indicate that the stock is in Tier 3b, at approximately 24% of unfished stock abundance.
- The SSC does not recommend a reduction from the maximum permissible ABC.

C1 BSAI Groundfish Harvest Specifications

Greenland Turbot

- Full assessment. SSB and total biomass continue declining trend since 1970s. SSB declined 6% in 2024.
- Female spawning biomass above B40%
- Tier 3a
- The SSC **recommends** model 16.4c in agreement with authors and Plan Team

C1 BSAI Groundfish Harvest Specifications

Greenland Turbot

- The SSC **agrees** with the PT and authors OFL
- The SSC **disagrees** with the PT and authors recommended reduction from maxABC
 - SSC recommends a 25% reduction from maxABC (greater than recommended by author and PT)
 - SSC made the decision for a 25% reduction during the review of buffer considerations across stocks at the end of the Groundfish specifications agenda item

C1 BSAI Groundfish Harvest Specifications

Greenland Turbot

- Rationale for reduction from maxABC
 - Risk Table Level 3 (extreme) assessment concerns
 - uncertainty in the initial stock biomass,
 - long term data loss from the EBS slope survey and canceled 2024 longline survey, coupled with
 - strong negative retrospective patterns
 - uncertainty in recruitment expectations not matching historical periodic recruitment events.
 - poor model fits to survey indices.
- The SSC **agrees** with the PT and authors on area apportionments

C1 BSAI Groundfish Harvest Specifications

Blackspotted/Rougeye Rockfish

- Operational full assessment, biennial cycle
 - Tier 3 age-structured model for AI portion of stock complex
 - Tier 5 methods based on smoothed NMFS AI trawl survey biomass for EBS
- AI portion of stock is above B40%
 - W/CAI subarea ABC exceeded for past six years (including 2024), combined BSAI ABC exceeded in 3 of last 4 years.
 - BSAI OFL has not been exceeded
- Tier 3a for AI
- The SSC ***recommends*** Model 20, in agreement author and PT

C1 BSAI Groundfish Harvest Specifications

Blackspotted/Rougeye Rockfish

- The SSC **agrees** with the PT and author recommended harvest specifications.
 - No reduction from maxABC
- The SSC **highlights** that catch > ABC is a concern, especially for long-lived and sedentary species with long recovery times and high risk of localized depletion
- The SSC discussed why the MSSC has not been successful in limiting harvest in WAI (catch exceeded the MSSC every year except one since 2015 implementation), highlighting the lack of consequences for exceedance and that catch is incidental in POP and other fisheries

C1 BSAI Groundfish Harvest Specifications

Blackspotted/Rougheye Rockfish

- Considerations for regarding spatial management
 - Positive signs for stock complex: Increasing AI survey biomass since 2016, exceptionally large 2011 year class, and local knowledge about increasing challenges in avoiding incidental catch despite active measures
 - Conflicting evidence for genetic structure of BS/RE. Even moderate levels of demographic connectivity combined species' longevity may result in lack of genetic structure
 - Lack of genetic structure may not indicate complete demographic connectivity among regions

C1 BSAI Groundfish Harvest Specifications

Shortraker Rockfish

- Operational update. Assessed biennially; last assessed 2022.
 - 2024 AI bottom trawl survey decreased 40% from 2022.
 - 2023 EBS longline survey decreased 11% from 2021.
 - Catch well below ABC
- Tier 5
- The SSC **recommends** the PT and the authors' recommended model (Model 22_2024)
- The SSC **agrees** with the PT and author recommended OFL and ABC.
 - no reduction from maxABC

C1 BSAI Groundfish Harvest Specifications

Shortraker Rockfish

- The AI bottom trawl survey reported the second-lowest biomass estimate in the time series, showing a 40% decrease from 2022 with a high coefficient of variation ($CV = 0.42$).
- Absence of a 2024 AFSC longline survey in the AI this year further exacerbated data gaps.
- The SSC ***recommends*** the author examine and present any new survey data in 2025 (in addition to the catch report) if available to help evaluate the current year's large decline.

C1 BSAI Groundfish Harvest Specifications

Other Rockfish

- Operational update assessment
- The SSC **recommends** model 22 in agreement with author and PT recommendations.
- The SSC **agrees** with the PT and author recommended harvest specifications.
 - no reduction from maxABC
- The SSC **agrees** with the PT and author on area apportionments.

C1 BSAI Groundfish Harvest Specifications

Other Rockfish

- The catch of the Other Rockfish complex exceeded the 2024 ABC.
- SSC discussion focused on the large (23%) decline in estimated biomass, which was strongly influenced by a 61% decline in the longline survey index of shortspine thornyheads.
- The SSC ***recommends*** the author examine and present any new survey data (if available) at the 2025 September Plan Team meeting and include survey data in the 2025 catch report.

C1 BSAI Groundfish Harvest Specifications

Aleutian Islands Pollock

- Update assessment, survey biomass and ABC stable
- Female spawning biomass is above the $B_{40\%}$ target
- Tier 3a stock is not overfished, and overfishing is not occurring
- The SSC **recommends** Model 15.2 in agreement with author(s) and PT
 - Same accepted model since 2015
 - Low catch/ABC and 19kt cap doesn't justify major revisions
 - BSAI Plan team would entertain Tier 5 instead

C1 BSAI Groundfish Harvest Specifications

Bogoslof Pollock

- This is an operational assessment updated biennially. The 2024 acoustic trawl survey estimate was a 31% decrease from the 2020 estimate.
- In 1992 this area was closed to directed pollock fishing.
- Managed under Tier 5
- SSC agrees with the Plan Teams and the author's recommendations for the 2025 and 2026 OFL and maximum permissible ABC for this stock.

C1 BSAI Groundfish Harvest Specifications

Yellowfin Sole

- Update assessment, female spawning biomass declining trend, good recent recruitment indicates population increasing, strong 2017 year class
- Spawning biomass $1.56 \times \text{BMSY}$
- Tier 1a stock
- The SSC ***recommends*** Model 23.0 in agreement with the authors and PT
 - Same accepted model as last assessment
 - No major model fit concerns

C1 BSAI Groundfish Harvest Specifications

Yellowfin Sole

- The SSC ***agrees*** with the PT and author recommended harvest specifications.
 - no reduction from maxABC
- The SSC ***supports*** transition to Stock Synthesis model
- The SSC ***concurs*** with PT recommendation to work with data providers to understand how VAST survey biomass trend projections behave given AR1 assumption when no new NBS survey data

C1 BSAI Groundfish Harvest Specifications

Kamchatka Flounder

- Full assessment, SSB and total biomass relatively stable since 2015 but show slight decline in recent years
- Female spawning biomass above B40%
- Tier 3a stock
- The SSC ***recommends*** Model 16.0b in agreement with authors and PT
 - Same accepted model as last assessment
 - No major model fit concerns

C1 BSAI Groundfish Harvest Specifications

Kamchatka Flounder

- The SSC **agrees** with the PT and author recommended harvest specifications.
 - no reduction from maxABC
- The SSC **supports** exploration of regional growth differences and fitting growth within the model
- The SSC **agrees** with PT recommendation to explore why the model fails to fully capture rapid decline of EBS shelf survey biomass for the most recent years
- The SSC **supports** evaluation of formal data weighting given the fits to the EBS shelf survey

C1 BSAI Groundfish Harvest Specifications

Northern Rock Sole

- Operational Full Assessment, biomass increasing since 2019.
- Underutilized - catch is about 20% of ABC - due to poor markets
- Tier 1, biennial assessment schedule
- The SSC ***recommends*** Model 24.2, in agreement with author/ PT
 - Improved fits to survey biomass/ fishery and survey age comps
 - Catchability estimates consistent with herding research
 - Reduced retrospective bias
 - Biologically reasonable estimates of M (male and female)

C1 BSAI Groundfish Harvest Specifications

Northern Rock Sole

- The SSC **agrees** with the PT and author recommended harvest specifications.
 - No reduction from maxABC
- The SSC **recommends** agrees with PT recommendations to
 - Clarify use of MCMC vs. MLE in recommendations tables and diagnostics
 - Explore sensitivity of model to maturity curve and S-R relationship
 - Re-parameterize male M as an offset to female M
 - Explore age-specific survey availability
 - Incorporate estimates of aging uncertainty or bias

C1 BSAI Groundfish Harvest Specifications

Flathead Sole

- Update operational assessment
- Female spawning biomass is above the $B_{40\%}$ target
- Tier 3a
- The SSC ***recommends*** Model 18.2c (2020) with updated data, in agreement with the assessment authors and PT.
 - Same accepted model as last assessment

C1 BSAI Groundfish Harvest Specifications

Flathead Sole

- The SSC **agrees** with the PT and author recommended harvest specifications.
 - no reduction from maxABC

C1 BSAI Groundfish Harvest Specifications

Alaska Plaice

- Full assessment, EBS and female spawning biomass slowly declining, strong recruitment and increasing total biomass
- Female spawning biomass above B40%
- Tier 3a stock
- The SSC ***recommends*** Model 24.1b in agreement with author and PT
 - Transition to Stock Synthesis
 - Model fits to data are good with low retrospective bias
 - Incorporates standard practices

C1 BSAI Groundfish Harvest Specifications

Alaska Plaice

- The SSC ***agrees*** with the PT and author recommended harvest specifications.
 - no reduction from maxABC
- The SSC ***recommends*** that NBS bottom trawl survey data be incorporated into assessment as a priority
- The SSC ***supports*** the additional model improvement suggested by author

C1 BSAI Groundfish Harvest Specifications

Other Flatfish

- Update operational assessment
- Tier 5 stock
- Exploitation rates are generally less than 5% and not increasing, and the total catch is substantially lower than the ABC.
- Biomass was predicted using a generalized random effects (RE) model was used to predict biomass, and different configurations were run separately for each of the survey areas and species groups

C1 BSAI Groundfish Harvest Specifications

Other Flatfish

- The SSC **agrees** with the PT and author recommended harvest specifications.
 - no reduction from maxABC
- The SSC **agrees** with the PT recommendation that the authors investigate the potential use of the longline survey to supplement time series given the loss of the EBS slope survey.

C1 BSAI Groundfish Harvest Specifications

Pacific Ocean Perch

- Full assessment
- Female spawning biomass above B40%
- Tier 3a
- The SSC **recommends** Model 24.1 model in agreement with authors and PT
 - Includes increased penalty for the dome-shapedness and restores the lognormal prior on AI survey catchability.
 - Improves estimated time-varying fishery selectivity distribution across ages in recent years

C1 BSAI Groundfish Harvest Specifications

Pacific Ocean Perch

- The SSC **agrees** with the PT and authors recommended harvest specifications.
 - no reduction from maxABC
- The SSC **agrees** with the PT and authors on area apportionments.
- The SSC **recommends**
 - Include stock structure discussion text in the assessment
 - Consider other potential indices for apportionment of the ABC given that this stock still relies on the EBS slope survey
 - Explore implementing time-varying M
 - Consider the plausibility of the bimodality in the fishery selectivity

C1 BSAI Groundfish Harvest Specifications

Atka Mackerel

- Operational update assessment; AI biomass modest decline (-14.6% from 2022) and notably, the SEBS biomass increased to the second largest biomass on record
- Current female SSB is above B40%
- Tier 3a
- The SSC ***recommends*** Model 16.0b with updated data, in agreement with the author and the GPT

C1 BSAI Groundfish Harvest Specifications

Atka Mackerel

- The SSC **agrees** with the GPT and author recommended harvest specifications.
 - No reduction from maxABC
- The SSC **agrees** with the GPT and author on area apportionments.
 - Moving from a four-year average (only intended as stopgap) to REMA model
- The SSC **supports** the authors' planned work to prepare for a CIE review in 2026
- The SSC **suggests** that the authors consider new approaches to estimating recruitment variance (σ_R), similar to sablefish

C1/C2 BSAI/GOA Groundfish Harvest Specifications

Forage Species

- Ecosystem component
- First-time joint GOA/BSAI report on FMP forage fish and squid
- There are no conservation concerns in forage fish abundance/distribution/catch trends.
 - Some noticeable increase in squid catches over last 5 years.
- The SSC **recommends** the authors ensure future reports focus solely on the conservation of explicit FMP forage fish and squid (eg., include krill, exclude herring) to align with the goals within the BSAI and GOA groundfish FMP.

C1/C2 BSAI/GOA Groundfish Harvest Specifications

Grenadiers

- Ecosystem component
- The biomass predicted for 2025 in the GOA and EBS is the lowest in the time series.
- The SSC **recognizes** bycatch levels are very small compared to those estimates, suggesting there is no conservation concerns
- The SSC **recommends** continued monitoring of this stock complex as an ecosystem component