

Draft SSC Report December 2019



**SSC Oral Report on C1: Joint Groundfish Plan
Team Report and BSAI Groundfish Specifications**

BSAI/GOA - Ecosystem Status Reports

- The **unusually high temperatures in the EBS and the GOA are of great concern**
- There is increased need for information about the effects of climate on the carrying capacity of the EBS and GOA marine ecosystem
- The ***SSC strongly recommends annual surveys***, not only for **groundfish**, but **also for zooplankton in both the EBS and the GOA**

BSAI/GOA - Ecosystem Status Reports

- **In the EBS, large zooplankton were scarce in 2019**
- **High mortality rates of gray whales and ice seals in the EBS are of concern.** There are also **declines in other benthic species** (e.g., northern rock sole, yellowfin sole, Tanner crab, red king crab). In toto, **these declines may be signaling a decrease in benthic productivity**
- **Changes in foodweb structure and carrying capacity are of particular concern in the NBS** because of the major increase in Pacific cod biomass there
- **A number of species** (e.g., many flatfishes and rockfishes) are **declining in the GOA**, as well

BSI/GOA - Ecosystem Status Reports

- The SSC *appreciates* the addition of the new section on sea ice in the EBS
- The SSC *recommends* efforts to add information about Harmful Algal Blooms
- The SSC *supports* attempts to use VAST models for understanding the distributions and abundances of zooplankton through time
- The SSC appreciates the integrated seabird section; it provides an excellent overview and spurred valuable collaborations among the contributors
- In both the EBS and GOA, the utility of a number of the human dimension indicators would be improved with the addition of spatial considerations on scales relevant to communities, as well as efforts to connect community changes to fishing and fisheries
- The SSC *strongly supports* new 4-page versions of the ESRs aimed at conveying information to the general public

Joint Plan Team Report – Risk Tables

From the Dec 2018 SSC Minutes:

- The SSC notes that the buffer between ABC and OFL is intended to reflect scientific uncertainty
- Adjustments from the maximum ABC are used to address uncertainty and risk that is not already accounted for in the assessment, Tier system and associated harvest control rules
- Reductions from the maximum ABC are intended to be an infrequent action prompted by extraordinary circumstances, or considerable uncertainty, in attempt to respond to substantial unquantified risk

Joint Plan Team Report – Risk Tables

From the Dec 2018 SSC Minutes:

- The risk table approach includes four increasing levels of concern crossed with four types of contributing factors: (1) assessment, (2) population dynamics, (3) ecosystem and (4) concerns related to fishery/resource-use performance that may indicate anomalous biological conditions
- The SSC did not request this approach in order to add new reasons for adjusting from the maximum ABC, but to better describe the rationale when such changes are warranted
- This framework is intended to clarify the basis for any potential reduction

Joint Plan Team Report – Risk Tables

- The SSC **endorsed** the Teams' request that the authors continue to fill out the risk tables for all full assessments
- The SSC will continue to review and approve all ABCs and OFLs but **welcomes** recommendations from the authors and the Teams regarding adjustment from maxABC in response to concerns reflected in the risk tables
- The SSC recommends removing the overall risk scores in the tables as these provided no additional information relative to ABC-setting and seemed to cause confusion
- The SSC requests that the table explanations (e.g., description of what the scores mean) be included in all the assessments which include a risk table for completeness

Joint Plan Team Report – Risk Tables

- The SSC considered the suggestion, provided during public testimony, that the numerical scoring approach be replaced with more qualitative descriptions. We **recommend** continuing with the current risk ranking approach.
- The SSC notes that the risk tables provide important information beyond ABC-setting which may be useful for both the AP and the Council and **welcomes** feedback to improve this tool going forward

Joint Plan Team Report - Economic SAFE Report

- The JPT noted that, due to delays in the arrival of finalized data, the catch share performance metrics and community section will no longer be included in the Economic SAFE
- The SSC *requests* that the Economic SAFE authors provide a plan for the reporting and review schedule for that information, given the National Standard 2 guidelines that each SAFE report should contain pertinent economic, social, and community information
- The SSC *requests* a more complete reporting of crew employment and income data for Alaska communities in particular in future versions of the document

BSAI Groundfish Specifications

- No stocks were subject to overfishing in 2019
- No stocks with reliable biomass reference points (all Tier 3 and above stocks) are overfished or approaching an overfished condition
- SSC recommended OFLs and ABCs differed from the BSAI GPT for only three BSAI stocks:
 - Sablefish - 2020/2021 OFLs (Alaska-wide) and ABCs
 - EBS pollock - 2020/2021 OFLs and ABCs from Model 16.2
 - EBS cod - 2020/2021 OFLs from Model 19.12

Sablefish

- The SSC ***supports*** the author and PTs choice of model 16.5
- The SSC ***agrees*** that a reduction from the maximum ABC was merited
- The SSC ***disagrees*** with the authors' and PT's approach which basically applied a constant fishing mortality rate from 2019 to arrive at the ABC reduction for 2020
- The SSC ***recommends*** a 25% stair step approach that resulted in a 50% reduction to the maxABC on the basis of multiple concerns:
 - Uncertainty in the size of the 2014 and 2016 year class
 - Concerns over potentially high fishing mortality on the current spawning biomass
 - Environmental effects due to the recent warm waters in the GOA
- The SSC ***accepted*** the author and JPT's recommended sub-area partitions of the ABC

Sablefish

- The author provided an evaluation of the history of combining the OFLs, and the SSC discussed OFL specifications
- NS1 status determinations are conducted at the Alaska-wide level
- The best scientific information available supports an Alaska-wide stock designation
- For these reasons, **the SSC recommends adoption of a single combined area OFL for sablefish**
- Sub-area ABCs would remain status quo
- The SSC **recommends** that the Council consider other spatial management approaches to address bycatch concerns

Sablefish

SSC Comments to the Authors:

- The SSC requests further refinements to the stock assessment including the new apportionment analysis for next year
- The SSC requests exploration of time-varying selectivity and exploration of age-varying natural mortality
- The SSC commends the authors for the development of the ecosystem and socioeconomic profile (ESP) and encourages the authors to explore the mechanisms underlying the recent strong year classes
- The SSC recommends that the coefficients determining the degree of whale depredation be re-evaluated in the near future

EBS Pollock

- The SSC **supports** model 16.2 (differing from the author and PT), which included a model-based bottom trawl index accounting for increased abundance in the Northern Bering Sea, outside the standard survey area
- Results indicate a declining stock at least through 2021
- The SSC **supports** estimation of OFL using Tier 1
- This stock is classified as Tier 1, but in recent years the maximum ABC has been based on the Tier 3 calculation
- The SSC **recommends** a 43% reduction from the maximum ABC (consistent with the Tier 3 calculation) based on:
 - Uncertain productivity estimates for use in the Tier 1 calculation which lead to an elevated level of risk associated with the assessment
 - The SSC **recommends** a detailed review of the support for retaining EBS Pollock in Tier 1 for 2020

EBS Pollock

- The SSC *supports*:
 - Continued work to develop a model-based approach to combining the acoustic and bottom trawl surveys accounting for vertical and distributional shifts
 - Ongoing genetic studies to determine the relationship between Pollock in the EBS, NBS and other areas
 - An update on data-sharing, cooperative survey efforts and the potential for joint efforts to assess and manage pollock along the U.S.-Russia EEZ

Aleutian Islands and Bogoslof Pollock

Aleutian Islands

- Aleutian Islands stock remains in Tier 3a based on the partial assessment adding only updated catches in 2019
- The SSC ***supports*** the author and PT maximum ABCs and OFLs

Bogoslof

- No assessment for Bogoslof pollock, leading to a roll-over of specifications developed in 2018
- The SSC supports these specifications for the ABCs and OFLs

EBS Pacific Cod

- The authors made considerable progress on ensemble models
- The VAST model is now used for estimating and combining indices
- 9 models for the ensemble looked at two issues:
 - 3 stock structure hypotheses regarding NBS
 - 3 levels of model complexity
- Weighted and unweighted model averages applied to ensemble
- The recommended ensemble used a weighting that gave most of the weight to one model (19.12)
- The author and Plan Team also noted that an ABC reduction maybe warranted because of an elevated ecosystem risk of 2

EBS Pacific Cod

- The SSC **disagrees** with the author and PTs ensemble model; while the SSC appreciates the ensemble, it is not ready for adoption
- The SSC **recommends** a new base model (19.12) that was also the authors' preferred single model
- The SSC **applies** model 19.12 to calculate maximum ABCs and OFLs
- The SSC **recommends** that the ABC be slightly reduced based on:
 - Structural model uncertainty revealed by the ensemble model
 - Concerns over fish movement out of the EEZ and uncertainty about potential higher mortality and lower reproduction in the NBS
- The SSC **applies** the ensemble model as the basis for calculation reductions for 2020 (3%) and 2021 (2%)

EBS Pacific Cod

- The SSC ***recommends*** that the authors focus on continuing to improve Model 19.12 and try to resolve problems with using fishery age compositions
- The SSC ***recommends*** that future ensemble models consist of a reduced set of models that are diverse in structure and hypotheses
- The SSC ***encourages*** further investigations into fish movement both analytically and through tagging studies

AI Pacific Cod

- Tier 5 stock, no new survey/no change in numbers
- The SSC ***agrees with*** the authors recommended ABC and OFL under Tier 5
- The SSC ***agrees with*** the authors use of a random effects model for ABC area apportionments
- An appendix with several new age-structure models was presented; the SSC was pleased with the progress
- The SSC ***recommends*** that an age-structured model be presented next year
- The SSC ***recommends*** authors focus on key parameters in the model (maturity and natural mortality)

C1 BSAI Yellowfin sole

- Tier 1a assessment that uses survey mean bottom temperature and survey start date as covariates for survey catchability
- Projected female spawning biomass is well above B_{msy}
- Slow decline in spawning biomass (approximately 6% per year) since 1985
- The SSC **supports** the PT choice of the base model from last year with updated data
- The SSC **supports** PT recommended OFLs and maximum permissible ABCs
- Model with sex-specific natural mortality is in development

Alaska Plaice

- A full assessment was conducted for 2019; no structural changes to model; the model uses updated fishery and survey information
- SSC agrees with the PT-recommended OFLs and ABCs
 - Stock is in Tier 3a
- 47% of the survey biomass resided in the NBS in 2019
 - SSC recommends investigation of length, sex, and genetic composition in the NBS versus EBS

BSAI Flathead Sole, Greenland Turbot, Kamchatka Flounder, Arrowtooth Flounder, Northern Rock Sole

- All partial assessments
- Rock sole is tier 1; all other assessments are tier 3
- Projections were updated with 2018 final catch estimates and preliminary 2019 catch
- The SSC accepted PT-recommended OFLs/ABCs
- Greenland Turbot: The SSC supports PT recommendation to evaluate the importance of the slope survey to this assessment

Northern Rockfish

- The SSC ***supports*** the 2020 and 2021 northern rockfish ABCs and OFLs recommended by the author and the Plan Team
- The SSC ***requests*** that further clarification be included regarding the extent to which the concerns listed in the Risk Table are addressed in the assessment and Tier status of this stock
- The SSC ***concurrs*** with the Team's recommendation that the author work to address the issues concerning the restrictive priors on key parameters in the model, explore alternatives for estimating survey selectivity, and to explore global age-length keys that are weighted by area-specific abundances.

BSAI Pacific ocean perch

- This was a partial assessment with updated input data
- The SSC *supports* the 2020 and 2021 Pacific ocean perch ABCs and OFLs recommended by the assessment author and the Plan Team.

BSAI Blackspotted/Rougheye

- A partial assessment was conducted on Blackspotted/rougheye rockfish
- The SSC ***supports*** the 2020 and 2021 blackspotted/rougheye complex ABCs and OFLs recommended by the assessment author and the Plan Team
- The SSC ***noted*** that overall exploitation rates were low, but that the maximum subarea species catch (MSSC) was exceeded in the WAI again in 2019 despite fishing industry efforts to actively avoid these species in the POP fishery
- The SSC ***requests*** further exploration of potential increases in the abundance of small fish in the WAI which may be driving high fishery encounters

Atka Mackerel

- No new models were presented for consideration, but numerous data series were updated; this remains a Tier 3b assessment
- For full assessment in 2020 authors are preparing an ESP, a new method for area apportionment, and an evaluation of VAST for estimating biomass in non-survey years
- All risk matrix categories were scored as 1; the SSC *agrees with* the use of maximum ABC
- The SSC agrees with the authors and PT to use Model 16.0b for deriving OFLs and ABCs for 2020 and 2021
- The SSC concurs with the authors and PT and *recommends* the use of 4-survey weighted average for area apportionment

Sculpins

- Partial assessment, Tier 5
- Random effects model was re-run with 2018 AI survey data and 2019 EBS shelf survey data
- Estimated total biomass for BS shelf for 2019 higher than 2017 (230,291 t vs. 171,760 t)
- The SSC ***accepts*** the OFL and ABC as proposed by the authors and Plan Team

Skate Complex

- Partial assessment
- Alaska skate projection model with updated 2018 catch data, preliminary 2019 catch estimates, and 2019 EBS shelf bottom trawl survey biomass estimates
- Managed as complex: Alaska skate are Tier 3, all other skates are Tier 5
- OFLs and ABCs are the sum of Tier 3 and Tier 5 assessments
- The SSC *accepts* OFLs and ABCs, as proposed by the authors and Plan Team

Forage Species

- The SSC *agrees* with the Plan Team recommendation to include all forage species information in the forage report, despite potential to duplicate information
- The SSC further *suggests* that consideration be given to changing the timing of the two regional forage species reports (BSAI – even years, GOA – odd years)
- Most survey information for forage species is inadequate or lacking but:
 - Record high squid catches
 - Capelin, Arctic cod and eulachon decreased
 - Incidental catches of forage fishes increased
 - Pacific herring increased