

Best Scientific Information Available: North Pacific Fishery Management Council Discussion Document - April 2022

Discussion:

In 2018, NOAA issued a [procedural directive](#) that required each Region to develop a regional Best Scientific Information Available (BSIA) framework that describes how it implements NOAA Fisheries general BSIA framework in the context of stock status determinations and catch specifications. The required elements of this framework should include: a timeline, the roles of each partner in the process, and a description of modifications from the general framework (if required). Criteria for implementing each of these elements of BSIA are included in the [NS2 Guidelines](#). Upon completion of the Regional response to the procedural directive, the document should be available to the public. This document provides the draft framework for stock status determinations and catch specifications of: groundfish resources in the Bering Sea Aleutian Islands (BSAI) and Gulf of Alaska (GOA); crab resources in the Bering Sea Aleutian Islands; the scallop off Alaska; and salmon fisheries in the EEZ of Alaska; fish resources of the Arctic ([BSAI Groundfish FMP](#), [GOA Groundfish FMP](#), [BSAI Crab FMP](#), and [Scallop FMP](#), [Salmon FMP](#); [Arctic FMP](#)). The partners involved in provision of BSIA include the Alaska Fisheries Science Center (AFSC), the Alaska Regional Office (AKRO), the North Pacific Fishery Management Council (NPFMC), the Alaska Department of Fish and Game (ADF&G), the International Pacific Halibut Commission (IPHC; halibut Discard Mortality Rates, DMRs), the Pacific Salmon Commission, and NOAA Fisheries Headquarters. The deadline for completion of this document is May 2022. This document provides an opportunity for review and comment prior to final submission in May.

This document outlines how the BSIA is considered at each step of the review and approval process. The process begins with the collection of information relevant to population status and the assembly of the stock assessment. With the exception of Demersal Shelf Rockfish, the AFSC prepares all groundfish assessments. Crab stock assessments are prepared by scientists within ADF&G and AFSC. Scallop stock assessments are prepared by scientists within ADF&G. These assessments undergo peer review by relevant NPFMC Plan Teams ([BSAI and GOA groundfish Plan Teams](#), [BSAI crab Plan Team](#), and [Scallop Plan Team](#)), Center of Independent Expert panels, and final recommendations are made by the NPFMC Scientific and Statistical Committee (SSC). Specification of key biological reference points (e.g., Acceptable Biological Catch (ABC), Overfishing Levels (OFL) and relevant spatial allocations) are adopted by the SSC and they are used by the NPFMC to establish groundfish annual total allowable catch specifications (TAC) at a level less than or equal to the ABC. TACs or GHGs for crab stocks, GHG for scallop, and the TAC for DSR in the Southeast Outside/East Yakutat areas are set by the State of Alaska (ADF&G). NOAA Fisheries officially certifies that the stock

assessment and/or management decision is based on BSIA through this multi-layered peer review process. Table 1 provides a roadmap of the different roles and responsibilities of different partners in the process (Table 1). The activities included in the spreadsheet are not a comprehensive summary of all of the quality control steps that occur to ensure that decisions are based on BSIA.

In compliance with the Directive, the AKRO identifies a staff person to be available in an advisory capacity to provide feedback on potential SSC decisions and recommendations that may be uncertain in regard to compliance with policies. In 2022, this person is Mary Furuness.

Timelines for Groundfish, Crab and Scallop:

Groundfish

The following provides an overview of the review schedule for determination of Best Scientific Information Available for groundfish stocks. The Regional Framework broadly reflects the current timelines by which the process takes place, however, the specific monthly schedules provided in the report for groundfish, crab and scallop are occasionally revised as the need requires. It should be noted that the public has an opportunity to comment during reviews by the Plan Teams, SSC and Council as well as opportunities to comment on Federal Register notices of harvest specifications.

January - August Stock assessment authors review comments and suggestions from the Plan Teams, SSC and CIE reviews, and explore alternative assessment inputs and model configurations or the implications of using alternative data sets. Relevant local knowledge, traditional knowledge, and subsistence knowledge, where appropriate is considered.

January - July CIE reviews of selected stocks.

July - Program leaders within AFSC distribute stock assessment assignment memorandum highlighting the dates of upcoming review panel meetings and timing for in-house review.

September - Groundfish Plan Teams review proposed model changes and make recommendations for which model configurations should be brought forward.

September - The Groundfish Plan Teams review the halibut discard mortality rate (DMR) working group report and recommends DMRs for the upcoming season.

October - The SSC reviews assessment inputs and proposed model changes, the Plan Team recommendations, and makes recommendations for what inputs and which model configurations should be brought forward. The SSC recommends proposed groundfish specifications for the next 2 years. Public comment is received prior to the SSC making recommendations on proposed groundfish specifications.

October - The NPFMC adopts proposed groundfish specifications. The NPFMC receives public comment prior to decision making.

October - Assessment authors update models with in-year data to the extent practicable, compile the draft stock assessment documents according to the Stock Assessment and Fishery

Evaluation (SAFE) Guidelines, submit their assessments for in-house review, and prepare presentations for the Groundfish Plan Team meetings

October - The SSC reviews the DMR working group report and recommendations from the Groundfish Plan Teams and approves DMRs for the upcoming season.

November - Groundfish Plan Teams review updated models and make recommendations for ABC and OFL.

November – December – NMFS publishes proposed groundfish specifications in the Federal Register and requests public comment for 30 days.

December - SSC reviews updated models, reviews the Plan Team recommendations, makes final recommendations for ABC and OFL, and approves the final SAFE report. Public comment is accepted prior to SSC final recommendations.

December - Based on the SSC's OFL and ABC, the NPFMC recommends the groundfish ACL, which is usually set equal to the ABC, and groundfish TAC, which may be equal to or less than the ABC, for the next 2 years to the Secretary of Commerce. Public comment is received by the NPFMC prior to action.

January - February - The Secretary of Commerce reviews and approves final recommendations for the next two years. The proposed groundfish specifications approved in October are superseded through this process when the final harvest specifications are published in the Federal Register.

Bering Sea Aleutian Islands Crab

January Crab modeling workshop reviews proposed changes to models.

January Crab Plan Team (CPT) reviews Norton Sound Red King Crab (NSRKC) assessment and makes recommendations for ABC and OFL

February SSC reviews NSRKC assessment and CPT recommendations for ABC and OFL. The SSC makes its own recommendation for ABC and OFL.

February The NPFMC receives the recommendation for ABC and OFL.

February ADF&G sets the guideline harvest level (GHL) for NSRKC less than the ABC recommended by the SSC.

April - Crab assessment authors are assigned. Assessment authors work on proposed model changes or alternative data uses.

May - CPT reviews proposed model changes and proposals for alternative use of available data. CPT recommends ABC and OFL for Aleutian Islands Golden King Crab (AIGKC)

June - SSC reviews CPT recommendations for model changes and/or changes in the use of available data. SSC selects preferred models for assessments in fall. SSC reviews CPT recommendations for ABC and OFL for AIGKC and recommends ABC and OFL.

June - NPFMC receives SSC recommended ABC and OFL for crab.

June - ADF&G sets TAC for AIGKC, GHL for PIGKC, and any harvest by Commissioner's permit for WAIRKC less than the ABC set by the SSC

June-July - CIE reviews conducted on selected Bering Sea crab stocks.

August - Results from AFSC bottom trawl survey delivered to crab assessment authors. ADF&G provides updated catch estimates to crab assessment authors.

September - CPT meets to review assessments for remaining Bering Sea crab stocks. The CPT develops recommendations for ABC and OFL.

October - The SSC reviews the updated stock assessments and the CPT recommendations for models and buffers, and ABC and OFL. The SSC recommends the ABC and OFL for remaining Bering Sea crab stocks.

October - The NPFMC receives the SSC recommended specifications for ABC and OFL.

October - ADF&G sets the TACs/GHLs for the remaining Bering Sea crab stocks less than the ABC recommended set by the SSC.

Scallop

The following provides an overview of the review schedule for determination of Best Scientific Information Available.

January - Scallop assessment authors are assigned. Assessment authors work on proposed model changes or alternative data uses.

March - The Scallop Plan Team (SPT) reviews proposed models and data and supports the ABC and OFL. In the absence of an estimate of stock biomass, OFL and ABC are specified using the methods described in the Scallop FMP.

April - SSC reviews the updated stock assessment and the SPT recommendations for models and their proposed ABC and OFL. The SSC recommends the ABC and OFL for scallop.

June – ADF&G sets the GHL for the upcoming season opening on July 1.

Salmon Fisheries

The **troll fishery in the EEZ off of Southeast Alaska (East Area)** is currently the only commercial salmon fishery authorized by the Salmon FMP. The Salmon FMP delegates management of this fishery to the State of Alaska, in accordance with the Magnuson-Stevens Act, and the fishery is also subject to the Pacific Salmon Treaty. Thus, the NPFMC, NOAA Fisheries, the State of Alaska, and the Pacific Salmon Commission coordinate their respective management responsibilities. The NPFMC and NOAA Fisheries receive information on, and stay apprised of, management measures that regulate the commercial salmon troll fishery and, if necessary, review state management measures for consistency with the policy and objectives of the Salmon FMP, the Magnuson-Stevens Act, and other applicable federal law. The Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean and domestic legislation implementing that Convention prohibit directed fishing for salmon outside of the EEZ (>200 nautical miles offshore) in the North Pacific.

Arctic Fishery Management

The Arctic Management Area is closed to commercial fishing inside the EEZ between 3 and 200 mi until such time in the future that sufficient information is available with which to initiate a planning process for commercial fishery development. The planning process and criteria the Council will consider for authorizing fishing using the BSIA in the Arctic Management Area are provided in Chapter 2 of the [Arctic FMP](#).

Table 1. NPFMC Groundfish, Crab and Scallop Review Procedures

BSIA Framework Action		NPFMC - Groundfish	NPFMC - Crab	ADF&G - Scallop, Crab, DSR	NOAA Fisheries (AKRO or HQ)
Stock Assessment	Assessment prioritization	Center works with NPFMC, Plan Teams and SSC to prioritize and schedule stock assessments. (Hollowed et al. 2017)	Center works with NPFMC, Plan Teams, SSC and ADF&G to prioritize and schedule stock assessments	For DSR and assigned crab see NPFMC crab and groundfish. ADF&G works with NPFMC to prioritize and schedule scallop stock assessments.	AKRO contributes to the prioritization and scheduling of groundfish stock assessments through membership on Plan Teams and SSC. HQ Tracks the assessment schedule for all stocks in the region.
	Overseeing research needed for assessment	Center conducts outreach regarding research needs and compilation of data for groundfish assessments.	Center works with ADF&G to conduct outreach regarding research needs and compilation of data for Bering Sea and Aleutian (BSAI) Islands crab stocks.	ADF&G works with the Center to conduct outreach regarding research needs and compilation of data for the scallop assessment, BSAI crab assessments and Demersal Shelf Rockfish (DSR).	
	Conduct and complete assessment	Center takes the lead in conducting stock assessments for groundfish. Center, Plan Teams and SSC develop standardized guidelines for preparing stock assessments.	Center takes the lead in conducting assigned crab stock assessments. The Crab Plan Team (CPT) and SSC develop standardized guidelines for stock assessments.	ADF&G takes the lead in conducting the scallop assessment, Demersal Shelf Rockfish, and assigned crab stock assessments. The Plan Team and SSC develop standardized guidelines for groundfish and crab stock assessments. ADF&G works with the Scallop Plan Team (SPT) to establish guidelines for the assessment.	
	Assessment working groups	(1) Center staff assemble authors to conduct groundfish stock assessments. (2) Authors carry out and consider analyses, and recommend analyses and outputs to be evaluated by peer review.	(1) Center staff assemble authors to conduct crab stock assessments. (2) Authors carry out and consider analyses, and recommend analyses and outputs to be evaluated by peer review.	(1) ADF&G staff assemble authors to conduct the DSR, scallop, and assigned crab assessments. (2) Authors carry out and consider analyses, and recommend analyses and outputs to be evaluated by peer review.	Staff participate in assessment working groups, as appropriate.
	Assessment model selection	Authors identify preferred assessment inputs and model. Center staff participate as members of the Groundfish Plan Team. Groundfish Plan Teams review the author's proposed assessment inputs and model(s) for consideration, and the basis for biological reference points and projection of short term OFLs, consistent with the SAFE guidelines. The SSC reviews the GPT and authors recommendations for assessment inputs, model(s), biological reference points and	Authors identify preferred assessment inputs and model. Center staff participate as members of the Crab Plan Team to review the author's proposed model(s) for consideration, and the basis for biological reference points and projection of short term OFLs, consistent with the SAFE guidelines. The SSC reviews the CPT and authors recommendations for assessment inputs, model(s), biological reference points and projection of ABC and OFLs. A preferred model is identified.	Authors identify preferred assessment inputs and model. ADF&G staff participate as members of the Groundfish PT, CPT and SPT to review the author's proposed assessment inputs and model(s) for consideration, and the basis for biological reference points and projection of short term OFLs, consistent with the SAFE guidelines. The SSC reviews the GPT, CPT, SPT and authors recommendations for assessment inputs, model(s), biological reference points and	Staff participate in assessment working groups, as appropriate.

		<p>projection of ABC and OFLs. A preferred model or ensemble of models is identified.</p> <p>The SSC Handbook outlines how best practices in peer review are achieved.</p>	<p>The SSC Handbook outlines how best practices in peer review are achieved.</p>	<p>projection of ABC and OFLs. A preferred model is identified.</p> <p>The SSC Handbook outlines how best practices in peer review are achieved.</p>	
Peer Review	Assessment Review	<p>In addition to the review process outlined above, stock assessments periodically undergo review by the Center of Independent Experts (CIE). These reviews are typically done every 5 years for the majority of stocks. The Center has the lead on organizing the CIE reviews of assessments.</p> <p>Subject matter experts participate in the CIE review and often include Council staff and scientists from ADF&G, the Center and the Alaska Regional Office (AKRO). The meetings are open to the public and members of the Plan Teams, SSC and Council Staff regularly attend the review.</p> <p>These reviews are not intended to select a preferred model nor a specific recommendation for ABC or OFL. These reviews are intended to seek advice on whether the current model configurations represent BSIA. In addition CIE reviewers provide advice on how to improve the model(s) in the future.</p> <p>Authors, Plan Teams and the SSC consider peer review panelist reports and identify areas of future research on assessment approaches.</p>	<p>In addition to the review process outlined above, stock assessments periodically undergo review by the Center of Independent Experts (CIE). These reviews are typically done every 5 years. The Center has the lead on organizing the CIE reviews of assessments.</p> <p>Subject matter experts participate in the CIE review and often include Council staff, and scientists from ADF&G, the Center, and the AKRO. The meetings are open to the public and members of the Plan Teams, SSC and Council Staff regularly attend the review.</p> <p>These reviews are not intended to select a preferred model nor a specific recommendation for ABC or OFL. These reviews are intended to seek advice on whether the current model configurations represent BSIA. In addition CIE reviewers provide advice on how to improve the model(s) in the future.</p> <p>Authors, Plan Teams and the SSC consider peer review panelist reports and identify areas of future research on assessment approaches.</p>	<p>In addition to the review process outlined above, crab stock assessments periodically undergo review by the Center of Independent Experts (CIE). These reviews are typically done every 5 years. The Center has the lead on organizing the CIE reviews of assessments.</p> <p>Subject matter experts participate in the CIE review and often include Council staff and scientists from ADF&G, the Center and the AKRO. The meetings are open to the public and members of the Plan Teams, SSC and Council Staff regularly attend the review.</p> <p>These reviews are not intended to select a preferred model nor a specific recommendation for ABC or OFL. These reviews are intended to seek advice on whether the current model configurations represent BSIA. In addition CIE reviewers provide advice on how to improve the model(s) in the future.</p> <p>Authors, Plan Teams and the SSC consider peer review panelist reports and identify areas of future research on assessment approaches.</p>	<p>NOAA Fisheries HQ tracks the outcome of the peer review with respect to conclusions about stock status through briefings by AFSC before and after the peer review.</p>
SSC Recommendations for ABC and OFL		<p>The authors consider whether a reduction in the ABC from the maximum permissible is recommended based on Risk Tables. Relevant information provided in the Ecosystem Status Reports (ESRs) and Ecosystem Socioeconomic Profile (ESP) may be included in the Risk Tables. The author's recommendation is reviewed by the Groundfish Plan Teams. After selecting a preferred model or ensemble of models, the default recommendation of the SSC is maximum permissible ABC as produced by the model or calculation. In some cases a reduction from maxABC may occur based</p>	<p>The authors consider whether a reduction in the ABC from the maximum permissible is recommended. Relevant information provided in the Ecosystem Status Report (ESR) and Ecosystem Socioeconomic Profile (ESP) may inform this recommendation. This recommendation is reviewed by the Crab Plan Team. The SSC reviews the author and Plan Team recommendations for reducing the ABC and selects a recommends the ABC.</p> <p>The SSC reviews the CPT's recommendations for ABC and OFL. The</p>	<p>The crab authors consider whether a reduction in the ABC from the maximum permissible is recommended. This recommendation is reviewed by the Crab Plan Team. The SSC reviews the author and Plan Team recommendations for reducing the ABC and selects a recommended ABC.</p> <p>The SSC reviews the GPT, CPT and SPT recommendations for ABC and OFL. For DSR, assigned crab stocks and scallop, the SSC recommends an ABC and OFL to the Council. The Council receives the SSC recommendation for ABC and OFL for</p>	

		<p>onbased on Risk Tables and selects a recommended ABC.</p> <p>The SSC reviews the GPT's recommendations for ABC and OFL. The SSC recommends the ABC and OFL to the Council and the Advisory Panel (AP). The Council receives the SSC recommendation for ABC and OFL for each stock or stock complex.</p>	<p>SSC recommends the ABC and OFL to the Council. The Council receives the SSC recommendation for ABC and OFL for each stock or stock complex.</p>	<p>each stock or stock complex.</p>	
SSC Comments		<p>The SSCs may also report on a variety of issues at the request of a Council, such as stock status and health, bycatch, habitat status, social and economic impacts of management measures and sustainability of fishing practices.</p> <p>When reviewing an assessment and making ABC recommendations, the SSC certifies that the recommendations made are based on scientific information that meets NS2 guidelines</p>	<p>The SSCs may also report on a variety of issues at the request of a Council, such as stock status and health, bycatch, habitat status, social and economic impacts of management measures and sustainability of fishing practices.</p> <p>When reviewing an assessment and making ABC recommendations, the SSC has certifies that the recommendations made are based on scientific information that meets NS2 guidelines</p>	<p>The SSCs may also report on a variety of issues at the request of a Councils, such as stock status and health, bycatch, habitat status, social and economic impacts of management measures and sustainability of fishing practices.</p> <p>When reviewing an assessment and making ABC recommendations, the SSC has certifies that the recommendations made are based on scientific information that meets NS2 guidelines</p>	
Catch Specification		<p>Council Staff in concert with the SSC develop tables of the recommended ABC and OFL for each stock for the Council and AP. The Advisory Panel comments on the specifications. The Council recommends ACLs that cannot exceed the ABC recommended by the SSC. Council then meets publicly to approve specifications.</p>	<p>Council Staff in concert with the SSC develop tables of the recommended ABC and OFL for each stock for the AP and Council. The Council meets publicly to accept the SSC recommendations for ABC and OFL.</p>	<p>The ADF&G sets the TAC/GHL for all BSAI crab stocks, GHL for scallop, and the TAC for DSR in the SEO/YAK area.</p>	<p>NOAA Fisheries will inform the Council if there are concerns with the catch specifications during development. NOAA Fisheries will provide this notice in time for the Council to amend its recommendation.</p>
Archives		<p>The Center records the assessment results into a centralized repository (NOAA Fisheries' Species Information System).</p>	<p>The Center records the assessment results into a centralized repository (NOAA Fisheries' Species Information System).</p>	<p>The Center records the assessment results into a centralized repository (NOAA Fisheries' Species Information System).</p>	<p>NOAA HQ maintains the SIS system.</p>
NOAA Fisheries Approval					<p>On behalf of the Secretary, NOAA Fisheries reviews Council recommendations, and, if appropriate, certifies that such recommendations are consistent with the Magnuson-Stevens Act, the National Standards, including National Standard 2 and BSIA, and other applicable laws</p>

Preparers

Anne Hollowed, NMFS AFSC, REFM
Chris Lunsford, NMFS, AFSC, ABL
Martin Dorn, NMFS AFSC, REFM
Mary Furuness, NMFS, AKRO, SFD
Katie Palof, ADF&G
Tyler Jackson, ADF&G

Persons (and Agencies) Consulted

Doug Duncan NMFS, AKRO, SFD
Molly Watson, NOAA GC