

AFSC Stock Assessment Prioritization

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Outline

Review stock assessment prioritization

Summarize October 2022 SSC recommendations

Recommend stocks for reduced frequency

Define assessment types

Revise SAFE Guidelines

National Standards for Stock Assessment Prioritization (SAP)

Methot et al. 2015

National framework for prioritization of stock assessments

Implemented on a regional basis to maintain flexibility

Created prioritization ranks for each stock



2017 NPFMC SAP process

Target frequencies only for Alaska stocks

Assessments done on a 1, 2, or 4 year cycle for groundfish

Assessments done on a 1, 2, or 3 year cycle for crab

Align full assessment with survey frequencies

Regional scalar based on high commercial value

High value stocks are assessed annually

Stability of abundance and current harvest strategies, fishery importance, ecosystem importance, and recruitment variability were considered



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2017 NPFMC SAP key decisions

Plan Teams

Groundfish proposed reduced frequency for 16 stocks

Crab proposed reduced frequencies for 5 stocks

SSC

10 groundfish stocks recommended for reduced frequency

4 crab stocks recommended for reduced frequency

2017 “Off” year assessments

Tiers 1-3

Run catch projection model

Tiers 4-5

Year 2 nothing

Year 3 provide catch/biomass **OR** run RE model

Tier 6

Undefined as no biomass or model (in the standard sense) used

Example GOA Atka Mackerel – Tier 6

Year	Current Frequency	Proposed Frequency	ABC (t)
2023	Full	Full	4700
2024	N/A	N/A	4700
2025	Full	Partial	4700
2026	N/A	N/A	4700
2027	Full	Full	4700

Current frequency - Year 2 and 4 nothing is done

Proposed frequency - Year 2 and 4 nothing is done – Year 3 is a partial catch projection

All scenarios - ABC does not change using current methodologies because catch history is maximum catch during a defined time period

SSC October 2022 Recommendations

Frequency 1) use 2017 exercise, 2) catch/ABC and % change in ABC, 3) projected to realized ABC, 4) stock specific considerations

Develop definitions for assessment types and level of review needed

Recommend when an assessment is to be conducted and what type

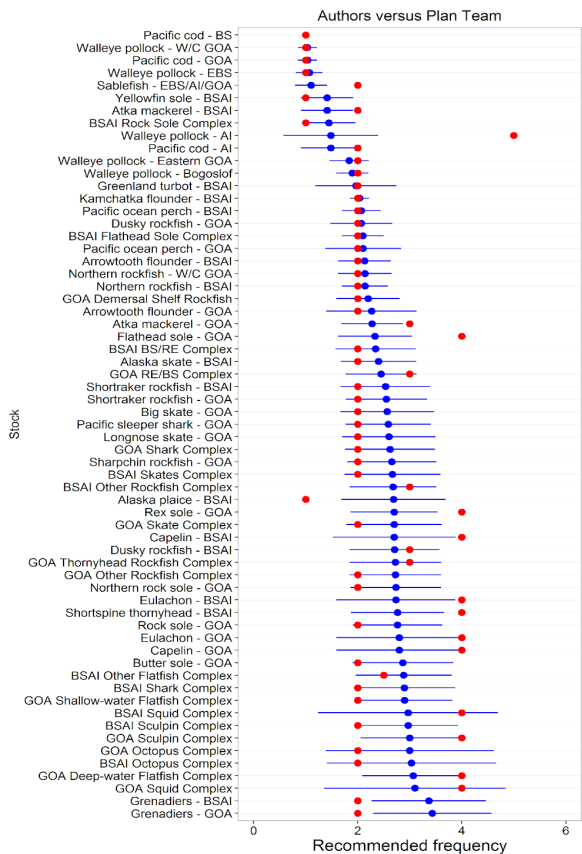
Stocks recommended for reduced frequency

Stock	Tier	Current Frequency	Proposed Frequency	2017-2020 ex-vessel value (millions)*	2017-2021 avg catch	2017-2021 avg ABC	2017-2021 catch/ABC	2017-2021 average annual change in ABC	2017- 2021 Projected ABC/ 2018-2022 ABC average absolute percent difference
GOA Atka mackerel	6	2	4	n/a	1063	4700	23%	0%	n/a
GOA Octopus	6	2	4	n/a	182	1,758	10%	0%	n/a
BSAI Octopus	6	2	4	n/a	340	3576	10%	0%	n/a
GOA shark	5/6	2	4	n/a	2089	5830	36%	41%	n/a
BSAI Shark	6	2	4	n/a	187	517	36%	0%	n/a
GOA Arrowtooth flounder	3	2	4	4.1	20,411	147,582	14%	6%	5%
BSAI Alaska plaice	3	2	4	n/a	18404	33489	55%	3%	4%
BSAI Flathead sole	3	2	4	\$4.99	11130	66475	17%	4%	5%
BSAI Arrowtooth flounder	3	2	4	\$3.69	8888	70189	13%	5%	3%
BSAI Atka mackerel	3	1	2	\$43.01	62508	78278	80%	12%	13%
AI Pacific cod	5	1	2	n/a	18404	20960	88%	1%	n/a
BSAI Northern rock sole	1	2	4	\$12.84	25893	142141	18%	21%	7%
BSAI Yellowfin sole	1	1	2	\$53.61	127,073	275,179	46%	9%	11%



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Stocks recommended for reduced frequency

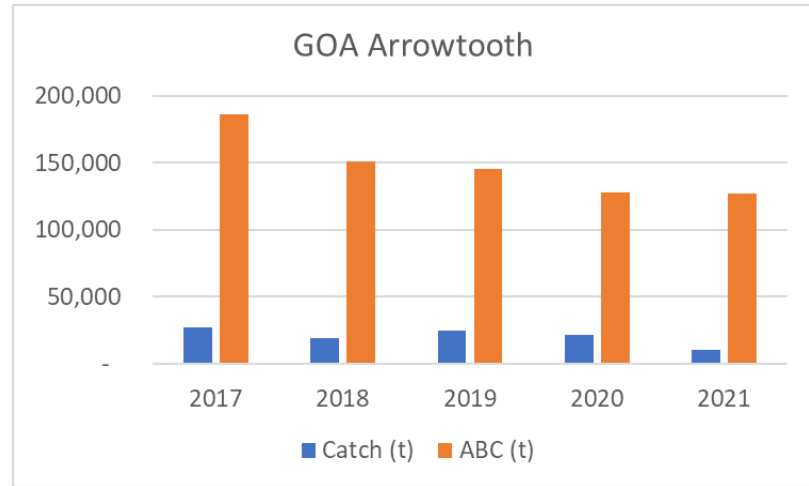
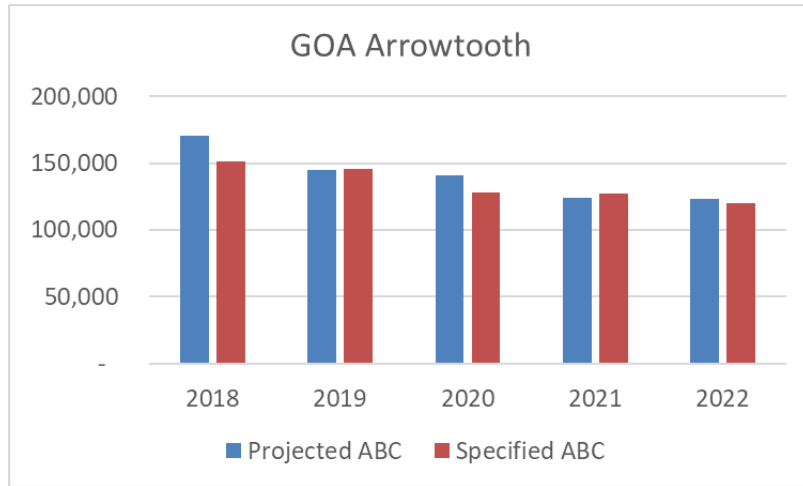


2017 analysis – authors and Plan Team members as individuals generally favored less frequent assessments compared to those adopted by Council



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Stocks recommended for reduced frequency



Metrics suggested by SSC: comparisons of catch/ABC and Projected ABC/realized ABC

Tier 6 stocks

Stocks: GOA Atka mackerel, GOA octopus, BSAI octopus, BSAI shark

Rationale: Catch history based management, catch recommendations have been constant, no target fishery, no assessment model used, risk of overfishing low

Frequency: 2 year to 4 year

Tier 5/6 stocks

Stock: GOA sharks

Rationale: Catch history based management, catch recommendations have been constant, no target fishery, no assessment model used, risk of overfishing low

Tier 5 is spiny dogfish, catch/ABC is 36%, Year 3 partial would update RE biomass or catch/biomass

Frequency: 2 year to 4 year



Tier 3 flatfish stocks

Stocks: GOA ATF, BSAI AK plaice, BSAI flathead sole, BSAI ATF,

Rationale: Commercial value low to moderate, catch/ABC ratio low, annual change in ABC low, difference between projected and realized ABC low, risk of overfishing is low

Frequency: 2 year to 4 year

Tier 1 stocks

Stocks: BSAI northern rock sole

Rationale: catch/ABC is low (18%), average annual change in ABC low (21%), projected to realized ABC ratio low (7%), risk of exceeding OFL low

Frequency: 2 year to 4 year

Tier 1 stocks

Stocks: BSAI yellowfin sole

Rationale: catch/ABC is moderate (46%), average annual change in ABC low (9%), projected to realized ABC ratio low (11%), risk of exceeding OFL low, responses to changing climate can be monitored on a two year frequency

Frequency: 1 year to 2 year



Aligning stocks and survey frequency (Tiers 3,5)

Stocks: BSAI Atka mackerel, AI Pacific cod

Rationale: AI trawl survey is only survey used, no requirement from Steller sea lion BIOP, risk of exceeding OFL low

Frequency: 1 year to 2 year

Stocks recommended for reduced frequency

Stock	Tier	Current Frequency	Proposed Frequency	2017-2020 ex-vessel value (millions)*	2017-2021 avg catch	2017-2021 avg ABC	2017-2021 catch/ABC	2017-2021 average annual change in ABC	2017- 2021 Projected ABC/ 2018-2022 ABC average absolute percent difference
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Plan Team recommendations

Candidate stocks for reduced frequency assessments.								
Stock	Tier	Current Frequency (years)	AFSC Proposed Frequency	PT Proposed Frequency (years)	Frequency Schedule based on PT recommendations			
					Year 1	Year 2	Year 3	Year 4
BSAI Atka mackerel	3	1	2	2	Full	PCPA		
GOA Atka mackerel	6	2	4	4	Full	CMU	CMU	CMU
BSAI Flathead sole	3	2	4	4	Full	PCPA	PCPA	PCPA
GOA Octopus	6	2	4	4	Full	CMU	CMU	CMU
BSAI Octopus	6	2	4	4	Full	CMU	CMU	CMU
GOA shark	5/6	2	4	4	Full	CMU	CMU	CMU
BSAI Shark	6	2	4	4	Full	CMU	CMU	CMU
BSAI Arrowtooth flounder	3	2	4	4	Full	PCPA	PCPA	PCPA
GOA Arrowtooth flounder	3	2	4	4	Full	PCPA	PCPA	PCPA
BSAI Alaska plaice	3	2	4	4	Full	PCPA	PCPA	PCPA
BSAI Northern rock sole	1	2	4	2	Full	PCPA		
BSAI Yellowfin sole	1	1	2	2	Full	PCPA		
AI Pacific cod	5	1	2	1	Full	Full		

Stock Assessment Definitions: Purpose and Need

In the past, assessment types have not been formally defined and definitions have been used inconsistently

Explicitly define the types of stock assessment products used by the NPFMC

Demonstrate how the NPFMC assessment types translate to national stock assessment definitions
(NGSAIP, 2018)



October 2022 highlights

Identify Council efficiencies

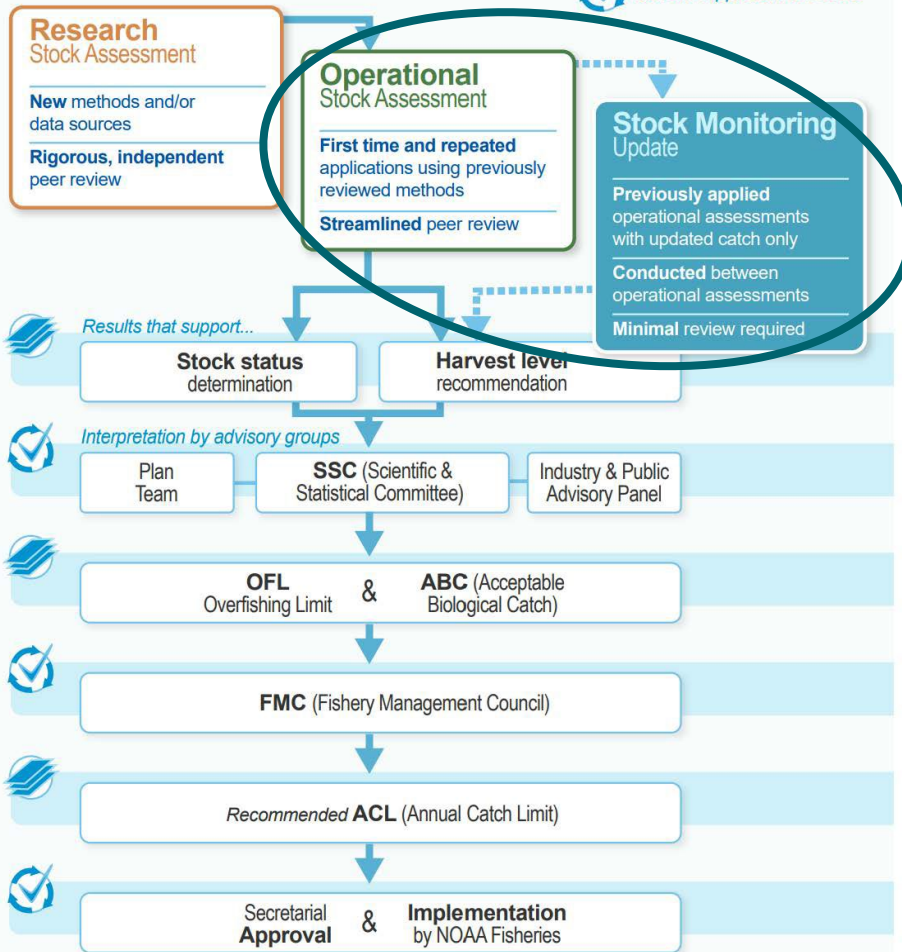
Streamline, standardize, reproducible, transparency

“Develop definitions of partial, full, and benchmark assessments and specify what documentation and level of review are needed for each.” (SSC, October 2022)

NOAA Fisheries Next Generation Stock Assessment to Management Process

 Products

 Review / Approval Processes



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NGSAIP and NPFMC

Research assessments not part of NPFMC

Operational assessments category too broad

Operational “full” is current NPFMC process – referred to as full/benchmark previously

Operational “update” is new proposed category – referred to as update

Benchmark may be confusing, clarify that the focus is on stock assessment products for NPFMC process



Benchmark Assessment

previously referred to as “full / benchmark assessments”

Considers all available data and multiple model configurations or new modeling platforms

Including any new unreviewed data sources not considered in previous assessments

Examples of model processes or inputs explored

Functional form of selectivity curves

Priors, parameterizations of treatment of life history processes

Aggregation or inclusion of datasets



Update Assessment

previously referred to as “full assessments”

For assessments with few outstanding and/or minor modeling or data issues and relatively stable results with new data

Maintains the approved model structure of the previous benchmark, with the addition of updated data

Correction of data entry errors or inclusion of additional historical data

Software version updates (with comparison between versions)

Limited minor model changes addressing Plan Team / SSC recommendations



Partial Catch Projection Assessment

previously referred to as “partial assessments”

Applies to age-or-length structured models that estimate stock status and project ABCs and OFLs (Tiers 1-3)

Stock projections updated with recent catch data

Tiers 4-5 -no projection model

Include catch/biomass ratios, and re-running the random effects model only if there is a new survey data point available



Catch Monitoring Update

previously referred to as “nothing”

Ensure sudden fishery or stock changes are not missed during years without other stock assessment products

Tabulates recent fishery removals to ensure they are below specified annual catch limits (ACLs and ABCs)

Applies to Tiers 4 to 6 groundfish stocks

NGSAIP - stock monitoring update



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Example GOA Atka Mackerel – Tier 6

Year	Current Frequency	Proposed Frequency	ABC (t)
2023	Full	Full	4700
2024	N/A	Catch Monitoring	4700
2025	Full	Catch Monitoring	4700
2026	N/A	Catch Monitoring	4700
2027	Full	Full	4700

Revised definitions – Catch Monitoring instead of N/A

Year 3 – Plan Team recommended Catch Monitoring for Tier 6

Pause for Discussion



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Stock Assessment Definitions: Review Effort

Benchmark assessments = intensive review

Introduced and reviewed at Sept/Oct Plan Team / SSC meetings

Update assessments = less intensive review

Introduced and reviewed at Nov/Dec Plan Team / SSC meetings

Stock Assessment Definitions: Review Effort

Partial catch projection assessments = least intensive

Short documents that could be reviewed for all stocks combined

Large changes in catches or surveys flagged for further consideration

Catch monitoring update = least intensive

A single brief document that provide a table of total catch relative to recent catches and ABC (landings and discards) for all stocks



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Revised SAFE Guidelines

Needed for all stock assessment products

New update and catch monitoring update assessment types

Promote standardization, consistency, and efficiency in communicating stock assessment products

Align with current assessment and Council processes

E.g. Updating with Ecosystem and Socioeconomic Profiles (ESPs)

and risk tables



Updated SAFE Guidelines

Following adoption of new definitions for stock assessment products, the AFSC will work closely with authors to revise and update the SAFE Guidelines

Revised SAFE Guidelines for NPFMC review in September and October 2023



Assessment scheduling

Following adoption of new frequencies the AFSC will set a predetermined schedule of 1-4 year assessments as was done in 2017

Frequency schedules for planned assessments can be revised based on concerns regarding assessment model, stock status, or fishery performance

Deciding when an upcoming assessment is requested as a benchmark or an update needs to be established



Outstanding “Issues”

Tier 4-6 partial catch projection assessment define what is needed

Year 3 provide catch/biomass **and/or** rerun RE model for Tier 4/5?

catch/biomass provides survey info but doesn't change ABC/OFL

rerunning RE model may change ABC/OFL/apportionment

Plan Teams deferred until definitions decided

Year 3 for Tier 6 not defined – no model or survey biomass to report?

Plan Teams recommended Catch Monitoring for Year 3 Tier 6



Outstanding “Issues”

Revise definitions of assessment type

NPFMC focus on clarifying types of operational assessments

Operational full vs Operational update

AFSC focus on better alignment with NGSaip Operational products

Timing of revised definition adoption

Establish definitions (April/June SSC?)

Bring forward SAFE Guidelines (Sept/Oct)

Outstanding “Issues”

Determine when the next assessment will be an update or full/benchmark?

November/December of previous year?

September/October of current year only if crisis?

Plan Teams deferred until definitions adopted

Action Items

Frequency recommendations to be made for 13 stocks

Approve or refine stock assessment definitions

Clarifications on Year 3 for Tier 4-6 and deciding when a benchmark or update should be requested

SAFE Guidelines to be developed for fall of 2023