February 2023

AFSC Stock Assessment Prioritization

Alaska Fisheries Science Center Staff

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Outline

Review 2017 stock assessment prioritization

Define assessment types

Recommend stocks for reduced frequency

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Stock Assessment Prioritization

Initiated in 2017

Intent is to balance assessment frequency with need to reduce workload

2017 10 groundfish stocks and 4 crab stocks

2022 five year review of 2017 decisions

2023 bringing 13 additional stocks forward for reduced frequency

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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

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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)

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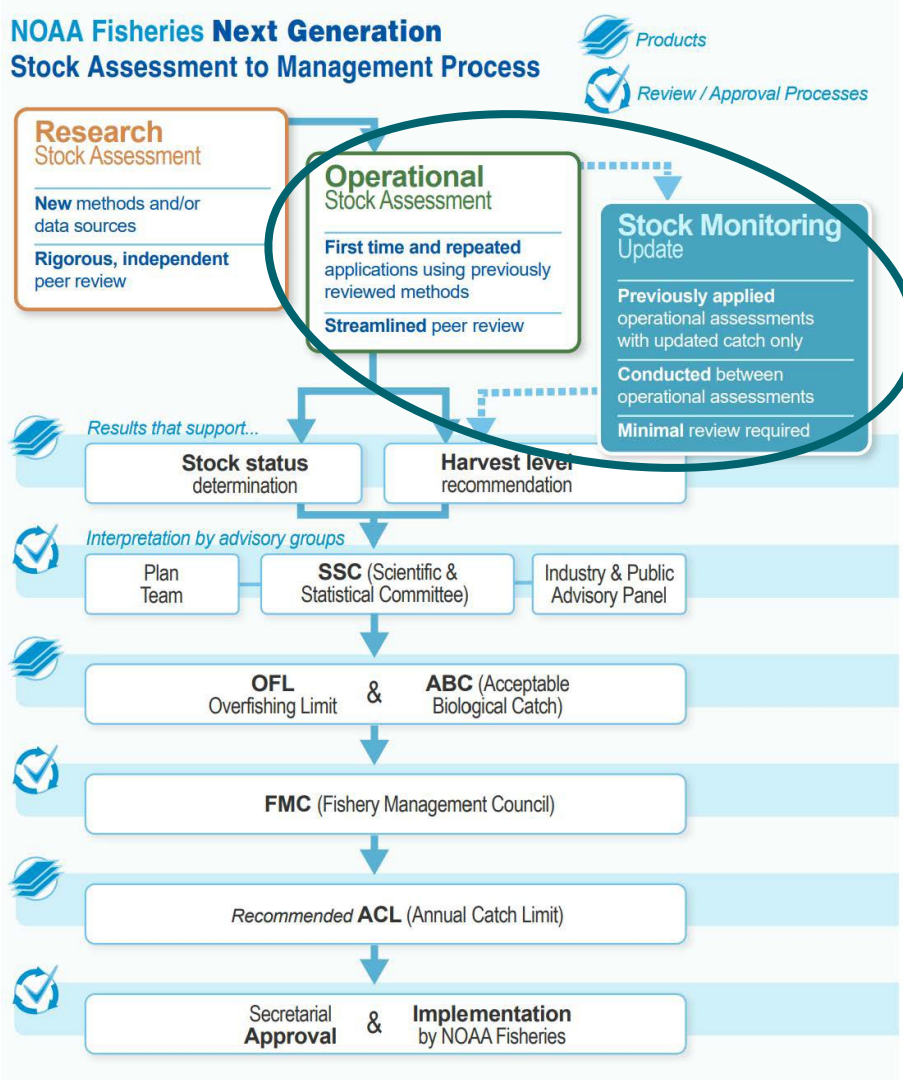

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NGSAIP and NPFMC

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

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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

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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

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Partial Catch Projection Assessment

previously referred to as “partial assessments”

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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

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Catch Monitoring Update

previously referred to as “nothing”

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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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Assessment Definitions (In the document)

Benchmark Assessment

Update Assessment

Partial Catch Projection Assessment

Catch Monitoring Update

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Assessment Definitions (After Plan Team/SSC)

Operational Full permits model and data changes (current practice) with extensive documentation and review

Operational Update is a new category focused on addition of recent data, less documentation and review

Partial Catch Projection (current "partial") with some clarifications made for Tiers 4/5/6

Catch Monitoring used to be "N/A"

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

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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 will be established

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Pause for Discussion

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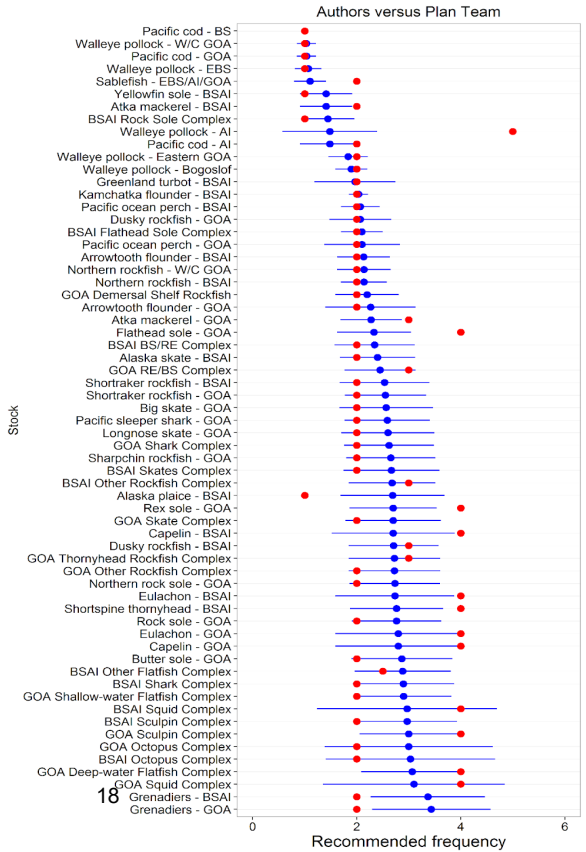
Stocks recommended for reduced frequency

Review 2017 analysis

Provide metrics: catch/ABC, and % change in ABC, projected to realized ABC

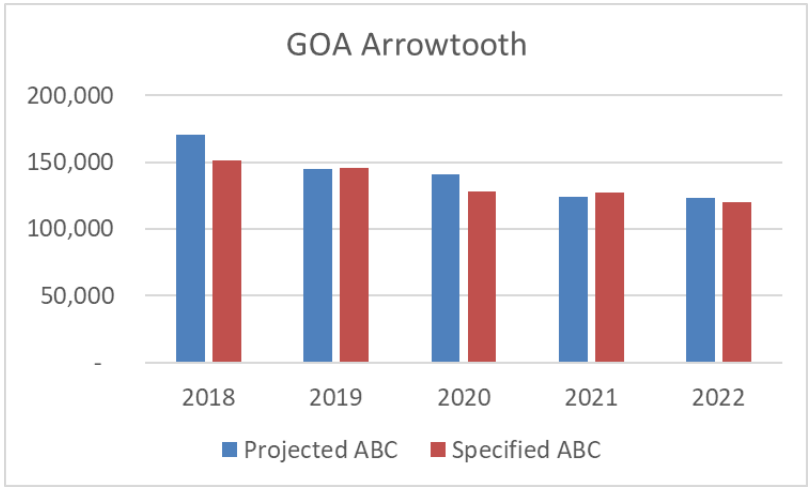
Consider stock specific considerations

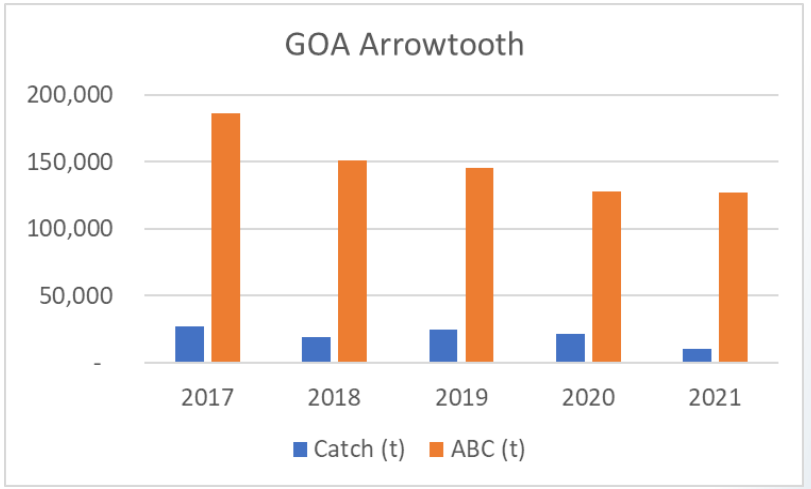
Stocks recommended for reduced frequency



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

Stocks recommended for reduced frequency





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

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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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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

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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 model

Frequency: 2 year to 4 year

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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

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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 Plan Team Decisions

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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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Clarifications

What are we reducing the frequency of?

Operational full and update assessment products

Why?

Increase focus on the full assessments

Implement a team approach

Thoroughly address Plan Team and SSC recommendations between full assessments

Increase time to complete research targeted at improving our assessments

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Clarifications

What happens in an out of cycle year without a full or update assessment?

- **Either** catch projections or a catch monitoring update
- **Every year** for all stocks will have abbreviated assessment or monitoring product available
- **Catch projections** will capture both recent catches and their expected impacts on stock size and status

Example GOA Atka Mackerel – Tier 6

Intersection of stock definitions and stock assessment frequency

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/SSC recommended Catch Monitoring for Tier 6

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