AFSC Stock Assessment Enterprise

Update on prioritization

Alaska Fisheries Science Center Staff

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2023 Stock Assessment Prioritization

Revisit 2017 Prioritization

- Improve efficiency
- Streamline work
- Clearly define a plan for expected products
- Communicate AFSC products

Redefine Assessment Products

- Clarify the range of assessment products
- Incorporate update assessments

Improve the assessment enterprise

- Update guidelines
- Provide timelines and product expectations
- Better inform Council

Outline

- Review of 2022/2023 stock assessment prioritization
- Previous SSC recommendations
- Revised stock assessment definitions
- Overview of stock assessment frequencies

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SSC recommendations (2/23)

Definitions

"The SSC recommended adding a 5th analysis category 'Research assessments' which would include analyses/methods undergoing external peer review (e.g., CIE) but not immediately feeding into management actions (e.g., assessments in between scheduled analyses and analysis products such as GMACS)."

- **Research assessments are included in current assessment definitions**

"The SSC supports these categories and looks forward to clear definitions for each Tier level in upcoming documentation of guidelines for stock assessment authors. The SSC requests that the guidelines include specific criteria for authors on the level of documentation for operational updates and partial catch projections. The SSC noted that for catch monitoring updates (or catch reports) consideration of subarea ABCs may enhance the utility of the report."

- **While "Groundfish Stock Assessment Guidelines" were updated to reflect the assessment products definitions for 2023 updates were not finalized. The AFSC is prioritizing this for 2024 for all assessment categories and also providing better guidance on specific categories such as model evaluation. Catch reports (catch monitoring updates) are now included in the Plan Team Summaries.**

"The SSC recommends that the planned development of guidelines for stock assessment authors be considered in the context of a larger review of consistency with National Standard 2 guidelines for the inclusion of pertinent economic, social, community, and ecological information across the range of Council decision-informing SAFE documents."

- **Incorporation of other NS2 considerations will require a larger development group than the stock assessment programs.**

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Frequency

"The SSC supports all JGPT recommendations for frequency except for BSAI yellowfin sole. Specifically, the SSC recommends maintaining BSAI yellowfin sole, BSAI northern rock sole and AI Pacific cod on the current schedule (annual, two year, and annual, respectively), and accepting the proposed reduced frequency of all other stocks recommended by AFSC."

- **The frequencies for these three stocks remain the same**

"The SSC recommended that future stock assessment prioritization need not occur only on a five-year schedule (as was recommended in 2017), but that a complete schedule for all stocks should be compiled and made available to the Council process."

- **A 2023-2026 schedule is included in this presentation and in SAFE intro's.**

"Subsequent changes to this schedule may then be considered on a case-by-case basis as the need arises and in tandem with planning for the specific type of stock assessment to be conducted."

- **We agree and appreciate that case-by-case basis situations may be considered**

"The SSC recommends that assessment frequency not be reduced (or perhaps be increased) for groundfish assessments where there were critical model and/or Tier concerns that need to be addressed, when there is potential for limiting interactions between species/fisheries (i.e., 'choke species'), and when upcoming non-assessment analyses require current stock assessment results. Assessments should also be prioritized when the SSC has determined that a reduction from the maximum permissible ABC should be applied."

- **AFSC intends to use the planned frequency and make Full or Update decisions based on current assessment status, review recommendations and available AFSC resources**

Non-action recommendations

"The SSC notes that the critical information from regular surveys has to be maintained regardless of assessment frequency; survey observations benefit a broad suite of species, which may be on differing assessment schedules and will likely provide the first indicators of change that can trigger assessment analyses and management response."

- **Prioritization efforts are focused on stock assessment frequency and products. Survey operations are not impacted by this initiative.**

"The SSC highlights that uncertainty will inevitably go up with decreased assessment frequency and decreased assessment detail, however, the SSC emphasizes that this may be offset by freeing up time and resources to address unexpected events. The SSC recognizes that this process is intended to avoid surprises and avoid having to increase buffers (the reduction of ABC from maxABC based on the risk table) as the time since the most recent assessment increases, while also trying to free up time and resources. "

- **Stock assessment frequency has been strategically thought about to help reduce uncertainty concerns while providing sound management advice. Many of the stocks with 2 and 4 year stock assessment frequencies are underutilized or are aligned with survey frequencies.**

Outstanding Issues

"The SSC recommended that for Tier 5 stocks on a four year frequency, the random effects model should be rerun and the OFL/ABC/apportionment calculations should be updated in year 3 if new survey biomass estimates are available."

- **This recommendation results in an update assessment which is contrary to prioritization efforts. Alternatives to be considered included moving four-year stocks to two-year frequencies where concerns warrant a more frequent product. Four-year stocks considerations include low value, data limited, underutilized, etc. (See later slides)**

"The SSC therefore recommends that, to the degree possible, clear criteria be developed for defining what would trigger an operational full assessment when an operational update was scheduled or an assessment to be conducted in a scheduled 'off' year."

- **At this time we have not developed criteria for when a full assessment occurs because it is unlikely to fit all future circumstances. AFSC supervisors and authors will evaluate the most recent assessment considerations and recommendations from PT/SSC/Council to determine if an update or a full will be provided (survey trends, recruitment, model fit, poor diagnostics, etc.). An annual stock assessment memo will be made available that includes assessment plans for the upcoming fall. (See later slides)**

"The SSC also requested clarification on when during the year these triggers would be activated and whether there would be resources made available to, for example, conduct a full assessment for November based on that year's survey data."

- **Part of the prioritization process is to ensure adequate resources are available to respond to unexpected circumstances and expect the AFSC assessment enterprise can respond to these unanticipated events.**

Stock Assessment Definitions

Stock Assessment Types - Five categories

- Operational full assessment
- Operational update assessment
- Harvest projection
- Catch report
- Research assessment

Stock Assessment Types - Full and Update

- Operational full assessment
  - Formerly known as “full” or “benchmark”
  - Least restricted
  - Considers all data, new model configurations, new modeling platform
  - Full in-depth review required (Sept/Oct)

- Operational update assessment
  - Formerly known as a “full”
  - Introduced to help improve efficiency and reduce workload
  - Maintains model structure of previous full assessment, incorporates new data, minimal changes
  - Reduced review requirements

Stock Assessment Types - Harvest projection and catch report

- Harvest projection
  - Formerly known as “partial”
  - Executive summary
  - Runs projection model, reports new catches, catch/biomass or REMA model

- Catch report
  - Formerly known as a “n/a”
  - Introduced to show off year assessments are considered and accounted for
  - Reports recent catch, ABC, OFL
  - Compile and include in PT SAFE report

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Tiers 4 and 5 - 4 year frequency assessments

- 2017 recommendation - Conduct a partial assessment in year 3
- 2023 recommendation - Run the REMA model
  - This results in an update assessment
  - This is contrary to prioritization efforts
- Options
  - Change year 3 to catch report so years 2, 3, and 4 are catch reports
  - Re-evaluate four-year stocks as two-year stocks

AFSC Assessment Update

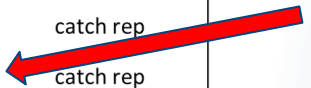
Tier 4/5 assessment schedule

2017

Year	1-year cycle		2-year cycle		4-year cycle	
	Tiers 1-3	Tiers 4-6	Tiers 1-3	Tiers 4-6	Tiers 1-3	Tiers 4-6
1	full	full	full	full	full	full
2	full	full	partial	nothing	partial	nothing
3	full	full	full	full	partial	partial
4	full	full	partial	nothing	partial	nothing

2023

Year	1-year cycle		2-year cycle			4-year cycle		
	Tiers 1-3	Tiers 4-6	Tiers 1-3	Tiers 4-5	Tier 6	Tiers 1-3	Tiers 4-5	Tier 6
1	full/update	full/update	full/update	full/update	full/update	full/update	full/update	full/update
2	full/update	full/update	harv proj	catch rep	catch rep	harv proj	catch rep	catch rep
3	full/update	full/update	full/update	full/update	full/update	harv proj	catch rep	catch rep
4	full/update	full/update	harv proj	catch rep	catch rep	harv proj	catch rep	catch rep



harv proj – harvest projection
catch rep – catch report

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Stock assessment guidelines

- We are focused on groundfish stock assessment guidelines only
- 2023 guidelines updated for assessment products definitions
  - Preliminary format for update stock assessments
  - Harvest projections
  - Catch reports
- 2024 guidelines - to do
  - Finalize operational update format and requirements
  - Revise model evaluation section for update and full
  - Better incorporate ecosystem contributions and ESPs
  - Better utilize links and Github repositories
  - Provide authors guidance for September - November products
    - Base models, stepwise model progression, ??
  - Produce final guidelines document for use in 2024 assessments

10 Stock Frequencies were changed in 2023

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	1,063	4,700	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	3,576	10%	0%	n/a
GOA shark	5/6	2	4	n/a	2,089	5,830	36%	41%	n/a
BSAI Shark	6	2	4	n/a	187	517	36%	0%	n/a
GOA Arrowtooth flounder	3	2	4	$4.13	20,411	147,582	14%	6%	5%
BSAI Alaska plaice	3	2	4	n/a	18,404	33,489	55%	3%	4%
BSAI Flathead sole	3	2	4	$4.99	11,130	66,475	17%	4%	5%
BSAI Arrowtooth flounder	3	2	4	$3.69	8,888	70,189	13%	5%	3%
BSAI Atka mackerel	3	1	2	$43.01	62,508	78,278	80%	12%	13%

Assessment Frequency Schedule

Annual assessments - 7

Stock	Region	Tier	Frequency	Last Full	2023	2024	2025	2026
Pollock	EBS	1	1	2022	OP	OP	OP	OP
Yellowfin sole	EBS/AI	1	1	2022	OP	OP	OP	OP
Pacific cod	EBS	3	1	2022	OP	OP	OP	OP
Pacific cod	AI	3	1	2022	OP	OP	OP	OP
Sablefish	EBS/AI/GOA	3	1	2022	OP	OP	OP	OP
Pacific cod	GOA	3	1	2022	OP	OP	OP	OP
Pollock	GOA	3	1	2022	OP	OP	OP	OP

OP - operational full or update
HP - harvest projection
CR - catch report
Grey shading - 2023 frequency change

Assessment Frequency Schedule

Two-year assessments - 22

Stock	Region	Tier	Frequency	Last Full	2023	2024	2025	2026
Northern rock sole	EBS/AI	1	2	2022	HP	OP	HP	OP
Pollock	AI	3	2	2022	HP	OP	HP	OP
Atka mackerel	EBS/AI	3	2	2022	HP	OP	HP	OP
Greenland turbot	EBS/AI	3	2	2022	HP	OP	HP	OP
Kamchatka flounder	EBS/AI	3	2	2022	HP	OP	HP	OP
Northern rockfish	EBS/AI	3	2	2021	OP	HP	OP	HP
Pacific ocean perch	EBS/AI	3	2	2022	HP	OP	HP	OP
Rougheye & blackspotted rockfish	EBS/AI	3	2	2022	HP	OP	HP	OP
Dusky rockfish	GOA	3	2	2022	HP	OP	HP	OP
Northern rockfish	GOA	3	2	2022	HP	OP	HP	OP
Pacific ocean perch	GOA	3	2	2021	OP	HP	OP	HP
Rougheye & blackspotted rockfish	GOA	3	2	2021	OP	HP	OP	HP
Pollock	Bogoslof	5	2	2022	CR	OP	CR	OP
Other rockfish	EBS/AI	5	2	2022	CR	OP	CR	OP
Shortraker rockfish	EBS/AI	5	2	2022	CR	OP	CR	OP
Shortraker rockfish	GOA	5	2	2021	OP	CR	OP	CR
Skates	GOA	5	2	2021	OP	CR	OP	CR
Thornyheads	GOA	5	2	2022	CR	OP	CR	OP
Skates	EBS/AI	3, 5	2	2020	OP	HP	OP	HP
Demersal shelf rockfish	GOA	4, 5, 6	2	2022	CR	OP	CR	OP
Other rockfish	GOA	4, 5, 6	2	2021	OP	CR	OP	CR
Forage Species (including Squid)	EBS/AI/GOA	6	ecosystem report	2	2021	OP	NA	OP	NA

OP - operational full or update
HP - harvest projection
CR - catch report
Grey shading - 2023 frequency change

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Assessment Frequency Schedule

Four-year assessments - 16

Stock	Region	Tier	Frequency	Last Full	2023	2024	2025	2026
Alaska plaice	EBS/AI	3	4	2021	HP	OP	HP	HP
Arrowtooth flounder	EBS/AI	3	4	2022	HP	HP	HP	OP
Flathead sole	EBS/AI	3	4	2020	HP	OP	HP	HP
Arrowtooth flounder	GOA	3	4	2021	HP	HP	OP	HP
Flathead sole	GOA	3	4	2022	HP	HP	HP	OP
Rex sole	GOA	3	4	2021	HP	HP	OP	HP
Other flatfish	EBS/AI	5	4	2020	CR	OP	CR	CR
Octopus	EBS/AI	6	4	2020	OP	CR	CR	CR
Sharks	EBS/AI	6	4	2022	CR	CR	CR	OP
Atka mackerel	GOA	6	4	2021	CR	CR	OP	CR
Octopus	GOA	6	4	2021	CR	CR	OP	CR
Shallow water flatfish (includ. N/S rock sole)	GOA	3, 5	4	2021	HP	HP	OP	HP
Deep water flatfish (inlud. Dover sole)	GOA	3, 6	4	2019	OP	HP	HP	HP
Sharks	GOA	5, 6	4	2022	CR	CR	CR	OP
Grenadiers	EBS/AI/GOA	ecosystem report	4	2020	NA	OP	NA	NA
Sculpins	EBS/AI/GOA	ecosystem report	4	2020	OP	NA	NA	NA

OP - operational full or update
HP - harvest projection
CR - catch report
Grey shading - 2023 frequency change

Annual AFSC stock assessment timeline

January

- AFSC supervisors and authors evaluate the need for full or update assessments or frequency changes based on assessment status, review body recommendations, resources

July

- AFSC provides stock assessment memo detailing which assessments are due in the fall and what type (full, update, harvest projection, catch report)

September/October

- Authors present proposed model changes for full assessments, proposed changes in data sources for update assessments, and present harvest projections

November/December

- Full/update assessments with base models and author recommended models