

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
- Five step process
 - Determine which stock should be included in prioritization
 - Develop scores based on fishery importance, stock status, ecosystem importance, assessment information, and stock biology
 - Identify current and target assessment level
 - Develop target assessment frequencies
 - Calculate prioritization ranks for each stock



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2017 NPFMC SAP process

- Focus on 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
- Use regional scalar based on high commercial value
 - High value stocks are assessed annually
- The stocks ultimately put forward had low catch/ABC
 - Many flatfish stocks catch < TAC < ABC
- Took into account stability of abundance and current harvest strategies

2017 NPFMC SAP key decisions

- Groundfish/Crab Plan Teams
 - Groundfish proposed reduced frequency for 16 stocks
 - Flatfish, non-targets, rockfish, AI pollock
 - Crab proposed reduced frequencies for 5 stocks
- SSC
 - 10 groundfish stocks recommended for reduced frequency
 - Did not support reduced frequencies for rockfish
 - 4 crab stocks recommended for reduced frequency
- Partial assessments to be completed in off-years
 - Tier 1-3 - Run projection model
 - Tier 4-5
 - Year 2 - Nothing
 - Year 3 - Provide catch/biomass or run RE model



Reduced assessment frequency in 2017 crab

Stock	Pre-2017 frequency (years)	2017- present frequency (years)
Pribilof Islands RKC	1	2
Pribilof Islands BKC	1	3
Pribilof Islands GKC	1	3
Western Aleutians RKC	1	3

No additional prioritization recommendations for crab



Reduced assessment frequency in 2017 groundfish

D1 AFSC Assessment Prioritization
October 2022

Stock	Pre-2017 frequency (years)	2017- present frequency (years)
AI Pollock	1	2
BSAI Turbot	1	2
BSAI Other Flatfish	2	4
BSAI Sculpin	2	4
BSAI Grenadier	2	4
GOA Shallow Water Flatfish*	2	4
GOA Rex sole	2	4
GOA Deepwater flatfish	2	4
GOA Flathead Sole	2	4
GOA Grenadier	2	4
GOA Sculpin	2	4

* GOA southern and northern rock sole are included in the GOA Shallow water flatfish complex.



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Review of 2017 SAP

- Effects on review process
 - Fewer full assessments to review annually
 - Off-year assessments require minimal attention
- Logistical hurdles
 - Unexpected event/change triggers an off-cycle assessment
 - Navigating pandemic, survey cancellations/reductions, species shifts
- Effects on management advice
 - Has catch advice met management needs?
 - Catch/ABC changed?
 - Providing a quantitative metric is challenging
 - Comparison of previous year forecast to off-year projection result



Stocks recommended for reduced frequency in 2017 - Catch / ABC

D1 AFSC Assessment Prioritization
October 2022

Stock	Pre-2017 catch/ABC	2017- catch/ABC
AI Pollock	5%	4%
BSAI Turbot	69%	27%
BSAI Other Flatfish	23%	28%
BSAI Sculpin	Ecosystem	Ecosystem
BSAI Grenadier	Ecosystem	Ecosystem
GOA Shallow Water Flatfish*	10%	5%
GOA Rex sole	29%	10%
GOA Deepwater flatfish	3%	2%
GOA Flathead Sole	13%	6%
GOA Grenadier	Ecosystem	Ecosystem
GOA Sculpin	Ecosystem	Ecosystem

* GOA southern and northern rock sole are included in the GOA Shallow water flatfish complex.



Stocks recommended for reduced frequency in 2017 - ABC avg change

D1 AFSC Assessment Prioritization
October 2022

Stock	Pre-2017 ABC average change/year	2017- present ABC average change/year
AI Pollock	11%	9%
BSAI Turbot	103%	15%
BSAI Other Flatfish	5%	6%
BSAI Sculpin	Ecosystem	Ecosystem
BSAI Grenadier	Ecosystem	Ecosystem
GOA Shallow Water Flatfish	8%	4%
GOA Rex sole	2%	15%
GOA Deepwater flatfish	27%	15%
GOA Flathead Sole	10%	3%
GOA Grenadier	Ecosystem	Ecosystem
GOA Sculpin	Ecosystem	Ecosystem

* GOA southern and northern rock sole are included in the GOA Shallow water flatfish complex.



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Review of 2017 SAP - Potential improvements

- Review “off-years” requirements for Tiers 4-6?
 - Currently nothing is done and off years not addressed in any review bodies
 - Consider automated product that informs managers of catch and status
 - Provides an annual “check” versus nothing
- Streamline review of partial assessments
 - Review partials as a group - summarized rather than presented individually
 - Automate output for partial assessments
 - Make agenda time more efficient



Taking stock assessment into the future

- Revisit SAFE Guidelines
 - What's required for best management advice
 - Clarify definitions of benchmark, full, partial assessment types
- Best practices
 - Increase reproducibility/transparency/transferability of assessments
 - Streamline and automate assessment production and products
 - Embracing Next Generation Stock Assessment practices (FIMS)
- Revisit SAP - frequency of assessments
 - 2017 analysis and results still meaningful
 - Review and identify additional low risk stocks
 - Implement additional frequency reductions
 - Balance assessment and mgmt advice needs with AFSC resources



SAFE Guidelines

- Main assessment types
 - New
 - Never assessed before
 - Benchmark
 - Substantially different than previous (model, data, parameters, biological ref. points)
 - Full update
 - Base model run with updated catch and/or survey data with little impact to results
 - Partial update
 - Executive summaries (projection model or running RE model), updating catch data only,

SAFE Guidelines

- Current practices
 - All full assessments presented as benchmarks
 - Full documentation
 - Dedicated review time
 - All recommendations by review bodies addressed by authors
 - Full update assessment process is inefficient
 - For assessments with no model/assessment changes and only data updates
 - Authors tasked with producing full documents
 - Review bodies tasked with intensive review
 - Substantial recommendations more beneficial for a benchmark than full update



SAFE Guidelines - recommendation

- Redefine and reduce requirements when no substantial changes occur (Full update)
 - Abbreviated document
 - Reference last benchmark assessment for documentation
 - Provide appendices to accompany assessment
 - Streamlined presentation of results both written and oral
 - Efficient documents help the readers
 - Less agenda time needed by review bodies allowing for more focused and in-depth reviews



Best practices

- Increase reproducibility/transparency/transferability of assessments
 - Effort being led by AFSC stock assessment scientists
 - Standardized approach for documenting entire assessment process
 - Ensures accuracy of data, transparency in workflow, ability to share
 - Allows AFSC to be more flexible with assignments, ease of review, output standardization, author transitions
 - Enhances ability to do team-based approaches
 - Contributes to open source science initiatives



Best practices - recommendation

- Streamline and automate assessment products
 - Utilize modern tools and techniques to efficiently create SAFEs
 - Automate partial assessments with reproducible code
 - Reduce burden/redundancy of creating documents and figures/tables
 - Produce standardized products
 - Provide authors better guidelines (templates) for what to produce/present
 - Ease the review burden
 - Make it easier for stakeholders to interpret assessment results (increased engagement)



Revisit frequency of assessments

- Identify **additional** low risk stocks following 2017 guidance
 - Fishery importance, stock status, role of species in ecosystem, and assessment-specific issues
 - Low risk of overfishing
 - Four flatfish stocks
 - Well above target biomass
 - Catch well below ABC
 - Low risk of overfishing
 - Five data-limited stocks
 - Tier 6 and Tier 5 complex based on catch history
 - ABC defined by time period based on catch history
 - Stocks not targeted
 - Survey biomass unreliable



Nine low-risk candidates for reduced assessment frequency

Stock	Tier	Current	Proposed	Catch/ABC	ABC variability
BSAI Flathead sole	3	2	4	17%	3%
BSAI Arrowtooth flounder	3	2	4	13%	7%
BSAI Alaska plaice	3	2	4	55%	6%
GOA Arrowtooth flounder	3	2	4	14%	10%
GOA Atka mackerel	6	2	4	23%	0%
GOA Octopus	6	2	4	15%	0%
BSAI Octopus	6	2	4	10%	0%
GOA Shark	5/6	2	4	41.3%	40.7%
BSAI Shark	6	2	4	36%	0%



BSAI Sharks - Tier 6

Year	Current Frequency	Proposed Frequency	ABC (t)
2022	Full	Full	517
2023	N/A	N/A	517
2024	Full	Partial	517
2025	N/A	Full	517

Current frequency - year 2 and 4 nothing is done

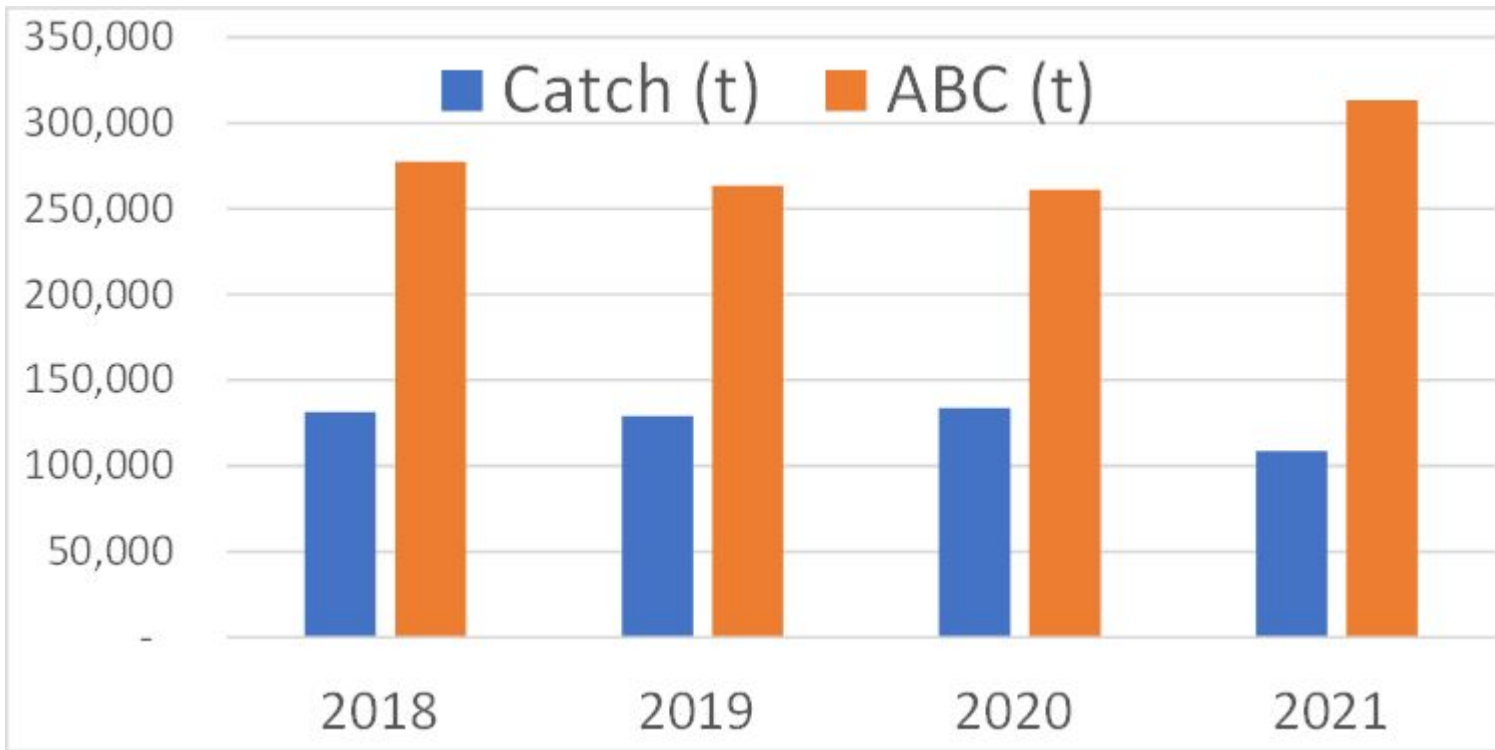
Proposed frequency - year 3 nothing is done

All scenarios - ABC does not change using current methodologies

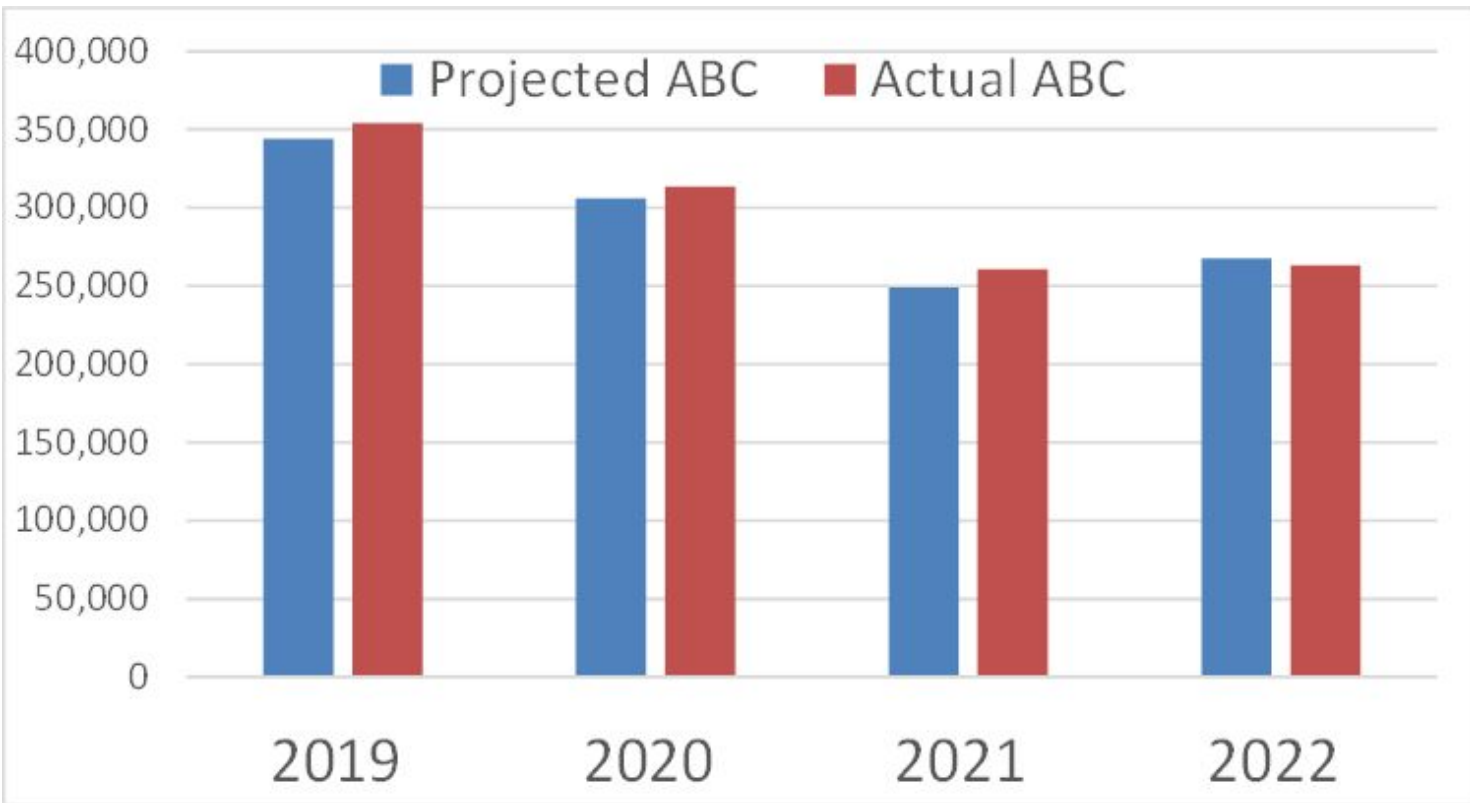
Stocks Warranting Further Consideration

- High value stocks but catch < ABC
 - BSAI yellowfin sole 47% catch/abc w 9% annual change in ABC (currently annual) , BSAI northern rock sole 18% catch/abc (currently every 2 years)
- Stocks assessed annually relying on biennial trawl survey as index
 - BSAI Atka mackerel 14% CV (currently annual), AI Pacific cod 2% CV (currently annual)
- Rockfish stocks originally proposed but rejected by SSC in 2017
 - GOA thornyheads, GOA RE/BS, GOA shortraker, BSAI shortraker, BSAI other rockfish

BSAI Yellowfin sole



BSAI Yellowfin sole



Summary

- Stock assessments and time series are maturing
 - Added stocks or increasing Tier levels has stabilized
 - Survey index's have 30+ years of data
- Assessment related products continue to increase
 - ESPs, risk tables, ensemble modeling, MSEs
- Demands have increased
 - Stock assessment and review capabilities are maxed

Need to balance requirements and expectations with workload



Action Items for the PT/SSC/Council

- Endorsement?
 - Reproducibility
 - Streamline/automate assessment products
- Approval and recommendations
 - Potential changes to SAFE Guidelines and definitions of what's produced and reviewed for “full” versus “benchmark” and “off-year” assessments
 - Revisit assessment frequency
 - Utilize 2017 analysis

Enact for 2023 groundfish assessments



Timeline

- October 2022
 - AFSC requesting Council consider revisiting SAP
 - SSC/Council provides guidance on any considerations/processes additional to 2017 SAP recommendations
 - SSC/Council provide guidance on any “no-go” or “additional” candidates
- October - January
 - AFSC staff evaluate and respond to SSC/Council considerations
- February, 2023
 - SSC/Council reviews and recommends potential candidates for reduced frequency for fall, 2023



END

