Draft Tech Memo: Data Limited Stocks

MAFMC SSC Meeting

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Background

- Data Limited Stocks: Challenges and Progress 2009- 2016

- 2016 NS 1 Guideline Revisions, NMFS convened NS 1 Technical Working Group with Subgroup 3 focusing on data-limited ACLs

- Draft Tech Memo: "Managing with ACLs for data-limited stocks in federal fishery management plans - Review and recommendations for implementing 50 CFR 600.310(h)(2) flexibilities for data limited stocks"

- Dates: NMFS discussed with the CCC in May 2021; comments requested by Oct. 1, 2021

Overview of Draft Tech Memo

- Legal context of MSA and NS1 Guidelines
  - Statutory Requirements
  - NMFS guidance: Standard approach; flexibilities

- Data-limited Assessment Methods
  - Methods that support Standard ACLs
  - Recommendations and Considerations
  - Other methods that support MSA compliance

- Management: Guidance on use of (h)(2) flexibilities for data-limited stocks
  - Qualification: When flexibilities may be available
  - Potential alternative: ACL expressed in terms of rate
  - Stocks that qualify for (h)(2) but lack data for Rate-based ACL

Legal context

Statutory Requirements

- FMP mechanism to specify "annual catch limit"
- That prevents overfishing
- Include Accountability Measures (AMs)

NS1 Guidelines

- Standard Approach to ACLs; expressed as amounts of fish (weight or number)
- (h)(2) Flexibilities (50 CFR 600.310(h)(2))
    - Council may recommend alternative approach
    - Must comply with MSA
    - Must be in FMP

# Flexibility to use "Alternative Approaches": NS 1 Guidelines (h)(2)

- "limited circumstances that may not fit the standard approaches to specification of reference points"

- "include, among other things, …stocks for which *data are not available* either to set reference points… or to manage to reference points" (pursuant to standard approach)

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- "Councils may propose alternative approaches for satisfying requirements of the Magnuson-Stevens Act"

Data-Limited Assessment Methods: Progress

Advances in stock assessment methods for data-limited stocks are giving us new tools that:

-more effectively use the data that are available

-identify manageable metrics

-increase understanding of uncertainties

Data-Limited Assessment Methods
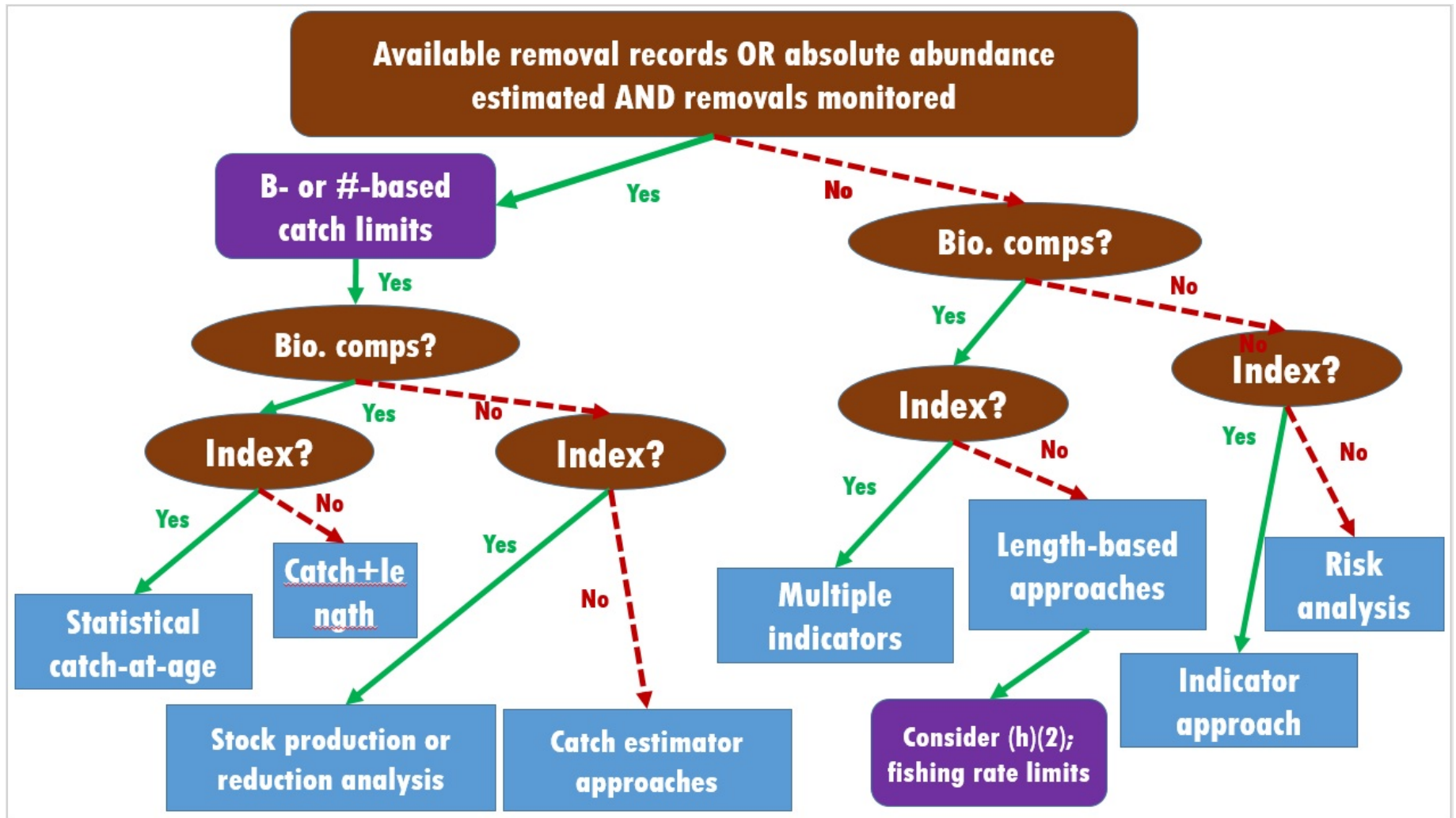
Recommendations

For methods that support weight/numbers-based ACLs

- Identify data gaps; recommend research priorities.
- Seek to improve data, including reconstructing removal histories.
- Explore the uncertainty in inputs.
- Be explicit about the uncertainty buffer between OFL and ABC; ensure that control rule buffers between OFL and ABC increase as scientific uncertainty increases.
- If inputs are weakly justified, consider using other data limited methods.
- Regarding catch-estimator methods:
    - Recognizing that, in some cases, "average catch" and "catch scalar," may be BSIA, if other data-limited methods can be used, they should be.
    - If data are not available to use other methods, then:
        - Consider whether an alternative ACL under (h)(2) may be appropriate.
        - Use appropriate buffers.
        - Plan to transition to another approach.

Information

Other data-limited methods

Length-based, and indicator-based methods:

- limited in ability to define removal targets in terms of amount of fish

- do provide science-based metrics and reference points
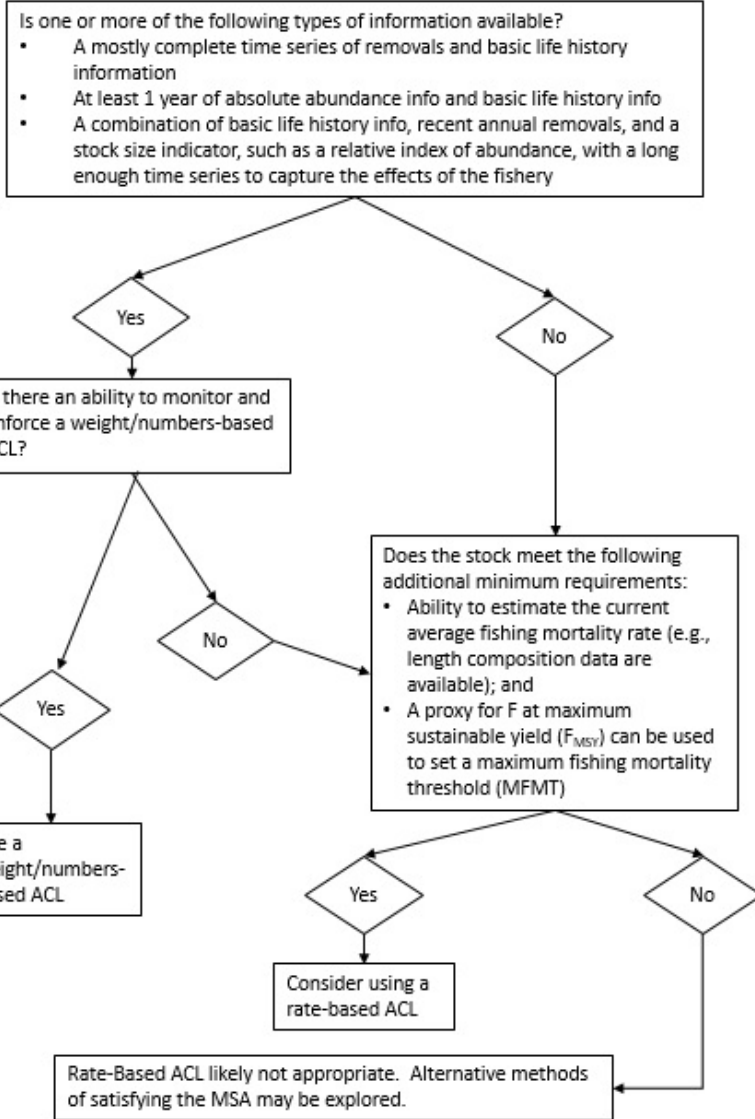
- can support compliance with MSA

Management: Qualification to apply (h)(2) for data-limited stocks

For stocks that lack data needed to effectively specify, or manage with, ACL expressed as amount of fish

Overview

Start with what you can measure

Considerations for ACLs in Data-Limited Fisheries

Is one or more of the following types of information available?
- A mostly complete time series of removals and basic life history information
- At least 1 year of absolute abundance info and basic life history info
- A combination of basic life history info, recent annual removals, and a stock size indicator, such as a relative index of abundance, with a long enough time series to capture the effects of the fishery

Yes → Is there an ability to monitor and enforce a weight/numbers-based ACL?

No → Does the stock meet the following additional minimum requirements:
- Ability to estimate the current average fishing mortality rate (e.g., length composition data are available); and
- A proxy for F at maximum sustainable yield (F_{MSY}) can be used to set a maximum fishing mortality threshold (MFMT)

Yes → Use a weight/numbers-based ACL

No → Does the stock meet the following additional minimum requirements...

Yes → Consider using a rate-based ACL

No → Rate-Based ACL likely not appropriate. Alternative methods of satisfying the MSA may be explored.

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Potential Alternative: ACL expressed as rate

- Stock Assessment provides F and MFMT

- ABC and ACL can be derived using buffers just as under the standard approach for ACLs, but expressed in terms of F rather than weight or number

Managing with Indicators: Example

If there are length data, consider whether SSC can correlate indicators to these rates, and management controls can be designed to maintain stock within indicator range.

Hypothetically, this could look like:

- Mean length indicator of 9.4 inches corresponding to F_{OFL} (obtained via length-based assessment)

- Mean length indicator of 10 inches corresponding to F_{ABC} (selected by SSC)

- Mean length indicator of 10.2 inches corresponding to F_{ACL} (selected by Council)

- Management options: size limits, time/area closures, gear modifications

Monitoring and Accountability Measures

- FMP must describe how monitoring would ensure compliance with MSA

- Potential Options: annually run the data-limited model to compare F to F_{ACL}; or monitor the indicator (e.g., lengths)

- Must include accountability measures

Stocks that Qualify for (h)(2) but lack rate data

- Must comply with MSA using best scientific information available

- Consider whether a data-collection program to support movement towards rate-based ACL would be appropriate

- <u>Goal</u>: progress towards use of Standard ACL approach

QUESTIONS? COMMENTS?

Please submit additional comments by COB: 10/01/2021
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Example: Establishing F_{ACL}

- MFMT = F_{MSY} proxy = $F_{30\%SPR}$

- MFMT = F_{OFL}

- F_{OFL} x buffer (scientific uncertainty) = F_{ABC}

- F_{ABC} x buffer (management uncertainty) = F_{ACL}

Wrap Up

Legal context of MSA and NS1 Guidelines

- Statutory Requirements
- NMFS guidance: Standard approach; flexibilities

Improvements in Data-limited assessment methods

- Methods that support Standard ACLs
- Recommendations and Considerations
- Other methods that support MSA compliance

Alternative Approaches to ACLs for Data-limited Stocks

- Qualifying to use (h)(2) data-limited flexibilities
- Potential Rate-Based Alternative ACL; how it would work
- Data-limited, (h)(2)-qualified, but lack rate data