

NOAA
FISHERIES

National Standard 1 – Technical Guidance

Council Coordination Committee

Richard Methot

October 2021

NS1 Technical Guidance Workgroup

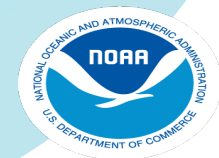
Purpose: Develop technical guidance on National Standard 1 (NS1) guideline topics to support decision-making.

- Subgroup 1: Reference points (*draft nearing completion*)
- Subgroup 2: Carry-over and Phase-in (*published July 2020*)
- Subgroup 3: Data Gaps and Alternative Approaches (*Draft complete, In review*)



NOAA
FISHERIES

Subgroup 1 MSY Reference points & Proxies



NOAA
FISHERIES

Overview on Reference Points

Overall theme: estimation of F_{MSY} , B_{MSY} , and their proxies.

- Guidelines and consideration for direct estimation
- Guidelines for selecting F_{MSY} and B_{MSY} proxies
- Guidelines for data-limited situations
- Additional considerations

F_{msy} – fraction caught per year

B_{msy} – Target population size

Status:

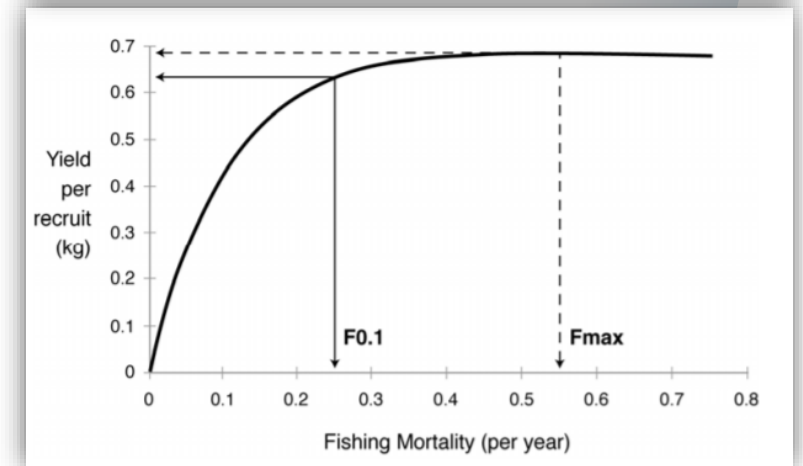
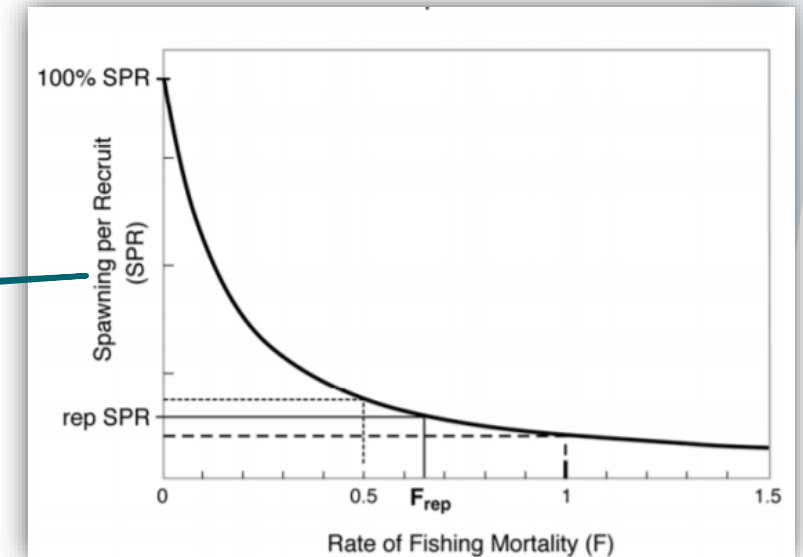
- Have a working draft, meetings and ongoing input from science centers.
- Providing a fuller preview today
- Expect draft for full working group review by end of 2021.
- Anticipate future Council review.



NOAA
FISHERIES

Measuring Impact of Fishing

- The harder you fish (F),
- The less biomass you get from each recruit (SSB/R)
- The catch from each recruit ($Yield/R$) reaches an asymptote and may decline
- **SPR** is the ratio of fished SSB/R to unfished SSB/R
- SPR is essentially the average escapement, and is the most common measure of fishery impact
- Fishery selectivity for older vs younger fish has big impact on catch, hence on MSY
- Transition from SSB in units of mature biomass to units of population egg production has not been calibrated



Direct Estimation of Reference Points

- Biomass dynamics

- Treats stock and its fishery with no biological detail
- Simple model provides direct estimate of MSY, but easily biased by the ignored biological and fishery details

- Age-structured

$$N_{a,y} = N_{a-1,y-1} e^{-Z_{a-1,y-1}}$$

- Age-structured models provide an explicit and detailed representation of a harvested stock. Accounting for age and size structure of the modeled population, age-selectivity of multiple fleets, discarding, possibly spatial structure.
- Age-structured models can include a spawner-recruitment relationship that enables direct estimation of reference points
 - Estimation of that SRR is not assured
 - Key considerations include the shape of the SRR, length of time series, parameter estimation, climate effects
 - Most age-structured assessments do NOT achieve direct estimation

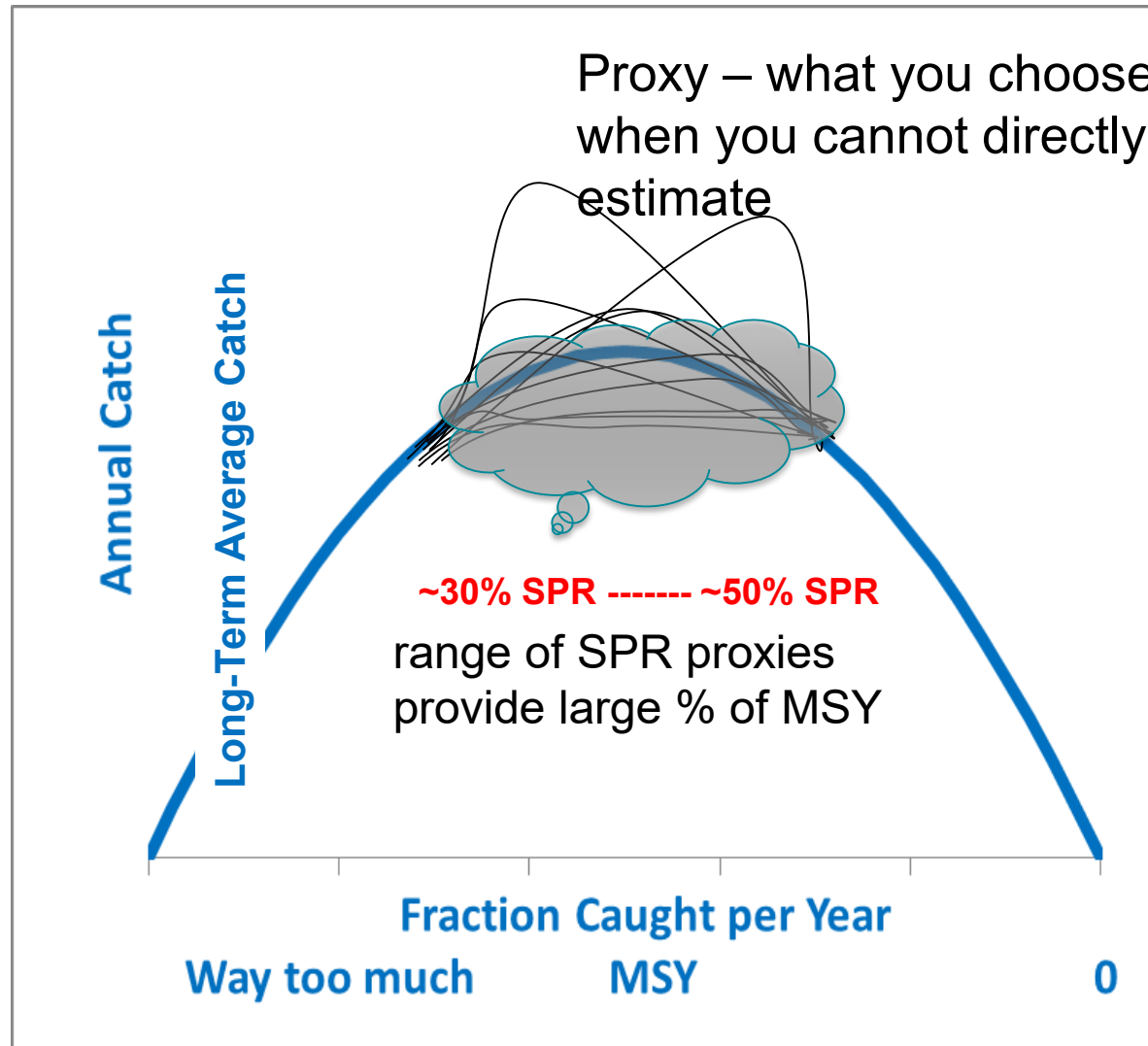


NOAA
FISHERIES

Why do we Need Proxies for F_{MSY} ?

Direct Estimation is impeded by:

- Data time series not covering full stock history
- High fluctuations mask spawner-recruitment signal
- Large climate signal (regime shifts) dominates spawner-recruitment



Take aways –

- Current range of SPR proxies supported
- Recommend SPR=45%
- Updated MSEs a good idea
- Historical literature has confounded target SPR and limit SPR, w/o explicit buffers in use today
- Recalibrate to new SSB units



Proxies for B_{msy} Reference Points:

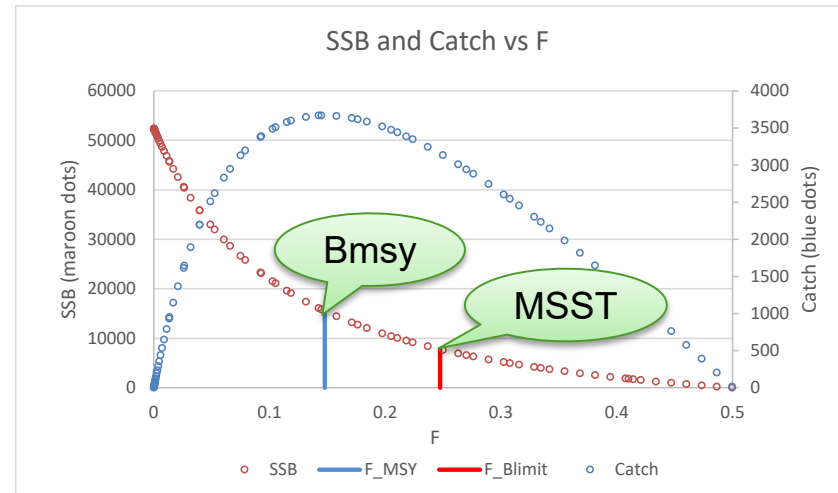
- B_{msy} is SSB level that would result from fishing at the F_{msy} level
- Important as the target for rebuilding
- Proxy B_{msy} is $SPR * SSB/R * Recruitment$
- The challenge: What recruitment is expected when fishing at F proxy?
 - Recent average? Since when? Regime shift? Dynamic running average? Will it increase as stock rebuilds?
- Alternatives:
 - specify B_{msy} proxy as % of unfished SSB



NOAA
FISHERIES

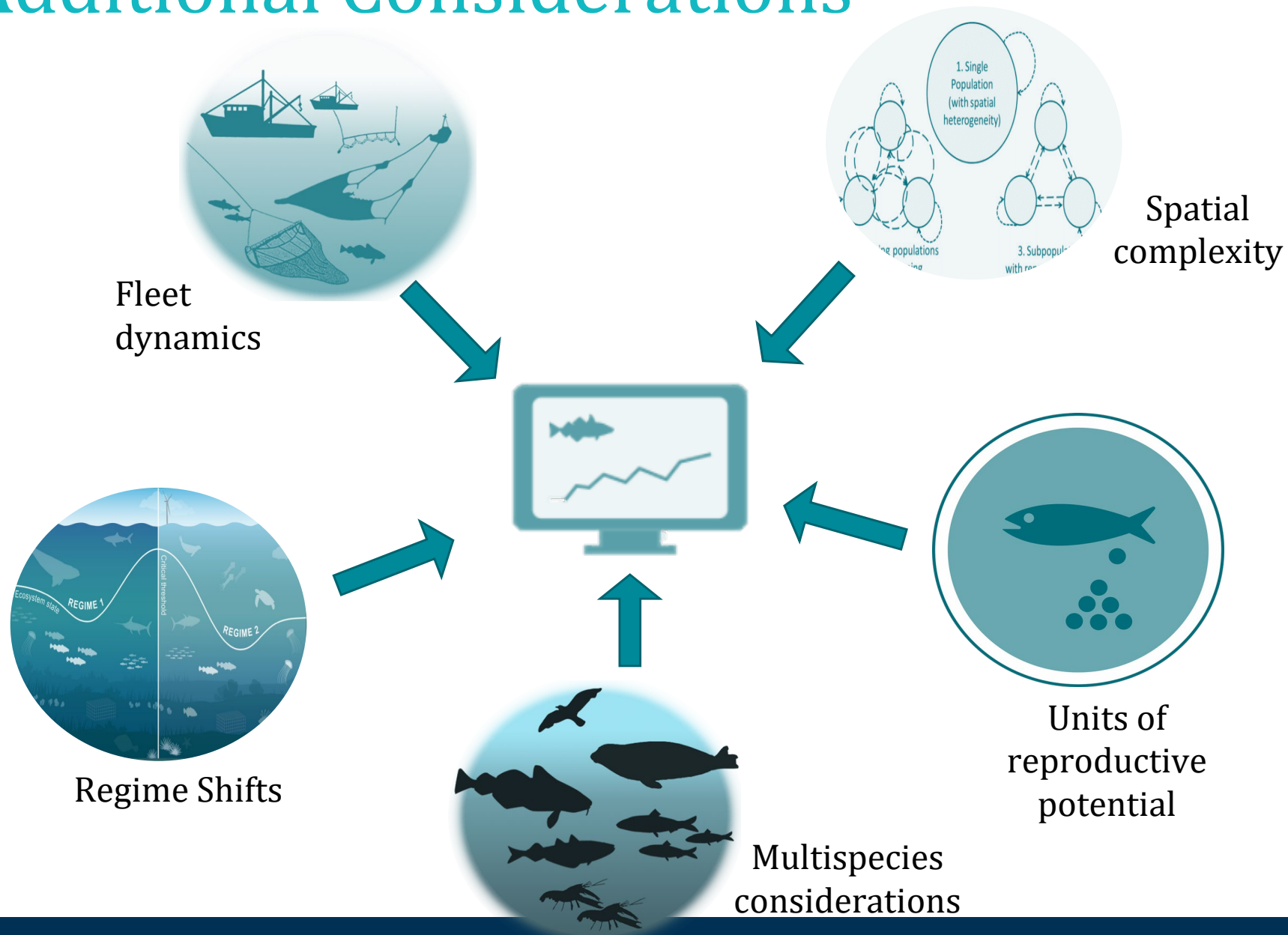
What's new in this Tech Guidance?

- Data-limited, quasi-equilibrium approaches described
- In some circumstances, quasi-equilibrium calculations can provide basis for both overfishing and overfished determinations
- More information on measuring degree to which a stock is approaching an overfished condition
- Including recommendation to document the F level that would drive a stock towards the overfished level.



NOAA
FISHERIES

Additional Considerations

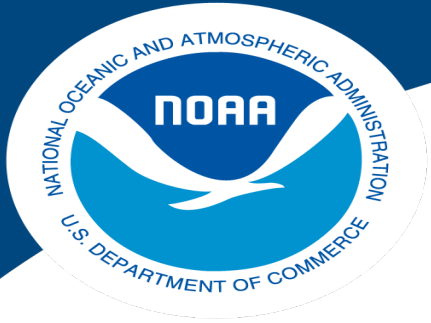


NOAA
FISHERIES

Questions?



NOAA
FISHERIES



**NOAA
FISHERIES**

Subgroup 3

Draft Tech Memo: Data-Limited ACLs

Marian Macpherson (OSF)

Overview of this section

- Title of draft: “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”
- This is a DRAFT document.
- Goal today: Update you on status, comments received, and next steps.

Review: Summary of draft Tech Memo

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

Status Update

Discussed draft with CCC in May 2021; requested feedback by Oct. 1, 2021.

By invitation, we attended the following Council and SSC meetings to discuss the draft:

- WPFMC, SSC
- WPFMC
- Caribbean SSC
- CFMC
- Gulf of Mexico SSC
- Mid-Atlantic SSC

Comments received:

- Councils
- Other

Summary of Comments

Councils:

- General support for proposed flexibility and rate-based approach.
- Note importance of early coordination with the assessment process if an alternative ACL will be used.
- Need for clarifications about which stocks may be eligible; how to evaluate “quality” of available data; and when ACLs would not be expressed as amounts of fish.
- Support for identification of additional methods.

Other Comments:

Request additional guidance on buffers; clearer restrictions on use; guidance on facilitating data improvement; and greater transparency.

Next Steps

- Re-convene Subgroup 3 to review comments, and develop plan for next steps
- We may follow up individually with some Councils as appropriate

QUESTIONS? COMMENTS?

For additional information contact: Marian.Macpherson@noaa.gov and
Stephanie.Hunt@noaa.gov

