

NEFMC SSC Workshop on Dynamic Reference Points

June 1-2, 2026, Hampton Inn, Boston Seaport District
670 Summer Street; Boston, MA
Joseph T. O'Callahan Ballroom

Laura Taylor Singer - SAMBAS Consulting

Hannah MacDonald - Facilitator

Willy Goldsmith - Pelagic Strategies

Day 2 Slides



New England Fishery
Management Council

Welcome Back

Tuesday, June 2

Morning: Management Applications, Challenges,
and Opportunities of Implementation

Afternoon: Toward Operational Guidance and Next
Steps

Where did we leave off yesterday?



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Photo: SBNMS

Workshop Outcomes

1. A preliminary **suite of indicators and guidelines** for evaluating whether to use dynamic BRPs and potentially candidate stocks.
2. Consensus on recommendations for developing, reviewing, and maintaining DRPs, building on existing CINAR, SSC8, and NS1 guidance (e.g., **evaluation standards, evidence thresholds**).
3. A stepwise **implementation roadmap** that aligns scientific advances with management, legal, and capacity constraints and identifies potential risks.
4. A prioritized **list of research recommendations** that could advance our understanding of DRPs and future development of best practices for implementation.



Day 2 Agenda at a Glance

Tuesday, June 2		
Time	Title	Presenter
8:30 - 9:00	Arrival and coffee	
9:00 – 9:10	Welcome: Goal Setting and Day 2 Overview	Hannah MacDonald Laura Singer
MORNING SESSION: Management Applications, Implementations Challenges and Opportunities		
9:10 – 9:45	Presentation: Policy and Legal Implications – National and Regional Perspectives	Wendy Morrison
9:45– 10:25	Panel: Perspectives from Other Fishery Management Councils & Fisheries Commission	Willy Goldsmith Mike Wilberg Kai Lorenzen Jeff Kipp
10:25 – 11:15	Breakout group discussions	
11:15 – 11:25	Break and return to plenary	
11:25 – 12:15	Plenary: Report Out and Discussion	
12:15– 1:15	Lunch	



Day 2 Agenda at a Glance

AFTERNOON SESSION: Toward Operational Guidance and Next Steps		
1:15 – 2:15	Discussion: Developing Operational Guidance for Dynamic Reference Points	Hannah MacDonald Laura Singer
2:15 – 2:30	Break	
2:30 – 3:20	Discussion continued	
3:20 – 4:00	Discussion: Identification of Future Work and Research Priorities	
4:00 – 4:30	Presentation: Next Steps & Wrap Up	Willy Goldsmith Hannah MacDonald Laura Singer
4:30 – 4:45	Closing Remarks	Conor McManus
4:45	Adjourn Workshop	



Potential Policy Considerations & Management Concerns

Assumption- ultimate goal is “robust” reference points.

- Simulations may be needed to better understand “robustness” of dynamic vs non-dynamic reference points

Management Concern -stability in dynamic reference points through time

- Large swings in reference points are hard for management and for business planning
- Unclear how different methods impact stability of catch

Panel: Perspectives from other management entities

Purpose:

- 1) Understand how others are working to address changing conditions that shift reference points
- 1) Identify lessons learned that could be applied to NEFMC-managed stocks

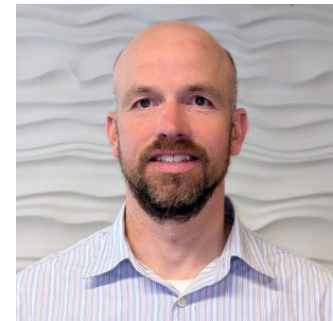
Panelists:



Dr. Mike Wilberg
MAFMC SSC



Dr. Kai Lorenzen
SAFMC SSC



Jeff Kipp
ASMFC Staff



DRP Perspectives: MAFMC

Challenge/Goal	Approach(es) considered	Progress to date and next steps
Atlantic mackerel rebuilding F – Recruitment much lower now than historically	Used recent recruitment instead of long-term recruitment for F_{rebuild}	Implemented – continue to review with new data and assessments
Setting ABCs when recruitment productivity seems to have changed	Use shorter, recent time series of recruitment for projections to inform ABCs	Implemented – continue to review with new data and assessments
Reference points change in response to some biological changes (growth and maturity)	Reference points are calculated using recent average weight-at-age and maturity-at-age	Implemented as standard practice
Trends in recruitment or growth	Currently no approach to do this – WHAM uses autoregressive approaches (i.e., stationary)	



DRP Perspectives: SAFMC (& Kai)

Challenge/Goal	Approach(es) considered	Progress to date and next steps
Deciding when (and how) non-stationarity is at play	- Regime shift declaration, Klaer et al. (2015) criteria (ABC consideration) - Model comparison (hindered by poor data, can give spurious results?) (May require more effort and resources than justified by management gains?)	- Catch projections WG -> use of recent vs. average recruitment (2022) - Proposal to apply robust F benchmarks (e.g. F40% SPR) instead of DRP (Damiano et al. SCS8) - SA & Gulf MSY proxied WG starting
Understanding implications of non-stationarity (assumption) for RP and management in short/medium term	Could be explored in simulations and set out clearly in general terms (but is often left to after process assumptions have been made)	- Not difficult but requires resources (not necessary when using robust F benchmarks)
How to set management targets when long-term 'terminal' env. driven recruitment decline is evident	- None currently proposed! - Difficulty of making determination - Possibly removing such stocks from active management (e.g. as ecosystem component stocks)?	None



DRP Perspectives: ASMFC

Challenge/Goal	Approach(es) considered	Progress to date and next steps
Lobster RPs decoupled from current productivity regime	Regime-based RP structure	- Adopted for abundance status - Need better link between productivity and F - Potential evaluation with MSE
Menhaden RPs did not account for dynamic ecosystem services	Ecological RPs with ecosystem dynamics model	- Used by management for TAC setting - Explicit spatial links between movement and environmental conditions
Mismatch between striped bass F and SSB RPs; trending recruitment	- F RPs based on observed recruitment regimes - Trigger mechanism to define recruitment regime	- RPs used for management advice in regular management cycle - Reevaluate management objectives and strategies given low recruitment - Alternate RP definitions



*Break 10:30 - 10:50

*Breakout Groups
10:50 - 11:50

Discussion
11:50 - 12:20



Photo: MCFA

No audio during
this time



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Dynamic [Biological] Reference Points (DRPs) are time-varying targets and thresholds that adjust for non-stationarity in stock productivity. DRPs can enable more responsive management by accounting for the impacts of broad and persistent ecosystem change or regime shifts to better reflect recent past and projected future stock conditions. As with conventional BRPs, DRPs can be biomass- and/or fishing mortality-based and may use proxies depending on data availability (e.g., spawning potential ratio [SPR]). In some cases, DRPs may include linkages with an environmental driver and/or productivity but this is not required.



Breakout Groups: Concept mapping for Implementing DRPs

Explore ideas for creating a stepwise implementation roadmap to advance DRPs while acknowledging potential constraints and risks. This could be done using a specific species that was mentioned by the panel as an example on how to implement a DRP or discuss more broadly as a hypothetical situation without a specific example.

- Use on ramps and pathways discussed in “How to Change” session discussions
- What is the data that is needed to create a DRP? What are the steps to implementation?
- Who is responsible at each step (including yourself as an SSC member)?

No webinar audio broadcast at this time.



Breakout Group Assignments

	Table 1 White Hake (analytical - lack of response to management)	Table 2 Monkfish (empirical)	Table 3 GB Haddock (analytical - random effects)
Facilitator	Hannah MacDonald	Willy Goldsmith	Laura Singer
Note Taker	Jamie Cournane	Jerelle Jesse	Rachel Feeney
SSC Members	Kevin St. Martin	Conor McManus	Mateja Nenadovic
	Lisa Kerr	Ed Camp	John Wiedenmann
	Jason McNamee	Gareth Lawson	Lauran Brewster
	Alex Hansell	Hirotsugu Uchida	Michelle Staudinger
	Kai Lorenzen		
Floaters	Tara Dolan	Mike Wilberg	Jon Deroba
	Jeff Kipp	Kristan Blackhart	Wendy Morrison
	Liz Sullivan	Cate O'Keefe	Dan Salerno



Lunch 12:30 - 1:15

Please consider these questions while you eat...

1. What workflows should exist to review and revise stock-specific reference points?
2. How should DRPs integrate into SSC decision processes?
3. Who would be responsible? Who would be involved?
4. Are there priority stocks for which to consider DRPs?



Assessment Schedule or Other Stocks?

2027 Assessment Schedule

11 MTs + Scallop Mgt Support

Spring

- GB cod (WHAM)

Fall

- 3 cods (EGOM, WGOM, SNE) (WHAM)
- White hake (ASAP)
- Witch Flounder (empirical approach)
- Scallop annual management support (CASA, SYM, SAMS)



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Preliminary indicators from Day 1 breakout

A. Ecology/Biology	B. Fishery	C. Environmental	D. Management
1. Change in stock recruitment (or recruitment/SSB) 2. Spatiotemporal distribution of stock 3. Observed changes in a stock's recruitment 4. Increased stock variability 5. Ecosystem and Socioeconomic Profiles 6. State of the Ecosystem Report 7. Ecosystem indicators (generally and stock-specific) 8. Changing growth/maturity schedules (signs that stock under stress) 9. Ruling out alternative hypotheses	1. Quota usage (or CPUE?) 2. Landings and lack of response in biology 3. Persistent non-responsiveness to decreases in F 4. Market-driven changes 5. Effort location (stat area, VMS, port of landing) 6. Industry-provided info (FEK)	1. Temperature 2. Anomaly analysis 3. Environmental linkage desired but not required	1. Management implications (choke sp., etc.) 2. Management history 3. Decoupling of F and SSB



Break 2:25 - 2:40



Photo: MCFA



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Continued Discussion: Developing Operational Guidance for Dynamic BRPs

1. When do you want to talk about DRPs? (e.g. SOE meeting, annual meeting, etc)
2. How much time is enough time before the assessment?
3. How would you like your recommendations to be conveyed? (e.g. NRCC, SSC recommendation letters)
4. How do you want to consider monitoring and review?



Discussion: Identification of Future Work and Research Priorities

1. What questions remain unresolved and require further work?
2. Are there some questions that are a higher priority? Why?



Research Recommendations/Knowledge Gaps (from meeting discussion) (1)

- Approaches for empirical stocks
- Do we want more formal recommendations for which metrics to use to assess productivity? (R/S v. $R/\log-S$ v. R) (Wiedenmann). Explore other metrics of productivity besides those related to recruitment (condition) [Staudinger]
- When considering revising RPs, need to look ahead to consider how revised RPs can operate in an ABC control rule process (Kerr)
- Making better use of fishery signals /catch accounting (Salerno)--using data outside of assessnets
- Identifying indicators that we're about to enter a regime shift in order to be more proactive [Staudinger]



Research Recommendations/Knowledge Gaps (from meeting discussion) (2)

- Explore/analyze patterns of multiple species showing same pattern of decline
- Utility of Economic RPs v. BRPs?
- Simulation testing
- How to quantify whether fishing is a driver of stock health/decline
- Retrospective on how RPs have changed over time (on, e.g., a decadal scale)
- Effect of different DRP methods on stability of catch
- How to appropriately account for age composition in dynamic reference points
- Policy Q: Do DRPs differ markedly from “routine” changes to RPs for the purpose of changing SDCs without needing an FMP amendment?



Research Recommendations/Knowledge Gaps (from meeting discussions) (3)

- How quickly to check for productivity/regime shifts? When for a given stock should we look for changepoints (recognizing the frequent lag between stanzas and their identification), and what is the threshold for response?



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Future SSC Meetings

- At August SSC meeting, finalize recommendations for developing and reviewing DRPs.



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Next Steps

Post-workshop evaluation to be sent shortly—***please complete!***

June 5: SSC members complete post-workshop evaluation

June 18: Draft report submitted to Workshop Steering Committee

July 15: Revised draft circulated to full SSC

July 31: Finalization of report

In addition, draft findings will be shared with the Council's Climate and Ecosystem Steering Committee in July (exact date TBD)



Wrap Up



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