8th National Workshop of the Scientific Coordination Subcommittee

Report of Outcomes
to the
South Atlantic SSC
October 24, 2024

New England
Fishery Management
Council

SCS8 Workshop Theme:
Applying ABC Control Rules in a Changing Environment

Goal: Provide actionable guidance on how to best support Councils in the management of fisheries, specifically the application of ABC control rules, in a changing environment.

Motivation: SSCs have been challenged in applying ABC control rules in a manner that reliably achieves management goals given the degree of ecosystem change and scientific uncertainty that Council regions are experiencing.

U.S. Regional Fishery Management Councils

A core function of a Council's SSC is to provide recommendations for tactical decision making on acceptable biological catch (ABC) and to support strategic decision making on ABC control rules.

Ecosystem information is increasingly being integrated into the tactical application and strategic decision making on ABC control rules.

Social science can provide critical insight on the potential for control rules to achieve management goals and how fisheries and communities can adapt to dynamic conditions.

U.S. Regional Fishery Management Councils

Agenda-at-a-Glance

Monday

- Context setting: Current approaches to defining ABC control rules and challenges in their application
- Sub-Theme 1: Advances in ecosystem science and assessment to inform ABC control rules in a dynamic environment

Tuesday

- Sub-Theme 2: Application of social science to achieve management goals under dynamic conditions
- Sub-Theme 3: Adaptation of reference points, control rules, and rebuilding plans to changing environment

Wednesday

- Synthesis, actionable outcomes, next steps

U.S. Regional Fishery Management Councils

Context Setting

Reviewed full range of ABC setting approaches (model-based, data limited, control rule revisions)

Challenges	Recommendations
Data limitations: availability and quality	**Basic research:** Need for more mechanistic studies/understanding of climate impacts; funding and strategic planning to address existing data limitations
Stock assessment: limited integration of non-stationarity in stock dynamics and shifts in species distribution	**Analytical advances:** Continue advances in integrating climate impacts into assessments (don't forget empirical assessments!) and in determining reference points
Reference points: uncertain how to define in a changing environment	

Context Setting

Reviewed full range of ABC setting approaches (model-based, data limited, control rule revisions)

Challenges	Recommendations
Scales: Mismatch spatial scale of management, diversity and culture can be challenging	
Rigidity: Regulatory actions required to allow future flexibility (phase-in, carryover) in control rules	**Proactive actions:** Build flexibility into FMPs.
ABC Control Rule Performance: Rarely simulation tested for robustness to climate/ecosystem change; no retrospective evaluations	**Performance evaluation:** of how ABC control rules are working in a dynamic environment and uncertainty (MSE, retrospective analyses)

Sub-Theme 1

Reviewed emerging ecosystem initiatives and products, examples of operationalizing ecosystem information in assessment and management

- Initiatives and products
  - Climate, Ecosystem, and Fisheries Initiative
  - State of the Ecosystem Report aka Ecosystem Status Reports
  - Ecosystem and Socioeconomic Profiles
  - Fisheries Ecosystem Plans
  - Climate Chapter in SAFE Report
- Modeling platforms that can use ecosystem/climate info (e.g. WHAM, FIMs)
- Use of risk tables to characterizing ecosystem considerations

Sub-Theme 1

Reviewed emerging ecosystem initiatives and products, examples of operationalizing ecosystem information in assessment and management

Challenges	Recommendations
Regional differences: in data, model types, and tools (e.g., SOE reports)	**Consistent availability:** expand data collection with partners, integrate local ecological knowledge, forecast at fisheries relevant scales, commit to more even distribution of resources
Capacity limitations: in human resources, funding	
Ad hoc uptake: some routine use but often ad hoc use in decision making process and products to define scientific uncertainty buffer, level of risk	**Strategic guidance:** revisions to risk policies and reference points, use of risk tables and phase in approaches, Define opportunities for on-ramping ecosystem information

Sub-Theme 2

Reviewed how Councils use socioeconomic expertise and information in decision making; examples of using socioeconomic data and LEK to augment assessments

- Risk Policy and Setting ABC by SSCs: variation in the scope/flexibility for SSCs to use socioeconomic data, either:
  - No separate risk policy, using P* approaches without S&E metrics or only if it informs biological knowledge.
  - Risk and ABC setting narrowly focused on biological risk.
  - Risk policy and/or ABC control rules being revised, potentially to include socioeconomic data.
  - With empirical assessments or when less quantitative biological data is available, SSCs turn to socioeconomic information
- Setting ACL/TAC by Councils: more use of socioeconomic data (e.g., SEEM process)
- Some SSC involved in reviewing economic models, impacts

Sub-Theme 2

Reviewed how Councils use social science expertise and information in decision making; examples of using data and LEK to augment assessments

Challenges	Recommendations
Regional data differences: fishery participation, landings, discards, life-history, demographics, who is involved in the Council process, crew, costs, shore-side support, etc….	**Formalize uses:** of local ecological knowledge, cooperative research, citizen science, industry input on fishery performance **Be more engaged**: respond to public testimony, foster relationships and trust
Capacity limitations: few scientists working on fishery social science; data confidentiality limits descriptions	**More coordination:** where to focus staff resources that are available; how SSCs can contribute

Sub-Theme 2

Reviewed how Councils use social science expertise and information in decision making; examples of using data and LEK to augment assessments

Challenges	Recommendations
Ad hoc uptake: lack of consistent on-ramps. ○ **Scale:** data often at fishery or community level, not species/stock level or specific to options presented ○ **Timing:** when socioeconomic updates are available doesn't align with specification decision timing, where ABC and ACL are set at same mtg ○ **Roles:** how SSCs can consider/review socioeconomic info without getting into policy considerations outside their purview	● With poor biological data or delayed stock assessment, develop socioeconomic indicators that could signal stock abundance ● Front load information for context setting ● Reconsider timing of science and management timing ● Clarify SSC TORs re scientific review

Sub-Theme 3

Adapting reference points, control rules, and rebuilding plans to environmental change

- Examples of performance testing of Council control rules under climate change: Pacific sardine, bluefin tuna.
- Examples of reference points being adjusted to account for changes in climate and ecosystems are emerging.
  - Redefining recruitment stanzas for projections based on current understanding of species' productivity.
  - Reference point changes informed by observed ecosystem or stock life history changes.
  - Environmentally-explicit assessment models becoming available to inform reference point development.
- Mechanisms or perceived rate of climate influence on stocks varies across regions.

Sub-Theme 3

Adapting reference points, control rules, and rebuilding plans to environmental change

Challenges	Recommendations
Data limits: biological, climate, socioeconomic data limits to understand how complex ecosystem changes are influencing stocks.	Identify what information is available to begin understanding ecosystem and productivity changes; scaling goals to information available (e.g. biology, LEK, socioeconomic).
Process rigidity: Current FMP or Council procedures may not be flexible to allow for changes; FMPs may not be at species-level required to appropriately adjust reference points.	Conversations with respective Councils: are current FMPs, risk policies, and Council procedures capable of allowing changes? If not, what is the path to achieve this?

SCS8 Goal: provide actionable guidance

- Given **very real limitations** in data, capacity, our understanding of ecosystem change and fish and fishery impacts, and funding,
- How can we do more with what we have right now?
- What action can we take in our specific regions?
- Are there national level policy changes that need to be made to enable these actions?

Council-specific Action Items

- **Began work on Council-specific actions.**
  - Consider challenges and recommendations discussed.
  - Focus on those important to your region and those that are actionable.
  - Plan for how your delegation will bring SCS8 recommendations home to continue the dialogue and take action on the recommendations.
- **Framing of actions**
  - Audience: Define audience for action item, who is recommendation going to? (Science center, regional offices, Councils, NOAA HQ)
  - Timeline/Priority: urgent (1-2 yr), near-term (3-5 yr), strategic (5+ yr)
  - Process: Require research, assessment improvements, Council action?
  - Partners and resources: Who to involve? Funding? Capacity?
  - Next Steps…

Council-specific Action Items (selected)

- Data-poor regions to collaboratively explore alternative management frameworks and data collection schedules/methods to overcome existing barriers.
- Leverage existing ad hoc group to consider alternative management pathways in addition to ABC control rules, integrating socioeconomic data.
- Develop working group of managers and scientists on changing reference points in response to a changing climate and how to assess the impacts of changes.
- Advocate for more frequent stock assessments to ensure availability of more timely data that would allow dynamic management.
- Build conceptual model of the management/process constraints for making changes to management in rapid way in response to climate change.

Council-specific Action Items (selected)

- Conduct a management strategy evaluation process—including goals, objectives, and a conceptual model—to develop a management system with time-varying reference points and what are the components that would be needed to create that system
- Investigate the use of dynamic harvest controls and dynamic reference points as they relate to rebuilding plans
- Expand the application of a tool used to gather socioeconomic data
- Obtain and integrate local ecological knowledge
- Identify and implement the appropriate vehicle to provide socioeconomic and community information at the appropriate level, aggregation, and in an easily digestible way at time of TAC setting.

Follow-up

- Current drafting SCS8 final report, final expected within 2024.
- SCS8 delegates presenting outcomes to their own SSCs.
- Increased communication among SSC staff coordinators.
- Informal webinar of SCS in early 2025 to share progress on action items.
- Some Councils planning for region-specific SSC workshops on this theme.
- After Council Executive Directors confirm host Council for SCS9 in 2026, SCS to develop proposed theme; could present to CCC in May 2025 for approval.

THE SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

Actionable Items for the South Atlantic Region

Action Item Template

- **Action Item:** Describe, including what challenge/recommendation the action would address
- **Audience**: Define audience for action item, who is the recommendation going to? (e.g., Science Center, Regional Offices, Councils, NOAA HQ)
- **Timeline**: Long term vs short term (1-3 years)
- **Scale**: National or regional level
- **Prioritization**: urgent (1-2 year), near-term (3-5 years), strategic (5+ years)
- **Process**: Does this require research, assessment improvements, management action?
- **Partners**: Who needs to be involved to make this happen?
- **Resources Needed**: e.g., funding, capacity, data, etc.
- **Next Steps**

Action Item 1:
Investigate the use of dynamic harvest control rules and dynamic reference points

- *Ties into rebuilding plans (or "not rebuilding" plans) to increase flexibility and adaptability, especially with regard to inclusion of social and economic factors*
- *Relevant for snapper grouper stocks experiencing recent low recruitment*

Audience: Councils, APs, and Stakeholders

Timeline: Short-term (1-3 years)

Scale: South Atlantic region

Prioritization: Urgent to Near-term

Process: Concept analysis → Assessment improvements → Management Action

Partners: SEFSC, Academic Researchers, SSC, Council

Resources Needed: Man-power (capacity) and data

Next Steps:

- Invite presenters from other Council SSCs for case studies in use of dynamic reference points.
- Continue SEFSC workgroup progress on dynamic reference points and low stock recruitment

Action Item 2:

Exploring tradeoffs between timeliness and complexity in stock assessment models for providing management advice.

- *Climate/Environmental changes create additional complexity, which may result in longer periods between management advice*
- *Become more accepting of less complex models to provide more timely management advice, especially for unassessed stocks.*
- *Trade-offs with uncertainty may be mitigated by more timely management recommendations.*

Audience: Science Center and Council, SEDAR steering committee, SSC

Timeline: Short-term (1-3 years)

Scale: Regional level

Prioritization: Near-term

Process: Concept analysis, Assessment Process Changes, and Management Action

Partners: SEFSC, SEDAR, SSC, Council

Resources Needed: Man-power (capacity), strategic planning

Next Steps:

- Revamping SEDAR process and identifying key stocks
- Data triage for both assessed and unassessd stocks
- Explore alternate analytical methods to provide more timely management advice (Unassessed Stocks WG)

Action Item 3:
Evaluating the climate-driven changes in species distributions

- *Centers of biomass for some species have changed significantly over the last decade (e.g. black sea bass).*
- *Unclear whether due to spatial changes in productivity or actual shifts in distribution.*

Audience: Academic Researchers, SEFSC, SSC

Timeline: Short-term (1-3 years) to Long-term

Scale: South Atlantic region, Nationwide

Prioritization: Near-term to Strategic

Process: Additional Research → Assessment modifications → Management Action

Partners: Academic Researchers, SEFSC, SSC

Resources Needed: Funding (RFPs), Man-power (capacity), Data

Next Steps:

- More funding needed for additional research in this area
- List in Research and Monitoring Priorities