

*Scientific and Statistical Committee
Report of March 2023 Meeting*

to

Mid-Atlantic Fishery Management Council
April 6, 2023
Tab 13

The Irreplaceable Lee Anderson

- March 2023 was the first meeting of the SSC without Lee Anderson in a very long time.
- Served on Council, taught many students and had a major impact on course of economic theory and fisheries management.
- His intellect and humor will be sorely missed.

Gentlemen:

This is a humble request to be excused from the sessions on Thursday afternoon and all day Friday. I will be on a mission to catch a Bluefin tuna on Cap'n John McMurray's boat. I think that is fair excuse especially since my last TWO trips were canceled because of rough seas. You can rest assured I will be fully attentive the time I am there.

Best,
Lee



“This is my excuse for missing Thursday afternoon and Friday.” July 21, 2021

Outline of SSC Report

- State of Ecosystem
- Short Term Forecasts for Species Distributions
- Illex ABCs for 2023-2025
- Video Monitoring of Recreational Fishing Effort
- Summer Flounder MSE project
- Progress from Ecosystem WG
- Progress—Economic WG
- Other Business

Video Monitoring to Quantify Fishing Effort

- Appreciated thoroughness of study and significant logistical and technical challenges encountered. Exemplary work.
- Encouraged structured subsampling program and use of software tools to facilitate processing and interpretation
- Study is valuable as basis for future studies and potential integration with other MRIP effort monitoring tools.
- AI methods may ultimately be useful.

Recreational Summer Flounder MSE Project

- **What is it?** A set of linked simulation models that incorporate an operating model of stock dynamics, an assessment model to estimate stock condition, a decision model to make catch recommendations, and a recreational fishing catch and effort model to simulate harvests.
- Recreational effort model incorporates expected behavioral responses of harvesters under varying trip and size regulations.
- Components will also be used to evaluate the efficacy of alternative regulations in the Summer Flounder, Black Sea Bass, and Scup fisheries.
- Strongly endorsed continuation of research efforts and engagement with the many partners who have contributed ideas along the way.

SSC Economic Work Group (2023)

- **Accomplishments include contributions to**
 - Research Set-Aside program
 - Summer Flounder MSE
 - Models for recreational harvest specifications
 - Recreational Harvest Control Rule
- **Moving Forward**—Match expertise and interests of SSC members with Council’s Research Priorities:
 - #2 Develop recreational measures for Summer Flounder, Scup and Black Sea Bass
 - #5 Updating of HCR 2.0 methodology after sunset in 2025
 - #40 Work with RSC to address new RSA program
 - #45 Essential Fish Habitat
 - #50 EAFM risk assessment comprehensive Review
 - Support of the Ecosystem WG

Other Business

- SSC WG on ABC Averaging
 - Multi-year averages can be problematic with respect to Risk Policy
 - Ongoing, will work with NEFSC to implement
 - Responsive to new methods
- SSC WG on Guidelines for Estimation of OFL CV
 - Important for deriving ABC from OFL
 - Reviewing consistency of decisions
 - Responsive to new information

Questions?

Misc slides sent to Council Staff Leads

State of The Ecosystem Report: Comments and Questions

- Praised comprehensiveness, transparency of methods, accessibility of the underlying data, and ongoing responsiveness to requests for improvements.
- Can “regime shifts” be defined in the Northeast Region? Evidence suggests significant changes in fish recruitment, zooplankton species composition and abundance, and condition factor of fish.
- Sufficient focus on non commercial species?
- Inclusion of state-level data to address measures of “satisfaction” in recreational fishing?.
- Fishing revenue vs profits? Ongoing need for cost information. These data, along with demography of the fishermen and the fleet (size and age of vessels), would help explain the differences in revenue trends among communities and species. New survey planned for 2023
- Integration of environmental justice metrics into management?
- Inclusion of “small fish” surveys?
- Inclusion of key findings from the Gulf of Maine, Georges Bank, and possibly the Scotian Shelf would provide additional context for the observed trends.

SSC Ecosystem Work Group (2023)

- **Objectives**

- Expand and clarify the ecosystem portion of the SSC's OFL CV
- Develop prototype processes to provide multispecies and system-level scientific advice
- Collaborate to develop stock-specific Ecosystem and Socio-economic Profiles (ESP).

- **Ongoing Work**

- Studies at U Md and Rutgers to simulate environmental effects on stock-recruitment and assessment uncertainty. Help inform appropriate OFL CV levels. Builds upon MSE studies for Summer Flounder.
- Methods to define “Ecosystem Overfishing”. What is a safe operating space?
- “Data Envelopment Analysis” (DEA) to develop ESP—promising.
- Use of ecosystem models for testing utility of indicators.
- Alternative measures of overfishing and overfished condition

Illex Squid Specifications—2023, 2024-2025

- Squid Squad presentation—excellent example of ongoing interdisciplinary collaboration among scientists and industry.
- Updated risk assessment to include variation in survey estimates of relative abundance and comparisons with 2022 analyses.
- Transfer of software and methodology to NEFSC and update analyses for setting specifications for 2023.
- SSC affirms previous recommendation of ABC=40,000 mt in 2022 and recommends 40,000 mt ABC in 2024 and 2025.
- SSC noted high level of uncertainty in estimates and recommended continuation of high resolution samples from the fishery and investigations of oceanography and basic biology.

Slides to Brandon for Species Distribution

Short-Term Forecasts of Species Distributions for Fisheries Management

- **The SSC:**
 - Encouraged continued development and potential utility for management decisions
 - Recommended additional validation including comparisons with simpler methods.
 - Encouraged further consideration of survey sampling issues and age-dependent responses to temperatures
 - Noted reasonably good correspondence between model predictions of Summer Flounder trends and spatial patterns for 2007-2016 period with observations from the bottom trawl surveys.
 - Noted variation of predictions increases with the length of the forecast.
 - Emphasized that true forecasts will require forecasts of oceanographic conditions on similar time scales.

Short-Term Forecasts of Species Distributions: Potential Applications

- Could be linked to SOE indicators of vulnerability for coastal communities and various social and economic metrics.
- Could be compared with EAFM indicators of distributional shifts.
- Evaluate recreational fishing performance under various Harvest Control Rules.
- Evaluate feasibility of catch advice relative to the historical distributions.
- Potential tool for allocation decisions.
- Interpreting retrospective patterns observed in some species stock assessments.
- Interpreting changes in species distributions within and around offshore wind energy areas.

Short-Term Forecasts of Species Distributions: Research Recommendations

- Consider changes in thermal preference that occur as fish age. Older fish prefer cooler water.
- Consider alternative patterns of spatial binning, i.e., East/West (depth) as well as latitudinal (north/south)
- Consider variations in the timing, duration, and execution of bottom trawl surveys since 1963.
- Check for confounding of such changes on detectability of trends due to climatic change.
- Species distribution forecasts should be confirmed by simpler methods.
- Adjust latitudinal boundaries to achieve more even distribution of samples among bins may be useful.
- Consider potential use of spring bottom trawl surveys along with the fall surveys.