



Atlantic States Marine Fisheries Commission

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Ecological Reference Point Work Group

Check-In Summary

July 9, 2025

Members in Attendance: M. Cieri, A. Buchheister, A. Sharov, A. Schueller, M. Dean, M. Celestino, D. Chagaris, S. Madsen, H. Townsend

Staff: K. Drew, J. Patel, S. Nehemiah, J. Boyle

Public: W. Poston, J. Kaelin, R. Fleming, C. Flora, S. Meyers, E. Ott, K., A. Kornbluth, P. Spitzer, G. N. Alisa, T. Friedrich, M. Ware, A. Evans

NWACS-MICE Update

During the last ERP WG call in June, the group discussed how the NWACS-MICE model was showing a strong predation link between spiny dogfish and striped bass. Spiny dogfish predation had been shown to negatively impact striped bass biomass, which necessitated manual adjustments to spiny dogfish inputs in previous model runs. In the previous meeting, the work group discussed potential approaches to better account for the possibility that spiny dogfish may not be feeding within the model, which would affect their predation rates on striped bass.

A shift in biomass estimates from the most recent stock assessment—which was double that of the previous assessment—prompted a re-evaluation of the catchability coefficient (q) since that last call. Instead of biomass, the trawl survey index was entered as numerical abundance, rendering the original q value non-transferable. To address this, the ratio of means between the new trawl survey biomass and the previous estimate was calculated, arriving at a value of 0.56. The diet matrix was adjusted accordingly. Since 50% of the spiny dogfish diet was already composed of imported prey (prey noted listed within the functional groups), the remaining diet components were multiplied by 0.56, effectively halving the modeled predation pressure across all prey groups.

This reduction in predation mortality allowed for a smoother calibration of the updated model. After returning to an unbalanced model and incorporating the revised spiny dogfish inputs, fewer balancing issues were observed. The model was then rebuilt and recalibrated for run150, which included seasonal vulnerability multipliers. The recalibrated model demonstrated that striped bass biomass, when fished at the target fishing mortality (F), approximated the biomass target without requiring further manual adjustments. The estimated vulnerability value increased to 5.02, suggesting a higher threshold that does not force striped bass into a low productivity regime.

The next steps for this new run150 include equilibrium and trade-off analyses. The group then discussed whether this updated run should replace the NWACS-MICE result sections in the current draft of the report. Since the original run 150 has already been sent to the Menhaden Technical Committee (TC), the group decided to keep the current version intact while preparing a white paper addendum with the new results and updates. This white paper addendum will accompany the peer review report when it is submitted to the peer review panel.

Next steps: D. Chagaris to write working paper of updated run150 results before July 25th and send the work group updates as they occur.

VADER Update

Given that the working group still does not have the results from the VADER model and that the model is still being adjusted, for the current iteration of the report, the work group agreed to keep a condensed version of the model description and methods in the report while creating a separate, more detailed working paper for the results. The portion in the report would also address the recommendations from the last review (i.e., using bottom-up feedback mechanisms) while showing that although the model is still not in a place where results can be used for management, there have been many improvements and strides forward since the last iteration, and the WG continues to be very supportive of VADER's statistical framework. The rest of the report should focus on the EwE models.

Next steps: K. Drew to streamline the VADER section and J. McNamee to write working paper with model results and detailed methods before July 25th.

Model Comparisons

In the previous version of this assessment, the model comparison section was used to pull together outputs from the ERP models with a focus on how they align with management objectives and internal reference points. The current iteration of this section compares the existing three model types.

A table comparing the models against the four main management objectives (sustain menhaden for fisheries and predators, provide fishery stability, and minimize risk from environmental change) was previously developed and discussed. The group agreed this was useful context, especially for external reviewers, and recommended keeping it in the report.

This section also compares biomass by age stanzas, exploitation rate, M2, and Z. This was done for the NWACS model and the BAM:

- Biomass by age stanzas: Comparisons between BAM and both the NWACS Full and NWACS MICE models show that BAM had more variability, largely due to recruitment dynamics. The ERP models (both full and MICE) showed less trend and contrast in biomass over time but still tracked with BAM on scale.
- Exploitation Rate: Virtually identical across BAM, NWACS Full, and NWACS MICE. Both NWACS models use F estimates from BAM as inputs to force their own projections.
- Predation Mortality (M2): NWACS Full predicted higher M2 than the MICE model, which aligns with the Full model including a broader suite of predators. Both ERP models showed higher predation mortality for age-0 menhaden than for age-1+, with M2 increasing gradually over time—though with more variability for age-0s.
- Total Mortality (Z): For age-0s, Z was higher in both ERP models compared to BAM. For age-1+, Z was more stable across models but trended downward slightly over time, likely reflecting declining fishing mortality in the BAM.

Despite some differences, overall estimates of biomass and exploitation rate across the ERP models were generally consistent with BAM in both scale and trend. This is expected given that ERP models are built using many of the same inputs—and in some cases, outputs—from BAM. While these comparisons might be less informative now with fewer model types, the work is done and could still be useful for reviewers unfamiliar with past ERP assessments. Some in the group suggested this section may be repetitive or overly reliant on equilibrium analysis and could be de-emphasized in the final version of the report. Ultimately, it was decided that this section be absorbed into the Synthesis of Findings section and de-emphasized but still included. The group also recommended the following additions:

- Plots of diet composition (observed vs predicted, and predicted across models) for NWACS Full, MICE, and VADER models, shown side by side to support discussion.
- Striped bass biomass and abundance by age stanza compared between ERP models and the single-species model.

- A “winners and losers” plot comparing ERP species responses across the different models.

Next steps: Modelers to send diet information to K. Drew to create the synthesis of findings section for the next version of the report.

Report Status and Reference Points

The group discussed a few of the larger questions that arose from feedback on version 9 of the report. This included the timing of the next benchmark assessment.

Given the board’s interest in spatially-explicit models, the group questioned whether to continue the current approach of only updating the NWACS ERP models during benchmarks, or whether the single-species models—especially a spatially structured version of BAM—should be developed in parallel. However, whether this is achievable depends heavily on data availability. On balance, the WG thought a spatially explicit single species model should be reviewed prior to the review of a spatially explicit multispecies model(s).

The next single-species update will likely be timed around the next TAC-setting cycle, so if the multi-species benchmark will have to be after that. Since it is difficult to recommend a certain timeline, the report should at least comment on likely scenarios and what would be required to meet the board’s goals.

To support these efforts, the report should recommend hosting an EMO Workshop 2.0, building on the original Ecosystem Management Objectives workshop to revisit and refine spatially relevant objectives. This could serve as a foundation for the next benchmark and help align model development with management priorities.

Timeline and Next Steps

The group agreed that another call was not necessary unless there was an urgent matter that needed to be discussed.

Next steps: ERP WG to comment on version 10 of the report (to be sent out by latest the afternoon of Friday July 11th) by July 21st. J. Patel to send out scheduler for one-hour call with peer review panel to modelers, staff, and chair. D. Chagaris and J. McNamee to continue work on their working papers and model results. Staff to refine peer review workshop agenda and send to SEDAR.