

Session: Management Considerations

Making EBM/EBFM Operational

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Ecosystem science initiatives at the Northeast Fisheries Science Center have been structured to address specific requests and requirements for support from the Mid-Atlantic and New England Fishery Management Councils, the Atlantic States Marine Fisheries Commission, the New England and Mid-Atlantic Regional Planning Bodies and the NMFS Greater Atlantic Regional Office. In this presentation, we attempt to bring the elements presented throughout the review together to demonstrate how ecosystem science at the Center is contributing or has contributed to initiatives designed to make EBM/EBFM operational in the Northeast.

In its 2014-2018 [Strategic Plan](#) (developed following a 2011 Visioning project engaging stakeholders) the Mid-Atlantic Fishery Management Council outlined an objective and strategies related to development of an ecosystem approach to fisheries management:

- Complete and implement the ‘Ecosystem Approach to Fisheries Management Guidance Document’
- Incorporate consideration of species interactions into fishery management plans and coordinate these considerations across appropriate management plans
- Determine and incorporate the relationship between essential fish habitat and productivity of marine resources into management
- Develop regional workshops that consider the various aspects of ecosystem approaches to management
- Develop management approaches that minimize adverse ecosystem impacts

NEFSC scientists have been directly involved in the development and execution of five regional workshops associated with Council meetings (Forage Fish, April 2013; Climate, February 2014; Climate and Governance, April 2014; Interactions, June 2015; and Habitat, October 2015), associated white papers (Forage, Climate, and Interactions), and the draft *Ecosystem Approach to Fisheries Management Guidance Document*, completed in April 2016. Social and economic considerations have been integrated within all of the workshops, white papers, and the draft EAFM Policy Guidance Document. NEFSC scientists have been specifically engaged in developing conceptual models, risk analyses, and planning initiatives for the application of Management Strategy Evaluation for the Mid-Atlantic EAFM initiative. The MAFMC plans further work to integrate climate considerations into its management at its June 2016 meeting, and further development of risk assessment for this summer to be presented in August 2016.

The NEFMC passed a resolution in April 2015 requesting its EBFM Plan Development Team to develop:

An example of a fishery ecosystem plan that is based on fundamental properties of ecosystem (e.g., energy flow and predator/prey interactions) as well as being realistic enough and with enough specification such that it could be implemented. The example should not be unduly constrained by current perceptions about legal restrictions or policies.

In structuring its approach, the PDT returned to core elements of a ‘roadmap’ to EBFM developed by the NEFMC Scientific and Statistical Committee (Figure 1). In the course of this review, we will document our efforts to address each of these elements related to scientific requirements in support of management.

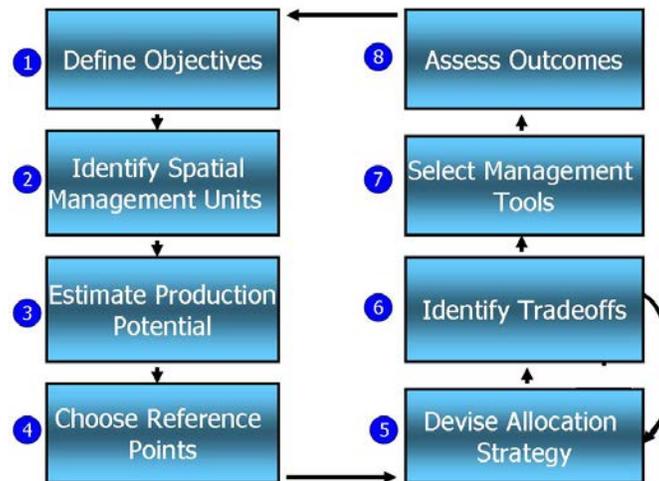


Figure 1. Adaptation of NEFMC SSC EBFM roadmap.

NEFSC direct engagement with the Atlantic States Marine Fishery Commission on ecosystem issues centered on the development of a Multispecies Virtual Population Analysis tailored to examine the role of forage species with particular emphasis on Atlantic menhaden.

NEFSC scientists have contributed to regional ocean management plans developed by the Northeast and the Mid-Atlantic Regional Planning Bodies through the Marine Life Data and Assessment Team, which worked with both groups in the development of their respective plans.

NEFSC scientists work closely with colleagues at GARFO in several key ecosystem-related areas including climate science in support of management, habitat protection and management, protected resource management, and fisheries management.