

Session: Management Considerations

Northeast Climate Science Strategy Regional Action Plan

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The Northeast U.S. Shelf Ecosystem supports a wide array of living marine resources from Atlantic sea scallops, one of the most valuable, to the North Atlantic right whale, one of the most endangered. All of these resources - fish, invertebrates, marine mammals, sea turtles, habitats, and other ecosystem components - are being impacted by climate change and multi-decadal climate variability. In fact, the pace of observed climate change in the Northeast U.S. is faster than in many of the other U.S. Large Marine Ecosystems, and future change in the Northeast U.S. Shelf ecosystem is projected to be greater than other portions of the world's oceans.

These changes in climate are already creating significant challenges for the region. Species distributions are getting out-of-sync with the spatial allocations of management. The productivity of some iconic species is decreasing making rebuilding and recovery difficult. Some ports rely on one or two fisheries; changes in these fisheries could have dramatic consequences for the human communities connected to these ports. Changes in management and regulation are slow, while changes in the physics, chemistry, and biology of the ecosystem are occurring rapidly. Despite these challenges, there are opportunities. Some species in the region are responding positively to the changes: moving into the region and increasing in productivity. Technology offers new tools for observing, understanding, and adapting to change. The region has an excellent marine science infrastructure.

On the national scale, NOAA Fisheries released the Climate Science Strategy in August 2015. This strategy develops a national framework to meet the growing demand for information to better prepare for and respond to climate-related impacts on the nation's living marine resources and resource-dependent communities. This presentation will provide an overview of Northeast U.S. Regional Action Plan for implementing the NOAA Fisheries Climate Science Strategy. The Northeast U.S. Shelf Ecosystem extends from North Carolina to Maine, and includes watersheds, estuaries, the continental shelf and the open ocean. Fifteen actions are identified, and the activities to be undertaken over the next three-to-five years are described under no new resources and new resources scenarios. The plan is currently open for public comment.

A critical element of this Action Plan is partnerships. The challenges are great, the issues are complex, and resources are limited. By working together, we can reduce the impacts of change on living marine resources, and increase the resilience of the ecosystem to change, including people, businesses and communities.

Priority Action 1 - Give greater emphasis to climate-related Terms of Reference and analyses in stock assessments.

Priority Action 2 - Continue development of stock assessment models (e.g., Age Structured Assessment Program, new state-space model, multi-species models) that include environmental terms (e.g., temperature, ocean acidification).

Priority Action 3 - Develop climate- related products and decision support tools to support protected species assessments and other management actions.

Priority Action 4 - Increase social and economic scientist involvement in climate change research.

Priority Action 5 - Develop Management Strategy Evaluation capability to examine the effect of different management strategies under climate change.

Priority Action 6 - Improve spatial management of living marine resources through an increased understanding of spatial and temporal distributions, migration, and phenology.

Priority Action 7 - Continue to build industry-based fisheries and ocean observing capabilities and use information to develop more adaptive management.

Priority Action 8 - Work with NOAA Oceanic and Atmospheric Research and academic scientists to develop short-term (day to year) and medium-term (year to decade) living marine resource forecasting products.

Priority Action 9 - Work with NOAA Oceanic and Atmospheric Research and academic scientists to develop and improve regional hindcasts and climatologies.

Priority Action 10 - Conduct research on the mechanistic effects of multiple climate factors on living marine resources with a goal of improving assessments and scientific advice provided to managers.

Priority Action 11 - Develop and implement vulnerability assessments in the Northeast U.S. Shelf Region.

Priority Action 12 - Continue production of the Ecosystem Status Report, and other related products, and improve the distribution of information from the reports through the formation of an Environmental Data Center.

Priority Action 13 – Maintain ecosystem survey effort in the Northeast U.S. Shelf ecosystem including the Bottom Trawl Survey, Ecosystem Monitoring Program, Sea Scallop Survey, Northern Shrimp Survey, and Protected Species Surveys and expand where possible (e.g., data poor species).

Priority Action 14 – Initiate a Northeast Climate Science Strategy Steering Group (NECSSSG) to coordinate, communicate, facilitate, and report on issues related to climate change and living marine resource management.

Priority Action 15 – Coordinate with other NOAA Programs to link living marine resource science and management to climate science and research activities