



**Adapting Fisheries Management to a Changing Ecosystem**  
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**Case Study 7**

**Integrating ecosystem and climate influences on dynamics of New England stocks into stock assessment**

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ABSTRACT

The Northeast Region Coordinating Council instituted an enhanced stock assessment process wherein research track stocks assessments provide a vehicle for comprehensive evaluation of new data streams and model changes. Research track assessments are complex scientific efforts carried out by a working group over several years and represent on-ramps for new science to be integrated into the stock assessment process with the aim of improving the quality of stock assessments. Working groups are asked to: identify relevant ecosystem and climate influences on stocks and consider these findings in addressing other terms of reference in the stock assessment. We will report on ongoing work and evolving approaches to address this term of reference in research track stock assessments in the Northeast. The general approach includes: 1) characterizing the influence of climate and ecosystem drivers on stock dynamics and identify candidate ecosystem indicators. 2) characterizing fishermen's ecosystem knowledge. 3) exploratory modeling of relationships among climate, ocean, and stock variables, and 4) testing the performance of climate informed stock assessments. We will draw on examples from recent and ongoing research track assessments, including American plaice, Atlantic cod, and haddock.