

## Setting the Stage: Northeast Regional Context for the Case Studies Presentation Abstracts

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### **Data Needs in Managing the New England Lobster Fishery**

*Bob Glenn, Fisheries Biologist, Massachusetts Division of Marine Fisheries*

The New England lobster fishery is valued at \$400 million, with over 110 million pounds landed since 2010. The future of this important fishery depends upon accurate and reliable stock assessments for each of the three lobster stocks: Gulf of Maine, Georges Bank, and Southern New England. Lobster stock assessment requires a variety of data, including: fishery independent data, fishery dependent data, and life history parameters. Fishery independent data is an integral part of model estimates of abundance and biomass, providing measures of relative abundance for each of the three stocks. Sources of fishery independent data include: trawl surveys, ventless trap surveys, and suction sampling surveys. Fishery dependent data provide estimates of harvest and effort, and characterization of the catch (size distribution and sex ratio). This data is an essential part of accounting for removals in stock assessment models. Sources of fishery dependent data include: catch reporting, dealer reporting, sea-sampling, and port-sampling. The availability of these data sources varies widely by state. Life history parameters, such as growth rate, molt frequency, maturity, and migration, have important implications for biological reference points in stock assessment models. These parameters are derived from lab and tagging studies, and maturity staging. Life history parameters are assumed to be constant in the current stock assessment models, although many of them may be influenced by temperatures regimes. To improve the stock assessment of Southern New England lobster, there is a pressing need for enhanced fisheries dependent sampling in offshore areas and expanded ventless trap surveys. Stock assessments would also benefit from updated maturity studies on fine spatial scales, laboratory and tagging studies to update growth rates, and broad-scale tagging studies to better define lobster migration patterns, stock structure, and stock connectivity of all three stocks.

### **Short-Lived Species: A Mid-Atlantic Perspective on Assessment and Management Challenges**

*Jason Didden, Fishery Management Specialist, Mid-Atlantic Fishery Management Council*

The Mid-Atlantic Fishery Management Council manages two species of squid that are definitely short-lived species (as defined by law) and one species of fish, Atlantic butterfish, which can at least be considered a shorter-lived species.

These species have presented the Council with a variety of management challenges, only some of which relate to their short-lived nature and the difficulties that arise when assessing them. The most pressing problem that is related to assessment issues involves butterfish. While butterfish may have a less unique life history than the squids, traditional assessment procedures lead to making quota decisions that are based on data that is at least three years old. Given that most butterfish do not live to see three years of age, and that the stock is sensitive to current environmental conditions, disconnects likely arise between contemporary quotas and the actual productivity of butterfish.

For the squids, stock assessments are used as a more general guide, and quotas are not often reached. As such, the lack of real-time squid assessment data has not caused as much difficulty compared to the lack of real-time information about butterfish. Any move toward real-time management should consider the costs and potential gains related to the particular species, and managers should evaluate if assessment and management changes can accurately predict changes in productivity/biomass before implementing new procedures.

## **Northeast Fishermen Involvement in Data Collection**

*John Hoey, Director, Northeast Cooperative Research Program, Northeast Fisheries Science Center*

Cooperative Research is designed to bring stakeholders together in a spirit of mutual respect, enabling an environment of shared knowledge and collaborative management strategies. The NEFSC Study Fleet is a Cooperative Research program. As such, the Study Fleet program provides several benefits to its commercial participants including: direct participation in the scientific data collection process, input into the development of electronic reporting technology, sharing ideas and observations with fisheries scientists, gaining insight into how environmental factors influence catch rates, and financial compensation for time and effort involved for more detailed data collection.

Study Fleets are a subset of fishing vessels from which high quality, self-reported data on fishing effort, area fished, gear characteristics, catch, and biological observations are collected. Participating vessels fish in commercial mode, and are selected to be representative of the larger fleet over time to supplement the stock assessment data process. The NEFSC Study Fleet was initiated with the dual objectives of: 1) assembling a “study fleet” of commercial New England vessels capable of providing high resolution (temporal and spatial) self-reported data on catch, effort and environmental conditions while conducting “normal” fishing operations; and 2) developing and implementing electronic reporting hardware and software for the collection, recording, and transferring of more accurate and timely fishery-based data.

Depending on its needs, the Study Fleet contracts vessels that participate in most of the major Northeast fisheries. Study Fleet typically supports between 20 and 35 contracted vessels. Geographically, they are located from Maine to New Jersey with concentrations heaviest around Gloucester, MA and Point Judith, RI. With the implementation of sectors, the development of a self-reporting system has been a priority for Study Fleet. Although sectors are currently limited to groundfish, all of our vessels, from scallopers to longliners, have provided valuable feedback that has helped develop FLDRS technology for successful deployments. Recently, Study Fleet has placed most of its effort and resources into the trawl fishery. In addition to their trip reporting requirements, participating trawl vessels have been an integral part in providing fish samples for age and growth scientists, and getting Study Fleet field scientists out to sea to perform biological sampling. Vessels in all fisheries can also provide fish lengths to help Study Fleet accrue a wider range of data for commercially important species such as yellowtail flounder, winter flounder, and dogfish. With our vessels reporting data on stocks from New Jersey to Maine, one of Study Fleet's current objectives is to be able to provide fishery-dependent data that may be used by scientists to supplement the stock assessment process. The NCRP and Study Fleet teams are currently working on initiatives to expand avenues for more fine-scale electronic data collection.

*Credit: <http://www.nefsc.noaa.gov/read/popdy/studyfleet/>*