Science, Service, Stewardship

NOAA FISHERIES SERVICE

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The Northeast Fisheries Science Center conducts ecosystem-based research and assessments of living marine resources, with a focus on the Northeast Shelf, to promote the recovery and long-term sustainability of these resources, and to generate social and economic opportunities and benefits from their use.

Electronic Monitoring: Documenting and Estimating Catch

Objectives Electronic Monitoring (EM) technologies hold promise as data collection resources and could be used as a monitoring tool by integrating the system with other data collection programs. The Northeast Fisheries Science Center (NEFSC) conducted a collaborative four-year study (in 3 phases) from 2010-2014 with Archipelago Marine Research, Ltd. and 13 participating fishing vessels. The goal of the study was to investigate the utility of EM to monitor fisheries and manage catch entitlements in the Northeast Multispecies Fishery.

The study has promoted broader awareness of EM capabilities to inform implementation planning activities and is used in consideration of developing EM standard applications and best practices. Through outreach meetings, presentations of findings, and simulation exercises, this project has brought operational experience to local fishermen, technicians, scientists, and regulators.

Phases I and II Phase I focused on building a foundation of data (detection, counting, species identification) specific to the needs of the Northeast Multispecies Fishery. Phase II focused on a series of dedicated experiments to improve methods for obtaining fish weight, with a known accuracy and precision, and to develop methods to increase species identification through catch handling practices. Results demonstrated there were efficiencies in weight estimation using standardized length/weight regressions and improvements in species identification among select species.

Phase III Phase III focused on developing and testing on-board methodologies (catch handling) to simulate an operational EM program. At-sea testing incorporated two EM models: 1) maximized retention of catch with EM monitoring for discard compliance; and 2) EM validation of allowed discards through vessel trip reports (discard audit). Incorporating techniques and information learned from previous work, each approach was tailored to meet specific program objectives. Results included identifying the necessary components to support an EM operational program and beneficial strategies for effective data collection.

Project Outcomes Information summarized in the Phase III report included: an inventory of data collected during Phase III, an examination on the two EM models tested (retention and audit), including procedural and logistical considerations and documented efficiencies for each, and a narrative of operational components necessary to support EM with a focus on the primary cost driver elements for management purposes. Project reports from the various phases of the study and other EM related information can be found on the Fisheries Sampling Branch (FSB) website (www.nefsc.noaa.gov/fsb/). To further support this work, NOAA fisheries is involved with the regional EM working group and is working with Fisheries Management Councils, the industry, EM service providers, and other stakeholders, to determine how to best incorporate EM into fisheries monitoring. For more information please visit the FSB website or contact Amy Martins at 508-495-2266 or at Amy.Martins@noaa.gov.