

1. Project Title: **Yellowtail Flounder Tagging Study**

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4. Major Accomplishments:

All cooperators were invited to three meetings to reflect on field work, review results and plan future work. Six fishermen and 33 scientists attended the first meeting in Woods Hole on January 14, 2004. Seven fishermen and 29 scientists attended the second meeting in Woods Hole on May 2, 2005. Twenty-one fishermen and 13 scientists attended the third meeting in New Bedford on March 1, 2006. Detailed summaries of the meetings are available online (www.cooperative-tagging.org). The field protocol and analytical design were peer reviewed at “a workshop to review and evaluate the design and utility of fish mark - recapture projects in the northeastern United States” and considered to be a valid approach to address the project objectives.

Tagging began in 2003 from 7 vessels (35 days of tagging), continued in 2004 (12 vessels, 57 days), 2005 (4 vessels, 23 days) and 2006 (7 vessels, 44 days). A total of 45,653 tags were released from 2003 to 2006, including 780 electronic tags that record depth and temperature. Holding experiments were performed to assess tag retention and tagging-induced mortality. As of December 1 2006, tags from 3,356 recaptured fish were reported. Seven percent of all lottery tags have been returned; 12% of \$100 reward tags and 10% of data tags were returned. The relative

return rate of lottery tags to high-value tags indicates a 58% reporting rate, which is exceptional for a commercial fishery.

Preliminary results indicate frequent movements within the Cape Cod and Georges Bank stock areas with a less frequent movement among stock areas. Recapture data indicate 95% residence in Cape Cod-Gulf of Maine, 98% residence on Georges Bank, and 50% residence in southern New England-Mid Atlantic. However, most movement from southern New England to Georges Bank was from the Nantucket Shoals area. Sixty data-storage tags were returned, indicating distinct off-bottom movements. Off-bottom movements were typically in evening hours, between 18:00 and 22:00, lasting an average of four hours, ascending to an average of 15m off-bottom. The long-term holding study observed no tags lost, with some fish held for over a year. Results from the cage experiments indicated low overall mortality of tagged and control fish. Analysis indicates no tag-induced mortality, because more control fish died than tagged fish, and approximately 3% mortality from the capture and cage system.

5. Unexpected Difficulties

Preliminary applications of the analytical model were reviewed at the 2005 and 2006 cooperators' meetings. The few recaptures in southern New England present a modeling challenge producing extremely low fishing mortality estimates in southern New England and unrealistically high movement rates into southern New England. Fortunately, fishing partners from southern New England demanded more tag releases in that area in 2006, which should provide better information on movement and mortality in the area. Offshore cage experiments were also challenging, because of strong tidal currents and sandflea infestations.

6. Next Steps

Data analysis will continue as tagged fish are still being recaptured. Project outreach, collection of tag recapture information and database management will continue over the next six months, supported by the NEFSC cooperative research program. A peer-review of analytical results is planned for 2007 to prepare for the 2008 Groundfish Assessment Review Meeting. Continued tagging is planned for 2007, funded by the Massachusetts Fisheries Institute.

7. Impacts of the Project

The results from this study will benefit researchers and managers, helping to improve the management of yellowtail resources. New information on yellowtail movement, independent estimates of mortality and confirmation of age determinations should be useful for academic, state, and federal scientists and will be important information for fishery managers (i.e., the New England Fishery Management Council). The cooperative approach used in the experimental design is being continued throughout the data collection, analysis and interpretation stages of the study. Therefore, results and conclusions will be a product of all cooperators.



8. Signature: _____

Date: December 1, 2006