



The SMAST Cod Tagging Program : Georges Bank and Gulf of Maine

Rountree, R., B.J. Rothschild, W. Brown, D. Martins* and R. Kessler

School for Marine Science and Technology, **SMAST** University of Massachusetts at Dartmouth
706 S. Rodney French Blvd, New Bedford, MA 02744-1221



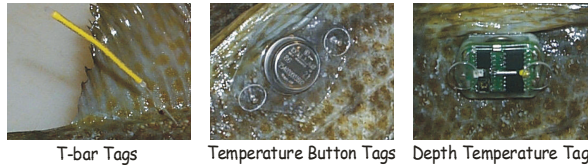
Capt. Pedro Cura (at right) and Engineer Luis Marcalo (foreground) tagging a cod aboard the FV Fisherman during a groundfish trip on Georges Bank. Their homeport is New Bedford, MA.

This tagging program is a cooperative effort involving:

- Commercial Fishing Industry!
- SMAST
- MA Fisheries Recovery Commission
- MA DMF
- NMFS

SMAST Technicians have worked side by side with industry on over forty vessels from Maine to New York providing training and instruction on tagging techniques and how to report recaptures

Cooperation with Industry



Fishermen report the following to SMASTS Tagging Center:

- Tag number
- Date
- Position
- Depth
- Fish length and weight
- Water temperature
- Including
- Address and Phone number

SMAST/DMF Tagging	
Attachment to tag - use appropriate	
Put tag and scales in envelope	
Species	
Length	
Weight	
Water Temp	
Pressure	
Salinity	
Depth	
Position	
Remarks	



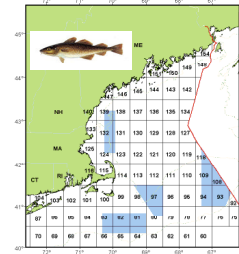
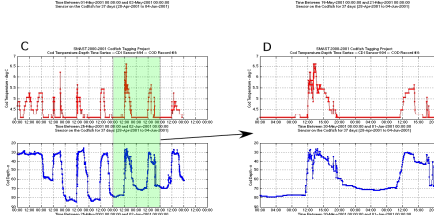
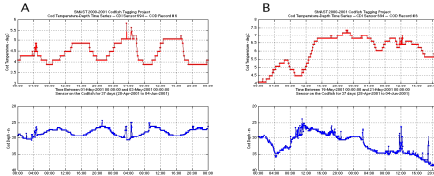
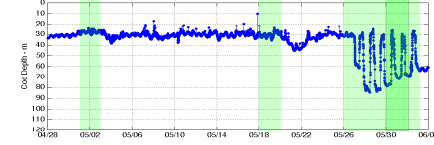
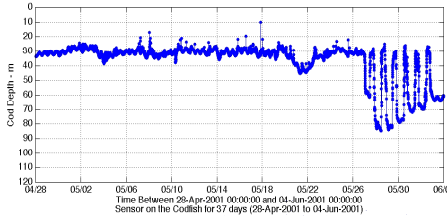
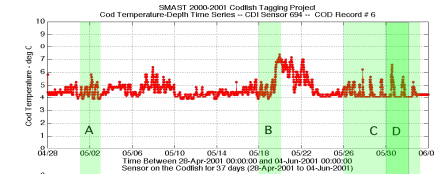
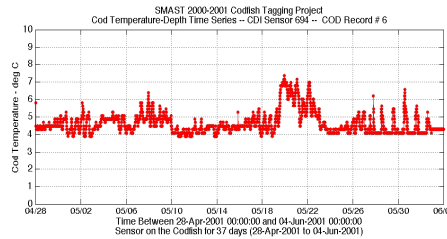
They receive a custom made **SMAST Cod Tagging Center** for their efforts!

Environmental preferences of Cod

Graphics and analysis courtesy Dr. Frank Bub

Each of the 16 CDI Temperature depth time records recovered so far is different. For example, the sixth sensor recovered gives us tantalizing insights into codfish behavior and it's ocean environment. In the panel below, the red area at the lower right, temperature versus depth frequency plots indicates the cod was most often in 4 deg C water at 30-meter depth.

In the panel at right, cross sections labeled A, C and D show a corresponding change in water temperature as the fish changes depth. Section B shows that although the cod moves deeper, water temperature seems to increase slightly. The change in depth from 80 meters to 30 meters in sections C, and D seem to indicate movement on and off Stellwagen Bank.



Project Summary

We have deployed ...

- 19,917 yellow Floy tags
- 100 Green Archival Tags which measure temperature and pressure,(water depth)
- 5 Pressure Temp. and Salinity Sensors

We have recovered...

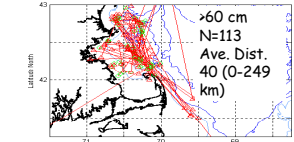
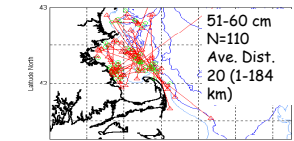
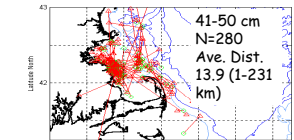
- 613 yellow floy tags or 3.1 %
- 16 pressure temperature sensors
- 1 pressure temp salinity sensor



Tag Statistics

Species	No. tagged	(% recapture)
Cod	19,588	3.1%
Haddock	197	0.5%
Striped Bass	57	5.3%
Pollock	51	0 %
Other spp.	24	4.2%

Cod Movement by Size Class



SMAST scientific staff have been very impressed with the skill and dedication of fishermen who have participated. This observation bears testimony to the belief that an invaluable resource – the fishermen – should not be overlooked in their unique ability to contribute to scientific studies of benefit to their own communities.

Rodney Rountree Program Manager

The vector plots below show trends in movement based on where fish were tagged and released

