

Engaging **fishermen** and **students** in observing  
New England's shelf waters

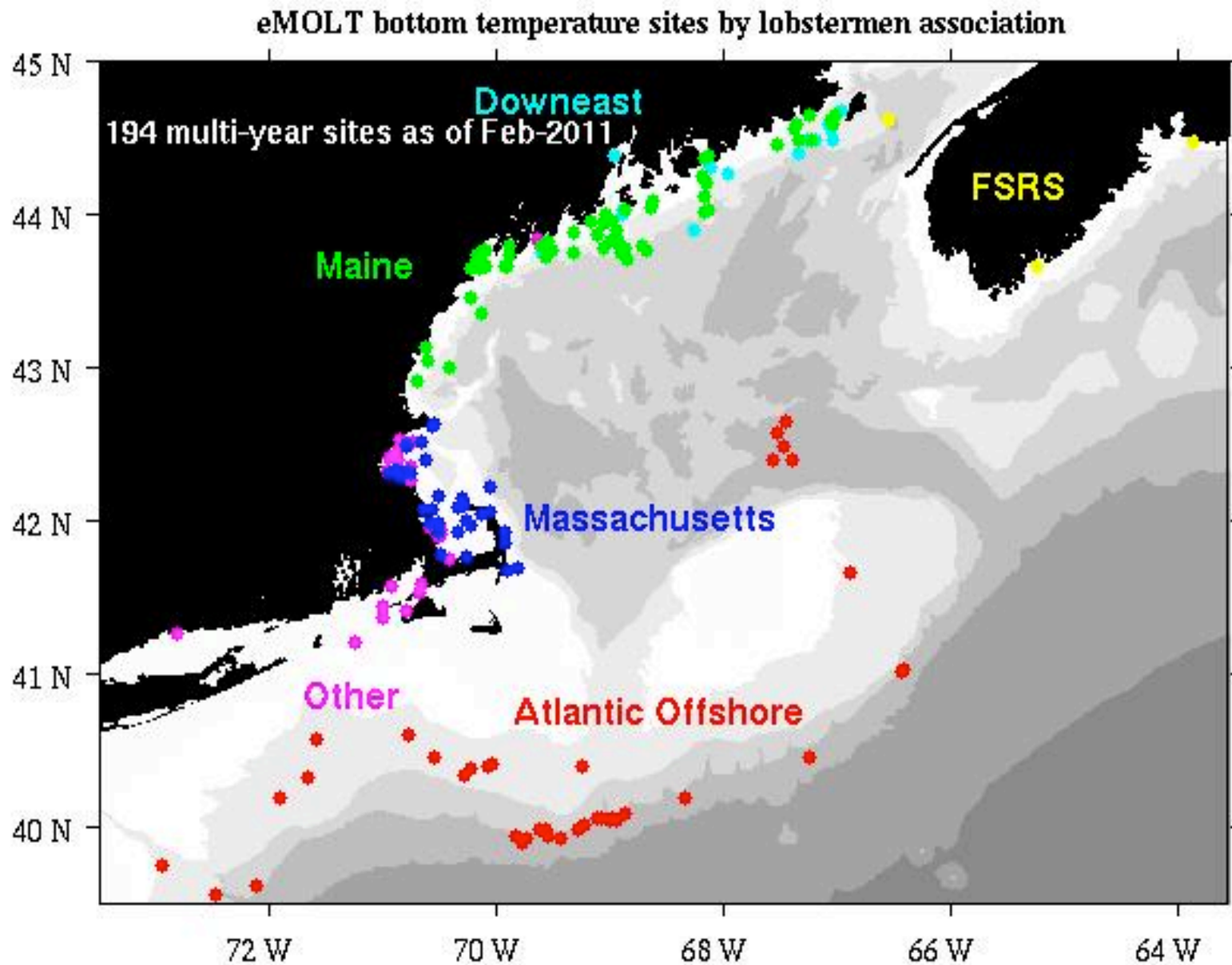
*Jim Manning*

*NOAA's Northeast Fisheries Science Center*

## Alternative Titles:

- Involving the people who care most about the bottom of the ocean (fishermen) and those that care least (young students)
- Ways to supplement our local ocean observing systems with help from fishermen & students
- A yankee's solution to long-term ocean monitoring
- Here's to you Randy for taking me to sea thirty something years ago

# Environmental Monitors on Lobster Traps



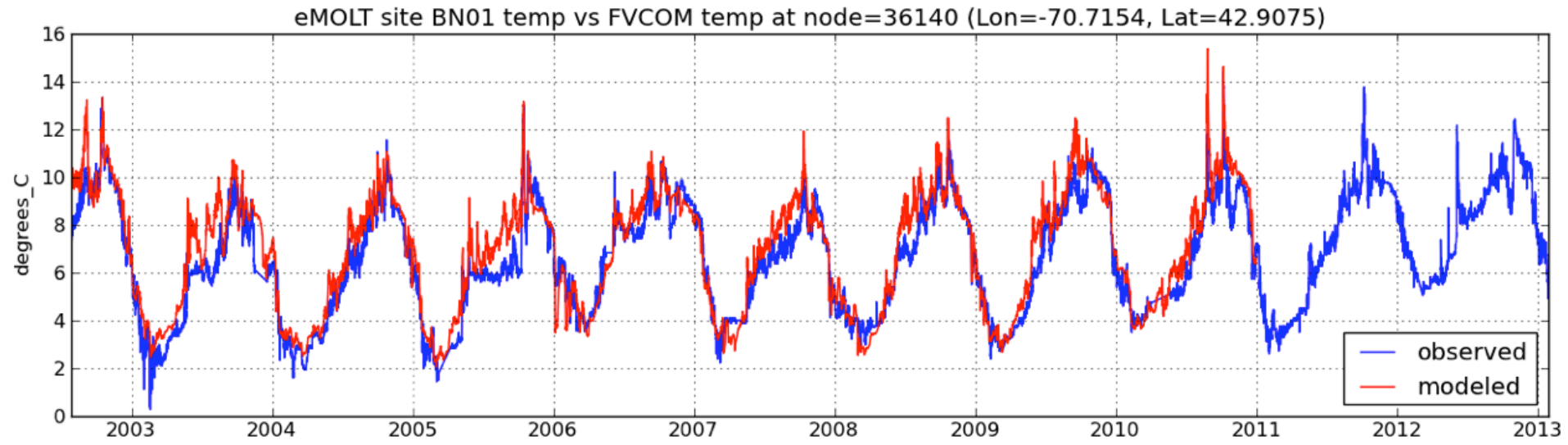
# Fishermen



# Sensors installed on traps:

- Long term monitoring
  - Temperature
- Shorter (1-2 year) experiments
  - Seabird Microcats
  - Vitalii's tilt current meters
  - Acoustic receivers
  - Cameras
  - Pressure

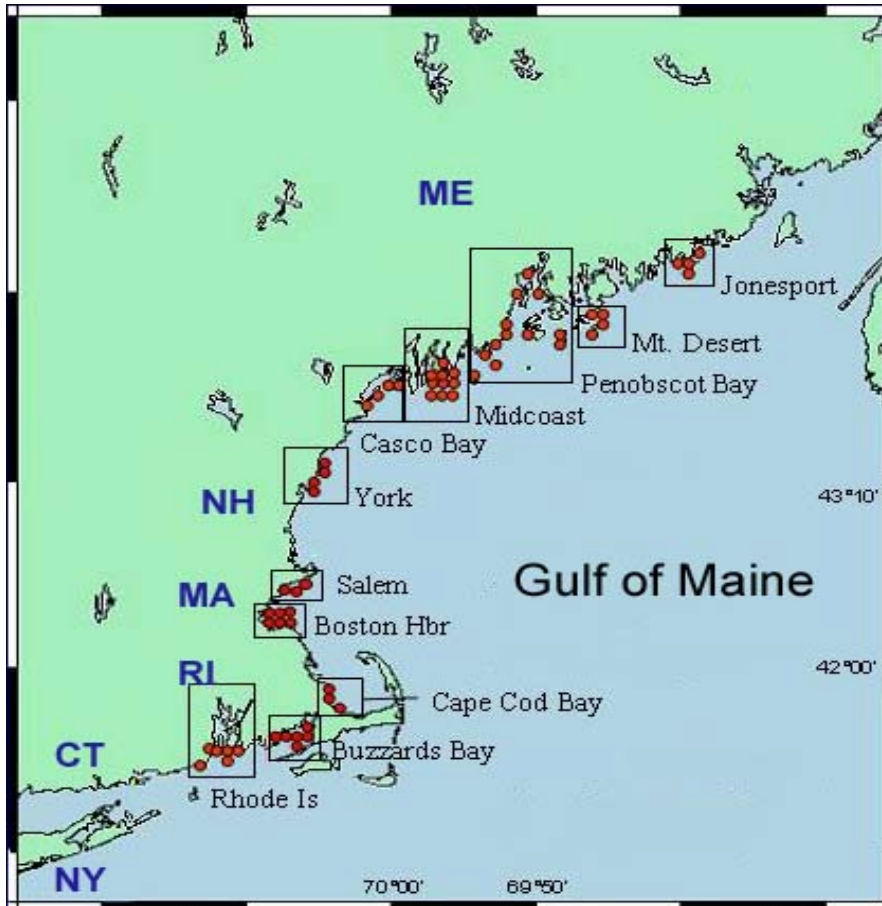
Primary Motivation: feed numerical ocean models data for assimilation and assessment



Full story at <http://emolt.org> and in Manning & Pelletier, 2009. JOO

What is more important to lobsters?  
Bottom temperatures or surface current?

## Juvenile Lobster Settlement Sites



(Wahle et al. Bigelow Labs)

# STUDENTS







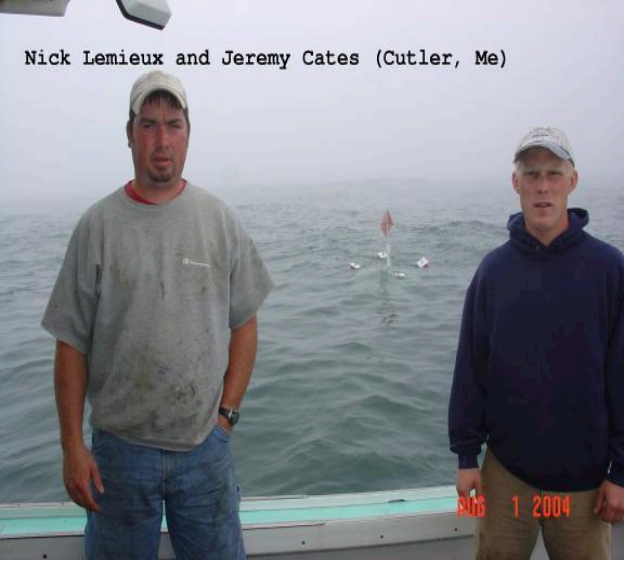
We drift, meander, and disperse.  
 We don't know where we are going.  
 We are [studentdrifters.org](http://studentdrifters.org).



# Applications funded thus far:

- Lobster larvae advection
- Harmful Algal Bloom advection
- Zooplankton advection
- **Educational demonstrations**
- Invasive crab dispersal
- Transient eddy formations
- Fish larvae (salmon, cod) advection
- Power plant effluent dispersal
- **Circulation Model Validation**

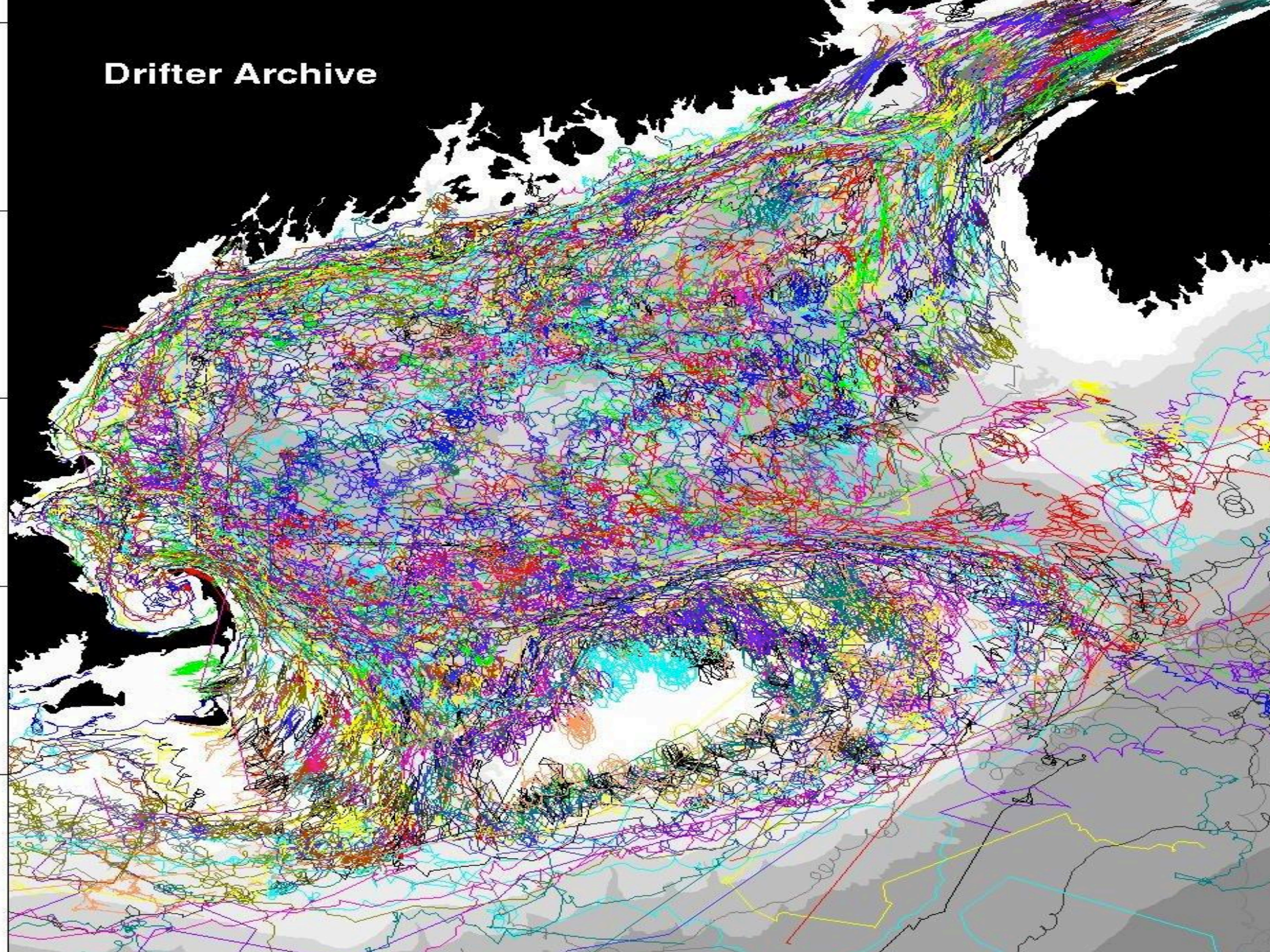
Nick Lemieux and Jeremy Cates (Cutler, Me)

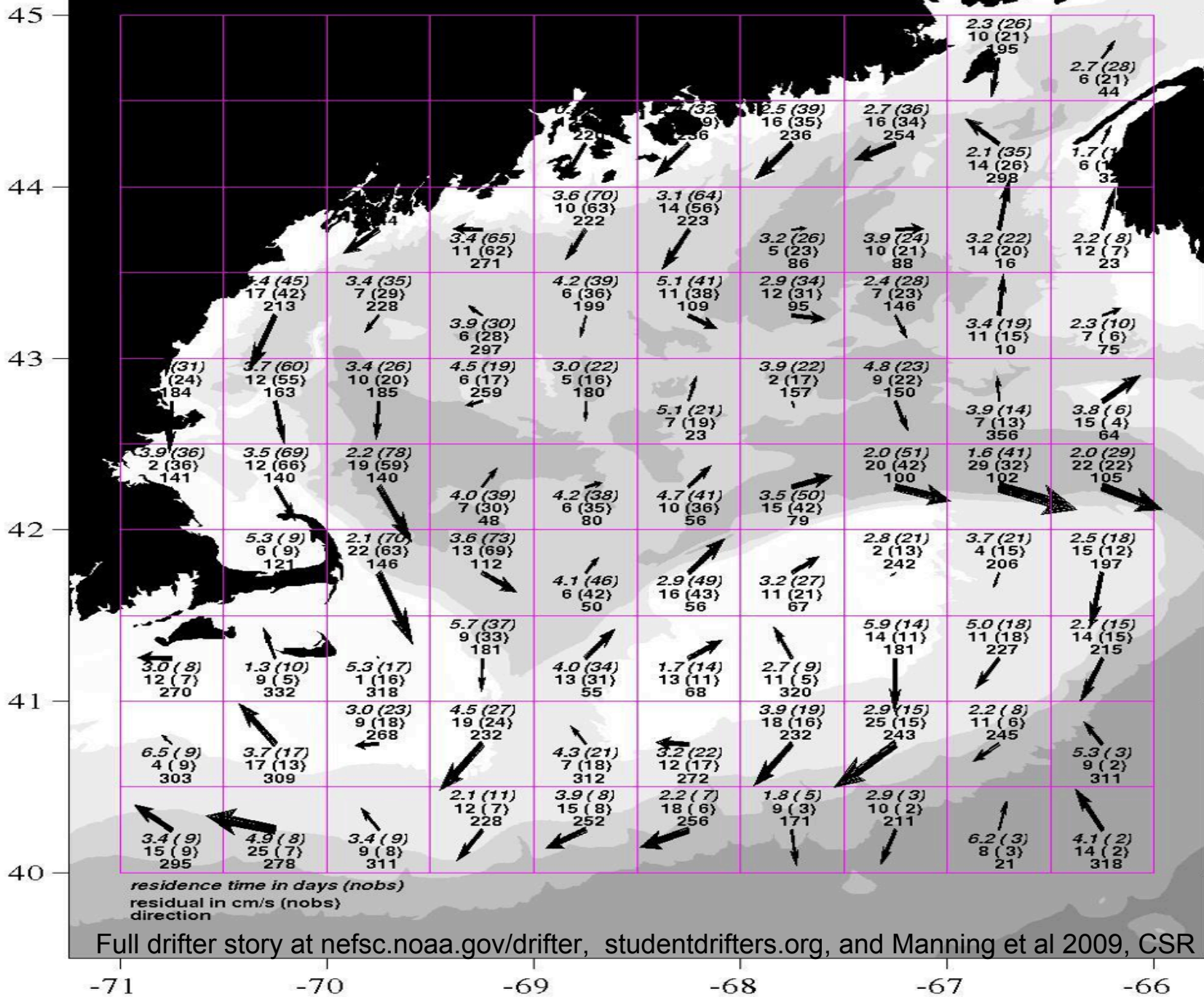


## New England lobstermen deploy student-made, satellite-tracked drifters



# Drifter Archive





# Summary

- Fishermen
  - most interested in oceanography
  - lobstermen have moorings
  - can start providing “real-time” data
- Students
  - next generation of oceanographers
  - hands-on drifters according to standards
  - basic coding w/ Python
- Resulting ERDDAP/OPeNDAP Web-served data
  - 100s of hourly time series of bottom temp
  - 1 million+ kilometers of tracks
  - tunes and validates local numerical models

