

# eMOLT

## Winter 2008/2009

### Update

#### Have you mailed your temperature probe?

Approximately half the eMOLT participants have already mailed in their temperature probes with data from 2008. Thanks! This amounts to more than 17 thousand observations of temperature this year alone. If we have no record of data from you for this past year, we have enclosed a self-addressed envelope in this mailing and ask that you enclose your probe and mail it in. Please be sure to include the deployment log (position and depth of probe). If you fish year round and you want a replacement probe immediately, let us know. Otherwise, we'll send you a reinitialized probe in the spring. If you ever find yourself fishing in the spring without a probe, please let us know (call my cell at 508-566-4080)!!

#### Bottom Temperatures in 2008

As noted in an update earlier this year, we can't label 2008 as being "very cold" or "very warm" but, in general, it falls on the warm side relative to the eMOLT years (>2000). As some of you with multiple years of data may have noticed, we can now generate a new type of plot where the most recent year is overlaid on the historical range and seasonal cycle (Figure 1). It is interesting to note that for some sites such as Bill Doherty's, the early June bottom temperatures are generally warmer than the July and August bottom temperatures!

#### Scientific Journal Publications

Two articles on eMOLT results are currently in press. If you are interested in receiving a copy of these articles (when they are become available) send a request to [james.manning@noaa.gov](mailto:james.manning@noaa.gov). One on the temperature study will appear in the Journal of Operational Oceanography and the other on the drifter study will appear in Continental Shelf Research early next year

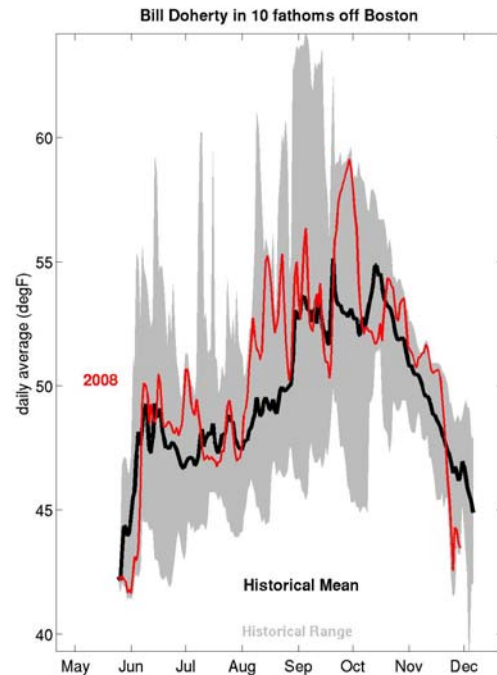


Figure 1. Example of new temperature plot with current year (red line) overlaid on historical range (shade) and mean (black line).

#### Accurate positions & depths

As you know, we strive to record accurate positions and depths associated with each eMOLT site. In the early years, many participants supplied loran TDs for their site and they subsequently note "same as last year" in their position logs. I converted these lorans to latitude/longitude and then stored that position in the database. We are now in the process of added loran TDs to all printed site listings so that, regardless of the system you use, you will have a complete record in both systems. We have purchased the Andren commercial software that does the conversions and will soon be able to provide you with customized charts denoting where we think your sites are located relative to both lat/lon and loran grids. Stay tuned.

#### Accurate temperatures

In March 2008, before mailing out probes, we immersed nearly all of them in a controlled ice-bath at the Woods Hole Oceanographic Institute's temperature calibration facility. We exposed them to a variety of temperature (0,5,10,15, and 20 degC) to test the full range of their ability.

The results are presented in Figure 2. The overall standard deviation of 0.20 degC, bias of 0.04 degC for the cigar-shaped VEMCO probes and -0.07 degC for the quartersized ONSET probes. The basic conclusion is that, while both types of probes performed well, the VEMCO probes recorded temperatures closer to the control.

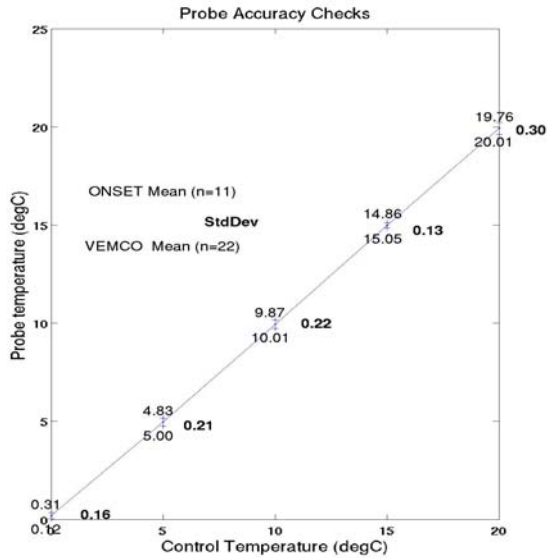


Figure 2. Preliminary results of checking temperature probe accuracy with controlled ice bath.

### eMOLT Phase VI: bottom currents

The first set of bottom-current meters were returned last month from nine different lobstermen along the coast. While the analysis is still underway, all but a few instruments recorded good data and the preliminary plots are posted on the emolt.org site under “bottom current tilt-meter study”. An example is given in Figure 3.

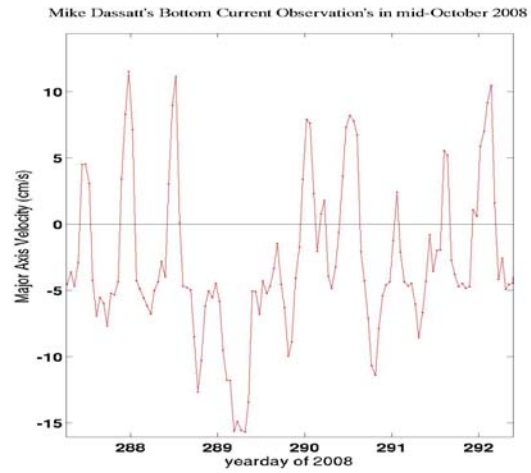


Figure 3. Example of currents measured from lobster traps by Mike Dassatt out of Belfast Maine. Near-bottom tidal velocities of approximately 12 cm/s (~1/4 knot) were recorded the month-long deployment along with residual events such as that on yearday 289 (16 Oct).

One of the most interesting findings from this pilot study is the fact that a few instruments were occasionally pinned in one position as if the trap had fallen on its side or upside-down. In our next prototype deployments in the spring of 2009, we hope to both enhance the tilt meter with a built in digital compass and better quantify the frequency that traps land wrong.

### Lobsterwoman Therese Sauvageau

helped students from the Environmental Science Department at Endicott College deploy a drifter in Mass Bay a few weeks ago. The students got to ride aboard her vessel and release the eMOLT-style drifter. The full story was written up on the local Salem Times and is on both the Endicott's website and the emolt.org “what's new” page in early December.



Figure 4. Therese Sauvageau on board the Sea Anchor preparing to deploy a satellite-tracked drifter w/college students.