Drifter Newsletter #7
July 2010

New Drifter Designs

We have been experimenting with alternative designs this summer in an effort to further reduce the cost and time needed to build surface drifters. Several new prototypes were built and tested in local Woods Hole waters including the:

1. **"Shawn Drifter" which has a 4 by 4 wooden mast and a flotation collar**
2. **"Miles Drifter" which has a 4 by 4 PVC fence-post mast filled with 2-part foam**
3. **"Eddie Drifter" which has a 2 by 4 wooden mast and a flotation collar**
4. **"Vitalii Drifter" which is a mini-rachel drifter that uses a Garmin instead of a TrackPack**

The first three are slight variations of the standard "Rachel Drifter". The Eddie model (see photo below) holds the most promise in replacing the Rachel as our standard surface drifter. While the first Eddie prototype failed after a few days, the 2nd has been reporting regularly for 3 weeks. Not only is this drifter a bit more environmentally friendly, it is much easier to make and should cost hundreds less. More info on these alternative models is posted with photos on the "drifter deign and technology" link on the drifter website http://www.nefsc.noaa.gov/drifter

Figure 1. The new "Eddie" drifter with a wooden 2-by-4 mast and collar flotation.

Gulf of Mexico Drifter Deployments

A couple dozen drifters were shipped to various labs on the gulf coast including University of South Florida in St Petersburg, Dauphin Island Sea Lab in Alabama, and NOAA's Atlantic Oceanogrphic and Metereoology Lab in Miami. They were also sent down on both the R/V ENDEAVOR and the R/V DELAWARE to be deployed at various locations around the gulf. The tracks of these drifters can be viewed at http://www.nefsc.noaa.gov/drifter/drift_BP_Spill.html . They are contributing to a multi-lab effort to understand the transport of the oil around the entire gulf as can be best seen at the USF site http://ocgweb.marine.usf.edu/~liu/drifter_all.html .

Proposal Plans

We hope to submit a planning letter to NOAA's Environmental Literacy Grant call for k-12 education projects in early September. Partnering with MATE, SMCC, GoMLF, and many New England-based marine educators, we hope to follow-up on what we have been doing for years: engaging students in drifter designing. building, and tracking. The idea would be to have marine science students at local college visit local high schools to teach educators, service providers, and students how to build drifters. The drifters will be deployed in offshore waters by fishermen.

Highlights of 2010 Drifter Deployments

More than 200 of the SMCC/GoMLF/NOAA drifters have been deployed this year, more than any year prior. While many of them were short deployments of just a few days or weeks in estuarine/coastal waters, some have traveled offshore waters for months. The raw statistics as posted at http://www.nefsc.noaa.gov/drifter/statsd.html show many of them that have each logged thousands of kilometers.

One of the most interesting tracks is that of unit # 105440672 **which has been retained in the enormous tides of Bay of Fundy for nearly 3 months and is still traveling. While it has traveled a total distance of over 5000 kilometers, it is still only a few hundred kilometers from where it was originally deployed.**

New Drifter Users

Since the last drifter newsletter, the following institutions have recently joined the cooperative

effort to deploy drifters (or plan to do so in the coming year):

- **UMASS Dartmouth Ocean Mixing Lab**
- **Sea Education Association**
- **URI Narragansett Bay Project**
- **Upper Cape Cod Regional High School**
- **Woods Hole Science and Technology Education Partnership**
- **NOAA's Great Lakes Environmental Research Laboratory**

Overlaying drifter tracks on sea-surface temperature images

MATLAB code has been developed to better visualize the relationship between SST structure and the path of drifters. The set of routines does that following:

- **browses remotely stored images at Rutgers University,**
- **saves "good" images,**
- **interpolates in time between good images,**
- **interpolates in space over cloudy images,**
- **generates animations of the drifter tracks on color-contoured imagery.**

Thanks to Emily Motz, a summer student from SUNY Maritime School who has spent her summer in Woods Hole with the "Partnerships in Education Program", the code has produced these animation at, for example:
http://www.nefsc.noaa.gov/epd/ocean/MainPage/anim/sst_may2010/sst.html

The next phase of this project will overlay circulation model vectors.