Environmental Monitors on Lobster Traps & Large Trawlers: eMOLT telemetered-bottom-temperature system

The eMOLT Program now has more than forty vessels sending bottom temperatures in realtime. As the gear is hauled on deck, sensors automatically send data to a computer in the wheelhouse to plot it. The system also relays the position along with averaged temperature and depths via the satellite. Close to 13 thousand hauls have reported to date.
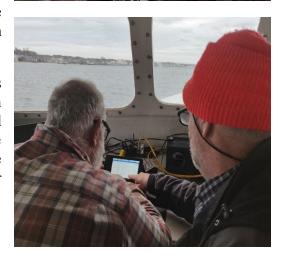
The current system consists of three main parts:
1.   The foot-long **wireless temperature & depth probe** is secured to the doors inside PVC pipe with stainless bolts. In fixed gear cases (lobster traps, longline, etc), the fisherman secures the probe however he sees fit. The probe collects data every minute up to six months on one battery charge.

2.   The **micro-computer** with 7" touchscreen is mounted in the wheelhouse. As the probe comes on deck, the computer automatically downloads the data via a bluetooth connection and plots the results with a toggle button allowing fishermen to easily view previous hauls. It also calculates trawl statistics, compares observed values to historical records, and relays the statistics to a satellite transmitter.

3.   The **satellite transmitter** is now mounted inside the wheelhouse (near window) and sends statistics of each haul to an online map where positions are binned to 10-mile-squares.

The system costs a few thousand dollars. Prior to 2021, the project has been funded primarily by NOAA's a) Northeast Cooperative Research Branch (connected with the Study Fleet Program) and b) Integrated Ocean Observing Systems. The primary objective is to assimilate these bottom temperatures into numerical ocean models, much the same way NWS uses observations of air temperatures on land in their forecast runs.

If you are a year-round fisherman in relatively deep water and would like to try the new instrumentation, please let us know by emailing james.manning@noaa.gov or calling 508-566-4080. Visit www.emolt.org for links to data & map.

While the system usually needs some maintenance by a dockside tech on a near bi-monthly basis, it is designed to be totally automatic. The installation usually takes less than an hour for two trained technicians with their own tools. All that is required is:
- Electric power for a micro-computer in the wheelhouse
- 15 minutes of Captain's time in determining:
    - the best place to install system parts
    - demo the system and bookmark websites in wheelhouse; and
    - hotspot/wifi password to automatically send raw data