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Spring 2007

Volume XV; Number 1

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Sea Tow Deploys Oceanic Research Glider

~ by Emily Corman

Captains from Sea Tow Atlantic City (N.J.) recently assisted researchers from Rutgers University's Coastal Ocean Observation Lab (RUCOOL) deploy a fleet of six Slocum Gliders off the coast of New Jersey. The battery-powered robots move in a vertical zig-zag pattern through the water and can be controlled from the lab via satellite phone. The connection also allows researchers to download current data in real-time.

"Sea Tow has been with us from the very beginning," Josh Kohut, director of the lab's Center for Advanced and Sustained Technology, said. "The very first glider that was put in the ocean – in 1998 – was launched from a Sea Tow boat. They've been fantastic – going out to get them at any time, even in situations where we've had technical troubles with the gliders."

Funded by the Office of Naval Research, the university's most recent project, "Shallow Water 2006," used gliders to collect information essential to improving marine weather forecasts: water temperature, salinity and back scatter (sediment and phytoplankton).

And, because the gliders are unmanned, they were also able to collect information from tropical storm Ernesto as it traveled north in the Atlantic Ocean. Kohut said preliminary data shows that the ocean cooled 10 degrees from the storm's beginning to end and that the research team has been surprised by some of the conditions revealed by the data.

"Most storms act like a spoon in a mixing bowl, mixing the density layers of water and, therefore, equalizing the water's salinity," Kohut said. "But with Ernesto, that didn't happen." Instead, Kohut explained, data shows that the less-dense water remained at the ocean's surface with denser water beneath it. What's really intriguing is that the storm pulled sediment 60-feet into the water column from the ocean's floor, but it did not cross the boundary from the deeper, more-dense water to the less-dense water at the ocean's surface.

This data has opened the door to a host of questions that have scientists wondering how storms affect the behavior of fish. Wouldn't that be priceless knowledge to have for your next tournament?

Jennifer Bosch (left), a research scientist at RUCOOL, and Naomi Flemming, an oceanography graduate student at Rutgers, prepare a Slocum Glider for deployment into the Atlantic Ocean aboard a towboat from Sea Tow Atlantic City (N.J.).