



## EPA surveys ponds' bottoms in toxin study

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NORTH PROVIDENCE -- A flat-bottomed boat drifted across the shallow waters of Lymanville Pond yesterday.

Below the water, a thick forest of pondweed was close enough to touch.

Onboard, four men bent over a computer screen, tracking pulses of sonar that showed them what lay beneath.

The boat's four-man crew of geophysicists and environmental engineers had been dispatched to Rhode Island from the federal Environmental Protection Agency to make a geophysical survey of Lymanville and Allandale Ponds.

Like the Woonasquacket River that flows through them, the ponds are polluted with dioxins: toxic chemicals that stick to silt and dirt.

By determining where silt has settled on the bottom of the ponds and taking samples of the sediment next spring, the EPA hopes to learn how far the pollution has traveled.

The small boat is just big enough to hold Ken Woodruff, Gordon Shields, Alan Humphrey, and Yoon-Jean Choi, and their equipment: two computers, one hooked into a GPS (Global Positioning System) and the other attached to the radar system. Wires crisscrossed the muddy bottom of the boat. The radar emitter itself floated alongside the boat.

"I've got more technology in this boat than I've got in my house," said Shields.

Sometimes the four scientists relied on lower-tech methods of measuring the water depth -- such as lowering an oar to stir the soft, fine silt at the bottom.

The team has already finished mapping the bottom of Allandale Pond. Yesterday was their first day on Lymanville Pond.

Shields watched the screen of the GPS computer to keep the boat moving in straight lines across the pond's surface, and to allow them to map the bottom accurately.

On the other computer screen, colored lines map out the echoes of the radar. Harder objects reflect the radar more sharply than the softer silt.

Throwing around terms such as "geomorphic" and "bathymetry," the four scientists are solicitous of their equipment, making small adjustments as they go.

This is the first pond-based Superfund site survey in New England, according to Choi. Usually, similar

surveys are carried out on solid ground. "We've worked a lot of different sites," said Woodruff. "Often we have to modify our techniques in the field."

With the exception of Choi, who works out of the EPA's Boston office, the team is based in New Jersey but travels all over the Eastern Seaboard to tend to Superfund sites such as this one.

They said the survey has been pleasant work. Under crisp October skies, they have spent the last week on the water, sighting turtles, geese, herons and fish.

And the humans who live by the ponds have been sighted as well.

"We've had a few people come near the shoreline, interested in what was going on," said Woodruff.

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