

Sample From Oyster Pond Resembles Pink Lemonade

by Paul D. Ott

A water sample taken from a depth of three meters in brackish Oyster Pond, Quissett, looks like pink lemonade, but you would not want to drink it.

"I was shocked by how foul the water was. I had no idea that six and twelve feet down it was so lousy," said John E. Dowling, a neurobiologist from Harvard University and trustee with the Marine Biological Laboratory in Woods Hole.

The neurobiologist said he does not know what gives the water its pinkish tinge.

Dr. Dowling is one of two pond captains for a group of 10 persons who volunteered to help with the monthly collection of water samples from Oyster Pond.

More than 50 Falmouth residents have volunteered as pond watchers for Oyster, Little and Green ponds. As pond watchers, they will take water samples from the ponds this summer and next.

The Woods Hole Oceanographic Institution Sea Grant Office and the Falmouth planning office support the project and hope to use the documented findings for planning of pond areas and to better interpret the town's coastal

pond nutrient guidelines approved in April.

"Dr. Kerfoot is responsible for getting a group of us together from those of us who are concerned about these coastal ponds and the enormous amounts of nutrient loading into them," Dr. Dowling said at his summer home on Ransom Road, Quissett. William B. Kerfoot is president of K-V Associates Inc., an environmental engineering firm.

With empty, clear-plastic bottles, soon to be filled with pond water, spread out on his dining room table, Dr. Dowling sat in a chair early yesterday morning and labeled the bottles while talking about the pond.

No More White Perch

He became concerned with Oyster Pond last summer when its seemingly endless stock of white perch went dry.

"Five years ago they were incredibly plentiful in this part. They practically jumped into the boat," he said.

Dr. Dowling uses white perch for his neurobiological research at Harvard University and during the summer at the MBL.

"The perch began to disappear last summer, and I

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caught one perch in the pond this summer," he said.

Dr. Dowling and Julie S. Rankin, the other Oyster Pond captain for the project, spent two hours of their morning yesterday on his rowboat calculating data from water samples they took from two of the deeper areas in the southern region of the pond.

Another pair of pond watchers spent their morning at two areas in the northern region of the pond, where they measured the depth, temperature, salinity, oxygen content and collected water samples for analysis of nutrient content.

Other watchers were doing the same at Green and Little ponds.

"Everybody is going out today because we want to do it at all three ponds at about the same time and on the same day," said Mrs. Rankin, a biologist and MBL tour guide.

She conducted three tests yesterday morning on samples from Oyster Pond and found the oxygen levels beyond 3.25 meters to be at zero.

The findings corroborated the samplings taken last month.

Oxygen Level Dropped
"In some locations, virtually at two meters, the oxygen had dropped to almost nothing," Dr. Dowling said of the July samples.

The pond watchers anchored

their boats at locations designated by certain landmarks. For instance, one spot where Dr. Dowling moored was directly between a flagpole on the eastern edge of the pond and a white stucco home on the western side of the pond.

To collect the samples, the pond watchers used a Niskin sampler, a long grayish-colored tube connected to weight and a line marked off by meters.

Once the sampler was lowered to the desired depth, the lower and upper hatch of the tube could be closed to trap a water sample from that depth.

After samples had been taken from the surface during the first stop in the pond at 9:30 A.M. yesterday, Dr. Dowling let the Niskin sampler drop two meters below the surface before trapping water for a sample from that depth.

"It's pretty clear at the surface; see how much that changes as we go down," he said.

Pulling the sampler aboard, he then released the water from a tube on the sampler into two plastic specimen containers. The oxygen levels at two meters were at 1.5 milligrams per liter, and the temperature of the water was 81 degrees Fahrenheit.

A sample at the same spot from five meters found the temperature of the water to be 67 degrees Fahrenheit and the oxygen levels nonexistent.

Mrs. Rankin took a whiff of

the water from the specimen bottle and wrinkled her nose. "That's pretty rotten eggy," she said.

Even after the bottle had been sealed and enclosed in a cooler to prevent the breakdown of the nutrients, the odor remained on the boat for several minutes.

"You can really smell the hydrogen sulfide," Dr. Dowling said.

The pinkish color of the water from five meters also was noticeably different from that of the surface.

Other than the occasional smell brought up from the nether region of Oyster Pond by the Niskin sampler, the two hours of testing water samples aboard the boat seemed a pleasant way to spend a Sunday morning.

"This is a nice job when it's nice out here, but boy, is it a stinking job when it's lousy!" Mrs. Rankin said.

There were no complaints yesterday as an occasional breeze from the southwest drifted across the pond. The only disturbance came from an angry Canada goose whose territorial rights were lost momentarily when the pond watchers stopped to test the water.

"Okay, Canadian Goose, we're not invading your territory. We're just trying to find out what you've put in the water,"

Mrs. Rankin said.

Still squawking, the perturbed goose finally gave up

and later flew away from the pond.

Besides getting wet occa-



John E. Dowling, a neurobiologist from Harvard University, holds a sample of water from Oyster Pond that will be analyzed for its nutrient content by the Woods Hole Oceanographic Institution. (Photo by Paul Ott)

sionally, the job of a pond watcher can have one more minor disadvantage.

"Your clothes wind up with small holes in them from some of the reagents you spill," said Mrs. Rankin, referring to the solution used to test the oxygen level of water samples.

Both Mrs. Rankin and Dr. Dowling used care in their handling of materials and samples on the boat.

"We're very careful with all the waste we use on the dissolved oxygen, so we're not putting any contaminants in the water," Mrs. Rankin said. The utensils used for the samplings were also rinsed with distilled water brought along for the testing.

Dr. Dowling said he thinks the WHOI program is a terrific one. "It's getting people around town alert to the problems we are facing."

All the equipment and supplies used by the pond watchers are supplied by WHOI, which is also conducting the nutrient analysis of the water samples.

Alan W. White, marine science adviser with the WHOI Sea Grant Program and coordinator of the pond project, drops the supplies off at pond captains' homes prior to the testing.

Training Sessions

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Monitoring Water In Falmouth Ponds Next Summer

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fore the sampling began last month, Dr. Dowling said.

"The people I've met who are not part of it are very interested," he added.

Paul E. Crocker, Fells Road, is one resident on Oyster Pond who became involved because of his concern for the pond.

"When the wind and temperature is just right you get an inversion and the sulfur comes up to the surface. That's when people think the pond is polluted with sewage," said Mr. Crocker, who noted that he is "about the only one on Oyster Pond without a doctorate."

Mr. Crocker, an architect, has

lived in his home beside Oyster Pond for 40 years.

"I want to make sure it's not becoming polluted," said Mr. Crocker, who is one of the residents who volunteered to be a pond watcher for the project.

Besides the disappearance of white perch from the pond, Mr. Crocker said he has noticed that the sea grass and weeds in the pond have become much thicker.

"It's very hard to fish in some of these areas now because your hook always catches in these weeds," he said.

Mr. Crocker said he uses an organic chemical-free fertilizer on his lawn, although the organic product is more expensive and cannot be bought locally.

Dr. Dowling cited the use of nutrient-laden fertilizers on lawns beside the pond as one of the possible reasons for the disappearance of the white perch.

The nonexistent oxygen levels beyond three meters in parts of the pond indicate that nothing is living at that depth, Dr. Dowling said.

"With more building, it's going to be putting an enormous nutrient load into the pond," he added.

"Falmouth is one of the first communities in the country to look at its ponds," Dr. Dowling said. "I hope when we come up with concrete recommendations that the town will take them to heart."



John E. Dowling, a neurobiologist from Harvard University, holds a sample of water from Oyster Pond that will be analyzed for its nutrient content by the Woods Hole Oceanographic Institution. (Photo by Paul Ott)