

Aeration could breathe life

Pa. firm's Clean-Flo promises to revive polluted lake

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HAMMONTON — Hammonton Lake is dying.

It's murky, the bottom covered by thick black muck. There are fish, but they can't descend below the top few feet of water because of the lack of oxygen. Pond weeds grow thick.

This is pollution at work — lawn pesticides, fertilizers, vehicle oil and gasoline, swept into storm drains, funneled down creeks, and eventually dumped into Hammonton Lake. The pollutants are slowly poisoning the water and the organisms that live there.

The lake has been dying for years, but the past year was, perhaps the worst. Last summer, the beach was open only about 13 days because of high coliform bacteria counts. Coliform bacteria come from fecal matter, and the fecal matter was most likely deposited by the lake's large population of geese. But the underlying problem is this: There are no longer enough microorganisms in Hammonton Lake to digest the goose feces.

"Lakes are dying. It's not just Hammonton," said Brian Kling, president of a small Pennsylvania company that sells lake clean-up systems.

Hammonton leaders are hoping Kling can help. Today, Town Council member Jeanne Lewis and other town officials will take a field trip to Pennsylvania to see Kling's Clean-Flo system in action.

The unique aeration system

has never been used by a New Jersey municipality, but it has cleaned up bodies of water around the globe, Kling says. Water problems are so pervasive, the company rarely advertises.

"We have not had to pursue people. People have pursued us," Kling says. "There's thousands and millions of lakes around this world, and to try to get to everybody is almost impossible."

His system works on simple principles. A half-dozen or more ceramic "diffusers," in a lake the size of Hammonton Lake, pump a constant stream of millions of air bubbles into the lake from the lakebed. The diffusers provide oxygen to aquatic life, and they also cause the lake water to circulate, allowing fish and bacteria to reach its lowest levels.

In Golden Valley, Minn., eight minutes from Minneapolis, the system has been in place at Sweeney Lake since 1972. About the same size as Hammonton Lake, Sweeney Lake is clear and healthy, a popular fishing spot for local anglers even in late October.

"We're a city lake that has a lot of polluted highway water coming in, so it's a real battle to keep the water in good shape," said David Hanson, a member of the homeowners' association that owns that lake. "I'm very pleased with it (the Clean-Flo system), and so are the people who live around the lake."

Founded in 1970 — two years before the U.S. Environmental Protection

Agency was created — Clean-Flo has been quietly cleaning up lakes worldwide for 35 years. In addition to diffusers, the company often introduces bacteria to replace the ones that have been killed off by pollution.

"I like it because we're not putting any chemicals in, (just) oxygen from the air," Hanson said. "It's kind of like a great big fish tank."

Hammonton officials are hopeful, but cautiously so. The system is expected to cost about \$117,000, and Lewis and other council members want to make sure it will work before they spend money on it. They also want to ensure that it doesn't negatively affect the water flowing out of the lake into Hammonton Creek, which could get the town in trouble with the state Department of Environmental Protection.

But there's also a sense of urgency. Lewis recalls families gathering at the lake on the weekends for a day of fun when she was a child. Now, even when the lake is open, few people go — because closures are so frequent no one plans a day at the lake anymore. She disputes other council members' characterization of the lake as "dying," but she says it's close.

"I think if we do not move forward in all due haste, then it will become a dying lake and we will lose it as a resource," she said. "That's why I feel it's so important to use whatever reasonable methods we have to save our lake."

Kling said Clean-Flo is still

into dying Hammonton Lake

Oxygen depletion can 'kill' lakes and ponds

Two common causes of oxygen depletion in water are bacteria and excessive nutrients. Both are aggravated by runoff from lawns and farms.

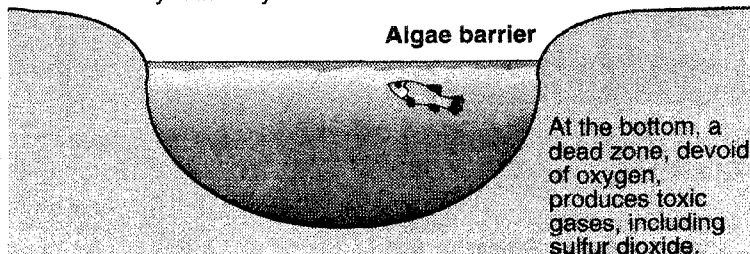
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Bacteria (such as those from animal waste) can use up oxygen in the water, not leaving enough for marine life. As fish die, they produce more bacteria.

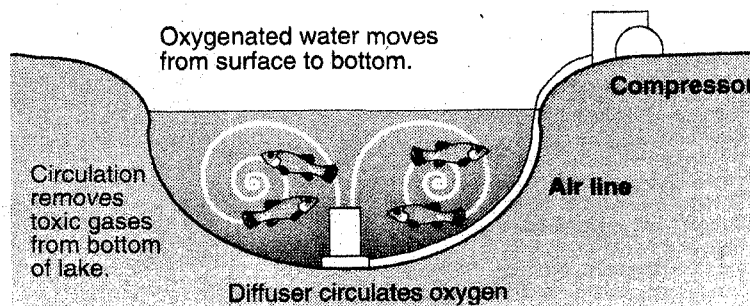
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Excessive nutrients (such as nitrates from fertilizers) spur algae growth. The algae keeps sunlight from reaching other aquatic plants. As these plants die, less oxygen is produced. Waste from the remains of algae blooms sinks and decays. As this material decomposes, more oxygen is used than is produced.

In a lake with low oxygen levels, fish and other marine life might survive in only a thin layer.



How aeration works



Press graphic by Tim Faherty

working on designing a system for Hammonton — a difficult task because various government reports put the lake's size at anywhere between 36 and 74 acres.

Hammonton is also looking to combat its goose problem, one it shares with many other municipalities. While some towns have used everything from windmills to spraying to get rid of geese, Hammonton is trying a more natural approach. For \$1,800, the town recently purchased two pairs of swans. With their wings clipped, the swans can't fly and will make Hammonton Lake their home.

Swans and geese don't get

along, and town officials hope the swans will drive away the geese. They'll need to be fed in the winter, but otherwise are a relatively inexpensive and low-maintenance solution to the goose problem.

The town is also looking into getting carp to eat the lake weeds.

Lakes in many other municipalities, like Tuckerton's Lake Pohatcong, are facing similar struggles.

"Storm water runoff affects lakes and streams throughout the state of New Jersey," said Karen Hershey, a spokeswoman for the Department of Environmental Protection. "When (people) change the oil

of their cars in their driveways or dump a cigarette out of their vehicle, those things will often make their way into storm drains and into our lakes and streams."

Cleanup is costly, but for Hammonton, it's pay or lose the lake where people have picnicked, played and gone swimming for generations.

"I think, with anything, you don't want to do it until it's absolutely necessary," Kling said. "At this point, when they were shut down with the beach last year, I think they feel it's absolutely necessary."

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