There may be way to restore Limekiln Lake

By HOWARD RONTAL

Sylvia Baize admits that she's not an unbiased source.

"I'm not unbiased but if I didn't believe in it I wouldn't be working with them. They're the only ones with a natural lake restoration system."

The "it" Ms. Baize is referring to is the "Clean-Flo" lake rehabilitation system, a system Ms. Baize believes may be the best answer to the question, "How do you clean up Limekiln Lake?"

The Clean-Flo system is three phase, says Ms. Baize, and is the only one she knows of that duplicates the way a lake expels harmful, toxic chemicals and restores its own chemical balance.

She also acknowledged that there are a number of other methods that have been used, with varying degrees of success, to rid lakes of polluting substances. Among these methods are harvesting aquatic plants, chemical plant killers, oxygenation of the water, and dredging.

The Michigan Department of Natural Resources says that Limekiln Lake, in Green Oak Township just to the west of South Lyon, is badly polluted.

Currently, the main culprits in this pollution are the South Lyon waste water treatment plant, Michigan Seamless Tube Company, and agricultural run-off from the surrounding land, according to a DNR report.

The sewage treatment plant and the tube company both dump treated effluent into Yerkes Drain, which carries it through Nichwaugh Lake and into Limekiln.

The pollutants have speeded up the lake's aging process to the point where, during each of the last two early summer months, fish have died, sediment has collected on the bottom and the water has become dark and discolored with algae.

Ms. Baize said that Mondon Lake, in White Lake Township, had problems similar to Limekiln Lake and that after one year under only a partial Clean-Flo treatment plan, it is in better chemical shape than many other lakes in southeastern Michigan.

According to literature supplied by Ms. Baize, oxygen is the most important element found in a lake, both because it keeps lakes clean and because it keeps the "web of life" in balance.

As organic matter decays on a lake bottom, the decomposition process produces toxic acids and gases. Oxygen "deactivates" the bacteria that produce these gases.

It also supports the small "benthic organisms," the snails, crayfish, bacteria and worms that consume bottom sediment and which are consumed by fish.

But oxygenation alone won't clean a lake, Clean-Flo people claim in their literature.

Through a process called "multiple inversion," Clean-Flo imitates a lake's own cleansing action.

In spring and fall, as surface water becomes heavier than bottom water, it sinks to the bottom and forces the bottom water to the surface. Bottom water brings with it the season's accumulation of lake gases, which when it reaches the surface, is blown away by the wind.

[illegible] Clean-Flo system, this [illegible] occurrence, can happen [illegible] weeks. Oxygen is pumped into the lake bottom where it is released in [illegible] bubbles.

[illegible] water clings to the bubbles as they rise to the surface. In this way, [illegible] temperature, 500,000 gallons of water can be carried to the surface each hour. At this rate a 10-acre section [illegible] feet deep can be "rolled over" every [illegible] days.

[illegible] the addition of calcium or [illegible] aeration pumps, phosphorus [illegible] removed from the water and settles to the bottom of the lake. Phosphorus is a plant nutrient which greatly increases the rate at which lakes age. The DNR has blamed the element for much of the current problems in Limekiln Lake.

[illegible] phosphorus is "settled out," it becomes food for the small bottom-living organisms. Those organisms become fish food.

[illegible] decaying organic matter is partially [illegible] deep at the lake bottom, Clean-Flo recommends an injection of additional benthic organisms. These organisms, like those already in the lake, consume the bottom "muck," the result of the decomposition process.

[illegible] the complete Clean-Flo plan [illegible] is used, lakes can be restored in as little as two to three years, says the literature.

[illegible] Laing, president of the Hopkins, Minnesota, company was hesitant in giving a price estimate in a phone interview, but he did offer a ballpark figure of $1,000 per acre. Clean-Flo is guaranteed to perform as the company promises or the cost will be refunded, Laing said.

A Clean-Flo representative will make an analysis of the lake, its problems, and what must be done to restore it before any work is done. The initial study costs $1,500 and is refundable if Clean-Flo can do nothing for the lake, Laing said.

Ms. Baize noted that other processes might also be recommended besides Clean-Flo.

If the lake is choked with aquatic plants, for instance, residents might have to "harvest" those plants. Water plants use oxygen and when numerous enough, can use so much that fish die for lack of the element.

Harvesting the plants removes their oxygen uptake and prevents them from settling to the bottom and becoming nutrients for the next year's growth of aquatic plants, Ms. Baize said.

Harvesting can be quite expensive, however. Aquatic plant harvesters can be purchased locally for between $17,000 and $65,000. Erle Gleisner, owner of Inland Lake Weed Harvesting Company, said that a harvester and operator are rented out for between $35 and $75 per hour.

Dredging is another method used to cure lake problems. This process removes the bottom muck and silt and deepens the lake below the point where light can penetrate. Since the aquatic plants need light to grow, they cannot grow where light fails to reach, Ms. Baize said.

But dredging is very expensive, temporarily clouds the water with suspended silt, and risks the possibility that the suspended silt will settle out and smother living animals on the lake's bottom. Also, a place to dump the dredged matter must be found.

Ms. Baize is definitely against the use of herbicides in the battle to control aquatic plants. These chemicals, she says, can be toxic to animal species and will affect most living organisms in the water to one degree or another.

If a herbicide is used and environmental damage is seen, lake residents are urged to call the Department of Natural Resources, Inland Lake Management Unit.

Here's do's and don'ts for keeping lake clean

Living on a lake is more than just fun and games, say water quality experts. Lake living means taking responsibility for the lake.

The following is a list of dos and dont's for lake property owners:

—Use biodegradable detergents with no phosphates. Phosphates promote the growth of aquatic plants which fill in the lake, use oxygen necessary for fish, and turn the bottom to muck. On a per capita basis, 50 pounds per year of phosphorus is deposited into the water table.

—Check your septic tank drainage. If it is not functioning properly, replace it or move it as far from the lake.

—Use lake water for watering sod or gardening. Eliminate fertilizers. Aquatic weeds and algae are excellent sources of fertilizer. Aquatic weeds are especially good for rose bushes.

—Do not feed ducks from your dock. There is plenty of natural food. Ducks may infect a lake with swimmer's itch.

—Do not clean fish on the dock and throw remains into the water.

—Have proper facilities for waste on your boats, such as chemical toilets.

—Rake your lawns away from the lake.

—Do not burn on the shoreline.

—Do not drain any type of sewage into the lake.

—Do not alter the natural shoreline unless approved by the Michigan Department of Natural Resources.

—Be sure there is proper drainage when improving your lot so that erosion will not take place.

—Do not destroy the sod or soil holding brush on the shoreline. Such vegetation prevents erosion and the silting process.

—Cooperate with your lake association which is primarily dedicated to lake improvement.

—Encourage farms to prevent any farm run-off. This is a prime factor in nutrient unbalance.

—Sanitary landfills should never drain into a body of water.