

A shimmering, goose-free hazard guards the 17th green on the Edinburgh Course, a new addition to the Wentworth Club in Virginia Water, England. The Edinburgh is a John Jacobs Golf Associates design.



Bioremediation, combined with aeration, gains practical acclaim

By DAVID M. ROSE

Ponds and lakes can be important assets for course managers, but they quickly become liabilities when problems like excessive algae growth and stagnation hold sway. Maintaining a healthy water hazard can be difficult and expensive, and chemical quick fixes can sometimes make matters worse in the long run.

Now a number of companies are taking a more natural approach to pond maintenance, enlisting the aid of beneficial microbes to clean up everything from heavy metals to duck droppings in a process known as bioremediation.

Perhaps the most common problem in pond management is eutrophication, a condition characterized by low oxygen levels and excessive algae growth. Eutrophication is caused when excessive nutrients are introduced into the water in the form of manure, grass clippings, or fertilizer runoff. This influx of nutrients results in an algae bloom, which robs the pond of oxygen and can cause odor problems as dead algae decays. This decay releases more nutrients and algae bloom again, in a recurring cycle.

When faced with an algae bloom, managers may be tempted to apply chemicals like copper sulfate. But while these agents will kill the algae, they can't break the cycle of eutrophication, according to Tom Lubin, an independent lake management consultant based in Cypress, Calif.

"A lake is a living system," said Lubin, "and you can't put enough chemicals in to kill everything and expect that it's going to smell good after six months, because it's still going to have this dead material on the bottom."

One solution to this problem is to encourage the growth of beneficial microbes by using aeration equipment. By increasing the pond's oxygen content, the growth of beneficial aerobic micro-organisms is encouraged. This growth consumes nutrients, inhibiting algae blooms. Moreover, the breakdown of dead material at the bottom of the pond is odor-free in the presence of sufficient oxygen.

While aeration alone is often effective, the process can be slow. To give the cleanup process a boost, Enviro-Reps International of Camarillo, Calif., manufactures Super-Bugs, a mix of 11 different bacteria and seven enzymes. Available in dry or liquid form, application of Super-Bugs combats algae growth by consuming nutrients and out-competing algae.

"The enzymes break down the larger waste products, making it easier for the bacteria to further process things," said Bob Friedman, co-owner of Enviro-Reps. "Because Super-Bugs contains billions of bacteria per gram, they very readily digest the nutrients. When used in conjunction with aeration, they are even more effective."

Continued on page 42

Dr. David M. Rose, who earned his PhD in cellular developmental biology, is a research fellow in the Department of Genetics at Harvard Medical School. He can be reached via e-mail at drose@fas.harvard.edu

Two superintendents sound off on goose tactics tried & untrue

By TONY RZADZKI

I live and work possibly thousands of miles away from all of you fellow superintendents. But I decided it's time to relate my experiences and opinions about goose control. This has become a universal problem that you and I deal with daily and, as yet, no one has come up with a solution. To be honest, neither have I, but I am constantly experimenting with methods to manage this problem with the resident Canada goose.

Following are all the methods I know of that have been used to chase, scare or eliminate geese from our properties. The list reads in order of least effective to most effective. These are my opinions and I am sure it may cause a stir among us. But here goes:

1. Yelling, waving and flailing arms, throwing rocks.

Tony Rzadzki, CGCS, is the superintendent at Cantigny Golf Club in Wheaton, Ill.

Result: You look like a maniac.

2. Swinging golf clubs or chasing geese with your golf cart and swinging a club at them.

Result: A nesting goose might bite you. Once again, you're perceived as a maniac, and the geese get used to your behavior and crap even harder before they honk (laugh) and scoot 5 feet out of the way, only to dump again on another spot.

3. Installing plastic alligators or swans.

Result: The perception is lost — you are a maniac who definitely needs help. Plastic or foam animals placed in ponds doesn't last long. The geese quickly destroy them while playing their version of Johnnie cross-tackle with them. If you ever get on I-88 eastbound off the Route 59 ramp, you will see a deflated alligator in the corner of the pond. The geese now use him as a diving platform.

Live swans, from personal experience, do nothing to frighten or chase geese off

Continued on page 59

By WILLIAM YANAKAKIS

Canadian geese are back! These words may produce cold chills down the spines of most golf course superintendents in the Northeast. The once temporary visitors and constant nuisances are becoming permanent residents on our ponds and fairways. They fatten up on our lush turf and leave in their wake enough excrement to increase your height by two full inches.

Over the past six years I have tried just about everything to alleviate this problem, from dogs chasing them, pyrotechnics hurled at them, to yet another futile attempt using artificial swans (a natural predator).

A new technique occurred to me while Christmas shopping in early October. I was walking through Toys R Us and passed by some remote control vehicles. A 2-foot boat was on display. After getting some information on price, range and operation I decided to give it a try.

Back at the course I was greeted once again by about 60 geese just sitting down to dinner. My dog, happily in pursuit, chased them into the pond. I started charging the nickel cadmium battery of my new toy.

Four hours later I hesitantly placed the boat into the pond. As it moved toward the flock, 60 long black necks turned as if in disbelief. I split the flock with my toy boat, then circled the pond. The geese couldn't leave the little pond fast enough. Amidst much honking and flapping of wings they took flight. My flock was gone.

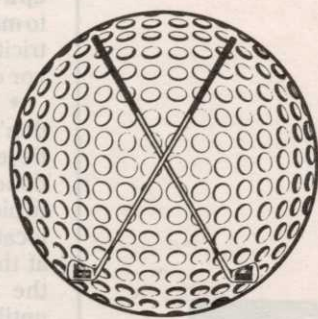
Since then, smaller flocks have landed, but my grounds crew keeps watch and launches our boat at the first sign of uninvited guests.

It has been music to my ears this fall when the golfers ask, "What happened to the geese?"

William Yanakakis is Superintendent at New Meadows Golf Club, Topsfield, Mass.

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Rzadzki airs opinions on Canadian goose control

Continued from page 40

of a pond. Yes, they are beautiful birds and may aesthetically enhance a lake, but they dump as much as a goose, they need extra veterinary care, and they need to be fed — which attracts other wading birds, which attracts more geese.

If I could develop a hybrid gator that could survive our winters and could be trained not to eat junior golfers or small adults, I might be on to something.

4. Flags, tape, and owl balloons.

Result: Too psychedelic.

5. Greens covers.

Results: Finally, something that is very effective in deterring geese on putting surfaces. It's too bad we can't leave them out year round.

But to those who can afford them in the winter time, they work great.

6. Pond aerator (a reminder — shut them off in the winter).

Result: If you have bubble aerators on your course, it's great to keep your stagnant areas moving even in the winter time. But our feathered friends love open water and they will add their own fertilizer down that open hole in the ice.

7. Irrigation control.

Result: Quite effective at scaring geese off of a particular area of your course.

I have yet to be lucky enough to have a sprinkler head pointing directly at a goose when I turn my heads on. I would really like to get lucky and have one sitting on a head when I detonate. Maybe I would literally scare the life out of him and he would die on the spot.

My usual result with irrigation control is that geese take off, circle around and land on the next green just as a player is trying to can a 60-footer.

8. Shellcrackers and rockets.

Result: I personally have not used this tactic, but I have talked to others who have. Once you gain permission from your neighbors to use these devices (if you can), I have heard they can be very effective — if you are persistent and use them before play begins.

9. Goose grid.

Result: They work. I have personally seen them used to protect various wetland management crops until they are large enough to withstand a feeding frenzy from the honkers. I understand the goose grid is a temporary guard installed for the protection of wetland crops until they mature. But during that time they look quite unpleasant, especially when the water level goes down and the algae hangs off the strings. It takes a silver-tongued superintendent to explain the benefits of this ugly situation to his committee — and that it will remain that way for a few years.

10. Vegetative buffer zones around lakes.

Result: According to many wildlife biologists, including those at The Audubon Cooperative Sanctuary System, this is one of the best ways to keep geese on the water and prevent them from walking onto the turf. I have yet to hear of anyone having any positive results from this management practice. If any of you have, please call me.

I believe the theory is great, but to put it into practice is rather

difficult on a golf course. Most of our club's committees demand that "clean-cut look" on lake banks. Once again, to convince them this method will work is very difficult, especially when they pose this question, "Can't the geese just fly onto our turf?" Duhhh!

I was able to persuade upper management here not to mow our lake banks this past season. One positive point: It reduces labor costs and time. Next season I hope to extend the buffer

zone further up the bank. Then I will be able to see for myself if this management practice really reduces goose fertilization on my fairways, greens and tees.

11. Grape juice/Reject it.

Result: In my opinion, the jury is still out and the scientists, I am sure, are feverishly working to discover if this will work. Millions of dollars are at stake. If it fails I'll just add some ice cubes and have a cold drink.

12. Eggs — removal/spraying/shaking.

Result: Removal and/or spraying with some sort of oil-based

product is very effective, but very illegal! \$500 per egg if you're caught molesting a federally protected bird. Egg-shaking is legal but difficult.

13. Remington's cure.

Result: Very effective. A 12-gauge shotgun can solve many problems and create many as well. I don't believe the "nuisance season" for removing geese is available in Illinois at this time. I didn't give it much regard since we did not want to start any problems with our neighbors. I am sure that many of you would share this same concern.

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