How Beaver Isla

By Erin McDonough and Evan Peterson
Photos by Jeff Cashman

On an island 30 miles off the coast of Charlevoix, Michigan a community has come together to prevent their Great Lakes shoreline and coastal wetlands from being overrun by an invasive plant called Phragmites.

Phragmites is a type of reed plant native to North America, Europe and Asia. While one species of Phragmites is historically native to the Great Lakes region, its hardier European cousin has quickly become a significant invasive nuisance. Individual stands of this European variety can easily grow to heights of 8-10 feet, creating dense, single-species stands of vegetation. The Phragmites stalks are topped by large plume like seed heads that are a distinctive brownish-purple in color.

While the description might not seem so bad, Phragmites can be a huge problem because it has the ability to spread at an astonishing rate. The seeds only cause a small amount of spread. Most reproduction is done through the rhizomes or runners that grow along the ground. Along the length of these runners, new Phragmites stalks can spring up. A single stand of Phragmites can spread 30-50 feet per year through these runners.

These dense stands effortlessly block views and make beaches inaccessible, which can lead to declines in tourism and property values. The combination of rapid reproduction and dense vegetation quickly drives out native plant species, destroying all beneficial wildlife habitat. In areas like Saginaw Bay where Phragmites have been allowed to run rampant, valuable waterfowl habitat has been reduced to such an extent that herbicide applications have to be done by helicopter and prescribed burns are necessary. Saginaw Bay has spent significant amounts of money just trying to control the problem, including $75,000 for a demonstration project that treated just 120 acres.

Three years ago when Beaver Islander Pam Grassmick, board member of the Beaver Island Property Owners Association (BIPOA), first noticed a few stalks of Phragmites blowing on one of the beaches near her home, no

one believed her that a few reeds could be a problem. Even the DNR and DEQ were skeptical that Phragmites could be found on Beaver Island's beaches because the island is so far from the mainland. However, when the Department of Natural Resource's Brian Mastenbrook, assigned to the island as the state's Wildlife Biologist, came for a visit he found that invasive Phragmites did exist on some of the beaches. The plant is thought to have established itself from the runners washing up on the beaches and reestablishing themselves.

Grassmick and Mastenbrook recognized the devastating effect this plant could have on the island's beaches and sensitive coastal wetlands if allowed to spread unchecked. Over the next three years, the BIPOA embarked upon an intensive public education campaign. Property lines do not figure in the spread of these stands, and treating one beach would be pointless, as the runners can come back from the untreated next door neighbor's within a summer.

Mastenbrook and Grassmick both underscore the importance of educating the community and doing the background work before getting state officials involved. "By the time I got there," said Mastenbrook, "the discussion was not whether there should be treatment, but how the island was going to get it done." With limited state resources available to help, it was critical that this foundation was laid in order for the project to be a success.

The only way to effectively treat phragmities on a large scale is with professional herbicide application, which requires a permit from the Department of Environmental Quality (DEQ). Beaver Islanders applied for a single DEQ permit, allowing herbicide treatment of the entire island's Great Lakes coastline at one time. At a cost of $400 per permit, this was a large savings. The Phragmites were spread over the property of approximately150 property owners including private individuals, the island's two townships, St. James and Peaine, the Little Traverse Conservancy, and state-owned beaches. If each owner applied for an

Victory over Phragmites

nd defied the odds

The invasive form of Phragmites are identified by the sheaths. Native Phragmites are smooth and lack any sheath.

Control Phragmites Now!

As demonstrated by the Beaver Island experience, control of phragmites must begin with early detection.

There are a number of materials and resources currently available to help do this.

Begin by finding out if the phragmites on your property are invasive or native. Dr. Bernard Blossey of Cornell University will take your sample and test it for free to determine if it is native or invasive. You can contact him at 607-255-5314 or at bb22@cornell.edu for more information.

Other resources:

The DEQ's Landowner's Guide to Phragmites Control is available on the web at www.michigan.gov/deqinlandlakes.

Other information on Phragmites and treatment tips can be found at:

www.agreatlakesjewel.org

individual permit, the cost could have been upwards of $60,000 just for the permits instead of just $400! In order to get the single permit to treat the island's shoreline with the proper herbicide, the DEQ required permission of each upland property owner.

In September of 2007, the island wound up treating approximately 25 acres of shoreline at a cost of $650 per acre. The majority of the money came from donations given by shoreline property owners.

That may seem like a lot of money, but according to the DNR, it's important to hire knowledgeable, professional applicators to handle the herbicide application. The correct chemical must be used to treat the problem during the correct time of year. Otherwise much time and money can be wasted with ineffectual approaches and, in some cases, the problem can be made worse or native plants and wildlife can be damaged. Some communities have concerns about the impact herbicide application in general might have on the native plants, amphibians and mammals located in Phragmites stands. However, due to the dense, single-species manner in which Phragmites grows, most native species have already been completely killed off by the invasive.

One application of herbicide is definitely not the end of the Phragmites battle though. Kill rates for phragmities are predicted at 85 percent or better on plants that have been treated with herbicide. Because the process is not 100-percent effective, a follow-up plan is critical.

Beaver Island's follow-up plan includes checking with property owners next spring to make sure that no stands of Phragmites were missed and an aerial fly-over is also being proposed. Reapplication of the herbicides is planned if any new stalks and runners are found. Thanks to the foresight and hard work of the islanders, a problem that has cost other communities hundreds of thousands of dollars to control has a high potential of being eradicated for much less than if the plant was allowed to grow unchecked.

Mastenbrook said that continuing vigilance is necessary. "This will have to be a problem that we continually work at every couple of years", he said. "Everything worthwhile takes work. If we would have waited 10

years this may have been impossible, but because they acted fast on Beaver Island we were able to prevent a problem that could have been much more damaging to the ecology and economy of the island."

Grassmick said that one of the unexpected results of this project was that it brought the community together in order to protect the island's beaches and coastal wetlands for future generations to enjoy. The island's two townships, the community school, the fire department, Central Michigan University's biological station, Little Traverse Land Conservancy, along with year-round and seasonal residents stood up to fight this dangerous plant which threatened their community's natural areas. Mastenbrook echoes that this was another key element to success. "It worked because we had a lot of strong, interested parties. Everyone pitched in. No one could have pulled this off alone," he said.

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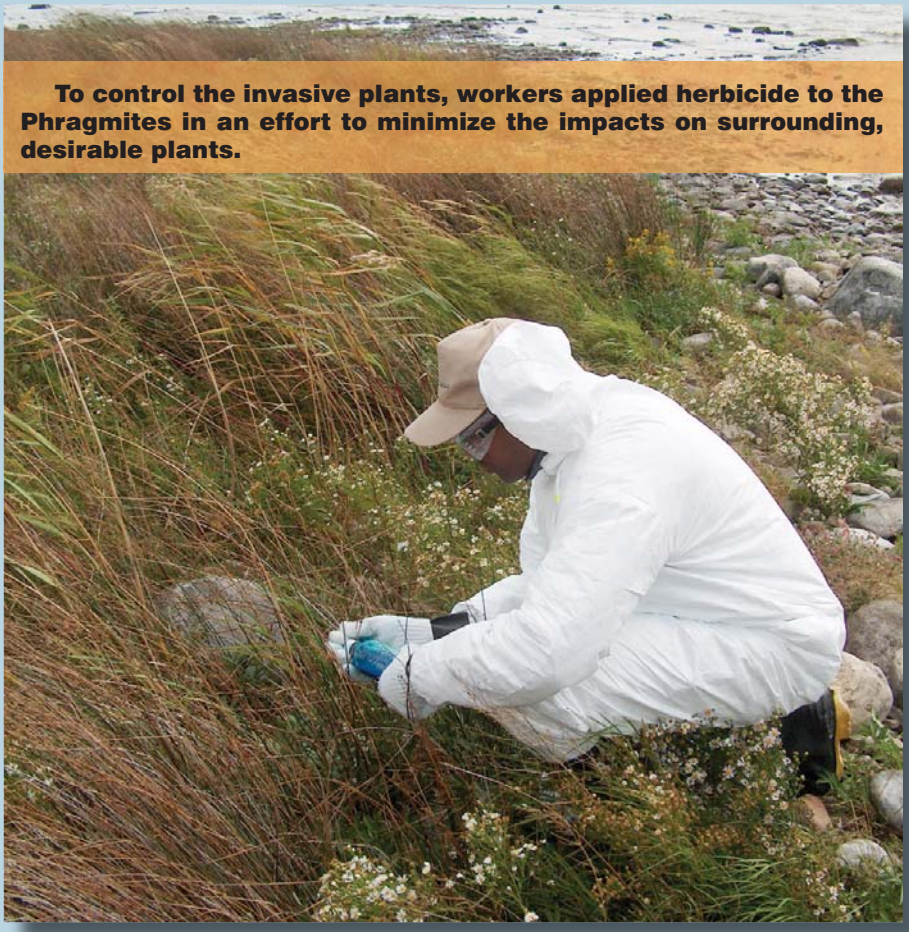

To control the invasive plants, workers applied herbicide to the Phragmites in an effort to minimize the impacts on surrounding, desirable plants.

An invasive Phragmites stand on Beaver Island's Little Sand Bay prior to herbicide treatment.