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Invasive species: The cost is staggering

Tracking the wild mustard and other invasive plant...: Garlic mustard, phragmites and emerald ash borer are all invasive species that cause ecosystem changes and cost homeowners and taxpayers money.

PART 1: Invasive species cost money.

Lots of money.

Money that could be spent on something else, or not spent at all.

For example, it costs the St. Clair County Road Commission about $80,000 a year — $40,000 on primary roads and $40,000 on local roads — to control the giant reed and invasive species phragmites with an herbicide. “We have a spray program that we put together three years ago that’s targeted just for phragmites,” said Kirk Weston, road commission managing director.

That’s $80,000 the the road commission isn’t spending on potholes, or grading, or dust control.

Laurel Malvitz-Draper with the Michigan Department of Natural Resources State Parks Stewardship Unit holds a sprig of invasive garlic mustard. / BOB GROSS/TIMES HERALD

That's $80,000 being spent to control — not eradicate — a species more at home as the thatching on roofs of storybook cottages in Europe than clogging ditches, marshes and wetlands in St. Clair County.

And that $80,000 is a drop in the bucket compared to what invasive species cost governments and businesses and, ultimately, consumers and taxpayers every day in the United States.

A fact sheet from the U.S. Fish and Wildlife Service notes the "negative consequences of invasive species are far-reaching, costing the United States billions of dollars every year."

It quotes a 2005 study reporting invasive species cost the U.S. more than $120 billion annually. In 2011, according to the fact sheet, Fish and Wildlife spent $100 million dealing with invasive species.

In 2012, a team of researchers from the University of Notre Dame, the University of Wyoming and the Technical University of Delft in the Netherlands published a study assigning a median estimate of $138 million annually in the Great Lakes from invasive species that originate in the ballast water of ocean-going vessels. Damages could be as much as $800 million annually.

Hugh McDiarmid, of the Michigan Environmental Council in Lansing, said invasive species are "not only a threat to the native species but in terms of the economy, we spend tons of money treating intake valves to clear zebra and quagga mussels from them."

Invasive species such as quagga and zebra mussels — and the threat of Asian carp — affect the $7 billion Great Lakes fishery as well as tourism, he said.

"It's an economic issue, a quality of life issue and it's a natural resource issue," he said.

Phragmites

The county road commission spends $80,000 a year on phragmites control for the most basic reason.

“It became a safety issue for us on our intersections,” Weston said.

On June 23, 2009, Todd Frantz, of St. Cair, was turning onto Wadhams Road from Tripp Road in China Township. He had been to his grandmother’s house to borrow fishing poles.

Frantz was driving a 1981 Plymouth Horizon. A southbound pickup struck the compact car, killing Frantz.

Another teen in the car, 15-year-old Trevor Jones, died about a month later from injuries sustained in the crash.

Phragmites growing in the ditches at the intersection might have screened Frantz from seeing the pickup.

“The phragmites, those things are just horrible,” said Bill Atkinson, of Clyde Township, a steward with the Michigan Nature Society. “They’re so big at intersections they’re causing accidents. People can’t see around the darn things.”

Weston said phragmites in some spots can grow as tall as 12 to 16 feet.

“It’s been around for a few years,” he said. “It’s really become a problem just recently, I would say within the past 10 years or so.

“Downriver, we’ve got a ton of it,” he said. “In our rural areas, as we go out to Yale and Capac, we’re seeing it as well.”

He said the road commission wanted to get a handle on the smaller colonies of phragmites in the western and northern parts of the county.

“We feel that we got that somewhat under control on our road right of way and will be concentrating more this year Downriver,” he said.

Crews spray an herbicide called Rodeo in the fall.

“It grows so fast that, we’re out there in June, early July, and we’ll mow an area and two weeks later it’ll be up again where you can’t see around it,” Weston said.

Bob Williams lives on Harsens Island, which is ground zero for the phragmites infestation in St. Clair County. He’s also chairman of the Clay Township Phragmites Management Advisory Board.

He said he came to the island in 1999, and phragmites was out of control.

The township and landowners have been whittling away at the problem.

“To the average person, they probably wouldn’t notice the difference,” Williams said. “People on the island who are there regularly, they are noticing the changes that are taking place.

“With 8,600 acres of phragmites, when you get rid of a few hundred acres it’s not a big impact to the visitor, but people who live there will notice certain spots,” he said.

“It’s a matter of people’s perception about when it’s bad and what’s not.”

He said phragmites also is a fire hazard.

“The phragmite grows to 15 feet, and when it catches on fire the flames can be 35 to 40 feet high,” Williams said.

And it does change native ecosystems, he said.

“It crowds out all the native plants,” Williams said. “In areas where we used to have 100 different species of plants and hundreds of insects and birds, now we have the single plant and a couple of species that use that plant.”

There is concern that with falling water levels, phragmites will colonize new areas of lakeshore.

“The phragmites sucks up the water and turns it into the plant biomass and ends up filling in the area.” Williams said. “Even if the water level comes up, you still don’t have as much water there as you used to.”

Emerald ash borer

It’s not impossible to find a live ash tree in St. Clair County. Williams, for example, has several on his property at Stewart Farm he saved by treating with chemicals.

But it’s hard to find one in the woods.

A fact sheet compiled by Deborah McCullough and Robin Usborne, of Michigan State University, calls the emerald ash borer “the most destructive forest pest ever seen in North America.

“The scope of this problem will reach the billions of dollars nationwide if not dealt with.”

The adult emerald ash borer is a lovely dark metallic green beetle about a half-inch long. The larvae feed under the bark of ash trees. Their tunnels, or galleries, prevent nutrients from reaching the crown of the tree, killing it.

Communities throughout Michigan have spent millions of dollars removing dead ash trees that could fall on cars, homes or people. Utilities also have to remove dead ash trees from power line corridors.

Researchers first noticed the adult beetles in 2002 in southeast Michigan. It's believed they arrived in the area in wood packing materials from Asia.

The ash borers were in the area as many as 10 years before the adults were noticed.

The adult beetles have been reported in Connecticut, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Massachusetts, Minnesota, Missouri, New York, Pennsylvania, Tennessee, Virginia, West Virginia, Wisconsin, Ontario and Quebec.

"Every day that goes by, it gets worse," said Rob Gorden, director of urban forestry for Arborjet, a tree injection company based in Woburn, Mass. "They stopped counting how many trees have died. There are 8 billion at risk, and at last count I heard around 60 million had been killed.

"What makes it most severe is it remains quiet and hidden for several years — not very obvious, and then suddenly it expands its reach suddenly," he said. "At that point it's a race against time to see if the trees can be protected."

Arborjet has had success treating street and yard ash trees, Gorden said.

Andrew Storer, professor and associate dean of forest resources and environmental science at Michigan Technological University in Houghton, wrote in an email the best way to deal with exotic pests is to keep them out of the country, "as managing them once they are here can be very problematic.

"The movement of nursery stock (in the early days of the emerald ash borer infestation) and the continued movement of infested firewood has undoubtedly hastened the spread of emerald ash borer and has the potential to move other damaging wood and bark-infesting bugs and fungi," he wrote.

Gorden said people were the prime vectors for the spread of emerald ash borer.

"The gypsy moth, it took about 100 years to get from Massachussetts to Minnesota," he said. "Emerald ash borer, it took about 20 years to encompass the whole middle of the country. It's not that it moved faster — we moved it faster."

Storer in his email wrote that more emphasis has to be on prevention.

“Regulations exist to treat imported materials such as wood packing materials,” he said. “Inspections at ports are carried out, but only occur for a small proportion of the material that enters.”

Both he and Gorden are concerned about the possibility of the Asian longhorn beetle, another wood-boring insect native to China, becoming established. Unlike the emerald ash borer, which feeds only on ash trees, the longhorn beetle infests a number of species including maple trees.

Garlic mustard and other invaders

Laurel Malvitz-Draper is with the Michigan Department of Natural Resources’ State Park Stewardship Unit. She organizes work days at Algonac State Park and other state parks in southeast Michigan where volunteers remove invasive plants, gather seeds from native plants and replant the natives.

It’s a battle. According to information from the University of Georgia’s Center for Invasive Species and Ecosystem Health, 192 exotic plants — not all of them are invasive — have been reported in St. Clair County.

Malvitz-Draper struggles with:

• Autumn olive, a shrub the old Soil Conservation Service encouraged farmers to plant to combat soil erosion and provide food for wildlife.

• Glossy buckthorn, another invasive shrub from Eurasia;

• Honeysuckle, introduced as an ornamental shrub.

• Purple loosestrife, a showy flower with purple spires.

• Garlic mustard, a culinary herb brought to North America by European settlers and a plant called “one of Michigan’s worst woodland weeds” in a March 2011 article by Rebecca Finneran, of Michigan State University.

“In the springtime, we go after garlic mustard,” said Malvitz-Draper.

She said each of the invaders has characteristics that allow it to be successful.

“They’re not from this area, so whatever in their native land would keep them in check isn’t necessarily here with them,” she said.

Garlic mustard is a biennial plant — it takes two years to complete its life cycle. It spreads rapidly and crowds out native wildflowers such as trillium.

“They not only invade and take up space, they also disrupt a balance in the ecosystem,” Malvitz-Draper said.

Garlic mustard, like spotted knapweed, another invader of concern to farmers, is allelopathic, she said. “It puts a chemical into the soil that inhibits competing plants from growing,” she said. “It also kills beneficial fungus.

“Wildflowers, native trees and shrubs — they need that interaction with the fungus to get those nutrients out of the soil.”

Threats to agriculture

Ken Nye, a horticulturist with the Michigan Farm Bureau, said it’s hard to pick just one invasive pest to worry about.

Spotted wing drosophila, however, might fit the bill.

“It’s a little fruit fly that just appeared in the past two or three years, and it’s different from most fruit flies you think of,” he said.

“The exception is this fruit fly lays its egg inside the fruit. That’s a bad thing because it cannot be visibly seen, and if you have worms in the fruit, that’s probably not going to be sold.”

Drosophila is a pest on most berry crops, cherries, grapes and other tree fruit. It’s a concern for blueberry growers.

“Michigan is the largest producer of blueberries in the country, so our industry is pretty darn important,” he said.

“It adds a cost obviously to the grower to try to control this critter,” Nye said. “It adds an unknown factor in terms of, I can get my product all ready to go to market and suddenly you find worms in the fruit and nobody is going to buy that.

“They get to the time when they’re going to put the product in the box and somebody says, ‘Wait a minute, there’s worms in this fruit. You’re going to have to take it back home and dump it.

“That’s the worst possible scenario for the grower.”

Not only does the grower feel the pinch, consumers also pay higher prices for fruit because of supply and demand, Nye said.

“As individual consumers, it has an impact on us, also,” he said.

Farmers also are keeping watch for the brown marmorated stink bug, an invasive pest reported in Berrien, Eaton, Genesee, Ingham, Lenawee, Monroe, Allegan, Clinton, Kent, Oakland, Oceana and Wayne counties in the Lower Peninsula.

“This is a new one that has been in the eastern U.S. for several years and has now migrated its way to Michigan,” Nye said. “It can feed on a number of food groups and we don’t have very good controls for this particular insect.”

The stinkbug feeds on “apples, peaches ... there’s going to be some other vegetable crops, tomatoes, peppers ... it might be a little bit more of a broad-term pest where it’s attacking a number of different commercial crops,” Nye said.

Bob Boehm, a row crop specialist with Michigan Farm Bureau, said soybean and sugar beet growers are concerned about Palmer amaranth, which is native to the southern states but is spreading north.

“Palmer amaranth is a giant pigweed, basically,” he said. “There’s a particular species that appears to be resistant to Roundup (an herbicide). Virtually all the sugar beets and soybeans and most of the corn planted in the state are Roundup ready.”

He said one Palmer amaranth plant can generate 400,000 seeds.

“The best thing we can do is get out and knock them out with a hoe.”