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Tracking the zigzags: Sawfly spreading in north country could pose threat to elm trees

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Melissa K. Fierke, a forest entomology professor at SUNY College of Environmental Science and Forestry, looks for signs of the invasive elm zigzag sawfly in the Perch River Wildlife Management Area last Thursday. Fierke is conducting research for the state Department of Environmental Conservation to determine the threat level of the species. Zachary Canaperi/Watertown Daily Times

A small, winged insect with a shiny black body and appetite for elm is now making its way across New York, after being detected in St. Lawrence County last year.

The invasive species, called the elm zigzag sawfly (*Aproceros leucopoda*), was found in southern Quebec in 2020, in Virginia in 2021, and then in North Carolina, Maryland, Pennsylvania and New York last year.

The state Department of Environmental Conservation confirmed last September that the elm zigzag sawfly was found for the first time in New York at three locations in St. Lawrence County — Wilson Hill Wildlife Management Area in the town of Louisville, Brasher State Forest and Lost Nation State Forest near Stockholm.

The insect poses a serious threat to already diminishing populations of elm trees in the United States.

When young elm zigzag sawflies feed on elm leaves, they cut out a distinguishable snake-like pattern, hence the zigzag in their name. After they go through their larval and pupal stages, they reach their adult form, which is when they can do the most damage — sometimes completely defoliating trees.

Elm zigzag sawflies are not actually flies, even though their common name might suggest they are. They are wasps, belonging to the order Hymenoptera, and family Argidae.

Melissa K. Fierke, a forest entomology professor at SUNY College of Environmental Science and Forestry in Syracuse, is working with the DEC to conduct research on the species.

Fierke frequently makes a six-hour round trip from Syracuse to check her insect traps at several observation sites in St. Lawrence County. Last Thursday was her most recent trip, which included stops at Brasher State Forest and Wilson Hill Wildlife Management Area. As usual, many of the traps — sticky yellow pads twist-tied to elm trees — were speckled black with sawflies.



An elm zigzag sawfly in St. Lawrence County. Courtesy of M. Fierke

The goal of Fierke’s research is to determine how many generations the elm zigzag sawflies are producing per year.

“With insects, you can have multiple generations per year, and we don’t know how many they have. So that’s kind of the larger overarching goal of the folks from different states that are studying it – to try to see how many different generations it has in the different states,” Fierke said.

Knowing the number of generations will determine how rapidly the species can multiply, which will help to determine the amount of long-term harm it is capable of.



Upper right, the distinct snake-like feeding pattern created by elm zigzag sawfly larvae on elm leaves. Courtesy of M. Fierke

“What we are seeing now is that there are some places with pretty heavy defoliation, and there’s other places where there’s just a little bit, and we don’t know how long the insect has been there, and if the populations are going to build,” Fierke said.

If populations build, elm trees will suffer, because they have already been made vulnerable by disease.

“This is in conjunction with Dutch elm disease, that has pretty much decimated elms across North America. To have one more thing that’s introduced and is going to give them problems, is what we are worried about,” Fierke said.



Yellow sticky traps with elm zigzag sawflies on them, placed by Melissa K. Fierke as part of the research she is conducting in St. Lawrence County for the state Department of Environmental Conservation. Courtesy of M. Fierke

Dutch elm disease is caused by invasive fungal pathogens — most commonly by the species *Ophiostoma novo-ulmi* — and is spread by native elm bark beetles when they feed, or through the root systems of adjacent trees.

When populations of a tree species suffer, a larger group of organisms that rely on that tree, also suffer.

“They (elm trees) do add to the overall diversity,” Fierke said. “There are definitely other elm specialist insects out there, that if you lose elm, you lose insects, and those insects could be important to, say, birds. There’s this kind of trickle-down effect of when you lose one thing, you lose other things as well. A tree species is a pretty big thing to keep getting hammered on.”

There are no confirmed reports of the insect in Jefferson County, but it has been popping up around the state. According to Fierke, it has recently been found near Rome, Cooperstown, Cazenovia Lake and Manlius.

Sue Gwise, consumer horticulture educator at Cornell Cooperative Extension of Jefferson County, said that New York is monitoring for elm zigzag sawfly in Jefferson County.

The elm zigzag sawfly would be “just another punch” to the elm tree, if it were to spread to the county, Gwise said. Elms have been hanging on to survival by sending out “suckers” or shoots. This causes a lack of healthy mature trees — but it is better than the alternative of having no trees at all.



Melissa K. Fierke, a forest entomology professor at SUNY College of Environmental Science and Forestry, places a yellow sticky trap on an elm tree in the Perch River Wildlife Management Area. She is working with the state Department of Environmental Conservation to research the elm zigzag sawfly, an invasive species first found in the state last year in St. Lawrence County. Zachary Canaperi/Watertown Daily Times



A yellow sticky trap placed by Melissa K. Fierke as part of the research she is conducting in St. Lawrence County for the state Department of Environmental Conservation. Courtesy of M. Fierke

“You’ve got a bunch of small elms that never really mature, and now you’ve got the zigzag sawfly, which is just another issue hitting the American elm,” Gwise said.

On her way back from Wilson Hill Wildlife Management Area in the town of Louisville on Thursday, Fierke stopped by at Perch River Wildlife Management area in Watertown. She strolled along the sparsely treed area on Vaadi Road, searching for elms. She pointed out several tree and plant species, rattling off their scientific names. She smiled when a fuzzy, white caterpillar got caught on her shirt. Not knowing the exact species, her curiosity got the best of her, and she took a picture so she could look it up back at her lab. She also saw buckthorn growing by the edges of a gravel parking area — noting the invasive species with concern.

After searching for an elm for several minutes, Fierke glanced to her left where a dense green wall of vegetation was growing, and immediately picked out a single elm tree, nestled in the tangle of plants.

“I’m glad I checked over here,” she said, wading through the roadside plants to get to the tree. She examined it for several minutes, looking for any signs of the tell-tale zigzag shape in the leaves. The tree was riddled with holes, which Fierke attributed to Japanese beetle feeding, but there was no sign of the elm zigzag sawfly. She left a trap on the tree so that the area could be further monitored.

Fierke suggests that people use an app called Seek by iNaturalist to identify and report any unknown insects or insect signs on elm trees. In a press release, the DEC also asked that people report sightings through the iMapInvasives Network at [imapinvasives.org](https://www.imapinvasives.org).