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State releases parasitic flies to battle winter moths

By Patricia McCarthy

It'll be a bug-eat-bug world this spring in Cape Elizabeth, and the hardwood trees in town will be better off for it.

The state released 800 parasitic flies at Two Lights State Park on May 7 and 9 to try to combat winter moths that threaten trees in town. The moth's caterpillars feed on hardwood trees and shrubs, like oak, apple, birch and maple, and Cape Elizabeth has an abundance of oak trees.

The moths – *Operophtera brumata* – became noticeably bothersome in Cape late

last fall, and the state reported the highest populations of winter moths in Harpswell, Vinalhaven and Cape Elizabeth this winter.

So the state decided to release the parasitic flies – the winter moth's natural enemy – in those three towns this May, explains Charlene Donahue, a forest entomologist for Maine.

With a limited supply of the flies available, Donahue wanted to be sure they were released in Cape where they could do the

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Photo courtesy of Maine Forest Service
A very young winter moth (*Operophtera brumata*) caterpillar on a maple bud in Cape.

Flies

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most good. Earlier this spring, she conducted surveys around town to see where winter moths could be found in larger populations.

Two Lights State Park was a location where many were spotted, and she determined it would be a great place to release the flies.

"We put them in a place where there is a high population of the moths and where we don't want to kill the caterpillars. In a state park, we know that no pesticides are being used on trees," she said.

Donahue and town officials are hoping that the release of the flies in Cape will start a cycle that produces more flies each year and thus reduce the damaging impact of the moths.

She explained how this process should work:

The flies - *Cyzenis albicans* - are released, and they gravitate toward leaves that are already damaged (by winter moth caterpillars feeding on them) because they give off an odor that flies are attracted to. A fly lays eggs on these leaves, and the winter moth larvae eat these eggs. The fly eggs hatch and live and develop inside the caterpillar while it spins a cocoon and pupates.

The fly larvae eat the pupa from the inside out and stay in the cocoon over the winter.

They emerge as adults in the spring and restart the cycle. The flies mate, lay their eggs on the leaves that winter moth caterpillars are eating, and so on.

"Flies lay about 1,000 eggs apiece, and we released

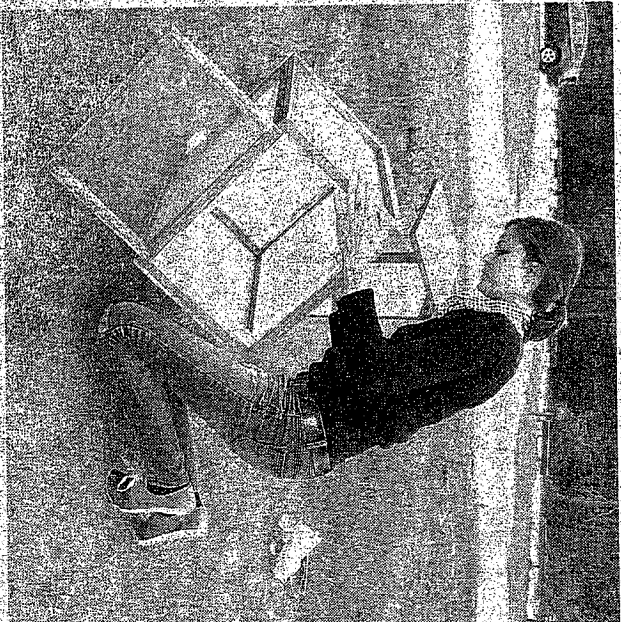


Photo courtesy of Maine Forest Service

*Natasha Manyak, a University of Massachusetts technician, releases *Cyzenis albicans* parasitic flies at Two Lights State Park on May 9. The flies are being used to combat winter moths that are damaging trees in Cape Elizabeth.*

800 flies in Cape this year. In a perfect world, they'd lay 800,000 eggs, and they'd be in the ground, then that many flies would come out next year," Donahue said.

The problem is that these parasitic flies do not live in Maine. Maine gets them from a lab at the University of

Massachusetts, which got them from British Columbia. The Canadian province had a huge problem with winter moths defoliating trees and used the flies to combat the moths. The flies continue to keep the moths "at a level that they can live with," Donahue explains.

"It takes a lot to get these flies," she said. "You have to hire people to go out and find the cocoons and beat them down, and it's a labor-intensive endeavor. So there are limited quantities and you basically have a small window - when the caterpillars are eating leaves - for the flies to be released."

Donahue explained that Cape Elizabeth residents can help prevent further expansion of the moths by not moving plantings from their gardens, where winter moths might be living in the soils - to other towns, or even to other parts of town. For example, moving an apple seedling is risky, she said, because it's likely that cocoons full of moths are in the soil around the trees, and it's hard to differentiate them from dirt.

"It's scary that we could lose a lot of foliage in Cape Elizabeth," said Town Manager Michael McGovern, adding that this fly-release program offers hope, but significant improvement is years away.

"The hope is that we would be able to continue releasing the flies to get the situation under control before it becomes out of control. But yes, that will take years," Donahue said.

She noted that the flies released in Cape are not dangerous to other insects or people. "Their mission in life is just to eat winter moths. That's it," she said.

Funding for the flies and their release in Cape is through the U.S. Department of Agriculture and U.S. Forest Service.