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HOT

Butterfly guy: Frederick County man aims to boost monarch populations

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Frederick County resident Philip Haines has raised and released 120 monarch butterflies on his farm this year. He finds the caterpillars he finds dining on milkweed and transfers them to a breathable mesh cage where the caterpillar forms a chrysalis and undergoes complete metamorphosis and then emerges as a butterfly.

Jeff Taylor/The Winchester Star

WINCHESTER — It was the first rain that the Winchester area had seen in 23 days.

But last Wednesday, Philip Haines was hoping that the sky would clear.

Inside a storage shed on his Frederick County farm, Haines had 13 monarch butterflies that were ready to be released.

They had emerged from their chrysalis forms 24 hours earlier, and if he waited too much longer, he worried they might not make it.

"They can't stay in here forever," he said. "And I'm not really sure how long they can go without having a little bit of outdoor moisture and nutrients and stuff."

"[I]t gives humans a peaceful, wonderful feeling. And I think that's the best part they could play."

— Frederick County resident Philip Haines about monarch butterflies, whose population he's trying to help restore

Haines would set eight butterflies free that day, bringing the total number of monarchs he's raised and released so far this year into the 80s.

Two days later, he'd break 100. Today, the count stands at 120.

Monarch populations have been declining for decades. But Haines believes his efforts can make a difference.

"The monarchs are getting less and less, but there's just as many predators, so their success rate is going way down," he said. "And that is a spiral that we don't want. So I'm trying to interfere with that spiral."

A learning process

Haines, 78, is a Frederick County native. He recalls a childhood spent on a farm, surrounded by animals and nature.

As it happens, he's always loved monarch butterflies.

He can remember a time when he could look out at his property, Grace Hollow Farm, and see a hundred monarchs fluttering about.

But in recent years, he says, such hasn't been the case.

"Last year was horrible," Haines said. "And this year, it's not really that good. So I thought, 'I've gotta do something.'"

The effort is something of a family affair, starting off a couple of years back when Haines's daughter, Annaliese McKenna, ordered some monarch caterpillars from an organization in Kansas.

The pair placed the caterpillars in a milkweed patch on Haines's farm and laid a butterfly net over them.

"I think I lost every single one of them to predators," Haines said, "which I didn't know were predators."

It was disheartening, he said, but the father and daughter pushed on. Rather than ordering caterpillars, they began searching for them in the milkweed on their respective properties, Haines's in Frederick County, McKenna's in Berryville.

Once found, they take the caterpillars and give them a safe place to go through metamorphosis.

"You gotta find them," Haines said, "before predators do."

Monarchs lay their eggs on a certain species of milkweed's leaves, Haines said. He and McKenna discovered that taking the eggs isn't a good strategy, that it's better to find the caterpillars as soon as they hatch, when they're almost impossible to see with your naked eye.

Once found, the caterpillars are placed on milkweed leaves sitting in water at the bottom of butterfly nets in Haines's shed, which resemble mesh laundry hampers with a zipper door on the side.

"And then those little babies will crawl off and start eating all the good stuff," Haines said.

The caterpillars grow to their full sizes within a couple of weeks, eventually going into their chrysalis forms, hanging from the top of the netting in striking jade green pods.

When the chrysalis turns dark, with the monarch's signature orange and black colors peeking through the membrane, that means a butterfly is close to emerging.

Monarch butterflies take about 24 hours to gain their strength once they emerge. Then when the time is right, Haines opens his shed door, and the insects fly outside together.

Monarchs can't survive cold winters, so in the fall, they begin their migration to warmer climates. According to the U.S. Forest Service, monarchs from eastern North America overwinter in Mexico, while western populations head to California.

"It's pretty cool," Haines said. "When the migrations happen, they see millions of them."

Monarchs by the numbers

Decades ago, a driver might arrive home from a trip with a smattering of insects splattered across their windshield.

Today, however, that phenomenon is much less common.

"Now initially, some people had suggested the aerodynamics of our cars have changed," said Kevin Rice, director and entomologist for Virginia Tech's Alston H Smith Jr. Agricultural Research and Extension Center in Frederick County. "But they've shown that's really not the case, that there's less insects."

For a couple of reasons, there's a solid record regarding monarch populations that scientists don't always have for other insects. First, Rice said, they're iconic, identifiable, beloved. Second, they migrate in huge numbers and settle in "massive overwintering sites."

"We have population data for this insect a whole lot better than we do for, like, a random grasshopper," he said. "... And for monarchs, they noticed in the [19]90s these massive, sharp declines in the overwintering population."

Rice noted a citizen group that does a Thanksgiving Day monarch count at overwintering sites in California.

In the 1980s, the sites had an estimated 3 million to 10 million monarchs. In 2018, the estimate was 30,000.

Rice says there are three main hypotheses that scientists have looked at regarding why populations have dropped so starkly.

One is a decrease in available milkweed, which is a monarch caterpillar's only food source.

Another is climate change — more winter storms, more rainfall, later hurricanes, drought.

And deforestation might be destroying habitats at overwintering sites in Mexico and California.

"The likelihood is there's probably not one full right answer," Rice said. "... Most of the more recent studies have put more weight on the milkweed reduction, and that's what it really seems to be."

That reduction, he said, is largely a result of "human manipulation of environments," whether that be mowing, spraying herbicides or developing natural areas.

That's why there are funded programs across the country encouraging people to plant more milkweed, Rice said.

An organization in the Midwest distributes seed packets that people can plant at home. And throughout Virginia, people are being encouraged to create "monarch stations," which, according to the Master Gardeners of Northern Virginia, require at least 100 square feet to be effective, though guidelines are offered for those with limited space.

"Even one patch of these milkweeds wouldn't make a big difference," Rice said. "And that's why it's this bigger program ... to get a lot of people to do patches. ... Establishing the habitat ... there's empirical evidence, and we know that does help population numbers."

'Citizen science'

Haines hopes that learning about his family's efforts, which extend to the Midwest, where his daughter-in-law, Jennifer, is on track to release 15 monarchs this year, will encourage other people to get involved.

In fact, he and McKenna have already begun expanding their initiative.

McKenna, who works as a teacher at Powhatan School in Clarke County, has given 14 chrysalises to two of her fellow teachers so that their students can watch the process.

She's also brought chrysalises into her own classroom. When a butterfly emerged, she said, her students were excited.

"I think Dad just wants people to realize that it's not that hard," McKenna said.

The pair is also willing to help anyone who wants to get on board with the effort. Haines mentioned a former teacher, who is married to his "bee mentor," saying, "I've got her excited about it."

"I said you get the caterpillars from raising your milkweed and bring them here, and we will raise them," he said. "And she likes that idea. ... If ... we can get two or three or four people interested ... it can be handed down, starting generation to generation, get the young kids involved."

Bringing kids into such efforts, Rice said, is one of the biggest benefits of what he calls "citizen science," especially when it comes to entomology.

"Kids are interested in insects, right?" he said. "And you can get them excited."

He added that there are instances over time of citizen science projects, including ones conducted by young students, providing scientists with valuable data.

With widespread, collective efforts in planting more milkweed patches, Rice says scientists believe there is potential for year-over-year impacts on monarch populations.

"And we'll be able to track this, right?" he said. "The good news is, we have these butterfly counts. They're counting them, and they're overwintering, so we'll be able to see if this project, overall, has any positive effect."

A successful year

The goldenrod on Haines's farm has come into full bloom over the past week.

As he looks out at his fields, he sees lots of monarchs fluttering from one bright yellow flower to another.

Monarchs are pollinators. They're not quite as important as bees, but still play their own role in the ecosystem.

To Haines, though, these butterflies serve a different purpose.

"[I]t gives humans a peaceful, wonderful feeling," he said. "And I think that's the best part they could play."

Haines has two chrysalises left, along with 25 that McKenna recently gave him to be released on his farm. His family in the Midwest has three monarchs waiting to emerge, and the 14 that McKenna gave to her fellow teachers have begun emerging.

If they all survive, that'll make 176 monarchs released among them this year.

It's "a worthy thing," Haines says, to lend these "beautiful thing[s]" a hand.

To get involved with this effort, text Haines at 540-336-6970. Reference monarchs in your message.

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