

## On the wings of a monarch

WSU scientist tags the butterflies to track their flight paths, boost their numbers



Washington state scientist David James uses tags to track monarch migration through the Pacific Northwest. It's not a radio-type tracking system; people who see a tag are urged to contact WSU. (David James)

By **Tom Vogt**, Columbian science, military & history reporter

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The muscular monarch: It's not a word we associate with a butterfly.

That characteristic, however, is helping a Washington State University scientist track the migratory paths of Pacific Northwest monarchs.

With monarch populations declining, David James wants to bring national attention to the plight of the iconic black-and-orange insect.

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The U.S. Fish and Wildlife Service recently announced it will conduct a one-year status review of the monarch to determine if it rates protective status under the "threatened" classification of the Endangered Species Act.

James was among 27 monarch experts and advocates who signed a letter to the Secretary of Interior in November supporting the review.

James is providing some of the research for developing conservation strategies along monarch butterfly migration corridors. It includes tagging monarchs so their flights can be tracked.

It's not as complicated as it sounds, James explained.

The tag is a tiny stick-on label, much like a postage stamp, with an inventory number and an email address.

"It's durable and waterproof and it will stay on for life, which can be nine months," James said.

"It doesn't affect the flight of the butterfly," James said. "A monarch butterfly is strong. It does this migration thing, and it's very muscular.

"We've even started tagging both wings. When they overwinter and are asleep, they show one wing. If you can see both wings, it increases your chances."

Applying the tag doesn't endanger the butterfly, either, he said.

About 12 hours after the butterfly emerges from its case, "the wing is pretty rigid. Then it's just holding the butterfly by the body or wing and putting the tag on.

"The hardest part is probably getting the tag off the sheet of paper. Putting it on the butterfly is the easy bit," James said. "You have to be really clumsy to hurt the butterfly. We get citizen scientists doing it, people who have never done it before."

There is another aspect to James' tagging project. He's also in the breed-your-own-butterfly business.

"That was born of necessity. If you're depending on tagging the wild population, it would take a century because there are so few," he said. "And if you tag 100 individuals, you're lucky to get one back. You need to tag a lot. We reared and released about 2,000 and got seven good recoveries in California."

That means that the program also is adding to the state's monarch population, he said.

A major factor in the decline of the Northwest monarch is the decline of the milkweed, a plant that serves as its nursery.

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The female monarch will only lay its eggs on milkweed, and "milkweed is the only host a caterpillar can feed on," he said.

James traces the loss of milkweed mostly to the use of genetically-modified crops — popularly known as "Roundup ready" — that resist popular weed-killers. Farmers can spray the entire field and kill everything but what they intend to harvest.

"There are other causes, too. California is intent on getting rid of roadside vegetation because of fire issues," he said..

Listing the monarch as threatened won't change farming practice, James stressed: "I see no great conflict between agriculture and this."

As an insect expert, "I'm working on pest management. I work with farmers all the time," he said.

There might even be financial grants for set-asides — getting paid for growing milkweed on land that can't be farmed.

He's already helping vineyard owners provide some habitat for butterflies because grape growers use so few pesticides.

Listing the monarch as threatened "would increase public awareness of the problem," he said. "Every government building has a patch of land with flowers; milkweed will grow there.

"The general public can help by growing milkweed in the back yard," he said. "Western Washington is not monarch habitat, but I get a lot of calls from Vancouver people wanting to grow milkweed, and I don't discourage them."

Conservation groups such as Monarch Watch and the Xerces Society for Invertebrate Conservation, which has a Portland chapter, are resources for back-yard nature enthusiasts.

Scott Black, executive director of The Xerces Society's Portland chapter, agreed that this area is not a hotbed of monarch activity.

"That said, any conservation effort to plant native milkweed helps," Black continued. "It's an incredible plant for birds and butterflies. Add other nectar plants, and people can have a flowing oasis. And if you're lucky, you can see a monarch."

Volunteers are crucial in this research, the WSU scientist said.

"The work we're doing is totally unfunded, which is remarkable in this day and age," said James, who is based in Prosser. "It's being done mostly by inmates at the Walla Walla penitentiary and ordinary citizens. We hope to increase the citizen-scientist component in coming years."

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