Monarch butterfly nowhere to be found in some state wildlife action plans, new research shows

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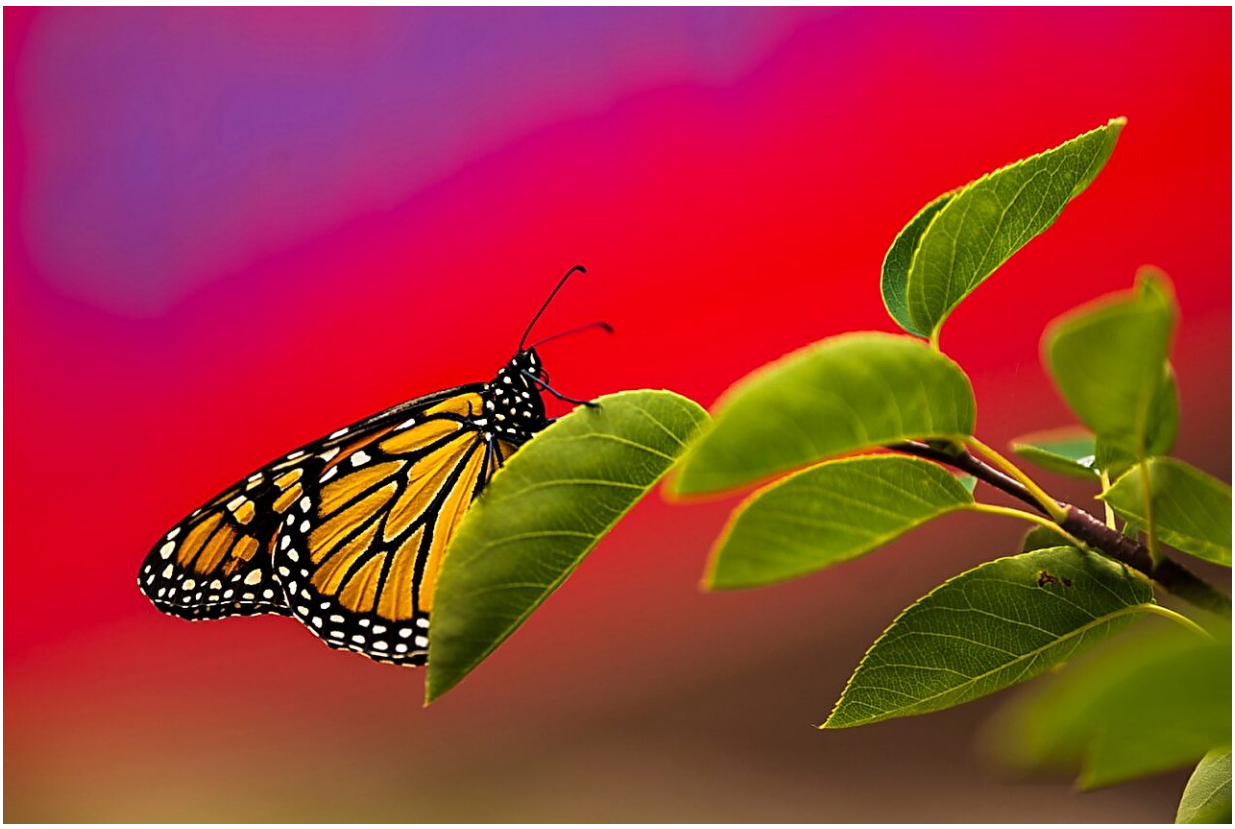

A monarch butterfly as seen on Northeastern's Boston campus. Credit: Alyssa Stone/Northeastern University

The monarch butterfly is one of the most widely recognized and admired

creatures native to North America.

The iconic critter, identified by its vibrant, sunset orange color and speckles of white dotting its black borders, has suffered significant population loss in recent decades. Last year, the International Union for Conservation of Nature listed the monarch butterfly as endangered. But the U.S. has yet to do the same, and many states that harbor the migratory insect don't list it as a species in need of conservation, according to new Northeastern research.

"What's unique about the monarchs is their conservation needs are really about their migratory behavior, and because they are susceptible to a wide range of stressors that affect populations," Damon Hall, an associate professor of marine and environmental sciences in the School of Public Policy and Urban Affairs, who co-authored the study published in the *Conservation Letters*, says.

Hall and his colleagues analyzed state wildlife agencies' efforts to conserve the monarch butterfly. In lieu of federal laws—the U.S. Fish and Wildlife Service determined that monarchs warrant an "endangered species" listing, but hasn't listed them due to "lack of agency resources," the study says—it's up to the individual states and their wildlife agencies to enshrine species protections.

As part of those protections, states are tasked with identifying "species of greatest conservation need." Based on an analysis of all available state wildlife action plans, which each state submits to the federal government as part of a broader conservation effort, the study notes that 15 states that play host to "critical monarch migration corridors" don't list the monarch butterfly as a species of conservation need. Ten of these states have critical monarch breeding habitat, the study says.

Critical to conserving the monarch butterfly is the protection of its food

source: the milkweed plant, the availability of which has been diminished as a result of urbanization and agricultural intensification, the study says. As a result, states have focused on propagating milkweed plants to sustain monarch butterfly populations.

But seven states had no references to monarch butterflies or milkweed in their action plans; five of them—Indiana, Kentucky, Montana, Nevada and New Mexico—"host the monarch butterfly as part of the eastern or western migration populations." States, on the other hand, with frequent monarch and milkweed mentions in their plans and strong conservation programs include Arkansas, Idaho, Michigan, North Dakota, South Dakota, Rhode Island and Texas.

"This limited attention in critical areas of monarch flyways is troubling," the study notes.

The monarch butterfly is known to seasonally migrate some 2,500 miles to avoid the cold climates during the winter. Using air currents and thermals, millions of the insects travel from as far north as Canada to locales in Southern California, Texas and Mexico, where they overwinter.

"They have a couple of breeding cycles they go through as they migrate throughout the continent, and the habitat that supports them throughout those stops are very important," Hall says.

Rather than point fingers at states, Hall notes that the inconsistencies in the different state approaches run counter to the broader effort—national and international—to conserve the species.

"What was telling was when there would be a state that had zero mentions of monarchs or zero mentions of milkweed—and they're located in critical breeding areas or migratory habitat," Hall says. "That's

problematic."

As part of the study, Hall and his team inquired into the federal government's decision to hold off on listing the monarch butterfly as endangered. Among the rationale, the U.S. Fish and Wildlife Service cited "higher-priority listing actions."

"What we heard from some of the folks within the U.S. Fish and Wildlife Service is that there were a number of interstate coordination activities occurring around that time, and so they wanted to see how those efforts were going to go first before throwing the full weight of their biologists and the money to begin the process of listing," he says.

A pollinator, the monarch butterfly, while not as ecologically important as the endangered bee, carries considerable "cultural" significance, Hall says. Although the western population showed some rebound last year, the monarch butterfly saw a decline of 91% since 1996.

"Also their migratory behavior is really unique, and so there is a kind of charismatic value," Hall says. "There are many ways to articulate the value of nature, and one of those is the cultural value of it."

"The iconic monarch is often the only butterfly people can identify," Hall adds.

More information: Katie M. Harris et al, Who cares about monarch butterflies? Comparing US State Wildlife Action Plans 2015–2025, *Conservation Letters* (2023). DOI: 10.1111/conl.12976

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