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Tech researchers express concern for monarch butterflies population

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While monarch butterflies are not on the endangered list for 20 years.

Threatened by various causes, the population of the monarch has declined by 90 percent.

Ron Kendall, professor of environmental toxicology, said he is concerned for the population loss but hopes to reverse the cycle through a restoration research.

“It’s a fascinating story in nature,” Kendall said, “but also it’s a signal for various species that may be impacted for how we are managing our land.”

It is a signal species, so if the monarch was ever endangered, there would be larger implications for wildlife and agriculture.

Because the monarch travels in a large migration pattern, the researchers want to create partnerships and collaborations. Texas Tech has already collaborated with the University of Arkansas and the University of Minnesota to aid in its research, he said.

“Currently, we’re looking at research strategies to enhance the spring and fall habitat for the monarch,” Kendall said. “We’re not just thinking about monarchs. We’re also thinking about grassland birds and particularly the bobwhite quail. What is good for monarchs, is good for other wildlife and birds.”

A large portion of research is concentrated on the evaluation of milkweed, Kendall said. Milkweed is critical to the monarch for its survival and reproduction process.

One of the primary issues that has resulted in monarch population loss is the elimination of milkweed because it is essential for reproduction. The researchers are looking to address the issue by introducing milkweed into idle land or properties that are not used extensively for agriculture, Kendall said.

Land use has changed, and modern agriculture could be the cause of milkweed loss, he said, because milkweed does not belong in the middle of a farm or an agricultural field.

“There are a lot of idle areas, border habitats and so on. They could be culminated with some milkweed, and that in itself would be huge because this could help them immediately by contribution to population increase,” Kendall said. “It is all about balance. Of course, we want to protect and sustain our agriculture base because we need it, but at the same time we need to figure this out.”

In addition to automobiles, pesticides and logging, deforestation of the critical zones where monarchs live during the winter is causing a reduction in their population size, he said.

“It’s not just one place,” Kendall said. “It is the whole migration corridor all the way to the Northern U.S.,

through the Midwest, Texas, and all the way back to Central Mexico.”

Texas is a vital area that will determine the rest of their year, he said. When they leave their winter habitat, Texas is the first place they travel to.

If there is not an adequate food supply or flowering plants are not available in Texas during the early spring, then the rest of the year will not be good for them, he said.

“I think we know a lot less about these organisms in Western Texas, particularly in the Rolling Plains,” Kendall said. “What we saw, even for last fall, is the Rolling Plains are an important wildlife zone in the state of Texas, but it is also important to the monarch. That will be one of our focal areas: the role of the Rolling Plains in monarch conservation.”

Matt Brym, a wildlife research scientist in the Wildlife Toxicology Laboratory, said there could be huge consequences for agriculture if monarchs are ever listed as endangered.

“They’re an iconic species that have been migrating one of nature’s great migrations,” Brym said. “Their fall and spring migrations have been a part of the U.S. for a while now. It’s just a great spectacle.”

The monarch butterfly is also a pollinator, which is essential to the ecosystem, he said, and monarchs are not the only pollinators whose population is dwindling at a quick pace.

Recently, several bee species made the list, and he said it is amazing to him what people do not know about pollinators. However, the monarch is an incredible source for pollen.

“In essence, they are the mascot for pollinators, which makes them so important,” Brym said. “Pollinators are declining at a very, very rapid rate.”

Approximately 80 percent of all flowering plant species are pollinated by animals and insects, according to the Food and Agriculture Organization of the United Nations website.

If the research can be used to gain attention toward pollinator conservation, Brym said he thinks that would be a great opportunity

“I’ve always been in love with the outdoors,” Brym said. “This is kind of the foundation for that. The importance of monarchs illustrate the decline on the foundation of what we rely on and the foundation of a lot of ecosystems and habitats.”



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