Monarch Habitat Establishment Grants

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Introduction

Pollinator populations are experiencing significant declines, often due to habitat loss. One such pollinator is the monarch butterfly. The monarch butterfly has experienced an 80% decline in the past few decades (IMCC 2024). To reverse this decline, researchers have called for an all-hands-on-deck approach to increase monarch habitat availability across all landscapes. Iowa plays an important role in monarch conservation as around 30 percent of all monarchs found at the annual overwintering sites in Mexico originated from Iowa and the Midwest (IMCC 2024).

To help protect the future of monarch butterflies, the Iowa Monarch Conservation Consortium (IMCC) has created a goal of establishing between 790,000 acres and 1,140,000 acres of monarch habitat by 2038 which would equate to 123 million – 195 million milkweed stems. Great progress has been made with over 690,000 acres being established as of 2022. Farmers have played an important role in this, establishing over 500,000 acres of habitat in the agricultural sector alone.

These monarch habitats provide multiple benefits for farmers beyond aiding monarch conservation. Conservation practices like prairie strips and saturated buffers help with soil stability by reducing soil erosion, increased water quality by filtering our nutrients and reducing runoff, and increased pollination services to crops by increasing pollinator abundance and diversity.

To help provide guidance on best management practices for habitat establishment and maintenance, the IMCC established a series of monarch habitats in 2016 on several ISU Research Farms, including the Agricultural Engineering and Agronomy Research Farm (Boone), Southeast Research and Demonstration Farm (Crawfordsville), Armstrong Memorial Research and Demonstration Farm (Lewis), Neely-Kinyon Research Farm (Greenfield), Northwest Research and Demonstration Farm (Sutherland), and the Committee for Agriculture Development (Madrid). Additional sites were also established on the private farms of individual landowners. At each of these sites, one to two monarch habitats were established, either as prairie strips or saturated buffers, ranging in size from 50 meters to 100 meters long. Since then, annual surveys have been conducted to assess the successful establishment of these sites. The purpose of these continued surveys is to evaluate how well the monarch habitat has been established and maintained, how it has changed over time, and how different management actions affect the quality of the sites. This information will inform future best management practices, provide guidance on different maintenance strategies, and create guidelines that farmers across the state can implement for monarch conservation.

Methods

Throughout the summer, undergraduate research interns visited each site to survey for monarch and milkweed abundance, as well as bee visitation rates and general vegetation surveys (floral abundance and diversity). Interns walked along a transect within the plot recording pollinator and floral abundance data as well and pollinator-plant interactions (Figure 1). This data were then compiled into a long-term data set in github where trends and yearly changes can be assessed.

Preliminary Results and Discussion

In 2025, interns visited each site five times and recorded 74 adult monarchs and 45 monarch eggs and caterpillars (Figure 2). Interns recorded over 700 bee visits. Vegetation surveys showed that flowering nectar plants made up around 40 percent of the available vegetation across the sites. Milkweed abundance was found to be over 1,300 cumulative milkweed stems (Figure 3).

The next step will be incorporating this data into the long-term data set which will allow us to assess how the sites have changed over the past 10 years. These results will inform future management decisions and help create better maintenance guidelines. We plan to analyze the data set and publish our results so that these outcomes can reach a broader audience. Moving forward, we will continue to survey the habitats so that we can maintain a long-term database and begin to test how various management decisions impact habitat quality on a longer timescale.

Acknowledgements

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References

Iowa Monarch Conservation Consortium. (2024, November 12). Conservation Strategy for the Eastern Monarch Butterfly (Danaus plexippus) in Iowa. Iowa Monarch Conservation Strategy. https://monarch.ent.iastate.edu/files/inline-files/iowa-monarch-conservation-strategy.pdf

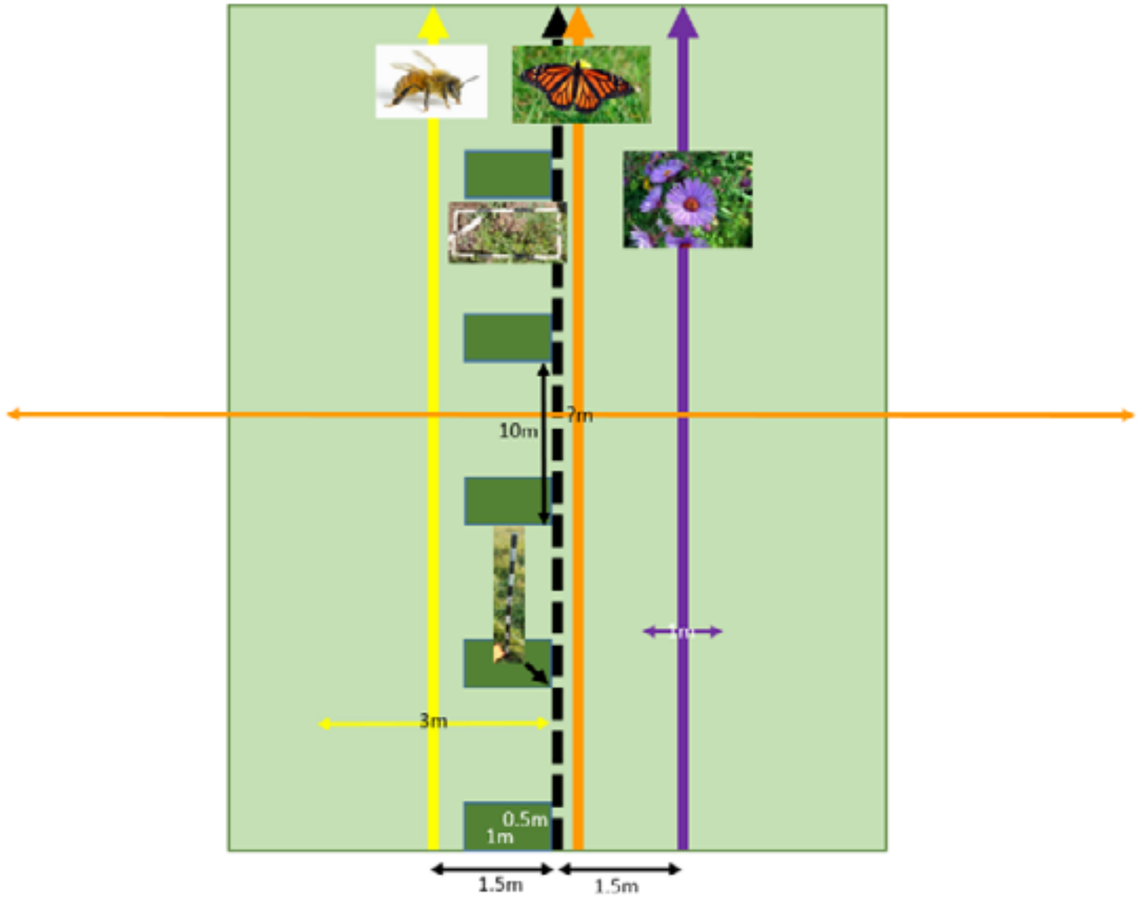

Figure 1. A schematic of the different surveys conducted at each site: monarch surveys (orange), nectar surveys (purple), bee surveys (yellow), and vegetation surveys (dark green rectangles). Each survey was taken in reference to the central transect (black dotted line) with spacing shown to offset the surveys.

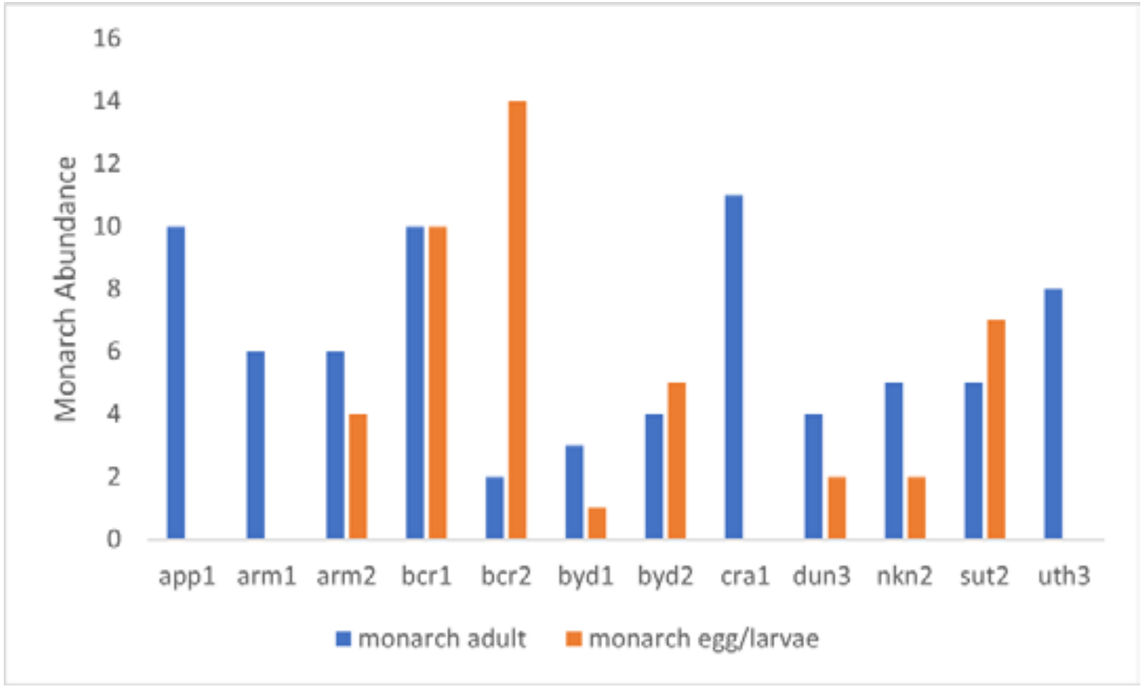

Figure 2. Cumulative adult and egg/larvae monarch abundance across the survey sites in 2025.

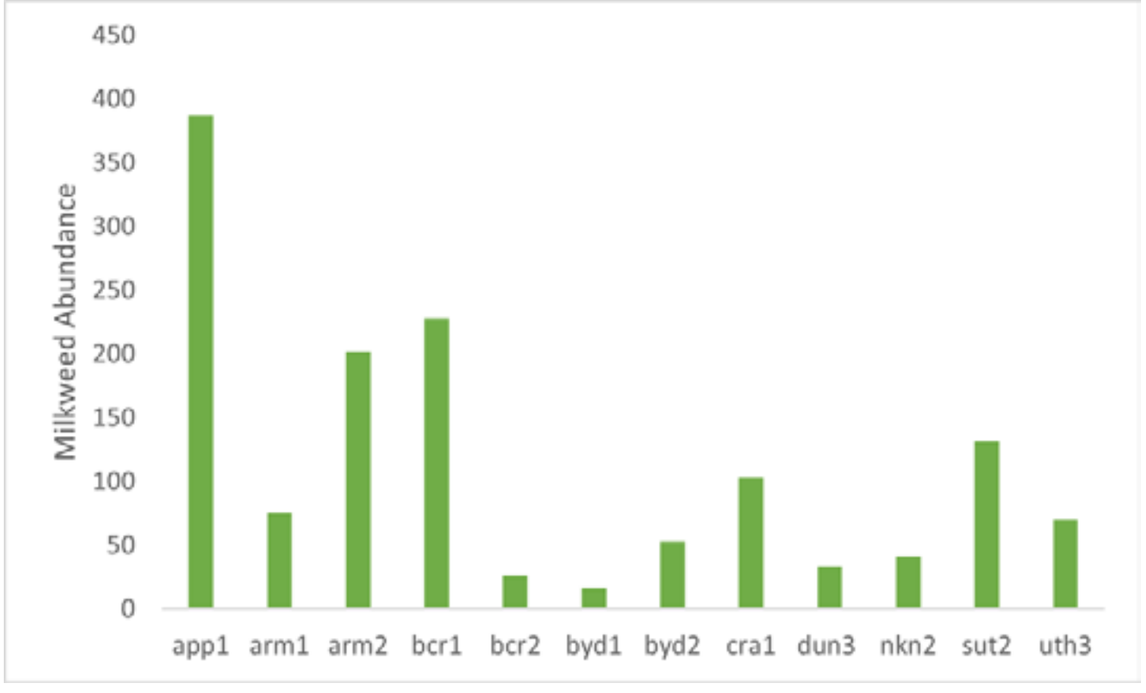

Figure 3. Average milkweed abundance across the survey sites in 2025.