

Mowing Milkweed for Monarchs Learning Outside the Classroom

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What is a Research Experience for Teachers (RET)?

Research Experience for Teachers (RET), a program coordinated by the Kellogg Biological Station (KBS) LTER, partners K-12 teachers with scientist mentors to conduct research projects and develop outreach opportunities for students, local communities and fellow K-12 teachers. In 2020-21, 4th grade teachers, Gabe Knowles and Britney Christensen, partnered with Nate Haan and Doug Landis from Michigan State University to conduct independent research and actively participate in the ReGrow Milkweed for Monarchs project.

ReGrow Milkweed for Monarchs Citizen Science Study

Monarch butterflies prefer to lay eggs on younger milkweed plants and younger milkweed plants may have less predators. Scientists, Landis and Haan, developed a citizen science project to test milkweed mowing methods, study regrowth, predator populations and monarch eggs/caterpillar presence.

Introduction

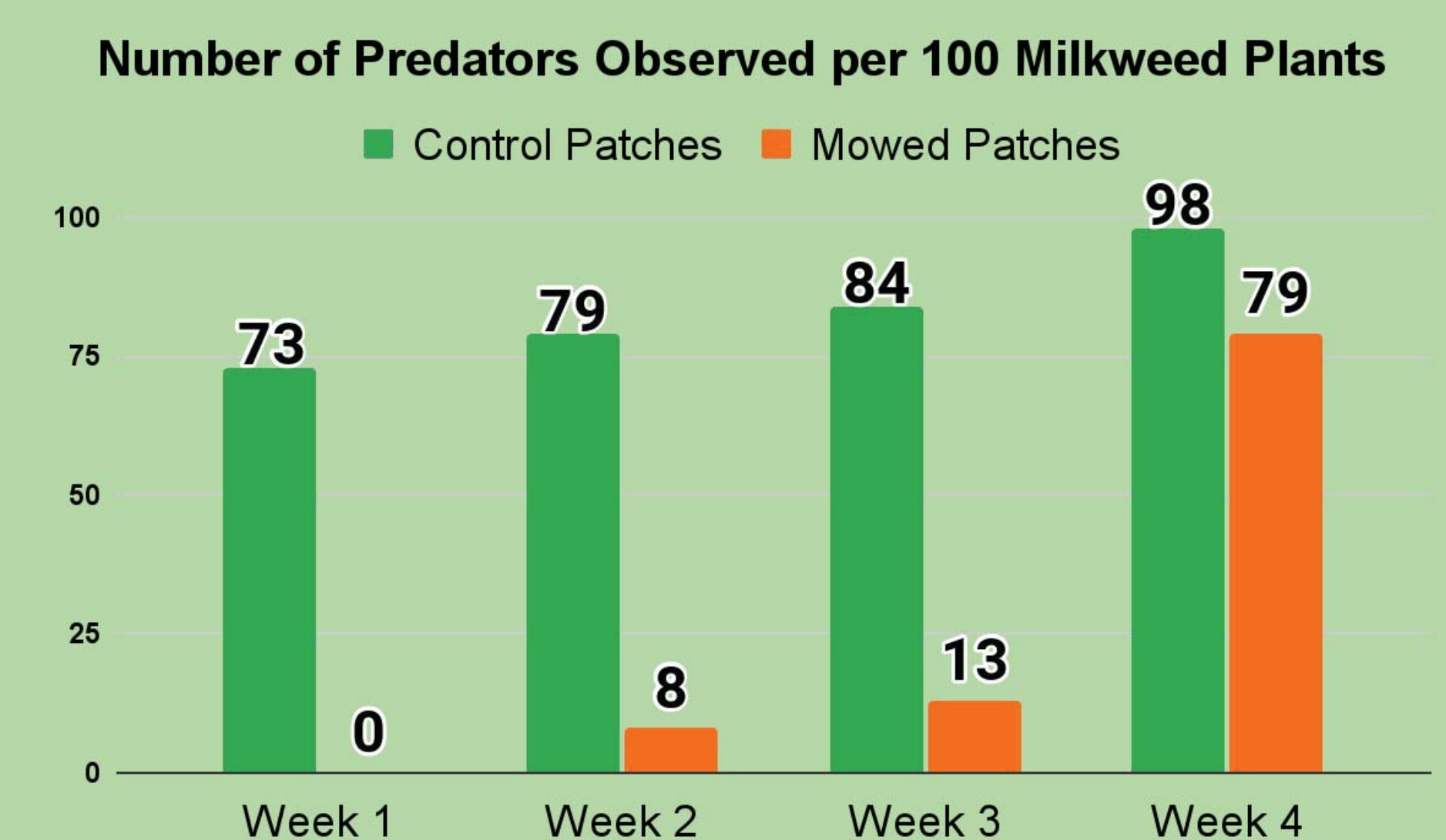
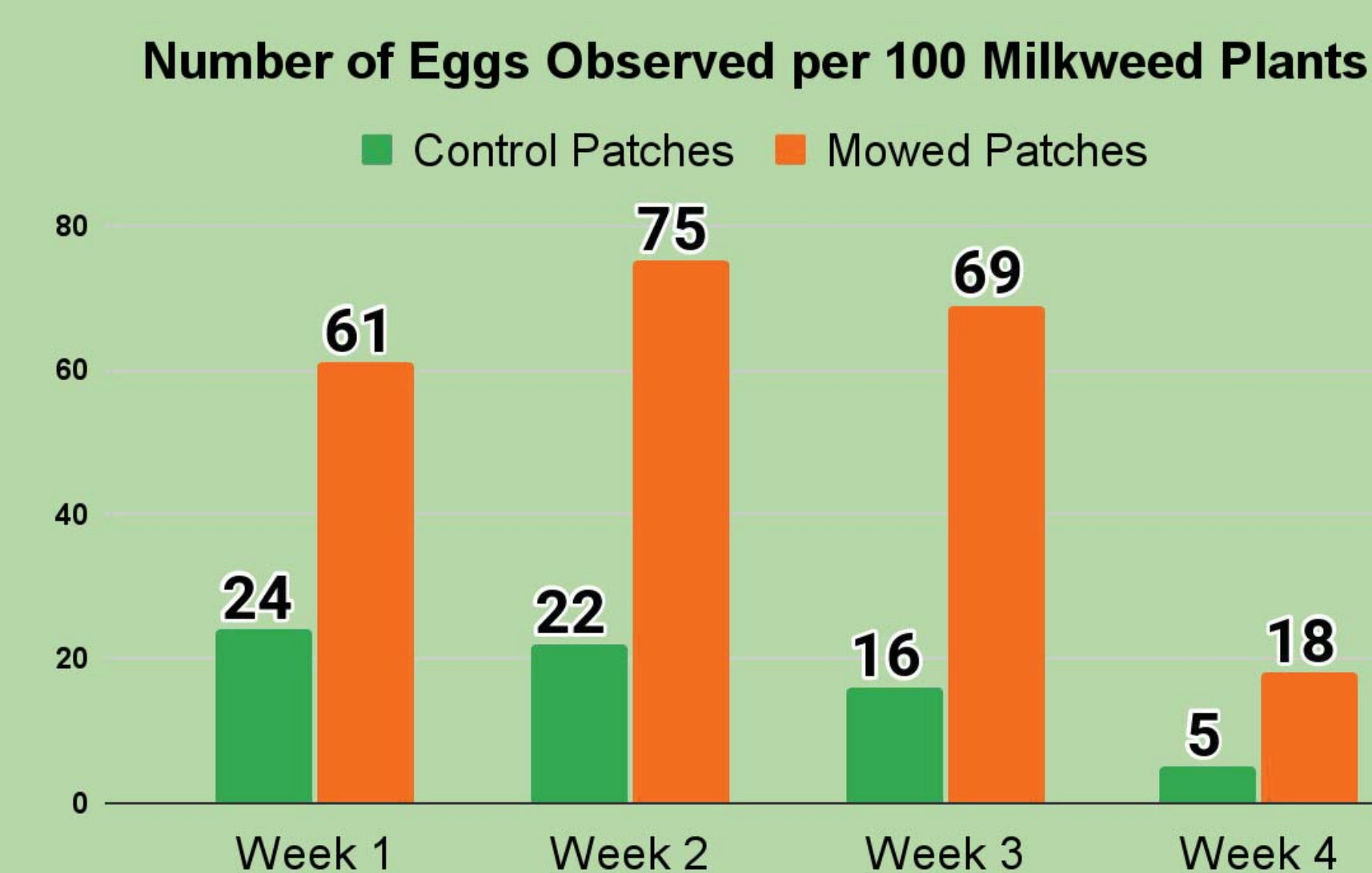
Research Methods

Summer 2020: RQ1. Do monarch butterflies prefer to lay their eggs on younger milkweed plants?, As ReGrown Milkweed study participants, Knowles and Christensen set up four study plots, which consisted of a control milkweed patch and an experimental milkweed patch where the milkweed plants were mowed. Weekly, over four weeks, Knowles and Christensen, conducted field work observations, counting monarch eggs and caterpillars within plots and attended lab meetings led by Haan and Landis.

Summer 2021: RQ2. Does mowing milkweed patches reduce the number of predators of monarch eggs? Knowles and Christensen, designed and conducted a project to collect more data to answer both research questions. Ten study plots were established throughout the Whitehall community. Plots included four sites at an industrial park (Howmet Aerospace), three sites at Whitehall District Schools, two sites on a golf course, and one site on private property. In addition to counting monarch eggs and caterpillars, observations of predators were included.

Preliminary Results

- There were more eggs observed on mowed milkweed plants than milkweed plants in the control group during the four week span.
- There were fewer predators in mowed milkweed patches compared to control group during a four week span.
- It appears that monarch butterflies prefer to lay their eggs on younger milkweed plants, and more research needs to be done.



Community Outreach

Through the RET program teachers shared their place-based research experience in the following ways:

- Created elementary summer enrichment program based on monarch butterfly conservation field work.
- Provided professional development learning opportunities for K-12 teachers based on RET fellowship.
- Created Data Nuggets activities for classroom teachers to engage K-12 students in data science.
- RET experience included in Howmet Aerospace Environmental, Social, and Governance Report.
- During virtual information sharing meetings with RETs across the LTER Network.

Acknowledgements

Sincere thanks to researchers, Doug Landis and Nate Haan at Michigan State University for mentoring us throughout our RET experience. We also want to extend our gratitude to Kara Haas for providing elementary teachers the opportunity to participate in this program. To make this project possible, we would like to thank Whitehall District Schools, Howmet Aerospace, Bent Pine Golf Course, and the Kittridge family of the White Lake Community for allowing access to their land to conduct our research. Special thanks to Liz Schultheis for assisting us in creating Data Nuggets based on our work. This project was supported by the National Science Foundation and the Kellogg Biological Station Long-Term Ecological Research Program.

Results

Impacts

