

# More butterfly species in wide buffer strips with tall, native grasses

If more species of butterflies in filter strips and other grass buffers is a goal, make the buffers wider and plant tall native grasses and broad-leaf plants. That is a key finding of a southwestern Minnesota study on butterfly use of conservation buffers.

Researchers determined habitat-sensitive butterflies, such as the great spangled fritillary, responded positively to added buffer width and preferred native over nonnative grasses. Wider buffers did not necessarily mean finding more butterflies of some species, however.

“We did find more habitat-sensitive butterflies like the regal fritillary—those that have specific habitat requirements and are often found in natural areas—in wider buffers,” says Dr. Diane Debinski, an associate professor at Iowa State University (ISU) in Ames, Iowa. “But wider buffers did not produce more monarch or eastern tailed-blue butterflies and others that are tolerant of habitat disturbances.”

Debinski was one of three ISU researchers who looked at butterfly use of 49 filter strips in 5 southwestern Minnesota counties in 2002 and 2003. Katy Reeder, an ISU graduate student, conducted the work. The filter strips varied in width from 59 to 548 feet.

Over the course of the 2 summers, 1,789 individual butterflies of 29 species were observed.

Vegetation varied from diverse native mixes of switchgrass, Canada wild rye, Indiangrass, and big and little bluestem to native monocultures of switchgrass to nonnative mixes, including smooth bromegrass and reed canarygrass, as well as legumes such as alfalfa and sweet clover.

In a separate analysis, researchers found fewer butterflies in filters as the amount of land surrounding the filters was developed with roads and urban uses.

Researchers cautioned that the study did not provide enough information on butterfly reproduction and mortality in strip-cover habitat to assert that filter strips provide quality habitat. Nevertheless, there are implications for managing filter strips to benefit butterflies. Among them:

- Even narrow filter strips are used by butterflies.
- Planting native species will result in more species of butterflies.
- Increasing the vegetation height and vertical density may increase the richness of habitat-sensitive butterfly species.
- Plant wide strips of warm-season grasses and forbs for the best results—flowering plants and nectar availability may support more species and butterflies overall.

Finding a greater diversity and abundance of butterfly species in wider buffers with tall plant structure is consistent with bird use of buffers, according to Dr. Bill Hohman, a biologist with the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) in Fort Worth, Texas. Hohman facilitated the butterfly study for NRCS and concurred with research recommendations.

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*Photo by Jen Vogel*

**Regal fritillary**

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