Rights-of-Way Ecology at Penn State

Plant and animal community response to long-term vegetation management on rights-of-way

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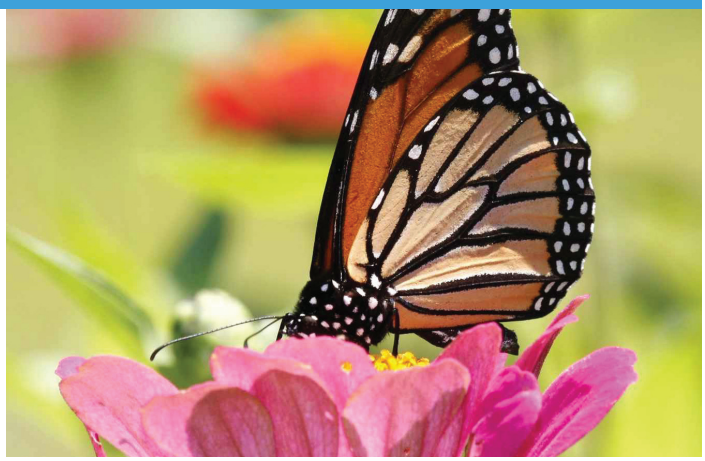
Butterflies



Butterflies are important indicators of environmental changes and are barometers of a healthy ecosystem. They are valuable pollinators to many wildflowers and are a food source for songbirds, small mammals, and other wildlife. Habitat loss has caused some butterfly populations to decline nationally.

A two-year study on the SGL33 and a companion study on GLR&D sites compared butterfly populations on hand-cutting units versus herbicide-treated units. Results show that the same or slightly more butterfly species occurred on the right-of-way than in the adjacent forest, and were more common in herbicide-treated units than on hand-cutting units. Common native butterfly species included aphrodite fritillary (Speyeris aphrodite), little wood satyr (Megistocymela), monarch (Danaus plexippus), spicebush swallowtail (Papilio troilus), eastern tiger swallowtail (P. glaucus), and the exotic European skipper (Thymelicus lineola).

A major factor affecting the abundance and diversity of butterflies on the right-way was the presence and use of flowering plants as nectar (food) sources during the growing season. The use of herbicides as part of integrated vegetation management practices promoted a rich wildflower community and habitat that supports a diverse butterfly community on the right-of-way.

Key Findings

1. Flowering herbaceous plants (forbs/wildflowers) occurring within the right-of-way provide excellent habitat for butterflies.

2. With the exception of hand-cutting, all herbicide and mowing plus herbicide treatments provided habitat for a diverse butterfly community within the right-of-way.

3. The use herbicides on the right-of-way did not have a detrimental impact on butterfly species or total number of butterflies.

Contact Information

Carolyn G. Mahan, PhD, Professor of Biology and Environmental Studies
209 Hawthorn Building, The Pennsylvania State University
Altoona, PA 16601
Tel: 814-949-5530, Em: cgm2@psu.edu