

# 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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## Small Mammal Populations

Small mammals are important components of any ecosystem, including rights-of-way. From an ecological perspective, small mammals serve as prey for predators and are major links in the food chain.

A two-year study was conducted on SGL33 to determine relative abundance and species richness (number of species) of small mammals on the right-of-way compared to the adjacent forest. Results of the study showed that eight species of small mammals were noted on the right-of-way compared to only two in the adjacent forest. Five species of mice [whitefooted mouse (*Peromyscus leucopus*), meadow vole (*Microtus pennsylvanicus*), red-backed vole (*Clethrionomys gapperi*), woodland jumping mouse (*Napaeozapus insignis*), and meadow jumping mouse (*Zapus hudsonius*)], two shrew species [short-tailed (*Blarina brevicauda*) and masked (*Sorex cinereus*)], and a short-tailed weasel (*Mustela erminea*) occurred on the right-of-way.

The findings of this study and a companion study conclude that specific treatments on the right-of-way produce cover types that benefit small mammals compared to the adjacent forest cover type. In addition, small mammals use a diversity of cover types found on the right-of-way from grass to shrub. Evidently, the right-of-way serves as a large forest clearing, which provides habitat for forest species (e.g., white-footed mouse and woodland jumping mouse) in border zones and habitat for early successional species (e.g., meadow vole and meadow jumping mouse) in wire zones.



### Key Findings

1. Small mammals contribute to the diversity of wildlife within a right-of-way.
2. Small mammal population and diversity is greater within the treated right-of-way than the adjacent forest.
3. Cover types that benefit small mammals can be predicted through the implementation of specific right-of-way maintenance techniques.
4. Small mammals use a diversity of cover types from grass to shrub that result from integrated vegetation management on the right-of-way.
5. Small mammals are important in reducing tree reinvasion by feeding on tree seeds and seedlings.

### 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](mailto:cgm2@psu.edu)