



Pollinator Best Management Practices for Roadsides and Other Rights-Of-Way

Globally, many pollinating insects are in decline. The Minnesota Department of Agriculture (MDA) has developed voluntary Best Management Practices (BMPs) to protect wild and managed insect pollinators by providing habitat for their survival and reproduction.¹ The BMPs described in this brochure provide voluntary practices to REDUCE negative impacts on pollinator habitat resulting from current management practices, IMPROVE existing habitat, and CREATE new habitat near, adjacent to, or in roadsides and other rights-of-way (ROW). Using these practices will make our landscape more pollinator-friendly, improve pollinator health, assist bee keepers, and help farmers produce food.

Insects surround us. A few insects can be pests. However, most insects are harmless, and many are beneficial, acting as pollinators, predators, and recyclers. A loss of beneficial insects means losing important agricultural services such as crop pollination and pest control.

What are Pollinators?



Pollinating insects in Minnesota include butterflies, flower flies, and most importantly bees (both managed honey bees as well as hundreds of wild bee species). Beneficial pollinating insects depend on flowering plants for their food and need undisturbed ground and vegetation for shelter. Management practices that preserve or provide food and shelter will reduce the threat to our beneficial insects, including pollinators.

Pollinator Benefits



One-third of our food production requires pollinators. Many of our nutritious foods, such as apples, almonds, and blueberries, are pollinated by honey bees that spend summer in Minnesota foraging in agricultural landscapes, producing honey, and growing larger, stronger colonies.

A copy of this brochure is available at www.mda.state.mn.us/pollinators

¹In accordance with 2013 Pollinator Legislation Ch. 114-H.F. 976

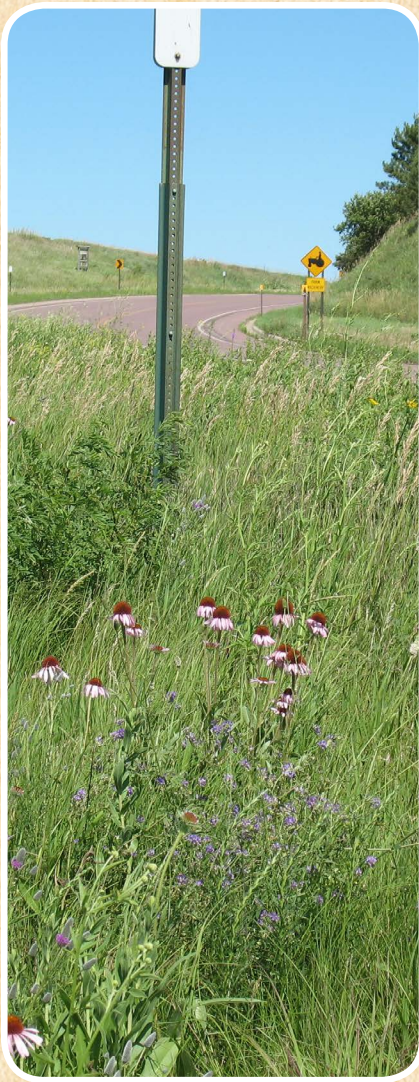


Photo Credit: Minnesota Department of Natural Resources

Roadsides and Pollinators

Roadsides and other rights-of-way (ROW) areas are important habitats for pollinators. They are often the only habitats available in intensely managed agricultural areas, and they serve as corridors that connect larger patches of habitat.

Roadside vegetation provides safe clear zones and sight lines, stabilizes soil, handles stormwater runoff, and resists weed invasion. When roadside vegetation contains a diverse mix of grasses and flowering plants, it becomes more resilient to weather extremes such as droughts, floods, and harsh winters. Managing roadsides for healthy, diverse vegetation will also provide food and nesting sites for pollinators.

ROW Best Management Practices for:

- Minnesota Department of Transportation
- County Highway Departments & Engineers
- Minnesota Township Supervisors
- Overhead Utility Companies
- ROW Adjacent Landowners

REDUCE Negative Impacts to Pollinators

- **Minnesota Statute 160.23 DESTRUCTION OF NOXIOUS WEEDS**
Prevent the spread of invasive species by not mowing through weeds with ripe seed and by cleaning mowers and other equipment frequently. Not only will this reduce weed control costs, but it will also reduce the negative impacts to pollinator habitat caused by invasive species.
- **Control invasive species infestations early** before they spread from roadsides and degrade additional habitat. Early detection and control will also reduce the amount of herbicide needed in the long term. To learn more about Minnesota Noxious Weeds and methods of control, visit www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf
- **Spot spray invasive weeds** with a well-targeted technique. Avoid broadcast spraying. Targeted sprays help to preserve desirable plants that make roadside vegetation more resilient. Spot treatments also allow nearby flowering plants to continue blooming so pollinators have a constant food source.
- **Spray weeds before they flower** to provide more effective control and to reduce impacts to pollinators.
- **Use registered herbicides according to label directions and prevent drift.** Herbicide drift is the off-site movement of herbicides through the air to adjacent areas. Drifting herbicides can reduce the number of flowers available for pollinators.
- **Work with adjacent landowners who have specific management concerns.** Owners of organic farms, vineyards, apiaries, and other sensitive crops often have concerns about herbicide use and can cooperate with road authorities to find site-specific alternatives.
- **Minnesota Statute 160.2715 RIGHTS-OF-WAY USE**
Prevent encroachment into legal roadside rights-of-way. Spraying, plowing, or cropping that extends into the roadside can impair drainage, erosion control, and sight lines. It also degrades pollinator habitat.



Photo Credit: Minnesota Department of Transportation

IMPROVE Existing Habitat

- **Protect roadsides with native plant communities from invasive species and other disturbances.** These sites often provide great pollinator habitat and have highly functional roadside vegetation that would be nearly impossible to recreate.
- **Minnesota Statute 160.232 MOWING DITCHES OUTSIDE CITIES**
Limit roadside mowing to the first eight feet of the roadside inslope. Mow other areas only when there is a clear vegetation management objective, such as maintaining sight lines, controlling brush, or managing weeds. Reduced mowing saves money, allows for healthier vegetation, and protects pollinator habitat. To learn more about how roadsides serve as a pollinator habitat, visit www.dnr.state.mn.us/roadsidesforwildlife/index.html
- **Delay roadside mowing.** Roadside laws require that mowing be delayed until after August 1st. However, waiting to mow until even later in the season will provide more food for pollinators, benefit wildlife, and allow flowering plants to set seed.



Photo Credit: Minnesota Department of Transportation

Mowing the edge of a roadside and leaving the rest provides habitat for pollinators.

- **Use prescribed fire to maintain roadsides with prairie remnants and to stimulate growth of native plants.** Fire will stimulate vegetation and reduce the amount of spraying needed for weeds and brush. Leave unburned patches that provide shelter for pollinators. To learn more about prescribed burning on Minnesota roadsides, visit www.dot.state.mn.us/roadsides/vegetation/fire.html



Photo Credit: Minnesota Department of Transportation

Prescribed burning simulates natural wildfire and will favor native plants rather than invasive species.

- **Leave standing dead trees on backslopes if they will not cause problems to roadside or adjacent landowner activities.** Dead trees and woody shrubs provide nesting sites for native bees and other wildlife. To learn more about pollinator biology and habitat, visit www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/mipmctn11774.pdf

CREATE New Pollinator Habitat

- **Plant native seed mixes during ROW construction** or where revegetation is needed. Seed mixes with a wide variety of native grasses and flowering plants will create functional roadside vegetation and provide season-long benefits to pollinators. To find native seed mixes for Minnesota roadsides, visit www.bwsr.state.mn.us/native_vegetation/state_seed_mixes.pdf
- **Choose sites for new pollinator habitat that are protected from disturbance** such as rest areas, weigh stations, stormwater ponds, etc.
- **Plant living snow fences** to improve safety and reduce maintenance costs. Some shrub species provide critical nesting sites and food sources for bees. Adding native grasses and flowers to the planting can further improve both snow storage and pollinator habitat. This diagram shows a living snow fence with recommended plant species that support pollinators. To learn more about living snow fences, visit www.dot.state.mn.us/environment/livingsnowfence/

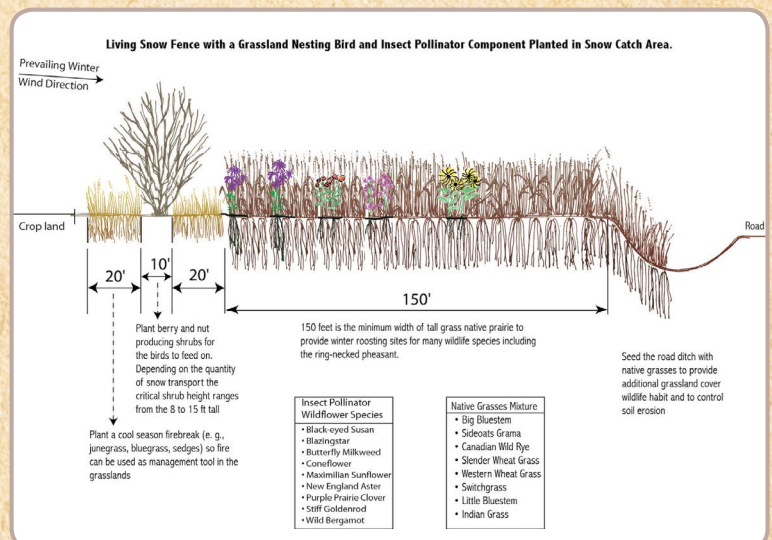


Illustration Credit: Minnesota Department of Transportation

Special Note for Transmission Lines

- **Control brush and trees** under electrical transmission and distribution center lines. Establish compact flowering shrubs under transmission line edges, and plant native grasses and wildflowers under center lines. Transmission lines and their ROW traverse farmlands, natural areas, urban centers, and rural landscapes. These corridors make excellent habitats for pollinators.



For More Information

A copy of this BMP brochure is available at www.mda.state.mn.us/pollinators

Hopwood, Jennifer L. 2013. Roadsides as Habitat for Pollinators: Management to Support Bees and Butterflies. From: Proceedings of the 2013 International Conference on Ecology and Transportation (ICOET 2013). www.icoet.net/icoet_2013/documents/papers/ICOET2013_Paper403C_Hopwood.pdf

Information on noxious weeds (invasive species) can be found at:
Minnesota Department of Agriculture: www.mda.state.mn.us/weedcontrol
Minnesota Department of Transportation: www.dot.state.mn.us/roadsides/vegetation/pdf/noxiousweeds.pdf

Minnesota Department of Natural Resources: information on using native plants on roadsides from the Roadsides for Wildlife program. www.dnr.state.mn.us/roadsidesforwildlife/index.html

Minnesota Department of Transportation: information on burning, mowing, native seed mixes, and living snow fences for managing roadsides where an Integrated Roadside Vegetation Management plan is used as a decision tool.
www.dot.state.mn.us/roadsides/vegetation/
www.dot.state.mn.us/environment/erosion/pdf/native-seed-mix-dm.pdf

Rager, Mary, Adams, Laurie D., and Wojcik, Vicki. 2013. Monarch Habitat Development on Utility Rights of Way. Pollinator Partnership. monarchjointventure.org/images/uploads/documents/Monarch.Habitat.Manual.ROW.NEast.ver16.pdf

The USDA-Natural Resource Conservation Service: Information on native plant materials for creating pollinator habitat. www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/pollinate/

The Xerces Society: Guidance on providing nesting sites, creating and managing pollinator habitats (including roadsides), and regional information about plants for pollinators. www.xerces.org/guidelines/pollinators-and-roadsides/



The Minnesota Department of Agriculture collaborated with the following partners in preparing these Best Management Practices:

- *Association of Minnesota Counties*
- *Connexus Energy*
- *Crop Production Services*
- *Minnesota Agricultural Aircraft Association*
- *Minnesota Association of County Agricultural Inspectors-Todd County*
- *Minnesota Association of Townships*
- *Minnesota Department of Natural Resources*
- *Minnesota Department of Transportation*
- *Minnesota Pesticide Information and Education*
- *Pheasants Forever*
- *Sherburne County Soil and Water District*
- *University of Minnesota, Bee Lab*

In accordance with the Americans with Disabilities Act, this information is available in alternative forms of communication upon request by calling 651-201-6000. TTY users can call the Minnesota Relay Service at 711 or 1-800-627-3529. The MDA is an equal opportunity educator and employer.