



U.S Fish and Wildlife Service



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# Endangered and Threatened Insect Pollinator Habitat, Protection, and Support Guide



Pollinators play an essential role in ecosystems throughout Minnesota, yet they have faced a number of challenges from pesticides and the breakup or loss of habitat. These challenges have led to declining pollinator populations. Endangered insect pollinators, such as the rusty patched bumble bee, Karner blue butterfly, and Poweshiek skipperling, and threatened pollinators, like the Dakota skipper, are important pollinators that used to be common throughout Minnesota. Recent sightings of and critical habitat for these species occur across the state (Figure 1). While actions are needed throughout the state, these locations require extra attention to prevent further pollinator population declines. By following the guidelines listed below, you can help protect and support endangered and threatened insect pollinators.

## Create, Improve, and Protect Habitats

Habitat loss is considered one of the main reasons for insect pollinator decline as well as a stressor preventing recovery. Beneficial practices, such as ones listed below, can help land managers and owners create and improve habitats for threatened and/or endangered insect pollinators. The following practices focus on management of agricultural and natural areas; however, many of the same principles can be applied to yards and gardens:

- Convert a portion of cropland, intensively managed pasture, or range to native prairie habitat to provide flowering plants for pollinators.
- Utilize grazing, mowing, and prescribed fire practices sparingly to preserve pollinator-friendly plants.
- When grazing, mowing, or using prescribed burns, leave 1/3 of your land undisturbed to maintain a reserve pollinator population that can repopulate disturbed areas.
- Determine which areas of your land can be left undisturbed.
- If eliminating flowering, invasive plants, such as spotted knapweed, replace them with native flowering plants.

## Reduce the Impact of Pesticides

The use of pesticides has the potential to severely impact insect pollinator populations. An effective way to reduce pesticide impacts is to avoid using pesticides in or near their habitat. However, pesticide use is a reality of pest control. The following smart pesticide selection and application decisions, can protect endangered insects.

- Use integrated pest management (IPM)
- Scout and monitor pest populations

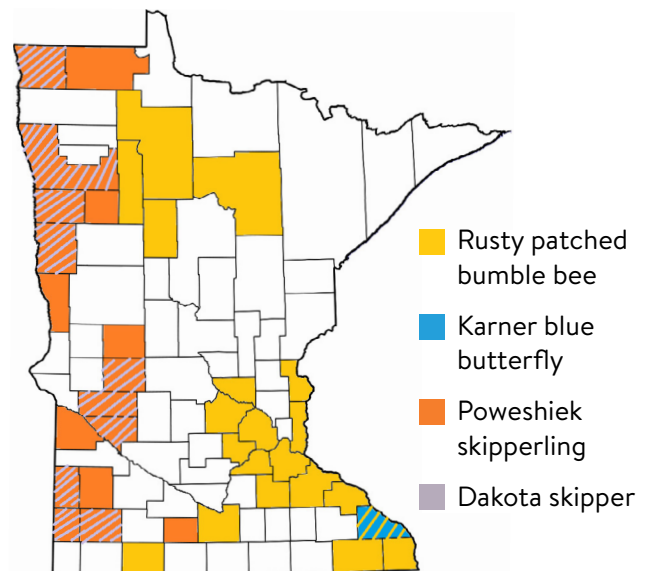


Figure 1. Counties where rusty patched bumble bees (yellow), Karner blue butterflies (blue), Poweshiek skipperlings (orange), and Dakota skippers (purple) are found or where critical habitat is located.<sup>1</sup> For the most up-to-date surveys and other state listed insect pollinators, visit the DNR's website: [www.dnr.state.mn.us/ets/index.html](http://www.dnr.state.mn.us/ets/index.html)

- Apply pesticides only when necessary
- Choose pesticides with low toxicity to bees and other pollinators<sup>2</sup>
- Read and follow all label directions
- Prevent drift when applying pesticides
- Follow application restrictions to minimize hazards from any pesticide
- Minimize abraded seed coating dust when planting treated seed<sup>3</sup>
- Separate pesticide-free areas of pollinator habitat from areas where pesticides are used with windbreaks or by maintaining distance between the two areas



## Follow Pesticide Restrictions

Many pesticide labels refer to bulletins for Pesticide Use Limitation Areas (PULAs). PULAs are region-specific restrictions on pesticide use for the protection of threatened and endangered species and their designated critical habitat. If your pesticide label directs you to the bulletin website, you are required to follow the pesticide use limitation(s) detailed in the bulletin. The bulletins referred to on the pesticide label are enforceable as an extension of the label. Bulletins can be found at the EPA's Bulletins Live website:

[www.epa.gov/endangered-species/bulletins-live-two-view-bulletins](http://www.epa.gov/endangered-species/bulletins-live-two-view-bulletins).

## Historical Insect Pollinator Habitat

- The rusty patched bumble bee historically lived in grasslands, prairies, and woodlands with a variety of plants producing pollen and nectar<sup>4</sup>.
- Although the Poweshiek skipperling has not been observed in Minnesota since 2008, critical habitat where it may still exist can be found in multiple counties. Poweshiek skipperlings prefer tallgrass prairie habitats where they eat grasses as caterpillars and feed on nectar from yellow flowers as adults<sup>5,6</sup>.
- Dakota skippers live in similar habitat as Poweshiek skipperlings. While some undetected Dakota skipper populations may exist across Western Minnesota, Dakota skippers have only been found in Clay County. Efforts are underway to reintroduce populations in Southwest Minnesota.
- The Karner blue butterfly lives in oak savanna and sand barren habitats where wild lupine (the caterpillar's sole food source<sup>7</sup>) grows. Winona County is the only area where Karner blue butterfly habitat is currently found in Minnesota.

<sup>1</sup> U.S. Fisheries and Wildlife Service: Minnesota County Distribution of Federally listed Threatened, Endangered, Proposed, and Candidate Species. [www.fws.gov/midwest/endangered/lists/minnesot-spp.html](http://www.fws.gov/midwest/endangered/lists/minnesot-spp.html)

<sup>2</sup> Pesticides & Bee Toxicity. [www.mda.state.mn.us/protecting/bmps/pollinators/beetoxicity](http://www.mda.state.mn.us/protecting/bmps/pollinators/beetoxicity)

<sup>3</sup> Stewardship Guidelines and Best Management Practices for Neonicotinoid Insecticide-Treated Seed [www.mda.state.mn.us/pesticide-fertilizer/best-management-practices-pollinators-and-their-habitat](http://www.mda.state.mn.us/pesticide-fertilizer/best-management-practices-pollinators-and-their-habitat)

<sup>4</sup> U.S. Fisheries and Wildlife Service: Rusty Patched Bumble Bee Fact Sheet. [www.fws.gov/midwest/endangered/insects/rpbb/factsheetrpbb.html](http://www.fws.gov/midwest/endangered/insects/rpbb/factsheetrpbb.html)

<sup>5</sup> Minnesota Zoo: Poweshiek Skipperling. [mnzoo.org/blog/animals/poweshiek-skipperling](http://mnzoo.org/blog/animals/poweshiek-skipperling)

<sup>6</sup> U.S. Fish & Wildlife Service: Poweshiek Skipperling Fact Sheet. [www.fws.gov/midwest/endangered/insects/posk/PoweshiekSkipperlingFactSheet.html](http://www.fws.gov/midwest/endangered/insects/posk/PoweshiekSkipperlingFactSheet.html)

<sup>7</sup> Minnesota Department of Natural Resources: Karner Blue Rare Species Guide. [www.dnr.state.mn.us/rsg/profile.html?ac](http://www.dnr.state.mn.us/rsg/profile.html?ac)

## Yards and Gardens

- Consider converting some of your lawn to flowering plants to increase the floral resources on your property.
- Establish native tree, shrub, and wildflower resources in yards and gardens to provide good sources of pollen and nectar throughout the season.
- Leave the previous year's plants and leaves on the ground undisturbed in gardens through the winter and into the spring to increase overwintering habitat for pollinators. Leave messy corners with sticks and logs to provide nesting habitat.