

Conserving the Endangered Rusty Patched Bumble Bee

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This is a guide for bumble bee conservation in backyards, parks and open spaces.

In 2017, the US Fish & Wildlife Service placed the [Rusty patched bumble bee \(*Bombus affinis*\)](#) on the list of endangered species. Once a common site in eastern North America, the RPBB has declined from an estimated 87% of its range.

Bumble bees and other pollinators need high quality habitat to survive. For the Rusty patched bumble bee, urban habitats can be just as important as parks or rural landscapes. Keeping areas pesticide free is important for habitat quality and for the recovery of the Rusty patched bumble bee.



Rusty patched bumble bee (*Bombus affinis*) is an endangered species. Photo: Heather Holm

Bumble Bees Need 3 Things To Survive:

- **Food:** Plant diverse flowers that bloom from spring through fall. Bumble bees collect nectar and pollen from a variety of [flowering plants including native and heirloom plants](#) (salvia, mint, lupines, asters, bee balm), shrubs (ninebark, pussy willow), trees (basswood, horse chestnut), weed plants (clover) and crops (buckwheat). Bumble bees are excellent pollinators of wildflowers and many important crops such as blueberries and tomatoes. Queens, workers and males all forage for pollen and nectar. Bumble bees forage throughout the warm months from spring to fall. Without flowers throughout the season, bumble bee queens and colonies can die.
- **Habitat:** [Leave some areas undisturbed for nesting and overwintering.](#) Bumble bees nest under bunch grasses, rock piles, brush and compost piles, in abandoned rodent holes, and other overgrown areas. Only the queen overwinters. Bumble bee queens need a safe place to overwinter/hibernate. Areas with bare soil, wood piles or leaf litter (including evergreen needle duff), are likely to support overwintering queens.
- **Protection from Pesticides:** Pesticides should not be used in or around nesting and forage sites. Pesticides that enter nesting habitat and foraging areas can harm and even kill bees. Pesticide and pesticide ingredients can harm bees. By minimizing pesticide use, you can help conserve this once common bee:
 - Insecticides can be toxic and harm bees.
 - Herbicides can kill the plants bees use for food and shelter.
 - Fungicides can be toxic to bees.
 - Some additives and adjuvants used in pesticides can be toxic to bees.
 - Combining pesticides, additives, and adjuvants can increase the toxicity of a pesticide.

The sum of your year round land management practices will make a difference. Avoid the use of pesticides, [manage with IPM](#), and retrofit the landscape with plants that provide pollen and nectar for bees and other pollinators.



Rusty patched bumble bee queen, photo: flic.kr/p/wP2Yz9

To help conserve the Rusty patched bumble bee, consider creating or restoring pollinator habitat and following ways to reduce harmful impacts of pesticides:

- **Avoid the use of pesticides, especially insecticides** especially when flowers are blooming. Remember, that bumble bee queens could be nesting or overwintering undetected in landscapes throughout the year, and could be exposed at any time. Healthy landscapes can be maintained with little or no pesticide use.
- **Follow the principles of IPM, Integrated Pest Management** and/or hire professionals who use IPM. IPM addresses the source of pest problems, whereas pesticides simply respond to the pest. The first step is to accept that plants can handle some pest pressure. If pests threaten the health of your plants, help make the plants more resistant to pest and disease by managing them with the proper amount of nutrients, sunlight and water, or replace the plant with a more resilient species. Improve the health of lawns and decrease insect and disease problems by aerating, adding compost, and providing nutrients.
- **If you must use a pesticide, only spot treat.** Use the IPM practices, and confirm that the pest is in sufficient numbers to cause long-term harm to the host plant first. All insecticides are toxic to pollinators, but some are less risky. If you decide an insecticide is needed, consider products made with spinosad, azadirachtin, horticultural oils, or insecticidal soaps. No insecticide is completely safe, but these will break down more quickly. Never spray pollinators directly with any pesticide.
- **Strongly consider not using herbicides** and permitting flowering plants to grow in the lawn. A pollinator-friendly lawn contains small flowering plants like dandelions, clover, self-heal, blanket flower, and creeping thyme.
- **Avoid the use of highly toxic systemic and neonicotinoid insecticides.** These insecticides are translocated to pollen and nectar and can remain in the plant months to years after a single application. Check carefully for these neonicotinoid ingredients: imidacloprid, clothianidin, thiamethoxam, dinotefuran.
- **Turf pest control:** For beetle grubs in the soil, use consumer available products that contain less toxic insecticides like chlorantraniliprole instead of systemic neonicotinoids. Ask your lawn service or course manager to use this less toxic insecticides for grubs in soil and adults on leaves such as grubEX (chlorantraniliprole) or grubGONE with the bacteria, *Bacillus thuringiensis galleriae* (Btg).
- **Label is the law. Read the EPA approved label** attached to the pesticide package, with safety and application information. Read the label to locate hazard to pollinator statement and application methods to protect pollinators. Remember, product labels are legally binding and must be followed exactly, including specific pollinator protection language.
- **When purchasing pollinator-friendly plants, be diligent in asking if plants were treated with neonicotinoids.** Avoid buying or planting plants that have been treated. Also, many garden annuals have been bred for longevity, not to provide nectar or pollen, and may have even lost their pollen/nectar creating ability. Consult a pollinator-friendly plant list before purchasing.

Helpful bumble bee conservation links:

Pollinator Conservation Biocontrol, U of Minnesota, ncipmhort.dl.umn.edu

Plant Lists & Restoration, U of Minnesota, ncipmhort.dl.umn.edu/plant-lists-restoration-tactics-and-videos

Rusty Patched Bumble Bee Plants, USFWS fws.gov/Midwest/Endangered/Insects/rpbb/plants.html

Pollinator Plant Lists, Xerces Society, xerces.org/pollinator-conservation/pollinator-friendly-plant-lists

At-Risk Bumble Bees, Xerces Society, xerces.org/Endangered-species/species-profiles/bumble-bees

Rusty-Patched Bumble Bee Identification, U of Minnesota, beelab.umn.edu/rusty-patched-identification

Plant lists for pollinators, Heather Holm, pollinatorsnativeplants.com/plant-lists--posters.html

Selecting Plants for Pollinators, Pollinator Partnership, pollinator.org/guides

Plants for Pollinators, NRCS, nrcs.usda.gov/wps/portal/nrcs/detailfull/national/plantsanimals/pollinate

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