

SFI Biodiversity Species Fact Sheet

Rusty Patched Bumble Bee (*Bombus affinis*)

Pennsylvania Bee Species; State Rank: S1 (critically imperiled) Global Rank: G2 (imperiled)

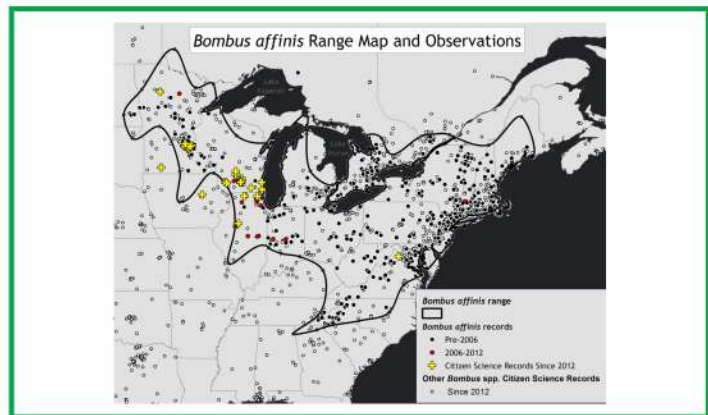
Identification

All rusty patched bumble bees have a mostly yellow upper thorax, with a black spot or band between the wings that may extend toward the back in a v-shape, resembling a thumb tack. The bottom of the thorax is black. In workers and males, the first abdominal segment is yellow and the second has a patch of rusty hairs on the front portion of the segment, with yellow hairs on the back and sides. Rusty patched bumble bee queens are entirely yellow on the first two abdominal segments and the rest of the abdominal segments are black.



Biology-Natural History

The rusty patched bumble bee is a social species with an annual cycle that starts in early spring when colonies are initiated by solitary queens that emerge from overwintering sites. This cycle progresses with the production of workers throughout the summer and ends with the production of males and new queens in late summer and early fall. Survival and successful recruitment require food from floral resources from early spring through fall, undisturbed nesting habitat in proximity to foraging resources and overwintering habitat for the next year's queens.



Distribution & Habitat

Rusty patched bumble bees have been observed in a variety of habitats, including prairies, woodlands, marshes, agricultural landscapes and residential parks and gardens, as documented by S.R. Colla and L. Packer in 2008 and later by S.R. Colla and S. Dumesh in 2010. The rusty patched bumble bee requires areas that support sufficient food, including nectar and pollen from diverse and abundant flowers, as well as undisturbed nesting sites that are in proximity to those floral resources. These bees also require overwintering sites for hibernating queens, as documented by D. Goulson and others in 2015 and Potts and others in 2010.

Conservation Concerns

The exact cause of the decline is unknown, but evidence suggests a synergistic interaction between an introduced pathogen and exposure to pesticides, specifically insecticides and fungicides, which was also noted in the species assessment. The species status assessment notes that the remaining populations are exposed to several interacting stressors, including pathogens, pesticides, habitat loss and degradation, non-native and managed bees, the effects of climate change and small population biology. These stressors likely operate independently and synergistically.

Management Practices

State agencies and other organizations have started to plant native wildflowers and grasses to attract pollinators. Additional restoration and management efforts include prescribed burns to control woody vegetation, stimulate growth of native plants, creating outreach programs, and community meetings. The U.S. Fish and Wildlife Service wrote a species status assessment for the rusty patched bumble bee in 2016, listed the species in 2017 and finalized the recovery plan for the rusty patched bumble bee in 2021.