

# Yellow Banded Bumble Bee

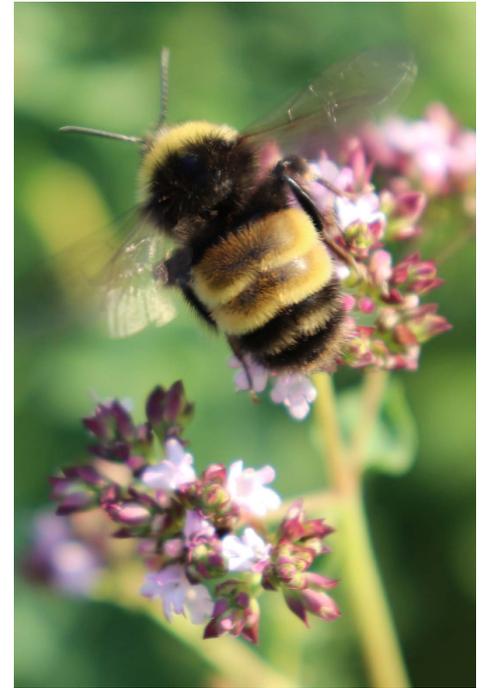
(*Bombus terricola*)

The yellow banded bumble bee is a highly social insect that lives in colonies that include a queen, female worker bees, male bees, and new queens. They do not store honey, but instead require abundant floral resources from early spring through the fall to survive. They also need undisturbed natural areas for colony nesting and for winter hibernation.

Yellow banded bumble bees are an important and especially effective pollinator of wild flowers and crops, many of which birds and other animals rely on for food. They have several advantages over other pollinators. Pollen sticks to their large fuzzy bodies, and they can fly in cool, rainy, and unfavorable weather and when light levels are lower (such as at dawn and dusk). The entire colony participates in pollination.

## Range

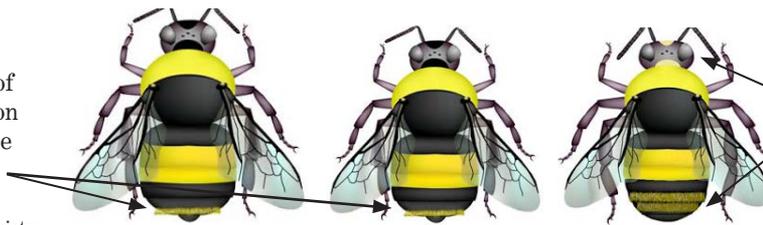
This bee was once common throughout its range, historically found in 25 United States and 12 Canadian provinces. In recent decades, the species' range has receded in the southern and far western areas of its range. It appears to have been extirpated from much of the Pacific Northwest, Southern Appalachians, and Southeast Plains and may be more patchily distributed where it remains.



Molly Jacobson/U.S. Fish and Wildlife Service

Yellow banded bumble bee

Queens and workers have a distinct fringe of brownish-yellow hair on the fifth segment of the abdomen



Males have long yellow hair on top of the head and on the face and a fringe of black-yellow hair on the fifth segment of the abdomen

Illustration Credit:  
Elaine Evans/The Xerces Society

## Appearance

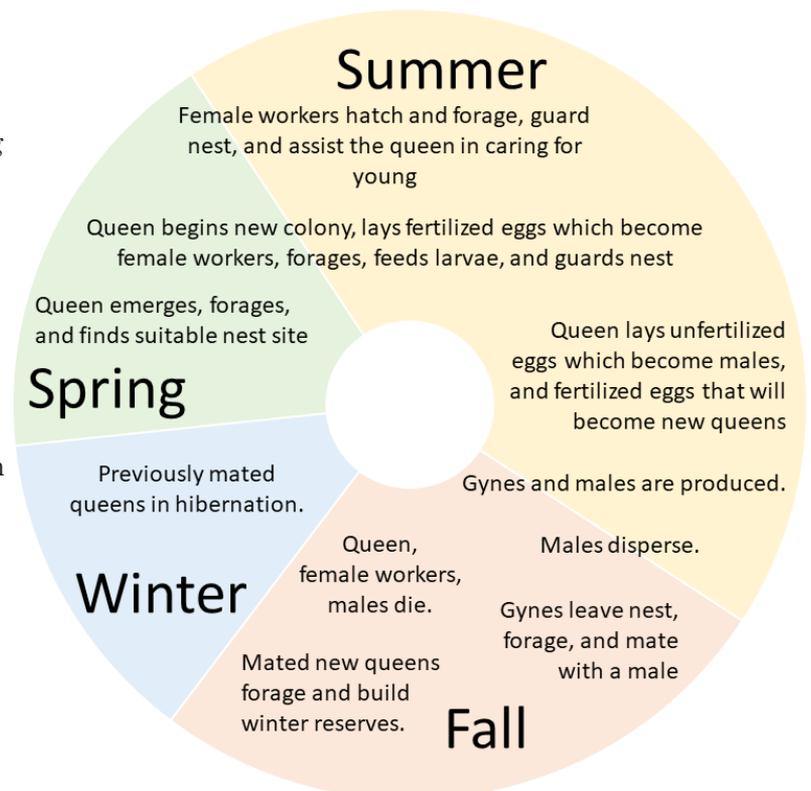
All yellow banded bumble bees have entirely black heads, and the second and third segments of the abdomen as well as the front of the thorax are yellow. Queens are the largest bees in the colony and are the first ones seen in early spring.

## Habitat

Yellow banded bumble bees prefer undisturbed woodlands, wetlands, prairies, and meadows. They need native flowering trees, shrubs, berries and wildflowers from early spring to fall, because nectar and pollen provide them with the necessary fuel, protein and nutrients to grow, successfully breed, and survive. The colony nests in natural cavities like abandoned rodent burrows. In the winter, the queen hibernates in an underground cavity she excavates in loose soil. Nesting and overwintering sites are optimally located near ample flowering resources.

## Reproduction

In early spring, the solitary queen emerges from hibernation and finds a nest site. She begins laying eggs that are fertilized by sperm stored since mating the previous fall, and rearing the young. Worker bees hatch and the colony grows as the workers collect food, care for the young, and defend the colony. In late summer, new queens and males hatch from eggs. The male bees disperse to mate with new queens from other colonies. In late fall, the founding queens, workers and males die. The new queens overwinter and begin the cycle again in spring.



## Feeding habits

The yellow banded bumble bee is one of the earliest species to emerge from winter hibernation in the spring. They gather pollen and nectar from April through October. Early spring flowers are especially important and provide much needed food for the queen after winter hibernation, and the first eggs and bees that hatch. Late fall flowers are also critical to the survival of new queens, because substantial body fat reserves are needed to survive hibernation. Queens without suitable fat reserves will die before spring emergence.

## Why may bumble bees and other pollinators be declining?

**Disease:** Pathogens and parasites reduce the health and number of wild bumble bee colonies. High densities of managed bees (commercial bumble bees and honey bees) can increase the risk of spreading disease as they interact with and use the same food and nesting habitat as wild bees.

**Insecticides, herbicides, and fungicides:** Chemicals that we use to kill or control insects and undesirable plants can have toxic effects on bumble bees.

## Habitat loss and degradation:

Natural habitat has been lost, degraded, and fragmented by conversion to other uses.

## The effects of climate change:

Increased temperature and precipitation extremes, increased drought, early snow melt and late frost events may lead to reduced floral resources, nesting habitat, and foraging time, as well as a mis-match between timing of available spring flowering plants and bumble bee emergence. Reduced floral resources can lead to nutritional deficiencies and smaller populations, which make colonies more susceptible to disease. Together these stressors may have even more of an effect.

## Loss of genetic diversity:

Small and/or geographically isolated populations can lead to inbreeding, sterile male production, smaller colonies, and colony extinction.

## What can you do to conserve bumble bees and other pollinators?

### Provide Habitat

- Use region-specific native plants and planting guides to benefit native pollinators such as <https://www.pollinator.org/guides> and <https://xerces.org/pollinator-conservation/plant-lists/>.
- Replace nonnative or invasive plants with native species instead! Early spring ephemerals and fall blooming

flowers, shrubs, and trees are especially important. Examples include pussy willows, lupine, milkweed, asters, bee balm, and American black elderberry.

- Provide nesting and overwintering sites. Yellow banded bumble bees build nests and hibernate in undisturbed soil, abandoned rodent burrows and along woodland edges. Keep unmowed, natural areas and reduce tilling soil. Support natural areas in your community, county and state.
- Plant pollinator gardens in urban and suburban areas as these pockets of flowers can provide additional pollen and nectar.

### Avoid or limit pesticides:

- Avoid or limit the use of these chemicals. Alternative non-chemical pollinator friendly options can often address the problem: <https://www.fws.gov/pollinators/PollinatorPages/YourHelp.html>
- Ask your local nursery for plants that have not been treated with systemic insecticides.
- Purchase organic plants if possible.
- Request that landscape and gardening companies not use pesticides on your property, and ask them to plant organically grown plants.
- Use Integrated Pest Management in yards, gardens and farmlands: [https://www.fws.gov/pollinators/pdfs/FWS\\_IPM\\_Urban\\_Outreach\\_Final\\_April\\_26\\_2018\\_final\\_web\\_508.pdf](https://www.fws.gov/pollinators/pdfs/FWS_IPM_Urban_Outreach_Final_April_26_2018_final_web_508.pdf) and more tips at: <https://www.xerces.org/pesticides/pesticides-your-garden>

### Reduce spread of pathogens and parasites:

- Use these safeguards within managed bee operations to reduce the risks and negative effects to native bees:
  - Monitor pathogens and parasites in managed bee stocks.
  - Treat pathogens and parasites to reduce their spread to wild bees.
  - Prevent the escape of managed bumble bees.
  - Follow regulations for the transport of managed bees across state and international boundaries.

### Participate in citizen science projects:

- Participate in citizen science efforts to monitor bees: <https://xerces.org/citizen-science/>
- Use and help develop survey methods that do not kill bees or other insects, such as photography and net collection and release.

## Bumble bees are important!

One out of every three bites we consume comes from food that has been grown with the helping wings of a pollinator such as the yellow banded bumble bee.

About 75 percent of our agricultural crops depend on insect, bird, and mammal pollinators. Pollinators help nearly all flowering plants reproduce, and create seeds and fruits that feed wildlife from songbirds to bears.

The economic value of pollination services provided by native insects (mostly bees) is estimated at \$10 billion per year in the United States.

## We wouldn't have these, without the bees!



*Blueberries, tomatoes, pumpkins and assorted vegetables*

For the Yellow Banded Bumble Bee Species Status Assessment (Use of newer browser is recommended as older browser may not work): <https://ecos.fws.gov/ecp0/profile/speciesProfile?sld=10403>

**U.S. Fish & Wildlife Service**  
**1 800/344 WILD**  
<http://www.fws.gov>

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