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Similar bees without yellow at the rear of T2

KEY
 SEX: ♀ Queen ♂ Male
 SIZE: The size ranges for each species are based off of averages. Use the size bars to check your printer's scale settings.

B. bimaculatus (two-spotted) SIZE RANGE: ♀ 12-15 mm ♂ 10-16 mm

B. impatiens (common eastern) SIZE RANGE: ♀ 14 mm ♂ 9-14 mm

B. griseocollis (brown-belted) SIZE RANGE: ♀ 14 mm ♂ 12-18 mm

B. ferridus (yellow) SIZE RANGE: ♀ 14 mm ♂ 11-17 mm

B. auricomus (black-and-gold) SIZE RANGE: ♀ 17 mm ♂ 13-21 mm

B. pensylvanicus (American) SIZE RANGE: ♀ 17 mm ♂ 13-19 mm

B. ternarius (tri-colored) SIZE RANGE: ♀ 13 mm ♂ 10-14 mm

B. vagans (half-black) SIZE RANGE: ♀ 14 mm ♂ 11-14 mm

B. citrinus (lemon cuckoo) SIZE RANGE: ♀ 14 mm ♂ 12-16 mm

B. affinis (rusty patch) SIZE RANGE: ♀ 18-22 mm ♂ 12-14 mm

Similar bees with yellow at the rear of T2

POCKET GUIDE TO IDENTIFYING THE RUSTY PATCHED BUMBLE BEE (*Bombus affinis*)



www.xerces.org/bumblebees

XERCES SOCIETY
for Invertebrate Conservation

Historic and recent range of *Bombus affinis*



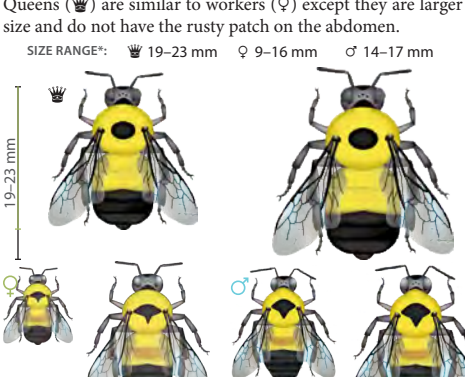
The rusty patched bumble bee was once common in the eastern United States and the upper Midwest. They can still occasionally be found in isolated patches, but *B. affinis* has disappeared from most of its former range. Your efforts to search for this bee will help document their current range. The Xerces Society and other bumble bee scientists will use this information to promote conservation of remaining *B. affinis* populations.

NOTE: This species is listed as endangered by the U.S. Fish & Wildlife Service. Please consult the USFWS Guidance on Endangered Species Act Implementation for survey protocols and other considerations when searching for this species at: www.fws.gov/midwest/endangered/insects/rpbb/guidance.html

Identifying *Bombus affinis*

Queens (♂) are similar to workers (♀) except they are larger in size and do not have the rusty patch on the abdomen.

SIZE RANGE: ♀ 19-23 mm ♂ 9-16 mm

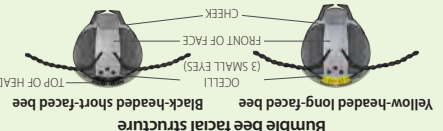


Workers (♀) and males (♂) have a distinctive rusty brown patch on the front half of their second abdominal segment (T2), which is completely surrounded by yellow hairs. The hair on their heads is mostly black.

On the thorax, black hairs extend from a central patch in the middle of the thorax out towards the wings and centrally in a narrow 'V' towards the rear.

***A note about bumble bee size:** Bumble bee sizes vary within a species largely due to nutrition. While there is a seasonal component to this (generally larger bees as the season progresses), different size bees are found throughout the flight season. Workers (non-reproductive females), generally speaking, are smaller early in the season and then increase in size as the colony grows and more resources are available.

Bumble bee facial structure



Labels: CHEEK, FRONT OF FACE, (3) SMALL EYES, OCCELLI, TOP OF HEAD.

Black-headed long-faced bee
Black-headed short-faced bee

B. vagans females and *B. citrinus* males have yellow hair on the top of their heads while *B. affinis* has black hair on the top of their heads. *B. vagans* also have a longer face than *B. affinis*.

Other common bumble bees of eastern North America

There are around 20 bumble bee species present in eastern North America. Illustrated below are some of the most commonly seen species and color morphs. Please note that many species are variable in coloration. Generally speaking, males are more variable than females and difficult to identify from color patterns alone. For more identification information, visit www.BumbleBeeWatch.org.

B. fraterculus (southern plains) SIZE RANGE: ♀ 11 mm ♂ 9-13 mm

B. rufocinctus (red-belted) SIZE RANGE: ♀ 11-15 mm ♂ 9-13 mm

B. impatiens (common eastern) SIZE RANGE: ♀ 14 mm ♂ 9-14 mm

B. ferridus (yellow) SIZE RANGE: ♀ 14 mm ♂ 11-17 mm

B. auricomus (black-and-gold) SIZE RANGE: ♀ 17 mm ♂ 13-21 mm

B. pensylvanicus (American) SIZE RANGE: ♀ 17 mm ♂ 13-19 mm

B. ternarius (tri-colored) SIZE RANGE: ♀ 13 mm ♂ 10-14 mm

B. vagans (half-black) SIZE RANGE: ♀ 14 mm ♂ 11-14 mm

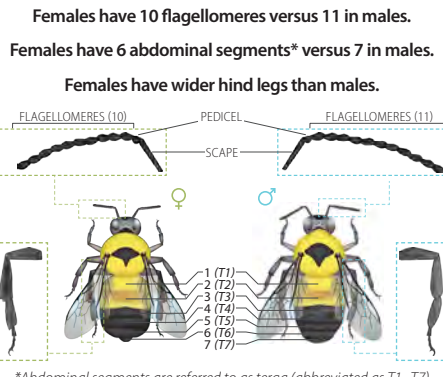
B. citrinus (lemon cuckoo) SIZE RANGE: ♀ 18-22 mm ♂ 12-16 mm

Similar bees with yellow at the rear of T2

Like *B. affinis*, *B. citrinus* males and *B. vagans* females have yellow hair covering most of the first two abdominal segments (T1-T2). However, *B. affinis* workers have a rusty patch on T2.

Is your bumble bee male (♂) or female (♀)?

Females have 10 flagellomeres versus 11 in males.
 Females have 6 abdominal segments* versus 7 in males.
 Females have wider hind legs than males.



*Abdominal segments are referred to as terga (abbreviated as T1-T7)

Bumble bees exhibit strong sexual dimorphism that extends beyond color and size differences—males have one more abdominal segment and one more flagellomere than females.

- Additional clues that can aid in identification:
- Females (♀) are found through spring, summer, and early fall. Workers and queens (♂) are both female.
 - Males (♂) can be common in late summer and early fall.
 - Females have corbicula (pollen baskets) used for carrying pollen back to the nest) on their hind legs, and shorter antennae and abdomens.
 - Males sometimes have larger eyes and longer hair.

Join our effort to track bumble bees at www.BumbleBeeWatch.org
 Visit www.xerces.org/bumblebees for more information.