Native Wildflowers and Bees of Western Montana

The Beauty of Wildflowers

Many of us enjoy the beauty of wildflowers, but we may not know their names or how to identify them.

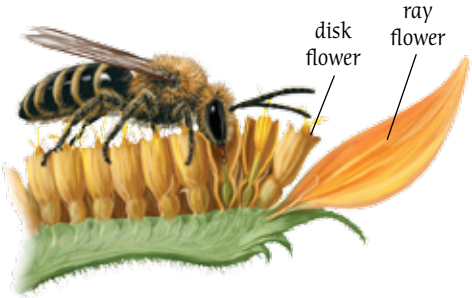
This basic guide will help you identify sixteen pairs of common native wildflowers and bees of western Montana that provide vital pollination services.

For this guide, a bee is paired with a flower it is most likely to visit, but it may visit other flower types as well.

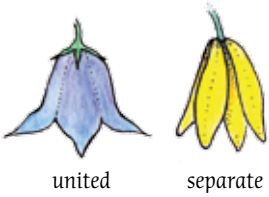
From early spring through the fall, look for these wildflowers and bees as you walk along forest and grassland trails.

Please do not pick wildflowers; leave them where you find them for others to enjoy.

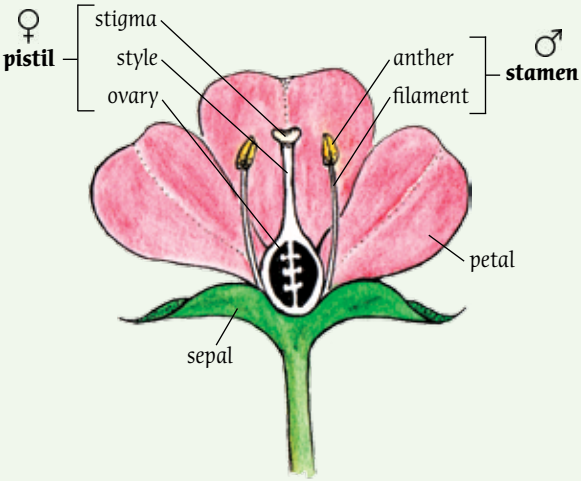
CROSS SECTION OF A FLOWER FROM THE ASTER FAMILY



PETALS



PARTS OF A FLOWER

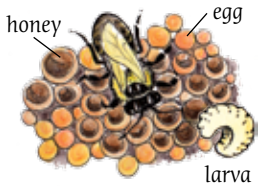


What is Pollination?

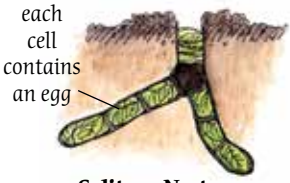
Pollination is the process of moving pollen from one flower to another of the same species, which produces fertile seeds. Most flowering plants depend on native bees for pollination. Bees and other animals pollinate one-third of the food we eat – all kinds of fruits, vegetables, grains, nuts and beans. And they provide us with landscapes filled with wonderful wildflowers.

Bees are by far the most effective pollinators because they feed only on flowers. Flowers attract and reward bees for their pollination service with sugar-rich nectar to fuel their flight and protein-rich pollen, or bee bread, to feed their young brood.

NESTING LIFESTYLES



Social Nest
(bumble bee)



Solitary Nest
(leafcutter bee)

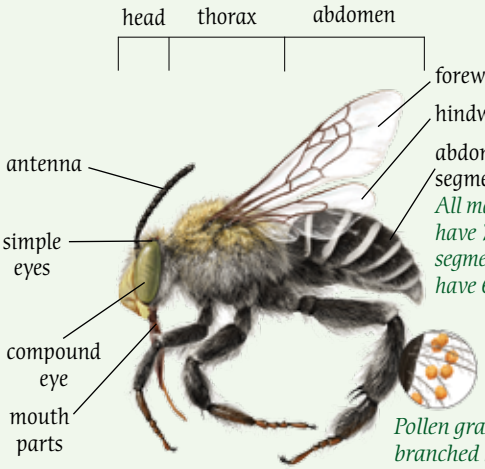
*Bees can be organized into two groups based on their nesting lifestyle – **social** and **solitary**.*

***Social** nesting bees, like bumble bees, build communal nests and share division of labor including foraging and rearing of young. They are the only native bees that nest socially in a colony.*

***Solitary** nesting bees nest alone, but some species share nest entrances or nest in groups.*

PARTS OF A BEE

SIDE VIEW OF A DIGGER BEE



All male bees have 7 abdominal segments, females have 6 segments

Pollen grains stick to branched hairs, which helps distinguish bees from wasps.

IDENTIFICATION TIPS

*How do I know it's a **bee** and not a **fly** or a **wasp**?*

Fly

2 wings (bees have 4)

flies hover, bees don't

Wasp

very little hair

does not carry pollen

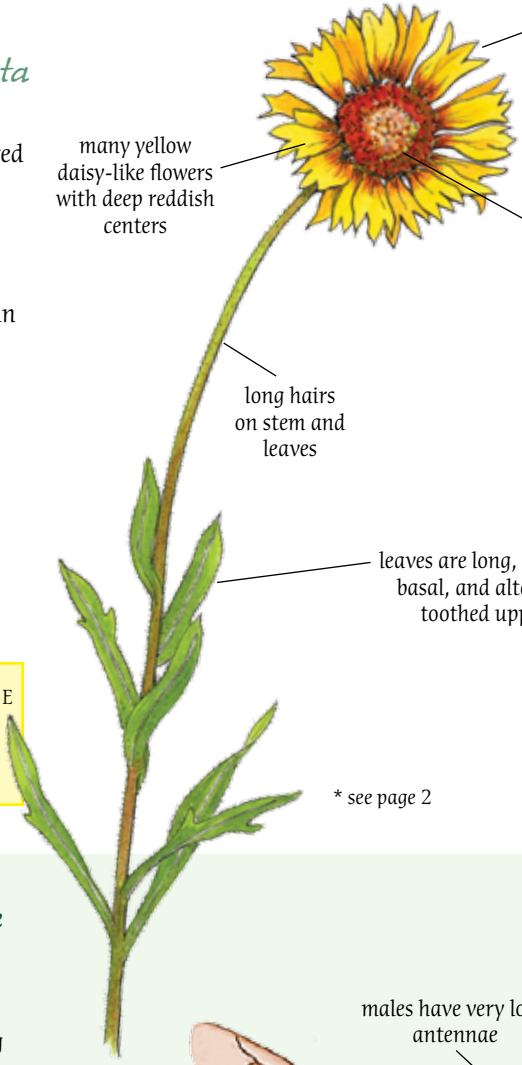
often has a pinched abdomen

A COMMON NON-NATIVE

***The European honey bee** is very common in western Montana – but not a native to North America.*

Blanketflower
Gaillardia aristata

Blanketflower, with its long-lasting multi-colored flower heads of yellow, purple, red and orange, grows in clumps. It can be found in dry, open grasslands and mountain slopes.



FAMILY ASTERACEAE

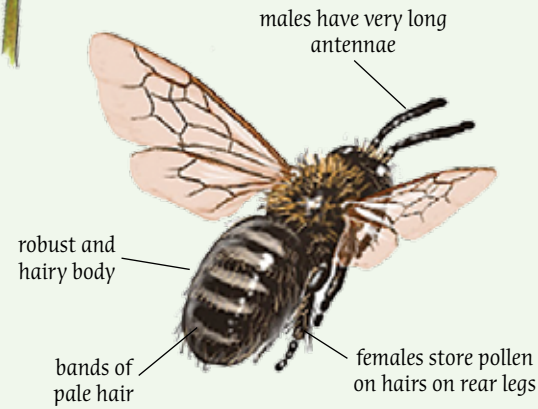
Blooms: June-August

Size: up to 20" tall

* see page 2

Long-horned Bee
Melissodes spp.

These bees get their name from the very long antennae found on males. Long-horned bees are important pollinators of sunflowers, blanketflowers, and other asters.



FAMILY APIDAE

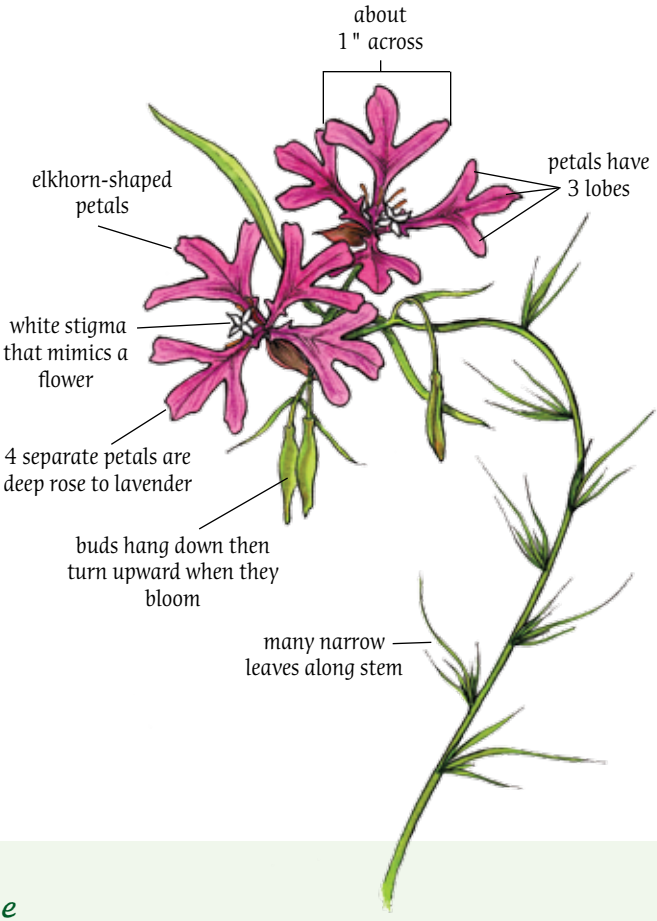
Nest: Solitary (ground)

Size: 0.3-0.7" long

approximate size

Clarkia
Clarkia pulchella

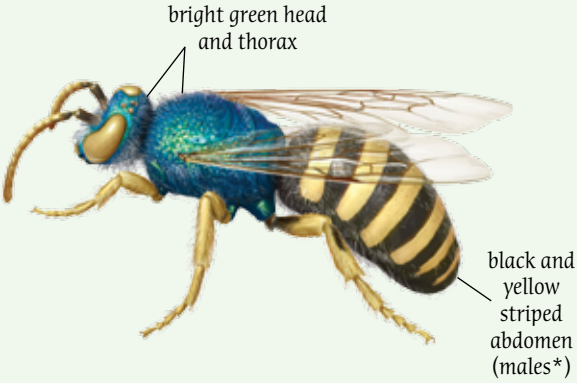
Clarkia, named in 1806 by Meriwether Lewis for Lewis and Clark Expedition partner William Clark, occurs at low elevations, in valleys and on dry mountain slopes. Clarkia is also known as “elkhorns” and “ragged robin.”



FAMILY ONAGRACEAE
Blooms: June-August
Size: 10-20" tall

Metallic Green Bee
Agapostemon texanus

These brilliantly colored metallic blue or green bees visit a wide variety of flowers. These bees are commonly called “sweat bees” because they are attracted to human sweat.

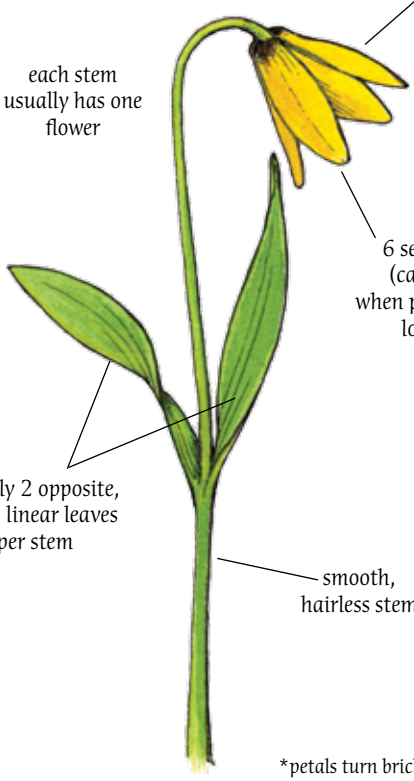


FAMILY HALICTIDAE
Nest: Solitary (ground)
Size: 0.3-0.6" long

*females are entirely green

Yellow Bells
Fritillaria pudica

One of the first wildflowers to bloom in the spring after the snow melts, yellow bells grow in dry, loose soil in open woodlands and grasslands. Meriwether Lewis collected this plant in 1806.



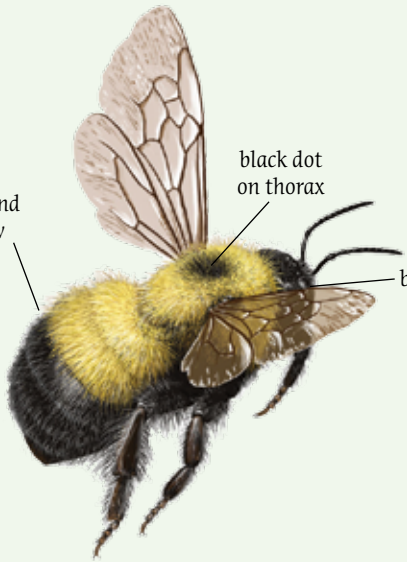
*petals turn brick red after pollination

FAMILY LILIACEAE
Blooms: April - June
Size: 4-12" tall

Half-black Bumble Bee
Bombus vagans

These large, hairy bees are one of the most common bumble bees in our area. They forage in sunny meadows and shady forests.

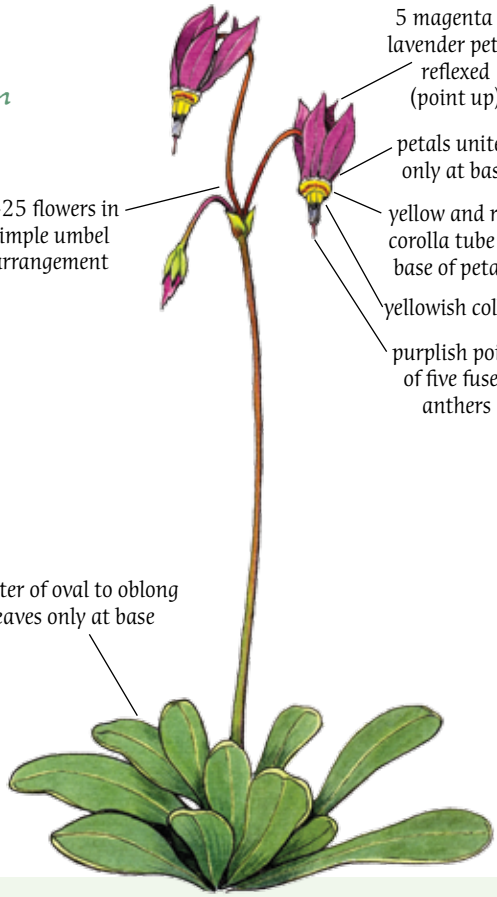
Bumble bees nest in small cavities such as abandoned rodent burrows or under grass tussocks.



FAMILY APIDAE
Nest: Social
Size: 0.4-0.9" long

Shooting Star
Dodecatheon pulchellum

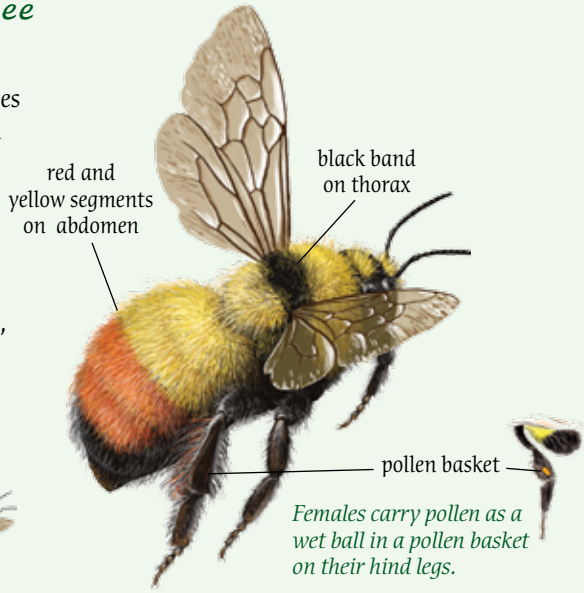
The nodding flowers of shooting stars look like pink darts. They grow in moist grasslands, forests, and along streambanks.



FAMILY
PRIMULACEAE
Blooms: April - June
Size: 6-16" tall

Great Basin Bumble Bee
Bombus centralis

Great Basin and other bumble bees perform a special behavior called "buzz pollination," in which a bee grabs a flower in her jaws and vibrates her wings to dislodge pollen trapped in a flower's anthers. Bumble bees buzz pollinate tomatoes, peppers, cranberries and shooting stars.

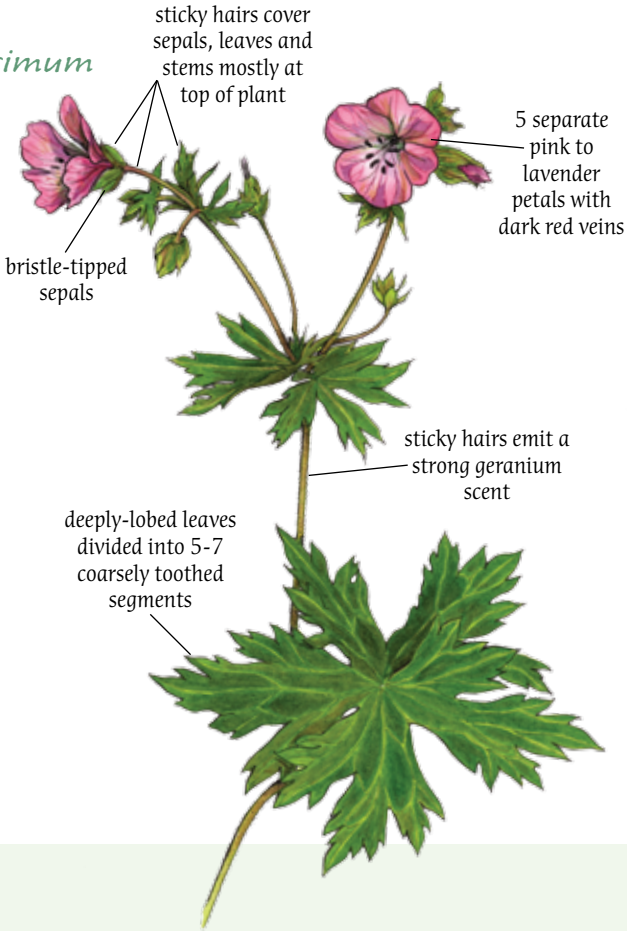


Females carry pollen as a wet ball in a pollen basket on their hind legs.

FAMILY APIDAE
Nest: Social
Size: 0.4-0.9" long

Sticky Geranium
Geranium viscosissimum

This perennial with a thick, woody taproot is commonly found in open grasslands and valleys to subalpine meadows. Sticky to the touch, geraniums emit a strong geranium scent. The dark red veins on the petals guide pollinators to their reward.



FAMILY GERANIACEA

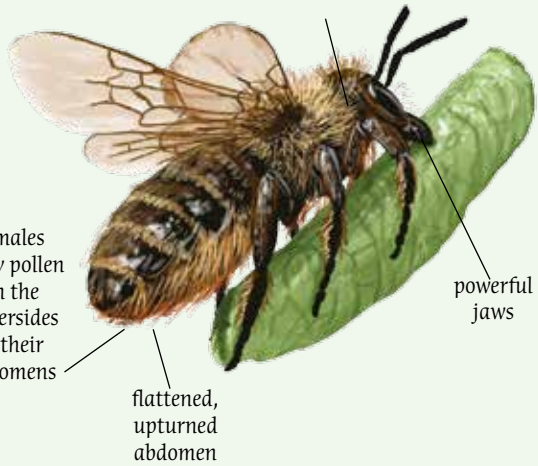
Blooms: June - August

Size: 16-32" tall

Leafcutter Bee
Megachile spp.

Female leafcutter bees cut circular leaf or petal pieces and use them to line their brood cells that they build in holes in wood or loose gravel.

Their stout bodies with upturned abdomens give them a pugnacious look.



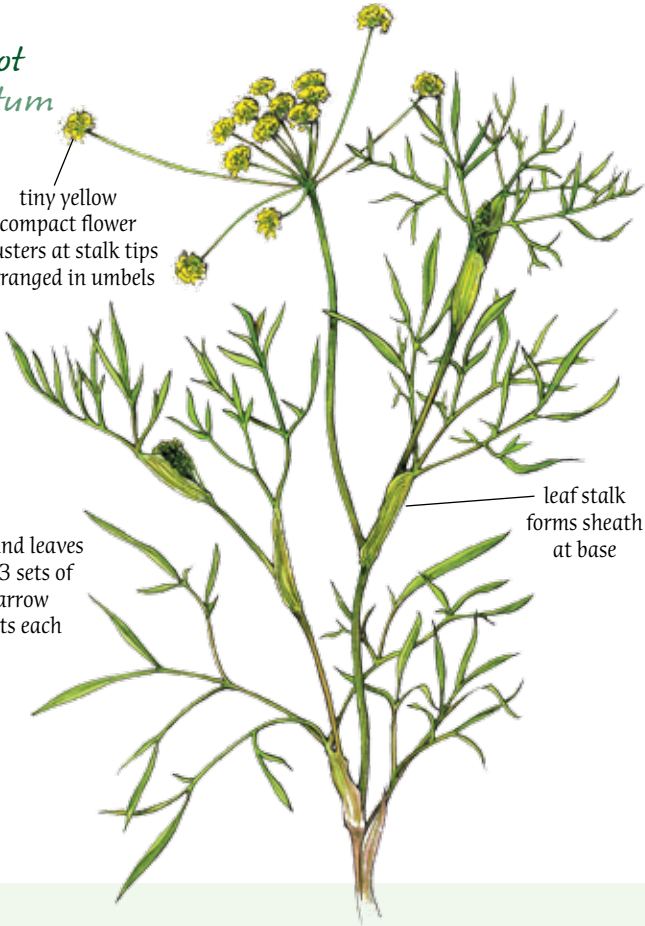
FAMILY MEGACHILIDAE

Nest: Solitary

Size: 0.4-0.8" long

Nine-leaf Biscuitroot
Lomatium triternatum

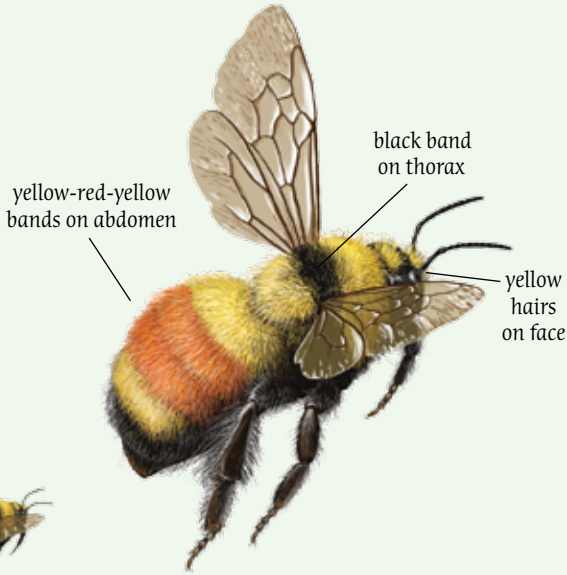
The nine leaves, consisting of three sets of three leaflets each, give nine-leaf biscuitroot its name. This perennial, in the carrot family, can be found on open slopes from valleys to subalpine forests.



FAMILY APIACEAE
Blooms: May - July
Size: 8-32" tall

Hunt's Bumble Bee
Bombus huntii

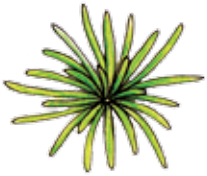
Queen Hunt's bumble bees are one of the earliest bumble bees to emerge in spring in search of the first flowers of the season. Because of their chunky size and furry body, bumble bees can fly in cooler temperatures and at lower light levels than many other bees.



FAMILY APIDAE
Nest: Social
Size: 0.4-0.9" long

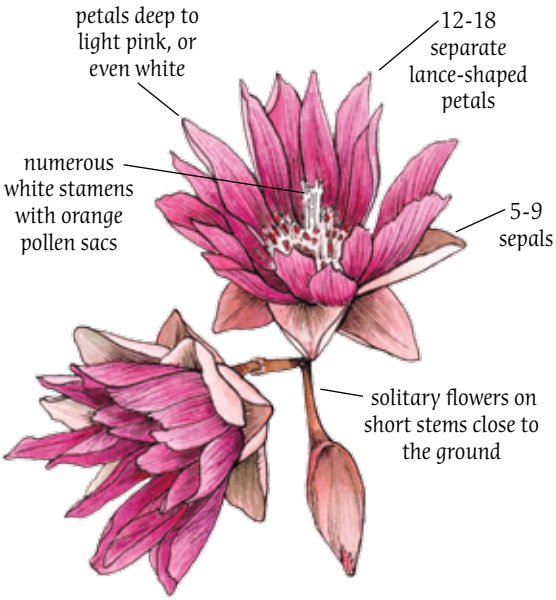
Bitterroot
Lewisia rediviva

Montana's state flower grows on dry, exposed mountain slopes in gravelly soils. It's named for Meriwether Lewis who collected it on July 1, 1806 during the Lewis and Clark Expedition.



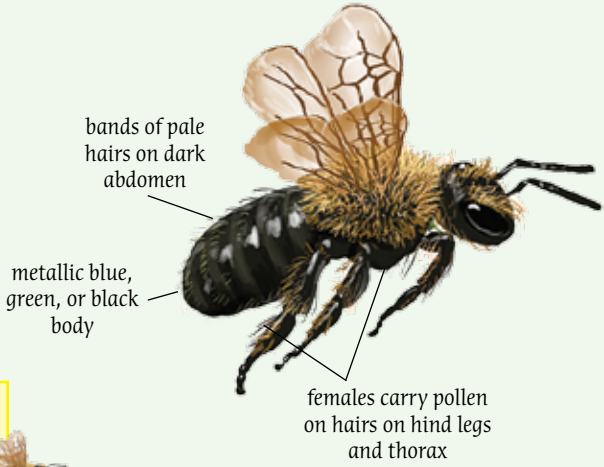
Leaves disappear usually before flowers bloom. They are narrow, basal, succulent and less than 2" tall.

FAMILY
PORTULACACEAE
Blooms: May - June
Size: 2-3" tall



Mining Bee
Andrena spp.

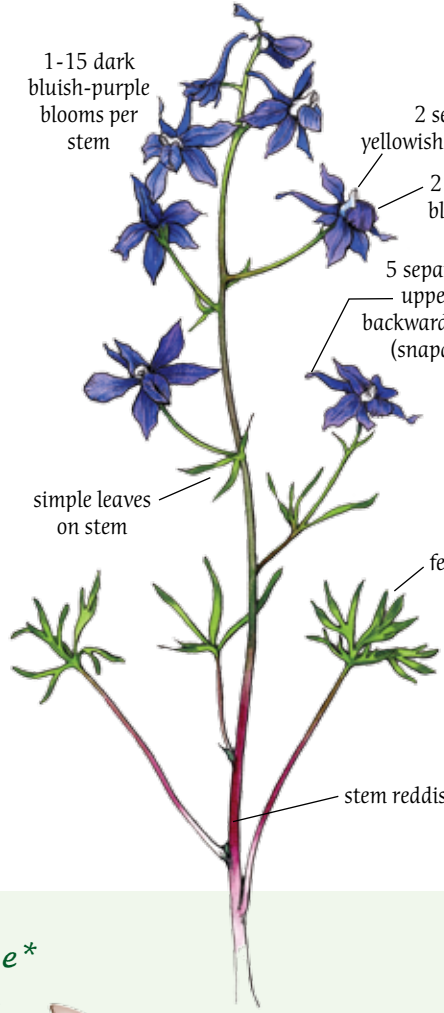
These medium-sized bees are often encountered by gardeners because they nest in lawns. They are among the most common bees that forage in the spring.



FAMILY ANDRENIDAE
Nest: Solitary (ground)
Size: 0.3-0.7" long

Little Larkspur
Delphinium bicolor

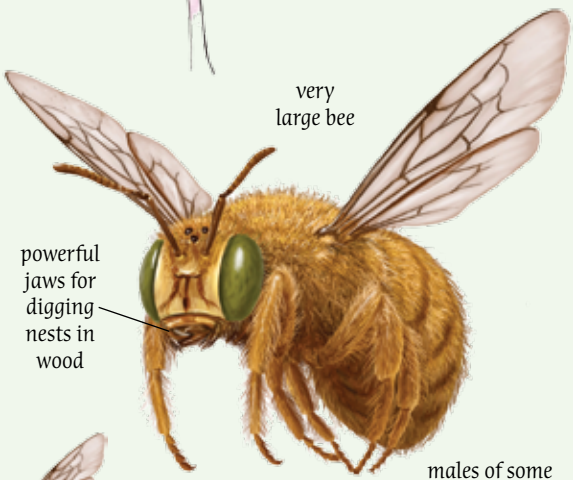
Little larkspur can be found in dry areas from valleys to subalpine forests. It's called "larkspur" because one of the sepals on each bloom has a spur, which looks like the spur on a lark's foot.



FAMILY
RANUNCULACEAE
Blooms: May - July
Size: 5-16" tall

*Large Carpenter Bee**
Xylocopa californica

These large, black or golden brown bees are often mistaken for bumble bees, but with much less hair. Males are territorial and will buzz around humans, but they (males) are unable to sting. They build nests in wood or stems.



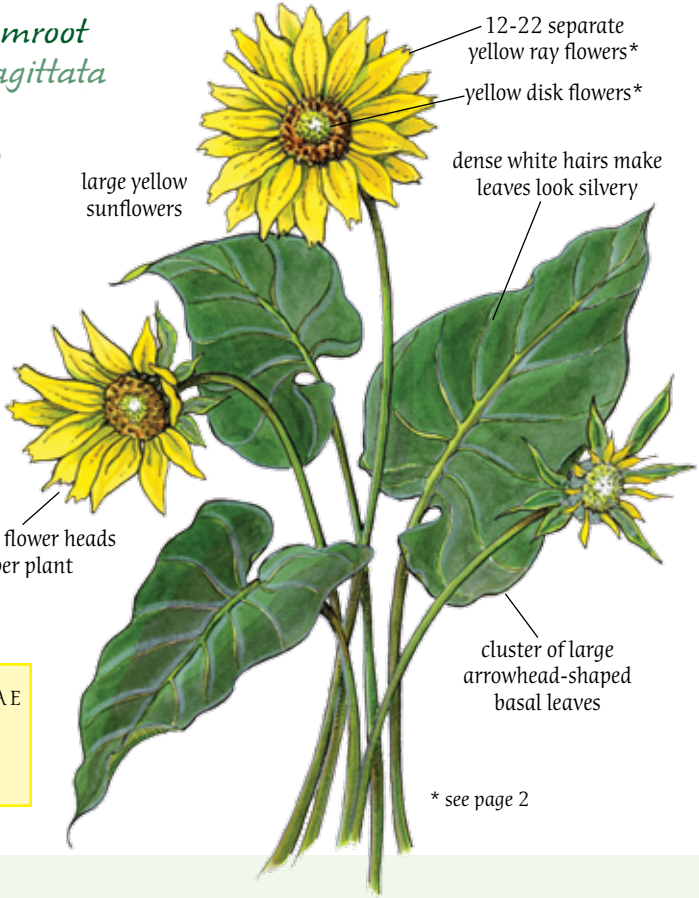
males of some species are golden brown

FAMILY APIDAE
Nest: Solitary (wood)
Size: 0.5-1.25" long

*uncommon in Montana

Arrowleaf Balsamroot
Balsamorhiza sagittata

The leaves of arrowleaf balsamroot can be up to a foot long and look silvery due to dense white hairs that cover their surface. Look for this plant in open grasslands, valleys and mountain slopes.

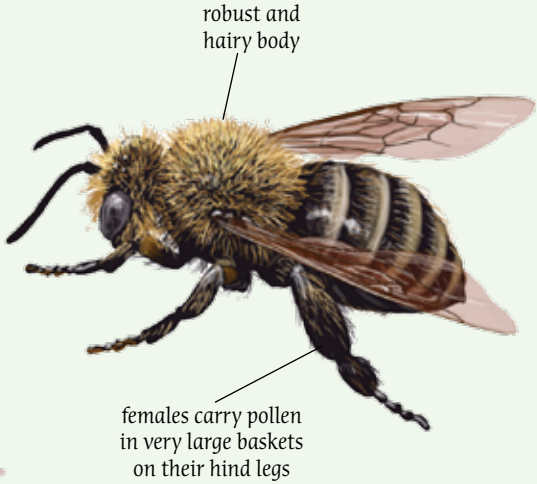


* see page 2

FAMILY ASTERACEAE
Blooms: April - July
Size: 12-24" tall

Sunflower Bee
Diadasia enavata

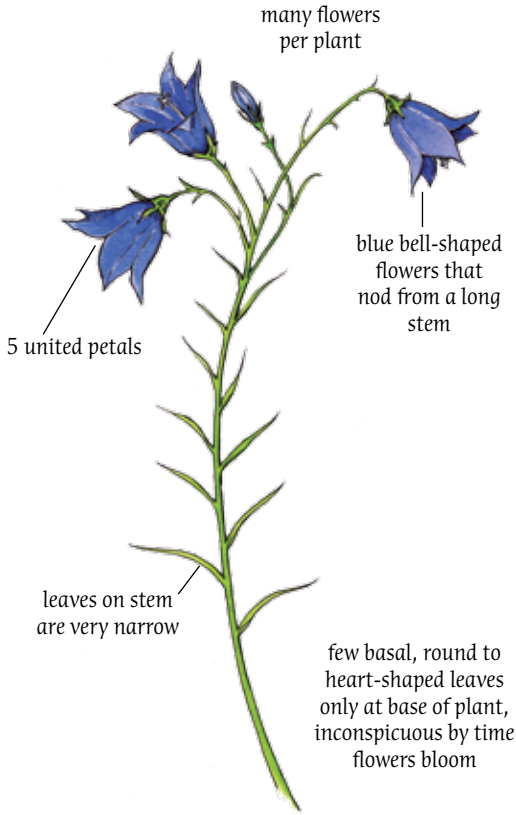
These bees have a specialized foraging habit – collecting pollen and nectar from sunflowers and other asters only. These solitary ground nesters have a unique habit of surrounding the nest entrance with a turret (chimney) possibly to protect it from the weather.



FAMILY APIDAE
Nest: Solitary (ground)
Size: 0.2-0.9" long

Common Harebell
Campanula rotundifolia

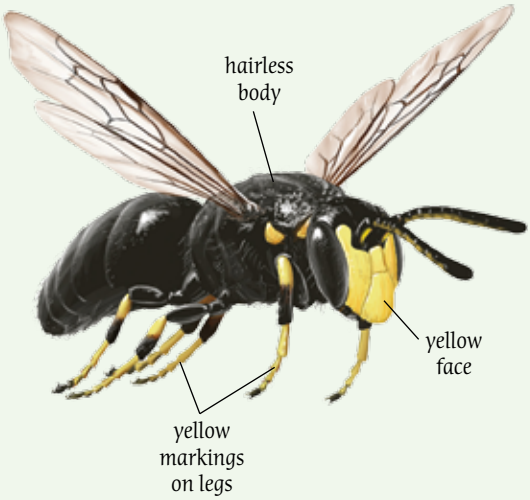
Harebell, with its bell-shaped flowers, is commonly found in open sites from grasslands and valleys to subalpine forests. If you break open harebell's stems or leaves, you will notice a milky fluid.



FAMILY CAMPANULACEAE
Blooms: June - September
Size: 6-20" tall

Yellow-faced Bee
Hylaeus spp.

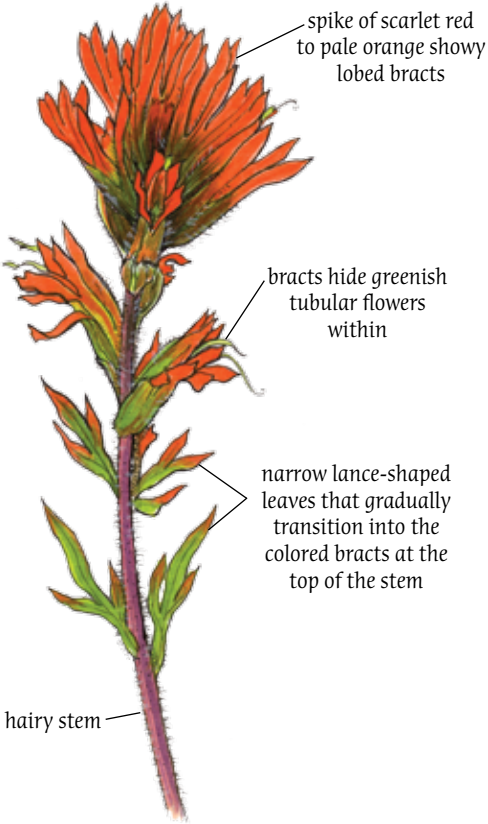
These small, slender and hairless bees are often mistaken for wasps. Females do not carry pollen externally on their body; instead, they store it in their stomachs. Most species nest in stems and twigs.



FAMILY COLLETIDAE
Nest: Solitary
Size: 0.2-0.3" long

Scarlet Paintbrush
Castilleja miniata

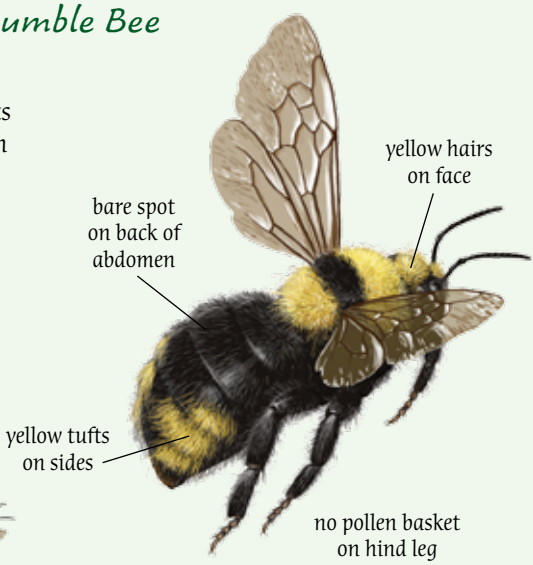
Because paintbrush produces lots of nectar, some ecologists believe that paintbrush and hummingbirds evolved together. Paintbrush is partly parasitic, which means that they take some of their nutrients and water from nearby host plants. Look for this widespread plant in moist meadows and open forests.



FAMILY SCROPHULARIACEAE
Blooms: July - September
Size: 8-32" tall

Indiscriminate Cuckoo Bumble Bee
Bombus insularis

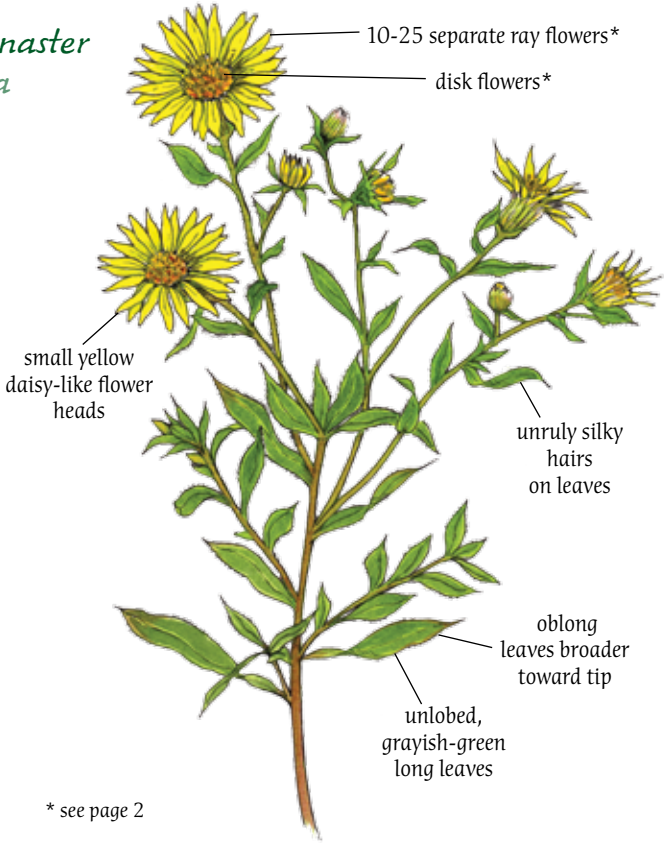
Cuckoo bumble bees parasitize nests of nonparasitic bumble bees. Queen cuckoo bumble bees invade other bumble bee nests, kill the resident queen, and force the workers to raise young parasitic bees along with the brood of the host colony. They can be seen patrolling a few inches above the ground looking for bumble bee nests.



FAMILY APIDAE
Nest: Social (parasitic)
Size: 0.4-0.9" long

Hairy False Goldenaster
Heterotheca villosa

This aster is found in clusters on well-drained, sandy mountain slopes. The leaves have a pleasant scent and look grayish-green because of the silky hairs that cover the plant. Hairy false goldenaster spreads easily in hot, exposed areas.

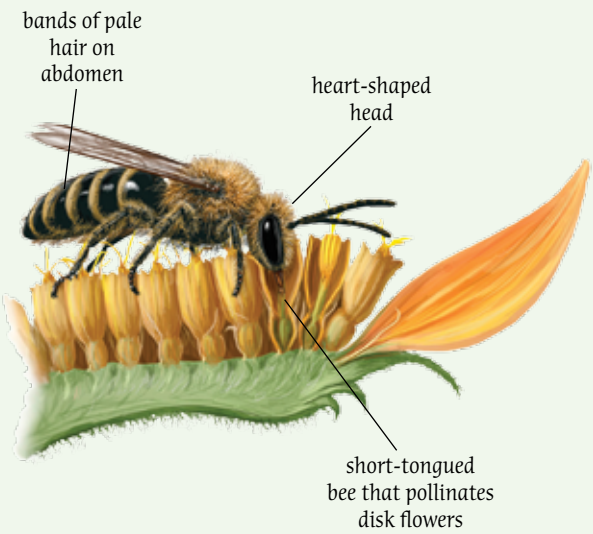


FAMILY ASTERACEAE
Blooms: July - September
Size: 6-20" tall

* see page 2

Polyester Bee
Colletes spp.

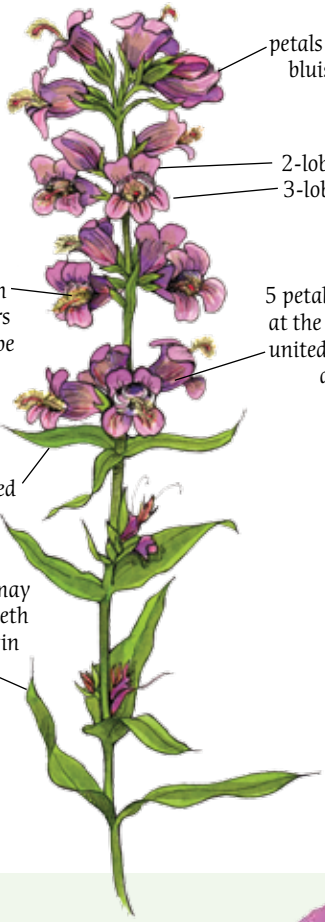
Slender, hairy, small bees that line their brood cells with a polyester-like material, hence their common name, "polyester bee." This waterproof lining allows them to nest along creeks and in moist soils.



FAMILY COLLETIDAE
Nest: Solitary (ground)
Size: 0.3 - 0.6" long

Fuzzy-tongued Penstemon
Penstemon eriantherus

This penstemon, with its funnel-shaped blooms, can be found on open, dry and sunny mountain slopes with rocky soils. Look for ridges inside the "throats" of this wildflower along with prominent yellow hairs, hence the name "fuzzy-tongued."



FAMILY SCROPHULARIACEAE
Blooms: May - July
Size: 5-25" tall

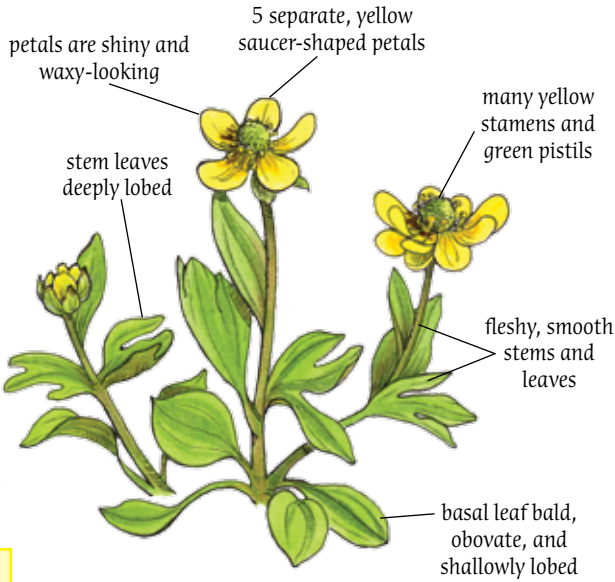
Digger Bee
Anthophora spp.

Robust, hairy and fast-flying bees that make a buzzing sound and are sometimes mistaken for bumble bees. They often gather together to sleep on a single plant and will fall asleep holding onto the plant with their jaws.

FAMILY APIDAE
Nest: Solitary (ground)
Size: 0.25-1" long

Sagebrush Buttercup
Ranunculus glaberrimus

One of the earliest flowers to bloom. When you see a buttercup, you know that spring is on its way. Sagebrush buttercup grows in valleys and on dry, open mountain slopes.

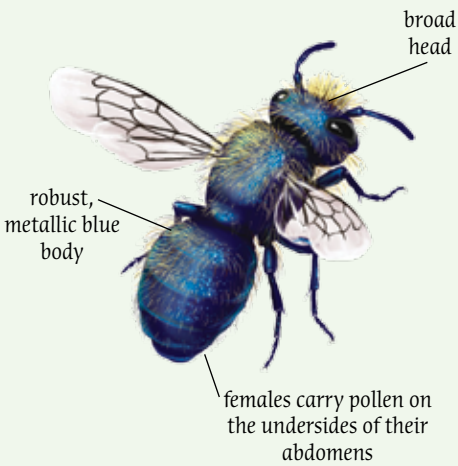


FAMILY RANUNCULACEAE
Blooms: March - May
Size: 3-8" tall

Orchard Mason Bee
Osmia lignaria

One of the earliest bees to emerge in the spring. They are important pollinators of fruit trees; thus the name orchard mason bee.

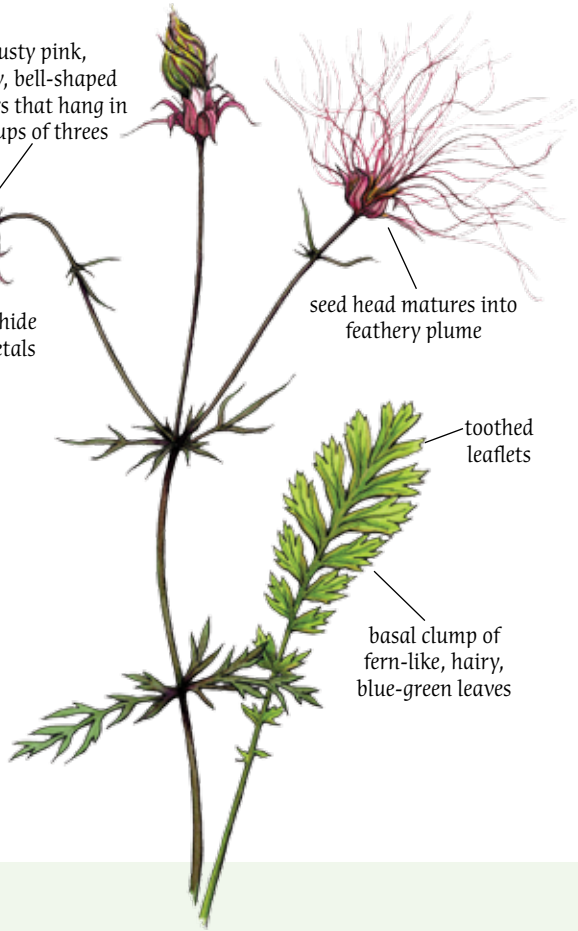
Solitary nesters use existing tunnels in dead wood, crevices in between stones, and orchard mason bee houses. Females plug the entrance of each egg cell with mud.



FAMILY MEGACHILIDAE
Nest: Solitary
Size: 0.2-0.8" long

Prairie Smoke
Geum triflorum

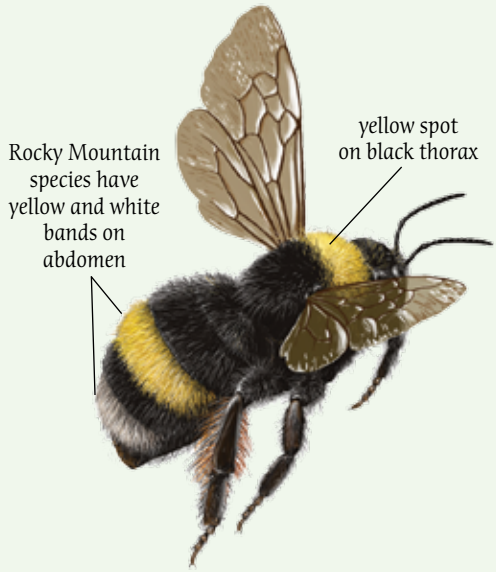
These nodding, urn-shaped flowers, also called "old man's whiskers," grow in grasslands to mountain meadows in dry to moist open areas. Called "prairie smoke" because these flowers, when matured to feathery seeds, look like smoke.



FAMILY ROSACEAE
Blooms: May - July
Size: 6-18" tall

Western Bumble Bee
Bombus occidentalis

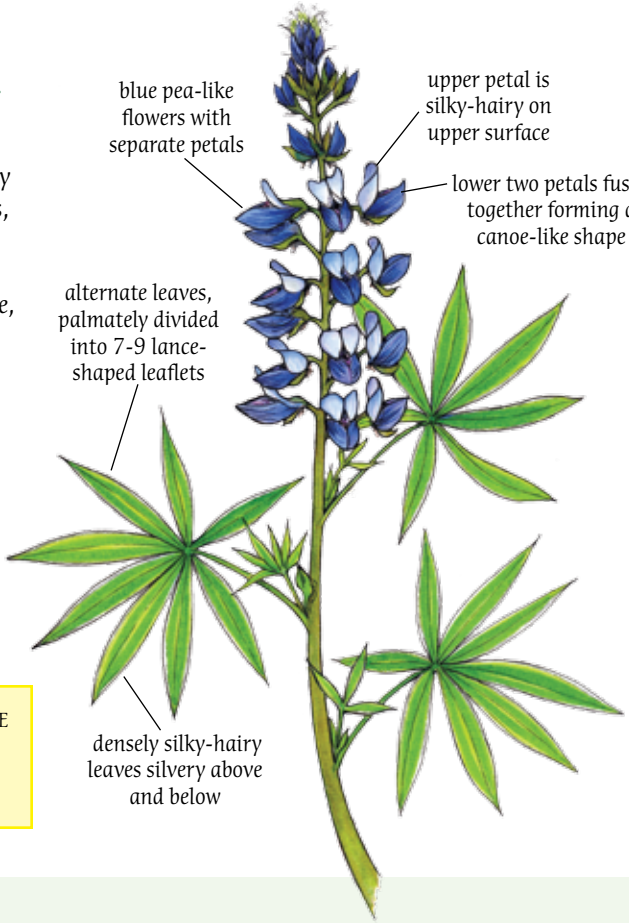
Once common in the West, western bumble bees have disappeared in the western-most portion of their range, possibly due to introduced diseases and habitat loss. Variable in color, the Rocky Mountain western bumble bees have a yellow band and white bands on the rear of their abdomens. They emerge early in the spring.



FAMILY APIDAE
Nest: Social
Size: 0.4-0.9" long

Silky Lupine
Lupinus sericeus

This perennial herb is found in moderately dry open areas from valleys, to mountain slopes and subalpine forest meadows. Although rare, you may spot a white silky lupine.



FAMILY FABACEAE
Blooms: May - August
Size: 8-32" tall

Mountain Bumble Bee
Bombus appositus

These large, yellow and black, long-tongued bumble bees are found in the Rocky Mountains. When a bumble bee lands on a lupine flower, its body weight tips the canoe-like petals down (as if opening a trap door) exposing the pollen which sticks to the bee's belly. Lupines have no nectar so pollen is the only reward.

FAMILY APIDAE
Nest: Social
Size: 0.4-0.9" long

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Bee Illustrations: Steve Buchanan

For more information on bees and native plants,
check out Pollinator Partnership at www.pollinator.org
and The Xerces Society at www.xerces.org.

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