

Apis mellifera (Honey Bee) [1 species]

A radically different bee from our native species. No close relatives inhabit the Western Hemisphere. Lifestyle unique and not mirrored by any native species. Morphology equally unique.

Field Marks: ♀♂ **Long hairs emerging from eyes**, Abdomen has variable transverse bands of amber and dark brown integument and pale hair. Abdomen, amber bands primarily on first 2 segments transitioning to all dark segments at tip (note, it is not uncommon to find bees with NO amber in abdomen). Abdomen, pale hair bands largely on segments 3-5, note hairs bands located on base of segments not rims like most other bees. Wings held **above back**, edges touching but rarely overlapping. ♀ **Hind legs broadened**, tibia and basitarsus flat and very wide, tibia with no hairs in the shiny central portion. ♂ Almost never seen, feeds only in hive on honey, does not visit flowers, leaves only to mate and immediately perish. Only Maryland bee where eyes meet atop its head.

Flight Season: Throughout

Size Relative to Honey Bee: 1X

Position of Wings Feeding on Flowers: Held parallel to one another over back, often touching but overlapping little

Location of Pollen Carrying Hairs: Carries pollen as a mix of pollen and nectar in a ball on outside of hind tibia

Similar Genera: *Colletes* - The Spring Group of *Colletes* are about the same size as Honey Bees, similarly visit blooming trees and shrubs, and are roughly the same tan/brown coloration of darker Honey Bees. Lacks the hairy eyes, wide bare hind tibia/basitarsus and lap their wings over their back. Face with long hair, abdomen often with bands of pale hair on rim.

Nest: Hives in hollow trees, building cavities, and hives

Flowers: Visits a wide variety of flowers



A. mellifera – Male



Apis mellifera



Apis mellifera – Female



Apis mellifera – Female



Apis mellifera – Male



Apis mellifera - Female

Anthophora (Digger Bee Group) [5 species]

Mostly uncommon bees, except for the recently introduced *A. plumipes* which can be quite common in DC and surrounding suburbs in early spring and is expected to become increasingly common.

Field Marks: ♀♂ Robust, **Bumble Bee shaped**, often seen hovering in one place in front of flowers. Some species hair patterns match Bumble Bees others with more extensive pale hairs. Wings, clear, not darkened. Head, top of head, more or less **flattened**. ♀ Pollen carrying hairs on tibia and basitarsus of **moderate length**. Hairs longer on the hind tibia than the basitarsus. ♂ Face, below the level of the antennae, **extensive yellow/white/pale** integument, including areas to either side of the clypeus and adjacent to the eyes. Most species with **pale mark** on first antennal segment (scape). **Antennae short**, not extending much past the base of wings if held backwards.

Flight Season: Spring to fall, primarily summer

Size Relative to Honey Bee: 1.5 - 2X

Position of Wings Feeding on Flowers: Slightly to the sides or overlapped

Location of Pollen Carrying Hairs: Hind tibia and basitarsus.

Similar Genera: *Bombus* - ♀ Hind tibia, wide, shiny, and bare in center, often carry large, noticeable mixed masses of pollen/nectar (rare species are parasitic and look like males); does not hover. *Anthophora* never have large moist masses of pollen on their legs, pollen usually hidden between hairs and carried dry. ♂ Face entirely black though may have yellow hairs. *Habropoda* - *A. abrupta* and *H. laboriosa* are very similar looking. *A. abrupta* is out later (late May to June) vs. mostly April to early May. ♀ Mostly on blueberry and redbud ♂ Face, white marks between clypeus and eye only a very narrow vertical line, *A. abrupta* with most of that region filled by white. Face, antenna, first antennal segment black. In *A. abrupta* first segment of antenna with prominent white mark on outside face. *Ptilothrix* - Legs much longer in both sexes. Wings held across back. Overall narrower. Mostly feeds on hibiscus/mallow. Hair on thorax dense, pale and short. ♂ No white on face. *Xylocopa* - Larger, wings smoky to dark brown, held out at 45° angle. *Eucerini* (*Long-horned Bee Group*) - ♀ Hind tibia and basitarsus have overall longer and more copious hair; hair of two segments equally long with no apparent break between the two. ♂ Clypeus yellow (rarely white); no pale markings between clypeus and eye; no pale mark on scape. Antennae long, extending well past base of wings when pulled back.

Nest: Usually clay soil, often aggregating together uses upturned tree roots, cliff faces, chinking in old log cabins, under decks.

Flowers: Nectars and a variety of flowers



A. abrupta – Male



A. abrupta – Female



A. abrupta – Female



A. bombooides – Male



A. bombooides – Male



A. villosula - Female



A. villosula – Male



A. villosula – Male



A. terminalis - Male



A. terminalis – Male



A. terminalis – Male



A. ursina – Male

Habropoda laboriosa (Digger Bee Group) [1 species]

Can be locally common in open wooded areas with abundant Blueberry bushes, shows up sparingly elsewhere in early spring.

Field Marks: ♀♂ Robust, **Bumble Bee** like in shape and color. Clypeus **inflated**, from side it is as wide as eyes. Wings clear not darkened. Head, top, flattened between compound eyes. Abdomen, long hair sparse and shiny black **integument visible**. ♀ Hind tibia and basitarsus with pollen carrying of moderate length. Hairs longer on the hind tibia than the basitarsus and **jet black**. Forages mostly on **blueberry** and redbud. ♂ Antennae **short**, not extending much past the base of the wings if held backwards. Antennae all black. Clypeus **bright white**. Area between clypeus and eye with white marks but the marks **hug the edge of eye** and appears as an uneven, narrow, vertical line.

Flight Season: Early spring

Size Relative to Honey Bee: 1.5x

Position of Wings Feeding on Flowers Holds parallel to abdomen with flat side facing upwards, wings do not overlap

Location of Pollen Carrying Hairs: Hind Tibia and basitarsus

Similar Genera: *Bombus* – During flight season only queens are flying and these are much larger than *Habropoda*. ♀ Hind tibia, flattened, wide and bare in center; carry large, noticeable mixed balls of pollen/nectar (rare species are parasitic and look like males). *Habropoda* never have large moist masses of pollen on their legs, pollen often hidden between hairs and carried dry. ♂ Face entirely black though may have yellow hairs. *Ptilothrix* – No overlap in flight seasons. *Xylocopa* – Larger, wings smoky to dark brown, held out at 45° angle. *Anthophora* - ♂ Head, area between clypeus and eye with more extensive yellow/white/pale integument. Antennae, first antennal segment (scape), most species with pale mark on outer face. *A. abrupta* and *H. laboriosa* are very similar looking. *A. abrupta* is out later (late May to June) vs. (mostly April to early May). *Eucerini* (*Long-horned Bee Group*) - ♀♂ Only *Eucera* overlaps in flight season. Hind tibia and basitarsus have longer hair and hair of two segments equally long with no apparent break between the two. ♂ Clypeus pale yellow to white with no pale markings between clypeus and eye. Antennal scape with no pale mark. Antennae very long extending well past base of hind wings when pulled back.

Nest: Ground

Flowers: Blueberry (primarily) and sometime Redbud (unclear if this sustains western Maryland populations).



H. laboriosa - Female



H. laboriosa – Female



H. laboriosa – Female



H. laboriosa – Male



H. laboriosa

Melecta pacifica (Digger Bee Group) [1 species]

Very rare, with only one record for the state.

Field Marks: ♀♂ **Humpbacked** appearance. Head appears slightly smaller than and lower on thorax. Thorax, top with dense pale white to orangish moderately long hairs. Head, top, sometimes with some light hairs. Abdomen, first segment usually with light hairs present. Remainder of bee with **black** hairs and integument. Abdomen **pointed**, tapers to end more rapidly than other species.

Flight Season: May/June

Size Relative to Honey Bee: 1X

Position of Wings Feeding on Flowers: Appears to mostly hold wings crossed on back

Location of Pollen Carrying Hairs: None, nest parasite

Similar Genera. *Anthophora* and *Habropoda* - ♀♂ *A. abrupta* and *H. laboriosa* very close in hair color, other species quite different. ♂ Lower face with extensive yellow/white integument. ♀ Hind legs with long stiff pollen carrying hairs. *Eucerine Genera* - Most come out later in the season, the few that are close in hair pattern have the same characteristics listed for *Anthophora/Habropoda* and the males have much longer antennae. *Bombus* - Larger. Abdomen does not taper as greatly. Abdomen completely haired; integument usually completely obscured. Female parasitic *B. citrinus* and male *B. impatiens* are close in hair color, other *Bombus* species have at least some yellow hair on abdominal segments 2-5. ♀ Hind tibia of pollen carrying species with expanded/bare outer face.

Nest: Nest parasite of *Anthophora*

Flowers: Nectars on a variety of flowers



M. pacifica – Female



M. pacifica – Female



M. pacifica – Female

Bombus (Bumble Bee Group) [14 species]

Most people recognize Bumble Bees (our only obligate native colonial bee), but few realize that there are 14 species in Maryland and that there are many species that look similar.

Field Marks: ♀♂ Integument completely black. Hair, combinations of **dense yellow/off-white and black** hair completely covering thorax and abdomen. Thorax always with extensive **yellow/pale** hairs. Only one uncommon species with all black-haired abdomen. Wings can be nearly black or clear. **Flight slow** and methodical almost never quick. ♀ Hind leg, **tibia flattened** with outer face bare except for fringe around edges, often filled with a dense ball of pollen and nectar; rare parasitic females without this character. **Clypeus bare** of hair and shiny. ♂ Face, **mustached**, with long hair on clypeus hanging over mandibles. Hind legs without bare area, antennae relatively **short**, not attening the base of wings when extended to the back.

Flight Season: Spring to fall, populations build up in summer

Size Relative to Honey Bee: 1 (rarely) - 2x

Position of Wings Feeding on Flowers: Held to side of abdomen or overlapping

Location of Pollen Carrying Hairs: Hind tibia (none in 3 rare nest parasites)

Similar Genera: *Ptilothrix* - Hair pattern similar. Legs much longer/thinner. Wings held across back. Body overall narrower. Forages mostly on hibiscus/mallow. Face rounder. Head, top, particularly round. Abdomen almost completely black; may have noticeable ochre/pale hairs on first abdominal segment. ♀ Without bare, expanded hind tibia. *Xylocopa* - All are the size of a queen Bumble Bee. Wings darkened and held out at 45° angle. Hair on abdomen dark except for pale hairs on first abdominal segment. Abdomen hairs thin compared to *Bombus*; slightly metallic integument almost always visible beneath sparse hairs. *Habropoda* and *Anthophora* - Out only in April/May, mostly on Blueberry and Redbud. ♂ Integument below antennae mostly white. *Eucerini* (*Long-horned Bee Group*) - ♀ Hind legs with very long dense hair and no bare patches. Hair patterns variable, but abdomen usually with narrow bands of white hair; ochre, reddish, brown, hairs often present; no species that closely mimics any of the Bumble Bees. ♂ Always with at least some pale integument below antennae. Long antennae extends past base of wings.

Nest: Colonial nester, Queen overwinters, uses rodent (rarely chickadee) nest to make nest and colony of workers created over several months. Queens and males produced in late summer/fall, they nectar briefly, mate, the males die off, and the potential queens then overwinter underground.

Flowers: Wide variety of flowers



B. affinis – Female



B. auricomus – Female



B. auricomus - Female



B. bimaculatus – Female



F. bimaculatus – Male



B. citrinus – Female



B. fervidus – Female



B. fervidus - Female



B. griseocollis – Male



B. griseocollis – Female



B. impatiens – Female



B. impatiens – Female

Cemolobus ipomoeae (Squash Bee Group) [1 species]

Very rare large bee specialist on the large flowered Wild Potato-vine (*Ipomoea pandurata*). Flies only at dawn and perhaps at dusk and unlikely to ever be seen away from the blooms of this plant.

Field Marks: ♀♂ Clypeus, **rim, shape distinct** to this species; rim with wide central rectangular projecting lobe and one large triangular tooth to either side. Abdomen with broad frosted bands of short silvery/white hairs transecting the segments with some brown/tan hairs towards the basal segments; black integument visible between the bands. Restricted to foraging early in the **morning/evening** on Wild Potato-vine, but be aware that *Peponapis* and *Bombus* also forage on these plants at those times. ♀ Hind tibia, pollen carrying hairs, **dark** and relatively sparse and short compared to similar genera. ♂ Antennae relatively short, not extending to base of wings when swept backwards. Clypeus, yellow restricted to **lower half**.

Flight Season: Summer

Size Relative to Honey Bee: 1.5X

Position of Wings Feeding on Flowers: Probably held across back

Location of Pollen Carrying Hairs: Hind tibia and basitarsus

Similar Genera: *Peponapis* - Common, slightly smaller, but very similar in general coloration and aspect, also out early in the morning, but mostly on squash/pumpkin, but does visit Wild Potato-vine too. Clypeus, rim, normal, straight no lobes/teeth. ♀ Hind leg pollen hairs orange/tan. ♂ Clypeus, yellow restricted to a central, smudgy roughly circular area. *Xenoglossa* - Rare, only a few records. Looks similar to *Peponapis*. Visits squash relatives. Has noticeable yellow marks on the base of the mandible. ♂ Clypeus, all yellow except for a short section of black near the top of the segment.

Nest: Likely in the ground

Flowers: Native *Ipomoea*



C. ipomoeae - Male



C. ipomoeae - Male

Peponapis pruinosa (Squash Bee Group) [1 species]

Common wherever pumpkins and squash grow. Flies from when the sky first lightens until the squash flowers close mid-morning.

Field Marks: ♀♂ Flies only early in the **morning** when squash/pumpkins are blooming. Males and females zip quickly from blossom to blossom. **Clypeus projects** outward, from the side its height is approximately equal to the width of the eye. Thorax, top, hairs usually slightly **dark orange**. ♀ Hind leg pollen hairs orange/tan, long, but a bit **sparser** than other Eucerines. ♂ Clypeus, **yellow restricted** to a central, smudgy roughly circular area.

Flight Season: Summer

Size Relative to Honey Bee: 1-1.2X

Position of Wings Feeding on Flowers: Crossed over back

Location of Pollen Carrying Hairs: Hind tibia and basitarsus

Similar Genera: *Apis* - Superficially looks similar and does occur in squash/pumpkin plants. Long hairs coming out of eyes. ♀ Hind tibia, widened with bare central area. *Xenoglossa* - Rare, only a few records. Also visits squash relatives. Mandible with noticeable yellow marks on the base. ♀ usually with a smudge of yellow on end of clypeus. ♂ Mandible, base with more extensive yellow than female. Clypeus, yellow with short section of the upper part black. *Cemolobus* - Clypeus, rim distinct to this species, with a wide central rectangular projecting lobe, and two more triangular teeth to either side. Restricted to foraging early in the morning on Wild Potato-Vine. ♀ Hind tibia, pollen carrying hairs dark and relatively sparse and short compared to similar genera. ♂ Antennae relatively short not extending to base of wings when swept backwards., Clypeus, yellow restricted to lower half.

Nest: Ground

Flowers: Planted squash and pumpkins

Xenoglossa strenua (Squash Bee Group) [1 species]

Rare, only a handful of records. Like the common *Peponapis pruinosa* this species only visits agricultural squash and pumpkins.

Field Marks: ♀♂ Flies only **early in the morning** when squash/pumpkins are blooming. Mandibles, have noticeable bright **yellow marks at the base**. Clypeus **projects outward** and when viewing from the side the clypeus height is approximately equal to the width of the eye. Thorax, top, hairs usually slightly **dark orange**. ♀ Hind leg pollen hairs orange/tan, long, but a bit **sparser** than most Eucerines. ♀ Usually with a **smudge of yellow** on end of clypeus. ♂ Has more extensive yellow on mandible than female. Clypeus, yellow, with a short section of the **upper part of the clypeus black**.

Flight Season: Summer

Size Relative to Honey Bee: 1-1.2X

Position of Wings Feeding on Flowers: Crossed over back

Location of Pollen Carrying Hairs: Hind tibia and basitarsus

Similar Genera: *Peponapis* - Super similar, but much more common. Mandibles all black in both sexes. ♂ Clypeus, yellow restricted to a central, smudgy roughly circular area. *Apis* - Superficially looks similar and does forage on squash/pumpkin plants. Hairy eyes. ♀ Hind tibia, widened with bare central area. *Cemolobus* - Equally rare, rim of clypeus distinct to this species, with a wide central rectangular projecting lobe and two triangular teeth to either side. Restricted to foraging early in the morning on Wild Potato-vine (a.k.a. Man-root). ♀ Hind tibia, pollen carrying hairs dark, sparser and short. ♂ Antennae relatively short not extending to base of wings when swept backwards. Clypeus, yellow restricted to lower half.

Nest: Ground

Flowers: Planted squash and pumpkins



X. strenua - Female



X. strenua - Female

Xylocopa virginica (Carpenter Bee Group) [1 species]

Familiar to many people for their habit of nesting in the soft woods of houses, benches, decks, and outbuildings, but often confused with Bumble Bees.

Field Marks: ♀♂ Uniformly large, Bumble Bee-like. Face with only dark hairs. Thorax covered in dense off-white hairs. Abdomen, first segment with narrow fringe of pale hairs at the base, rest with sparse, short dark hairs. Abdomen shiny because dark hairs are generally sparse enough that glossy, weakly bluish, integument shows beneath. Face round, equally wide or wider than length. Unique, but difficult to see in the field, the marginal cell is 7X long as wide. Wings dark, but not opaque. ♀ Face, between the antennae, has a small, but sometimes noticeable, projecting semicircular mound like the edge of a buried Frisbee. ♂ Face, below antennae almost entirely creamy white. Eyes large compared to those of female and most bee species, nearly meeting together at top of head.

Flight Season: Throughout

Size Relative to Honey Bee: 1.5X

Position of Wings Feeding on Flowers: Held at 45° to body

Location of Pollen Carrying Hairs: Hind femur, tibia, basitarsus

Similar Genera: *Bombus* - Holds wings to its sides or across its back. Abdomen, hairs, except in old individuals, dense, hiding surface, many species; many species have extensive yellow/pale hair beyond the first segments. Face long, longer than wide. Workers smaller than *Xylocopa*. ♀ Hind tibia, wide and bare in center, carry large, noticeable mixed masses of pollen/nectar (rare species are parasitic and look like males), *Xylocopa* never have large masses of pollen on their legs, pollen usually hidden among hairs. ♂ Face entirely black though may have yellow hairs. *B. griseocollis*/*B. auricoumus* has round face/ large eyes similar to *Xylocopa* but no white on face. *Ptilothrix* - Legs much longer. Wings held across back. Overall narrower. Feeds mostly on hibiscus/mallow. Hair on thorax lacks central bare spot of *Xylocopa*. ♂ No white on face. *Anthophora* - Smaller. Uncommon. Abdomen often with extensive pale hair. Wings held folded over back. ♀ Head, top, flattened, evenly rounded in *Xylocopa*. ♂ Eyes not larger than females and do not nearly meet at top of head. Abdomen, pale hairs more extensive.

Nest: Excavates short tunnels in soft, often in man-made structures

Flowers: Uses a variety of large, tall forbs and woody plants



X. virginica – Female



X. virginica - Male



X. virginica – Female



X. virginica - Female



X. virginica - Female

Ceratina (Carpenter Bee Group) [5 species]

Despite being related to Carpenter Bees, these are very small bees, only half the size of a Honey Bee. However, they are far more abundant than Carpenter Bees, but, unlike the huge Carpenter Bee they cannot chew into wood and do not inhabit wooden structures, although they do inhabit pithy stems. Consequently, they are much less visible to the average person, but if you look closely you will find them on many flowers.

Field Marks: ♀♂ Dull **metallic blue or greenish-blue** with pale marks on the clypeus (rarely absent in female *C. calcarata*). No hairs on body obvious to the naked eye. Abdomen with no pale markings or hair bands. Abdomen, sides, somewhat parallel and **ridged** like bottled water bottle; back end bluntly comes to an end with a tiny **projecting point** or flange. ♀ Clypeus with longitudinal **white stripe** or dot (rarely absent). Hind legs, sparse pollen hairs. Abdomen end comes to a blunt end and contains a short obtuse spike/projection. ♂ Clypeus with inverted white **T-shaped mark** covering rim with stem of “T” running up the center. Abdomen comes to a blunt end with a wide to narrow projecting flange/plate at the very end.

Flight Season: Throughout

Size Relative to Honey Bee: 0.5X

Position of Wings Feeding on Flowers: Held over the back

Location of Pollen Carrying Hairs: Hind tibia primarily

Similar Genera: Nothing is similar

Nest: Pith of cut/browsed stems of shrubs, brambles, and forbs

Flowers: Nectars on a variety of flowers



C. mikmaqi – Female



C. mikmaqi – Female



C. mikmaqi – Female



C. strenua - Female

Triepeolus (Variegated Cuckoo Bee Group) [12 species]

Nest parasite of primarily Eucerine bees. Densely arrayed in short flattened and prone hairs creating bold patterns of black and white bands and islands.

Field Marks: ♀♂ Lacks long hair. Integument black except the legs are often red or reddish, rarely with red on antennae, head, and thorax. Visible **hair all short**, flattened, and prone. Abdomen with **striking bands** of black and white hairs, particularly noticeable on first abdominal segment. Thorax, upper surface, sides of rear edge with two small **triangular projections** (axillae). Thorax, upper side, pattern of hair often, but not always appears like the classic “happy face.” ♀ Hind legs with same short hair length as other legs. ♂ With small, narrow, parallel-sided, bare plate (pygidial plate) with a rounded end at the very tip of its abdomen, often difficult to see in the field.

Flight Season: Summer and fall

Size Relative to Honey Bee: 0.5-0.75X

Position of Wings Feeding on Flowers: Most of the time up and out at about 45° to the body

Location of Pollen Carrying Hairs: None, does not gather pollen

Similar Genera: *Epeolus* - On average, smaller, but lots of overlap between the two genera and almost impossible to tell apart in the field. However, within the two groups a few have species specific unique characters that can be used for identification, and those will be covered in a separate publication at the species level. Thorax, upper side, can also have a “happy face.”

Nest: Nest parasite of Eucerines

Flowers: Nectars at a variety of flowers



T. concavus



T. concavus



T. concavus



T. distinctus



T. distinctus



T. donates - Female



T. donatus



T. lunatus



T. lunatus



T. lunatus



T. lunatus - Female



T. pectoralis - Female

Epeolus (Variegated Cuckoo Bee Group) [8 species]

Uncommon nest parasite of summer and fall *Colletes* bees. Generally smallish and densely arrayed in short flattened and prone hairs creating bold patterns of black and white bands and islands.

Field Marks: ♀♂ Lacks long hair. Integument black except legs often red or reddish, rarely with red on base of antennae, head, and thorax (Most noticeable in *E. bifasciatus*). All visible hair short, flattened, and prone. Abdomen with striking bands of black and white hairs, particularly noticeable on first abdominal segment. Thorax, upper surface, sides of rear edge with two small triangular projections (axillae). Thorax, upper side, pattern of hair often, but not always appears like the classic “happy face.” ♀ Hind legs with same short hair length as other legs. ♂ With small, narrow, parallel-sided, bare plate (pygidial plate) with a rounded end at the very tip of its abdomen.

Flight Season: Summer and fall

Size Relative to Honey Bee: 0.5-0.75X

Position of Wings Feeding on Flowers: Most of the time up and out at about 45° to the body; appearing narrow-winged as hind and fore wings overlap, sometimes closes wings across back if staying in one place for a time.

Location of Pollen Carrying Hairs: None, nest parasite

Similar Genera: *Triepeolus* - On average, larger, more common, but lots of overlap between the two genera and almost impossible to tell apart in the field. However, within the two groups a few have species specific unique characters that can be used for separation, and will be covered in greater detail in a publication at the species level.

Nest: Nest parasite of *Colletes*

Flowers: Nectars at a variety of flowers



E. bifasciatus



E. bifasciatus



E.lectoides



E. lectoides



E. lectoides



E. scutellaris

Epeoloides pilosulus (Oil Cuckoo Bee Group) [1 species]

This extremely rare nest parasite of *Macropis* has not been recorded in the state for almost 100 years!

Field Marks: ♀♂ **Humpbacked** appearance; top of thorax is unusually raised above level of head. Sparse hair. Shiny black-brown integument. Long legs. Abdomen end more **pointed** (rather than blunt) than most other genera. Head, top, clearly and evenly **rounded**. ♀ Hind legs, hair as sparse as other legs. ♂ Middle and hind legs, femur, unusually **expanded**/wide. Eyes, distance between inner edges **narrows** towards top of head.

Flight Season: Summer

Size Relative to Honey Bee: 0.66X

Position of Wings Feeding on Flowers: Unknown

Location of Pollen Carrying Hairs: None, nest parasite of other species

Similar Genera: None

Nest: Nest parasite of *Macropis*

Flowers: Nectars and a variety of flowers

Eucera (Long-horned Bee Group) [4 species]

Large, regularly occurring, but uncommon spring bees. Usually found in higher quality field/meadow environments.

Field Marks: ♀♂ Clypeus **protruding** like a great mound from the face, viewed from side it protrudes the same distance as the width of the eye. Moderate sized, flat, bare, triangular or oblong plate (pygidial plate) on the very last abdominal segment (often hard to see or retracted). ♀Hind legs with **long, bushy** pollen carrying hairs. ♂Clypeus **entirely yellow/off-white**. Antennae **extremely long**, arcing well past the base of the wings. Flight, **very fast**, zipping blurrily between flowers, looking for females, where they hesitate slightly before going to the next flower.

Flight Season: Spring through June

Size Relative to Honey Bee: 1-1.5X

Position of Wings Feeding on Flowers: Along sides or crossed on back

Location of Pollen Carrying Hairs: Hind leg's tibia and basitarsus

Similar Genera: *Habropoda* and *Anthophora* - Clypeus also protruding. ♀Chubbier, more *Bombus*-like. Hind legs, hair on basitarsus clearly shorter than on tibia. ♂Face, area between clypeus and eye with at least some white/yellow integument (all black in *Eucera*). *Other Eucerini* - Clypeus flatter (*Long-horned Bee Group*) and/or out later in the year, with minor overlap with other Long-horned Bees in the month of June.

Nest: Ground nester

Flowers: Nectars from a variety of flowers



E. dubitata – Male



E. dubitata – Male



E. dubitata – Male



E. dubitata - Female



E. dubitata - Female



E. dubitata - Female



E. dubitata - Female



E. rosae - Female



E. rosae - Female



E. rosae - Female



E. rosae - Female

Florilegus condignus (Long-horned Bee Group) [1 species]

An uncommon bee overall, but where it occurs in Pickerelweed beds (its sole source of pollen for its babies) it can be quite common. Distributions centered on fresh tidal portions of Coastal Plain rivers.

Field Marks: ♀♂ Almost exclusively found on **Pickerelweed**. Abdominal hair pattern distinctive. Abdomen with thin bands of bright white hair on the base of the 2nd and 3rd segments, 4th and 5th segments with **large patches/bands of white hair** separated in the middle by black hairs or no hairs. ♀Hind leg hairs off-white. ♂Clypeus **all yellow**. Antennae **long** and when pulled back surpass the base of the wings. Males extremely fast flying and usually only seen as a blur until they hesitate at a Pickerelweed blossom for the tiniest moment. Females are more deliberate as they forage for pollen and nectar.

Flight Season: Summer

Size Relative to Honey Bee: 1X

Position of Wings Feeding on Flowers: Unknown but probably on sides or crossed on back

Location of Pollen Carrying Hairs: Hind leg's tarsus and basitarsus hair not quite as long as other Eucerines.

Similar Genera: *Other Eucerines* with a summer flight period - Have and a less projecting clypeus. No other genus has the distinct abdominal hair pattern with broad white hair bands on the 4th and 5th segment separated by black, this can be seen from quite a distance. Be aware that several *Melissodes* species visit Pickerelweed and will behave similarly, but don't have the unique hair pattern on the abdomen.

Nest:

Flowers: Nectars on a variety of flowers



F. condignus - Male



F. condignus - Male



F. condignus - Male



F. condignus - Female



F. condignus - Female

Melissodes (Long-horned Bee Group) [14 species]

Common in the summer, particularly on tall groups of composites, where they move blindingly quickly among the flowers, particularly the males.

Field Marks: ♀♂ Light colored hairs on head and thorax (all black on *M. bimaculata*). Abdomen, most species with thin, **transverse bands of white hairs**, often set back from the rim. Tibia, hairs (at least outward facing side), **tan to white**. ♂ Clypeus **all yellow**. **Antennae long** and when pulled back surpass the base of the wings and extend to rear of thorax. Males extremely **fast** flying and usually only seen as a blur until they hesitate at a blossom for the tiniest moment but more easily found late in the afternoon, early evening when they are stationary on the flowers for the night. Females also fast but spend more time foraging on flowers for pollen.

Flight Season: Summer and fall

Size Relative to Honey Bee: 1-1.5X

Position of Wings Feeding on Flowers: Crossed on back

Location of Pollen Carrying Hairs: Hind tarsus and basitarsus

Similar Genera: *Eucera* - Has a primarily spring flight season with some overlap in June. Clypeus, strongly projecting, viewed from side clypeus is as tall, or taller, than the eye is wide, only moderately so in *Melissodes*. *Florilegus* - Abdomen, with broad white hair bands on the 4th and 5th segment separated by black, this pattern can be seen from quite a distance. *Svastra* - Larger (approaching carpenter bees in size, most *Melissodes* approach Honey Bees in size), comparatively flatter clypeus, less common. ♀ One species has all black hairs on hind tibia (*S. atripes*), one species with extensive black hair on body (*S. obliqua*) with hind tibia hairs orange to burnt orange and basitarsus hairs black to brown, remaining species (*S. compta*), rare, likely to only be seen on Evening Primrose early in the morning or in the evening but otherwise indistinguishable other than by size. ♂ Antennae not quite as long, reaching to only about the base of the wings. *Other Eucerines (Squash Bee Group)* - On the larger end of the range of *Melissodes* species. All are specialists, restrict their foraging almost entirely to Squash or Morning Glories, and forage only very early morning, males with restricted yellow on clypeus and antennae that only reach wing bases.

Nest: Ground

Flowers: Almost entirely composites with specialists on Sunflower, Thistle, Ironweed and one rare Pickerelweed specialist.



M. dentiventris - Male



M. apicata - Female



M. bimaculata - Male



M. bimaculata - Male



M. comptoides - Male



M. denticulate - Female



M. denticulata - Female



M. dentiventris - Female



M. desponsa - Female



M. desponsa - Female



M. subillata - Female



M. subillata - Female

Svastra (Long-horned Bee Group) [3 species]

A late summer group of bees associated with high quality natural meadows with diverse native flowering plants, planted or wild.

Field Marks: ♀♂ Large, approaching carpenter bees in size, comparatively flatter clypeus and less common than other Eucerines. ♀ One species with all black hairs on hind tibia (*S. atripes*), the most common species has extensive black hair on body (*S. obliqua*) with hind tibia hairs orange to burnt orange and hind basitarsus hairs at least partially black to brown. Remaining species (*S. compta*), rare, likely to only be seen on Evening Primrose early in the morning or in the evening but otherwise indistinguishable with the naked eye from *Melissodes* other than by size. ♂ Antennae not quite as long as other Eucerines, reaching to only about the base of the hind wings perhaps a bit more.

Flight Season: Summer and fall

Size Relative to Honey Bee: 1.5X

Position of Wings Feeding on Flowers: Crossed on back.

Location of Pollen Carrying Hairs: Hind tarsus and basitarsus

Similar Genera: *Melissodes* - Smaller, +/- Honey Bee size. Clypeus more protruding. Abdomen, most species with thin, transverse bands of white hairs. Hairs on tibia (at least outward facing side) tan to white. ♂ Antennae long and when pulled back surpass the base of the wings and extend to rear of thorax. *Eucera* - Spring flight season, not overlapping. *Florilegus* - Abdomen, with distinct broad white hair bands on the 4th and 5th segment separated by black, this pattern can be seen from quite a distance. Primarily found on Pickerelweed. *Squash Bee Group* - Smaller. All are specialists, restrict their foraging almost entirely to Squash or Morning Glories, and forage only very early morning. ♂ Clypeus with restricted yellow and antennae that also only reach wing bases.

Nest: Ground, may aggregate nests in one location

Flowers: Composites and *S. compta* is an Evening Primrose specialist.



S. atripes - Female



S. atripes - Female



S. atripes - Female



S. atripes - Female



S. obliqua - Male



S. obliqua -



S. obliqua - Female



S. obliqua - Female



S. obliqua - Male



S. obliqua - Female

Nomada (Colorful Cuckoo Bee Group) [33 species]

Common in the spring, these waspish bees, usually arrayed in yellow and red, are often found flying low over the ground looking for bee nests to lay their eggs in. There are two main groups. *Spring Group* (March - June) - Primarily parasitize the nests of *Andrena*. *Late Group* (July - October) - Mostly parasitize *Agapostemon* and likely some summer/fall *Andrena*.

Field Marks: ♀♂ **Wasp-like**. Hair present but **sparse**, white, and often overlooked. Abdomen **color very variable**, but integument base color either red or black, a few females are entirely red (including head/thorax) with no yellow/black markings whatsoever, but most species have extensive yellow stripes/dots on the abdomen and very commonly on the face/thorax. Wings for most species with a dusky, partially **opaque band** bordering the tips. Abdomen held rigidly straight back or tilted slightly upward. Abdomen long, strongly tapered towards tip; look very similar to crabronid wasps. Thorax, viewed from side, rear face with a **slope angle** approximately 45° to the surface of thorax, other genera closer to 90°. *Late Group* has red restricted primarily to legs, black integument elsewhere with yellow markings. Holds their **wings out** and up when resting. *Spring Group* is more variable in color, many females have a basal red-colored integument, with yellow markings, but others, particularly the larger ones are extensively yellow with a black background. ♀ Abdomen with a short silver/white latitudinal **hair patch** at the end of last visible segment. ♂ Abdomen with a usually prominent (sometimes retracted) **thin plate** (pygidial plate) at the end, with end of plate notched or rounded over.

Flight Season: Throughout

Size Relative to Honey Bee: 0.5-1X

Position of Wings Feeding on Flowers: *Spring Group* almost always cross wings over their back. *Late Group* (uncommonly found) primarily hold their wings up and out at a 45° angle.

Location of Pollen Carrying Hairs: None, nest parasite

Similar Genera: No other genera/species in our area have similar patterns of colors and form.

Nest: Nest cleptoparasite on *Andrena* and *Agapostemon* and, rarely, *Eucera*.

Flowers: Nectars on a variety of flowers



N. affabilis - Male



N. annulata - Male



N. annulata - Male



N. australis - Female



N. australis - Male



N. bidentate group



N. denticulata - Male



N. luteola - Male



N. maculata - Male



N. rubicunda - Female



N. superba - Male



N. tiftonensis - Female

Holcopasites (Colorful Cuckoo Bee Group) [3 species]

An uncommon, tiny wasp-like nest parasite of *Calliopsis*.

Field Marks: ♀♂ Very **tiny**. Antennae **short** and set low on the face. **Wasp-like**, seemingly hairless (similar to Crabronids). Integument color a **unique combination** of black on the head and thorax with the abdomen bright red with central black bands on the segments with dots or short lines of bright white, prone, short, hairs. The only species most people will detect is *H. andreniformis* which has a very obvious paired set of **white dots** composed of flattened hairs marking each abdominal segment. Unique in **holdings its wings under its abdomen** at rest. Sometimes found resting parallel on a blade of grass with mandibles grasping the blade.

Flight Season: Summer to fall

Size Relative to Honey Bee: 0.3X

Position of Wings Feeding on Flowers: Unique...tuck their wings UNDER their abdomen to the inside of their hind legs. May at times hold them tight to the sides rather than completely under.

Location of Pollen Carrying Hairs: None, nest parasite

Similar Genera: None

Nest: Nest cleptoparasite of *Calliopsis*

Flowers: Nectars on a variety of flowers



H. calliopsidis - Male



H. calliopsidis - Male



H. calliopsidis - Male



H. heliopsis - Female



H. heliopsis - Female



H. heliopsis - Female

Melitoma taurea (Round-headed Bee Group) [1 species]

Forages for pollen primarily on both native and introduced Morning Glories in the genus *Ipomoea* and occurs throughout both rural and urban areas.

Field Marks: ♀♂ Thorax, top, **uniquely divided longitudinally** by 1-3 white bands of hair lines (one always splitting the center) separated by black hairs. Pale hairs often taking on a **gray** aspect. Head, crown, uniformly rounded. Tongue **extremely long**; folded up under head it extends to the abdomen. Abdomen, segment rims, **completely lined** with a band of prone, short, white hairs. Claws, **long**, curved. Flies unbelievably quickly between flowers. ♀ Hind legs with long but sparse, loosely plumose **black pollen collecting hairs**.

Flight Season: Summer

Size Relative to Honey Bee: 1X

Position of Wings Feeding on Flowers: Crossed over back

Location of Pollen Carrying Hairs: Hind tibia and basitarsus

Similar Genera: Hair pattern on thorax is unique in our area as is the extremely long tongue, if visible. Note that *Melissodes* and other Eucerines along with *Bombus/Ptilothrix* will also commonly feed on Morning Glories.

Nest: In the ground, usually in open clay banks along roads, ditches, streams, and overturned root masses. Usually protected by a projecting turrett made of dried balls of earth.

Flowers: A specialist on Morning Glories, but can be found nectaring on other species.



M. taurea - Male



M. taurea - Male



M. taurea - Male

Ptilothrix bombiformis (Round-headed Bee Group) [1 species]

Bumble Bee like, forages for pollen (often with Bumble Bees!) primarily on native and introduced plants in the Mallow Family, particularly native Hibiscus. Occurs commonly on the edge of wetlands and on plantings in urban areas.

Field Marks: ♀♂ **Bumble Bee** in general coloration (*B. impatiens* and *B. citrinus* specifically). Head, top, evenly rounded over. Thorax, top, sides, hairs dense, tan to off-white, never yellow, **no central dark spot** or black hairs present. Abdomen hairs black except for some light pale/ochre hairs at the very base. **Legs long**, last segment and claws particularly **long and curved**. ♀Hind legs, **pollen hairs, black**, sparse, much longer on **basitarsus** than tarsus.

Flight Season: Summer

Size Relative to Honey Bee: 1.2-1.5X

Position of Wings Feeding on Flowers: Crossed over back

Location of Pollen Carrying Hairs: Hind tibia and basitarsus

Similar Genera: *Bombus* - Light hairs mostly with a yellow caste to them. Thorax, top, hairs usually not completely pale, some black hairs in center. Abdomen of most species with more extensive pale/yellow hairs throughout. Face longer. Head, top, flattened. Legs generally shorter and body generally wider. ♀Rear legs, tibia in *B. impatiens* flattened and bare in center. Will also forage on Mallow with *Ptilothrix. Eucerines (Long-horned Group)* - ♀Hind legs, almost all have at least some pale hairs. ♂Antennae much longer, projecting at least to the base of the wings when pushed backwards. Head, clypeus, always at least partially yellow.

Nest: In the ground, usually in compacted open clay with no vegetation. Will make short turrets of clay around nest hole. Often found in paths and dirt access roads.

Flowers: A specialist on Mallow Family plants, in particular native Hibiscus plants near wetlands, but can be found nectaring on other species.



P. bombiformis - Male



P. bombiformis - Male



P. bombiformis - Male