

# Florida's Bee Species of Greatest Conservation Need<sup>1</sup>

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## Introduction

There are 25 bee species (Hymenoptera: Anthophila) listed as Species of Greatest Conservation Need in the Florida State Wildlife Action Plan (FWC 2019). Bees provide pollination services vital to the stability of ecosystems and the prosperity of our food systems. A diverse and abundant wild bee community is often far more effective at crop pollination than honey bees (Garibaldi et al. 2011; 2013). Beyond crop pollination, bee pollinators are essential for the reproduction and biodiversity of flowering plants, with an estimated 85% of flowering plants requiring pollinators (Ollerton et al. 2011). Despite the clear need for bee pollinators, bees are understudied relative to the charismatic megafauna that typically garner public, media, and government attention (Diniz-Filho et al. 2010). In recent years, public support for pollinator conservation has greatly increased; however, knowledge and awareness of the diversity of wild bees is lacking (Wilson et al. 2017).

This Extension publication was created to raise awareness among **the public** of the diversity of Florida's bees and their life histories. Additionally, this publication synthesizes the current information available on each bee species of conservation concern for quick reference by **researchers and land managers interested in efforts to conserve these species**.

## Florida Bee Species of Greatest Conservation Need

The Florida State Wildlife Action Plan uses the following four criteria to determine Species of Greatest Conservation Need (SGCN), with species needing to meet at least one of the four criteria to be included (FWC 2019):

1. Florida Federally Listed Taxa
2. State Listed Taxa
3. Biologically Vulnerable Taxa:
  - Taxa with NatureServe conservation status ranks of S1 (sub-nationally critically imperiled), G1 (globally critically imperiled), or S2G2 (a combined sub-national and global ranking of imperiled)
  - Taxa with a Florida Fish and Wildlife Conservation Commission (FWC) Species Ranking System biological score of 27 or higher
4. Taxa of Concern:
  - Taxa described on the International Union for Conservation of Nature (IUCN) list as "vulnerable" or above
  - Newly described species within the last five years
  - State delisted species within the last five years
  - Species that are state listed in Alabama or Georgia
  - U.S. Fish and Wildlife Service (USFWS) At-Risk species
  - National Marine Fisheries Service (NMFS) Species of Concern
  - Vulnerable to an emerging risk factor:
    - Drastic decline in large parts of their range
    - Devastating disease that may cause large declines in population

Using the above criteria, the 2019 Florida State Action Plan lists the following bee species as SGCNs:

- *Ashmeadiella floridana* (Robertson 1897) — southeastern Ashmeadiella bee
- *Bombus fervidus* (Fabricius 1798) — yellow bumble bee
- *Bombus fraternus* (Smith 1854) — Southern Plains bumble bee
- *Bombus pensylvanicus* (De Geer 1773) — American bumble bee
- *Bombus variabilis* (Cresson 1872) — variable cuckoo bumble bee
- *Caupolicana electa* (Cresson 1878) — southeastern fork-tongue bee
- *Caupolicana floridana* Michener and Deyrup 2004 — giant scrub plasterer bee
- *Centris errans* Fox 1899 — Florida locust-berry oil-collecting bee
- *Colletes francesae* M. A. Deyrup and L. D. Deyrup 2011 — tough buckthorn bee
- *Colletes longifacies* Stephen 1954 — long-faced cellophane bee
- *Colletes titusensis* Mitchell 1951 — no common name
- *Hesperapis oraria* Snelling and Stage 1997 — Barrier Island Hesperapis bee
- *Hylaeus formosus* Krombein 1953 — no common name

- *Lasioglossum flaveriae* (Mitchell 1960) — no common name
- *Lasioglossum surianae* (Mitchell 1960) — Florida Keys sweat bee
- *Lasioglossum tahitensis* Mitchell 1960 — Tahiti Beach sweat bee
- *Osmia calaminthae* Rightmyer, Ascher, and Griswold 2011 — blue calamintha bee
- *Perdita blatchleyi* Timberlake 1952 — Blatchley's Perdita bee
- *Perdita graenicheri* Timberlake 1947 — no common name
- *Perdita mitchelli* Timberlake 1947 — no common name
- *Perdita townesi* Timberlake 1968 — no common name
- *Stelis ater* Mitchell 1962 — southwest Florida Stelis bee
- *Trachusa crassipes* (Cresson 1878) — no common name
- *Triepeolus monardae* Mitchell 1962 — large monarda cuckoo bee
- *Triepeolus rugosus* Mitchell 1962 — punctate central Florida cuckoo bee

Two species listed above and included in the 2019 Florida State Action Plan were excluded in this document: *Bombus fervidus*, which is not considered to be found in Florida (Colla et al. 2011), and *Lasioglossum tahitensis*, which was recently synonymized with *L. flaveriae* (Gibbs 2011).

## Definitions

**Cavity-nesting bees** — Bees that construct their nests in pre-existing holes such as cavities in wood, other plant materials, or human-made structures

**Cleptoparasite bees** — Cleptoparasitic bees are solitary bees that do not construct their own nests and do not gather their own pollen provision for their offspring. Instead, they lay their eggs in the nests of other bees, and their larvae feed on the provisions collected by the host species. Cleptoparasitic larvae will develop faster than host larvae and may kill and/or consume the host larvae.

**Communal nesting bees** — Bees that share a common entrance to many individual nests

**Congeners/congeneric species** — Species that share a genus

**Corbicula** — Pollen-carrying structure on the hind tibia of corbiculate bees (honey bees, bumble bees, stingless bees, and orchid bees) that forms a smooth, scoop-like basket

**Declining species** — Species with published literature documenting their decline

**Gregarious nesting bees** — Solitary bees that nest in aggregations where many individuals construct nests in a small area

**Ground nesting bees** — Bees that construct their nests in soil

**Limited range/endemic species** — Species restricted to a specific locality or geographic region

**Rare species** — For the purposes of this guide, species with few recent records unrelated to endemism (limited native range)

**Scopa** — Pollen-carrying structure comprised of many dense hairs

**Social bees** — Bees that form colonies and exhibit a division of labor between morphologically and physiologically different castes, such as queens (reproductive females), who are responsible for reproduction, and workers (non-reproductive females), who are responsible for foraging and rearing offspring

**Social parasite bees** — Socially parasitic bees kill and/or mimic a queen bee to then use the existing workers to rear her offspring

**Solitary bees** — Solitary bees do not have castes. Females are responsible only for their own offspring and do not provide maternal care beyond constructing the nest, provisioning the nest with pollen, and laying eggs. Solitary bees may nest singly, gregariously, or communally.

## Known Biology and Ecology of Florida's Bee Species of Greatest Conservation Need

The online databases linked below in the bee-species subsections provide additional information about the individual bee species described. [Explorer.NatureServe.org](https://explorer.natureserve.org) hosts a database of species and their conservation statuses across the United States and Canada. [DiscoverLife.org](https://discoverlife.org) provides information about more than a million species worldwide with emphasis on bees, moths, and birds.

### *Ashmeadiella floridana* (Robertson 1897), Megachilidae

**Common Name(s)**  
southeastern Ashmeadiella bee

**Reason(s) for Concern**  
rare

**Description**  
7 mm–8 mm (1/4 in–1/3 in) long. Entirely black. Face and thorax with short white hairs. Abdomen striped with white hairs. Abdominal scopa white. Full description in Mitchell 1962.



Figure 1. Photo of a female *A. floridana*.

Credit: Harlan Glenn Hall, "The Bees of Florida," used with permission

<https://entnemdept.ufl.edu/hallg/melitto/floridabees/ashmeadiella.htm>

### Range

Scattered observations in eastern North Carolina, South Carolina, Georgia, and north Florida. See DiscoverLife.org's *Ashmeadiella floridana* [page](#).

### Flight Period

April to July

### Nesting Behavior

Undescribed. Assumed to be a solitary, cavity-nesting species based on congeners. Other *Ashmeadiella* spp. often use plant material or mud to form their nests.

### Floral Records

*Lupinus* spp. (Lamiaceae)

### Notes

While there have been recent observations, most of the few records that exist date back many decades. Only member of its genus in the southeastern United States.

### References

Mitchell 1962; Murray et al. 2021; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's southeastern *Ashmeadiella* bee [page](#).

### *Bombus fraternus* (Smith 1854), Apidae

#### Common Name(s)

Southern Plains bumble bee

#### Reason(s) for Concern

declining

### Description

15 mm–19 mm (2/3 in–3/4 in) long. Densely covered in short hairs. Black hairs on head, yellow hairs on the front and rear of the thorax. First segments of the abdomen with yellow hairs, the remainder with black hairs. Full description in Williams et al. 2014.



Figure 2. Photo of a female *B. fraternus*.

Credit: Jonathan Bremer, Florida State Collection of Arthropods, used with permission

### Range

Central and eastern United States extending into northern Mexico and central Florida. See DiscoverLife.org's *Bombus fraternus* [page](#)

### Flight Period

April to October

### Nesting Behavior

Social, forming colonies in underground cavities.

### Floral Records

Numerous (polylectic)

### Notes

While at first glance *B. fraternus* could look very similar to many other *Bombus* spp., subtle characters, like the shape of a spur on the hind leg and the width of the cheek, can eliminate look-alikes.

### References

Colla et al. 2011; Grixti et al. 2009; Pascarella and Hall 2006; Williams et al. 2014.

### Also See

Explorer.NatureServe.org's *Bombus fraternus* [page](#)

### *Bombus pensylvanicus* (De Geer 1773), Apidae

#### Common Name(s)

American bumble bee

#### Reason(s) for Concern

declining



### Description

13 mm–19 mm (1/2 in–3/4 in) long. Covered in short hairs. Black hairs covering the head and sides of the thorax. Yellow hairs on the top of the thorax are variable in pattern. Upper half of the abdomen covered in yellow hairs, the lower half with black hairs. Full description in Williams et al. 2014.



Figure 3. Photo of a female *B. pensylvanicus*.  
Credit: J. Bremer, FSCA, used with permission

### Range

Widely distributed across southern Canada, the United States, and Mexico. See DiscoverLife.org's *Bombus pensylvanicus* [page](#).

### Flight Period

February to November

### Nesting Behavior

Social, forming colonies primarily above ground in clumps of long grass. Occasionally will take up nesting sites in underground cavities.

### Floral Records

Numerous (polylectic)

### Notes

Decline in this species is due to a host of factors, including habitat loss, pesticide use, and pathogen pressure, with effects most striking in the Midwest, Canada, and New England. In the southern parts of the range of *B. pensylvanicus*, the flight period is nearly year-round.

### References

Colla et al. 2011; Grixti et al. 2009; Williams 2014.

### Also See

Explorer.NatureServe.org's *Bombus pensylvanicus* [page](#)

### *Bombus variabilis* (Cresson 1872), Apidae

#### Common Name(s)

variable cuckoo bumble bee

### Reason(s) for Concern

declining, rare

### Description

18 mm–22 mm (3/4 in–7/8 in) long. Black hair on the face. Variably patterned yellow hairs on the thorax. Wings dark brown. Hair on the abdomen very short and entirely black. Corbicula absent due to parasitic life history. Full description in Williams et al. 2014.



Figure 4. Photo of a female *B. variabilis*.  
Credit: J. Bremer, FSCA, used with permission

### Range

Distributed across the central and eastern United States. See DiscoverLife.org's *Bombus variabilis* [page](#).

### Flight Period

March to October

### Nesting Behavior

Social parasite of *B. pensylvanicus*

### Floral Records

Numerous (polylectic)

### Notes

The decline of this species is closely related to the decline of its host, *B. pensylvanicus*. No recent observations in Florida. Social parasites like *B. variabilis* tend to emerge about a month after their host does and invade newly established nests. No worker caste is present due to parasitic life history. Females recorded as early as January in Miami-Dade County.

### References

Colla et al. 2011; Grixti et al. 2009; Pascarella and Hall 2006; Williams et al. 2014.

### Also See

Explorer.NatureServe.org's *Bombus variabilis* [page](#)

### *Caupolicana electa* (Cresson 1878), Colletidae

#### Common Name(s)

southeastern fork-tongue bee

### Reason(s) for Concern

rare

### Description

18 mm–23 mm (3/4 in–7/8 in) long. Yellow hairs cover the head, thorax, and legs. Abdomen covered in short black hairs. White bands of hair are thin or absent. Full description in Michener and Deyrup 2004.



Figure 5. Photo of a female *C. electa*.

Credit: United States Geological Survey Bee Monitoring and Inventory Lab, *Caupolicana electa*, f, ga, baker, used under Public Domain

### Range

Scattered occurrences in northwest Florida, southern Mississippi, and eastern Louisiana. Believed to be extirpated from North Carolina and South Carolina. See DiscoverLife.org's *Caupolicana electa* [page](#).

### Flight Period

September and October

### Nesting Behavior

Undescribed. Solitary, ground-nesting species based on congeners. Other *Caupolicana* spp. in the Southwest and Mexico nest in sandy soils.

### Floral Records

*Agalinis* spp. (Orobanchaceae), *Aureolaria* spp. (Orobanchaceae), and *Trichostema* spp. (Lamiaceae)

### Notes

*C. electa* and *C. floridana* are the only *Caupolicana* spp. in the southeastern United States. Distinguished from *C. floridana* by hair bands and size.

### References

Michener 1966; Michener and Deyrup 2004; Owens 2018; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Caupolicana electa* [page](#)

### *Caupolicana floridana* (Michener and Deyrup 2004), Colletidae

### Common Name(s)

giant scrub plasterer bee, Florida fork-tongue bee

### Reason(s) for Concern

limited range/endemic, rare

### Description

16 mm–18 mm (2/3 in–3/4 in) long. Yellow hairs cover the head, thorax, and legs. Abdomen covered in short black hairs. Conspicuous white bands across the abdomen. Full description in Michener and Deyrup 2004.



Figure 6. Photo of a female *C. floridana*.

Credit: J. Bremer, FSCA, used with permission

### Range

Archbold Biological Station, Lake Placid, Florida. See DiscoverLife.org's *Caupolicana floridana* [page](#).

### Flight Period

September and October

### Nesting Behavior

Undescribed. Solitary, ground-nesting species based on congeners. Other *Caupolicana* spp. in the Southwest and Mexico nest in sandy soils.

### Floral Records

*Dicerandra* spp. (Lamiaceae), *Trichostema* spp. (Lamiaceae), and *Seymeria* spp. (Orobanchaceae)

### Notes

*C. floridana* and *C. electa* are the only *Caupolicana* spp. in the southeastern United States. Distinguished from *C. electa* by hair bands and size. Recorded pre-1900 as *C. yarrowi* in Dade County, Florida, where it is believed to have been extirpated since then due to development.

### References

Michener and Deyrup 2004; van Hoose 2021a.

### Also See

Explorer.NatureServe.org's *Caupolicana floridana* [page](#)

## ***Centris errans* (Fox 1899), Apidae**

### **Common Name(s)**

Florida locust-berry oil-collecting bee, wandering *Centris*

### **Reason(s) for Concern**

limited range/endemic

### **Description**

13 mm–14 mm (1/2 in) long. Top of the head and thorax are covered in dense yellow-brown hairs. Thorax is accented with pale, whitish hairs. Abdomen is a rusty brown color. Full description as *Centris versicolor* in Mitchell 1962.



Figure 7. Photo of a female *C. errans*.

Credit: J. Bremer, FSCA, used with permission

### **Range**

Broward, Dade, and Monroe Counties, Florida. Most abundant in the southern Everglades and the lower Florida Keys. Also found on select islands in the Bahamas. See DiscoverLife.org's *Centris errans* [page](#).

### **Flight Period**

March to June

### **Nesting Behavior**

Undescribed. Assumed to be a solitary, ground-nesting species based on congeners. Other *Centris* (*Centris*) spp. nest in the ground.

### **Floral Records**

Oil collection on *Brysonima lucida* (P. Mill.) DC. (Malpighiaceae), *Stigmaphyllon sagraeanum* Juss. (Malpighiaceae), and *Galphimia gracilis* Bartl. (Malpighiaceae). *Brysonima lucida* is the only native oil host in Florida. Recorded on a diversity of other plants for nectar and pollen.

### **Notes**

Recently found in Ft. Lauderdale outside the range of *B. lucida*, its only native plant host for oil rewards. Range

expansion may be facilitated by non-native plant species that provide suitable oil rewards.

### **References**

Coville et al. 1983; Mitchell 1962; Pascarella et al. 1999; Pascarella and Hall 2006; Pemberton and Liu 2008a; 2008b.

### **Also See**

Explorer.NatureServe.org's *Centris errans* [page](#)

## ***Colletes francesae* (M. A. Deyrup and L. D. Deyrup 2011), Colletidae**

### **Common Name(s)**

tough buckthorn bee

### **Reason(s) for Concern**

limited range/endemic, rare

### **Description**

About 12 mm (1/2 in) long. Head, thorax, and front of the abdomen covered in whitish hairs. Remainder of the abdomen black with white bands of hair. Full description in Deyrup and Deyrup 2011.



Figure 8. Photo of a female *C. francesae*.

Credit: J. Bremer, FSCA, used with permission

### **Range**

Scattered across Lake Wales Ridge, Polk Co., Florida. See DiscoverLife.org's *Colletes francesae* [page](#).

### **Flight Period**

May and June

### **Nesting Behavior**

Undescribed. Solitary, ground-nesting species based on congeners. The majority of other *Colletes* spp. nest in soil.

### **Floral Records**

*Sideroxylon tenax* L. (Sapotaceae)



### Notes

Its floral host, *S. tenax*, exists in seemingly suitable habitats in other parts of the Lake Wales Ridge, and even other parts of the state. Additional surveys for *C. francesae* are needed to confirm its range.

### References

Deyrup and Deyrup 2011.

### Also See

Explorer.NatureServe.org's *Colletes francesae* [page](#)

### *Colletes longifacies*(Stephen 1954), Colletidae

#### Common Name(s)

long-faced cellophane bee

#### Reason(s) for Concern

rare, limited range/endemic

#### Description

About 11 mm (~3/8 in) long. Head and thorax are covered in dense white-gray hairs. Wings whitish with black veins. Abdomen with white bands of hair. Females described in Mitchell 1960. Males later described in Hall and Ascher 2014.



Figure 9. Photo of a female *C. longifacies*.

Credit: J. Bremer, FSCA, used with permission

#### Range

Scattered occurrences across north-central Florida. See DiscoverLife.org's *Colletes longifacies* [page](#).

#### Flight Period

October

#### Nesting Behavior

Undescribed. Solitary, ground-nesting species based on congeners. The majority of other *Colletes* spp. nest in soil.

#### Floral Records

*Liatris tenuifolia* Nutt. (Asteraceae)

#### Notes

The long face of this bee is likely evidence of its close association with *L. tenuifolia*, an aster with deep florets.

For more information, see Hall and Ascher 2014; Mitchell 1960; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Colletes longifacies* [page](#)

### *Colletes titusensis* (Mitchell 1951), Colletidae

#### Common Name(s)

No common name

#### Reason(s) for Concern

rare, limited range/endemic

#### Description

About 8 mm (1/3 in) long. Face covered in white hairs. Thorax covered in light brown hair. The legs covered in white hairs. Abdomen with short white bands of hairs. Full description in Mitchell 1960.



Figure 10. Photo of a female *C. titusensis*.

Credit: J. Bremer, FSCA, used with permission

#### Range

Occurs in coastal Titusville and in the Tampa area. See DiscoverLife.org's *Colletes titusensis* [page](#).

#### Flight Period

April and May

#### Nesting Behavior

Undescribed. Solitary, ground-nesting species based on congeners. The majority of other *Colletes* spp. nest in soil.

#### Floral Records

*Campanula floridana* S. Wats. ex Gray (Campanulaceae)

#### Notes

First observation in decades in 2013 from a pan trap at Cape Canaveral National Seashore. Recent observations of the species in the Tampa area suggest that *C. titusensis* specializes on *C. floridana*.

#### References

Hall et al. 2016; Mitchell 1960; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Colletes titusensis* [page](#)

### *Hesperapis oraria* (Snelling and Stage 1997), Melittidae

#### Common Name(s)

Barrier Island Hesperapis bee, Gulf Coast solitary bee,  
Coastal Plain Hesperapis, Gulf Coast evening bee

#### Reason(s) for Concern

limited range/endemic

#### Description

11 mm–13 mm (~3/8 in–1/2 in) long. Face covered in dull yellow to whitish hairs. Thorax covered in dense yellow hairs. Wings clear with light brown veins. Abdomen covered in short brown hairs with bands of white hairs. Full description in Cane et al. 1996.



Figure 11. Photo of a female *H. oraria*.

Credit: J. Bremer, FSCA, used with permission

#### Range

Shore and barrier island dunes of Mississippi, Alabama, and the Florida Panhandle. See DiscoverLife.org's *Hesperapis oraria* [page](#).

#### Flight Period

September and October

#### Nesting Behavior

Undescribed. Assumed to be a solitary, ground-nesting species based on congeners. All other *Hesperapis* spp. nest descriptions are in sandy soils.

#### Floral Records

*Balduina angustifolia* (Pursh) B. L. Robins. (Asteraceae)

#### Notes

Only *Hesperapis* species known to occur east of the Mississippi River. *Hesperapis* shares similar modified hairs found on *Carinapsis*, its sister genus, that are thought

to aid in burrowing in sandy soils. This supports the thinking that *H. oraria*'s range is highly dependent on suitable nesting in dunes as, despite the presence of its sole floral host (*B. angustifolia*) well inland, *H. oraria* is absent more than two to three kilometers from the shore. See Davis et al. 2020 for more information.

#### References

Cane et al. 1996; Davis et al. 2020; Pascarella and Hall 2006.

#### Also See

Explorer.NatureServe.org's *Hesperapis oraria* [page](#)

### *Hylaeus formosus* (Krombein 1953), Colletidae

#### Common Name(s)

No common name

#### Reason(s) for Concern

rare

#### Description

About 5 mm (~1/8 in) long. Largely hairless, black. Face, legs, and abdomen with brown markings. Many members of this genus could be mistaken for small wasps as they lack scopa. Females described in Mitchell 1960 as *Hylaeus metopii*. No description of males.

#### Range

Recent observations in Guantanamo, Cuba. Many observations from the 1980s in the Florida Keys. Also seen on an island in the Bahamas and in Pinar del Rio, Cuba. See DiscoverLife.org's *Hylaeus Formosus* [page](#).

#### Flight Period

Varies across range

#### Nesting Behavior

Undescribed. Assumed to be a solitary, cavity-nesting species based on congeners. Other *Hylaeus* spp. nest in various locations, often inside the stems of plant debris.

#### Floral Records

*Metopium toxiferum* (L.) Krug and Urban (Anacardiaceae)

#### Notes

Limited observations across varying climates makes describing an exact flight period difficult. Observed in winter, spring, and summer months. *Hylaeus* do not carry pollen in a scopa but instead carry it internally in their crop.

#### References

Genaro 2016; Mitchell 1960; Pascarella and Hall 2006.

#### Also See

Explorer.NatureServe.org's *Hylaeus Formosus* [page](#)



## ***Lasioglossum flaveriae* (Mitchell 1960), Halictidae**

### **Common Name(s)**

No common name

### **Reason(s) for Concern**

rare

### **Description**

About 4mm long. Largely hairless, head and thorax green-blue. Wings clear with yellow-brown veins. Abdomen reddish-brown. Full description in Gibbs 2011.



Figure 12. Photo of a female *L. flaveriae*.

Credit: J. Bremer, FSCA, used with permission

### **Range**

Scattered occurrences in the coastal regions of south Florida as well as an island in the Bahamas. See DiscoverLife.org's *Lasioglossum flaveriae* [page](#).

### **Flight Period**

March to August

### **Nesting Behavior**

Undescribed. Gibbs lists 97 *Lasioglossum* (*Dialictus*) spp. in eastern North America alone, with many more around the world. The nesting within the subgenus is highly diverse. No assumptions can be made about nesting.

### **Floral Records**

*Ardisia escallonioides* Schlechtendal and Chamisso (Primulaceae), *Achyranthes* spp. (Amaranthaceae), *Flaveria linearis* Lag. (Asteraceae), *Mikania* spp. (Asteraceae), *Sartwellia flaveriae* Gray (Asteraceae), *Lyonia mariana* (L.) D. Don (Ericaceae).

### **Notes**

*Lasioglossum* (*Dialictus*) spp. can be difficult to identify to species.

## **References**

Gibbs 2011; Pascarella et al. 1999; Pascarella and Hall 2006.

### **Also See**

Explorer.NatureServe.org's *Lasioglossum flaveriae* [page](#)

## ***Lasioglossum surianae* (Mitchell 1960), Halictidae**

### **Common Name(s)**

Florida Keys sweat bee

### **Reason(s) for Concern**

rare

### **Description**

About 4 mm (1/8 in) long. Head and thorax gold-green. Largely hairless. Abdomen reddish-brown. Wings clear with red-brown veins. Full description in Gibbs 2011.



Figure 13. Photo of a female *L. surianae*.

Credit: J. Bremer, FSCA, used with permission

### **Range**

Big Pine Key and Stock Island of the Florida Keys with more recent observations in Biscayne National Park, Highlands County, as well as two islands in the Bahamas. See DiscoverLife.org's *Lasioglossum surianae* [page](#).

### **Flight Period**

May to December

### **Nesting Behavior**

Assumed to be ground nesting based on congeners. *L. surianae* is a part of the *L. (Dialictus) tegulare* species group, from which other members have been reported as ground nesting. See *L. (Dialictus) tegulare* in Cuminal 2023 and Brokaw et al. 2023.

### **Floral Records**

*Bidens pilosa* L. (Asteraceae), *Jacquemontia* spp. (Convolvulaceae), and *Suriana maritima* L. (Surianaceae)

### **Notes**

*Lasioglossum* (*Dialictus*) spp. can be difficult to identify to species.

## References

Gibbs 2011; Gibbs 2009; Pascarella et al. 1999.

## Also See

Explorer.NatureServe.org's *Lasioglossum surianae* [page](#)

## *Osmia calaminthae* (Rightmyer, Ascher, and Griswold 2011), Megachilidae

### Common Name(s)

blue calamintha bee

### Reason(s) for Concern

limited range/endemic

### Description

10 mm–11 mm (~3/8 in) long. Dark blue. Face with short hairs used as a scopa. Thorax and front of the abdomen covered in white hairs. Wings light brown. Remainder of the abdomen hairless except for the scopa on the underside. Full description in Rightmyer et al. 2011.



Figure 14. Photo of a female *O. calaminthae*.  
Credit: J. Bremer, FSCA, used with permission

### Range

Southern 20 miles of Lake Wales Ridge near Lake Placid, Florida. Recently found in select locations in Ocala National Forest. See DiscoverLife.org's *Osmia calaminthae* [page](#).

### Flight Period

March and April

### Nesting Behavior

Solitary bee nesting belowground in the root structure of grass clumps. The majority of other *Osmia* spp. nest aboveground in woody vegetation and debris, making *O. calaminthae* one of the rare exceptions. *Osmia* spp. use mud and foliage to line their nests.

### Floral Records

*Clinopodium ashei* (Weatherby) Small (syn. *Calamintha ashei*) and *Conradina brevifolia* Shinnery (Lamiaceae).

## Notes

Once considered the most range-restricted floral specialist in the country until it was discovered in Ocala National Forest in 2021. Highly specialized forager, once thought to only forage on *C. ashei* but more recently discovered to also visit *C. brevifolia*.

## References

Burns et al. 2019; Cane et al. 2007; Rightmyer et al. 2011; Srinivasan 2020; van Hoose 2021a.

## Also See

Explorer.NatureServe.org's *Osmia calaminthae* [page](#)

## *Perdita blatchleyi* (Timberlake 1952), Andrenidae

### Common Name(s)

Blatchley's Perdita bee

### Reason(s) for Concern

rare, limited range/endemic

### Description

5 mm–6 mm (~1/8 in–1/4 in) long. Covered in sparse white hairs. Head and thorax dark green. Wings clear with brown veins. Abdomen dull brown. Face and abdomen with light yellow markings. Females described in Mitchell 1960. Males described in Hall and Ascher 2014.



Figure 15. Photo of a female *P. blatchleyi*.  
Credit: J. Bremer, FSCA, used with permission

### Range

Scattered occurrences across central Florida, including observations at Archbold Biological Station, Ordway-Swisher Biological Station, and Alachua County. See DiscoverLife.org's *Perdita blatchleyi* [page](#).

### Flight Period

September and October

### Nesting Behavior

Undescribed. Assumed to be ground-nesting based on congeners. Nesting habit varies across the genus, including solitary, gregarious, and communal nesting habits.

### Floral Records

*Pityopsis graminifolia* (Michx.) Nutt. (Asteraceae),  
*Heterotheca subaxillaris* (Lam.) Britt. and Rusby  
(Asteraceae), *Agalinis filifolia* (Nutt.) Raf. (Orobanchaceae),  
*Solidago* spp. (Asteraceae)

### References

Deyrup et al. 2002; Mitchell 1960; Hall and Ascher 2014;  
Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Perdita blatchleyi* [page](#)

### *Perdita graenicheri* (Timberlake 1947), Andrenidae

#### Common Name(s)

No common name

#### Reason(s) for Concern

limited range/endemic, rare

#### Description

About 4.5 mm (~1/8 in) long. Covered in sparse white hairs. Head and thorax dark green. Wings clear with light yellow, nearly clear, veins. Abdomen dull yellow-brown. Face and abdomen with light yellow markings. Full description in Mitchell 1960. Corrections in Norden 1992.

#### Range

Recorded from Archbold Biological Station in south central Florida. Several observations from the 1920s in Miami and West Palm Beach. See DiscoverLife.org's *Perdita graenicheri* [page](#).

#### Flight Period

August to November

#### Nesting Behavior

Gregarious ground-nester in the sandy soils of scrub and sandhill communities

#### Floral Records

*Heterotheca subaxillaris* (Lam.) Britt. and Rusby  
(Asteraceae), *Pityopsis graminifolia* (Michx.) Nutt.  
(Asteraceae), and *Solidago odora* Ait. (Asteraceae)

### References

Deyrup et al. 2002; Mitchell 1960; Norden et al. 1992;  
Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Perdita graenicheri* [page](#)

### *Perdita mitchelli* (Timberlake 1947), Andrenidae

#### Common Name(s)

No common name

### Reason(s) for Concern

rare

#### Description

About 4.5 mm (~1/8 in) long. Covered in sparse white hairs. Head and thorax blue-green. Wings whitish with nearly clear veins. Abdomen dark brown. Full description in Mitchell 1960.



Figure 16. Photo of a female *P. mitchelli*.

Credit: J. Bremer, FSCA, used with permission

#### Range

Single recent observation in Apalachicola National Forest, with another in Bradford County, Florida, in the 1950s. Mitchell 1960 and Timberlake 1947 report this species as found in Mississippi, Alabama, and North Carolina. See DiscoverLife.org's *Perdita mitchelli* [page](#).

#### Flight Period

June

#### Nesting Behavior

Undescribed. Assumed to be ground-nesting based on congeners. Nesting habit varies across the genus, including solitary, gregarious, and communal nesting habits.

#### Floral Records

*Ceanothus* spp. (Rhamnaceae), *Cyrilla* spp. (Cyrillaceae),  
and *Oxydendrum arboreum* (L.) DC. (Ericaceae)

### References

Mitchell 1960; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Perdita mitchelli* [page](#)

### *Perdita townesi* (Timberlake 1968), Andrenidae

#### Common Name(s)

No common name

#### Reason(s) for Concern

rare

#### Description

5 mm–6 mm (~1/8 in–1/4 in) long. Covered in sparse white hairs. Head and thorax dark green, face with yellow markings. Wings whitish with pale brown veins. Abdomen



black with yellow bands that may be broken into two spots. Full description in Timberlake 1968.



Figure 17. Photo of a female *P. townesi*.

Credit: J. Bremer, FSCA, used with permission

### Range

Scattered occurrences across central Florida, as well as in Georgia and South Carolina. See DiscoverLife.org's *Perdita townesi* [page](#).

### Flight Period

March to May

### Nesting Behavior

Undescribed. Assumed to be ground-nesting based on congeners. Nesting habit varies across the genus, including solitary, gregarious, and communal nesting habits.

### Floral Records

*Ilex* spp. (Aquifoliaceae), *Nyssa sylvatica* Marsh. (Nyssaceae), *Ceanothus microphyllus* Michx. (Rhamnaceae), *Diospyros virginiana* L. (Ebenaceae), and *Vaccinium* spp. (Ericaceae)

### Notes

Most recent observation was in the 1970s. Females are difficult to distinguish from *P. bradleyi*.

### References

Timberlake 1968; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Perdita townesi* [page](#)

### *Stelis ater* (Mitchell 1962), Megachilidae

#### Common Name(s)

southwest Florida *Stelis* bee, Florida black dark bee

#### Reason(s) for Concern

limited range/endemic, rare

### Description

10 mm (3/8 in) long. Covered in sparse white hairs. Entirely black. Wings dark with black veins. First description in Mitchell 1962. Males first recorded in Hall and Ascher 2010.



Figure 18. Photo of a female *S. ater*.

Credit: J. Bremer, FSCA, used with permission

### Range

Scattered across central Florida. See DiscoverLife.org's *Stelis ater* [page](#).

### Flight Period

January to April

### Nesting Behavior

Cleptoparasite of *Osmia chalybea* (Smith 1853)

### Floral Records

*Circium* spp. (Asteraceae), which are also floral hosts of *O. chalybea*

### References:

Hall and Ascher 2010; Mitchell 1962; Pascarella and Hall 2006; Rozen and Hall 2011.

### Also See:

Explorer.NatureServe.org's *Stelis ater* [page](#)

### *Trachusa crassipes* (Cresson 1878), Megachilidae

#### Common Name(s)

No common name

#### Reason(s) for Concern

rare

### Description

About 10 mm (3/8 in) long. Nearly hairless except for whitish hairs on the face. Black. Many yellow markings across the body. Wings light brown with black veins.

Abdominal scopa white. Full description in Mitchell 1962 as *Heteranthidium crassipes*.



Figure 19. Photo of a female *T. crassipes*.  
Credit: J. Bremer, FSCA, used with permission

### Range

Observations in northern Florida, Alabama, and Mississippi. See DiscoverLife.org's *Trachusa crassipes* [page](#).

### Flight Period

June to October

### Nesting Behavior

Undescribed. Assumed to be a solitary, ground-nesting species based on congeners. Several other *Trachusa* spp. nest in soil.

### Floral Records

*Galactia* spp. (Fabaceae)

### Notes

One of three *Trachusa* spp. found in the southeastern United States. Differentiated geographically from *T. dorsalis*. Distinguished from *T. fontemvitae* by size.

### References

Brooks and Griswold 1988; Mitchell 1962; Pascarella and Hall 2006.

### Also See

Explorer.NatureServe.org's *Trachusa crassipes* [page](#)

### *Triepeolus monardae* (Mitchell 1962), Apidae

#### Common Name(s)

large monarda cuckoo bee

#### Reason(s) for Concern

rare

#### Description

15 mm–18 mm (~1/2 in–3/4 in) long. Black with short dense yellow hairs across the thorax and in bands across the abdomen. Full description in Rightmyer 2008.



Figure 20. Photo of a female *T. monardae*.  
Credit: USGS BMIL, *Triepeolus monardae*, F, Side, GA, Baker County, used under [Public Domain](#)

### Range

Occurrences in Florida, Georgia, and North Carolina. See DiscoverLife.org's *Triepeolus monardae* [page](#).

### Flight Period

August and September

### Nesting Behavior

Undescribed. *Triepeolus* spp. are cleptoparasitic with hosts across several bee families, though most are cleptoparasites of Eucerini. The host species for *T. monardae* is unknown.

### Floral Records

*Monarda punctata* L. (Lamiaceae), *Solidago bicolor* L. (Asteraceae)

### References

Michener 2007 and Rightmyer 2008.

### Also See

Explorer.NatureServe.org's *Triepeolus monardae* [page](#)

### *Triepeolus rugosus* (Mitchell 1962), Apidae

#### Common Name(s)

punctate central Florida cuckoo bee

#### Reason(s) for Concern

rare

#### Description

8.5 mm–10 mm (1/3 in–3/8 in) long. Black. Thorax covered in short, dense white-gray hairs. Abdomen with similar short, dense, white-gray hairs in bands. Full description in Rightmyer 2008.



Figure 21. Photo of a female *T. rugosus*.

Credit: J. Bremer, Florida State Collection of Arthropods, used with permission

### Range

Several occurrences throughout central Florida and in New Jersey. See DiscoverLife.org's *Triepeolus rugosus* [page](#).

### Flight Period

March to July

### Nesting Behavior

Undescribed. *Triepeolus* spp. are cleptoparasitic with hosts across several bee families, though most are cleptoparasites of Eucerini. The host species for *T. rugosus* is unknown.

### Floral Records

*Pontederia* spp. (Pontederiaceae)

### References

Michener 2007; Pascarella and Hall, 2006; Rightmyer 2008.

### Also See

Explorer.NatureServe.org's *Triepeolus rugosus* [page](#)

## Species Pages on DiscoverLife and NatureServe

*Ashmeadiella floridana* (Robertson 1897), Megachilidae

<https://www.discoverlife.org/mp/20q?search=Ashmeadiella+floridana>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30729/Ashmeadiella\\_floridana](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30729/Ashmeadiella_floridana)

*Bombus fraternus* (Smith 1854), Apidae

<https://www.discoverlife.org/20/q?search=Bombus+fraternus>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.832125/Bombus\\_fraternus](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.832125/Bombus_fraternus)

*Bombus pensylvanicus* (De Geer 1773), Apidae

<https://www.discoverlife.org/20/q?search=Bombus+pensylvanicus>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.744953/Bombus\\_pensylvanicus](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.744953/Bombus_pensylvanicus)

*Bombus variabilis* (Cresson 1872), Apidae

<https://www.discoverlife.org/mp/20q?search=Bombus+variabilis>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.819626/Bombus\\_variabilis](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.819626/Bombus_variabilis)

*Caupolicana electa* (Cresson 1878), Colletidae

<https://www.discoverlife.org/mp/20q?search=Caupolicana+electa>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30719/Caupolicana\\_electa](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30719/Caupolicana_electa)

*Caupolicana floridana* (Michener and Deyrup 2004), Colletidae

<https://www.discoverlife.org/mp/20q?search=Caupolicana+floridana>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30723/Caupolicana\\_floridana](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30723/Caupolicana_floridana)

*Centris errans* (Fox 1899), Apidae

<https://www.discoverlife.org/mp/20q?search=Centris+errans>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30748/Centris\\_errans](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30748/Centris_errans)

*Colletes francesae* (M. A. Deyrup and L. D. Deyrup 2011), Colletidae

<https://www.discoverlife.org/20/q?search=Colletes+francesae>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.31227/Colletes\\_francesae](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.31227/Colletes_francesae)

*Colletes longifacies* (Stephen 1954), Colletidae

<https://www.discoverlife.org/mp/20q?search=Colletes+longifacies>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30713/Colletes\\_longifacies](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30713/Colletes_longifacies)



*Colletes titusensis* (Mitchell 1951), Colletidae

<https://www.discoverlife.org/mp/20q?search=Colletes+titusensis&flags=subgenus:>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30716/Colletes\\_titusensis](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30716/Colletes_titusensis)

*Hesperapis oraria* (Snelling and Stage 1997), Melittidae

<https://www.discoverlife.org/20/q?search=Hesperapis+oraria>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30424/Hesperapis\\_oraria](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30424/Hesperapis_oraria)

*Hylaeus Formosus* (Krombein 1953), Colletidae

<https://www.discoverlife.org/mp/20q?search=Hylaeus+formosus>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30707/Hylaeus\\_formosus](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30707/Hylaeus_formosus)

*Lasioglossum flaveriae* (Mitchell 1960), Halictidae

<https://www.discoverlife.org/mp/20q?search=Lasioglossum+flaveriae&guide=Lasioglossum>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30669/Lasioglossum\\_flaveriae](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30669/Lasioglossum_flaveriae)

*Lasioglossum surianae* (Mitchell 1960), Halictidae

<https://www.discoverlife.org/20/q?search=Lasioglossum+surianae>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30738/Lasioglossum\\_surianae](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30738/Lasioglossum_surianae)

*Osmia calaminthae* (Rightmyer, Ascher, and Griswold 2011), Megachilidae

<https://www.discoverlife.org/20/q?search=Osmia+calaminthae>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.872575/Osmia\\_calaminthae](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.872575/Osmia_calaminthae)

*Perdita blatchleyi* (Timberlake 1952), Andrenidae

<https://www.discoverlife.org/20/q?search=Perdita+blatchleyi>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30726/Perdita\\_blatchleyi](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30726/Perdita_blatchleyi)

*Perdita graenicheri* (Timberlake 1947), Andrenidae

[https://www.discoverlife.org/mp/20q?search=Perdita+graenicheri&guide=Perdita\\_female&flags=subgenus:](https://www.discoverlife.org/mp/20q?search=Perdita+graenicheri&guide=Perdita_female&flags=subgenus:)

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.31249/Perdita\\_graenicheri](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.31249/Perdita_graenicheri)

*Perdita mitchelli* (Timberlake 1947), Andrenidae

<https://www.discoverlife.org/mp/20q?search=Perdita+mitchelli>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.902541/Perdita\\_mitchelli](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.902541/Perdita_mitchelli)

*Perdita townesi* (Timberlake 1968), Andrenidae

<https://www.discoverlife.org/mp/20q?search=Perdita+townesi&flags=subgenus:>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.902542/Perdita\\_townesi](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.902542/Perdita_townesi)

*Stelis ater* (Mitchell 1962), Megachilidae

<https://www.discoverlife.org/mp/20q?search=Stelis+ater>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30732/Stelis\\_ater](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30732/Stelis_ater)

*Trachusa crassipes* (Cresson 1878), Megachilidae

<https://www.discoverlife.org/mp/20q?search=Trachusa+crassipes>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.902544/Trachusa\\_crassipes](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.902544/Trachusa_crassipes)

*Triepeolus monardae* (Mitchell 1962), Apidae

[https://www.discoverlife.org/mp/20q?search=Triepeolus+monardae&guide=Triepeolus\\_female](https://www.discoverlife.org/mp/20q?search=Triepeolus+monardae&guide=Triepeolus_female)

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.2.902543/Triepeolus\\_monardae](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.902543/Triepeolus_monardae)

*Triepeolus rugosus* (Mitchell 1962), Apidae

<https://www.discoverlife.org/mp/20q?search=Triepeolus+rugosus>

[https://explorer.natureserve.org/Taxon/ELEMENT\\_GLOBAL.23.30744/Triepeolus\\_rugosus](https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.23.30744/Triepeolus_rugosus)

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