Perdita grandiceps (Tranquila Fairy Bee)

No Photo Available

Taxonomy

- **Class**: INSECTA
- **Order**: HYMENOPTERA
- **Family**: ANDRENIDAE
- **Genus**: Perdita
- **Scientific Name**: *Perdita grandiceps* Cockerell, 1896
- **Common Name**: Tranquila Fairy Bee
- **Synonyms**:
- **Taxonomic Name Source**:Integrated Taxonomic Information System (ITIS). 2008. World Bee Checklist Project (version 03-Oct-2008). Integrated Taxonomic Information System: Biological Names. Online. Available: http://www.itis.gov.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: GNR
- **NHNM State**: S1
- **NM Endemic**:YES

Description

This is a small (4-5mm) bee with a dark bluish green head and thorax and black abdomen. It has a large head. It is distinguished from its closest allies by the lack of light markings in the female, and the lack of yellow in the male, which is only seen on the anterior margin of face. The genitalia of the male are very distinctive (Timberlake 1962).

Habitat and Ecology

The habitats and ecology of this species are not well understood. It has been recorded primarily in the Chihuahuan Desert, which is largely comprised of arid grasslands and shrublands. This species has been collected from goldenrod (*Solidago* spp.) and snakeweed (Gutierrezia microcephala), both forbs in the aster family (Asteraceae) as well as Apache plume (*Fallugia paradoxa*), a shrub in the rose family (Rosaceae) (Timberlake 1962, Ascher and Pickering 2024). Most species of *Perdita* are oligolectic (Michener 2007). As such, their emergence is usually timed to coincide with the floral bloom period of their host plants (Wilson and Carril 2016). However, as this species has been collected from several hosts in two different families, it is unclear how specific its dietary preferences are. The species has been collected in April and May, as well as September (Timberlake 1968, Ascher and Pickering 2024).

Though the nesting habits of this species are unknown, *Perdita* generally nest in the soil, within burrows that branch, each ending in a single cell, which is more or less horizontal (Michener 2007). A few species nest gregariously, with females nesting in close proximity to one another (Wilson and Carril 2016). Other species are communal nesters, with more than one female sharing a nest entrance (Michener 2007). Any yet others are more solitary. Instead of covering nest cells in a water proof coating, like other species in the family Andrenidae do, *Perdita* cover only the spherical ball of pollen provisioned for larvae in a coating (Wilson and Carril 2016). Many species are specific about the soil type they choose to nest in (Wilson and Carril 2016). Adult emergency seems to be dependent on humidity levels which indicate significant rain events above ground, at least for desert species (Wilson and Carril 2016).

Geographic Range:

Perdita grandiceps is endemic to New Mexico, in the United States, were it is known from several localities in the southern half of the state, including in or near the towns of Las Cruces, Alamogordo, Carrizozo and Socorro (Timberlake 1962, Ascher and Pickering 2024). It is unclear whether this species has been recorded since 1962.

Conservation Considerations:

There are no conservation actions in place for this species. It is unknown whether it is found in any protected areas. Research is needed to verify the species remains extant. In addition, a better understanding of the distribution, population size and trend, habitats and ecology and threats is needed for this species.

Threats:

The threats to this species are not well understood, though drought is likely the main threat. The Southwestern U.S. saw its driest 22-year period from 2000 to 2021, since at least 800 CE (the time period used in previous climatic reconstructions) (Williams *et al.* 2022). Droughts are projected to become more prolonged, severe, and common in the region under future climate change scenarios (USGCRP 2018). Drought may negatively impact bee species by reducing floral resource availability (Phillips *et al.* 2017). In addition, declines observed in *Perdita* species at one site the Chihuahuan Desert have been attributed to small body size of these bees, and associated sensitivity to heat and desiccation (Kazenel *et al*. 2024).

Population:

The population size and trend are not known for this species. It has not been recorded since 1962, so it could be quite rare (Timberlake 1962, Ascher and Pickering 1962).

References:

- ITIS. 2024. Integrated Taxonomic Information System (ITIS). 2024. https://www.itis.gov/
- Ascher, J. S. and Pickering, J.. 2024. Discover Life bee species guide and world checklist (Hymenoptera): *Perdita grandiceps* Cockerell, 1896. 2024. https://www.discoverlife.org/mp/20q?search=Perdita+grandiceps
- Timberlake P.H.. 1962. A revisional study of the bees of the genus *Perdita* F. Smith, with special reference to the fauna of the Pacific Coast (Hymenoptera, Apoidea) Part V. *University of California Publications in Entomology* 28: (1-124).

More Information