

Conanthalictus conanthi (Sweat Bee)



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Taxonomy

- **Class:** INSECTA
- **Order:** HYMENOPTERA
- **Family:** HALICTIDAE
- **Genus:** Conanthalictus
- **Scientific Name:** *Conanthalictus conanthi* (Cockerell, 1901)
- **Common Name:** Sweat Bee
- **Synonyms:** Halictus conanthi Cockerell, 1901 Cockerell, 1901
- **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:** S2
- **NM Endemic:** NO

Description

This species is a tiny bluish black bee with testaceous antenna, legs, and wings. It can be separated from other *Conthalictus* species by its "elongate oval head, with the antennae separated from the epistomal suture by less than the width of an antennal socket, the antennal bases twice as far from the ocelli as from the anterior margin of the clypeus, the ocelli above a line drawn between the summits of the eyes, and the glossa rather elongate" (Michener 1942).

Habitat and Ecology

This species has been found in arid grasslands containing mesquite bushes (Rozen and McGinley 1976). Species of *Conanthalictus* appear to be oligolectic, mostly visiting flowers of certain genera of the subfamily Hydrophyllaceae

(Family: Boraginaceae) (Michener 2007). *C. conanthi* is ground nesting, and both males and females have been found on and near Sandbells (*Nama hispidum* var. *mentzelii*) during the heat of the day, in August (Rozen and McGinley 1976). Rozen and McGinley (1976) found and excavated a nest of this species. The nest was found in full sun on a sparsely vegetated slope, near nests of *C. dicksoni*. Both species visited a nearby clump of *Nama*, and therefore, may be competing for food resources. The nest was open and had loose, dry tumulus on the downhill side. It was comprised of a meandering main tunnel, about 20 cm long, ending in a single nest cell containing a mealy, moist ball of pollen. The cell walls were firmer than the surrounding soil, suggesting they had been reinforced with some secretion. There was no indication of parasitism in the nest (Rozen and McGinley 1976).

Geographic Range:

This species is known to occur in the Southwest United States, where it has been recorded in southern New Mexico and southeastern Arizona (Cheshire *et al.* 2023, Ascher and Pickering 2024).

Conservation Considerations:

There are no conservation measures in place for this species. It is known to occur in at least one protected area, the Sevilleta National Wildlife Refuge (Wright *et al.* 2023), though this will not protect against the main threat of increased drought due to climate change. Research is needed to better understand the distribution, population size and trend, habitats and ecology, and threats to this species.

Threats:

The threats to this species are not well understood. Climate warming may have impacts across the range of this species, particularly due to increasing drought conditions. 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). Bees that are oligolectic, like this one, are generally at higher risk of extinction due to reduced host plant availability, especially under climate change scenarios (Roberts *et al.* 2011) and reduced effective population sizes (Packer *et al.* 2005).

Population:

The population size and trend for this species is unknown. It is reportedly less common than a closely related species, *Conanthalictus dicksoni*, where they are found nesting in proximity to one another (Rozen and McGinley 1976). Surveys at the Sevilleta National Wildlife Refuge documented seven specimens between 2002 and 2019 (Wright *et al.* 2023).

References:

- [Wright, K.W., Kazenel, M.R., Bettinelli, J., Griswold, T.L., McLellan, J., Whitney, K.D. and Rudgers, J.A.. 2023. Bee species abundance and composition in three ecosystem types at the Sevilleta National Wildlife Refuge, New Mexico, USA ver 7. Environmental Data Initiative. 2024. <https://doi.org/10.6073/pasta/5a007cc78cf32244cb8a812f5be2ef60>](https://doi.org/10.6073/pasta/5a007cc78cf32244cb8a812f5be2ef60)
- [ITIS. 2024. Integrated Taxonomic Information System \(ITIS\). 2024. <https://www.itis.gov/>](https://www.itis.gov/)

- [Ascher, J.S. and Pickering, J.. 2024. Discover Life bee species guide and world checklist \(Hymenoptera\): *Conanthalictus conanthi* \(Cockerell, 1901\). 2024. <https://www.discoverlife.org/mp/20q?search=Conanthalictus+conanthi&flags=subgenus>](https://www.discoverlife.org/mp/20q?search=Conanthalictus+conanthi&flags=subgenus)
- Rozen, J.G. and McGinley, R.J.. 1976. Biology of the bee Genus *Conanthalictus* (Halictidae, Dufoureaeinae). *American Museum Novitates* 2602: (6-Jan).
- Phillips, B.B., Shaw, R.F., Holland, M.J., Fry, E.L., Bardgett, R.D., Bullock, J.M. and Osborne, J.L.. 2017. Drought reduces floral resources for pollinators. *Global Change Biology* 24: (3226-3235).
- Chesshire, P.R., Fischer, E.E., Dowdy, N.J., Griswold, T.L., Hughes, A.C., Orr, M.C, Ascher, J.S. Guzman, L.M, Hung, K-L.J., Cobb, N.S. and McCabe, L.M.. 2023. Completeness analysis for over 3000 United States bee species identifies persistent data gap. *Ecography* e06584: (13-Jan).
- Packer, L., Zayed, A., Grixti, J.C., Ruz, L., Owen, R.E., Vivallo, F. and Toro, H.. 2005. Conservation genetics of potentially endangered mutualisms: reduced levels of genetic variation in specialist versus generalist bees. *Conservation Biology* 19: (195-202).
- Williams, A.P., Cook, B.I. and Smerdon, J.E. . 2022. Rapid intensification of the emerging southwestern North American megadrought in 2020â€“2021. *Nature Climate Change* 12: (232-234).
- USGCRP. 2018. Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II. *U.S. Global Change Research Program* , Washington, DC, USA : (1515).
- Roberts, S.P.M., Potts, S.G., Biesmeijer, K., Kuhlmann, M., Kunin, B. and Ohlemüller, R.. 2011. Assessing continental-scale risks for generalist and specialist pollinating bee species under climate change. *BioRisk* 6: (18-Jan).
- Michener, D.C.. 2007. *The Bees of the World*. The Johns Hopkins University Press, Baltimore : (953).
- Michener, C.D.. 1942. Taxonomic observations on bees with descriptions of new genera and species (Hymenoptera; Apoidea). *Journal of the New York Entomological Society* 50: (273-282).

More Information

