Lasioglossum argammon (White Sands Sweat Bee)

No Photo Available

Taxonomy

- **Class**: INSECTA
- **Order**: HYMENOPTERA
- **Family**: HALICTIDAE
- **Genus**: Lasioglossum
- **Scientific Name**: *Lasioglossum argammon* Gardner and Gibbs, 2020
- **Common Name**: White Sands Sweat Bee
- **Synonyms**:
- **Taxonomic Name Source**:Gardner, J., and J. Gibbs. 2020. The 'red-tailed' *Lasioglossum* (Dialictus) (Hymenoptera: Halictidae) of the western Nearctic. European Journal of Taxonomy 725:1-242.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: GNR
- **NHNM State**: S1
- **NM Endemic**:NO

Description

In general, *Lassiglossum* bees tend to be small and metallic colored (Carril and Wilson 2023). Females of *Lasioglossum argammon* can be distinguished by their relatively long face, and other characteristics specified by Gardener and Gibbs (2020, pg. 23). The male of *L. argammon* is unknown, but it is probably similar to that of *L. lilianae* (Gardener and Gibbs 2020).

Habitat and Ecology

This species is known from gypsum sand dune habitats, such as White Sands National Park. This species has been recorded feeding on *Lepidium* species, a plant in the Brassicaceae family (Gardner and Gibbs 2020).

Lasioglossum species typically nest in the ground, though some species nest in rotting wood, and a variety of social behaviours have been observed, from purely solitary to primitively eusocial and even parasitic (Wilson and Carril 2016). More research is necessary to better understand the ecology of this species.

Geographic Range:

This species occurs in southern New Mexico and West Texas, in the United States. It is known from several localities in and around White Sands National Monument and at the Sevilleta National Wildlife Refuge, in New Mexico and in Texas it has been recorded at Salt Flats, in Hudspeth County. It is primarily found in areas with gypsum soils (Gardner and Gibbs 2020).

The estimated extent of occurrence (EOO) is 12,100 km^2. As the species is only known from five localities, the area of occupancy (AOO) could be as low as 20 km^2. This is likely underestimated, though it is unlikely the AOO exceeds 2,000 km^2, as this species is a habitat specialist and therefore there are limited suitable habitats.

Conservation Considerations:

The majority of gypsum sand habitat in New Mexico is under management by the National Park Service and the US Department of Defense (DoD). This species occurs in White Sands National Park, which is the world's largest white gypsum sand field and completely protected from resource extraction and development (Metzler *et al*. 2009). It also found at the Sevilleta National wildlife Refuge. However, neither of these sites protect against the major threat of increased drought due to climate change. Surveys are needed to understand whether the species remains extant across its range. Research on the distribution, population size and trend, and threats is urgently needed.

Threats:

The threats to this species are not well understood, though drought is likely the main threat across its range. 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 many species, including this one, 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).

In addition, where the species is found at White Sands dune field, dune instability due to extensive groundwater extraction on the eastern edge of the Tularosa Basin is a growing concern. Hydrologic modeling has shown that increased groundwater pumping in response to increased temperatures and drought conditions will lead to water level decreases up to 1.5 meters. The dune field only exists as a permanent landscape feature because the gypsum sands are held in place at the base by water weight wicked up from the ground, so a decrease in water resources could result in increased sand motility, and therefore instability of the interdune habitats where bees nest and forage (Bourret 2015).

Population:

The population size and trend are not known for this species. However, based on 16 years of abundance data from the Sevilleta National Wildlife Refuge and experimentally determined heat and desiccation tolerances, climate sensitivity models predict this species is likely to decline in the coming years (Kazenel *et al*. 2024). Despite survey efforts from 2002 to 2018, the last record taken in New Mexico was in 2009, and the last record taken in Texas was in 2010 (Gardner and Gibbs 2020). Apart from the Sevilleta, survey effort is lacking.

References:

- Gardner, J. and Gibbs, J.. 2020. The â€˜red-tailedâ€™ *Lasioglossum* (*Dialictus*) (Hymenoptera: Halictidae) of the western Nearctic. *European Journal of Taxonomy* 725: (1-242). https://doi.org/10.5852/ejt.2020.725.1167

More Information