

Sclerobunus skywalkeri (Skywalker Spider)

No Photo Available

Taxonomy

- **Class:** ARACHNIDA
- **Order:** Opiliones
- **Family:** Paranonychidae
- **Genus:** Sclerobunus
- **Scientific Name:** Sclerobunus skywalkeri
Derkarabetian & Hedin, 2014
- **Common Name:** Skywalker Spider
- **Synonyms:**
- **Taxonomic Name Source:** Derkarabetian, S. & Hedin, M. (2014) Integrative taxonomy and species delimitation in harvestmen: A revision of the western North American genus Sclerobunus (Opiliones: Laniatores: Travunioidea). PLoS One, 9(8), 1–25 (e104982).
<https://doi.org/10.1371/journal.pone.0104982>

Agency Status

- **NMDGF:**
- **Federal Status:**
- **BLM Sensitive:**
- **USFS:**
- **IUCN Red List:** [Not Evaluated](#)
- **Nature Serve Global:**
- **NHNM State:** S1
- **NM Endemic:** YES

Description

Habitat and Ecology

This species is known from forested areas near mountain peaks in central New Mexico (Derkarabetian & Hedin, 2014). All records are from June 3rd to July 21st, but the emergence period isn't known (Derkarabetian & Hedin, 2014). The ecology of this spider is unknown, but as a Harvestmen spider in the genus Sclerobunus, it relies on micro habitats that are moist and dark (Derkarabetian & Hedin, 2014). They are typically found under logs and rocks in high-elevation forests or in caves (Derkarabetian & Hedin, 2014). The diet of this species isn't known (Derkarabetian & Hedin, 2014) but Harvestmen spiders are known to be omnivores. They scavenge and hunt for small invertebrates and opportunistically feed on decaying leaves or fungi (Halaj and Cady 2002). Mating rituals in this species are unknown and mating Harvestmen spiders is incredibly varied and often complex (Machado and Burns 2024). More research is needed on the ecology of this species.

Geographic Range:

The full scope of this spider's range is unknown. The species is known from three locations (Derkarabetian & Hedin, 2014). One is along the road to Capilla Peak in Canon Huevo in the Manzano Mountains in New Mexico (Derkarabetian & Hedin, 2014). Another is along Forest Road 193, 4 miles east of Highway 547 in Lobo Canyon, in Mt. Taylor, New Mexico (Derkarabetian & Hedin, 2014). The third location is 10.2 miles from State Road 14 along Sandia Crest Road, within the Sandia Mountains in New Mexico (Derkarabetian & Hedin, 2014). More research is needed into the range of this species.

Conservation Considerations:

There are no known active range-wide conservation actions in place for this spider. More research is needed into the ecology and range of this species.

Threats:

This spider's range includes the Southwestern United States, which 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) and droughts are projected to become more prolonged, severe, and common in the region under future climate change scenarios (USGCRP 2018). Drought conditions over the last few years have severely limited food and resources (Hughes 2020) and environmental stochasticity, especially variation in plant quantity, quality, and phenology in other arthropod groups (Ehrlich and Murphy 1987). As this spider likely relies on small insects for food, any insect declines will affect this species. Another threat facing this spider is catastrophic fire or lack of fire. The impacts of fire on this species may depend on the intensity and size of the fire, as well as seasonal timing (USFWS et al. 2004). With population numbers in small areas one fire, controlled or wild, could wipe out a large percentage of this species (Moretti et al. 2008). On the other hand, with no fire this habitat may grow senescent or be succeeded which will also drive the taxa towards potential extinction (Moretti et al. 2008). The impacts of land use on fire intensity and spread may also be consequential. Many arthropods respond to climate change by moving to higher elevations or latitudes however, this is not an option for this taxa where there are no higher elevation habitats to shift to and as a result just a small amount of warming could push this taxa into thin air driving it to extinction as seen in many butterflies (Forister et al. 2010, Holland 2010, Rödder et al. 2021, Forister et al. 2023). Inbreeding depression is likely also a major threat to this spider, as populations are small and isolated. Inbreeding depression results when slightly deleterious alleles accumulate in a small population, reducing the likelihood of population persistence (Bilde et al. 2007, Bonte 2009). A reduction in fitness resulting from the loss of genetic diversity significantly increases the risk of extinction when populations are subject to environmental stress. Saccheri et al. (1998) found that microclimatic conditions combined with inbreeding caused the extinction of a checkerspot butterfly population in Finland. This spider relied on dark and moist microhabitats such as logs and caves. Mammola et al. (2017) characterized the thermal conditions of caves in the western Alps, and related climate data to the occurrence of Troglolyphantes spiders. Using ecological niche modeling to predict habitat suitability both in the Pleistocene and under future global warming scenarios. These analyses pointed toward a future decline in habitat suitability for subterranean spiders and the potential extinction of the most restricted endemic species. When compared with other species that live in confined habitats such as islands and mountains, Mammola et al. (2017) expect cave species to be as much, if not more, vulnerable to climate change.

Population:

The population size and trend are not known for this species. Determination of population size and monitoring of population trends is necessary to ensure the population is stable.

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More Information

