Thalkethops grallatrix (a centipede)

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Taxonomy

- **Class**: CHILOPODA
- **Order**: MYRIAPODA
- **Family**: SCOLOPOCRYPTOPIDAE
- **Genus**: Thalkethops
- **Scientific Name**: *Thalkethops grallatrix* Crabill, 1960
- **Common Name**: a centipede
- **Synonyms**:
- **Taxonomic Name Source**:Mercurio, R.J. 2010. An annotated catalog of centipedes (Chilopoda) from the United States of America, Canada and Greenland (1758-2008). Xlibris Publishing. 560 pp.

Agency Status

- **NMDGF**:
- **Federal Status**:
- **BLM Sensitive**:
- **USFS**:
- **IUCN Red List**: Not Evaluated
- **Nature Serve Global**: G1
- **NHNM State**: S1
- **NM Endemic**:YES

Description

This is a colorless, virtually transparent centipede with 23 sets of long, slender, stilt-like legs and long antennal articles. It measures around 35 mm in length and the antenna is 15 mm, with 17 articles. This centipede is also distinguishable because t

Habitat and Ecology

The Carlsbad Centipede has only been found in Carlsbad Caverns National Park in dark and wet locations (Crabill 1960, Barr and Reddell 1967), sometimes at great depths (Bock 2023). Very little is known about the ecology of the millipede. However, Crabill (1960) identified the centipede as a possible cave obligate due to its long, light, and thin legs, which appear suitable for quick movement along cave floors and walls. The centipede is also pale and near transparent; a loss of pigmentation also suggests this centipede is a true troglobite (Crabill 1960). More research about the habitat and ecology of this species is needed.

Geographic Range:

The Carlsbad Centipede is thought to be a cave obligate species (Barr and Reddell 1967) found only deep within the caves at Carlsbad Caverns national Park, in southeastern New Mexico. The centipede has been collected on just three occasions, at three different localities, though the full scope of the range is unknown. The 1957 holotype was found beneath Iceberg Rock (Crabill 1960, Barr and Reddell 1967) and the 1959 specimen was found in the Papoose Room Tunnel (Barr and Reddell 1967). The 2023 occurrence was seen in the Hall of the White Giant (Bock 2023). There are also unconfirmed sightings by Baker (1959) near the left hand tunnel which leads down to the Lake of the Clouds (Baker 1959, Barr and Reddell 1967).

Conservation Considerations:

There are no known conservation actions in place for this millipede. It was listed as a Species of Greatest Conservation Need list in New Mexico, in 2005 (NMDGF 2006), though it has since been dropped from the list as the state does not have authority to manage most invertebrates species. It is found entirely with a protected area, at Carlsbad Caverns National Park, though the Park does not manage habitat specifically for this species.

Threats:

Threats are not well understood, as little is known about this centipedeâ€™s ecology. However, climate change and tourism likely adversely impact this species. The average temperature in caves is highly correlated with average surface temperature (Medina et al. 2023). With temperatures rising in the southwest due to climate change, cave temperatures will also rise, which may not be ideal for this species. Droughts are projected to become more prolonged, severe, and common in the region under future climate change scenarios (USGCRP 2018), which may not be ideal for this species.

Much of the range of this species is within Carlsbad Caverns National Park, which may provide some protection from certain threats. However, the cave systems at the Park are heavily trafficked, so tourist-caused habitat disturbances are a concern. Caves are especially vulnerable to human impact because as closed ecosystems they are highly transmissive and prone to rapid pollutant transfer (Constantin et al. 2021). Caves open for tourism can cause direct and indirect effects on an ecosystem (Piano et al. 2024). Direct effects include trampling and trail maintenance. Indirect effects from tourism include chemical changes. Tourism may introduce higher levels of nitrogen and phosphorus, which could potentially change chemical concentrations in sediments and groundwater (Piano et al. 2024).

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.

References:

- Barr, T.C. and Reddell, J.R.. 1967. The Arthropod Cave Fauna of the Carlsbad Caverns Region, New Mexico. *The Southwestern Naturalist* 12: (253-273). https://doi.org/10.2307/3669113
- Cokendolpher, J. and Polyak, V.J.. 1996. Biology of the caves at Sinkhole Flat, Eddy County, New Mexico.

Journal of Cave and Karst Studies 58: (181-192).
- Constantin, S., Mirea, I.C., Petculescu, A., Arghir, R.A., MÄƒntoiu, D.È˜., Kenesz, M., Robu, M. and Moldovan, O.T.. 2021. Monitoring Human Impact in Show Caves. A Study of Four Romanian Caves. *Sustainability* 13: (1619).
- Piano, I., Mammola, S., Nicolosi, G. and Isaia, M.. 2024. Advancing tourism sustainability in show caves. *Cell Reports Sustainability* 1: (100057).
- ITIS. 2024. Integrated Taxonomic Information System (ITIS). 2024. https://www.itis.gov/
- Crabill, R.E.. 1960. A new American genus of Cryptopid centipedes, with an annotated key to the Scolopendromorph genera from America north of Mexico. *Proceedings of the United States National Museum* 11: (45306). https://doi.org/10.5479/si.00963801.111-3422.1
- Bock, A.. 2023. iNaturalist observation:. 2024. https://www.inaturalist.org/observations/182904239
- New Mexico Department of Game and Fish (NMDGF). 2006. Comprehensive Wildlife Conservation Strategy for New Mexico.. New Mexico Department of Game and Fish, Sante Fe . https://bison-m.org/documents/47967_Comprehensive-Wildlife-Conservation-Strategy.pdf
- 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).
- Medina, M.J., Antic, D., Borges, P.A., Borko, S., Fiser, C., Lauritzen, S.-E., Martin, J.L., Oromi, P., Pavlek, M., Premate, E., Puliafico, K.P., Sendra, A. and Reboleira, A.P.S.. 2023. Temperature variation in caves and its significance for subterranean ecosystems. *Scientific Reports* 13. https://doi.org/10.1038/s41598-023-48014-7

More Information