

UC SANTA CRUZ CAMPUS NATURAL RESERVE

# DOLLOFF CAVE SPIDER



**Brandon Sanchez**

**Scientific Name:** *Meta dolloff*

**Common Name:** Dolloff Cave Spider

**Global Rarity:** Critically Imperiled;  
IUCN Vulnerable

**State listing:** Critically Imperiled

**UCSC Rarity:** Very rare



## General Description

The Dolloff Cave Spider is endemic to California and is considered one of the rarest spiders in North America. Although not biologically modified for cave life, this species has only been found in cave and cave-like habitats in Santa Cruz and Monterey Counties. Female Dolloff Cave Spiders weave orb webs near entrance areas to the twilight regions of the cave or cave-like habitats to prey on insects, presumably. This large spider is dark overall, with a lighter brown pattern on its abdomen, long leg spines, and colors accents of orange, red, light and dark brown.



## Identification

**General Color:** Red, Brown, Orange

**Legs:** Long spine-like setae; various dashes of red, brown, and orange marks on leg joints (depending on main color of spider)

**Abdomen:** Lighter colored pattern on dark brown/black base color

## Geographic Range and Seasonal Movements

The Dolloff Cave Spider has only been found in a few caves or cave-like environments within Santa Cruz and Monterey Counties. Cave-like environments have included soil pits, abandoned train tunnels, and a tunnel through a cliff on the Big Sur coast. Dispersal patterns are unknown but may include ballooning and terrestrial, epigeal (above-ground) movement.





## UCSC Distribution

At UCSC, the Dolloff Cave Spider can be found in several cave and cave-like habitats within redwood forest. **NOTE: DO NOT TOUCH OR HANDLE THESE SPIDERS. THEY ARE CRITICALLY IMPERILED.**

## Life history

**Habitat:** The Dolloff Cave Spider occupies entrance and twilight areas of cave and cave-like habitats.

**Reproduction:** Females appear to guard, or at least stand by, egg sacs that appear as dense, cottony white spheres surrounded by silk webbing (A. Jones, pers. comm.).

**Behavior:** Females sit and wait in the hub of orb webs.

**Diet:** Unknown, but likely flying insects that get trapped in the orb webs. Dolloff Cave Spider webs have some radial lines that are attached directly to cave (or other substrate) walls, which may point towards the spiders sometimes leaving the web to prey upon invertebrates that walk into these lines (T. Hesselberg, pers. comm.).

## Research Highlights and Fun Facts

- One of the most rare species of spiders in North America
- The largest web-building spider known from Santa Cruz caves
- UC Santa Cruz students and other visitors to Empire Cave at UCSC are a threat to this species as large gatherings commonly occur within the cave and cave walls are frequently spray-painted.
- Not truly adapted to be in caves and have still survived quite well by positioning themselves strategically in the entrance and twilight zones of the cave.





## Conservation Status

### Critically Imperiled

In 1996 the Dolloff Cave Spider was listed by the United States Fish and Wildlife Service as a **Critically Imperiled** species due to their limited distribution. The International Union for Conservation of Nature (IUCN) lists them as Vulnerable.

## Threats

### Statewide:

The Dolloff Cave Spider is threatened across the state by:

1. Development that may impact cave habitats
2. Hydrological modifications that may impact karst cave systems
3. Chemical contamination
4. Alteration of nutrient flow into caves

### UCSC campus:

At UCSC, the Dolloff Cave Spider is threatened by:

1. Disturbance from cave visitors (spray paint, smoke, damage to webs)



## Ways you can help

### In your community:

1. Do not disturb cave habitats (and especially refrain from smoking or spray painting in caves)
2. Report your sightings of Dolloff Cave Spiders on iNaturalist and by contacting the Campus Natural Reserve (cnr@ucsc.edu)
3. Support protection of karst cave systems

## References

Krohn, A.R. and A.S. Jones. 2020. *Meta dolloff* Levi, 1980 (Aranae: Tetragnathidae) in cave-like environments. *Pan-Pacific Entomologist* 96:185-187.

Ubick, D. 2001. Cavernicolous invertebrates of Cave Gulch Santa Cruz County, California. Department of Entomology California Academy of Sciences, San Francisco.

William R.E., et al. 2017. The Cave Fauna of California. California Academy of Sciences, Institute for Biodiversity Science & Sustainability.

Cover Page Top Left: “Cave Spider (*Meta dolloff*) ” by jmledford is licensed under CC by 4.0

Cover Page Top Right: “Dolloff Cave Spider (*Meta dolloff*) ” by Alex Jones, used by permission.

Cover Page Bottom Left: “Dolloff Cave Spider (*Meta dolloff*) ” by Alex Jones, used by permission

Cover Page Bottom Right: by Alex Jones, used by permission.

Page 1 Top Right: “Dolloff Cave Spider (*Meta dolloff*) ” by jmledford is licensed under CC by 4.0

Page 1 Middle Left: “Dolloff Cave Spider (*Meta dolloff*) ” by Alex Jones, used by permission.

Page 2 Top Left: “Dolloff Cave Spider (*Meta dolloff*) ” by Alex Jones, used by permission.

Page 2 Bottom: “Dolloff Cave Spider (*Meta dolloff*) ” by Alex Jones, used by permission.

Page 3 Top Left: “Dolloff Cave Spider (*Meta dolloff*) ” by parangatang is licensed under CC by 4.0

Page 3 Middle Right: “Dolloff Cave Spider (*Meta dolloff*) ” by parangatang is licensed under CC by 4.0

Page 3 Bottom Left: “Dolloff Cave Spider (*Meta dolloff*) ” by Alex Jones, used by permission.