

# Field Guide to Cave Life

Great Basin National Park  
Baker, Nevada



## A Guide to Cave Life in Great Basin National Park



NPS Photo by Gretchen Baker

by Gretchen M. Baker, 2007

This guide is an overview of some of the more interesting cave creatures in Great Basin National Park. To date, more than 100 taxa have been found. A current study of several caves will help us to understand the distribution and ecology of some of these underground dwellers.

Over 40 caves in Great Basin National Park have been located, and of those about half have had biological inventories conducted. The public can enter Lehman Caves with a park ranger-led tour, and eight caves are open periodically by permit for cavers with sufficient experience and a good cave conservation ethic.

*Special thanks to Steve Taylor, Jean Krejca, Mike Slay, Meg Horner, Ben Roberts, and Christy Slay for their assistance with this guide.*

**Ecology** - There is no sunlight in caves beyond the twilight zone, and thus plants that capture energy from sunlight are not found in caves. Therefore, the ecology of Great Basin caves is based on nutrients entering the cave via water and organisms venturing into the cave and depositing guano, eggs, debris, or their carcasses. These nutrients are in turn used by the organisms that are limited to the cave environment.

### Common Terms

**Troglobite** - a species that spends its entire life cycle in caves. Often troglobites have adapted to the cave environment by morphological changes such as the loss of eyes and pigment and lengthening of appendages, as is seen in the cave dipluran.

**Troglophile** - an organism that can complete its life cycle in a cave but may also survive in a similar habitat outside of the cave, such as in the soil or under rocks. Some moderate changes in body form may be apparent, including reduced eyes and other enhanced sensory structures.

**Trogloxene** - an organism that uses caves frequently but does not complete its life cycle within one, for example a bat or cave cricket.

**Accidental** - a surface organism that has ventured into the cave. Pack rats and humans are examples.

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Great Basin  
Cave Millipede  
*Idagona lehmanensis*



NPS Photo by Gretchen Baker



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**Common Name:** Great Basin Cave Millipede

**Scientific Name:** *Idagona lehmanensis* Shear

Family: Conotylidae

Order: Chordeumatida

Class: Diplopoda

**Range:** Only known from two sites in Great Basin National Park: Water Trough and Model caves.

**Level of Cave Adaptation:** Troglobite.

**Distinguishing Features:** This millipede was first collected in 2006 and described as a new species in 2007. The pale coloration, size, and nearly cylindrical body distinguish this species from others found in park caves.

**Abundance:** Uncommon.

**Size:** About 10-20 mm long.

**Biology:** Millipedes feed on detritus, fungi and bacteria. They have two legs for each segment of most of their bodies.

**Ecology:** Scavengers/detritivores.

**Habitat:** Often found in muddy areas or near decaying materials.

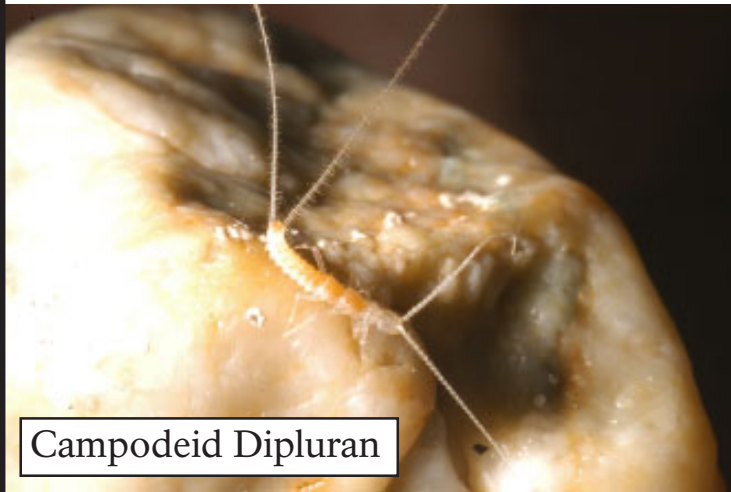


Photo by Jean Krejca

Campodeid Dipluran



NPS Photo by Gretchen Baker

**Common Name:** Campodeid Dipluran

**Scientific Name:** *Undescribed*

Family: Campodeidae

Class: Diplura

Subphylum: Hexapoda

**Range:** Unknown; Diplurans were collected from Model, Little Muddy, and Root caves in 2006.

**Level of Cave Adaptation:** Troglobite.

**Distinguishing Features:** This all-white creature has two long antennae and two long tails.

**Abundance:** Uncommon.

**Size:** About 10-20 mm long.

**Biology:** Diplurans are primitive, insect-like invertebrates that do not have eyes or wings.

**Ecology:** Probably a detritivore.

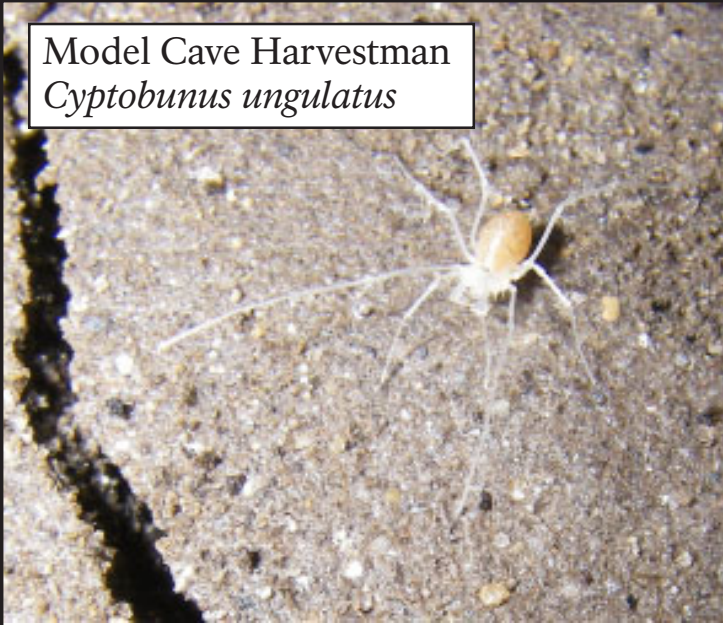
**Habitat:** Found on mud, rocks, tree roots.

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Model Cave Harvestman  
*Cyptobunus unguulatus*



NPS Photo by Gretchen Baker



Photo by Jean Krejca

**Common Name:** Model Cave Harvestman

**Scientific Name:** *Cyptobunus unguulatus unguulatus*  
Briggs

**Family:** Triaenonychidae

**Order:** Opiliones

**Class:** Arachnida

**Range:** Presently only found in Great Basin National Park. First found in Model Cave and described in 1971; since then it has been found in several other caves.

**Level of Cave Adaptation:** Troglóbite.

**Distinguishing Features:** Pale tan as immature, more orange as an adult. Slow moving.

**Abundance:** Uncommon.

**Size:** About 15-25 mm long.

**Biology:** Instead of having two body segments like true spiders, Harvestmen are close relatives with just one body segment. Some people call them Daddy Longlegs. They eat a wide variety of food.

**Ecology:** Predator.

**Habitat:** Generally found on moist surfaces.

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Pseudoscorpion  
*Microcreagris grandis*



NPS Photo by Gretchen Baker

Male



NPS Photo by Gretchen Baker

Female

**Common Name:** Cave Basin Cave Pseudoscorpion

**Scientific Name:** *Microcreagris grandis* Muchmore

Family: Neobisiidae

Order: Pseudoscorpiones

Class: Arachnida

**Range:** Only known from Great Basin National Park; first collected in Lehman Caves in the late 1930s. Since then, these pseudoscorpions have been found in several other park caves.

**Level of Cave Adaptation:** Troglobite.

**Distinguishing Features:** Pseudoscorpions look like scorpions but do not have a tail. This is the largest pseudoscorpion known from the park.

**Abundance:** Fairly common.

**Size:** About 15-20 mm long.

**Biology:** Males are darker in color and more common than females. As pseudoscorpions grow, they shed their exoskeleton in a process called molting.

**Ecology:** Predator. Feeds on a variety of small arthropods including flies and springtails.

**Habitat:** Usually found under rocks, but sometimes crawling on cave walls and formations.



Lehman Caves  
Millipede

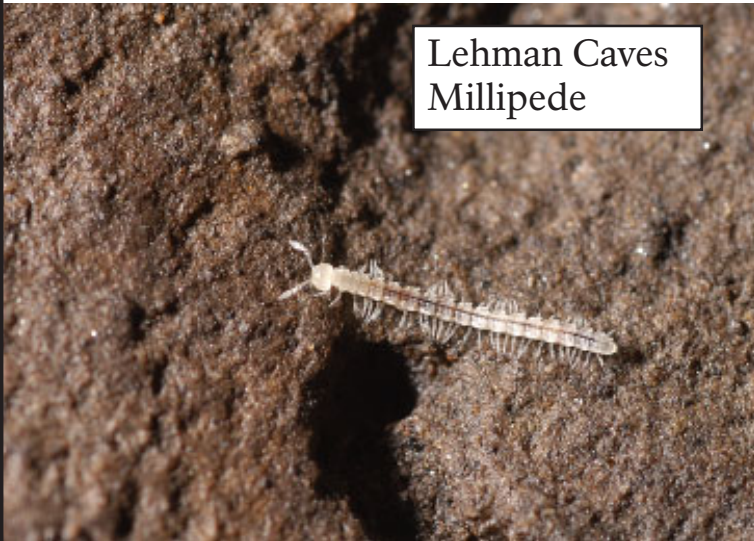


Photo by Jean Krejcar



NPS Photo by Gretchen Baker

**Common Name:** Lehman Caves Millipede

**Scientific Name:** *Undescribed*

Family: Polydesmidae

Order: Polydesmida

Class: Diplopoda

**Range:** Known only from a few caves in Great Basin National Park, including Lehman Caves.

**Level of Cave Adaptation:** Troglobite.

**Distinguishing Features:** Small white millipede, collected in 2003 and 2006 and presently being described as a new species.

**Abundance:** Uncommon.

**Size:** About 10-15 mm long.

**Biology:** Millipedes feed on fungi and bacteria. They have two legs for each segment of most of their bodies.

**Ecology:** Detrivore.

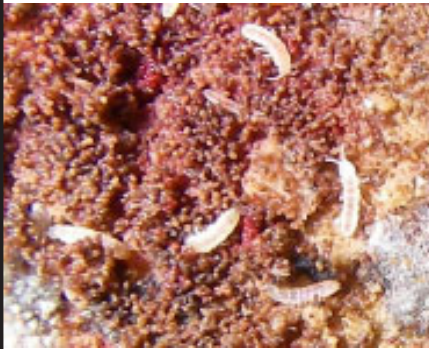
**Habitat:** Often found in moist areas on soil or bedrock.

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## White Springtails



NPS Photos by Gretchen Baker



## Gray Springtails



Photo by Jean Krejca

**Common Name:** Springtails

**Scientific Name:** *Undetermined*

**Families:** Entomobryidae, Arrhopalitidae, Poduridae, Onychiuridae

**Order:** Collembola

**Class:** Insecta

**Range:** Widespread; at least one species found in virtually all caves in the park; Lehman Caves has at least three species.

**Level of Cave Adaptation:** Troglobite; troglophile.

**Distinguishing Features:** Tiny, look like crawling dandruff.

**Abundance:** Common.

**Size:** About 1-2 mm long.

**Biology:** Springtails are so named because they have a tail that they can use to spring forward. They subsist on fungi and bacteria, along with lint and other material people may bring into the cave.

**Ecology:** Springtails are low on the food chain, feeding on bacteria and fungi, and are the most common animals found in the caves.

**Habitat:** Often found on or near moist surfaces.



Centipede

NPS Photo by Gretchen Baker



NPS Photo by Gretchen Baker

**Common Name:** Centipede

**Scientific Name:** *Undetermined*

**Family:** Geophilidae?

**Order:** Geophilomorpha

**Class:** Chilopoda

**Range:** Unknown; This centipede was collected from Ice, Crevasse, and System's Key caves in 2003.

**Level of Cave Adaptation:** Troglophile or soil inhabitant.

**Distinguishing Features:** This is the only centipede found regularly in caves in the park.

**Abundance:** Uncommon.

**Size:** About 50-80 mm long.

**Biology:** Centipedes feed on other invertebrates. They have one leg for each segment of most of their bodies. Centipedes of this order are commonly soil inhabitants.

**Ecology:** Predator.

**Habitat:** Often found on soil in moist areas and near potential food sources.

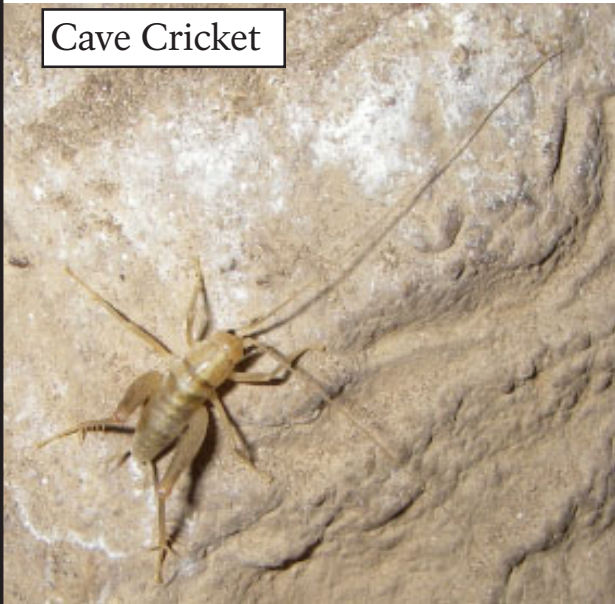


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Cave Cricket



NPS Photo by Gretchen Baker



NPS Photo by Gretchen Baker

**Common Name:** Inyo Cave Cricket

**Scientific Name:** *Ceuthophilus inyo*

Family: Rhaphidophoridae

Order: Orthoptera

Class: Insecta

**Range:** Widespread. Cave crickets have been seen in several park caves including Lehman Caves.

**Level of Cave Adaptation:** Troglaxene.

**Distinguishing Features:** Light tan in color with darker stripes across thorax and abdomen. Very long antennae.

**Abundance:** Uncommon.

**Size:** About 30-40 mm long.

**Biology:** Cave crickets usually leave the cave to eat at night and then return to roost in the daytime.

**Ecology:** Cave crickets are an important source of nutrients to other cave creatures, since they bring food into the cave by depositing eggs, guano, and eventually their carcasses.

**Habitat:** Generally found on dry cave walls.

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Townsend's Big - Eared Bat  
*Corynorhinus townsendii*



NPS Photo by Gretchen Baker

**Common Name:** Townsend's Big - Eared Bat

**Scientific Name:** *Corynorhinus townsendii*

Family: Vespertilionidae

Order: Chiroptera

Class: Mammalia

**Range:** Widespread. This bat is one of the most common in the area and in Great Basin National Park. Several other species of bats are present in the park.

**Level of Cave Adaptation:** Trogloxene.

**Distinguishing Features:** Large ears and tube-like nose.

**Abundance:** Fairly common.

**Size:** About 60-80 mm long.

**Biology:** Townsend's big-eared bats emerge during summer evenings to eat hundreds of moths and other insects. They form colonies of up to 200 bats. During the winter they hibernate in caves.

**Ecology:** Bat guano is an important food source food for cave -adapted species.

**Habitat:** Found in caves with adequate entrances for exit and entry.



Darkling Beetle



Photo by Jean Krejca

**Common Name:** Darkling Beetle

**Scientific Name:** *Undetermined*

**Family:** Tenebrionidae

**Order:** Coleoptera

**Class:** Insecta

**Range:** Widespread. Found in Lehman Caves and several other park caves, as well as in surface habitats.

**Level of Cave Adaptation:** Accidental or troglophile.

**Distinguishing Features:** Black.

**Abundance:** Uncommon.

**Size:** About 20-30 mm long.

**Biology:** Darkling beetles are not cave adapted, so probably enter caves by accident. They feed on plant material or organic debris.

**Ecology:** Darkling beetles seem to do well in some caves, which perhaps function as marginal habitat.

**Habitat:** Generally found in dry areas near cave entrances.