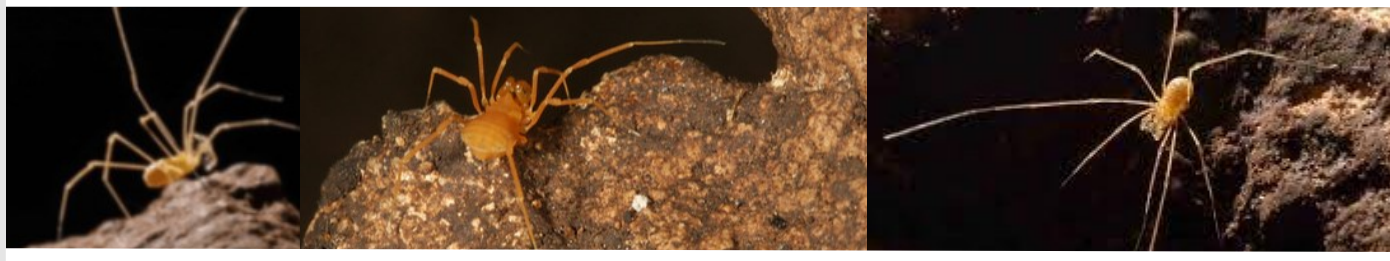


# USACE Natural Resource Management

## Insects



### Bone Cave Harvestman

**Bone Cave Harvestman (*Texella reyesi*):** This species is a troglobite, meaning that it spends its entire life-cycle underground. It displays a high degree of morphological adaptation to subterranean environments including leg elongation, increased number of tarsomeres, eye reduction, reduced pigmentation, and reduced number of protuberances on the carapace. (USFWS)

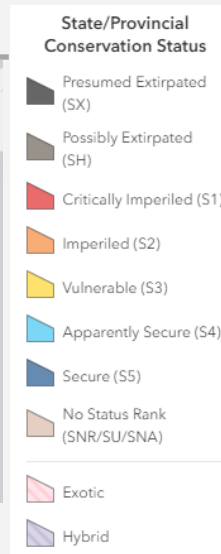
**Status:** *Endangered, listed 1988*

**NatureServe:** *Imperiled*

G2  
Imperiled



Photo: Map of species' NatureServe status by state.



**Genus:** The genus *Texella* has a total of 28 recognized species in North America. Prior to 1992, the genus had only two recognized species. In 1992, new studies were conducted which evaluated the taxonomic validity of closely related genera. At this time, an additional 20 species of *Texella* were recognized. (USFWS)

*Photos Left to Right:* U.S Fish and Wildlife Service, Travis County Flickr, & U.S. Fish and Wildlife Service

#### Management and Protection:

- The Bone Cave harvestman occurs only in subterranean habitats of the Balcones Canyonlands in portions of Travis and Williamson counties in Texas. (USFWS)
- This species spends its entire life underground within naturally formed voids of varying sizes from caves to smaller-diameter, humanly inaccessible mesocaverns.
- Resilient populations will require subterranean habitats with high humidity and stable temperatures.
- Intact networks of subterranean voids provide living space as well as refugia from the impacts of humidity and temperature extremes. (USFWS)
- Threats to the Bone Cave harvestman include habitat destruction, degradation, and fragmentation that results from urban, suburban, and exurban development. Travis and Williamson counties, which cover this species' entire range, have experienced substantial human population growth and development.

The expansion of urban, suburban, and exurban developments has resulted in significant loss and fragmentation of natural habitat across the species' range. Projections indicate that the counties' populations will continue to grow in the next three decades, further increasing the impacts of development. (USFWS)



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**USACE ROLE:** According to the Engineering Research and Development Center's Threatened and Endangered Species Team Cost Estimates, the USACE has incurred costs across multiple business lines for the Bone Cave harvestman since 2006. Because this species has a very small range, all USACE funds have been expended within the Fort Worth District. Expense types have included Coordination and Determination, Site Visits and Inspections, as well as Inventory, Survey, and Monitoring efforts.



**Bone Cave Harvestman = \$6,885 (2006)**

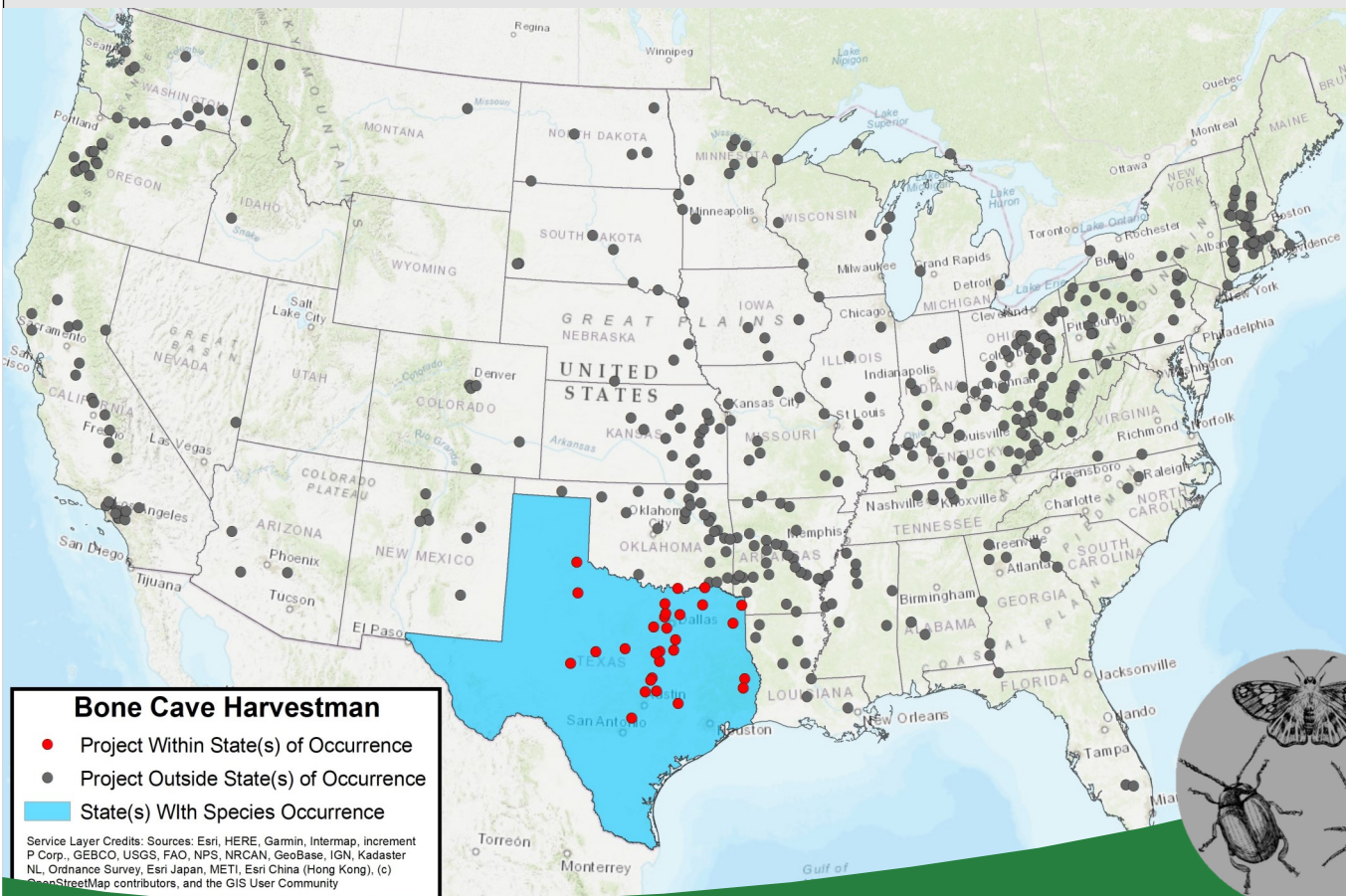
**What is USACE NRM Doing:** The Bone Cave harvestman's restricted range is located completely within the Fort Worth District of the Southwestern Division. Only a single project occurs in one of the two counties the Bone Cave Harvestman is known to occur in. Lake Georgetown, a reservoir created via the damming of the North Fork of the San Gabriel River, is located within Williamson County.



*Photo: An image of Lake Georgetown, a USACE project found within the range of the Bone Cave harvestman.*

At this project and across the Nation, the U.S. Army Corps of Engineers staff practices sustainable land management techniques to ensure that federally listed species, such as the Bone Cave harvestman, are not negatively impacted by project operations.

*This fact sheet has been prepared as an unofficial publication of the U.S. Army Corps of Engineers (USACE). This online publication is produced to provide its readers information about best management practices related to special status species. Editorial views and opinions expressed are not necessarily those of the Department of the Army. Mention of specific vendors does not constitute endorsement by the Department of the Army or any element thereof.*



**Insects**

Source: Map provided by Ashleigh Boss, ORISE Fellowship, Institute for Water Resources



**Bone Cave Harvestman**

- Project Within State(s) of Occurrence
- Project Outside State(s) of Occurrence
- State(s) With Species Occurrence

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) Swisstopo, Mapbox contributors, and the GIS User Community