

Madison Cave Isopod

Antrolana lira

Description

The Madison Cave isopod is an eyeless, unpigmented, freshwater crustacean. It belongs to a family that consists of mostly marine species and a small number of freshwater species. The species is the only member of its genus and is the only freshwater cirrolanid isopod north of Texas. Its body is flattened and bears seven pairs of long walking legs. The first pair of legs are modified as grasping structures. It has a pair of short antennae and a pair of long antennae. Males reach a length of 0.6 inches; females reach a length of 0.7 inches. While most cave isopods spend the majority of their time walking along the bottoms of streams and pools, *Antrolana lira* spends much of its time swimming freely through flooded caves formed in ancient limestone.

Distribution and Habitat

The Madison Cave isopod is found in flooded limestone caves beneath the Great Valley of Virginia and West Virginia where it swims freely through calcite-saturated waters of deep karst aquifers. Recent discoveries in caves and wells have extended the range of the species 200 miles. The range of the isopod is now known from a 15 mile wide belt stretching from Lexington VA to Charles Town, WV. There are documented population centers in the Waynesboro-Grottoes area (Augusta County, VA), the Harrisonburg area (Rockingham County, VA), and the valley of the main stem of the Shenandoah River (Warren and Clarke counties, VA, and Jefferson County, WV).

Life History

The population size of the Madison Cave isopod is unknown at most sites. Sampling results suggest that the population is dominated by adults. The population structure of the Madison

Cave isopod suggests that it has a lengthy life span with a low rate of reproduction. It is not known how this species reproduces. Its feeding habitats are also unknown, however, it is believed to be carnivorous.

Conservation

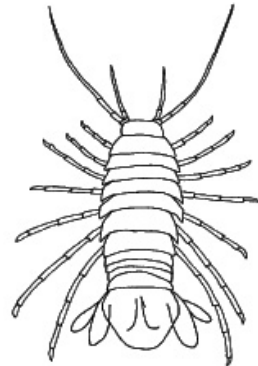
The Madison Cave Isopod was federally listed as a threatened species on November 3, 1982. Agriculture and encroaching industrial and urban development threaten the quality of groundwater habitat and thus the survival of this species.

What you can do to help

If you reside on property that borders a stream or other waterway within the range of this isopod, avoid using chemicals or fertilizers. To help control erosion and reduce run-off, maintain a buffer of natural vegetation along waterbodies and sinkholes. Sinkholes are natural depressions in the land surface that are formed by the collapse of an underground cavern roof. Never place anything into sinkholes because harmful materials can end up in underground streams. Install fencing to prevent livestock from entering streams, which will reduce siltation and input of waste products. Properly dispose of household wastes, including used motor oil, at recycling facilities and permitted landfills. Have your septic tank inspected regularly by a licensed professional. By following these land use practices, you are not only protecting the habitat of cave creatures but also protecting the quality of your drinking water.

To find out more about the Madison Cave isopod contact:

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References

Orndorff, W.D., and C.S. Hobson. 2007. Status Survey for the Madison Cave Isopod (*Antrolana lira*) in Virginia, 2005-2007. Natural Heritage Technical Report 07-11. Virginia Department of Conservation and Recreation, Division of Natural Heritage, Richmond, Virginia. 17pp.

U.S. Fish and Wildlife Service. 1996. Madison Cave isopod (*Antrolana lira*) recovery plan. Hadley, Massachusetts.

U.S. Fish and Wildlife Service Virginia Field Office

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