

# **Biology**

## **Gray Bat Trends in Missouri: Gated vs. Ungated Caves**

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### **Abstract**

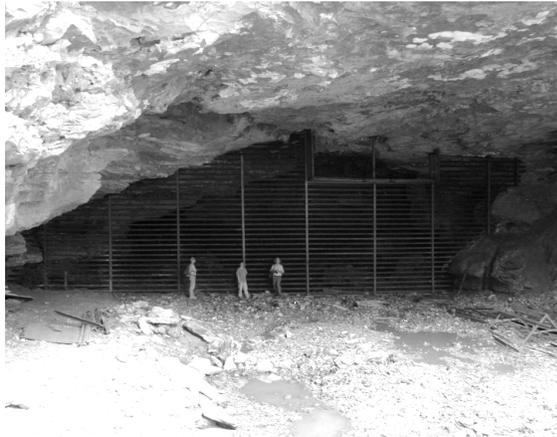
I have reviewed over 25 years of census data on gray bats, *Myotis grisescens*, from Missouri's Natural Heritage Database and Cave Life Database. The data were taken in numerous caves, both gated and ungated. Examination of the census data and information on cave structure, type of management, type of gate, and other factors shows that cave gates are not always needed to protect this species. However, a proper cave gate often is needed if there is no vigilant owner or manager living nearby and the cave is vulnerable to unauthorized intruders. Vulnerability arises from different factors, but public ownership is an important one. I shall present several case histories and graphs to illustrate typical and extreme situations for maternity colonies. A summary graph will also be presented. Despite my findings, we utilize the latest cave gating techniques to protect important, vulnerable gray bat caves. That is why Missouri now has the first and second largest cave gates at Rocheport (Boone) Cave and Great Spirit Cave, respectively. A Missouri Cave Gate Working Group is being established to bring together cave owners, state and federal agencies, cavers and conservationists who can work together on cave protection issues and funding.

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### **About the Author**

Dr William R. (Bill) Elliott has been the cave biologist for the Missouri Department of Conservation since 1998. His duties include research, conservation, management, education,

and recreation in 220 caves owned by the Department and cooperative work with cavers and cave owners of all types. His published studies have included cave biogeography, invertebrates, fishes, salamanders, bats, karst land management, and bad-air caves. He devel-



*The world's largest cave gate, Rocheport (Boone) Cave, Boone County, Missouri, weighs 24 tons. It was built in 2002 by Roy Powers and Kristen Bobo with support from the U.S. Army Corps of Engineers and the Missouri Department of Conservation for the protection of endangered gray bats and Indiana bats. At least 50,000 gray bats used the gate in 2003. (photo by William R. Elliott).*

oped the Cave Life Database in Missouri, which is adaptable to other states. His photographs of cave life appear in his international web site, **Biospeleology**, at <http://www.utexas.edu/depts/tnhc/.www/biospeleology>

In his spare time he flies sport airplanes, photographs, describes new species of millipedes, travels, hikes, and canoes.