W 453-A

Guide to Caves and Sinkholes in Tennessee

Edited by Eric Drumm, Professor
Biosystems Engineering and Soil Science

Overview of Series

Sinkholes and karst features are common across much of Middle and East Tennessee, and questions about karst arise not only from newcomers to the state, but also from those who have spent their entire lives in Tennessee. The "Guide to Caves and Sinkholes in Tennessee" consists of the following documents, with summary descriptions of each and links to the documents below:

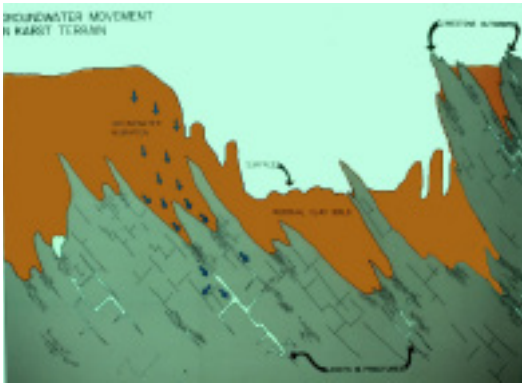
1. Best Management Practices for Livestock Production and Operations in Karst Areas (W 453-B)
2. Karst Geology in Tennessee (W 453-C)
3. Landowner's Guide to Biological Resources and Biodiversity in Tennessee Caves (W 453-D)
4. Landowners Guide to Caves and Cave Ownership in Tennessee (W 453-E)
5. National Speleological Society "Guide to Responsible Caving" (https://caves.org/brochure/Guide_to_Resp_Caving.pdf)

Landowners Guide to Caves and Cave Ownership in Tennessee *(by Cory Holliday)*

This document is intended to provide guidance to cave owners and describes management of both the natural resources and the cultural resources found in Tennessee caves. Best management practices for these resources are discussed, including recommendations for assuring that cave bat hibernation is not interrupted. Recommendations for owners regarding recreational caving are provided, and the laws and statutes governing caves in Tennessee are summarized.

Landowner's Guide to Biological Resources and Biodiversity in Tennessee Caves *(by Annette S. Engel and Matthew L. Niemiller)*

Caves and associated subterranean habitats represent one of the most unforgiving and challenging environments on earth, even though significant and diverse fauna are found in these habitats. This guide summarizes what it is like to live in a cave, describes the types of life that may be encountered in Tennessee caves, and provides an overview of how understanding more about cave biodiversity can help with conservation and management of caves and karst in the state.



Karst Geology in Tennessee *(by Harry Moore and Eric C. Drumm)*

The geologic conditions leading to karst features are described, and the differences in the features observed in East and Middle Tennessee are explained. Maps of karst terrain are provided, as well as a description of the role of groundwater and the mechanism by which sinkholes form.

Best Management Practices for Livestock Production and Operations in Karst Areas *(by Harry Moore and Eric C. Drumm)*

This document provides recommendations regarding livestock operations in karst terrain and best management practices for limiting the flow of nutrients and other undesirable materials into the subsurface hydrologic system. Links are provided to specific recommendations for septic systems when installed in karst areas with thin soil cover, as well as guidance for the construction of rain gardens. Some general repair methods are described should it become necessary to remediate a sinkhole.

"Guide to Responsible Caving" by the National Speleological Society *(referenced by Scott Engel)*

This document *(caves.org/brochure/Guide_to_Resp_Caving_2016.pdf)* provides summary guidance for recreational cavers, including information related to the importance of protecting cave resources, proper equipment, cave hazards, as well as caver "etiquette." The National Speleological Society is the largest organization in the world working every day to further the exploration, study and protection of caves and their environments and foster fellowship among cavers.

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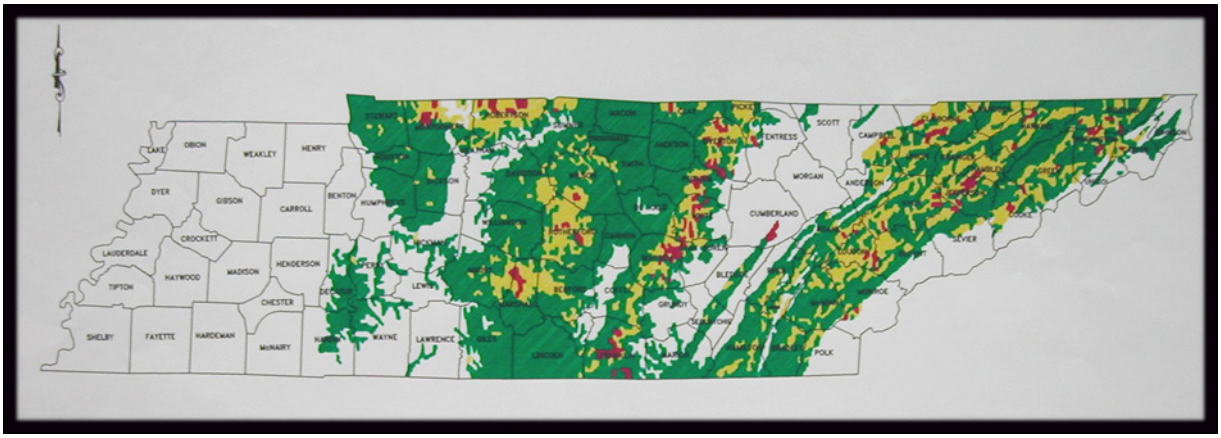

This map illustrates the sensitive karst areas of Tennessee; red indicates highest sensitivity to karst. [Beck, B.F., Stephenson, J.B., Wanfang, Z., Smoot, J.L., &, A.M. (1996)]. Design and evaluation of a cost-effective method to improve the water quality of highway runoff prior to discharge into sinkholes. Proceedings, 1996 Florida Environmental Expo, Tampa, Florida, October 1-3, pp. 155-164. (Note: Maps provided here were part of an appendix to the final report to the Federal Highway Administration.)

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