



Cave Owner's Newsletter

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In Introduction to the Virginia Cave Board

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The Virginia Cave Board (originally known as the Virginia Cave Commission) was established by the Virginia General Assembly in 1979. The board is composed of eleven members, appointed by the governor for four-year terms and selected for their activity and knowledge in the conservation, exploration, study and management of caves. By agreeing to serve, the members have accepted a responsibility to:

1. Protect the rare, unique and irreplaceable minerals and archaeological resources found in caves.
2. Protect and maintain cave life.
3. Protect the natural groundwater flow in caves from water pollution.
4. Protect the integrity of caves that have unique characteristics or are exemplary natural community types.
5. Make recommendations to interested state agencies concerning any proposed rule, regulation or administrative policy which directly affects the use and conservation of caves in this Commonwealth.
6. Study any matters of special concern relating to caves and karst.

The VCB, a collegial body of the Virginia Department of Conservation and Recreation, is active throughout Virginia in environmental education and conservation of caves and karst. Some of the activities that have proven worthwhile to the Virginia Cave Board may be useful to other organizations; therefore, a partial list of recent activities of the VCB follows:

Educational and environmental projects in karst:

Speleological exhibit, Virginia Museum of Natural History, Martinsville, VA: VCB members served as guest curators and consultants in the production of an exhibit entitled "*Buried Treasures: Caves of the Virginias*". Work on scripting began in 1987. The premiere showing of the exhibit occurred at Radford University during March and early April 1991. The exhibit was a central component at the grand opening of the Virginia Museum of Natural History in Martinsville, Virginia in late April 1991. The exhibit has rotated on tour among the branch museums of the VMNH at Virginia Tech in Blacksburg and the University of Virginia in Charlottesville, and the main museum in Martinsville. The exhibit includes the video, *Into the Ground... Into the Water*, produced by Captain Ron Erchul (Virginia Military Institute) with participation by several VCB members. The Cave Board continues to provide support for the exhibit with guest speakers and educational material.

"In Karstlands...What Goes Down Must Come Up!" cave conservation poster: This 22" x 28", full-color poster was distributed to nearly 1000 ninth-grade Earth Science teachers in the Commonwealth of Virginia as well as to individuals in several other institutions. It emphasizes the role of groundwater in the karst system and how it may be easily contaminated by man. The poster was funded by the Natural Heritage Program of the Virginia Department of Conservation and Recreation and the Virginia Department of Education. Distribution was funded by the Cave Conservancy of the

Virginias. This poster resulted in considerable favorable publicity throughout the Commonwealth which in turn has brought the problem of sinkhole contamination to the attention of the citizens living in Virginia's karst regions.

Living with Sinkholes brochure. The VCB prepared a brochure for distribution to landowners, developers, and governmental officials explaining the ill effects of sinkhole mismanagement. The brochure, published in 1992 and reprinted in 1994, gives a brief description of how sinkholes function in the hydrologic system and how to properly protect sinkhole drainage.

The *Virginia Cave Owner's Newsletter*, a publication of the VCB, is mailed to over 1500 landowners in Virginia who have caves on their property. This newsletter addresses issues that landowners face regarding caves, including environmental problems, recreation, biologic resources, and archeological materials. It is also

intended to educate the owners about caves, their contents, and groundwater, especially with regard to augmented contamination of springs and wells in karst terranes.

Interpretation of caves, karst, and groundwater at show caves: VCB members have worked with owners, managers, and lead guides at several show caves in Virginia in order to improve the manner in which caves and their environmental importance are presented to the lay public touring the caves.

Conservation planning for karst resource protection: VCB members assist federal and state agencies and local governments as well as private groups, such as The Nature Conservancy, on setting conservation priorities for cave and karst ecosystems, and making sound decisions on project siting and compatible development in karst terrane.



Outreach: VCB member leads Radford University students on a geology fieldtrip to local karst features. Educational outreach is an important activity of the VCB. Lectures and fieldtrips are frequently presented to organizations ranging from youth groups to governmental agencies. Photograph by Ernst H. Kastning.

Outreach:

There have been many situations where VCB members have interacted with civic organizations, governmental agencies, or the general public on behalf of cave conservation and environmental awareness. Aside from the items listed above, there are several categories related to community service and outreach that are included here:

Site investigations: Sudden problems in karst terranes occur from time to time. Often members of the VCB are contacted to investigate and/or advise. Recent examples include:

- 1. Professional consultation to VDOT on caves and karst:** Often VCB members inspect plans and/or visit the sites of proposed roadways to ascertain any potential risk to the karst, caves, or groundwater in the area. Recent examples include investigations at Peppers Ferry Cave, intersected by a roadcut in Montgomery County, the construction site of a new access road to Shenandoah National Park over sinkholes and caves near Front Royal, and an endangered burial cave along the proposed path of U.S. Route 58.
- 2. Sinkhole collapse:** VCB members have investigated recent occurrences including collapses at Berryville (Clarke County), Interstate 81 (northern Augusta County and southwestern Roanoke County), Austinville (Wythe County), and Maggie (Craig County). Prevention and mitigation of future collapses may lessen economic losses to residents of Virginia.
- 3. Impacts of karst on urban and other communities:** Developing communities in the Appalachian region are often underlain by karst. Groundwater contamination is a major concern in such terrane. Concerns arise that require assessment by qualified specialists. VCB members have participated in several studies of potential problems in karst areas. One such study, at the Nellies Cave Karst Area in Blacksburg, has resulted in an *ad hoc* committee under the Montgomery County Board of Supervisors to study the feasibility of developing guidelines and/or ordinances that would protect karstlands in the county, from environmental degradation. Working with the Virginia Council on the Environment, this

committee and its work has resulted in a technical study group and an active well-water testing program under the direction of the local agricultural extension service.

- 4. Archeological sites:** Members of the VCB have investigated and inventoried many caves throughout the Virginian Appalachians that contain archeological material. Steps have been taken to insure preservation of these resources.

Interaction with the public: The VCB has responded to various groups and individuals to participate in educational and informational events. Some of these are listed here:

- 1. Environmental events:** VCB members frequently attend functions, such as Earth Day celebrations and environmental fairs at malls and elsewhere. Questions from the public are answered and literature from the VCB is distributed to interested citizens.
- 2. Lectures to the public:** Frequently VCB members are called upon by various groups to present lectures on karst, caves, or environmental issues. Groups visited include civic organizations (*e.g.* Rotary, Lions, Kiwanis, Ruritan clubs), environmental action organizations, governmental agencies, museums, high-school science clubs, elementary and junior high-school classes, youth groups (*e.g.* Boy Scouts, Cub Scouts, 4-H). In the past five years, over 100 programs have been presented.
- 3. Media contacts and panel discussions:** Frequently VCB members are contacted by reporters about caves and the environmental sensitivity of karst. This has resulted in many items in the media (radio, TV, newspaper, and video productions) and panel discussions open to the public or broadcast on TV or radio.
- 4. Professional seminars, symposia, short courses, and field trips:** VCB members have presented programs at cave management seminars for land managers from the U.S. National Park System, U.S. National Forest Service, and other agencies in Tennessee (1989), Texas (1989), and Arkansas (1990). Additionally, members of VCB actively participated in the Appalachian Karst

Symposium (1991) and the Virginia Karst Field Seminar (1994), both held in Radford, Virginia. These technical conferences and geology fieldtrips attracted scientists and others from academia, government, and the private consulting sector.

Inventory of speleological resources: The VCB works closely with the Virginia Speleological Survey and the Virginia Natural Heritage Program in exchanging information on all aspects of caves in the Commonwealth. The Virginia Speleological Survey database has been important for cave-resource management. Recently, members of the VCB worked with the Jefferson National Forest to compile an inventory of all known caves located on land owned by the Forest in west-central and southwestern Virginia.



Remediation: In the spring of 1987, a massive quantity of sawdust was bulldozed into the sinkhole entrance to Thompson Cedar Cave in Lee County, Virginia by workers from a local sawmill. Note the standing water in the foreground; this water flowed slowly through the sawdust, carrying leachate into the groundwater via a blind valley on the other side of the big mound seen at the upper right. The pollution killed the life in the cave stream, including the Lee County Cave Isopod, listed as an Endangered Species by the U.S. Fish and Wildlife Service. After the owners were contacted about the problem by the VCB, cleanup was initiated in 1988 and intensified after May 1990. As of late 1994, life is returning to the water in a nearby spring. Photograph by Dr. John Holsinger, May 1990.

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