

**Virginia Cave Board  
Saturday, January 10, 2009  
Grand Caverns, Grottoes, Virginia**

**MINUTES**

**Virginia Cave Board Members Present**

Mr. Tom Lera, Chairman  
Dr. David C. Culver  
Dr. Daniel H. Doctor  
Mr. Andrew Harrison, PG  
Ms. Judy Molnar  
Mr. Jesse J. Richardson  
Ms. Meredith Weberg

**Virginia Cave Board Members Not Present**

Ms. Babs Funkhouser  
Dr. John R. Holsinger  
Ms. Barbara L. Moss  
Mr. David Socky  
Virginia Department of Historical Resources representative

**DCR Staff Present**

Mr. Joey Fagan  
Mr. Larry Smith  
Mr. Wil Orndorff  
Ms. Carol Zokaites

**Others Present**

Mr. Rick Lambert

**Call to Order**

Mr. Tom Lera called the meeting to order at 1:15 p.m. and declared a quorum present.

**Introduction and Announcements**

Mr. Lera welcomed members of the Cave Board, DCR staff, and guests.

**Approval of Minutes from October 4, 2008**

MOTION: Ms. Meredith Weberg moved that the minutes of the June 14, 2008 meeting of the Virginia Cave Board be approved as corrected.

SECOND: Mr. Jesse Richardson seconded.

DISCUSSION: None.

VOTE: Motion carried unanimously.

### **Treasury Report**

Mr. Larry Smith reported that the Cave Board Treasury contains a balance of about \$3070.00. He noted that a majority of the funds that make up the treasury were derived from grants from the Cave Conservancy of the Virginias that were provided for the expressed purpose of paying the expenses associated with printing and distribution of the Virginia Cave Owners Newsletter. A written exemption will be required from the Secretary of Natural Resources in order to publish the next issue of the newsletter under state restrictions in place due to the Commonwealth's budget crisis.

## **Old Business**

### **Education and Outreach Committee**

Ms. Meredith Weberg noted that articles are due for the next issue of the Virginia Cave Owners' Newsletter. The next issue will be published in March, subject to approvals as previously noted.

Ms. Weberg discussed Virginia Cave Week, which will be held April 19 through 25, 2009. A public service announcement/press release is being prepared to better present cave week to a wider audience. The purpose of Cave Week is to educate students and citizens about caves and karst in Virginia.

Work is progressing to design a poster introducing a Captain Karst anime character that will highlight the karst resources in Virginia's watershed regions. Ms. Weberg circulated some draft examples of artwork to the Board depicting the Captain Karst anime figure.

### **Joint Technical Committee**

Mr. Andrew Harrison reported on the items discussed by the Joint Technical Committee. Dr. Dan Doctor gave a summary of information available from the US Geological Survey. Internet links for additional resources on caves and other karst resources will be added to the Cave Board website.

The Cave Board discussed the response received from the US Environmental Protection Agency (EPA) regarding the registration of improved sinkholes used to receive stormwater as Class V injection wells. Ms. Karen Johnson, Chief, Ground Water and Enforcement Branch of EPA expresses a willingness to meet with members of the Cave

Board and DCR karst program staff to discuss concerns about the regulated use and registration of karst features as class V injection wells.

Mr. Wil Orndorff reported that arrangements are being made with Mr. Mike Eller of EPA for a joint field trip to visit some unregistered sinkhole/injection well sites in March 2009. This would be followed by a meeting at a later date between EPA representatives, the Cave Board, and DCR Karst Program to further discuss the regulations in light of the findings of the field trip. Mr. Eller has expressed an interest in having some help in developing better educational materials about class V injection wells in karst. It is hoped that a workshop/conference for localities, perhaps built around the Growing Communities on Karst format, will take place in the fall of 2009 to present information on the regulated use and registration of karst features as class V injection wells.

Mr. Jesse Richardson reported that he and Mr. Orndorff are working with Ms. Twila Carr and another person (to be named later) from West Virginia to develop model state legislation that would address issues associated with management of sinkholes and karst areas

### **Virginia DCR Natural Heritage Karst Program**

#### **Technical Assistance**

Geophysical investigations of the stormwater basin associated with the Wytheville Walmart have been performed by ATS of Christiansburg as a first step toward repairing this subsidence-prone facility. As many as nine sinkholes have been observed within its boundaries, providing a direct route for stormwater runoff into groundwater supplies. Walmart is working with DCR Urban Programs staff, the Town of Wytheville, and the Karst Program to address this issue.

Staff is working with the Opequon watershed group of Frederick County, Virginia and the West Virginia panhandle to develop guidelines for stormwater management practices in karst.

Staff is working with the US Fish and Wildlife Service to develop guidelines for land use practices within the habitat range of the federally listed threatened Madison Cave Isopod (*Antrolana lira*).

Working with the Natural Heritage Environmental Project Review office, staff has since November 1, 2008 reviewed ~75 projects in Virginia's limestone region for potential impacts to cave and karst systems.

Staff continues to serve on the Green Infrastructure Steering and Technical committees of the New River Valley, and assisted in the development of a grant proposal during the fourth quarter of 2008.

Staff completed a contract with the US Forest Service to build and repair bat-friendly gates on caves, develop education and outreach materials, and prepare a technical guidance document outlining the significant cave resources either on or potentially impacted by land use activities on land managed by the US Forest Service. It is likely that future management and data development efforts by the Forest Service will rely significantly on this document.

### Education and Outreach

The Karst Education Coordinator attended the Virginia Environmental Education Conference this fall and gave a presentation on Bats and White Nose Syndrome. The 2009 conference will be held in early September, and Governor Kaine is anticipated to attend.

The brochure “Virginia’s Bats at a Glance” was completed as part of the US Forest Service contract note above. The brochure, available in hard copy and electronically via the DCR Division of Natural Heritage website, was a collaborative effort between Natural Heritage staff, the Department of Game and Inland Fisheries, and the US Forest Service. Additional significant contributions came from Bat Conservation International, the Virginia Speleological Survey, and Environmental Solutions and Innovations, Inc.

A Project Underground facilitator training is being planned for Douthat State Park in late February 2009 in conjunction with a Project Wild facilitator training by Department of Game and Inland Fisheries staff.

Staff led the technical program for the 2008 Virginia Association of Professional Soil Scientists (VAPPS) annual meeting, held in Blacksburg during October. Included were a trip to James Cave in Pulaski County to observe a research project involving groundwater recharge by epikarstic waters, and a surface excursion examining karst landforms and sinkhole soils. Staff assisted a graduate course in Karst Studies at Virginia Tech by presenting guest lectures and leading a field excursion to Tawney’s Cave.

Stakeholders in several karst localities are considering holding Project Underground and/or Growing Communities on Karst workshops. Current economic and government budget conditions are making it more difficult to bring such projects to fruition.

Travel restrictions are making it difficult for some participants and sponsoring agencies to participate in trainings, and tight funding is increasingly forcing former collaborators into competing roles within the environmental education (EE) network. Directors of all the EE programs are anxious to see whether participants will be allowed to travel and attend Professional Development workshops.

### Data Development

Staff is currently working on two survey projects for the Madison Cave Isopod (*Antrolana lira*) in the Maury and South Fork Shenandoah river basins.

Staff is working under contract to the US Fish and Wildlife Service to lead monitoring efforts for the federally endangered Lee County cave isopod (*Lirceus usdagalun*).

Staff is working with Natural Heritage zoologists to perform biological inventories of caves on lands enrolled in the TNC Forest Conservation Bank in the Upper Tennessee River Basin, southwestern Virginia. To date, numerous cave obligate invertebrates have been collected and distributed to taxonomists, and potentially significant cave discoveries have been made. Preliminary identifications of beetle specimens suggest at least two new beetle species from Russell County, Virginia.

Dye tracing efforts in Pulaski County continue in an effort to delineate the James Cave and Donnelly Spring drainage basins. However, the drought conditions during the second half of 2008 until recently made flows extremely low, and dye injections from 2008 have either not cleared the system, or flowed to springs that have not been located and are not being monitored.

Staff is working with the Department of Game and Inland Fisheries under a grant from the US Fish and Wildlife Service to perform winter bat counts and spring emergence studies in an attempt to monitor for the presence or absence of White Nose Syndrome in Virginia's bat populations.

#### Land Protection

The Nature Conservancy closed on the ~250 acre Jim Fulks property in Lee County, which includes the entrance to Surgener Cave, part of the most biologically diverse cave system in Virginia. The Nature Conservancy is negotiating with other nearby landowners to acquire additional portions of the system. These tracts will eventually be transferred to Virginia DCR for incorporation into The Cedars Natural Area Preserve. Funds were also approved to purchase 143 acres near Phoebe's Butt in Lee County, which drains to the Unthanks Cave system, portions of which form the Unthanks Cave Natural Area Preserve.

#### Rocky Hollow Cave

Mr. Orndorff reported that the graffiti resulting from the fairly recent act of vandalism remains in Rocky Hollow Cave. Concerns about possible impacts to historic resources have caused a postponement of efforts to remove the markings from the walls of the cave.

#### Conservation Sites

Mr. Orndorff reported that all the cave conservation site polygons for Virginia's Significant Caves are now integrated into the DCR Natural Heritage database and are currently being used for project environmental review purposes. A written report on the cave conservation sites will be forthcoming.

#### International Congress of Speleology

Ms. Carol Zokaites of the DCR Karst Program and Ms. Jay Anderson of Australia are serving as Co-Chairmen of the Educating Citizens about Living in Karst Symposium at the 15<sup>th</sup> International Congress of Speleology (ICS) to be held in July 2009 in Kerrville, Texas. Several members of the Cave Board and DCR Staff hope to attend the ICS and several will be presenting scientific papers.

### **Cave Protection Signs**

Rick Lambert discussed placement strategies and attachment techniques for mounting the new cave protection signs in caves. Different fastener systems were discussed as well as methods to render the signs less prone to theft or tampering. Past experience suggests that theft of signs has not been a serious problem.

### **Contact with EPA regarding improved sinkholes Class V injection wells**

(Item addressed in the Joint Technical Committee report above).

### **White Nose**

Ms. Zokaites gave an update on White Nose Syndrome (WNS) in bats. She noted that according to the National Speleological Society WNS Liaison webpage, a recent paper by Dr. David Blehert, et al, reports the finding that the skin of WNS-affected bats is colonized by a psychrophilic fungus that is phylogenetically related to *Geomyces spp.* An effort is underway to collect organic material from selected cave sites all over the eastern United States (including Virginia) to check for the presence of the fungus. It is hoped that this study will inform scientists, fish and wildlife managers, and cavers as to the background prevalence of the fungus, and thus the potential for the spread of WNS over a much wider geographic region. Whether the fungus is a causal agent or a secondary condition is still not known, according to Peter Youngbaer, the NSS Liaison on WNS. A confirmed case of bats with WNS has been recently reported from a gated mine in central Pennsylvania. A website on WNS is maintained by the U.S. Fish and Wildlife Service at: [http://www.fws.gov/northeast/white\\_nose.html](http://www.fws.gov/northeast/white_nose.html).

### **Other Old Business**

### **Cave Owner Address Updates**

Mr. Smith reported that approximately sixty Cave Owners' Newsletters were returned with undeliverable addresses. Mr. Orndorff and Mr. David Socky are taking the lead to update the mailing list of Virginia Cave Owners for the Virginia Speleological Survey.

## **New Business**

### **Virginia Cave Board Show Cave Representatives Update**

Ms. Judy Molnar reported that Grand Caverns is experiencing financial challenges that have resulted in reduced staff hours and could result in other cost-cutting measures including seasonal closures of the caverns during the winter of 2010. The swimming pool is in need of repairs, but the UVRPA lacks sufficient funding to effect repairs, therefore the pool will not be open for summer 2009 season. On a more positive note, caver volunteers from the Virginia Region of the NSS are working to install a new communication system within Grand Caverns to facilitate emergency communications.

Mr. Lera reported that the managers of Endless Caverns were pleased to receive one of the new cave protection signs. They are looking forward to hosting the next meeting of the Cave Board at Endless Caverns on April 18, 2009.

Ms. Weberg assisted the manager of Skyline Caverns to choose a site to place the new cave protection sign. The site is in a conspicuous location where it will be seen by all who tour the cave.

Ms. Molnar reported that one of the new cave protection signs is now on display at the cave exhibit at the Virginia Living Museum in Newport News.

### **Ongoing and Future Karst Research in the Shenandoah Valley**

Dr. Daniel Doctor made a short presentation on karst research being performed in the Shenandoah Valley by the U.S. Geological Survey (USGS). Dr. Doctor and David Weary, of the USGS Geologic Division, are working on geologic mapping while the Water Resources Division is studying springs and groundwater circulation in the karst aquifers of the Shenandoah Valley; a groundwater model has been developed. This work will help to better determine available water resources for use by the rapidly developing communities in the region.

In addition, future work is planned for obtaining sedimentary and speleothem-based records of paleoclimate and paleo-hydrology in a number of caves throughout Virginia. A letter to the DCR is being drafted that will outline the goals, site selection, and sampling strategy for the research.

Provided below are links to online resources on USGS karst studies in Virginia:

Statewide ground-water (well) monitoring network:

<http://groundwaterwatch.usgs.gov/StateMaps/VA.html>

Statewide surface water (springs and streams) monitoring network:

<http://waterdata.usgs.gov/va/nwis/>

Frederick County Aquifer assessment:

<http://va.water.usgs.gov/va134/index.htm>

Clarke County aquifer assessment:

<http://va.water.usgs.gov/clarke/>

USGS Geologic map products for Northern Shenandoah Valley:

<http://geology.er.usgs.gov/eespteam/Karst/tasks/Shenandoah/products.html>

Appalachian karst map (includes GIS data):

<http://pubs.usgs.gov/of/2008/1154/>

### **Virginia Cave Board Research-based Collecting Permit Request**

Dr. Doctor inquired about the process of applying for the required permit from the Virginia Cave Board to perform deliberate and limited research-based scientific collection of materials from Virginia caves. He noted that such a permit would be required by USGS scientists to pursue some of the research reported in the previous agenda item.

Mr. Smith outlined the application process for a Cave Board Permit. Researchers are required to send a letter of request to the Virginia Department of Conservation and Recreation Division of Natural Heritage (DCR DNH) requesting a permit from the Cave Board. The letter of request should describe the proposed work, the timeframe of the project, and details about the specific sites to be sampled. Following a review of the application by DCR DNH and the Virginia Department of Historic Resources, a permit may be issued – the review process may take four weeks. A requirement of the permit is to submit an annual written report of work completed at the end of each calendar year and to properly document and curate any specimens or materials collected. Written permissions are required from landowners whose caves are to be visited and must be in the possession of the permittee along with a copy of the permit letter when performing the permitted work. If a permit is issued, it is typically good for a period of two years.

### **Conservation Easements and the Protection of Karst Resources**

Mr. Joey Fagan circulated a copy of the paper “Incorporating Cave and Karst Protection into Conservation Easements: A Tool for Cave and Karst Protection in Virginia” see: [http://www.utexas.edu/tmm/sponsored\\_sites/biospeleology/nckms2007/Papers/fagan.pdf](http://www.utexas.edu/tmm/sponsored_sites/biospeleology/nckms2007/Papers/fagan.pdf). He described a few details about a recently proposed conservation easement in Giles County that contains karst resources.

Mr. Orndorff discussed the role conservation easements can serve in protecting significant conservation values, but noted that many such easements do little to actually protect such values. He pointed out that conservation easements often neglect to require stream buffers and do not consistently require landowners to adopt agricultural best management practices that would serve to improve water quality and protect habitat. Mr. Richardson noted that aside from conservation easements, conservation subdivisions can be a useful tool for conserving caves and other karst resources; he cited the work of the Texas Cave Conservancy (TCC) in managing caves in such subdivisions. Dr. Culver pointed out that caves containing stygobitic invertebrates would require additional

protection measures beyond the practices adopted by TCC to protect caves containing terrestrial cave beetles. Conservation needs dictate site-specific management strategies, depending upon the habitats and organisms being protected. Mr. Smith noted that the period of time provided to review proposed conservation easements is sometimes rather short.

## **Other New Business**

### **George Washington National Forest Plan Revision**

George Washington National Forest is currently working to prepare a new Land Management Plan. The DCR Natural Heritage Program is providing information on Conservation Sites on U.S. Forest Service (USFS) land. Information on about 100 conservation sites protecting terrestrial organisms is being provided by DCR DNH to the USFS. An additional thirty-seven conservation sites containing cave resources are being documented for the USFS. Eighteen of the thirty-seven conservation sites contain cave entrances that are on U.S. Forest Service lands. DCR DNH plans to discuss these cave resources and cave resource management strategies during an upcoming meeting with George Washington National Forest representatives.

### **Article on the Virginia Cave Protection Act**

Mr. Lera circulated a copy of an article he has written for an upcoming issue of the Journal for Cave and Karst Studies about the Virginia Cave Protection Act. Mr. Lera presented the paper on the Virginia Cave Protection Act at the Second Appalachian Karst Symposium held at East Tennessee University at the Gray Fossil Site in May 2008.

### **Virginia Karst Trail**

The Virginia Karst Trail will be discussed at the next meeting of the Virginia Cave Board.

### **Announcements**

Mr. Lera announced that the 3<sup>rd</sup> National Cave and Karst Conservancies Forum will be held March 12 - 13, 2009 at Lewisburg, West Virginia.

The 20<sup>th</sup> Annual Grand Caverns Restoration Camp, sponsored by the Virginia Region of the National Speleological Society, will be held April 10 – 12, 2009

Virginia Cave Week will be held April 19 – 25, 2009 in conjunction with Earth Day.

The Spring VAR, a meeting of the Virginia Region of the National Speleological Society, will be held at Grand Caverns Regional Park, Grottoes, Virginia the weekend of April 24 – 26, 2009 at Grand Caverns Regional Park, Grottoes, Virginia

The 15<sup>th</sup> International Congress of Speleology will be held July 19 – 26, 2009 at Kerrville, Texas. (<http://www.ics2009.us>)

**Dates for Future Cave Board Meetings**

- Meeting: April 18, 2009 at Endless Caverns at New Market, Virginia.

**Thanks to Grand Caverns for Hosting Meeting**

Mr. Lera expressed thanks on behalf of the Cave Board to the Upper Valley Regional Park Authority for hosting the meeting and the staff of Grand Caverns for their assistance.

**Adjournment**

Mr. Lera adjourned the meeting at 3:35 PM.

Respectfully submitted,

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Thomas Lera  
Board Chairman

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Joseph H. Fagan  
Secretary