

**Virginia Cave Board  
Saturday, June 4, 2022  
Natural Bridge State Park**

**TIME AND PLACE**

The meeting of the Virginia Cave Board took place at 11:00 a.m. on June 4, 2022 at Natural Bridge State Park.

**VIRGINIA CAVE BOARD MEMBERS PRESENT**

Robert K. Denton, Jr., Chair  
Dr. Daniel Doctor, Vice Chair  
Steve Lindeman  
Anthony R. Bessette  
David Ek

John H.H. Graves  
Rick Lambert  
Russell Kohrs  
Meredith Hall Weberg

**VIRGINIA CAVE BOARD MEMBERS NOT PRESENT**

John T. Haynes

Roger W. Kirchen, *ex officio*

**DCR STAFF PRESENT**

Matthew S. Wells, Director  
Frank Stovall, Deputy Director for Operations  
Jason Bulluck, Director, Division of Natural Heritage  
Michael Fletcher, Board and Constituent Services Liaison  
Will Orndorff, Karst Protection Coordinator

**OTHERS PRESENT**

Michael Rolband, Director, DEQ  
Evan Branosky, Chief Stormwater Policy Advisor, DEQ

**ESTABLISHMENT OF A QUORUM**

With nine (9) members of the Board present, a quorum was established.

**CALL TO ORDER**

Chairman Denton called the meeting to order at 11:00 a.m. He asked those present to introduce themselves.

**APPROVAL OF THE MINUTES FROM FEBRUARY 26, 2022**

Chairman Denton and Mr. Ek noted that they had submitted edits prior to the meeting. Dr. Doctor also provided edits and agreed to send them in writing to Mr. Fletcher

#### **BOARD ACTION**

Ms. Weberg moved that the minutes of the February 26, 2022 meeting of the Virginia Cave Board be approved as amended. Dr. Doctor seconded and the motion carried.

#### **TREASURER'S REPORT**

Mr. Bulluck gave the treasurer's report. He reported that he had worked with the new Natural Heritage business manager to complete a full reconciliation of the cost center associated with the Cave Board. He provided an updated report and reported a balance of \$3,168. (See Attachment 1)

#### **BOARD ACTION**

Mr. Kohrs moved that the Virginia Cave Board accept the Treasurer's Report as presented. Dr. Doctor seconded and the motion carried.

#### **LEGISLATIVE UPDATE**

Dr. Doctor advised that this was a standing agenda item related to cave and karst issues. There were no known legislative issues to report.

Legislative Update: Dr. Doctor reported that this is a standing agenda item related to cave and karst issues. At this time there are no known issues related to cave and karst legislation.

#### **DISCUSSIONS WITH DCR DIRECTOR AND DEQ DIRECTOR**

Chairman Denton welcomed DCR Director Matthew Wells and DEQ Director Michael Rolband to the meeting. He noted that for some time, the Cave Board has desired to coordinate with DEQ regarding cave and karst issues.

Director Rolband thanked Mr. Denton. He noted that Mr. Orndorff had reached out to DEQ in January. Right now about 80 percent of all complaints received by DEQ are stormwater related. He introduced Evan Branosky, Chief Stormwater Policy Advisory at DEQ.

Director Rolband advised that the fundamental problems stem from guidance and regulations published prior to 2014. These are now available on the DEQ website. Most of these were transferred from DCR when DEQ assumed the responsibility for the stormwater program. He noted that the stormwater handbook has also changed.

Mr. Branosky will lead a task force to review and update these regulations. This will include a review of 56 annual standards. The project will take a couple of years to complete.

Director Rolband advised that the regulatory review is a long term goal. A short term goal is to create a guidance document that will address necessary steps when karst is encountered. The document will include a complete checklist. This will be developed from existing technical standards.

DEQ will also develop a certification program for reviewing stormwater plans. He noted that currently DEQ does not have enough staff to complete the necessary reviews.

Dr. Doctor asked about the specific criteria for the reviewers. Chairman Denton noted a concern that any PE (professional engineer) could sign.

Director Rolband replied that currently that is the only requirement. This will be an ongoing education process and DEQ will work with Mr. Orndorff and others to develop the standards.

Mr. Orndorff advised that DCR will provide a map of karst bedrock. This will indicate the need to look for sinkholes and caves.

Director Rolband advised that the hope is to have the initial guidance document prepared for public comment by July.

Dr. Doctor advised that the Cave Board members were willing to provide rudimentary karst education.

Director Rolband commented that DEQ would rely on that assistance.

Director Wells advised that he is looking forward to the partnership with Director Rolband and DEQ.

### **DCR KARST PROGRAM UPDATE**

Mr. Orndoff gave the following report:

DCR Natural Heritage Karst Program Update to VA Cave Board  
Wil Orndorff, Karst Protection Coordinator

#### **Karst Workshop NRV in May, 2022 – May 3 and May 4**

DCR Karst staff collaborated with the New River Regional Commission, the Virginia Cave Board, the Virginia Speleological Survey, and the Cave Conservancy of the Virginias (CCV) to host the New River on May 3 followed by a field trip on May 4 for local stakeholders. The workshop and

field trip addressed protection and conservation of karst and cave resources, with emphasis on making development practices more compatible with karst conservation, as well as promoting awareness of the geotechnical hazards associated with land disturbance in karst. Attendees learned about appropriate karst management techniques. Some stakeholders involved professionally in stormwater management expressed interest in additional training on karst and a willingness to contribute to revision of guidelines. A highlight of the workshop was a short course entitled “Karst and Land Development” taught by Virginia Cave Board Chair Bob Denton, Senior Geologist with Terracon, Inc. The field trip on May 4 visited several sites in the Radford area under various stages of development and land use, as well as springs and seeps in Radford’s Wildwood Park. The workshop and field trip were well attended, with 43 registered attendees, about half of whom attended the field trip portion as well.

#### Interagency Meeting on Karst, Stormwater Management, and Erosion and Sediment Control (VDEQ and VDCR)

On May 24, DCR Natural Heritage staff, including Wil Orndorff, met with DEQ Director Mike Rolband, DCR Director Matt Wells, and some of their respective senior staff to discuss the relevance of karst and caves to their respective agencies’ missions. Special emphasis was placed on stormwater management and erosion and sediment control, responsibilities once at VDCR but falling since 2013 under the jurisdiction of VDEQ. It was pointed out that the VDCR Karst Program continues to be relied upon for karst specific guidance in these areas. Preliminary discussions were held on:

- 1- improving guidance on karst issues and access to karst data for DEQ staff and permit applicants
- 2- providing training on karst to DEQ staff and to developers and regulators through DEQ trainings, and
- 3- identification of shortcomings in the regulatory treatment of karst issues and the potential pursuit of regulatory reform and legislation in key areas.

DCR staff emphasized the critical role the Virginia Cave Board should play in these processes, as mandated under the Virginia Cave Protection Act.

The meeting was a highly productive and collegial starting point on addressing these issues, and progress has already been made in terms of provision of karst data and guidance documents for use by DEQ. Both Mike Rolband and Matt Wells planned to attend the June 4, 2022 meeting of the Virginia Cave Board.

### Groundwater Isopods of Virginia Monograph

The DCR Natural Heritage Program is supporting and working in collaboration with Dr. Julian Lewis in preparation of the “Groundwater Isopods of Virginia”, a major revision to the taxonomy of freshwater groundwater asellid isopods that will include numerous descriptions of species new to science. Led by Lewis, the monograph will combined traditional morphologically based taxonomy with modern molecular genetics to better understand the biology and natural history of this diverse and fascinating group, members of which are found in caves, karst springs, and coastal plain seeps. Lewis was a student of founding Virginia Cave Board member John Holsinger. Karst staff just participated in an exhaustive pre-submission review of the manuscript with Dr. Lewis, and the monograph is on track for submission in July, 2022 to the Virginia Museum of Natural History, where Lewis was recently named a research associate.

### Cave Microbiology Reconnaissance Sampling

During the last week of April, 2022, karst staff led by Katarina Kosič Ficco assisted student researcher Riley Drake from MIT in sampling the microbiology and geochemistry of groundwater Virginia’s caves. Four of the nine caves sampled are located on DCR Natural Area Preserves. While sampling caves in Southwest Virginia, DCR steward Laura Young and technician Caleb Haynes assisted us. The results will help us understand and protect microbiological communities that live in karst groundwaters and that may form a significant yet commonly overlooked component of cave food webs. Stay tuned.

### Investigation of Ancient Bat Guano Deposits

Karst staff are collaborating with scientists from the Geology and Geography departments at Virginia Tech to study ancient bat guano deposits in Virginia caves, with the goal of learning more about paleoclimatic conditions from the ages and composition of the deposits. VT scientists plan to attempt to correlate the guano deposits to data from surface cores. Preliminary work to date involved sampling of guano deposits over a meter thick from Pighole Cave in Giles County, which they will attempt to correlate with newly collected sediment cores from nearby Mountain Lake. Skeletal material collected by karst staff from one of the guano pits was determined by Dr. Blaine Schubert of East Tennessee State University to be of the genus *Myotis*. Schubert plans to assist the project in further identification of skeletal remains to the species level, which will help the team get a better picture of the nature of these extensive deposits.

### Biodiversity without boundaries

DCR Karst Staff Tom Malabad and Katarina Kosič Ficco attended Natureserve’s Biodiversity Without Boundaries Conference in March, 2022 in Pittsburgh, PA. They delivered a presentation on the challenges of and approaches to incorporating cave and karst related biological data into the Natureserve Biotics conservation data framework. Virginia is a leader within the Natural Heritage network in ensuring that cave and karst related resources are treated on an equal footing to other more traditional natural heritage resources such as rare plants and terrestrial natural communities.

### Virginia Region of the National Speleological Society Meeting and Cave Hill

On May 20-22, DCR Karst Protection Coordinator Wil Orndorff attended the Spring, 2022 meeting of the Virginia Region of the National Speleological Society (VAR), chaired by Virginia Cave Board member Meredith Weberg. Orndorff worked with DCR steward Ryan Lepsch and CCV Chair Mike Ficco to organize a work day at Madison Cave Hill Natural Area Preserve. Fifteen volunteers from VAR accomplished several tasks, including removal of a structure, partial restoration of an excavation in a sinkhole overlying Madisons Saltpeter Cave, removal of invasive species, and improvements to access to the cave entrance. Volunteers were briefed on DCR's restoration plan for the site, which faces a host of challenges due to numerous well-established invasive species. Fortunately, funds from the Dupont NRDA settlement, which funded purchase of the property by the Cave Conservancy of the Virginias, also include substantial dollars for restoration and management that make addressing the invasive species issue possible. Though owned by CCV, the upland portion of the preserve, which includes all caves and exposed limestone areas, is a dedicated Natural Area Preserve jointly managed by CCV and DCR.

Two cave tours into Madisons Saltpeter Cave also took place, led by VAR cavers familiar with the cave and its management plan. Orndorff met both groups in the cave, and introduced them to the Madison Cave Isopod, the Madison Cave Amphipod, and the significance of the site from biological and hydrological perspectives. Live specimens were obtained on May 21 from traps placed on May 20 by Orndorff during a trip to the cave with DCR Director Matt Wells, Deputy Director Frank Stovall, Policy Specialist Derrick Bolen, and several Natural Heritage staff. VAR cave tour participants had a chance to observe the animals up close. The isopods and amphipods were returned unharmed to their habitat on May 22.

### Investigation of Caves near Gypsy Hill Park in Staunton

A local property owner contacted DCR requesting investigation of a cave or caves on his property within the city limits of Staunton. The property owner is looking for a conservation buyer for the property, which consists of several forested tracts. Cave Board member Rick Lambert visited the site with Wil Orndorff on June 1. One cave entrance known to the owner was entered and surveyed by Lambert and Orndorff, yielding a hundred feet or so of accessible passages. Lambert commented that this was the only cave he knew of in the city limits of Staunton that did not have a blocked or sealed entrance. Additional potential entrances on the property were identified and will be the subject of further investigation.

### Environmental Project Review

Tom Malabad leads the DCR Karst team's project review efforts, and screened ~ 100 projects for impacts to karst since the February Cave Board meeting. These project reviews continue to pay huge dividends both in terms of conservation and exploration. Impacts to known caves are avoided or mitigated, and new caves are regularly reported back to the karst team from stakeholders that use the Natural Heritage Environment Project Review service. This is an activity that takes place in the background, but forms a cornerstone of DCR's protection of natural heritage resources, including karst.

#### Spring and summer bat and mammal work

DNH Karst staff continues to assist the US Forest Service in evaluation of the use by bats of abandoned coal mines in the Devils Hen Nest management area of the Jefferson National Forest in Scott County. Staff spent 8 nights in late March and April harp trapping two mine entrances that had been sealed with bat friendly gates. Two species of bat were captured during these nights, both in very low numbers. The species present were the Eastern Small-footed Bat (*Myotis leibii*) and the Tricolored Bat (*Perimyotis subflavus*). Continuous acoustic monitoring in the fall of 2021 and the spring of 2022 suggest the possible presence of other species as well, including the federally endangered Indiana Bat (*Myotis sodalis*). Further work at the site will be performed during the summer and fall of 2022. This data is critical for the Forest Service to make informed decisions about proposed management actions in this section of the National Forest.

DCR staff continues to monitor several summer Gray Bat roosts in the Upper Tennessee River Basin, including several caves and the Piedmont Avenue Bridge in Bristol, VA (aka the “Bristol Culvert”). Work over the last five years by DCR has shown that Gray bats in Virginia systematically use a network of caves for summer roost sites, with temporal activity patterns at individual sites very similar from year to year. The results of these ongoing investigations point to the importance of conservation of a network of caves rather than focusing only on individual cave sites.

Staff has assisted Radford University Professor Karen Powers in identification of and access to several caves for DNA sampling of Alleghany Woodrat (*Neotoma magister*). Woodrats are at risk from encroachment by human populations, and are thought to be particularly susceptible to the roundworm parasite associated with raccoon feces, *Baylisascaris procyonis*. Natural Bridge State Park, the site of today’s Cave Board meeting, is home to a healthy population of Alleghany Woodrats, which are also known to frequent the gift shop after hours of the nearby Natural Bridge Caverns.

#### LAND CONSERVATION UPDATE

##### *The Nature Conservancy*

Mr. Lindeman noted that he has now retired from The Nature Conservancy and has been working with his replacement.

Margaret Meg” Short is a former VDOT employee, a wildlife biologist working with native species issues who has been in Southwest Virginia for over twenty years.

Properties TNC has been working on include the Pinnacle Smith property which is about 90 acres to be added to the Pinnacle Peaks Natural Area Preserve. Part of the funding for this project came through the Virginia Land Conservation Foundation.

An elk preserve is being established in the former coalfields in Buckingham County. This includes about 800 acres in the Cumberland forest.

TNC is working with an estate regarding property on Clinch Mountain in Washington County. This is about 700 acres.

*Department of Conservation and Recreation*

Mr. Bulluck gave the following update from DCR.

### **LAND PROTECTION REPORT (June 2022)**

**Prepared for VA Cave Board**

**For more information on any of these or other projects contact Rob Evans**

#### **CLOSED PROJECTS (since February report)**

**Cedars NAP (Lee Co):** “Smith heirs”. DCR completed purchase of 26.18 acres, consisting of 2 adjacent parcels, in early March. These tracts adjoin the existing Preserve and help protect 2 caves one of which has been recognized as state significant under the Virginia Cave Protection Act known as “Sweetpotato Cave”. “Smith Cave” supports the globally rare Delicate Cave Beetle (*Pseudanophthalmus delicates*) and Sweetpotato supports at least 3 narrowly endemic, globally rare species (although the entrance is found on an adjacent tract still being targeted for acquisition). It is believed this karst area drains to the nearby Gibson-Frazier Cave or into the Surgener -Gallohan cave and spring system.

**Cedars NAP (Lee Co):** “Wilder-Free”. DCR completed purchase of this 4.91 acre tract in late March. This property is situated on exposed outcrops of limestone that lie within the recharge area of sinkholes which ultimately drain into Flanary Bridge Spring, a significant tributary to the Powell River at approximately River Mile 130. Acquisition will enable DCR to remove a derelict home and extensive amount of associated household trash that have been degrading water quality.

#### **IMMINENT CLOSINGS**

**Crows Nest (Stafford Co):** DCR will close 2 small tracts in June that are will directly support improved public access at this NAP.

#### **ONGOING PROJECTS**

**DCR has 10 acquisition projects in advanced stages of completion** across the Commonwealth, ranging from the Eastern Shore to Lee County. Preserves to be expanded if these projects close include the **Cedars, Crows Nest, Chestnut Ridge, Cypress Bridge, Deep Run Ponds, Difficult Creek, Picketts Harbor, and Poor Mountain.**



Several other projects mentioned in our last report have just entered the transaction “pipeline” with funding from the DuPont settlement (**including Cowbane Prairie NAP (Augusta Co), Lyndhurst Ponds NAP (Augusta Co), and Deep Run Ponds (Rockingham Co)**). Due diligence is also beginning on the VLCF-funded Pedlar Hills project as well as the Folly Mills Creek Fen project (mentioned in last report) for which an application package has now been drafted and is under consideration for funding.

## **NEW BUSINESS**

### *Potential Discussions with Department of Forestry*

Mr. Ek reported that at the February meeting he volunteered to reach out to the Department of Forestry regarding the best point of contact for dealing with karst issues.

He advised that he had spoken with Matthew Poirot, the water quality program lead. DOF has guidance in their BMP manuals that requires a fifty foot buffer around care and karst features.

Mr. Ek noted that he did not discuss the guidance in great detail as the initial point was to establish a dialogue a process for communication. He had hoped to schedule a meeting, however Mr. Poirot will retire at the end of June. It will likely be best to wait until there is a new point of contact.

## **LUNCH**

At this time the Board recessed for lunch.

The meeting resumed at 1:30 p.m.

Mr. Ek noted that there were a few more items he would like to discuss.

Among them was the need for a list of action items following each meeting. He noted that he had an expanded proposal regarding that concept. He suggested that a separate list be maintained outside of the meeting minutes. He commented that this is where he saw the need for a Board Secretary.

It was noted that Mr. Fletcher sent out a list of action items following the February meeting.

Ms. Weberg suggested the action items also be delineated in the meeting minutes.

This will also generate a list of action items to be included in the next meeting agenda.

**ACTION ITEM: Mr. Fletcher will delineate action items in the meeting minutes. He will develop an action item list to forward to the board following the meeting. Chairman Denton and Mr. Fletcher will use this list to develop the next meeting agenda.**

### **OLD BUSINESS**

#### *Virginia Cave Owners' Newsletter*

Ms. Weberg thanked DCR staff for getting the newsletter printed and distributed.

Mr. Bulluck advised that staff have worked to make sure that the printing does not get delayed by measures outside of agency control.

**ACTION ITEM: Mr. Bulluck will see that additional print copies are provided to Ms. Weberg.**

Chairman Denton asked how many people were on the list.

Ms. Weberg advised that the list consisted of about 1,500 names. She asked who sent the newsletters out electronically. She noted that initially the hope had been to do all distribution electronically but readers prefer the hard copy.

**ACTION ITEM: Ms. Endo and Mr. Bulluck will follow up on the electronic distribution of the newsletter and make sure that happens going forward.**

**ACTION ITEM: Mr. Bulluck and Ms. Endo will verify that all Cave Board members are receiving the newsletter.**

#### *Virginia Cave Week*

Ms. Weberg advised that she would also address the item of bringing CaveSim to Virginia.

She advised that no movement had taken place regarding CaveSim. The grant being considered was directed elsewhere. In addition, due to the cost the educator in Maryland is no longer bringing CaveSim to Baltimore.

With current travel costs and the daily cost of CaveSim, it is currently cost prohibitive.

With regard to Virginia Cave Week, Ms. Weberg suggested that it be promoted on social media and that, for this year, the board forego normal Cave Week activities.

*2023 National Speleological Society Convention, Elkins, West Virginia, June 20-23, 2023*

Ms. Weberg noted that she is a co-chair of the Elkins Convention. The 2022 convention is later in June in South Dakota.

Mr. Lambert will conduct a geology field trip in 2023.

Ms. Weberg noted that grant deadlines from the Cave Conservancy are August 15 and January 15. The Board discussed applying to both the Cave Conservancy of Virginia and the Cave Conservancy Foundation to cover the cost of CaveSim at the 2023 conference.

Mr. Kohrs commented that the solution may be to have a version of CaveSim constructed for the East Coast.

Discussion will continue at the next meeting.

#### *Treatment of Karst in Virginia's Regulatory Environment*

Mr. Ek noted that the write up regarding karst resources in other agencies should be reformatted and moved forward. This included the discussions with DEQ and DOF that are already underway.

Dr. Doctor noted that he would like the document to be distributed to legislators.

**ACTION ITEM: Dr. Doctor and Mr. Ek will work together to finalize the document regarding state agencies and karst to be distributed to state legislators. Mr. Denton will give final approval and forward to Mr. Fletcher for the cover letter.**

Mr. Ek commented that the document should also be included on the DCR website.

#### *Natural Bridge State Park master plan update*

Dr. Doctor noted that his concern had been the development of new facilities, restrooms, etc. at the park.

Mr. Stovall reported that the hope is to connect any new facilities and the park to the county sewer system. Currently the water treatment facility is owned by the hotel. The park owns the current sewer system.

Dr. Doctor also expressed concern regarding Highway 11 going over the bridge.

Mr. Stovall reported that DCR prefers that the highway be moved. VDOT is aware of this. They have conducted feasibility studies. Changes will require action and funding by the General Assembly.

*Review of Cave Board Web Pages*

Mr. Ek noted that at the last meeting there was a discussion of a Board review of the website to see what gaps there are.

Chairman Denton noted that some of the documents seem to be hidden away. He asked if some of the karst issues could be given more prominence on the website, including links from the front page.

**ACTION ITEM: Ms. Endo will provide the Board with the analytics for the website.**

*Additional items for follow up*

Windsor Hills Pump Station in Blacksburg.

Dr. Doctor reported that the Town of Blacksburg is aware of the situation but has so far not been allowed onto the property of the apartment complex to further review the erosion issues. He has had several discussion with the Town Manager. Mr. White did not inform the Board that the Town was aware of the issue.

**ACTION ITEM: Dr. Doctor will communicate the status with Mr. White and note that the Town is involved. He will also prepare a summary for the director of the DEQ Regional Office in Roanoke to indicate that the Cave Board was aware of the situation.**

*Follow up to 2018 Letter to CCV*

Mr. Ek noted that in a letter to the CCV the Cave Board indicated six tasks the Board would complete as a follow up for receiving grants for the newsletter.

Dr. Doctor noted that a number of those items had been taken care of.

Chairman Denton commented that a review of these items could be included in the agenda for the next meeting.

Mr. Ek noted that he sent a copy of the letter on February 27.

**ACTION ITEM: Mr. Fletcher will include a copy of the letter in a subsequent mailing to the Board.**

Mr. Denton inquired regarding the development of the agenda. Currently items are sent to Mr. Fletcher for inclusion and then distributed to the Board for comment.

**ACTION ITEM: Include a review of the Board Bylaws on the next agenda.**

**PUBLIC COMMENT**

There was no public comment

**NEXT MEETING**

**ACTION ITEM: Mr. Fletcher will poll the Board for meeting dates from late October to early November.**

**ACTION ITEM: Mr. Kohrs will check on the possibility of meeting at Shenandoah Caverns.**

If Shenandoah is not available, Mr. Graves offered Luray Caverns for the next meeting.  
Go to Luray...

ADJOURN

There was no further business and the meeting adjourned at 3:05 p.m.

ATTACHMENT #1

**Virginia Cave Board  
Summary of Financial Activities  
Fiscal Year 2022**

<b>FY22 Beginning Cash Balance</b>	<b>2,099</b>
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<b>Revenues (by Fiscal Year)</b>	<b>Amount</b>
Prior Year Revenues	7,348
FY22 Revenues	2,000
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<b>Total Revenues</b>	<b>9,348</b>
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<b>Expenses (by Fiscal Year)</b>	<b>Amount</b>
Prior Year Expenses	6,062
FY22 Expenses	931
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<b>Total Expenses</b>	<b>6,992</b>
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<b>Total Cash Balance (as of May 31, 2022)</b>	<b>3,168</b>
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