

# INCORPORATING CAVE AND KARST PROTECTION INTO CONSERVATION EASEMENTS: A TOOL FOR CAVE AND KARST PROTECTION IN VIRGINIA

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## Abstract

As economic factors compel landowners to subdivide and sell their lands, caves and other karst resources are at increased risk. According to Virginia Governor, Tim Kaine, if current development trends continue *Virginia will develop more land in the next 40 years than was developed in the last 400 years*. The increased parceling of the countryside leads to suburban sprawl and to a loss of the open spaces that define the rural character of the landscape. *Virginia has instituted a conservation easement program whereby landowners can generate transferable tax credits for donating conservation easements on their land*. Ideally, *conservation easements qualifying for tax credits should principally protect lands possessing legitimate conservation value*. *Applied appropriately, conservation easements can be a useful tool for preserving the natural environment, including the protection of caves and karst systems*.

Key words: conservation easements, Virginia, karst land management

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## What Is a Conservation Easement?

A conservation easement is a permanent, legal agreement negotiated between a landowner and a nonprofit conservation organization or a government agency. The deed of easement is a contract that places permanent limits on future development and divisions of the subject property. In Virginia, prospective conservation easements undergo a review to determine what scenic, natural, or historic resources are present.

## Who Holds (Owns) Conservation Easements?

A variety of land trusts and several state and federal agencies are qualified to hold conservation easements. An organization must meet certain guidelines before it can legally hold a conserva-

tion easement. The Virginia Outdoors Foundation (VOF), a public foundation that also serves as a state agency, holds most conservation easements in the Commonwealth of Virginia. As of 2007, Virginia Outdoors Foundation holds conservation easements on more than 400,000 acres of land in Virginia. For conservation easements held by VOF, the office of the Attorney General of the Commonwealth is empowered to enforce the terms of such easements.

Relatively small organizations, such as cave conservancies, generally lack the considerable financial resources required to defend successfully a conservation easement against a noncompliant landowner—a protracted series of lawsuits could easily cost several hundreds of thousand of dollars. A cave conservancy might nevertheless utilize their own conservation-easement donation as a means of ensuring long-term protection for cave resources

under their ownership. A preemptively placed conservation easement would offer some safeguard to owned caves and other karst resources should subsequent misfortunes such as lawsuits, insolvency, or dissolution place a cave conservancy's assets at risk. Placement of wisely crafted conservation easements on appropriate landholdings could enhance protection to conservancy-owned caves, a state or federal agency such as the VOF or USDA Forest Service, or perhaps a large, stable private conservation organization like The Nature Conservancy should logically hold and enforce any such easements.

### **Tax Incentives for Conservation Easements**

Donation of a conservation easement can have tax benefits. There are several ways to deduct a portion of the donated value of a qualified conservation easement from adjusted gross income for federal income tax purposes. Federal tax rules dealing with conservation easements are in a state of flux; a detailed discussion of the Federal Tax Code is beyond the scope of this paper. At present in Virginia, donation of an eligible conservation easement can generate a transferable Virginia State Tax Credit under the terms of the Virginia Land Conservation Incentives Act of 1999. Virginia Tax credits currently are conferred based on 40% of the easement's fair market value; these saleable credits can carry over for up to ten years.

Some other states also offer tax incentives for the donation of conservation easements.

### **The Landowner's Perspective**

Choosing whether to place one's land under a conservation easement is a major decision. Only after carefully considering the benefits as well as potential consequences should a landowner make the informed decision to grant an easement. Except for the rights explicitly given up in the easement document, the landowner continues to own, use, and control his land. Conservation easements, however, are permanent and appurtenant—they pass along with the property to restrict uses of the land by all future owners. A conservation easement typically restricts the ability to subdivide and develop real estate, it prohibits mining and quarrying, and it restricts the size and number of

permitted structures. An easement will encumber a property from certain types of land uses, but it does enable a landowner to obligate future owners to continue to protect and conserve the land for future generations. A conservation easement will likely diminish the eventual sales price of the subject property.

Despite these drawbacks, many landowners realize a net economic benefit by donating a conservation easement. Placement of a conservation easement on a property may result in a reduced property tax assessment, and might reduce exposure to estate taxes. As discussed, landowners who donate conservation easements can benefit from federal and state tax incentives, which in some cases (for example Virginia) can be quite significant.

### **Ensuring That Easements Achieve Conservation**

The Virginia Department of Conservation and Recreation (DCR), Natural Heritage Program, performs an environmental assessment on proposed easements to identify what unique plants, animals, or natural communities, including caves and karst features, might be present on the property. In some cases, site visits lead to the discovery of previously undocumented caves and other Natural Heritage resources. After review and, in some cases, site visits, Natural Heritage Program staff generally recommend specific additional protective provisions for incorporation into the easement contract language. The degree to which these recommendations are included in the Final Deed of Gift of Conservation Easement is a matter of negotiation between the landowner and the organization that will hold the easement.

In situations where a donor claims a Virginia Land Preservation Tax Credit of \$1 million or more, DCR must review the donation to verify that the donation meets the conservation-value-review criteria adopted by the Virginia Land Conservation Foundation board. In order for the applicant and the Virginia Department of Taxation to receive the required letter of verification of conservation value for tax credits worth \$1 million or more from the DCR Director, the final conservation easement or deed of gift must comply with DCR requirements as stated in the comment letter.



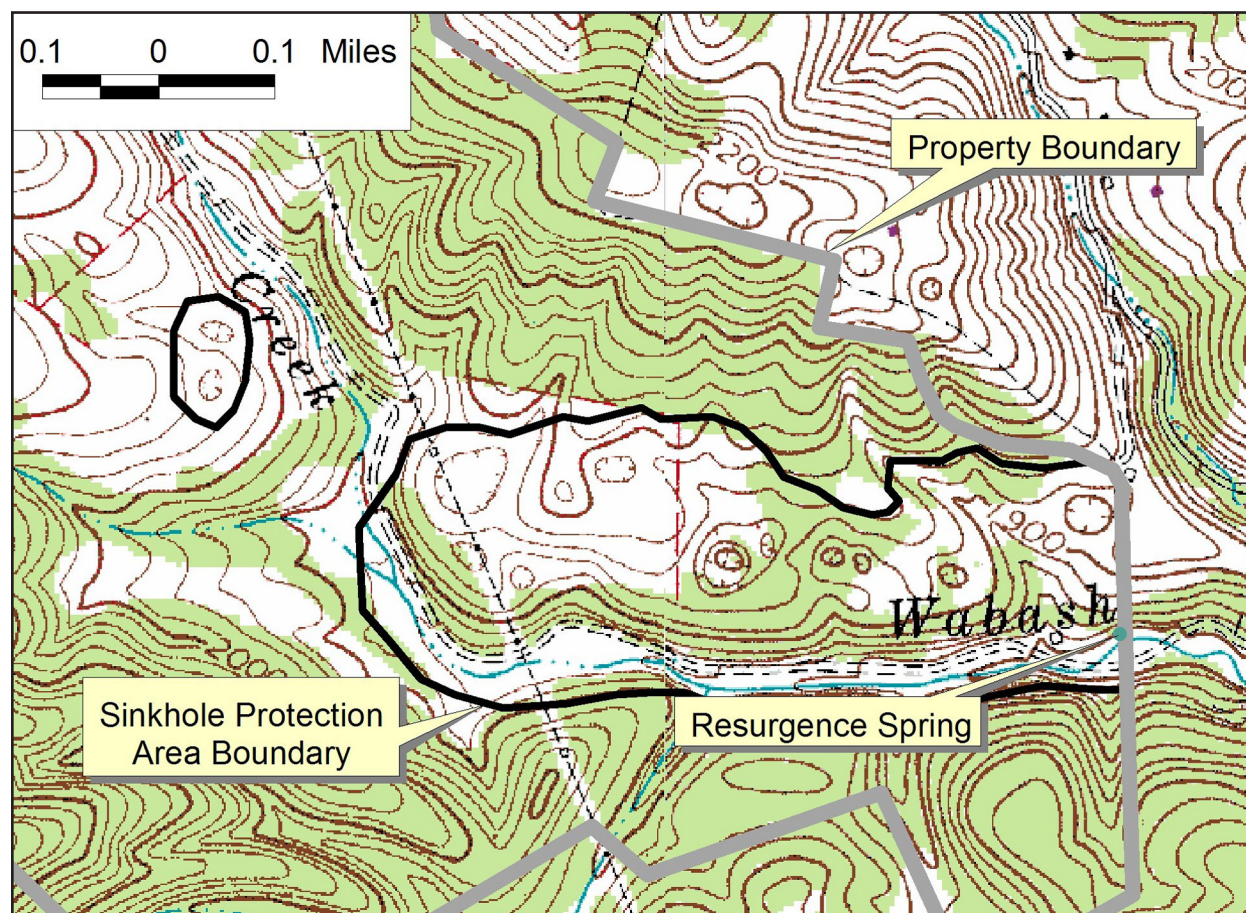


Figure 1 Buffered sinkhole protection boundaries near Wabash Spring, Poplar Hill Farm, Giles County, Virginia. Map by Wil Orndorff.

## Conservation Practice Requirements

A conservation easement may require use of Best Management Practices (BMPs) in agricultural operations. BMPs such as cleaning out existing sinkhole dumps, installing fencing to exclude livestock from streams and sinkholes, and establishment of riparian buffers along sinking and losing streams helps to protect karst habitats, aquifers, and receiving surface waters. Implementation of such BMPs is frequently a precondition to acceptance of a donated conservation easement by a land trust or government agency. State and federal cost-share programs are commonly available to help landowners install and pay for such conservation practices. Whenever possible, negotiated contract documents should include language to require landowners to adopt and maintain appropriate conservation practices in order to increase the conservation value of the easement and to preserve the environmental integrity of the property.

## Examples of Conservation Easements Protecting Karst Resources

The Moss conservation easement in Tazewell County, Virginia, contains four significant caves on 537 ha (1,327 ac.). These caves are home to numerous, globally rare cave invertebrates. The streams in these caves help recharge springs feeding the upper Clinch River, which hosts one of the richest and most imperiled freshwater mussel faunas in the world. Upon recommendation by the DCR Natural Heritage Karst Program, the easement agreement specifies detailed requirements to protect the caves and sinkholes on this working farm.

The Poplar Hill, LLC, conservation easement in Giles County, Virginia protects 256 ha (632 ac) of significant karst and upslope recharge land. The agreement denotes sinkhole protection boundaries on two large areas of the property containing many sinkholes (Figure 1). The sinkholes serve as catchments to recharge the karst aquifer that includes



one of Virginia's longer and more biologically significant cave systems, home to at least two extremely rare (G1) cave invertebrate species. The easement specifies steps to protect the sinkholes, including a requirement to exclude livestock from the identified areas.

A conservation easement in Bland County, Virginia protects 104 ha (257 ac) of karst that includes a cave serving as a hibernaculum for several species of bats, including the Virginia big-eared bat (*Corynorhinus townsendii virginianus*), the Eastern small-footed bat (*Myotis leibii*), and, in large numbers, the Little brown bat (*Myotis lucifugus*).

Conservation easements may specify access to private property for monitoring purposes, but typically offer no guarantee of recreational access to the public. The owner of Crossroads Cave in Bath County, Virginia, wanted to make sure recreational cavers could always visit his cave. He placed a conservation easement on the bulk of his land with the Virginia Outdoors Foundation, but reserved a 0.8-ha (two-ac) tract containing the cave entrance, which he donated to the Virginia Speleological Survey, ensuring access to his cave by future generations of responsible cavers. The conservation easement protects a large portion of the recharge area of the cave from development, while the tract donated to the VSS maintains access for the caving community.

The largest easement VOF has accepted to date, a 1,752-ha (4,329-ac) farm in Tazewell County, Virginia covers a landscape underlain almost entirely by karst or land draining to karst (allogenic recharge). Caves on the property are home to a species of cave beetle known only from the property, and to a major colony of a federally protected bats. The easement contract stipulates some provisions to protect caves and karst features on the property



Figure 2 Spring entrance to Smokehole Cave, Giles County, Virginia.  
Photo by Joey Fagan.

and acknowledges an existing agreement to protect and manage the cave housing the bat colony. The recording of this particular easement occurred in 2006, prior to the requirement for DCR to perform a conservation value review. Current DCR criteria would likely require the landowner to install additional BMPs to fence livestock from a sinking creek on the property and develop alternative water supplies for cattle.

The Virginia Outdoors Foundation gives highest priority to easement projects of 40 ha (100 ac) or more. For lands with particularly high conservation value and/or multiple conservation values and strongest protection, this minimum requirement is sometimes relaxed. Presence of a cave or other significant karst features may serve as evidence of such significant conservation value. VOF relaxed these same guidelines when they agreed to accept donation of a conservation easement containing less than 20 ha (50 ac) from the owner of Smokehole Cave in Giles County, Virginia. Smokehole Cave (Figure 2) is one of the resurgence caves of the Clover Hollow karst area, which hosts a globally significant invertebrate fauna, with several species restricted to the Sinking Creek basin. The exceptional conservation value justified for VOF an exception to the 40-ha (100-ac) minimum policy.

## **The Small Parcel Problem**

It is difficult to convince most conservation organizations to agree to hold an easement on tracts less than 30 or so acres. This is at least partly because many land trusts use total acreage placed under easement as their primary measure of success. There are cases, for example, where some relatively small parcels containing biologically significant caves possess considerable conservation value. Even though legal and stewardship expenses to administer conservation easements on small parcels tend to cost more per area, the benefits of protecting certain selected undersized properties should justify the required extra effort. Virginia Natural Heritage program staff continues to work with partners in developing protocols that are more effective to protect small tracts of exceptional conservation value through conservation easements.

## **Summary**

Working partnerships between landowners, VOF and the various land trusts, DCR, and other state and federal agencies help preserve Virginia's natural landscape for both the survival of the natural communities that depend upon it as well as for

the enjoyment of future generations. Conservation easements can serve to provide effective protection for caves and other karst resources. Conservation easements already help protect several of Virginia's significant caves. Each specific easement document incorporates wording to address concerns for caves and other karst resources on a particular property. Appendix A offers a list of selected karst protective provisions taken from actual VOF Easement Deeds. May Virginia's successes continue and serve to encourage other states to adopt similar conservation easement programs.

## **Sources and Acknowledgments**

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## Appendix A Selected Conservation Easement Provisions for Karst Protection

### Poplar Hill (Giles County, Virginia)

1. **Trash.** Accumulation or dumping of trash, refuse, or junk is not permitted on the Property. This restriction shall not prevent generally accepted agricultural or wildlife management practices, such as creation of brush piles, composting, or the storage of farm machinery, organic matter, agricultural products or agricultural byproducts on the Property, as long as such practices are conducted in accordance with applicable laws and regulations and do not damage the karst features on the property.
- 4b. **Riparian buffer.** A vegetated or forested buffer extending 11 m (35 ft.) from each bank of Wabash Creek shall be maintained on the Property, limited, however, to the property lines, if applicable. This buffer shall be protected from degradation by livestock. Removal of non-native invasive species and minimal harvest of trees is permitted, provided that the function of the buffer to protect water quality both in the surface stream and the surface and subsurface karst features are not impaired. It is hereby acknowledged by both parties to this deed that an existing road traverses the buffer area in some places, and may be maintained by the Grantor.
5. **Karst features.** No sinkholes or cave entrances shall be filled, and no construction shall take place within a sinkhole. All sinkholes on the property shall be maintained as wooded areas, and harvest of trees within sinkhole boundaries shall be limited to minimal selective harvest of trees. Cattle shall not be permitted access to the hydrologically significant sinkholes shown on **Schedule B** attached hereto. Disposal of any material in all sinkholes is prohibited.
6. **Grading, blasting, mining.** Grading, blasting or earth removal shall not materially alter the topography of the Property except for dam construction to create private ponds, or as required in the construction of permitted buildings, structures, connecting private roads, and utilities as described in Paragraph 7. Gen-

erally accepted agricultural activities shall not constitute any such material alteration. Best Management Practices, in accordance with the Virginia Erosion and Sediment Control Law, shall be used to control erosion and protect water quality in the construction of permitted buildings and private roads. **Notwithstanding the foregoing, no grading, blasting, or earth removal is permitted on the Property if it will damage the surface or subsurface karst features on the property or materially diminish or impair the Open Space Values of the Property.** Mining on the Property by surface mining or any other method is prohibited.

### Smokehole Cave (Giles County, Virginia)

2. **Trash.** Accumulation or dumping of trash, refuse, or junk is not permitted on the Property. This restriction shall not prevent generally accepted agricultural or wildlife management practices, such as creation of brush piles, composting, or the storage of farm machinery, organic matter, agricultural products or agricultural byproducts on the Property, as long as such practices are conducted in accordance with applicable laws and regulations and do not damage the karst features on the property.
5. **Karst features.** No disturbance or alteration of either of the two entrances to Smokehole Cave is permitted. In addition, no sinkholes or cave entrances shall be filled, and no construction shall take place within a sinkhole. Cattle shall not be permitted access to any sinkholes on the Property and disposal of any material in Smokehole Cave and in all sinkholes is prohibited.

### Moss Easement (Tazewell County, Virginia)

4. **Management of Forest.** Best Management Practices, as defined by the Virginia Department of Forestry, shall be used to control



erosion and protect water quality when any timber harvest or land-clearing activity is undertaken. All material timber harvest activities on the Property shall be guided by a Forest Stewardship Management Plan approved by VOF or the VA Department of Forestry. A pre-harvest plan consistent with the Forest Stewardship Management Plan shall be submitted to VOF for approval 30 days before beginning any material timber harvest. The objectives of the Forest Stewardship Management Plan may include, but are not limited to, forest health, biodiversity, timber management, wildlife habitat, aesthetics, recreation, water and air quality, carbon or other mitigation banking programs, historic and cultural resource preservation, natural area preservation, or any combination thereof. VOF shall be notified 30 days prior to the clearing of over 4 hectares (10 acres) of forestland for grassland, crop land, or in association with the construction of permitted buildings.

Non-commercial *de minimis* harvest of trees for trail clearing, firewood, or Grantor's domestic use; trees that pose an imminent hazard to human health or safety; or removal of invasive species shall not require a Forest Stewardship Management Plan.

5. **Riparian buffer (pasture/cropland area).** To protect water quality there shall be no plowing, cultivation, or other earth-disturbing activity in a 11-m (35-ft.) buffer strip along each edge of Liberty Creek, as measured from the top of the bank and there shall be no plowing, cultivation, or other earth-disturbing activity in a 8-m (25-ft.) buffer strip along each edge of the unnamed intermittent tributaries to Liberty Creek, as measured from the tops of the banks (see Schedule B, attached hereto and made a part hereof), except as may be reasonably necessary for (i) wetland or stream bank restoration, or erosion control, pursuant to a government permit, (ii) fencing along or within the buffer area, (iii) construction and maintenance of stream crossings that do not obstruct water flow, (iv) creation and maintenance of foot or horse trails with unimproved surfaces or (v) dam construction to create ponds. Within this buffer strip there shall be (a) no buildings or other substantial struc-

tures constructed, (b) no storage of compost, manure, fertilizers, chemicals, machinery or equipment, and (c) no removal of trees except removal of invasive species or removal of dead, diseased or dying trees or trees posing an imminent human health or safety hazard. Mowing within buffer areas is permitted. There shall be no grazing of livestock in the buffer strip, other than periodic or "flash grazing" as defined by the Natural Resources Conservation Service.

6. **Grading, blasting, mining.** Grading, blasting, or earth removal shall not materially alter the topography of the Property except for (i) dam construction to create ponds, (ii) wetlands or stream bank restoration pursuant to a government permit, (iii) erosion and sediment control pursuant to a government-required erosion and sediment control plan, or (iv) as required in the construction of permitted buildings, structures, roads, and utilities. Best Management Practices, in accordance with the Virginia Erosion and Sediment Control Law, shall be used to control erosion and protect water quality in such construction. Grading, blasting or earth removal in excess of 0.4 ha (one ac.) for the purposes set forth in subparagraphs (i) through (iv) above require 30 days' prior notice to VOF. Generally accepted agricultural activities shall not constitute a material alteration. Surface mining, subsurface mining, dredging on or from the Property, or drilling for oil or gas on the Property is prohibited.
7. **Accumulation of trash.** Accumulation or dumping of trash, refuse, junk, or toxic materials is not permitted on the Property. This restriction shall not prevent generally accepted agricultural or wildlife management practices, such as creation of brush piles, composting, or the storage of farm machinery, organic matter, agricultural products or agricultural byproducts on the Property. The Grantor and Grantee hereby acknowledge the existence of a "pre-existing" dump on the property at the time of this deed, which is documented in the permanent files of the Grantees and which is not visible to the traveling public. No additional trash shall be added to the existing dump and no additional dumps shall be permitted on the Property.

9. **Karst features.** To protect water quality and the unique karst features on the Property, **no new building or structure shall be located within 61 m (200 ft.) from the entrance of any cave on the Property.** In addition, no sinkholes or cave entrances shall be filled; no disturbance or alteration of the entrances to the caves is permitted; no fertilizer or other agricultural chemicals shall be applied for a distance of at least 30 m (100 ft.) from any cave opening; no dumping of animal carcasses or other waste is permitted in sinkholes, caves, or other karst features; disposal of any material in the caves and sinkholes is prohibited; cattle shall not be permitted access to any of the three caves on the Property that are already fenced. The Grantor is not required to remediate any condition existing as of the date of this easement.

Notwithstanding the above, the Grantees acknowledge the measures already taken by the Grantor to exclude livestock from three of the four known caves on the Property. Ten (10) years from the date of recordation of this easement, livestock shall be prevented from accessing the remaining known (fourth) cave on the Property.

### **Unspecified Cave (Bland County, Virginia)**

9. **Karst features.** No building, structure, or road shall be located in an area of the Property that would damage the cave system on the property. In addition, no sinkholes or cave entrances shall be filled and no construction shall take place within a sinkhole. Cattle shall not be permitted access to any sinkholes on the Property. Disposal of any material in \_\_\_\_\_ Cave and in all sinkholes is prohibited. No disturbance or alteration of the entrance to \_\_\_\_\_ Cave is permitted.

No dumping of animal carcasses or other waste is permitted in sinkholes, cave, or other karst features, provided, however, that Grantor is not required to remediate any condition existing as of the date of this easement.

#### **Cave Protection:**

The cave openings on the Property shall be

protected from degradation by runoff from agricultural chemicals and livestock waste. If necessary, livestock on the Property shall be fenced out, and no fertilize or other agricultural chemicals shall be applied for a distance of at least 30 m (100 ft.) from the cave opening and no sediment or other debris shall be placed in the cave opening.

### **Unspecified Cave (Tazewell County, Virginia)**

The parties recognize the pre-existing management agreement between \_\_\_\_\_ and the Nature Conservancy for the management of a cave containing species federally listed as endangered, last renewed on \_\_\_\_\_ and expiring \_\_\_\_\_, with provisions for renewal upon agreement of \_\_\_\_\_ and the Nature Conservancy. Nothing in this easement is intended to supersede this management agreement.

Notwithstanding the above, if the management agreement with the Nature Conservancy terminates for any reason, Grantor agrees to maintain the cave in its current undisturbed state. Grantor agrees to refrain from cutting or uprooting trees or shrubs, dumping trash, digging, or filling cave entrances in the area defined in the current agreement between Grantor and the Nature Conservancy; provide, however, that removal of vegetation that blocks the cave entrances is permitted. No buildings or structures are permitted in the designated area. Specific information about the cave, its location, and species that live in the cave are maintained by the Virginia Department of Conservation and Recreation, Division of Natural Heritage Program.

No disturbance or alteration of the four (4) cave entrances as shown in the Baseline Documentation described in Paragraph 11 is permitted. A vegetated buffer extending a minimum 15-m (50-ft.) radius from the mouth of each cave entrance shall also be maintained on the Property. Cattle shall not be permitted access to said caves and disposal of any material, both man-made or natural, in the caves is prohibited.

**Buildings and Structures:** Notwithstanding the above, no building or structure shall be located within 91 m (300 ft.) of the cave entrance on the Property.

In the event of subdivision of the Property as



provided in Paragraph 3 above, permitted dwellings shall be allocated among the parcels in the instrument creating the subdivision, and private roads and utilities may be constructed on each parcel. **Notwithstanding the above, no building, structure or road shall be located in an area of the Property that would damage the cave system on the Property.**

**Sinkhole Buffer.** A forested buffer extending a minimum of 11 m (35 ft.) from the edge of any sinkhole shall be maintained on the Property. This buffer shall be protected from degradation by livestock. Removal of non-native invasive species and minimal harvest of trees is permitted, provided that the function of the buffer to protect water quality is not impaired. Waste material of any nature shall not be disposed of in sinkholes.

Disposal of any material in the sinkhole located on the Property is prohibited. Said sinkhole is shown in the Baseline Documentation as described in paragraph 11 herein.

In the event of subdivision of the Property as provided in Paragraph 3 above, permitted dwellings shall be allocated among the parcels in the instrument creating the subdivision, and private

roads and utilities may be constructed on each parcel. **Notwithstanding the above, no building, structure or road shall be located in an area of the Property that would damage the cave system on the Property.**

Disposal of any material in the sinkhole located on the Property is prohibited. Said sinkhole is shown in the Baseline Documentation as described in paragraph 11 herein.

**Access to \_\_\_\_\_ Cave.** Representatives of the Grantee may enter the Property for purposes of scientific investigations and monitoring of \_\_\_\_\_ Cave, and of other caves and karst features on the Property after permission from or reasonable notice to the owner or the owner's representative. Representatives of the Grantee may investigate the Property for the purpose of documentation and exploration of any additional caves or karst features that may be present.

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