November 13, 2014

Kimberly Bose,
Secretary Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Dear Secretary Bose:

I am writing on behalf of Friends of Shenandoah Mountain to express opposition to the Atlantic Coast Pipeline submitted for pre-filing by Dominion Resources: **FERC Docket # PF15-6**.

Friends of Shenandoah Mountain is a coalition of organizations, businesses, faith groups, and individuals working toward permanent protection of the central Shenandoah Mountain area in the George Washington National Forest (GWNF). Our goal is Congressional designation of a 90,000-acre tract of Shenandoah Mountain as a National Scenic Area (see Map of Proposed Shenandoah Mountain NSA and **www.friendsofshenandoahmountain.org**). Our proposal is the result of a 12-year collaborative effort among diverse forest interest groups that has resulted in broad support by over 220 organizations and businesses (see SM Proposal Endorsers), and diverse GWNF stakeholders, including the Virginia Forestry Association, Ruffed Grouse Society, The Nature Conservancy, National Wild Turkey Federation, Virginia Chapter of Trout Unlimited, Virginia Chapter of Backcountry Horsemen of America, and International Mountain Bicycling Association. (See SM Proposal and the GWNF Stakeholders' Agreement)

When Dominion proposed their route for the Atlantic Coast Pipeline (shown on Dominion's August 29, 2014 Augusta and Highland County Maps), they may have been unaware of the tremendous natural and cultural resources on our public lands that the pipeline would impact, irreplaceable resources that benefit people throughout our region. The GWNF is the largest of the Eastern national forests and has the most (and largest) Inventoried Roadless Areas of any national forest in the East. It is also the closest national forest to major mid-Atlantic metropolitan areas, such as Washington, DC-Northern Virginia-Maryland, Richmond, and the Norfolk-Hampton-Chesapeake-Virginia Beach area. As such, it serves the recreational needs of about 10 million Americans who live within a 2-hour drive.

The Shenandoah Mountain area has been selected by citizen groups as a worthy candidate for permanent protection because it is so special. Stretching 72 miles through the heart of the GWNF, Shenandoah Mountain has the largest concentration of roadless areas on national forest land east of the Mississippi. This mostly unfragmented forest, which is exceptionally rich in biodiversity, is a local, regional, and national treasure. Shenandoah Mountain lies within a Biodiversity Hotspot identified by The Nature Conservancy (see TNC Biodiversity Hotspots Map) and constitutes an Outstanding Ecological Core identified by the Virginia Department of Conservation and Recreation (see Map of Virginia DCR Ecological Cores). Its pure mountain streams are a regional stronghold for native brook trout, a diminishing resource. With headwaters of both the Potomac and James Rivers, Shenandoah Mountain streams provide municipal drinking water to Staunton, Harrisonburg, and numerous towns in the Shenandoah Valley and downstream. Shenandoah Mountain is a popular destination for hiking, mountain biking, hunting, fishing, camping, horseback riding, and scenic driving. The Shenandoah Valley Travel Association, Scenic Virginia, and numerous tourism-related businesses in the Shenandoah Valley have endorsed the proposed Shenandoah Mountain National Scenic Area because they value its natural beauty and recreational resources that support our vibrant tourism-based economy. Rt. 250, which

would be crossed several times by the pipeline, is a scenic gateway to the national forest and one of only a few access points to the many recreational resources on Shenandoah Mountain. Rt. 250 is historically significant in that it was the Staunton-Parkersburg Turnpike.

From our perspective, the Atlantic Coast Pipeline is problematic for several important reasons:

1. It cuts a broad swath through the southeastern portion of the proposed Shenandoah Mountain National Scenic Area, creating a permanent 75' linear clearing that would destroy its natural character, and perhaps make it unsuitable for Congressional designation. (see Map of Proposed Pipeline Route over SM)
2. It would fragment one of the most undisturbed tracts of national forest land in the East, creating "edge effect" that favors less desirable predatory species and providing a pathway for nonnative invasive plant species.
3. It crosses access roads to the popular Braley Pond Recreation Area, which has a beautiful large stocked pond, a picnic area, a campground, and several heavily used trails.
4. It follows the Dowells Draft Forest Road across the flank of Hankey Mountain through the Chestnut Oak Knob Grouse Habitat Improvement Project. This project is supported by Virginia Game and Inland Fisheries and the Ruffed Grouse Society. The pipeline would not be compatible with grouse management, because maintenance of a permanent linear clearing would prevent young forests from growing. Ruffed grouse benefit from actively managed young forest habitat. Friends of Shenandoah Mountain has pledged its support for continuing management of Hankey Mountain for grouse and other species that need early successional habitat as part of the GWNF stakeholders agreement.
5. It bisects the Ramseys Draft Addition Potential Wilderness Area, inventoried by the GWNF during the forest planning process for the new plan.
6. It crosses Ramseys Draft, an exceptional Class IV native trout stream, the Calfpasture River, and the Cowpasture River, some of the cleanest native trout streams in Virginia.
7. If herbicides are used to maintain the linear clearing, the runoff will harm these streams.
8. The linear clearing and necessary maintenance vehicle access would allow invasives to move into an area that is currently relatively free of invasives. The right-of-way Dominion maintains through the south section of Shenandoah National Park for its electric transmission line is a sea of invasive ailanthus. (See Photo of Dominion Powerline ROW through SNP)
9. Ramseys Draft Wilderness, designated by Congress in 1984, is one of the most popular of Virginia's Wilderness areas, drawing hikers, backpackers, and flyfishermen from the whole region. The pipeline would permanently scar the area just downstream from the Wilderness.
10. Hankey Mountain is known to have the coal skink, a locally rare species that could be harmed by pipeline construction and maintenance.
11. Hankey Mountain is a popular recreation area for hunting, mountain biking and hiking. The pipeline would obliterate Dowells Draft Road, one of the most accessible national forest trails for hunting, mountain biking, and winter hiking.
12. The pipeline route passes about one mile from the eastern end of the Staunton Dam Tunnel through Hankey Mountain, which has supplied municipal water to Staunton since the 1920s. At that time Staunton faced a water shortage and was forced to find a pure water source 15 miles away in the GWNF. The City had to build a mile-long tunnel through Hankey Mountain using hand tools and mules. This tunnel has partially collapsed in places and could be vulnerable to blasting during pipeline construction. Pipeline explosions could endanger Staunton's water supply.
13. Because it is undeveloped, Shenandoah Mountain is one of the darkest areas in the Eastern United States, and for this reason is a popular destination for viewing stars. There are not many places in the East one can still see the Milky Way, but it is still possible from Shenandoah Mountain. Several organizations have endorsed the proposed Shenandoah Mountain National Scenic Area just for this reason.
14. The pipeline route crosses Signal Corps Knob, an area where JMU Biology researchers and GWNF biologists have documented multiple occurrences of the Cow Knob Salamander. In October 2014, Eastern Mennonite University students found and photographed Cow Knob Salamanders along the pipeline route. (see Photo of Cow Knob Salamander on Signal Corps Knob) The GWNF and U.S. Fish

and Wildlife have signed an agreement to protect Cow Knob Salamander habitat. We expect the GWNF to enforce the agreement to protect this species, which is found nowhere else on earth, and we also expect FERC's environmental review to respect and uphold this agreement.

15. The Shenandoah Mountain salamander is also a concern as it is found only on Shenandoah Mountain.
16. Shenandoah Mountain has over 180 miles of popular and scenic trails. The Great Eastern Trail (GET), which extends from New York to Alabama, follows the Shenandoah Mountain Trail through Rockingham, Augusta, and Bath Counties. The pipeline would cross the GET at Signal Corps Knob, only a mile from the Confederate Breastworks Parking Lot along Rt. 250, a popular access point for hiking, biking and hunting along the GET. The Shenandoah Mountain area is one of the most popular mountain biking destinations in the East. The Shenandoah Mountain 100 bike race, now in its 15th year, utilizes Shenandoah Mountain Trail and several other trails crossed by the pipeline. The race draws as many as 800 participants from across the country, much to the benefit of local tourism-related businesses. Trails on Shenandoah Mountain are actively maintained by the Shenandoah Valley Bicycle Coalition (SVBC) and the Potomac Appalachian Trail Club – Southern Shenandoah Valley Chapter, with volunteers collectively logging thousands of hours annually in this area. SVBC has secured $300,000 of Recreational Trails Program grant funding in the last 5 years, most of which was used in the Shenandoah Mountain area, and is poised to spend an additional $200,000 by the end of 2015. The PATC is preparing to publish a hiking guide for Shenandoah Mountain to promote these trails. A wide pipeline swath crisscrossing the Rt. 250 corridor would seriously degrade this popular recreation area.
17. Signal Corps Knob and the Georgia Camp area are quite significant Civil War cultural resources. The pipeline route may damage sites that have not yet been inventoried.
18. In Highland County the pipeline route appears to cut through the Shaws Fork Horse Camp, the only horse camp in the entire GWNF.
19. Our last point, and a very important one, is that the presence of a pipeline will make fracking in the GWNF more likely in the future.

Given these concerns, Friends of Shenandoah Mountain is opposed to the ACP route through one of the finest and least fragmented natural areas remaining in the Eastern United States. This area is without question one of the worst possible places to put an interstate gas transmission pipeline. We ask that FERC deny this project.

Thank you for responding to the serious concerns we have about the pipeline.

Sincerely,

Lynn Cameron
Co-Chair
Friends of Shenandoah Mountain
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Mt. Crawford, VA 22841
(540)234-6273
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Attachments:
- Map of Proposed Shenandoah Mountain NSA
- Photo of Cow Knob Salamander on Signal Corps Knob, Oct. 11, 2014 by J Bush
- Photo of Dominion Powerline ROW through SNP, Aug. 2014 by D Bennick
- SM Proposal Endorsers as of 11/13/2014
- Map of TNC Biodiversity Hotspots
- Map of Virginia DCR Outstanding Ecological Cores
- Map of Proposed Pipeline Route over SM
- SM Proposal and the GWNF Stakeholders' Agreement, Oct. 17, 2011

April 28, 2015

Kimberly Bose,
Secretary Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: **Atlantic Coast Pipeline, FERC Docket # PF15-6**

Dear Secretary Bose:

Friends of Shenandoah Mountain submitted comments on the Atlantic Coast Pipeline on Nov. 13, 2014 (See attached FOSM Letter to FERC). We are submitting additional comments further expanding our points on potential impacts to the Cow Knob Salamander.

The Cow Knob Salamander (*Plethodon punctatus*) is a woodland salamander found primarily on Shenandoah Mountain in Virginia and West Virginia between 2,400 and 4,300 feet in elevation. The Cow Knob salamander is listed as:

- a “Species At Risk” by the U.S. Fish and Wildlife Service;
- a “Species of Special Concern” in Virginia and West Virginia;
- “Near Threatened” on International Union for Conservation of Nature’s Redlist.

Nearly the entire range of the Cow Knob Salamander lies within the George Washington National Forest (GWNF). These endemic salamanders are a source of regional pride and are a part of some of the most amazing biodiversity found anywhere. This species is terrestrial and is usually found living in rocky outcrops that occur in moist areas. It is threatened by logging, roadbuilding, forest fragmentation, and deforestation.

In 1994, the U.S. Fish and Wildlife Service and the GWNF entered into a Conservation Agreement to keep this at-risk species from needing to be listed under the Endangered Species Act. This Conservation Agreement established the Shenandoah Mountain Crest Conservation Area with written guidelines that protect habitat for the Cow Knob Salamander along with 28 other at risk species of plants and animals. (See Conservation Agreement, 1994) According to the 2014 GWNF forest management plan, the Conservation Area is unsuitable for designation of new utility corridors unless there is an over-riding demonstrated public need or benefit. No new roads may be constructed in Cow Knob Salamander habitat. The GWNF plan

also states that if Cow Knob salamanders are found in areas outside the boundaries of the Shenandoah Mountain Crest Management Area, those areas will be subject to the same management measures. (See attachment: Excerpts from 2014 GWNF Plan, with significant text highlighted) The management objectives stated in the plan are in keeping with the guidelines established by the 1994 Conservation Agreement.

The proposed Atlantic Coast Pipeline passes through Cow Knob Salamander habitat about 10 miles south of the Shenandoah Mountain Crest Conservation Area. Numerous occurrences of Cow Knob Salamander were documented on Shenandoah Mountain south of Rt. 250 in 2008, by Dr. Reid Harris, Professor of Biology, James Madison University. These occurrences, shown on the attached maps are in close proximity to the proposed pipeline. (See attached Harris letter to Fish & Wildlife and three accompanying maps)

Eastern Mennonite University students photographed Cow Knob Salamanders in the Signal Corps Knob area of Shenandoah Mountain, within the vicinity of the pipeline route in October 2014, providing evidence that healthy populations are present. See photos at:
https://www.flickr.com/photos/stevendavidjohnson/galleries/72157649390492841/

If built, the Atlantic Coast Pipeline would bisect an area with known populations of Cow Knob Salamander, creating an uncrossable barrier that would isolate populations and cut off genetic exchange. Habitat fragmentation and deforestation from construction and maintenance of a permanent pipeline corridor would further endanger this sensitive species, found nowhere else on earth.

Dominion Resources has not offered a single alternative route that avoids known Cow Knob Salamander habitat on Shenandoah Mountain. The proposed route over Shenandoah Mountain violates the Conservation Agreement and the GWNF Management Plan. We think it would be very hard to make the case that a high impact utility corridor of this size and magnitude could only be built through this sensitive habitat. It is clear to us that the Conservation Agreement obligates both the Forest Service and U.S. Fish and Wildlife Service to employ strong protection measures to ensure the survival of the Cow Knob Salamander.

If the Conservation Agreement does not effectively achieve the goal of securing and protecting the Cow Knob Salamander within its known and potential range from the logging, roadbuilding, forest fragmentation and deforestation related to construction and maintenance of the ACP, then it seems likely that interested parties will pursue federal listing under the Endangered Species Act.

We request that FERC deny Dominion Resources application or insist they develop an alternative route that does not

- fragment Cow Knob Salamander habitat and
- degrade scenic, recreational, and water resources on Shenandoah Mountain.

We see no justification for a new corridor through special habitat and would prefer to see Dominion use existing rights-of-way, if the pipeline is deemed necessary.

Thank you for the opportunity to comment.

Sincerely,

Lynn Cameron
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Attachments:

FOSM letter to FERC, Nov. 13, 2014
Conservation Agreement, 1994
Excerpts from 2014 GWNF Plan
Harris letter to U.S. Fish and Wildlife Service, April 18, 2015

- Map: CKS on Shenandoah Mountain south of Rt. 250
- Map: CKS on Elliott Knob and Crawford Mountain
- Map: ACP in relation to CKS occurrences

CONSERVATION AGREEMENT
FOR THE
COW KNOB SALAMANDER

The signatory parties to this agreement affirm the mutual goal of securing and protecting the Cow Knob (white-spotted) salamander (*Plethodon punctatus*) within its known and potential range in the states of Virginia and West Virginia. To attain this goal, these parties further agree to implement the actions delineated in the Cow Knob Salamander Habitat Conservation Assessment (Assessment) to conserve this species and its occupied and potential habitat on the George Washington National Forest (Forest). A Conservation Team (Team) with representatives from the Virginia Department of Game and Inland Fisheries, Virginia Division of Natural Heritage, West Virginia Department of Natural Resources, U.S. Fish and Wildlife Service, and U.S. Forest Service will advise the Forest on the implementation of the Assessment and management of the Cow Knob salamander's habitat. The Conservation Assessment, the standards delineated in the George Washington National Forest Land and Resource Management Plan, and the advice of the Team have as their goal ensuring the long-term viability of the salamander on the Forest. The U.S. Forest Service has designated nearly the entire area supporting the salamander as the Shenandoah Mountain Crest - Special Interest Area (SMC-SIA) and will develop an Individual Implementation Schedule for this area. Until the Individual Implementation Schedule is developed and implemented for this area, the management of the salamander will be governed by the management measures set forth in the Assessment (see attached Summary) and by the following:

1. In order to evaluate the effectiveness of this program and the stability of the Cow Knob salamander's populations, a long-term monitoring program will be designed with the input of the Team and initiated no later than FY '95.

2. The areas surrounding the SMC-SIA will be subject to activities that may be detrimental to salamanders or their habitat, and where appropriate, surveys will be conducted to determine the presence of salamanders. If salamanders are found in these areas, they will be subject to the same management measures as the SMC-SIA.

3. The Team will review proposed research and management activities that may affect the Cow Knob salamander or its habitat on the Forest, oversee implementation of actions delineated in the Assessment and otherwise aid in achieving the conservation of this species.

4. The U.S. Forest Service will provide project data, survey results, and biological information concerning proposed activities as early in the planning process as possible. In turn, the Team will review and provide recommendations and opinions as expeditiously as possible. The Team will evaluate all proposed activities that could be detrimental to the salamander or its habitat and render such opinions that will be considered and made part of the public record by the U.S. Forest Service in its decision-making process as to whether to proceed with a given activity.

5. Following the development of a draft Individual Implementation Schedule for the SMC-SIA by the U.S. Forest Service, it will be provided to the Team for review. The Team's recommendations will be utilized by the U.S. Forest Service in the development of the final document.

The U.S. Forest Service agrees to carry out these management measures to the best of its ability with the assistance of the Team and the U.S. Fish and Wildlife Service. Provided that this is done, it is expected that populations of this candidate salamander will be stabilized or enhanced so that listing this species as threatened or endangered under the Endangered Species Act will be unnecessary.

Supervisor, Chesapeake Bay Field Office
U.S. Fish and Wildlife Service

1/25/94
Date

Forest Supervisor
George Washington National Forest
U.S. Forest Service

1/25/94
Date

Conservation Assessment - Management Measures

1. Habitat Maintenance and Enhancement - Cow Knob salamander populations reach their highest population densities in older age hardwood forests above the 3,000 foot elevation. Forest stand structure and composition in this area should be allowed to develop into a condition of old growth through protection from timber management and other forms of habitat alteration that would affect the forest community by decreasing stand age. Removal of cover objects that retain moisture will not be permitted. Removal of non-native vegetation and species limiting growth of hardwoods may be appropriate management measures.

2. Protection from Take - The Cow Knob salamander must be actively protected against taking and killing by humans, except for specified scientific purposes. Such purposes include research on its ecology and systematics that will directly benefit the long-term protection of this species. Even for these purposes, specific permission from the U.S. Forest Service will be required. Collection of specimens for educational display and captive breeding should be discouraged.

3. Training for U.S. Forest Service and State Personnel - George Washington National Forest biologists and other appropriate personnel, especially those in the Dry River Ranger District, should be trained on the biology, habitat, threats, and management of the Cow Knob salamander by knowledgeable personnel. Workshops should be conducted as needed, especially as a result of changing personnel.

4. Education and Interpretation - The natural history of a secretive animal such as the Cow Knob salamander should be an important part of an educational package based on all aspects of the Shenandoah Mountain Crest Special Interest Area. Brochures, booklets, media reviews, etc., could provide much needed outlets for general information on management procedures and natural history of all the sensitive species in this area. This also offers an opportunity to educate the general public about the importance of conservation efforts on behalf of the forest's biodiversity and of the many uses of the forest itself. People should also be made aware of the rarity of the salamander, its habitat, and the fragility of the community so that they may be more aware of the impact of their activities.

Revealing exact locations of Cow Knob salamander populations to anyone should be avoided, however, except to those persons who need to know for valid conservation or scientific purposes.

5. Fire Control and Prescribed Burns - The role of fire in maintaining some natural communities is recognized, as is the importance of fire control. Fire control efforts will use the least impact methods available to control the fire. The effect of fire on Cow Knob salamander populations is unknown and needs to be evaluated. However, it is apparent that fires have occurred across the SMC-SIA at various times and Cow Knob salamanders now occur in areas which have burned in the recent past. Potential effects of prescribed fire should be evaluated during the development of the necessary environmental documentation. Generally however, fires occur predominately on drier sites where the Cow Knob salamander is absent. Therefore, controlled burns on dry sites supporting rare plants and unique natural communities appear to be compatible with salamander conservation.

6. Integrated Pest Management - In general, forest insect and disease outbreaks should not be controlled within the SMC-SIA except where lack of control might adversely affect Cow Knob salamander populations. If control of pest insects and diseases in the SMC-SIA is warranted at all, it shall consist of the least deleterious methods available. Biological control measures are favored over chemical measures. Chemical pesticides are to be avoided. The secondary effects of any control method proposed for use should be evaluated for their impacts on the salamander and its microhabitat before its implementation. Caution should be taken when introducing natural enemies of the target pest species. The introduced control species must not affect any aspect of the natural prey base of the Cow Knob salamander or in some way affect other sensitive species. Studies of gypsy moth impacts and control measures appear to be one of the most immediate research needs for this salamander.

Land Ownership - The SMC-SIA is to be retained in Federal ownership, and it, or any parts thereof, are unavailable for exchange. Non-Federal inholdings that contain Cow Knob salamander populations should be identified and acquired, wherever possible.

8. Minerals - The area encompassing the range of the Cow Knob salamander is available for oil and gas leasing with controlled surface use stipulations, and for common variety minerals on a case-by-case basis. Availability depends on the nature and degree of disturbance planned. Significant disturbances of the surface are not compatible with the long-term survival of the Cow Knob salamander and will not be allowed. Special stipulations will be used to protect Cow Knob salamander habitat and populations. These stipulations are subject to approval by the Cow Knob salamander team. The area is not available for other leasable minerals, such as iron, coal, and tin.

9. Range - Grazing of domestic livestock in the SMC-SIA is not consistent with the maintenance of forested habitat appropriate for the Cow Knob salamander and will not be allowed.

10. Recreation - Low-impact (dispersed) recreational uses of the SMC-SIA are compatible with the long-term protection of the Cow Knob salamander. These include hiking, hunting, backpacking, picnicking, photography, wildlife study, and non-motorized biking. Existing trails and roads should be used for access to specified areas for these activities. New trails may be constructed if no adverse effect on Cow Knob salamander populations will occur, as determined by the Cow Knob salamander team.

    Motorized vehicular (OHV) access should be limited to existing areas designated for that purpose.

11. Roads - Existing roads may be maintained, and motorized travel should be limited to open road systems. Construction of new roads of any kind is not permitted in the SMC-SIA. Such new construction would directly destroy salamander habitat, create additional habitat fragmentation, and increase forest edge.

    Road maintenance actions should be reviewed for their impacts on natural habitat, and efforts coordinated between U.S. Forest Service maintenance crews and U.S. Forest Service biologists. Reconstruction, minor relocation, and parking facilities may be permitted provided these activities do not negatively impact Cow Knob salamander populations and habitats.

12. Timber - With the limited exception noted in measure 15, timbering operations in the SMC-SIA are inconsistent with the long-term goals of protection of the Cow Knob salamander. The SMC-SIA shall be classified as unsuitable for timber production. Cutting of insect damaged, wind thrown, and fire-killed trees which pose a safety or maintenance concern, may be conducted only within 100 feet of the center of existing open roads. Non-commercial firewood cutting may be permitted within this same corridor, but only following salamander surveys indicating that the area is not of significance to the Cow Knob salamander.

13. Vegetation - Management of vegetation in the SMC-SIA should be minimal, allowing natural processes to work wherever possible. Exceptions may be allowed when the forest in the SMC-SIA is adversely affected by introduced organisms (see Integrated Pest Management, above), in habitats maintained by periodic disturbances, such as fire, which no longer occur at natural frequencies, or for wildlife management in areas classified as unsuitable habitat for Cow Knob salamanders, based on salamander survey results (see below). Such exceptions shall be approved in writing by the U.S. Fish and Wildlife Service in coordination with the Conservation Team. Herbicides may be used to control or eliminate exotic and invasive plant species

whose presence is inconsistent with the long-term protection of Cow Knob salamander habitat. Aerial spraying over broad areas for vegetation control should be avoided if possible. Chemicals toxic to salamanders, their prey, or their habitat are to be avoided.

Where active vegetation management can occur, natural plant species are preferable to non-native species.

14. Utility and Transportation Corridors - Because corridors of any size will fragment Cow Knob salamander habitat and isolate populations on either side, new utility corridors must be sited around the SMC-SIA. When opportunities exist, utility corridors should be closed and allowed to revegetate naturally.

15. Wildlife - Wildlife management for selected species will be unaffected except for activities that require the alteration of Cow Knob salamander habitat. Removal of hardwood stands, such as in the creation of openings, is inconsistent with long-term management of salamander populations. Such openings directly impact salamanders and create additional edge effects. Existing and replacement wildlife improvements may be maintained only if their presence does not adversely affect Cow Knob salamander habitat.

Hunting is an acceptable practice in the SMC-SIA. The creation of new edge habitat for management of game species should be minimized, and is allowed as a wildlife management tool only in areas of habitat unsuitable for the Cow Knob salamander.

Atlantic Coast Pipeline
Impact on
Cow Knob Salamander Habitat

Excerpts taken from 2014 GWNF Management Plan

Chapter 4 Design Criteria

8E7 - SHENANDOAH MOUNTAIN CREST

Nearly the entire known range of the Cow Knob salamander (Plethodon punctatus) occurs on the George Washington National Forest. This area is located on the North River Ranger District along the crest of Shenandoah Mountain and Great North Mountain, largely above 3,000 feet elevation. Cow Knob salamanders typically reach their highest population densities in older age hardwood forests with abundant large down wood and rock. The U.S. Fish and Wildlife Service and the George Washington National Forest were the first federal agencies in the Nation to enter into a Conservation Agreement in 1994, under a multi-agency Memorandum of Understanding, designed to keep an at-risk species from needing to be listed under the Endangered Species Act. This Conservation Agreement, and accompanying Habitat Conservation Assessment, serves as the guide for management of the Cow Knob salamander. There are approximately 24,000 acres allocated to this management prescription area. Another 23,000 acres of the area established in the Conservation Agreement are located within the recommended National Scenic Area and about 11,000 acres are allocated to Wilderness, Recommended Wilderness Study or Research Natural Areas. A variety of threatened, endangered, and sensitive species and unique natural communities occur on Shenandoah Mountain. This includes at least 15 species of plants and 13 species of animals plus their associated habitats. This area includes the following Virginia Division of Natural Heritage Conservation sites: Cow Knob, Laurel Run, Middle Mountain, and portions of Bother Knob/High Knob, Little Bald Knob, and Reddish Knob.

EMPHASIS

This large area is managed to protect and/or enhance habitat for the Cow Knob salamander and for other outstanding natural biological values. The protection, maintenance and restoration of species, natural communities and ecological processes are the primary objectives. Management of the biological resources coexists with dispersed recreation activities as well as other wildlife management activities that are compatible.

DESIRED CONDITIONS FOR 8E7 - SHENANDOAH MOUNTAIN CREST

DC 8E7-01: Vegetation types influenced by the natural environmental and ecological processes dominate the landscape. Restoration and maintenance of certain vegetation communities are permitted through prescribed burning or other proven means of controlling natural succession. Inholdings and adjacent lands are acquired

as opportunities arise and are considered a priority for acquisition.

DC 8E7-02: Within this area, habitats are managed to maintain or enhance Cow Knob salamander populations and populations of other threatened, endangered, sensitive, and locally rare (TESLR) species, including the Shenandoah Mountain salamander. The landscape character of this area generally consists of a closed forest canopy of late-successional stages of mixed hardwoods on upper slopes combined with coves and riparian areas with eastern hemlock, tulip poplar, and rhododendron thickets. Within this matrix of mostly closed canopy forest is a mosaic of dry oak and yellow pine woodlands in a wide variety of successional stages and structural conditions, with a south to west aspect. Abundant ground cover in the form of rocks, down and decaying logs, and leaf litter are maintained and restored. Open grassy, shrubby areas and areas without vegetation, like roads, trails, and utility rights-of-way are minimized, except where desired for certain TESLR species and ecological systems. The landscape of the area retains a natural, forested appearance, and the valued character of the natural evolving landscape is intact with no noticeable deviations. The mix of forest communities varies by landtype association, including mixed mesophytic and mesic oak hickory forests dominated by red, white, chestnut, and black oaks, as well as tulip poplar, sugar and red maples, and hemlocks. The overstory is generally closed in forested conditions with minimal sunlight reaching the forest floor; however, naturally occurring brushy and herbaceous openings may occasionally be found. Natural processes eventually result in a large patch old growth forest matrix throughout much of the area. Cavity trees, standing dead trees, and down logs are common throughout the entire area as a result of natural mortality combined with gypsy moth killed trees. All forested blocks are interconnected by corridors which themselves have a continuous forest cover. Wildlife species associated with area-sensitive mid- to late-successional deciduous forest habitats are expected to inhabit this area. 2

DC 8E7-03: This habitat conservation area is unsuitable for timber production and commercial timber harvest. Removal of non-native vegetation is considered appropriate. Sufficient canopy trees and large woody debris on the forest floor are maintained to reduce drying of subsurface soils. Biological pesticide controls of gypsy moth, hemlock woolly adelgid, and other detrimental species are permitted with full consideration of the effects on the salamanders, TESLR species, their microhabitat, and their prey.

DC 8E7-04: The role of fire in maintaining some natural communities within this area is recognized as an important management tool. Management will include prescribed fire and wildfires on drier sites supporting rare plants and unique natural communities, including woodlands. Generally, fires occur predominately on drier sites where the Cow Knob salamander is absent. Therefore, fires on dry sites supporting rare plants and unique natural communities appear to be compatible with salamander conservation. Wildfires are managed under conditions to create or maintain habitat needed by TESLR species and rare communities where

appropriate. Fire suppression efforts will use the least impact methods available to manage the fire.

DC 8E7-05: Low-impact (dispersed) recreational uses of the area are compatible with the long-term conservation of the Cow Knob salamander. These include hiking, hunting, backpacking, picnicking, photography, and wildlife study. Existing trails and roads are used for access to specified areas for these activities, although decommissioning of existing roads may occur. Mountain bike and horse riding occur only on designated roads and trails. The Cow Knob salamander is actively protected against collection and killing, except for specified scientific purposes. Limited access is provided through portions of the area on Forest Service and State roads with gravel, native, and occasionally paved surfaces. The opportunity to encounter other visitors is high along the roads and at parking areas, pull-outs, and overlooks. Forest visitors on foot, horse, or bicycles experience solitude in portions of this prescription area away from roads. Comfort, sanitation, and camping facilities on Forest Service lands are not provided, although primitive camping can be enjoyed throughout the area. During most of the year, occasional encounters with other forest visitors can be expected; however these encounters are more frequent during spring and fall hunting seasons. Visitors to this area see examples of the natural communities of Shenandoah Mountain. This includes various old growth forest types as well as a mosaic of grass and fern dominated openings with scattered trees along the very crest of Shenandoah Mountain. Dispersed recreation opportunities are provided when in harmony with the special biological values of the area. Mountaintop vistas such as Reddish Knob Observation Site and Flagpole Knob provide sweeping views of the Shenandoah Valley.

DC 8E7-06: Management activities limit negative impacts to Cow Knob salamander populations from permanent and long-term fragmentation, isolation, and edge effects (such as drying from increased insolation, impacts from edge predators, invasion of non-native invasive plants, and increased competition from other salamander species). No new permanent roads are constructed. Restoration of canopy and cover along temporary and decommissioned roads occurs quickly. Canopy closure along road rights-of-way is common.
New trails may be constructed if no adverse effect on Cow Knob salamander populations will occur. Trail and road reconstruction, minor relocation, and new parking facilities are permitted. All activities are conducted with full consideration of effects on Cow Knob salamander populations.

STANDARDS FOR 8E7 - SHENANDOAH MOUNTAIN CREST
Terrestrial and Aquatic Species
8E7-001 Watershed improvement projects are developed and implemented on areas where erosion is human-caused, but not normally undertaken in response to natural processes occurring on the area.

8E7-002 Maintenance or creation of wildlife habitat improvements is allowed except for those activities that would negatively impact Cow Knob salamander habitat.

8E7-003 The creation of new edge habitat for management of game species should be minimized, and is allowed as a wildlife management tool only in areas of habitat unsuitable for the Cow Knob salamander.

8E7-004 Vegetation may be manipulated for the management of the biological values identified as well as threatened, endangered, or sensitive species and their habitat.

Vegetation and Forest Health

8E7-005 Native forest insect and disease outbreaks are controlled only to prevent unacceptable damage to resources on adjacent land or to protect threatened, endangered, sensitive, or locally rare species. Non-native, invasive insects and diseases may be eradicated or suppressed to prevent a loss of the special biological community. Favor biological control methods.

8E7-006 Control or eradicate non-native invasive plants using hand-applied herbicides, with Forest Supervisor approval, when necessary.

8E7-007 Control non-native invasive animals, insects, and diseases where they are causing negative effects to rare communities. Do not introduce non-native species in or near rare communities, unless it is a natural enemy of a non-native pest.

Timber Management

8E7-008 These lands are classified as unsuitable for timber production.

8E7-009 Salvage of dead or dying trees using ground-based systems may occur for safety or scenic rehabilitation along open road systems.

8E7-010 Cutting of insect damaged, wind thrown, and fire killed trees which pose a safety or maintenance concern, may be conducted within 100 feet of the center of existing open roads. Non-commercial firewood cutting may be permitted with this same corridor, but only following salamander surveys indicating the area is not of significance to the Cow Knob salamander.

Non-timber Forest Products

8E7-011 Do not permit the collection of non-timber forest products, except for scientific purposes as permitted by the Forest Supervisor.

Wildland Fire Management

8E7-012 Vegetation management may be accomplished with wildland fire management.

8E7-013 New plow lines for containing prescribed burns in or near bogs and seasonal ponds are prohibited to avoid disrupting hydrology. Use existing roads, firelines, or streams to contain burns where possible. Favor construction of new firelines by using less intensive methods such as wetline, handline, and cutting back flashy fuels. Heavy mechanized equipment (e.g. bulldozers and tractors) may be used only if compatible with the values for which the management prescription area was created.

Recreation
8E7-014 Modify recreation sites or trails to reduce or eliminate negative effects where recreational uses are negatively affecting threatened, endangered, sensitive, and locally rare species. New and improved recreational developments are designed to avoid adverse effects to threatened, endangered, sensitive, and locally rare species.

8E7-015 These areas are unsuitable for designation as All-Terrain Vehicle use areas.5

8E7-016 Where appropriate, interpretive services (trails, signs, viewing areas) are provided to enhance visitors' understanding and appreciation of the area's special values.

8E7-017 Trails and other recreation facilities are located to minimize impacts occurring to the natural values of the established area.
8E7-018 Vistas and associated turn-outs may be maintained or increased where compatible with biological values.

Scenery
8E7-019 All management activities will meet or exceed a Scenic Integrity Objective of High.

Minerals
8E7-020 These areas are suitable for federal oil and gas leasing with a no surface occupancy stipulation to protect threatened, endangered, sensitive, and locally rare species. Other Federal minerals may be available on a case-by-case basis after full consideration of effects on threatened, endangered, sensitive, and locally rare species.

8E7-021 Permit mineral materials for commercial, personal, free, and administrative use purposes with conditions to protect threatened, endangered, sensitive, and locally rare species habitat.8E7-022 Private mineral rights exist in some of these areas. Roads, wells, and other necessary infrastructure associated with these rights are allowed. Requests for access to a non-Federal interest in lands pursuant to a reserved or outstanding right are recognized, and reasonable access is granted. Encourage such interests to minimize disturbance to threatened, endangered, sensitive, and locally rare species habitat.

Roads
8E7-023 Only permit road construction to access valid existing rights and mineral leases.

8E7-024 Existing roads may be maintained. Construction of new roads of any kind is not permitted in the
management prescription area.

8E7-025 Reconstruction, minor relocation and construction of parking facilities are permitted where compatible with biological values.

Lands and Special Uses
8E7-026 These areas are unsuitable for designation of new utility corridors, utility rights-of-way, or communication sites unless there is an over-riding demonstrated public need or benefit. Existing uses may continue unless removal is necessary to protect threatened, endangered, sensitive, and locally rare species.

8E7-027 These areas are unsuitable for wind energy development.

8E7-028 Allow commercial use by outfitters and guides if compatible with preservation of the rare community values. Contest events such as foot races or horseback endurance events are generally discouraged, but can be considered on a case-by-case basis. Require outfitters and guides to use leave-no-trace techniques. Do not allow permanent camps.

8E7-029 Vegetation within existing corridors is maintained in a grass/shrub type by mowing, hand cutting
or use of selective herbicide treatments.6

Additional Direction
8E7-030 The following standards will apply to the portion of the Shenandoah Mountain Crest within the Shenandoah Mountain Remote Backcountry Area as displayed in Appendix I. Timber may be cut, sold, or removed if one of the following circumstances exists. The cutting, sale, or removal of timber in these areas is expected to be infrequent.
(1) The cutting, sale, or removal of generally small diameter timber is needed for one of the following purposes and will maintain or improve one or more of the remote area characteristics;
(i) To improve threatened, endangered, proposed, or sensitive species habitat; or
(ii) To maintain or restore the characteristics of ecosystem composition and structure, such as to reduce the risk of uncharacteristic wildfire effects, within the range of variability that would be expected to occur under natural disturbance regimes of the current climatic period;
(2) The cutting, sale, or removal of timber is incidental to the implementation of a management activity not otherwise prohibited; or

(3) The cutting, sale, or removal of timber is needed and appropriate for personal or administrative use.

Roads may not be constructed or reconstructed unless:
(1) A road is needed to protect public health and safety in cases of an imminent threat of flood, fire, or other catastrophic event that, without intervention, would cause the loss of life or property;
(2) A road is needed to conduct a response action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to conduct a natural resource restoration action under CERCLA, Section 311 of the Clean Water Act, or the Oil Pollution Act;
(3) A road is needed pursuant to reserved or outstanding rights, or as provided for by statute or treaty;
(4) Road realignment is needed to prevent irreparable resource damage that arises from the design, location, use, or deterioration of a system road that cannot be mitigated by road maintenance. Road realignment may occur under this paragraph only if the road is deemed essential for public or private access, natural resource management, or public health and safety;
(5) Road reconstruction is needed to implement a road safety improvement project on a system road determined to be hazardous on the basis of accident experience or accident potential on that road;
(6) The appropriate decision-maker determines that a Federal Aid Highway project, authorized pursuant to Title 23 of the United States Code, is in the public interest or is consistent with the purposes for which the land was reserved or acquired and no other reasonable and prudent alternative exists; or
(7) A road is needed in conjunction with the continuation, extension, or renewal of a mineral lease on lands that are under lease or for a new lease issued immediately upon expiration of an existing lease. Such road construction or reconstruction must be conducted in a manner that minimizes effects on surface resources, prevents unnecessary or unreasonable surface disturbance, and complies with all applicable lease requirements, land and resource management plan direction, regulations, and laws. Roads constructed or reconstructed pursuant to this paragraph must be obliterated when no longer needed for the purposes of the lease or upon termination or expiration of the lease, whichever is sooner.

Also in Chapter 4: Design Criteria:

COW KNOB SALAMANDER MANAGEMENT
FW-45 If Cow Knob salamanders are found in areas outside the Shenandoah Mountain Crest management prescription area, those areas will be subject to the same management measures as described in the Shenandoah Mountain Crest Management Prescription Area 8E7.

JAMES MADISON UNIVERSITY

18 April 2015

Mr. John Schmidt
Project Leader
U.S. Fish & Wildlife, West Virginia Field Office
694 Beverly Pike
Elkins, WV 26241

Ms. Cindy Schultz
Field Supervisor
U.S. Fish & Wildlife, Virginia Field Office
6669 Short Lane
Gloucester, VA 23061

Dear Mr. Schmidt and Ms. Schultz:

I am writing to inform you of a survey for Cow Knob Salamanders (*plethodon punctatus*) done by my research team in 2008 showing occurrences on Shenandoah Mountain south of Rt. 250 and on Great North Mountain on the crest of both Elliott Knob and Crawford Mountain. These data collected by me and my lab group, with assistance from Fred Huber of the GWNF, extend the range of the Cow Knob Salamander on Shenandoah Mountain as far south as Benson Run and Gwyn Mountain. I am calling your attention to this survey data because the proposed Atlantic Coast Pipeline would pass through this area between Signal Corps Knob and Benson Run. We also found occurrences on Elliott Knob along the original route of the Atlantic Coast Pipeline before it was rerouted to the north over Hankey Mountain.

As you know, the Cow Knob Salamander is a woodland salamander with a very narrow range. It is found primarily on talus slopes in old growth hardwood sites, mostly on Shenandoah Mountain in Virginia and West Virginia between 2,400 and 4,300 feet in elevation. Nearly the entire range of the Cow Knob Salamander lies within the George Washington National Forest. Threats include logging, road building, forest fragmentation, and deforestation. My research team has found that roads have a negative impact on Cow Knob Salamanders. If the ACP is built through this area with known populations, it would very likely create a permanent un-crossable barrier that would isolate populations and cut off genetic exchange.

It is my understanding that the 1994 Conservation Agreement signed by U.S. Fish & Wildlife and the George Washington National Forest applies not only to the Shenandoah Mountain Crest Special Interest Area, which encompassed almost all of the Cow Knob Salamander habitat known at the time the agreement was signed, but also to new areas where Cow Knob Salamanders are found. I want to be sure you are aware of these data as you evaluate the potential impact of the pipeline on this species of concern. That agreement expressly recognizes the risks that new utility corridors pose for this species.

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540.568.6225 Phone
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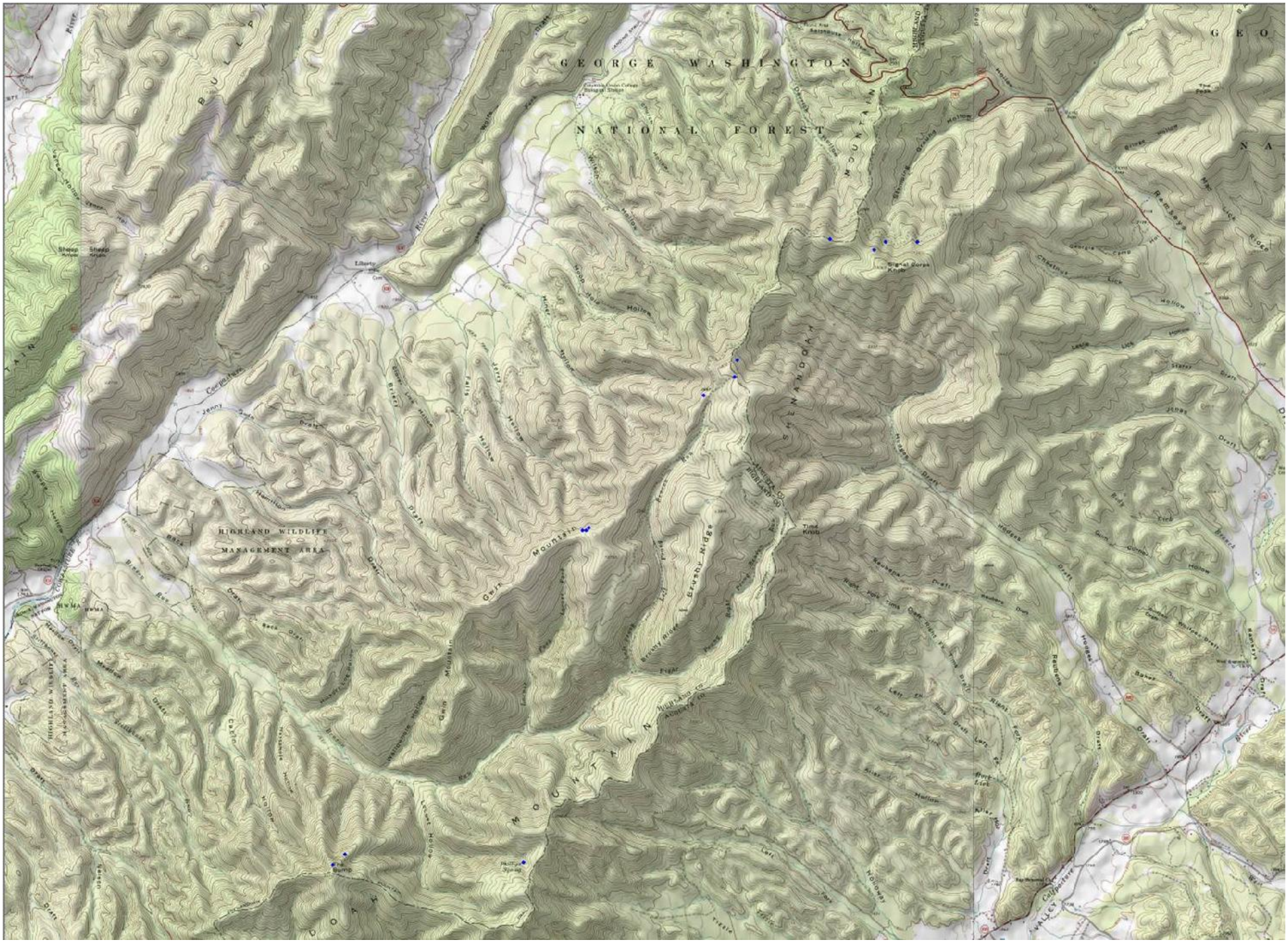
I have attached two survey maps: Shenandoah Mountain South and Elliott Knob/Crawford Mountain along with a map showing the Atlantic Coast Pipeline in relation to survey data on Shenandoah Mountain.

Thank you.

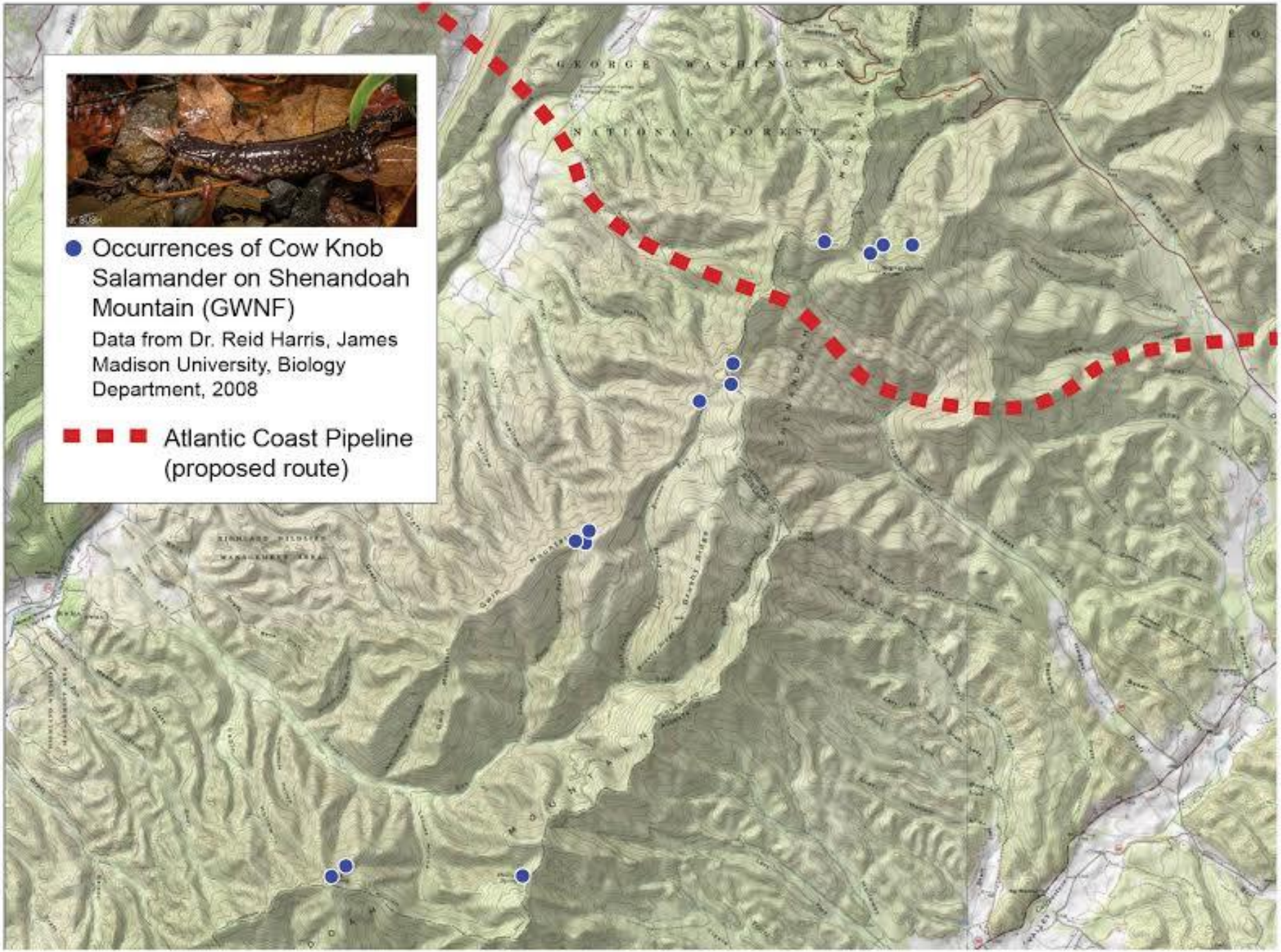
Reid Harris

Dr. Reid Harris
Professor of Biology



CKS on Shenandoah Mountain South of US 250

CKS on Elliot Knob and Crawford Mountain



Cow Knob Salamander Occurrences and ACP Proposed Route