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June 16, 2015

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

**RE:** Docket No. PF15-3-000; Notice of Intent to Prepare an Environmental Impact Statement for the Mountain Valley Pipeline Project and Request for Comments on Environmental Issues.

Dear Ms. Bose:

On behalf of our colleagues at The Nature Conservancy, thank you for the opportunity to provide comments on the scope of the issues to be addressed within the Environmental Impact Statement (EIS) that will be prepared for the Mountain Valley Pipeline (MVP). These comments are submitted on behalf of The Nature Conservancy state programs in Virginia, and West Virginia as well as the Conservancy's Central Appalachian Whole System Projects.

## The Nature Conservancy's Mission and Investment in the Mid-Atlantic

The mission of The Nature Conservancy is to conserve the lands and waters on which all life depends. The Conservancy is a leading conservation organization working in all 50 states and more than 35 countries. We have helped conserve nearly 15 million acres of land in the United States and more than 118 million acres with local partner organizations globally.

The proposed route of the MVP crosses through the Central Appalachian Whole System Project, which is an area of deep investment for The Nature Conservancy. Within this region, The Conservancy has worked with public agencies, corporations, private landowners, and local communities to undertake land protection, management, and restoration actions across public and private lands. We have worked with others to rigorously develop and implement strategies to protect the best large, intact habitats that will continue to support a diversity of species, in the face of a changing landscape and a changing climate.

The Central Appalachians Whole System Project was formed to provide organizational capacity

to deal with large-scale threats to natural systems that cross state borders and boundaries. For the Central Appalachians, these threats include energy development-related impacts, management of public and private lands incompatible with biodiversity conservation, and the mounting pressure of climate change. The program strives to provide integrated conservation actions that abate such threats and ensure effective conservation of priority places.

Spanning six states, from central Pennsylvania to northeastern Tennessee, the Central Appalachians are home to one of the most diverse deciduous forests on earth and shelter one of the richest concentrations of endemic plants and animals in North America. The headwaters of the Ohio and Tennessee Rivers – the most diverse river system in North America - emerge here, as do those of the major tributaries to the Chesapeake Bay. The boundaries of the

Central Appalachian Whole System encompass one of the three major eastern cave regions which together are a global center of cave species diversity (Christman et al. 2005). In total, this area represents one of the foremost examples of intact, diverse, temperate deciduous forests, and well-connected freshwater systems in the world.

A key partner in conservation efforts in the Central Appalachians is the USDA Forest Service, which manages 3.1 million acres in the whole system including the largest intact forests east of the Mississippi. The proposed route of the MVP crosses the George Washington and Jefferson National Forests with which we are actively working on several landscape scale projects including: management of forest invasives, pests and pathogens; restoration of fire-adapted ecosystems; and restoration of key habitats for neotropical migratory birds and forest-dwelling bats.

## Take a Programmatic Approach to Pipeline Review

As stated in FERC's Notice of Intent (NOI) "The MVP Project would involve the construction and operation of about 294 miles of 42-inch-diameter buried steel pipeline in Wetzel, Harrison, Doddridge, Lewis, Braxton, Webster, Nicholas, Greenbrier, Fayette, Summers, and Monroe Counties, West Virginia and Giles, Montgomery, Roanoke, Franklin, and Pittsylvania Counties in Virginia. The pipeline would originate at Equitrans, L.P.'s existing transmission system in Wetzel County, West Virginia and terminate at the existing Transcontinental Gas Pipeline Company LLC's existing Zone 5 Compressor Station 165 in Pittsylvania County, Virginia."

In its pre-filing letter, Mountain Valley Pipeline, LLC indicated their desire to commence construction activities in January 2017.

In addition to the MVP, The Conservancy is aware of three other pipeline projects in the region:

1) Atlantic Coast Pipeline, LLC, has pre-filed with FERC for a Certificate of Public Convenience and Necessity to construct and operate the proposed **Atlantic Coast Pipeline Project**, which would involve the construction and operation of 554 miles of variable diameter natural gas pipeline in West Virginia, Virginia, and North Carolina, including: an approximately 295.6 mile segment of 42-inch-diameter pipeline; an approximately 179.9 mile segment of 36-

inch-diameter pipeline; an approximately 75.7 mile segment of 20-inch-diameter lateral pipeline; and an approximately 3.1 mile segment of 16-inch-diameter natural gas lateral pipeline." In its pre-filing letter to FERC, the applicant indicated its desire to commence construction activities in the fall of 2016, and a planned in-service date in the fall of 2018.

2) Columbia Gas Transmission, LLC has pre-filed with FERC for a Certificate of Public Convenience and Necessity to construct and operate the proposed **WB XPress Project**. The WB XPress Project would involve the construction and operation of approximately 30 miles of various diameter pipeline, modifications to seven existing compressor stations, construction of two new compressor stations, and uprating the maximum allowable operating pressure on various segments of the WB pipeline system. All project components would be located in West Virginia and Virginia. The stated purpose of the project is to provide an additional 1.3 billion cubic feet per day of capacity for bi-directional firm transportation service to markets in western West Virginia and northern Virginia. In its pre-filing letter, Columbia has requested that FERC staff review the Project on a timeline that allows for construction activities to commence in early 2017.
3) On its company website, Williams has announced that it is in the preliminary planning stages for the **Appalachian Connector** project (formerly called the Western Marcellus project). Williams is in the early stages of performing desktop analysis to identify a study area for the potential route, which would extend from the Rockies Express pipeline near Clarington, Ohio, and Williams Oak Grove processing plant in Marshall County, West Virginia, to Transco's compressor station 165 in Chatham, Virginia. This project is an expansion of the Transco pipeline designed to move up to 2 billion cubic feet of natural gas per day by late 2018.

Each of these four projects is designed to transport shale gas from the Utica and Marcellus plays to customers in the eastern and southeastern U.S. and each must in some manner cross the rugged and ecologically sensitive terrain of the Appalachian Mountains. In light of the similarities in purpose, nature of environmental concerns, and timeline among these projects, and in order to meet the requirement that FERC consider cumulative impacts, The Nature Conservancy strongly urges FERC to consider the MVP, the Atlantic Coast Pipeline, the WB XPress Project, and the Appalachian Connector under a Programmatic Environmental Impact Statement (PEIS) that would simultaneously consider the purpose and need of each project, the cumulative impacts of these projects on the Central Appalachian Region, and the optimal combination and alignment of pipelines to deliver gas from the Marcellus and Utica shale gas plays to eastern and southeastern markets. Our request is consistent with the Council on Environmental Quality (CEQ) Guidance on "Effective use of Programmatic NEPA Reviews" issued on December 18, 2014, which states that a programmatic NEPA review may be appropriate when an agency is approving multiple actions, for example "Several similar actions or projects in a region."

A Programmatic and tiered NEPA review is clearly the most efficient means by which to conduct cumulative assessments of impacts from the suite of recently proposed projects and from additional pipelines that are a reasonably foreseeable result of the presence of a large reservoir of

natural gas in the Marcellus and Utica formations and limited supply in the southeastern U.S. Again, as stated in the CEQ Guidance, "one advantage of preparing a programmatic NEPA review for repetitive agency activities is that the programmatic NEPA review can provide a starting point for analyzing direct, indirect, and cumulative impacts. Using programmatic NEPA reviews allows an agency to subsequently tier to this analysis, and analysis narrower, site- or proposal specific issues. This avoids repetitive broad level analyses and provides a more comprehensive picture of the consequences of multiple proposed actions."

Analysis of different alignments and alternatives from multiple pipelines would also streamline evaluation consistent with George Washington and Jefferson National Forest land and resource management plan direction for special use authorizations and utility corridors to: "Locate uses where they minimize the need for additional designated sites and best serve their intended purpose. Require joint use on land when feasible."

Such a process also affords FERC a transparent and streamlined opportunity to evaluate the total demand for gas that infrastructure will be needed to meet. The Nature Conservancy strongly recommends that FERC develop a Final PEIS for mid-Atlantic shale gas pipelines prior to the issuing of a Certificate of Public Convenience and Necessity for any of the proposed mid-Atlantic pipeline projects.

Development of such a programmatic approach should, we suggest, include the USDA Forest Service (USFS) U.S. Fish and Wildlife Service (FWS) and could be modeled on similar programmatic efforts, such as the PEIS for Solar Energy Development in Six Southwestern States (Solar PEIS) undertaken by The Office of Energy Efficiency and Renewable Energy (EERE), Department of Energy (DOE) and the Bureau of Land Management (BLM), Department of the Interior (DOI). The purpose of the Solar PEIS was to evaluate utility-scale solar energy development, develop and implement agency-specific programs or guidance that would establish environmental policies and mitigation strategies for solar energy projects, and to amend relevant BLM land use plans with the consideration of establishing a new BLM Solar Energy Program.

## Consider Cumulative impacts of Reasonably Foreseeable Actions

Cumulative impacts result from the incremental effect of the action when considered in light of other past, present, and reasonably foreseeable actions (40 C.F.R. §1508.7). Consideration of cumulative impacts allows for avoidance, minimization, and compensation for impacts that individually may be minor but over time and in concert with other activities may be significant.

In the absence of a PEIS, FERC should include in its analysis the pipeline routes cited above in the project specific analysis for the MVP. While we do not believe this is as efficient as undertaking a PEIS, this approach would allow evaluation of the cumulative impacts of multiple projects, as well as the cumulative need for each project.

## Take a Landscape Approach to Mitigation for the Proposed MVP

Landscape-scale application of the mitigation hierarchy (avoidance, minimization, and measures to offset or compensate) for energy and other infrastructure development is a focus of the President's Executive Order 13604 and the subsequent May 2013 Presidential Memorandum (PM) on "Modernizing Federal Infrastructure Review and Permitting Regulations, Policies, and Procedures." The PM identifies as a best management practice, "utilizing landscape- and watershed-level mitigation practices."

To fulfill our mission in the 21st century, The Nature Conservancy has made landscape scale application of the mitigation hierarchy a global priority which we implement through an approach called Development by Design (DbD). The science behind this approach is well-established and documented in the peer- reviewed literature (Kiesecker, et. al., 2009; Kiesecker, et. al., 2010). Through this approach we can provide a holistic view of how potential development conflicts with natural systems and the people, wildlife, and wildlife habitats that depend upon them. The Conservancy is working with partners to apply the full mitigation hierarchy to energy projects in areas as diverse as Australia, Colombia, Mongolia and the United States.

We believe that the MVP permitting process can utilize this framework by undertaking the following actions:

- Taking a landscape-scale approach to identifying priorities for avoidance, minimization, and compensatory mitigation;
- Observing the full mitigation hierarchy of avoiding, minimizing, and compensating for unavoidable impacts; and
- Taking full advantage of existing authorities to require compensation for critical resources.

## Priorities for Avoidance, Minimization, and Compensatory Mitigation along the Proposed MVP Pipeline Route

### *Areas of Conservation Investment and Critical Habitats*

We have previously written to NextEra Energy, to provide specific information regarding TNC preserves, easements, and conservation priorities that lie within a four-mile buffer of the route centerline, current as of September, 2014. Specifically we notified NextEra Energy that our assessments suggest that the pipeline project has the potential to intersect many sites identified as critical habitats for conservation including The Narrows Preserve which is owned and managed by The Nature Conservancy and was established to protect the world's only known population of the Federally Endangered Peters Mountain mallow (*Iliamna corei*). Ongoing conservation work including management of the mallow population on Peters Mountain and maintenance of an intact forest landscape setting for the species is a priority for the Conservancy.

The critical habitats potentially affected include cave and karst, and riparian habitats areas of high conservation significance to the biodiversity of the Central Appalachians. It is important to note that the term "Critical Habitats" is not used here in the same way as it is generally used by the U.S. Fish and Wildlife Service (FWS). Instead, The Conservancy has used this term for designated areas with high biodiversity value, consistent with the definitions of Critical Habitats as outlined in the International Finance Corporation Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources.

Critical Habitats include occurrences of Federally Listed Endangered or Threatened species, and endemic and/or restricted range species, as well as highly threatened and unique ecosystems, and areas associated with key evolutionary processes. The Conservancy's current delineation of Critical Habitats for the Central Appalachian Region is shown in Map 2, and can also be viewed and downloaded from our web map server.

The Nature Conservancy requested that NextEra Energy ensure the final preferred alternative for the Mountain Valley Pipeline avoids all preserves, easements and Critical Habitats for conservation. We were gratified to see that Proposed Alternative 1 shown in the December 2014 Draft Resource Report 10 would avoid the Narrows Preserve. However, this alternative would intersect TNC's Blake Preserve, and conservation easement within our Bottom Creek Gorge Conservation site, and two areas of critical intact forest habitat in the counties of Roanoke, Montgomery, Franklin and Floyd. Alternative 110, detailed in the alternatives update submitted in February 2015, would avoid all of the lands TNC owns or over which we have a conservation easement. We have not obtained shapefiles and have not evaluated the extent to which this route would avoid critical habitats, though with note with interest that the applicant indicates the route would avoid an area of karst terrain.

***Sites Resilient to Climate Change Impacts***

The Nature Conservancy has analyzed and reported (Anderson et al 2014, Anderson et al, 2012; see here for related work) on an approach to species conservation in the face of a changing climate that focuses on inherent site resilience. We use the term "site resilience" (modified from Gunderson 2000) to refer to the capacity of a site to adapt to climate change while still maintaining diversity and ecological function. We have sought to identify key areas for conservation across the Eastern U.S. based on land characteristics that increase diversity and resilience.

These characteristics fall into two categories. The first, landscape diversity, refers to the number of microhabitats and climatic gradients available within a given area. Landscape diversity is measured by counting the variety of landforms, the elevation range, and the density and configuration of wetlands present in a small area. Because topographic diversity buffers against climatic effects, the persistence of most species within a given area increases in landscapes with a wide variety of microclimates (Weiss et al. 1988). Local connectedness, the second factor, is defined as the number of barriers and the degree of fragmentation within a landscape. A highly permeable landscape promotes resilience by facilitating range shifts and the

reorganization of communities. Roads, development, dams, and other structures create resistance that interrupts or redirects movement and, therefore, lowers the permeability. Maintaining a connected landscape is the most widely cited strategy in the scientific literature for building resilience (Heller and Zavaleta 2009) and has been suggested as an explanation for why there were few extinctions during the last period of comparable rapid climate change (Botkin et al. 2007).

Map 5 shows the relationship between areas that exhibit above average characteristics of resilience and the proposed MVP route as well as the three other projects referenced above. As noted above, the activity of traversing a relatively unfragmented area with a structure that requires a permanent change in habitat condition diminishes the connectedness and therefore resiliency of the site. It is immediately apparent that each of these projects has the potential to adversely affect sites that currently possess attributes that would tend to make them resilient to climate change. The Nature Conservancy requests that FERC consider the loss of site resilience to climate change consequent to an interruption in connectedness within large patches of intact habitats to be an indirect effect of pipeline construction within the scope of its EIS. This is consistent with draft guidance issued on December 18, 2014 by CEQ on "Consideration of Greenhouse Gas Emissions and the Effects of Climate Change", which counsels agencies to consider alternatives that are more resilient to the effects of a changing climate.

***Migratory Birds***

The Nature Conservancy is a partner in the Appalachian Mountain Joint Venture. Migratory Bird Joint Ventures are cooperative, regional partnerships that work to conserve habitat for the benefit of birds, other wildlife, and people. There are twenty-two habitat-based Joint Ventures, each addressing the bird habitat conservation issues found within their geographic area. The proposed MVP project route would traverse habitats known to be important to migratory birds including very large patches of intact interior forest and riparian forests, as well as focal conservation areas for cerulean warbler, a priority species within the Appalachian Mountain Joint Venture (AMJV). We have identified exemplary occurrences of these habitat types within the Central Appalachians and the Albemarle Sound in the Critical Habitats assessment described above.

The Migratory Bird Treaty Act (MBTA), first passed in 1918 and later amended, makes it illegal for anyone to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to Federal regulations. In 2001, President Clinton issued Executive Order (EO) 13186, which clarifies the responsibilities of federal agencies with respect to the Migratory Bird Treaty Act and directs the agencies to, among other things, develop memoranda of understanding (MOU) with the U.S. Fish and Wildlife Service to support the objectives of MBTA and its related conventions. In March 2011, FERC entered into such an MOU with USFWS: *Memorandum of Understanding Between the Federal Energy Regulatory Commission and the U.S. Department of the Interior United States Fish and Wildlife Service*

*Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds".* The MOU calls for FERC applicants to provide compensatory mitigation not only for impacts to migratory birds, but for impacts to their habitat as well and directs applications to develop "project-specific conservation measures" with USFWS during the pre-filing and/or initial planning phases of projects. The MOU language is also quite broad in what it covers, including migratory birds and their habitats with an emphasis on (but no restriction to) species of conservation concern; identification and evaluation of direct, indirect, and cumulative effects; and full consideration of seasonal habitats (breeding, migrating, roosting, over-wintering). With regard to the MVP, we focus particular attention on the provisions of the MOU defining FERC's responsibilities to include:

F.4. Address migratory birds and their habitats, where appropriate, with emphasis on, but not exclusive to, species of concern, in the scope of any environmental review, including the NEPA analysis. This review shall include, as necessary, identifying and evaluating:

a. Direct, indirect, and cumulative effects, of the proposed action on migratory birds, including take, and detrimental alteration of important habitats such as breeding, migrating, roosting, or over-wintering habitats using best available demographic, population, or habitat association data. Where the potential for impacts on raptors or other species of concern is likely, require applicant to conduct pre-application surveys to facilitate the evaluation of effects to migratory birds and their habitats.
b. Reasonable modifications and alternatives to the proposed action that avoid or minimize take.

<u>The Nature Conservancy urges both the FWS and FERC to fully utilize the MOU Regarding "Responsibilities of Federal Agencies to Protect Migratory Birds": to identify, avoid, and minimize impacts to migratory birds and their habitat, including large patches of intact forest</u>.

***Cave and Karst Resources***

Other EIS documents prepared by FERC have addressed karst geology as a geologic hazard; e.g. the Ruby (CP09-54-000) and Constitution Pipelines (CP13-499-000 and CP13-502-000). Recommendations typically appear to entail requirements to minimize the risk of groundwater contamination through spills, and substrate instability through blasting. As we have noted above, the Ridge and Valley physiographic province through which this and other pipeline projects are proposed to traverse includes a large amount of karst geology, and is dense with biologically significant cave and karst systems (Map 6).

The Conservancy's Central Appalachians Critical Habitats Assessment includes 1,065,120 acres of modeled and verified cave occurrences that constitute priorities for conservation. Due to their subterranean nature and the cryptic intersections of groundwater flow, conservation areas for these habitats are very difficult to map. In 2007, the Conservancy mapped potential cave systems within a subsection of the Central Appalachians, based on karst geology. Each potential cave was evaluated with respect to its size, condition, landscape context and known

biodiversity value then prioritized for conservation action using a standardized ranking method followed by expert review. This is the best cave and karst conservation area dataset we are aware of, although we expect it to be superseded by an effort currently being led by Dr. David Culver of the American University: "Classification and Georeferencing Cave/Karst Resources across the Appalachian Landscape Conservation Cooperative". The Conservancy requests that FERC and Mountain Valley, LLC use the best available data, expert consultation, and field inventory to identify and avoid impacts to biologically significant cave systems along this an all other mid- Atlantic shale gas pipeline routes.

***Priority River and Stream Systems***

As mentioned above, The Nature Conservancy worked with experts to identify the streams, rivers, and lakes that would need to be conserved to protect all the representative native biodiversity in a given freshwater ecoregion. (Map 4) The general approach for such an assessment is to select and set conservation goals for a set of targets that combined represent the native biodiversity of the freshwater ecoregion. Known occurrences of these targets are mapped and evaluated for viability, and occurrences are selected to meet goals based on the principles of efficiency and complementarity. The Conservancy requests that impacts to priority streams and rivers identified through the freshwater ecosystem assessment be avoided by routing the pipeline to minimize the total number of stream crossings and - where appropriate and not in conflict with karst resources – minimized through the use directional drilling techniques.

In conversations with Mountain Valley LLC and other companies proposing mid-Atlantic shale gas pipelines, we have often heard comments regarding the challenges associated with constructing such a large diameter pipeline through such rugged terrain (Map 7). It has been suggested to U.S. that the two projects most similar to the MVP in terms of engineering and construction challenges are the Ruby Pipeline (cited above) which entailed 675.2 miles of 42-inch-diameter pipeline to transport from suppliers in the Rocky Mountain region to customers in Nevada and on the West Coast, and the Rockies Express - a 1,679-mile natural gas pipeline system intended to bring gas from the Powder River Basin in Colorado to then gas limited markets in Ohio.

A significant difference between projects originating in the Rocky Mountains and those traversing the Appalachians is the abundance of precipitation in the east. The topographical complexity and roughness of the terrain through which the MVP will travel and the industry-wide lack of experience constructing such a pipeline through this sort of terrain in a humid climate suggest that erosion and sedimentation impacts are very likely. The Conservancy requests that FERC and Mountain Valley LLC comprehensively evaluate potential impacts to ground and surface waters due to sedimentation and erosion from high intensity rain events during construction. The Conservancy further requests that recommended methods for minimizing anticipated impacts are of demonstrated effectiveness on pipeline construction projects in similar terrain and climate with similar diameter pipe.

***Species of Particular Concern***

The West Virginia Field Office of the FWS has submitted project review letters to Mountain Valley LLC detailing Federally Listed, Petitioned, and Candidate species, as well as Federal Species of Concern. We incorporate their concerns by reference, as well as those of the Heritage Programs and wildlife agencies of the affected states.

These comments on scoping have thus far mostly focused on landscape scale impacts that would affect not just a specific occurrence of a species, but the size, quality, and connection of habitats for various vulnerable species across the landscape. We are also concerned about particularly vulnerable species. In addition to migratory birds, and cave and spring obligate species we have mentioned above, The Conservancy requests that the scope of the EIS address mitigation of landscape scale impacts to:

- Eastern tree bats which are known to be in precipitous decline due to white nose syndrome;
- Eastern brook trout, which are an important indicator of high quality coldwater habitat and are vulnerable to extirpation from climate change;

## Observe the Full Mitigation Hierarchy

The White House Council on Environmental Quality defines the mitigation hierarchy to include, in order of preference, avoidance, minimization, and measures to offset or compensate for unavoidable impacts (40 CFR § 1508.20). In the context of the EIS for the MVP, The Nature Conservancy requests that avoidance of both direct and indirect impacts be demonstrated by the applicant, and that any finding that avoidance is not reasonably practicable be supported by transparent, quantitative, and repeatable analyses. For instances where a substantive finding is made that avoidance is not practical, all effort should be made to minimize impacts to the greatest practical extent. The Conservancy further requests that the recommendations for impacts compensation adhere to the following principles:

- Landscape Context: the mitigation hierarchy should be applied in a landscape context.
- Additionality: offsets should provide a new contribution to conservation, additional to what would have occurred without the offset.
- Equivalence: offsets should provide ecologically equivalent values as those lost to project impacts.
- Location: offset benefits should accrue in the project-affected region.
- Timing and Durability: offsets should protect against temporal loss and should be durable.

***Alternatives Analysis***

One mechanism by which to demonstrate application of the mitigation hierarchy is through the promulgation of alternatives that avoid and minimize impacts to resources of concern.

The Nature Conservancy requests that the set of alternatives under consideration be expanded. As mentioned above, The Conservancy provided Mountain Valley LLC with information

regarding the location of our preserves, easements, and critical habitats in September of 2014. We are extremely gratified that Mountain Valley LLC has, since that time, publicized route variations that would avoid impacts to most of the areas of concern indicated in our correspondence.

We request that the comparison of impacts among alternatives expand beyond the simple measure of miles of pipeline within a given resource type as shown in Resource Report 10. Specifically, the Conservancy requests that the EIS quantify the area, rather than the length of a resource, that would be affected along an alternative within the temporary construction corridor, the permanent right-of-way, and along necessary new access roads. We have suggested some metrics we believe are appropriate to consider for natural resource impacts in Table 2. We further request that the EIS evaluate impacts to USFS lands according to the consistency of the introduction of linear infrastructure with management area objectives and desired conditions stated within the area's resource management plan. This should also apply to other public lands to the extent that they have a spatially explicit management plan.

## Take Full Advantage of Authorities to Require Compensation

We believe that FERC should take full advantage of existing authorities to require compensation for critical resources, including migratory bird habitat. In several regions of the country, FERC has relied on its MOU with FWS regarding "Responsibilities of Federal Agencies to Protect Migratory Birds" to assert the need for applicants to develop a Migratory Bird Conservation Plan in coordination with USFWS, outlining avoidance, minimization, and compensatory mitigation measures for impacts to migratory birds and migratory bird habitat. The Nature Conservancy recommends that FERC take full advantage of the MOU to require the project proponent to develop a Migratory Bird Conservation Plan in coordination with USFWS and include identified mitigation measures (avoidance, minimization, and compensatory mitigation) in the final EIS and ROD.

FERC has also encouraged pipeline applicants to develop mitigation plans for other critical resources for which impacts are anticipated. For example, in October 2014, FERC issued the Final EIS the Constitution Pipeline (CP13-499-000 and CP13-502-000). The EIS notes that the proposed pipeline would have both direct impacts on interior forest tracts by the proposed clearing during construction and maintenance operations and indirect impacts. Constitution filed a preliminary "Migratory Bird and Upland Forest Plan" in advance of the Final EIS, which details impacts on upland forest habitat, Constitution's valuation of these habitat impacts, and measures proposed to reduce impacts and offset temporary and permanent impacts through conservation. The Final EIS states that "Prior to construction, Constitution should file with the Secretary for review and written approval of the Director of OEP a final Migratory Bird and Upland Forest Plan developed in consultation with the FWS" and state resource agencies. The Nature Conservancy recommends that FERC require the Dominion to develop mitigation plans for similarly critical resources likely to be impacted by the proposed project,

such as contiguous forests. Such plans should be developed in coordination with USFWS and relevant state resource agencies and should be included identified mitigation measures (avoidance, minimization, and compensatory mitigation) in the final EIS and ROD.

## Conclusion and Summary

The Nature Conservancy's overarching recommendation is that **FERC consider the MVP, in conjunction with the Atlantic Coast Pipeline, the WB XPress Project, and the Appalachian Connector under a Programmatic Environmental Impact Statement (PEIS)** that would simultaneously consider the purpose and need of each project, the cumulative impacts of these projects on the Central Appalachian Region, and the optimal combination and alignment of pipelines to deliver gas from the Marcellus and Utica shale gas plays to eastern and southeastern markets, **and that the PEIS be completed prior to issuing a Certificate of Public Convenience and Necessity for the proposed MVP**.

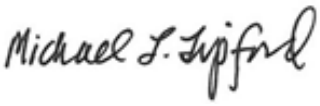
### In addition, we request that, within the EIS for the MVP:

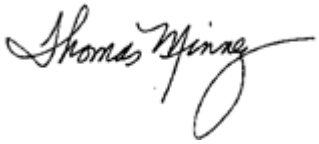
- In the absence of a PEIS, FERC include reasonably foreseeable actions in its project specific analysis for the MVP;
- The recommended alternative for the Mountain Valley Pipeline avoid all preserves, easements and Critical Habitats for conservation;
- The loss of site resilience to climate change consequent to an interruption in connectedness within large patches of intact habitats is considered to be an indirect effect of pipeline construction to be mitigated;
- the FWS and FERC fully utilize the MOU Regarding Implementation of Executive Order 13186, "Responsibilities of Federal Agencies to Protect Migratory Birds";
- Best available data, expert consultation and field inventories for biologically significant caves and springs be conducted to ensure avoidance of impacts to such systems;
- Impacts to surface waters be avoided to the greatest extent possible, and recommended minimization strategies are based upon techniques shown to have been effective in projects in similar terrain, climate, and of comparable scale;
- Avoidance of both direct and indirect impacts be demonstrated by the applicant, and supported by robust, quantitative, and repeatable analyses;
- Compensatory mitigation recommendations consider landscape context, are in addition to business as usual and equivalent to functions and values lost, are located to benefit the area in which impacts occurred, incorporate temporal loss of functions and values, and are durable over time.
- The area, rather than the length, of resources that would be affected along an alternative within the temporary construction corridor, the permanent right-of-way, and along necessary new access roads be quantified;

- Impacts to public lands are evaluated according to the consistency of the introduction of linear infrastructure with management area objectives and desired conditions stated within the area's resource management plan.

Thank you for the opportunity to provide comments to FERC on this important issue. If you have any questions about these comments, please contact Judy Dunscomb, Senior Conservation Scientist at jdunscomb@tnc.org or (434) 951-0573.

Sincerely,





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Virginia Executive Director and
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Thomas Minney
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Enclosures

Cc: Thomas Speaks, Forest Supervisor, George Washington and Jefferson National Forests
Jennifer Adams, Project Coordinator, USFS
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Cindy Shulz, Field Supervisor, USFWS Virginia Field Office
John E. Schmidt, Field Supervisor, USFWS West Virginia Field Office
Pete Benjamin, Field Supervisor, USFWS North Carolina Field Office
Michelle B. Lakly, Eastern US Division Director, The Nature Conservancy
Nels C. Johnson, N. American Energy by Design Project Director, The Nature Conservancy

## Selected References


Anderson, M.G., A. Barnett, M. Clark, C. Ferree, A. Olivero Sheldon, and J. Prince. 2014. Resilient Sites for Terrestrial Conservation in the Southeast Region. The Nature Conservancy, Eastern Conservation Science. 127 pp.

Anderson, M.G., M. Clark, and A. Olivero Sheldon. 2012. Resilient Sites for Terrestrial Conservation in the Northeast and Mid-Atlantic Region. The Nature Conservancy, Eastern Conservation Science. 168pp.

Buler, J. J., and D. K. Dawson. 2014. Radar analysis of fall bird migration stopover sites in the northeastern US. The Condor, 116(3), 357-370.

Botkin, D.B., Saxe, H. Araujo, M.B., Betts, R., Bradshaw, R.H.W., Cedhagen, T., Chasson, P, Dawson, T.P., Etterson, J.R., Faith, D.P. Ferrier, S., Guisan, A., Hansen, A.S., Hilbert, D.W., Loehle, C., Margules, C. 2007. Forecasting the Effects of Global Warming on Biodiversity. BioScience. Vol. 57 No. 3.

Christman MC, Culver D, Madden MK, White D. 2005. Patterns of endemism of the eastern North American cave fauna. Journal of Biogeography. 32(8): 1441–1452.

Gunderson, L.H., 2000. Ecological Resilience--In Theory and Application. Annual Review of Ecology and Systematics, Vol. 31. (2000), pp. 425-439.

Kiesecker, J.M., H. Copeland, A. Pocewicz, B. McKenney. 2010. Development by design: blending landscape-level planning with the mitigation hierarchy. Frontiers in Ecology and the Environment 8: 261–266.

Kiesecker, J.M., H. Copeland, A. Pocewicz, N. Nibbelink, B. McKenney J. Dahlke, M. Holloran, and D. Stroud. 2009. A Framework for Implementing Biodiversity Offsets: Selecting Sites and Determining Scale. BioScience 59:77-84

Heller, N.E. and E.S. Zavaleta. 2009. Biodiversity management in the face of climate change: A review of 22 years of recommendations. Biological Conservation 142; 14-32.

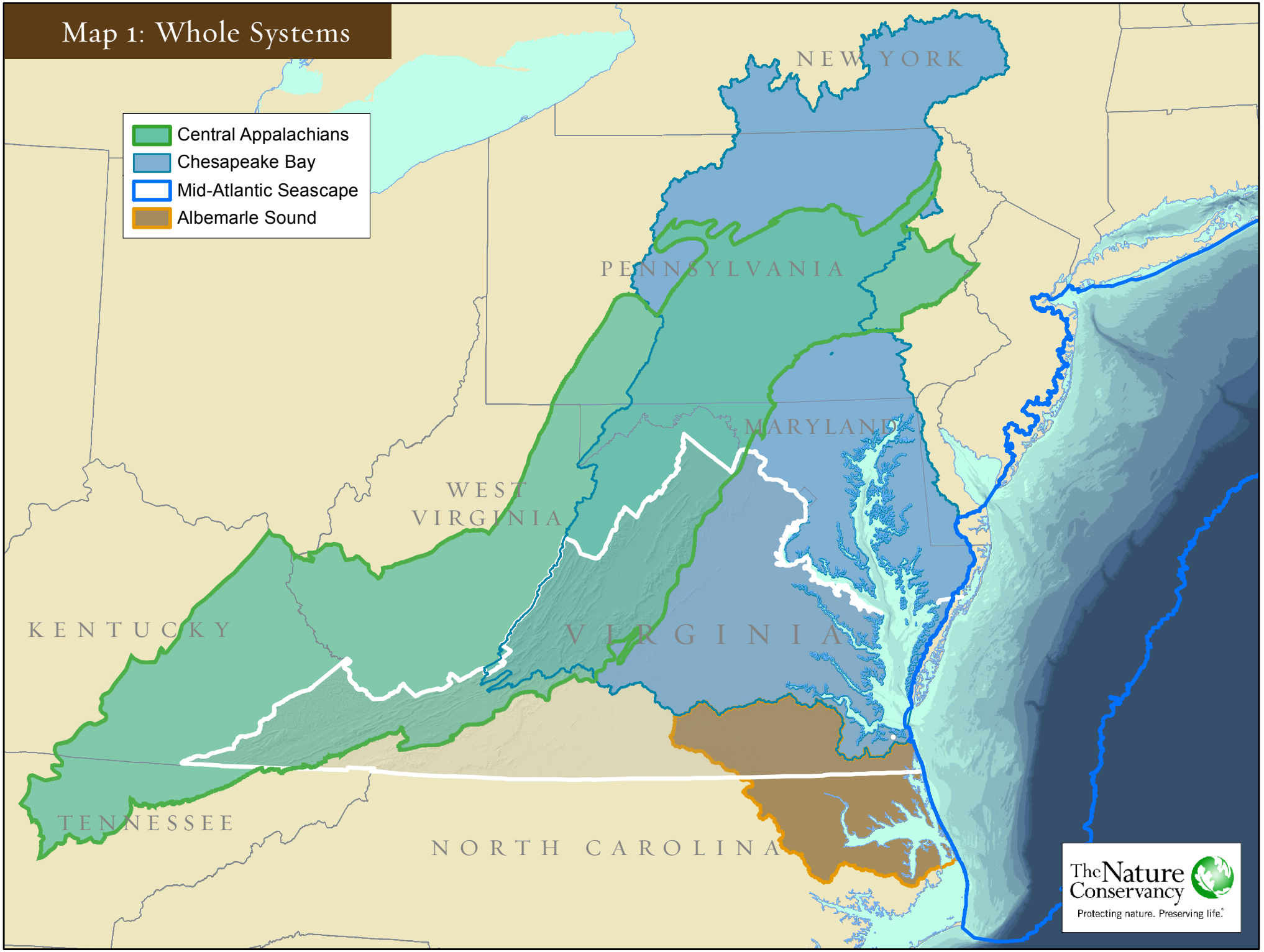
Weiss, S.B., D. D. Murphy, and R. R. White. 1988. Sun, slope, and butterflies: Topographic determinants of habitat quality for Euphydryas editha bayensis. Ecology 69:1386.

**Table 2: Environmentally relevant criteria for comparing impacts of pipeline alternatives**

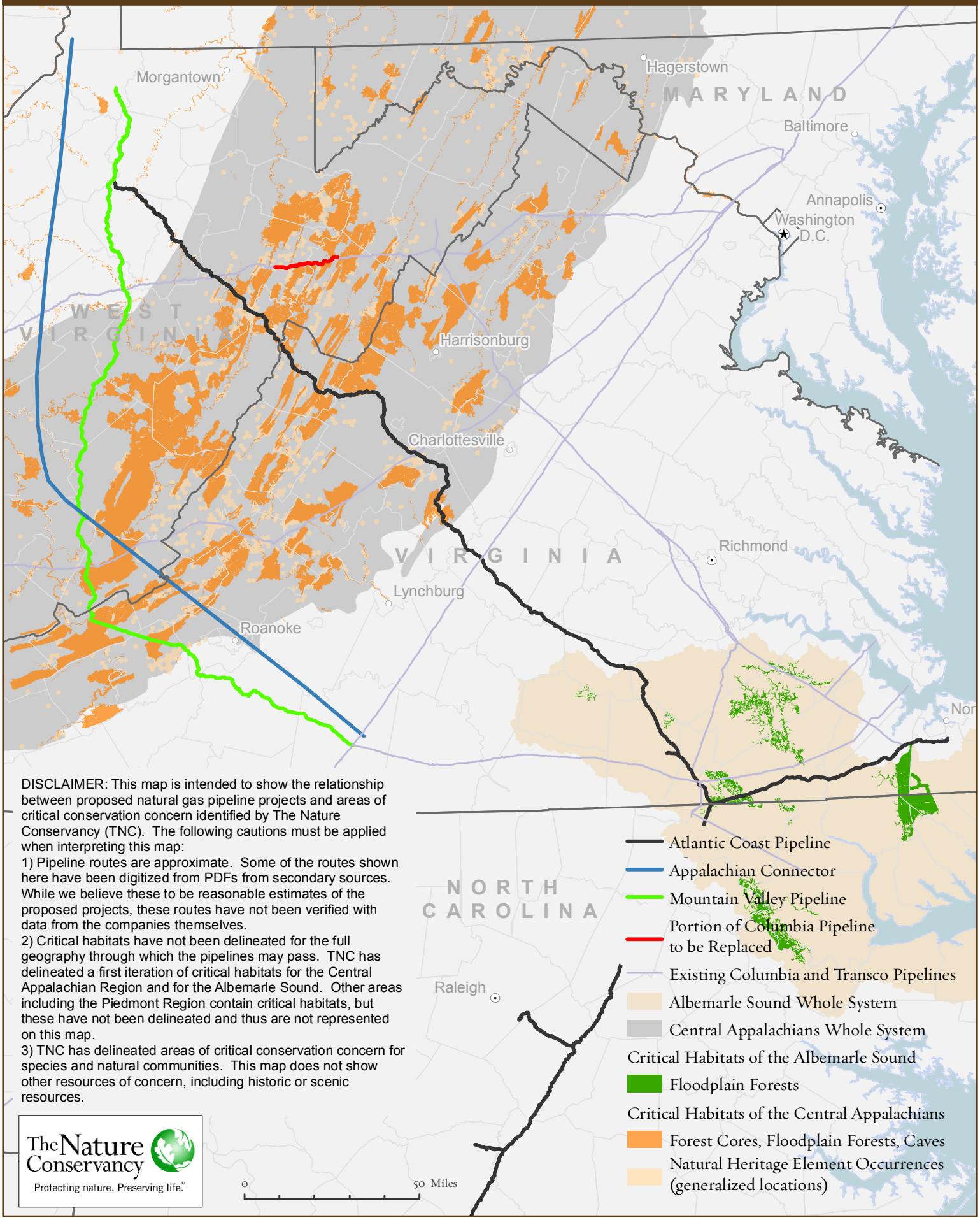
Note: Metrics should include pipeline and new access roads constructed to implement the pipeline alternative.

| Criteria | Metric |
|---|---|
| Total Length | Miles |
| Construction Feasibility (e.g., length across ridgeline, length across steep side slopes associated) | Miles |
| Karst | Miles |
| Wetlands | Miles |
| Stream Crossings | Number |
| State and National Scenic Rivers | Number |
| Trout Streams | Number |
| State Heritage Program Element Occurrences | Number |
| Interior Forest (Migratory Bird Habitat) | Miles Crossed/Acres Affected (assume direct loss plus 100m on either side) |
| Interior Forest (Migratory Bird Habitat) | Number of patches before, number of patches after, number patches reduced to less than 5,000 acres contiguous interior forest habitat. |
| Red spruce crossing % cover | Miles/Acres affected |
| Rare Bat Habitat | Miles crossed/Acres affected |
| Public Lands – Federal | |
| Management Area with Objectives and Desired Condition | Miles Crossed/Acres affected |
| Public Lands – State | |
| Management Agency and Objective | Miles Crossed/Acres affected |

# Map 1: Whole Systems



# Map 2: Critical Habitats




DISCLAIMER: This map is intended to show the relationship between proposed natural gas pipeline projects and areas of critical conservation concern identified by The Nature Conservancy (TNC). The following cautions must be applied when interpreting this map:

1) Pipeline routes are approximate. Some of the routes shown here have been digitized from PDFs from secondary sources. While we believe these to be reasonable estimates of the proposed projects, these routes have not been verified with data from the companies themselves.

2) Critical habitats have not been delineated for the full geography through which the pipelines may pass. TNC has delineated a first iteration of critical habitats for the Central Appalachian Region and for the Albemarle Sound. Other areas including the Piedmont Region contain critical habitats, but these have not been delineated and thus are not represented on this map.

3) TNC has delineated areas of critical conservation concern for species and natural communities. This map does not show other resources of concern, including historic or scenic resources.

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# Map 3. Dominion Pipeline Route and Identified Critical Habitats


- Proposed Pipeline Route
- TNC Preserve
- TNC Conservation Easement
- Other Conservation Easement
- State Natural Area Preserve
- National Forest or National Wildlife Refuge
- Cheat Mt. Priority Spruce Restoration Area

**Critical Habitats**

- Natural Heritage Element Occurrences (generalized locations)
- Forests, Caves and Riparian Areas
- Critical Floodplain Forests in the Albemarle Sound Watershed

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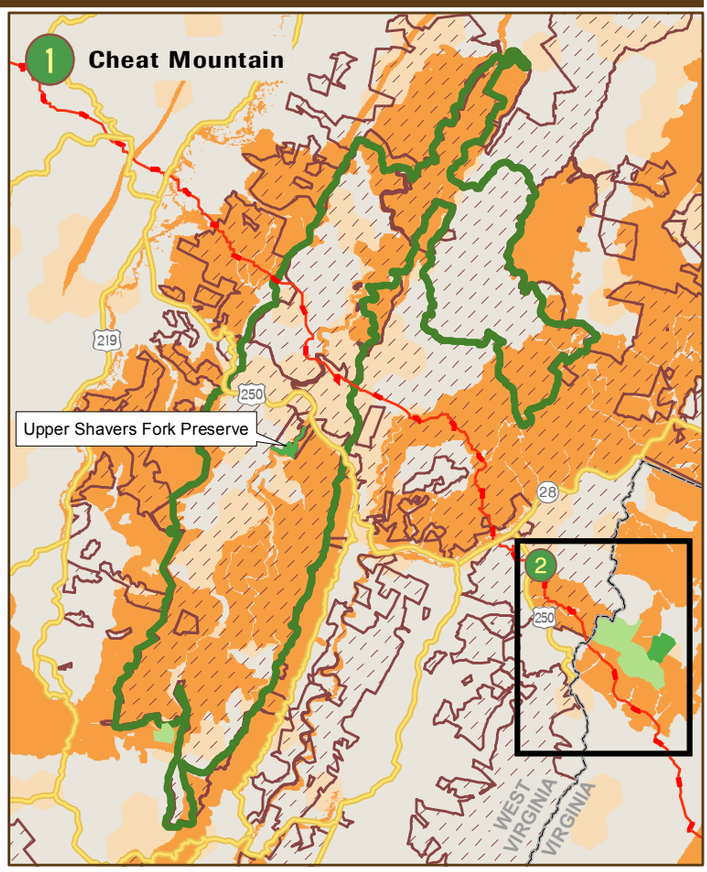
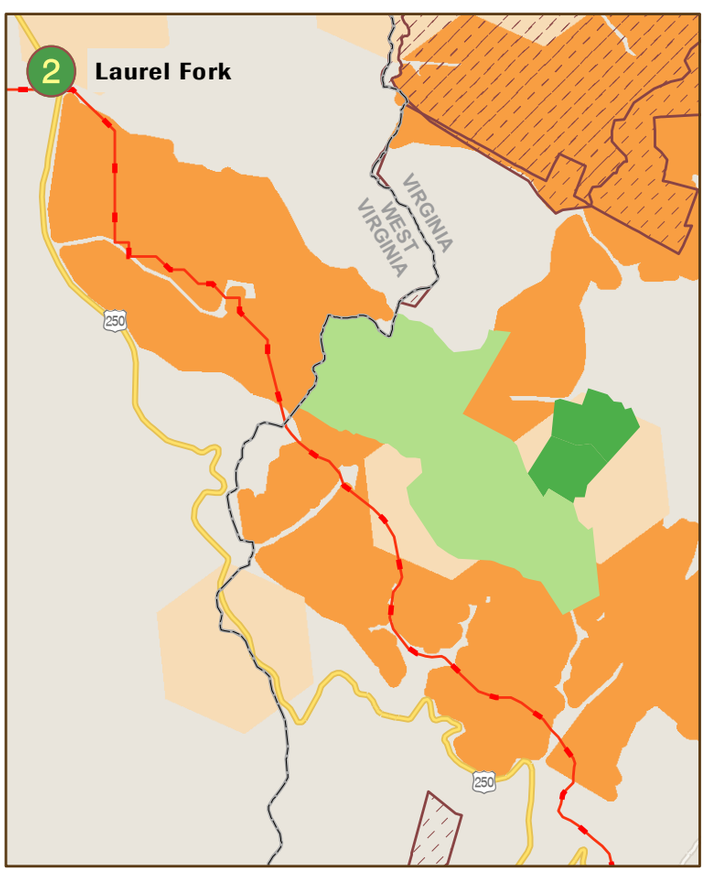
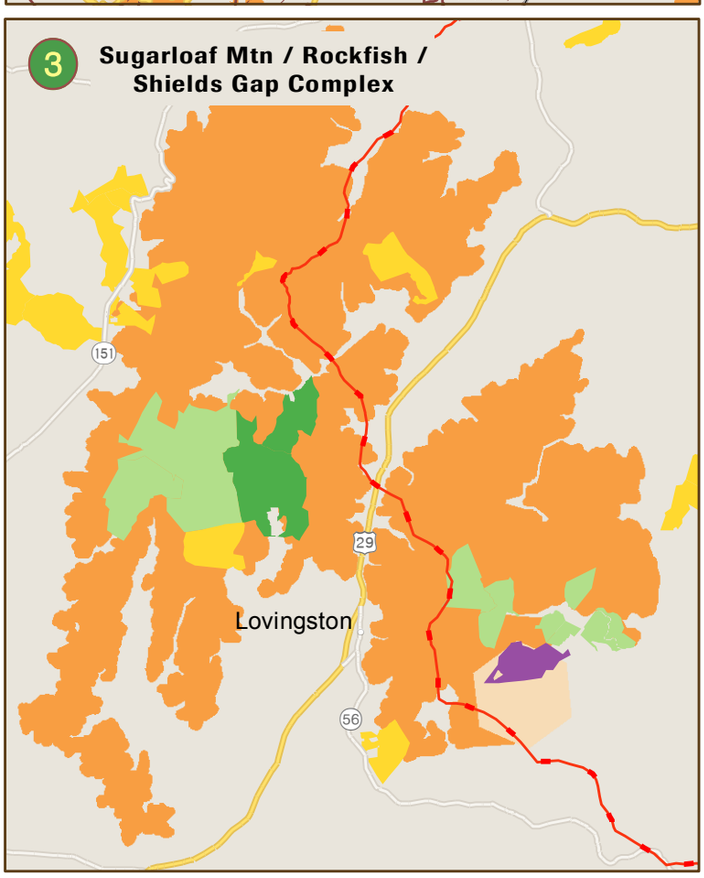
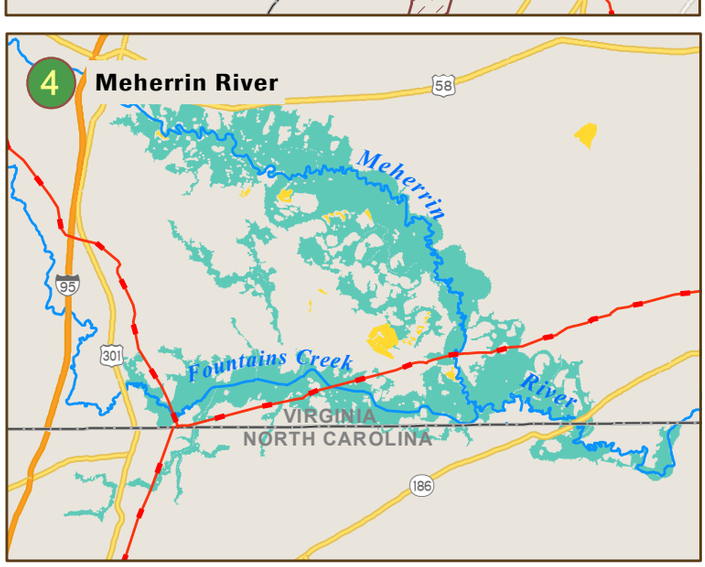
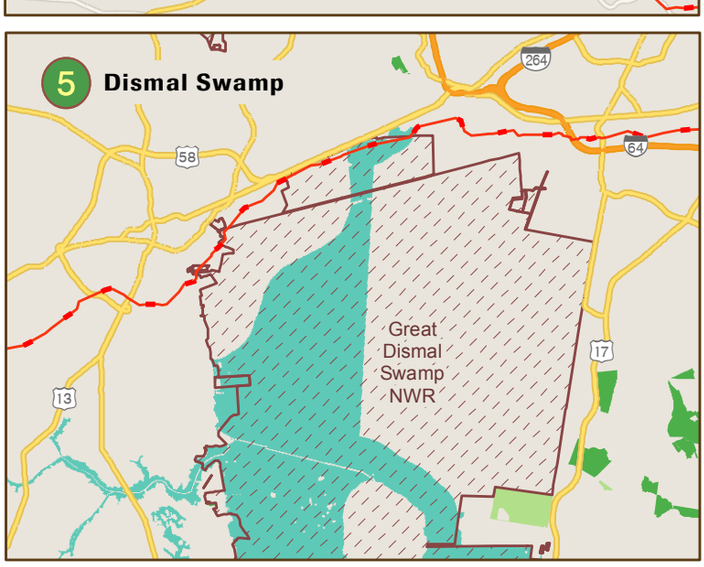


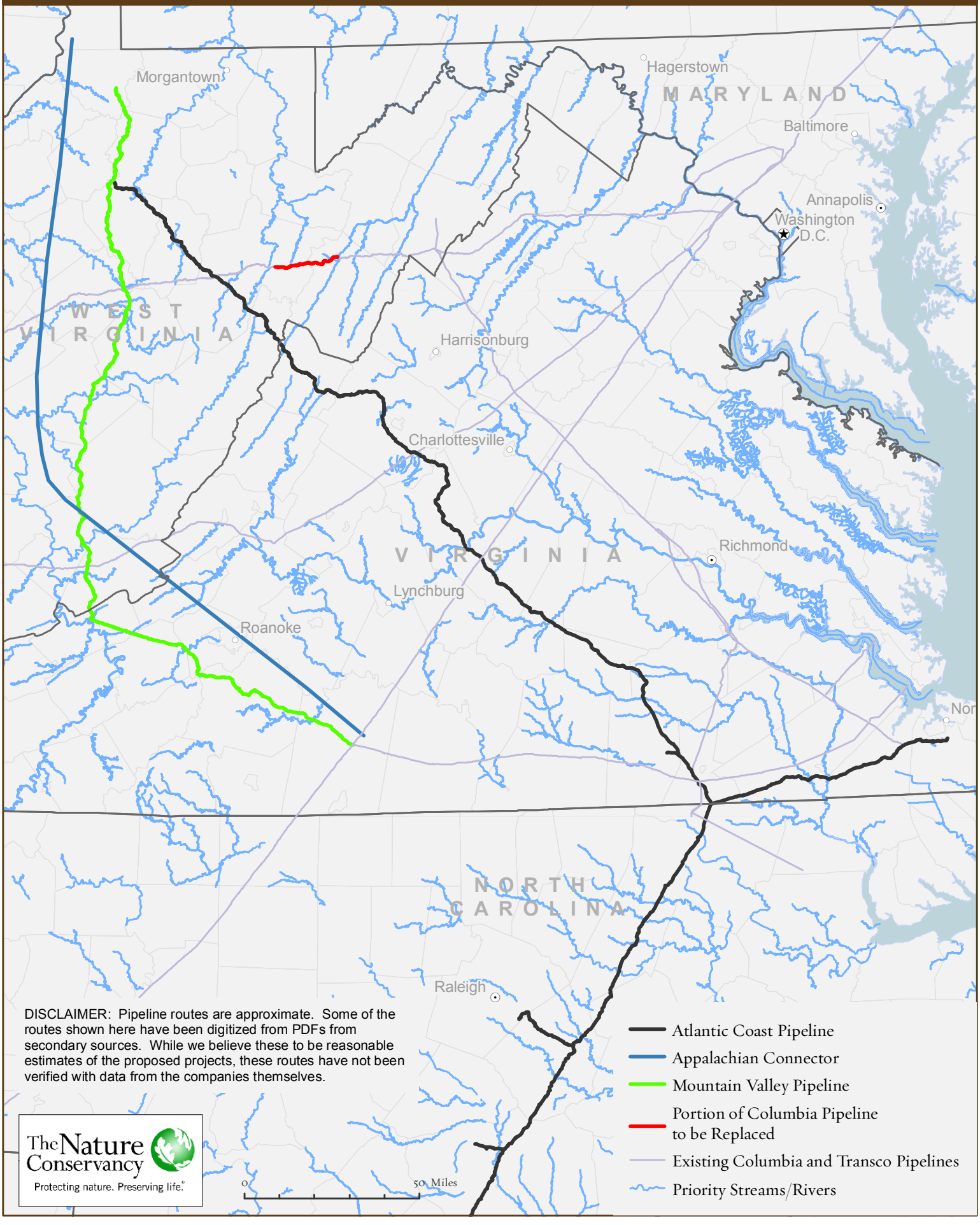



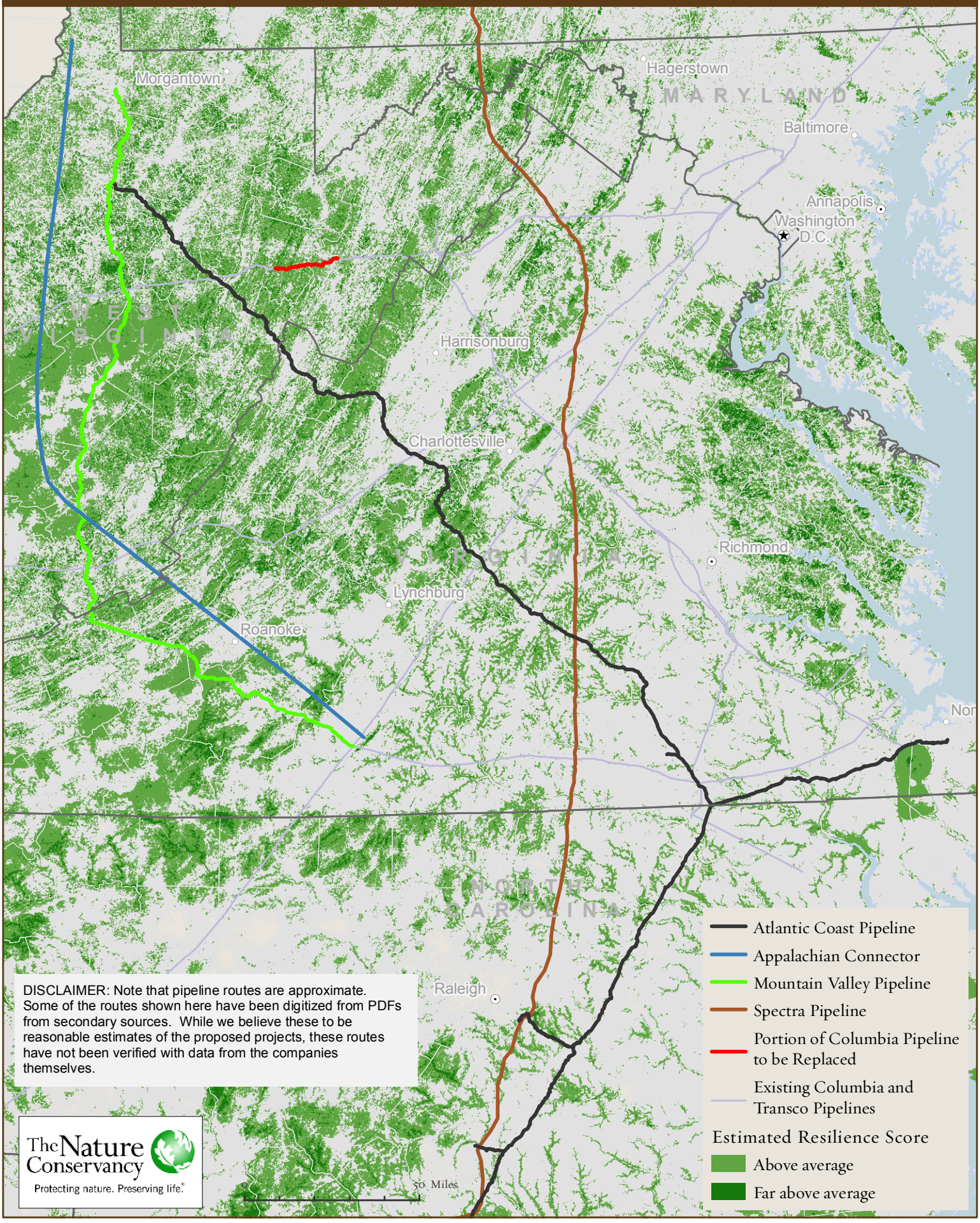



# Map 4: Aquatic Conservation Priorities



# Map 5: Resilience




DISCLAIMER: Note that pipeline routes are approximate. Some of the routes shown here have been digitized from PDFs from secondary sources. While we believe these to be reasonable estimates of the proposed projects, these routes have not been verified with data from the companies themselves.

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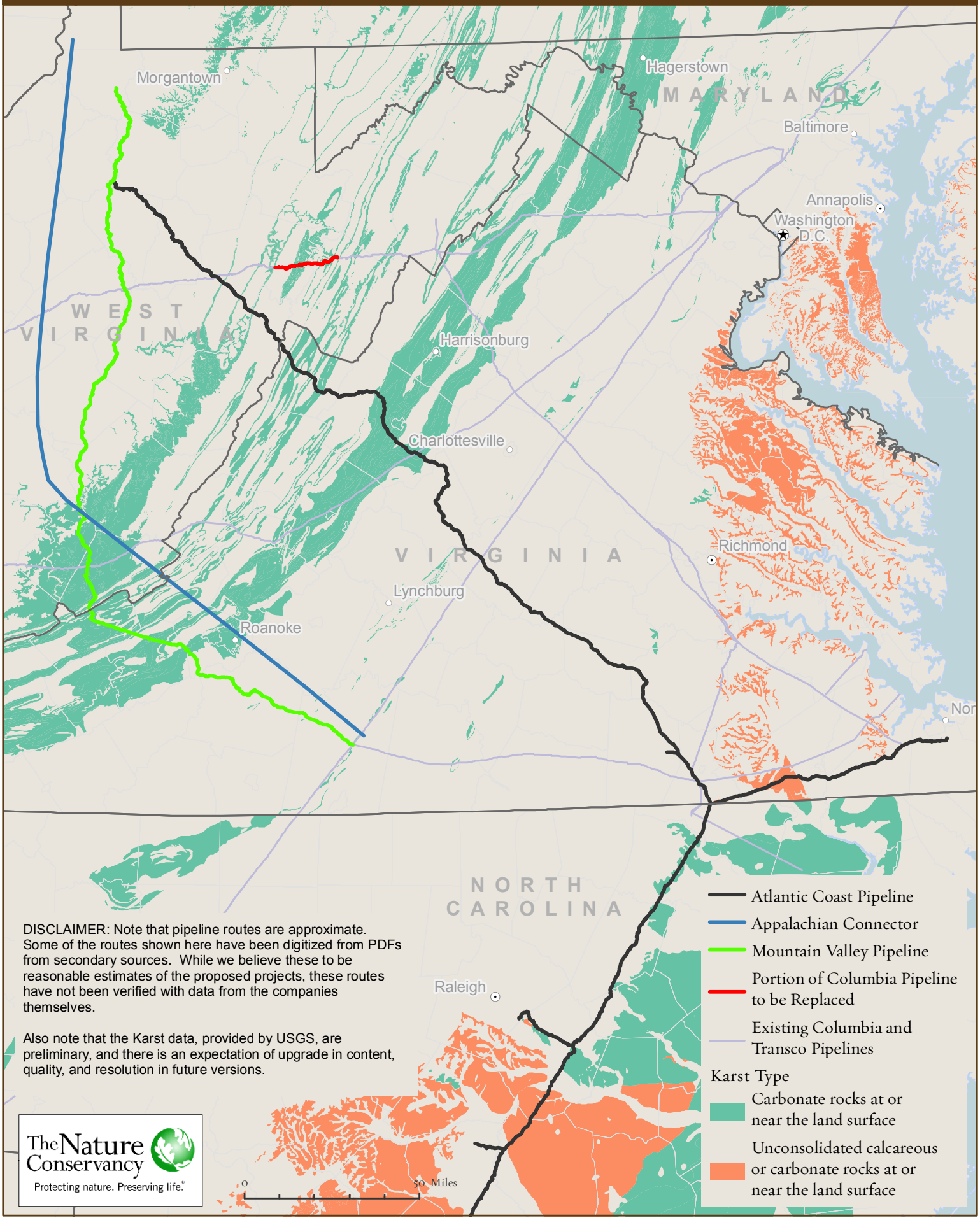
# Map 6: Karst




DISCLAIMER: Note that pipeline routes are approximate. Some of the routes shown here have been digitized from PDFs from secondary sources. While we believe these to be reasonable estimates of the proposed projects, these routes have not been verified with data from the companies themselves.

Also note that the Karst data, provided by USGS, are preliminary, and there is an expectation of upgrade in content, quality, and resolution in future versions.

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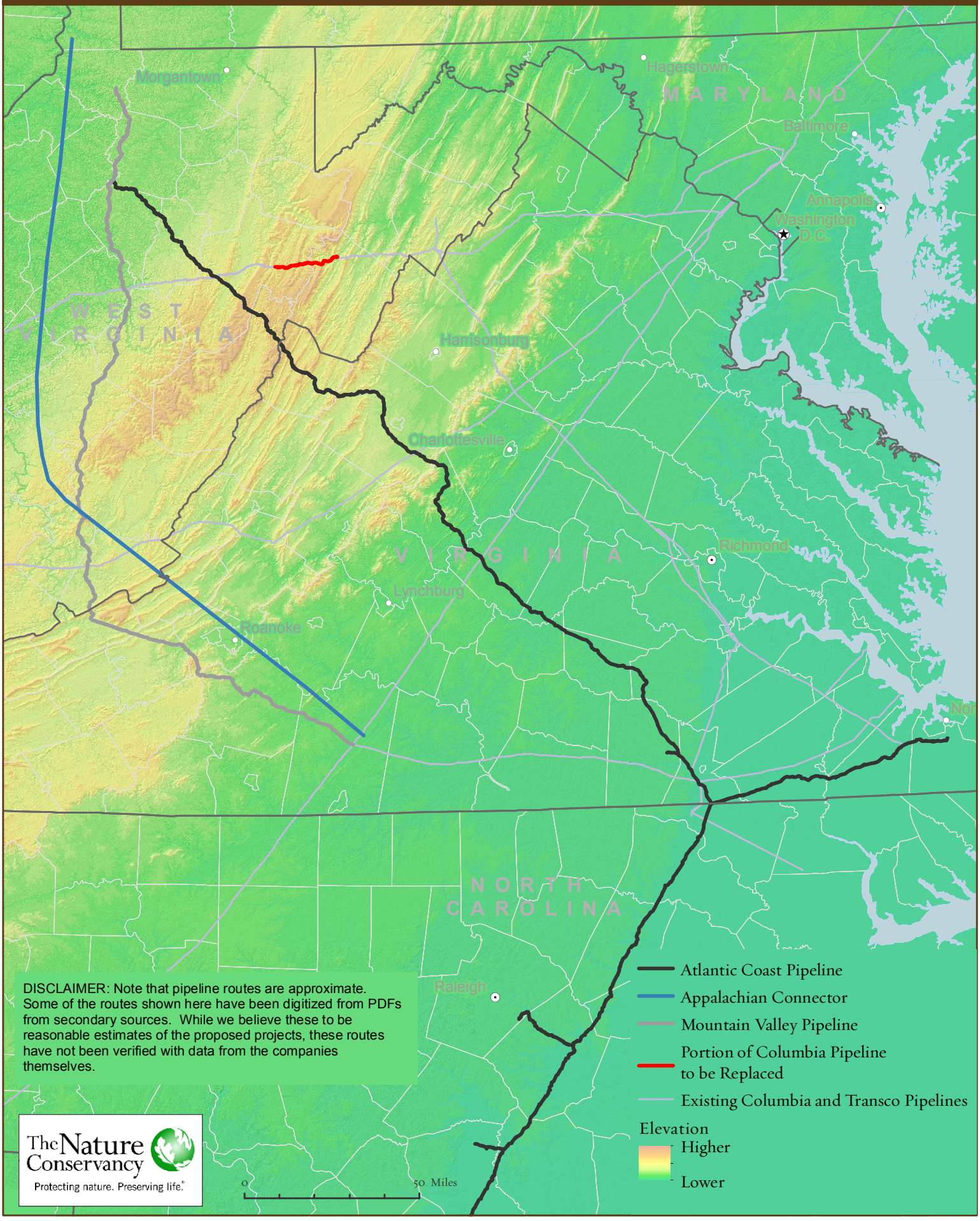
# Map 7: Topography




DISCLAIMER: Note that pipeline routes are approximate. Some of the routes shown here have been digitized from PDFs from secondary sources. While we believe these to be reasonable estimates of the proposed projects, these routes have not been verified with data from the companies themselves.

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