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June 2, 2016

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

RE: Docket Nos. CP15-554-000 and CP15-555-000

Supplemental Notice of Intent to Prepare an Environmental Impact Statement and Proposed Land and Resource Plan Amendment(s) for the Proposed Atlantic Coast Pipeline, Request for Comments on Environmental Issues Related to New Route and Facility Modifications.

Dear Ms. Bose:

Thank you for the opportunity to provide supplemental comments on the scope of the issues to be addressed within the Environmental Impact Statement (EIS) for the Atlantic Coast Pipeline (ACP) and associated projects. These comments are submitted on behalf of The Nature Conservancy programs in North Carolina, Virginia, and West Virginia. The purpose of this letter is to communicate our priorities for avoidance and minimization of ecological impacts, as well as compensation for unavoidable impacts, along the modified proposed ACP Pipeline Route.

Areas of Conservation Investment and Critical Habitats

The Nature Conservancy reiterates the request made in our previous scoping comments that the final preferred alternative for the Atlantic Coast Pipeline avoid all preserves, conservation easements and Critical Habitats. Our previous comments identified three areas of very high concern in the Central Appalachian Region that could be adversely affected by the proposed ACP project route: 1) Cheat Mountain; 2) Laurel Fork; and 3) the Sugarloaf Mt / Rockfish / Shields Gap Complex. Our analysis of the GWNF6 Route Alternative for the ACP indicates that it will avoid impacts to preserves, impacts to conservation easements and Critical Habitats remain.

Preserves and Conservation Easements

The GWNF6 Route Alternative fully addresses concerns expressed by the Conservancy and others regarding avoidance of the rare, threatened, and endangered species and red spruce restoration areas on Cheat Mountain, as well as to similar habitats in the Laurel Fork area. Other route adjustments in the Shields Gap area will avoid the TNC preserve and adjacent conservation easements. However, the GWNF6 alternative intersects nine Virginia Outdoor Foundation (VOF) conservation easements in Bath

County, Virginia. These easements represent the intent of a landowner to ensure a durable conservation outcome on their property. Impacts to these conservation easements should be avoided.

Critical Habitats

The GWNF6 Route Alternative intersects several areas delineated by the Nature Conservancy as Critical Habitats. As noted in our previous comments, the term “Critical Habitats” is not used here in the same way as it is used by the U.S. Fish and Wildlife Service (FWS), but rather to designate areas with high biodiversity value consistent with the definitions outlined in the [International Finance Corporation Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources](#). Within that framework Critical Habitats include: occurrences of Federally Listed Endangered or Threatened species, and endemic and/or restricted range species; highly threatened and unique ecosystems; and areas associated with key evolutionary processes.

Of particular concern the Conservancy are intersections between the GWNF6 Route Alternative with cave and karst and riparian habitats areas of high conservation significance in Pocahontas County WV and Bath County Virginia. The relationship between the Conservancy’s current delineation of Critical Habitats for the Central Appalachian Region and regional pipeline projects is shown on Map 1 (p. 10), and can also be viewed and downloaded from our [web map server](#).

Cave and Karst Resources

The Conservancy reiterates our request that FERC use the best available data, expert consultation, and field inventory to identify and avoid impacts to biologically significant cave systems along this and all other mid- Atlantic shale gas pipeline routes. The Conservancy is seriously concerned that pipeline activities that intersect biologically significant cave and karst systems have the potential to create lasting impacts that cannot be offset.

As noted in the Conservancy’s previous scoping comments, the alignments of the ACP and other proposed regional pipeline projects fall within the Appalachian cave region, one of three major eastern cave regions and a global center of cave species diversity (Christman et al. 2005). The Appalachian Landscape Conservation Cooperative (Appalachian LCC) recently commissioned a study of significant cave and karst resources, conducted by Dr. David Culver of American University as Principle Investigator. Among the products of that effort are a review of existing records of cave and karst biodiversity and a model predicting the probability that aquatic and terrestrial cave and karst species are present. Summary information from this project (shown in Figure 1) indicate that Pocahontas County WV and Bath County VA are among the highest tier of counties in the study region for cave and karst biodiversity, and also for potential for species occurrence (Culver et al, 2015). Additional information on this project can be found on the [Classification and Mapping of Cave and Karst Resources](#) page on the Appalachian LCC website.

The Nature Conservancy requests that natural cover be retained within an extended buffer around any cave or karst features within the project footprint. The presence and composition of natural cover regulates the temperature, moisture, and nutrient regimes of the subterranean environment and is known to be important to the maintenance of healthy cave and karst habitats (USFWS 2011; van Beynen et al. 2012). Natural vegetative cover was among the variables considered by Culver et al, (2015) to influence the probability of occurrence for subterranean species.

In addition, the Conservancy has reviewed ACP’s “Karst Terrain Assessment, Construction, Monitoring,

and Mitigation Plan” (GeoConcepts Engineering 2015) and has the following specific comments regarding the adequacy of that document, its use for the EIS, and the conditions that FERC should include in any certificate issued for this project:

1. Complete surveys of the proposed GWNF6 route alternative should be incorporated into the draft EIS, and should incorporate existing karst mapping and dye tracing work.
2. The scope of the Karst Plan should be expanded to address not only geophysical attributes, but also the subterranean environment and potential impacts to subterranean species.
3. The plan makes multiple references to remediation but does not specify what such remediation would be. The EIS should provide detail on how various impacts to karst systems would be remediated.
4. The electrical resistivity investigation (ERI) is characterized as “Construction Monitoring” and is intended to take place “following vegetation clearing but prior to any earth-disturbance”. The purpose of the ERI is to map voids, porous rock, and other attributes indicative of karst features. As noted above, the quality of such features and their associated biota is affected by the surrounding vegetative cover. In order to avoid impacts to karst features and the wildlife that inhabit them, the ERI should occur prior to vegetation clearing.
5. Paragraph 2 under “Measures to Avoid Impact to the Karst Aquifer and Environment” states that Buffers of 300 feet around karst features in all work areas (within and off-ROW including discharge areas) must be clearly marked in the field with signs and/or highly visible flagging until construction related ground disturbing activities are completed.
 - a. The EIS should clarify how a 300’ buffer will be maintained within a 125’ right-of-way.
 - b. To be compliant with USDA-NRCS’s Conservation Practice Standard Code 527 “Karst Sinkhole Treatment” (2010) and the West Virginia Department of Environmental Protection Division of Water and Waste Management Ground Water Protection Program Sinkhole Mitigation Guidance, August 8, 2005, such buffers should be retained in natural vegetation.

Intact Riparian Forests

Where further avoidance of floodplain forests is not possible, the Conservancy requests that FERC require ACP to avoid and minimize removal of intact floodplain forest through directional drilling techniques where feasible, and through reducing the construction ROW through these forests to the 50’ even if the floodplain forest is not a delineated wetland.

River health depends on a wide array of processes that require dynamic interaction between the water and land through which it flows. The Conservancy created the Active River Area (ARA) framework to explicitly consider the spatial area necessary for natural processes and disturbance regimes to occur, and thereby allow the inherently dynamic formation, modification, and maintenance of aquatic and riparian habitat (Smith et al, 2008). The ARA framework is incorporated into the Conservancy’s Critical Habitats assessment through the inclusion of zones within the ARA adjacent to rivers identified as conservation priorities that are in natural vegetative cover (see further description of priority streams and rivers below). This area may include less active terraces and high slope riparian land which does not usually receive overbank flooding, but which contribute to other important riverine processes such as shading, input of woody debris, sediments, and nutrients which influence river health. (The Nature Conservancy, 2009). A discussion of the importance of and recommendations for how to address impacts from the GWNF 6 route alternative to riparian forests within the critical habitats dataset is given in the discussion of priority streams and rivers below.

The Conservancy also previously provided data on intact floodplain forests within the ARA of the Albemarle Sound watershed. The Great Dismal Swamp Major Route Alternative avoids direct impacts to the 114,000-acre Great Dismal Swamp National Wildlife Refuge that the Conservancy helped establish in 1974 and where we are actively assisting the U.S. Fish and Wildlife Service with restoration actions. Route adjustments to the west of the Dismal Swamp that are not formally named also greatly reduce impacts to large intact wetland and floodplain forests identified by the Conservancy that support high levels of use by migratory and breeding birds (Buler and Dawson 2014) and buffer some of the best migratory fish spawning and nursery habitats on the East Coast ([see here for details of the Conservancy's Atlantic Coast Diadromous Fish Assessment](#)).

Sites Resilient to Climate Change Impacts

The Nature Conservancy requests that FERC that the EIS fully 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.

In our previous scoping comments, The Nature Conservancy described our efforts to advance species conservation in the face of a changing climate ([Anderson et al 2014](#), [Anderson et al, 2012](#); [see here for related work](#)) that focuses on inherent site resilience. Map 2 (p. 11) shows the relationship between areas that exhibit above average characteristics of resilience and the proposed ACP route alternatives. The activity of traversing a relatively unfragmented area with a permanently maintained clearing diminishes the connectedness and therefore resiliency of the site. It is immediately apparent that the ACP route alternatives have the potential to adversely affect places that currently possess attributes that would tend to make them resilient to climate change.

The EIS should address the need for adequate compensation for direct and indirect impacts to longleaf pine habitat. In addition to the above analysis which covers the eastern US, the Nature Conservancy in North Carolina has conducted a landscape scale conservation assessment longleaf pine in North Carolina that evaluates the resilience of mapped longleaf pine sites and identifies the optimal location of corridors to connect longleaf pine habitat blocks and enhance ecosystem resilience (The Nature Conservancy 2016). The Fayetteville major route alternative crosses one of these and resilient cores connectors Map 3 (p. 12) indicates the location of this intersection.

Priority River and Stream Systems

The Conservancy reiterates its requests that 1) FERC and ACP comprehensively evaluate potential impacts to ground and surface waters due to sedimentation and erosion from during both normal and high intensity rain events during construction and 2) methods for minimizing anticipated impacts are of demonstrated effectiveness on pipeline construction projects in similar terrain and climate with similar diameter pipe. If such demonstration cannot be documented the EIS should include a detailed justification of the efficacy of the proposed measures for managing and mitigating sedimentation and erosion impacts.

The Conservancy's previous scoping comments described landscape scale conservation planning efforts

we have led 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](#). The GWNF6 Route Alternative avoids two priority rivers that would be affected by the previous alignment; however, it also intersects three priority rivers at mainstem locations that previously were intersected near their headwaters (Map 4, p. 13). Two of these are areas of conservation investment by the Conservancy:

- The Greenbrier river in West Virginia is the longest free-flowing river in the state, and the heart of the Conservancy's [Greenbrier Valley](#) conservation area; and
- the free-flowing Cowpasture River in the [Allegheny Highlands](#) landscape is an outstanding example of a small Ridge and Valley river, its high water quality and healthy aquatic communities leading many experts to consider it the most pristine river in Virginia.

The Conservancy reiterates and expands on the concerns we expressed previously regarding the potential for project construction and maintenance activities to adversely affect river and stream systems. Specifically, we are concerned with loss of intact natural forests and sedimentation and erosion impacts.

The Conservancy requests that impacts intact riparian forests within the Critical Habitats dataset be avoided. Both the Greenbrier and the Cowpasture support intact natural cover at their intersection with the proposed GWNF6 Route Alternative, and these intersections are therefore included in the Critical Habitats dataset described above. Our previous recommendation to FERC was to avoid impacts by routing the pipeline to minimize the total number of stream crossings and - where appropriate and not in conflict with karst resources –through the use directional drilling techniques. We assume, however, that directional drilling cannot be used in either the Cowpasture or Greenbrier river crossings because of their karst geology.

The long term loss of riparian cover along the construction right-of-way and maintenance of a cleared 75' gap in what is now a continuous ribbon of intact forested habitat will have serious impacts on services currently provided by that riparian corridor, including migratory pathways for terrestrial species, and moderation of the rivers' nutrient temperature, and sediment regimes. Again, the Conservancy is very concerned that the activities associated with project construction and maintenance through the mountain portion of the ACP have potential to cause lasting impacts that cannot be offset.

In the Conservancy's previous scoping comments, we also noted the challenges associated with constructing a very large diameter pipeline through the rugged terrain of the Appalachian Mountains. While this project has been compared in scope and complexity to projects traversing the Rocky Mountains, a significant variable in sedimentation and erosion control that differs between the two regions is the abundance of precipitation in the east, and particularly through the portion of the pipeline traversed by route alternative GWNF 6, which exhibits multiple reaches of extremely steep slopes and narrow ridges. Annual precipitation patterns for the region are shown on Map 5 (p. 14). We previously noted that the topographical complexity and roughness of the terrain through which the ACP will travel coupled with the industry-wide lack of experience in pipeline construction through this kind of terrain in a humid climate suggest that erosion and sedimentation impacts are very likely.

In addition, even though the required route modifications have delayed the anticipated start of construction, ACP has stated its intent to achieve the same in-service date identified in its initial filings with FERC. ACP staff have indicated that in order to meet this milestone, project construction will occur within a compressed timeframe. Having an extensive length of the project under active construction at any one time may place a heavy burden on inspectors needing to verify that sedimentation and erosion

control measures are in place and performing as expected.

Proposed Land and Resource Plan Amendment(s)

The Land and Resource Management Plans (Forest Plans) that govern the use of National Forests do not represent the singular intent of the U.S. Forest Service (USFS). Rather, Forest Plans require multiple years of intensive dialogue between the USFS and a diverse group of forest stakeholders who often hold divergent or even incompatible views of how the forest should be managed. The management designations or prescriptions established in the Forest Plans reflect extensive efforts to obtain stakeholder input and achieve consensus on the resource values that are or should be present at a given place, and how best to conserve them. The Nature Conservancy participated extensively in the development of the Forest Plans for both the Monongahela and George Washington National Forests and can testify to the monumental effort required to draft a final plan that received broad support, as both of these plans did.

The Nature Conservancy requests that any amendments to either of the Forest Plans to accommodate construction of the ACP be consistent with the specific management designations for the areas the project would affect, and that such a finding of consistency be based on a complete analysis of potential project impacts (i.e. Final EIS). Any management designations that were established to conserve intact forest habitat and avoid durable fragmenting features should be deemed incompatible with pipeline construction. Further, the ACP should be called upon to address why the project route cannot be accommodated within the designated utility corridors on the George Washington National Forest.

Conclusion and Summary

The overarching conclusion of the Nature Conservancy is that there remain a number of serious potential impacts in the mountain portion of the ACP alignment. This highlights the challenge of attempting to route a pipeline project through such a biologically diverse region with so much intact forest and high integrity rivers, streams, and cave and karst systems.

We request that, within the EIS for the ACP:

- The recommended alternative for the Atlantic Coast pipeline avoid all preserves, conservation easements and Critical Habitats;
- The best available data, expert consultation, and field inventory are used to identify and avoid impacts to biologically significant cave systems along this and all other mid- Atlantic shale gas pipeline routes, and that natural cover be retained within an extended buffer around any cave or karst features within the project footprint;
- 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 for which mitigation is required;
- Potential impacts to ground and surface waters due to sedimentation and erosion during both normal and high intensity rain events during construction are comprehensively evaluated and minimization strategies are based upon techniques shown to have been effective in projects of comparable scale in similar terrain and climate and if this is not achievable a detailed justification of the efficacy of the proposed measures for managing and mitigating sedimentation and erosion impacts is provided;

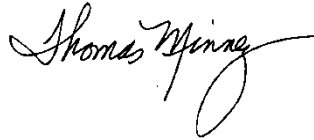
- Any amendments to a Forest Land and Resource Management Plan to accommodate construction of the ACP be consistent with specific management designations for the areas the project would affect, and that such a finding of consistency be based on a complete analysis of potential project impacts (i.e. Final EIS).

Thank you again 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.

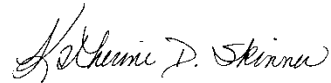
Sincerely,



Michael L. Lipford
Virginia Executive Director and
Mid-Atlantic Lead Director



Thomas Minney
West Virginia Executive Director



Katherine D. Skinner
North Carolina Executive Director

Enclosures

Cc: Pam Faggert, Vice President & Chief Environmental Officer, Dominion Resources
Clyde Thomson, Forest Supervisor, Monongahela National Forest
Joby Timm, Forest Supervisor, George Washington and Jefferson National Forests
Jennifer Adams, Project Coordinator, USFS
Lise Hanners, Eastern US Director of Conservation, The Nature Conservancy
Nels C. Johnson, N. American Energy by Design Project Director, The Nature Conservancy

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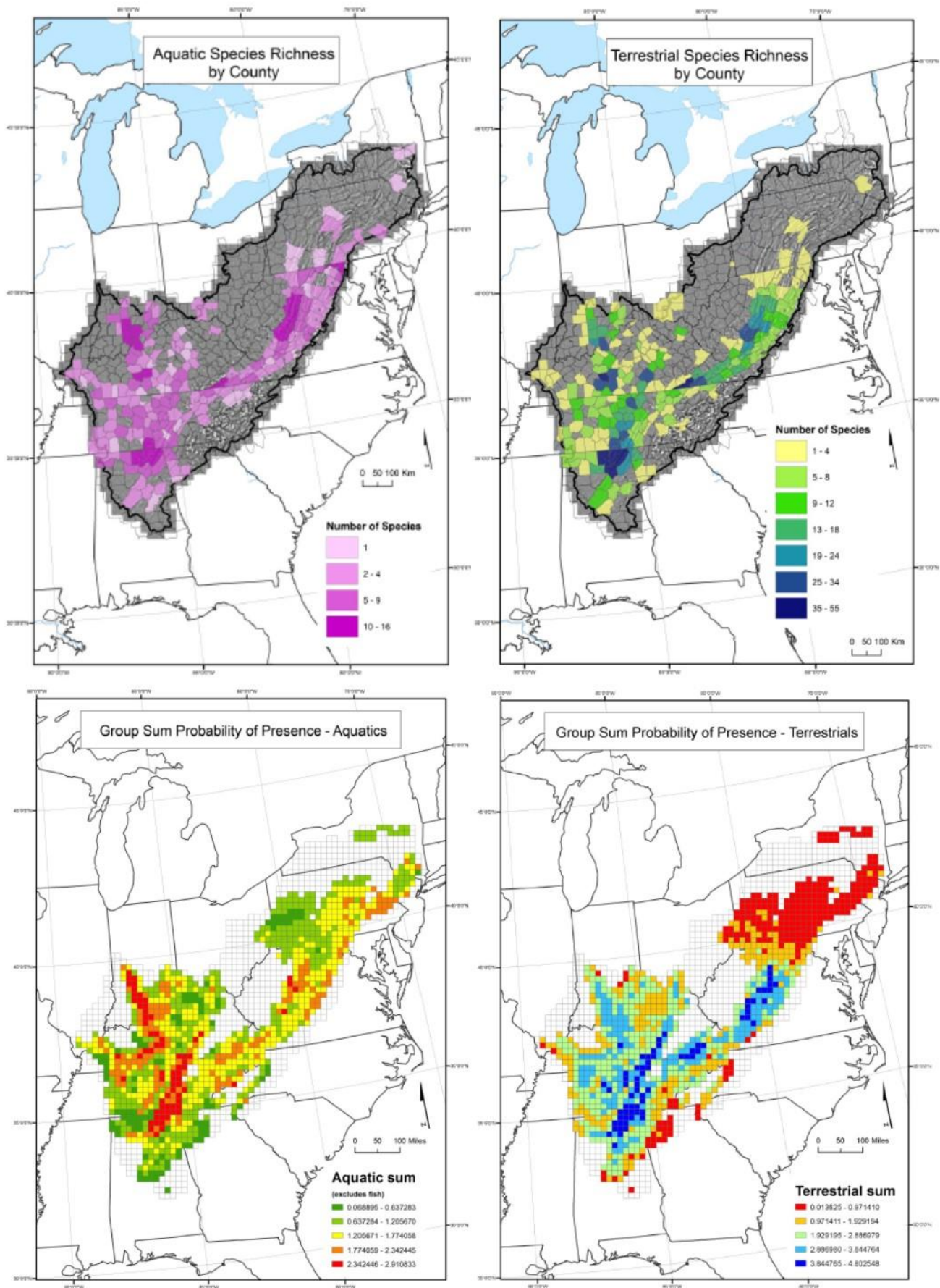
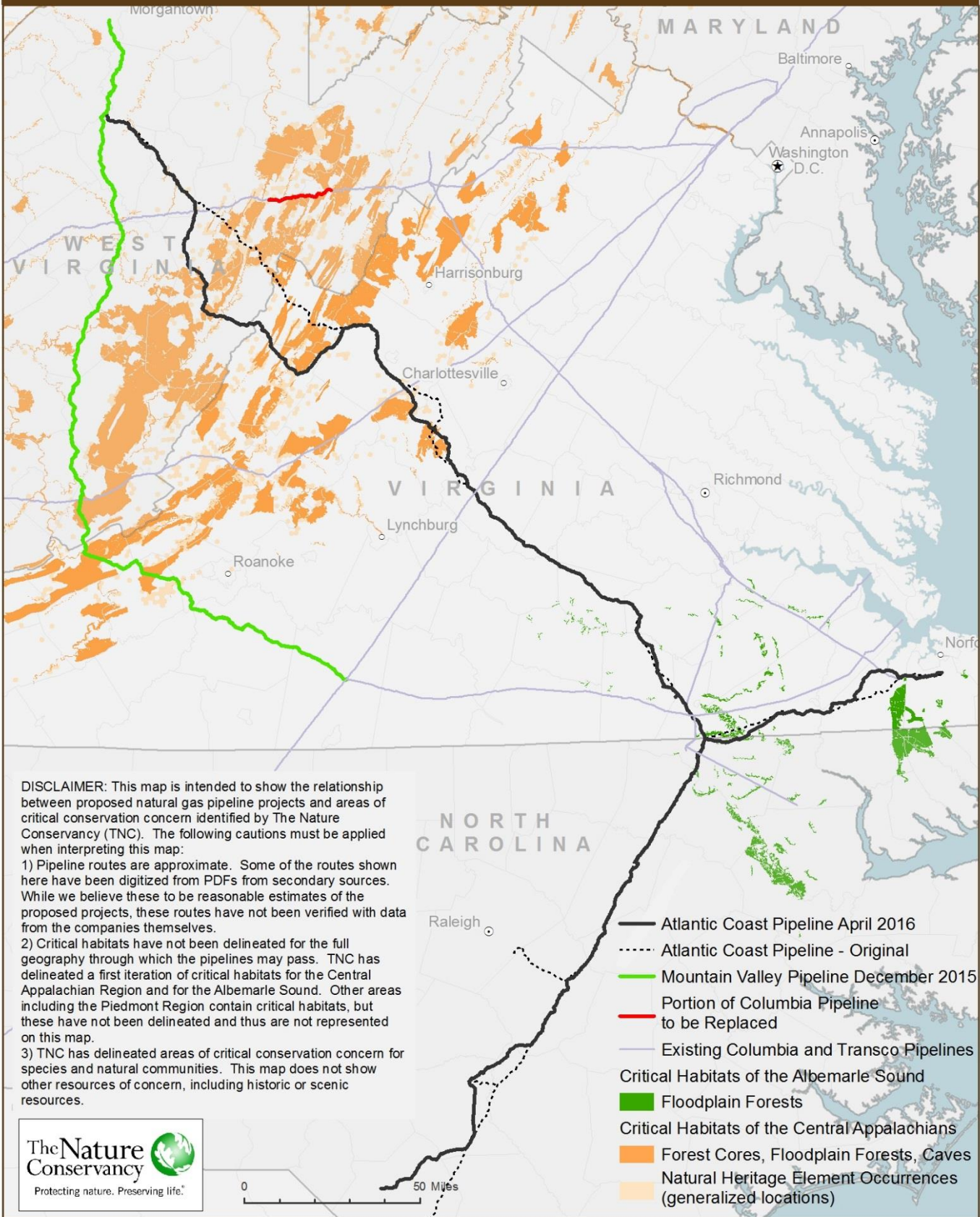
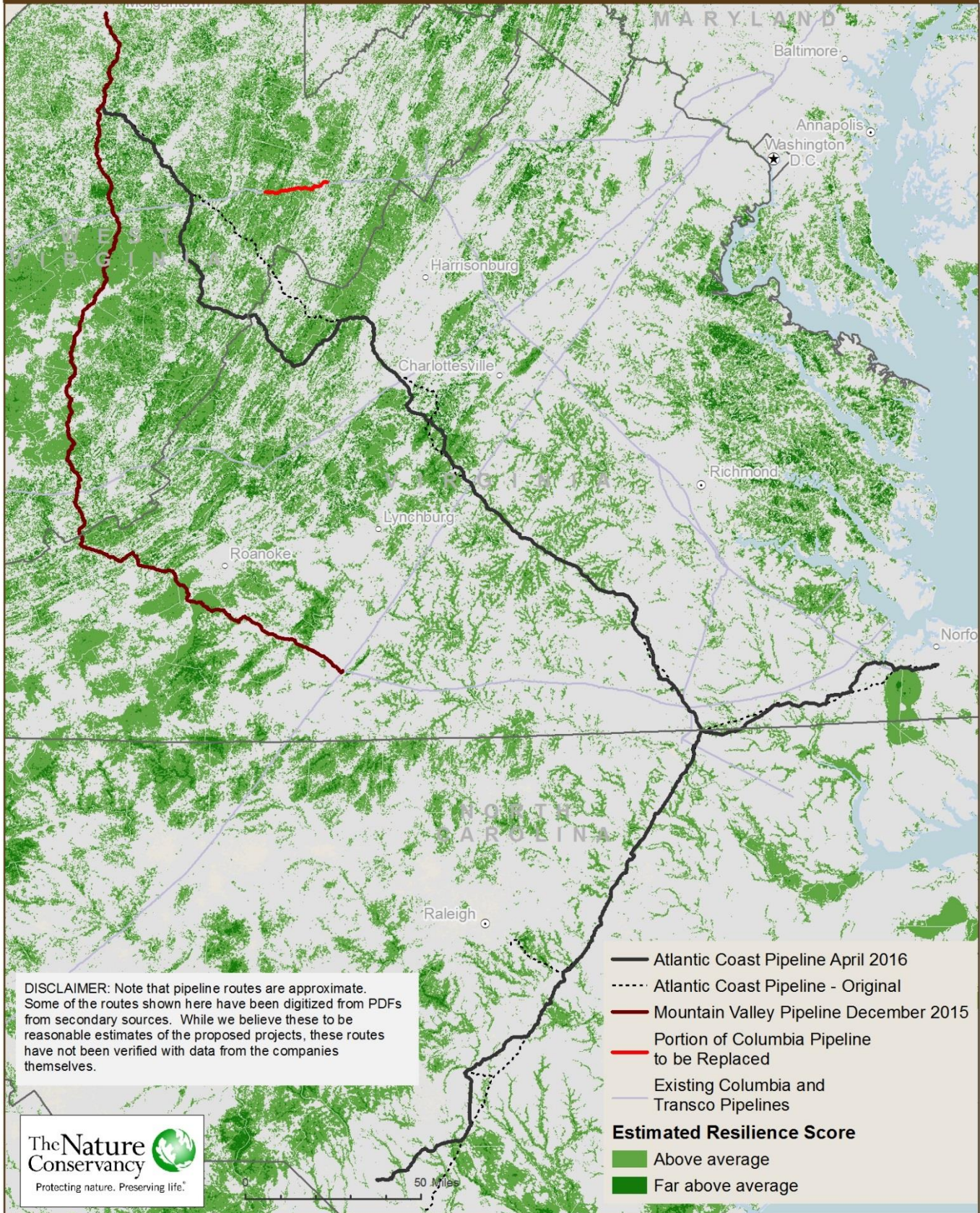


Figure 1. Patterns of subterranean aquatic and terrestrial species richness (a, b) and probability of occurrence (c,d) in the Appalachian LCC. From Culver et al, 2015.

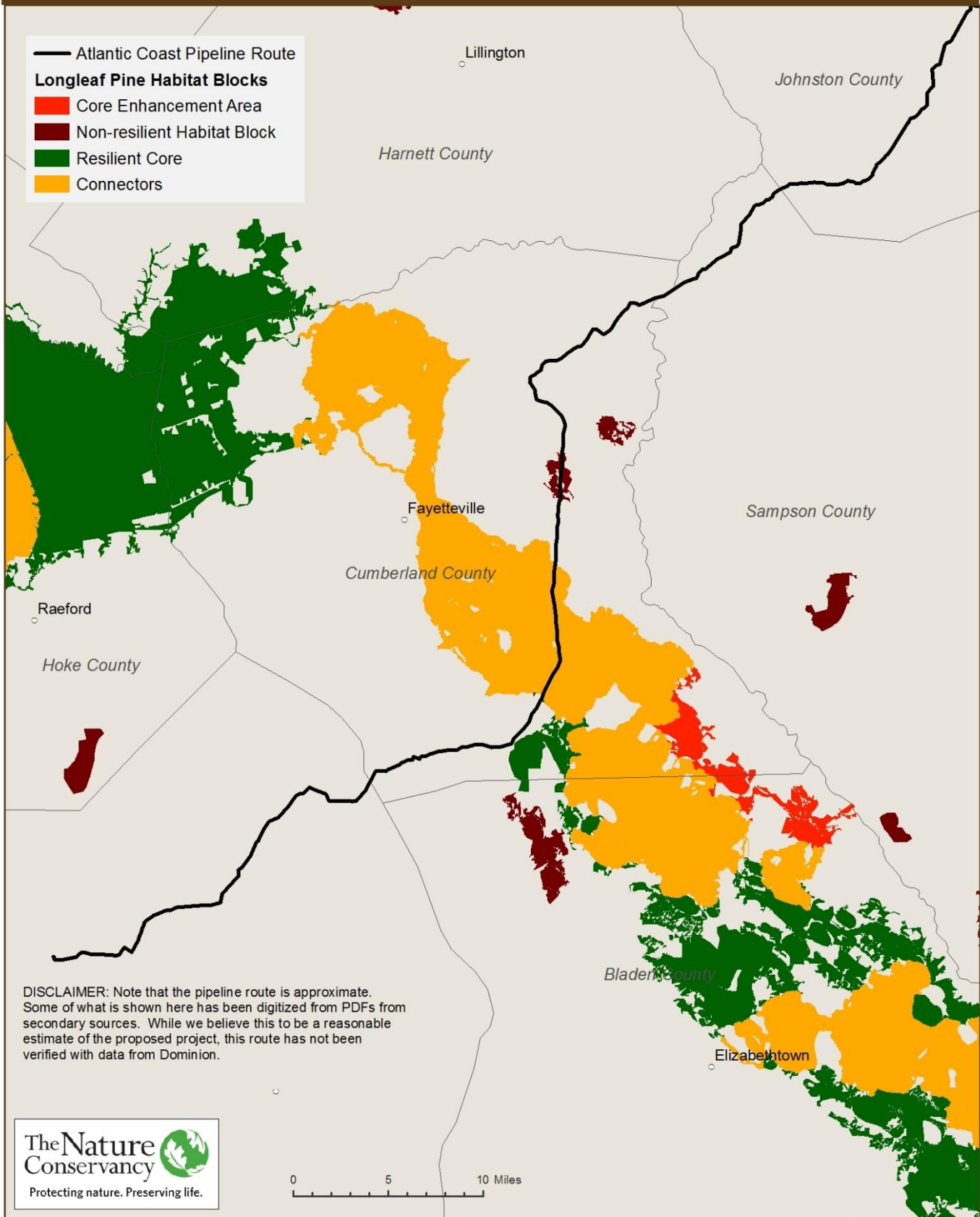
Map 1: Critical Habitats



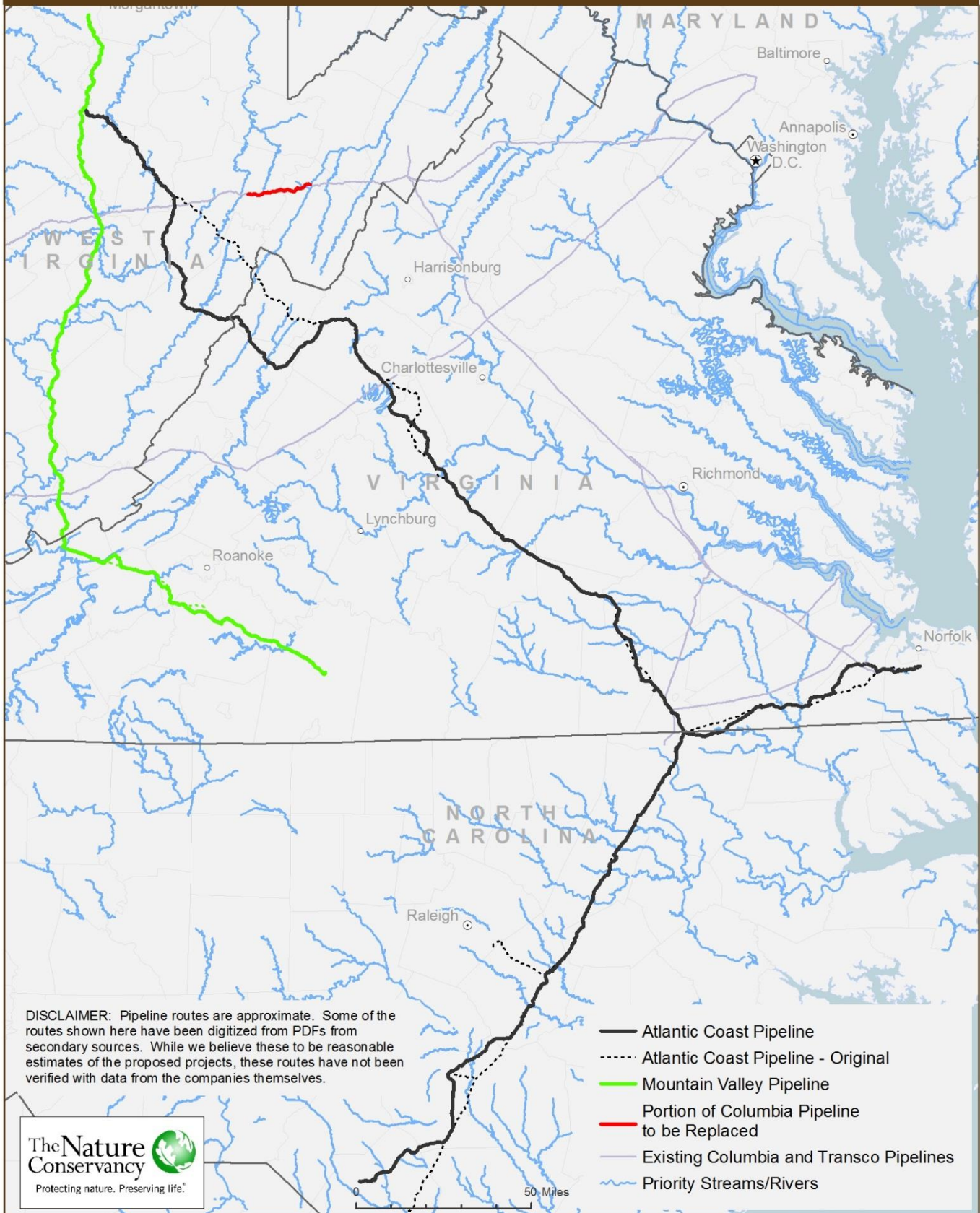
Map 2: Resilience



Map 3: Longleaf Pine Cores and Connectors



Map 4: Aquatics



Map 5: Annual Precipitation

