



File Code: 1900; 2700
Date: April 14, 2017

Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First St., N.E., Room 1A
Washington, DC 20426

Dear Ms. Bose:

Subject: Forest Service Comments on the Draft Biological Assessment
OEP/DG2E/Gas 4
Atlantic Coast Pipeline, LLC
Docket Nos. CP15-554-001 and -001

The Forest Service submits comments on the Draft Biological Assessment (fifth draft) filed with the Federal Energy Regulatory Commission (FERC) on January 27, 2017 by Atlantic Coast Pipeline, LLC (ACP) for the proposed Atlantic Coast Pipeline Project (ACP Project). The proposed ACP Project would affect National Forest System (NFS) lands in the Monongahela National Forest (MNF) and the George Washington National Forest (GWNF).

The Forest Service provides comments on the Draft Biological Assessment to assist ACP, Fish and Wildlife Service, and FERC with identifying potential effects of the proposed ACP Project on federally listed species and their habitats occurring on NFS lands. We note that additional surveys are required on the GWNF on a segment of the route about 1.4 miles long, and possibly in other locations on both the GWNF and MNF due to route modifications and construction of and improvements to access roads. We can make our final determination about additional surveys after receiving the construction footprint shapefiles we have requested from ACP. We appreciate the opportunity to comment on the Draft Biological Assessment and look forward to continued consultation concerning federally listed species on NFS lands.

For questions, please contact Jennifer Adams, Special Project Coordinator, at (540) 265-5114 or by email at jenniferpadams@fs.fed.us.

Sincerely,


CLYDE THOMPSON
Forest Supervisor

cc: Atlantic Coast Pipeline, LLC



**FOREST SERVICE COMMENTS ON DRAFT BIOLOGICAL ASSESSMENT
ATLANTIC COAST PIPELINE PROJECT**

Comment #	Page #	Section #	Comment
1	7	2.2.2	<p>BA statement: Prior to beginning ground-disturbing activities, Atlantic will fell trees and mow non-forested areas outside of the migratory bird nesting and bat summer roosting seasons.</p> <p>Comment: Please add that both mechanical and chemical pre-treatment of NNIS will also be conducted at this time as appropriate, as per the Non-Native Invasive Plant Species Management Plan. This is important for determining effects of construction on TES plant species.</p>
2	11	2.2.2	<p>BA statement: In streams with potential for or known occurrences of federally listed species, no grubbing will occur within 50 feet of the stream between November 15 and April 1.</p> <p>Comment: Please discuss how and why this timeframe was selected to what it relates. Most of the mussel TOYR are during the spring to summer. It does not correspond to the TOYR in Attachment B, table B-3 of the BA nor table 4.6.1-2 in the DEIS.</p>
3	11	2.2.2	<p>BA statement: If bridging and grubbing is not completed at this time, clearing activities could be delayed and could potentially extend tree felling and mowing into the nesting season of migratory birds (e.g., areas where access is not available in between sensitive waterbody crossings, thus requiring disturbance within the buffer to install bridges and access these otherwise isolated segments of the Project to conduct tree felling and mowing).</p> <p>Comment: If this occurs on NFS lands, the Forest Service should be consulted.</p>
4	12	2.2.2	<p>BA statement: Temporary slope breakers will be installed during grading in accordance with the Plan to reduce runoff velocity and divert water off the construction corridor into stable, well-vegetated areas...</p> <p>Comment: Such diversions need to be installed so as to avoid any impact to areas with known TES plants.</p>
5	17	2.2.8	<p>BA statement: Segregated topsoil will be spread over the surface of the right of way...</p> <p>Comment: Please revise to include the exception that topsoil identified as containing non-native invasive species will not be re-spread over the right-of-way.</p>
6	17	2.2.8	<p>BA statement: The incorporation and development of native flowering plants could create, where conditions and land management practices along the pipeline corridor are suitable, substantial acreages of pollinator habitat where this type of habitat is either currently non-existent or was previously degraded.”</p> <p>Comment: Please either remove or provide support for the statement that pollinator habitat in some areas is “either non-existent or...degraded.” Many native trees and shrubs provide excellent pollinator habitat. Replacing them with native forbs may provide habitat for different pollinators, but it is still a disruption to the current existing ecological community, and not necessarily an improvement to what is already there.</p>
7	18	2.2.8	<p>Please add a paragraph describing plans for post-construction invasive species control and monitoring. This is an important component for assessing the impact of the pipeline on the continued survival of TES populations.</p>

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8	18	2.3.2	<p>BA statement: some new roads may need to be built in remote areas...New roads will also need to be built to provide access to aboveground facility sites...Improvements for access roads will be identified during the refinement phase of the Projects...</p> <p>Comment: All proposed new Access roads and improvements to existing roads on the MNF will need to be surveyed for TES plants prior to construction, and potential effects to TES plants will need to be avoided, minimized, or mitigated to the extent practicable, in accordance with the MNF's LRMP. Please include language to this effect in this document in order to support determinations of effects to TES plants. FR 1026, for example, has several improvements proposed in areas that have not been surveyed, despite the road being a known location for the Federally Endangered running buffalo clover.</p>
9	23	2.4.2.3	<p>BA statement: Once dewatering is complete, any fish trapped in the temporary diversion structure will be removed and returned to the flowing waterbody.”</p> <p>Comment: Revise to read, “...fish and other aquatic species...,” as stated in the other methods above.</p>
10	36	2.7	<p>BA statement: Sprays for invasive species will not occur within 25 feet of Federally listed species...”</p> <p>Comment: The Non-Native Invasive Plant Species Management Plan states, “within 60 feet of any identified sensitive plant species, only hand-pulling of NNIS will be permitted” (COM plan, 11.4.1.1, p. 161) and “herbicides will not be ground applied within 60 feet of any known threatened, endangered, proposed, or sensitive plant” (p. 165.) Please revise for consistency, and ensure statements in the DEIS etc. are consistent as well.</p>
11	49	2.8.2.1	<p>BA statement: In the event that an invasive plant species becomes established in the right of way, Atlantic and DTI will implement measures...to control invasive plants within the right of way...”</p> <p>Comment: Regarding every similar such statement in this table, this is insufficient to prevent the increase of invasive species as a result of this project. Effective control must be implemented in all areas of impact, including but not limited to the right of way, all access roads, all ATWS, aboveground facilities, road improvements, etc.</p>
12	51	Table 2.8.2-1	<p>BA statement: Equipment bridges are not required at minor waterbodies that do not have a state-designated fishery classification or protected status (e.g., agricultural or intermittent drainage ditches).</p> <p>Comment: There are many “Minor waterbodies (less than or equal to 10 feet wide at the water’s edge at the time of crossing)” that do not have a state-designated fishery classification or protected status that should have equipment bridges.</p>
13	58	2.8.2.11	<p>BA statement: Any spills...within 100 feet of known occurrences of federally listed species...</p> <p>Comment: Please clarify what spills.</p>
14	59	2.8.3.2	<p>BA statement: Employ reasonable and practical measures to control the invasive plants within the right of way...implement control measures at the aboveground facility sites...”</p> <p>Comment: Controlling invasives within the right of way and aboveground facilities alone is insufficient to prevent the increase of invasive species as a result of this project. Effective control must be implemented in</p>

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			<p>all areas of impact, including but not limited to the right of way, all access roads, all ATWS, aboveground facilities, road improvements, etc.</p> <p>BA statement: Treat weed infestations that develop as a result of construction...</p> <p>Comment: Please explain how NNIS sites will be chosen for treatment. Meaning, how populations that develop as a result of construction will be differentiated from pre-existing populations (which are also going to be treated), and include a timeframe for how frequently treatments will be conducted, or reference where plans with those details will be found (ideally, the Non-Native Invasive Plant Species Management Plan). Given the variety of species to be treated, and the different treatment windows for each species, monitoring and control activities for NNIS should be scheduled annually in spring, summer, and fall, depending on the species.</p>
15	60	2.8.3.2	<p>BA statement: Sprays for invasive species will not occur within 25 feet of federally listed species.</p> <p>Comment: The GW Forest Plan regarding vegetation and herbicides includes the standards and language below. Please revise the BA to use the correct language.</p> <ul style="list-style-type: none"> • FW-110 No herbicide is aerially applied within 300 feet, nor ground-applied within 60 feet, of any known threatened, endangered, proposed, or sensitive plant, except where its use is necessary to control non-native invasive species affecting federally listed or sensitive species. Buffers are clearly marked before treatment so applicators can easily see and avoid them. • FW-113 When applying herbicide, protect non-target vegetation, especially threatened, endangered, proposed, or sensitive plants by employing a physical barrier between them and the area being treated. The physical barrier must be sufficient to protect the non-target vegetation from herbicide drift and flow. • FW-116 Herbicide mixing, loading, or cleaning areas in the field are not located within 200 feet of private land, riparian corridors, open water or wells, or other sensitive areas.
16	60	2.8.3.2	<p>BA statement: Sprays for invasive species will not occur within 25 feet of federally listed species.”</p> <p>Comment: The Non-Native Invasive Plant Species Management Plan states, “within 60 feet of any identified sensitive plant species, only hand-pulling of NNIS will be permitted” (COM plan, 11.4.1.1, p. 161) and “herbicides will not be ground applied within 60 feet of any known threatened, endangered, proposed, or sensitive plant” (p. 165.). Please revise for consistency, and ensure statements in the DEIS etc. are consistent as well.</p> <p>For the Monongahela, protection measures should be consistent with those outlined in the Forest-wide Non-native Invasive Plant Management Project Environmental Assessment.</p>
17	60	2.8.3.2	<p>BA statement: Sprays for invasive species will not occur within 25 feet of federally listed species.</p>

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			<p>Comment: For the Monongahela, protection measures should be consistent with those outlined in the Forest-wide Non-native Invasive Plant Management Project Environmental Assessment.</p>
18	60	2.8.3.3	<p>BA statement: Monitor to determine the success of revegetation and implement corrective action as required.”</p> <p>Comment: Please describe the duration and extent of the monitoring, what extent of the revegetation sites will be monitored, and by what method, success criteria, and the entity to conduct the monitoring, or reference where plans with those details will be found (ideally, the Non-Native Invasive Plant Species Management Plan).</p> <p>BA statement: Following successful revegetation, monitor and treat invasive plant species as part of the normal operations and maintenance activities in accordance with applicable State/Commonwealth and Federal regulations.</p> <p>Comment: Multiple other statements in this document and in the DEIS state that invasives will be treated according to the Non-Native Invasive Plant Species Management Plan. Please revise this statement or remove it, or, if treatments will only be done according to “applicable State/Commonwealth and Federal regulations,” please cite those regulations in this document or in the Invasive Management Plan so the efficacy of this method can be assessed.</p> <p>Monitoring for and control of invasive species should take place every year during spring, summer, and fall (depending on the species), and needs to start concurrently with the beginning of the revegetation process. Waiting until revegetation is deemed successful would allow invasive plants several years to become established and spread, and would be detrimental to habitat and TES species.</p> <p>Please provide a revised monitoring plan that will provide for monitoring for NNIS at least annually, or reference where plans with those details will be found (ideally, the Non-Native Invasive Plant Species Management Plan).</p> <p>Please describe how invasive species monitoring will be conducted, how sites will be chosen for treatment, and which sites will be treated and how often, or reference where plans with those details will be found (ideally, the Non-Native Invasive Plant Species Management Plan).</p>
19	60	2.9	<p>BA statement: Although not all of the 300 foot wide linear corridor will be directly impacted by the Projects, this area allows room for minor modifications to the route that may be needed during construction.</p> <p>Response: When route modifications are made that bring the area of direct impact to the edge of the 300-foot-wide linear corridor that was surveyed, indirect effects are likely to affect areas that have not been surveyed. Therefore on NFS lands, additional surveys of 150 feet beyond the area of impact are needed to ensure no Federally listed or RFSS plant species are affected by any route variations.</p>
20	100	5.4.2	<p>BA statement: <input type="checkbox"/> Within the 3-mile buffer of a northern long-eared bat capture location (however, due to the implementation of the 4(d) rule, this buffer no longer applies).</p>

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			<p>Comment: While the USFWS may have determined that the 3-mile buffer no longer applies as a result of the 4(d) rule, the MNF still requires that roost survey information to inform our analysis and assessment of compliance with MNF Forest Plan Standards and Guidelines related to TES bat species. The MNF approved of the survey plan with the knowledge that, based on this bulleted item, virtually all NFS lands crossed by the proposed ROW within the MNF would be included in the survey effort based on historic captures in the area.</p>
21	101	5.4.2	<p>BA statement: Potential roost tree surveys identified 16 primary roost trees and 88 secondary roost trees within the ACP workspace during 2015 and 2016 surveys...</p> <p>Comment: Numbers provided here are incomplete, pending additional surveys on NFS lands within the MNF. We anticipate that many more roost trees will be identified as a result of ongoing roost surveys being completed in compliance with the survey plan (i.e., including all areas within 3 miles of northern long-eared bat captures).</p>
22	105	5.4.3	<p>BA statement: Adult females and juvenile males in maternity trees and adult males in bachelor colonies would be able to leave...</p> <p>Comment: Why are juvenile males referred to separately from juvenile females?</p>
23	107	5.4.3	<p>BA statement: If a blasting plan is developed for an area in the vicinity of a federally listed species, Atlantic and DTI will coordinate with the FWS.”</p> <p>Comment: If on NFS lands, the Forest Service should also be consulted and direction provided in the COM Plan should be followed.</p>
24	108	5.4.3	<p>BA statement: Utility corridors may create travel corridors for Indiana bats traveling between summer roost trees and foraging areas, much like stream corridors are used by bats...</p> <p>Comment: Utility corridors do not provide the same habitat benefits that stream corridors do.</p>
25	120	5.5.2	<p>BA statement: West Virginia NHI data identified six occurrences of northern long-eared bat within five miles of the mainline and access roads in West Virginia.</p> <p>Comment: Hundreds of northern long-eared bats were captured within five miles of the proposed centerline within the MNF alone (as part of the Forest’s annual survey efforts). Most of these were from one particular area and approximately half were reproductively active females. Spatial information regarding all long-eared bat captures on the MNF within 3 miles of the centerline were provided to ACP in November of 2016 when it became clear that this information was missing from the roost tree survey analysis.</p>

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26	122	5.5.2	<p>BA statement: No maternity roost trees were identified within the MNF. All northern long-eared bat captures and roost locations in 2015 were on a route that has now been superseded.</p> <p>Comment: While no roost trees were specifically identified within the MNF, the prevalence of reproductive female NLEB captured in the vicinity of the centerline (at sites as close as ¼ mile) indicates that the area likely provides maternity habitat.</p>
27	130	5.5.2	<p>BA statement: West Virginia FWS noted that mitigation is not required for potential northern long-eared bat trees under the 4(d) rule; however, potential roost tree information is useful for determining habitat suitability and quality in the Project area.</p> <p>Comment: The FWS does not address the Forest Service’s responsibilities under the Land and Resource Management Plan, which contains standards and guidelines to be followed. Because some of these standards and guidelines will not be followed (shagbark hickories and snags will be cut), mitigation measures will need to be incorporated, and a plan amendment may be needed. Mitigation measures include snag creation and installation of artificial roosting structures at a 1:1 ratio, so it will need to be known how many snags and shagbark hickories above 5 inches DBH are taken during clearing. In order to do that, document and incorporate these details into the timber cruising plan. Details of the mitigation measures will be incorporated once bat surveys are complete.</p>
28	130	5.5.2	<p>BA statement: Potential Roost Tree Surveys- West Virginia. Potential roost tree surveys for northern long-eared bats were conducted ...Potential roost tree surveys identified 16 primary roost trees and 93 secondary roost trees within the ACP workspace during 2015 and 2016 surveys...</p> <p>Comment: Same comment as that given for Indiana bat roost tree surveys: Numbers provided here are incomplete, pending additional surveys on NFS lands within the MNF. We anticipate that many more roost trees will be identified as a result of ongoing roost surveys being completed in compliance with the survey plan (i.e., including all areas within 3 miles of northern long-eared bat captures).</p>
29	131	5.5.2	<p>BA statement: For purposes of this BA, occupied habitat for northern long-eared bats was considered:</p> <ul style="list-style-type: none"> <input type="checkbox"/> a 0.25 mile buffer around agency and survey-identified known hibernacula; and <input type="checkbox"/> a 150 foot buffer around active roost trees. <p>Comment: While we understand that the BA focuses on USFWS requirements, it is important that impacts to TEP species be addressed as they relate to Forest Plan Standards and Guidelines as well since this is the only document in which these species, and potential impacts, are discussed. As such, a more comprehensive assessment is required here which includes all potential habitat on the MNF, not just that within the restricted areas noted above, so that an appropriate assessment can be made regarding whether the project is consistent with the Forest Plan. Alternatively, a separate document should be provided with that information.</p>

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30	132	5.5.3	<p>BA statement: If a blasting plan is developed for an area in the vicinity of a federally listed species, Atlantic and DTI will coordinate with the FWS.</p> <p>Comment: If on NFS lands, consult the Forest Service and follow any applicable direction provided in the COM Plan.</p>
31	137	5.5.4	<p>BA statement: In the event the tree clearing restriction cannot be met, Atlantic and DTI will consult with the FWS to determine appropriate minimization and mitigation measures.</p> <p>Comment: If this is the case on NFS lands, consult with the Forest Service. The FWS does not address the Forest Service’s responsibilities under the Land and Resource Management Plan, which contains standards and guidelines to be followed. If these standards and guidelines, including timing restrictions, will not be followed, mitigation measures will need to be incorporated in consultation with the Forest Service and a plan amendment may be needed.</p>
32	138	5.6.2	There appears to be confusion regarding Hupman’s Saltpetre Cave and Arbegast Cave. Please confirm locations in Highland County and address accordingly.
33	140	Fig 5.6.2-1	On the map, please confirm the location of Arbegast Cave and include location of Hupman’s Saltpetre Cave.
34	143	5.6.3	<p>BA statement: If a blasting plan is developed for an area in the vicinity of a federally listed species, Atlantic and DTI will coordinate with the FWS.</p> <p>Comment: If on NFS lands, consult with the Forest Service.</p> <p>BA statement: Fragmentation of forest habitat used for foraging or migration may contribute to population declines of the Virginia big-eared bat. (first sentence of paragraph); Impacts on Virginia big-eared bats from clearing activities are expected to be minimal. (last sentence of paragraph)</p> <p>Comment: According to this statement, impacts would be minimal but may lead to population declines, which is contradictory. Also, this is not a forest interior species, so fragmentation is not as much of a concern as it is for other species.</p> <p>BA statement: The Virginia and North Carolina FWS offices recommend the following conservation measures specific to the Virginia big-eared bat....</p> <p>Comment: Please note if the WV FWS office provided any recommended conservation measures.</p>
35	145	5.7.2	<p>Comment: Contrary to IPaC, there are no known occurrences of gray bat in Bath County, Virginia. See information provided by VDGIF: https://www.dgif.virginia.gov/wildlife/information/gray-bat/</p> <p>The only known occurrences in VA are in Washington, Scott, & Lee Counties in far southwest VA in the Upper Tennessee River watershed (Clinch, Holston, & Powell Rivers).</p>
36	165	5.11.1	<p>BA statement: In Virginia access road 33-078-AR1 crosses Mill Creek two times. This waterbody has the potential for federally listed mussels; however, no mussels were identified during surveys in 2017.</p>

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			Comment: Please explain about the access road that crosses the Cowpasture river which are listed in table 5.11.1-1 and the table indicates assumed presence and surveys pending. Also, figure 5.11.1-1 shows surveys for mill creek still pending
37	173-174	5.11.1.3	BA statement: James spiny mussels may occur in the James River drainage in Bath County, Virginia and are known to occur in the Cowpasture River upstream of the project crossing location (VDGIF, 2016). Comment: James spiny mussels are known to occur downstream from the pipeline crossing and at the access road location, upstream from the pipeline.
38	174	5.11.1.3	BA statement: Virginia WERMS data identified occurrences of James spiny mussel within two miles of the mainline and access roads in the Cowpasture River in Bath County Comment: Please address James Spiny mussels in Mill Creek.
39	175	5.11.1.6	BA statement: A list of rivers in VA where the Atlantic pigtoe may be found. Comment: It is also known from Mill Creek, which the pipeline and access roads would cross.
40	177	5.11.2	BA statement: Direct effects are not expected to the known population of James spiny mussel in the Cowpasture River due to its occurrence upstream of the project crossing location; any increased sediment generated by the construction activities will flow away from the known population. Comment: The access road crosses at known location of spiny mussels. Please discuss if there would be direct effects, and if so, identify how far downstream the nearest populations occur.
41	179	5.11.2	BA statement: In Virginia Access road 33-078-AR1 crosses Mill Creek two times. This waterbody has the potential for federally listed mussels; however, surveys in 2017 did not identify any mussels at this crossing location. Comment: Include a discussion about the access road crossing Cowpasture River (table 5.11.1-1). Also, surveys of Mill Creek are listed as incomplete (figure 5.11.1-1).
42	182	5.11.4	BA statement: A Preliminary Determination of Effect of <i>may affect, but is not likely to adversely affect</i> for the Dwarf wedgemussel, the James spiny mussel, and tar river spiny mussel. There is insufficient analysis to support that determination. Comment: Similar language is used for the clubshell as to potential effects, however, the preliminary determination is <i>may affect, and is likely to adversely affect</i> . Other than the inclusion of water withdrawals from McElroy Creek, describe the difference to warrant the different effects determinations. Also, page 4-238 of the DEIS includes a determination of <i>may affect, but is not likely to adversely affect</i> for all of the above species. There is inconsistency between the documents.
43	196	5.13.2	Please add that additional surveys will be needed in areas of route variations, access road improvements, and other currently unforeseen changes to the total impact area that may create potential direct and indirect impacts on unsurveyed areas.
44	216	5.13.2.7	BA statement: Running buffalo clover may occur in West Virginia. Comment: Running buffalo clover does occur in West Virginia, as dozens of known populations and

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			ACP's own survey results confirm. Please revise for accuracy. This paragraph also appears to jump around between discussing the SHP, the ACP, RBC habitat types, and survey methodology. Please revise for clarity.
45	220	5.13.2.9	BA statement: Small whorled pogonia has the potential to occur...in Randolph County, West Virginia, and... Comment: Small whorled pogonia is known to occur in Pocahontas County, by ACP's own surveys. Please revise for accuracy.
46	224	5.13.3	BA statement: 0.78 acres of running buffalo clover are located within the workspace and access roads and will be directly impacted by construction activities. This is approximately 16% percent of the known populations.... Comment: The DEIS states that approximately 25% of known populations within the vicinity of the projects will be directly affected. Please revise the DEIS and/or the BA for accuracy and consistency.
47	224	5.1.3.3	BA statement: Four populations of small whorled pogonia were identified within the study corridor; however, no direct effects are expected on small whorled pogonia since they are not within the project workspace or on access roads. Comment: During a field survey of the proposed project the Forest Service was told by ACP that blasting or other removal of rock material (if necessary) could result in the movement of that material downslope potentially impacting the small whorled pogonia. This should be noted in the BA. Also, please update the statement above following completion of the 2017 surveys for small whorled pogonia, if additional populations are identified during the surveys.
48	224	5.13.3	BA statement: Atlantic performed an evaluation on the potential changes to light on the four small whorled pogonia populations. Comment: Please revise this opening statement to make it clear it was a full microclimate analysis, covering light, wind, overland flow, invasive species, deer browse, and operations and maintenance. Please incorporate the full results of the microclimate analysis into the BA, including invasive species, deer browse, and operations and maintenance, but do so only after addressing the following comments regarding the light analysis, impacts of invasive species, deer browsing, and monitoring: Regarding light: There is no quantified change in light regime provided, only a qualitative visual assessment of a modeled simulation. There is no description of any direct measurements taken on-site to ground-truth the model, nor a description of how baseline or construction conditions sunlight values were established, nor a quantitative assessment of how proposed mitigation would preserve the existing light regime. The simulations also do not demonstrate the impact of the one route realignment on light regimes, though it does state later in the document that the realignment is likely to reduce the impact to the population.

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			<p>Please provide a quantified assessment of expected changes in light regime to each population. Please re-run the simulation for the population adjacent to the realignment and provide a quantified assessment of the realignment's effect on light regimes. Please also provide information about how baseline and construction conditions light levels were established for the simulation, and any information about how those model values correspond to actual values on site.</p> <p>BA statement: Regarding invasive species, the microclimate report states that, "Atlantic will implement the Invasive Species Plan for the Project, which includes monitoring the right of way for infestation of invasive species that may have been created or exacerbated by its construction activities, and treating such infestations as described in the Invasive Species Plan for the Project."</p> <p>Comment: Please clarify whether the "Invasive Species Plan for the Project" mentioned is the Upland Erosion Control, Revegetation, and Maintenance Plan, commonly referred to as simply "the Plan," or Section 11.0 of the COM plan, which is the "Non-Native Invasive Plant Species Management Plan" (but which also references "the Plan," and the Restoration and Rehabilitation Plan (Section 10.0 of the COM plan), regarding post-construction monitoring for invasives). Taken together, the Non-Native Invasive Plant Species Management Plan (COM Plan Section 11), the Restoration and Rehabilitation Plan (COM Plan Section 10), and the Upland Erosion Control, Revegetation, and Maintenance Plan ("the Plan") state the following plans for NNIS monitoring:</p> <ul style="list-style-type: none"> • post construction monitoring and treatment will continue until the density and cover of non-NNIS species is similar to nearby non-forested, undisturbed lands, and until NNIS and noxious weeds are absent unless they are abundant in adjacent undisturbed areas. (Non-Native Invasive Plant Species Management Plan) • "post-construction and post-disturbance monitoring should be conducted in perpetuity, for the life of the project on USFS lands", "Qualitative monitoring will be conducted in years 1 to 5", and quantitative monitoring (via random quadrat sampling in consultation with USFS) would be done in year 3. "Reports, including a summary of corrective actions proposed, will be submitted within three months of identifying these conditions. Areas where control applications for noxious weeds are needed will be reported." (Restoration and Rehabilitation Plan) • "Conduct follow-up inspections of all disturbed areas, as necessary...at a minimum...after the first and second growing seasons." (Upland Erosion Control, Revegetation, and Maintenance Plan) <p>The sum of the guidance provided by these documents is insufficient to effectively monitor and treat the invasive plant species found along the project route. Appendix J of the COM plan describes each NNIS species and its optimal treatment timeframe and method, with timeframes ranging from early spring to late fall. Please use this to develop a plan to conduct annual</p>

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			<p>NNIS monitoring at appropriate times of the year for each species, and to develop a plan for treating NNIS discoveries in a timely fashion.</p> <p>Please provide more details regarding how often monitoring and reporting will be conducted for the remainder of the life of the project on USFS land, after year 5.</p> <p>When a sufficiently detailed plan for monitoring and treatment is developed, please add those details to COM plan sections 10 and 11, the SWP Evaluation report, the BA, and the DEIS. These important details need to be accessible to the reader in order to follow the logic of the effects determinations.</p> <p>BA statement: Deer browsing may increase...because additional sunlight on the forest floor may increase the understory vegetation.</p> <p>Comment: Please provide a reference to support this statement.</p> <p>Mitigation measures are planned for this area with the stated purpose of preventing additional sunlight on the forest floor. If these measures are sufficient, then there should not be an increase in light or understory vegetation as a result. If these measures are not sufficient, then additional mitigation to prevent both increased sunlight and deer browse is called for. Please review the consistency of the analysis as a whole, and revise as appropriate.</p> <p>BA statement: A qualified botanist would document populations during the growing season the year before construction (2017), during construction, and the year following initial restoration activities near these sites.</p> <p>Comment: This is not a sufficient length of follow up time to establish population survival and sustainability. According to research cited in Atlantic’s own microclimate analysis, individuals of this species can go dormant for as long as 4 years at a time, and viability of a population can only be assessed with three consecutive years of monitoring or more (US FWS, 2008).</p> <p>Please increase the monitoring timeframe such that it is sufficient to establish post-construction survival of these populations, and describe what that timeframe will be in the Restoration and Rehabilitation Plan, the BA, the DEIS, and the microclimate analysis report.</p>
49	225	5.1.3.3	<p>BA statement: Using topography, Atlantic first determined whether there is a potential surface water flowpath from the construction right of way to each of the plant populations. For groundwater, it was ascertained whether the buried pipeline and backfilled materials will affect the flow of groundwater in the vicinity of the plant populations. Depth of groundwater, rooting depth of the plant, groundwater flow paths relative to the pipeline and the plant locations were evaluated to determine if there is a potential for an impact.</p> <p>Comment: ACP conducted simulations of effects to overland flow of water and effects to groundwater (depth to the water table). However, there is no mention of the movement of water in the soil layer that could be affected by the proposed project. The Recovery Plan for the small whorled pogonia discusses the</p>

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			<p>fragipan soils that often under lay plant populations. These hard pan layers intercept the downward movement of water in the soil causing a lateral flow of water. It is possible that this lateral flow of water through the soil, moving downhill to the plant population is important for plant survival*. This omission needs to be corrected.</p> <p>*From the Massachusetts Division of Fisheries and Wildlife: This species relies on water moving from upslope regions down to its populations. When these vital buffer zones are altered, water movement is disrupted and the microclimate of the area often changes, creating a different habitat in which <i>Isotria medeoloides</i> cannot grow. It is believed that it is as important to preserve these peripheral areas as it is to preserve the habitat on which the plants occur.</p>
50	225	5.13.3	<p>BA statement: Atlantic incorporated a route shift.</p> <p>Comment: Additional botanical surveys need to be done as a result of this route shift, as the shift takes the route to the edge of the previously surveyed corridor. Surveys need to be conducted in a 150-foot buffer from the new anticipated limits of impact to determine the presence or absence of TES species adjacent to the realignment, and to determine potential direct and indirect effects to them as a result.</p>
51	225	5.1.3.3	<p>BA statement: The population on GWNF land near project milepost 85.2 may be affected by a change in light regime from removal of vegetation on the right of way, and due to its location downslope of the construction workspace is at risk of sediment reaching the plants from the construction right of way. Atlantic will use diversion channels to divert water away from the plants during construction, minimizing erosion and sedimentation which could destroy the plants.</p> <p>Comment: See previous comments regarding Direct and Indirect Effects.</p>
52	226	5.13.4	<p>BA statement: Atlantic will implement the Invasive Species Plan for the Project, which includes monitoring the right of way for infestation of invasive species that may have been created or exacerbated by its construction activities, and treating such infestations as described in the Invasive Species Plan for the Project.</p> <p>Comment: Please clarify whether the “Invasive Species Plan for the Project” mentioned is the Upland Erosion Control, Revegetation, and Maintenance Plan, commonly referred to as simply “the Plan,” or Section 11.0 of the COM plan, which is the “Non-Native Invasive Plant Species Management Plan” (but which also references “the Plan,” and the Restoration and Rehabilitation Plan (Section 10.0 of the COM plan), regarding post-construction monitoring for invasives).</p>
53	226	5.13.4	<p>BA comment: Sprays for invasive species will not occur within 25 feet of Federally listed species.</p> <p>Comment: The Non-Native Invasive Plant Species Management Plan states, “within 60 feet of any identified sensitive plant species, only hand-pulling of NNIS will be permitted” (COM plan, 11.4.1.1, p. 161) and “herbicides will not be ground applied within 60 feet of any known threatened, endangered, proposed, or sensitive plant” (p. 165.) Please revise for consistency, and ensure statements in the DEIS etc. are consistent as well.</p>

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			For the Monongahela, protection measures should be consistent with those outlined in the Forest-wide Non-native Invasive Plant Management Project Environmental Assessment.
54	226	5.13.4	<p>BA statement: For known populations of running buffalo clover...that were identified within the study corridor the following conservation measures will be implemented: [annual monitoring for one year before, during, and after construction, site specific erosion control measures and signage, and weed-free seed mixes]”</p> <p>Comment: This is inadequate to ensure protection of known populations of running buffalo clover, and not detailed enough to support an effect determination. The DEIS states, “Atlantic is currently exploring avoidance and minimization measures for running buffalo clover including evaluating avoidance measures where they have documented dense populations of running buffalo clover” which, while insufficient in and of itself, implies that more detailed conservation measures are available somewhere else. Please provide more detailed information about how impacts to known populations of running buffalo clover in the project area are being minimized, including for the population adjacent to a work space for which ACP met with USFS, FWS, WVDNR, etc. on July 18th, 2016.</p>
55	226	5.13.4	<p>BA statement: A qualified botanist would document populations during the growing season the year before construction (2017), during construction, and the year following initial restoration activities near these sites.</p> <p>Comment: This is not a sufficient length of follow up time to establish population survival and sustainability. According to research cited in Atlantic’s own microclimate analysis, individuals of this species can go dormant for as long as 4 years at a time, and viability of a population can only be assessed with three consecutive years of monitoring or more (US FWS, 2008). Please increase the monitoring timeframe such that it is sufficient to establish post-construction survival of these populations, and describe what that timeframe will be in the Restoration and Rehabilitation Plan, the BA, the DEIS, and the microclimate analysis report.</p>
56	226	5.13.4	<p>BA statement: In areas where additional surveys are needed...</p> <p>Comment: Additional surveys will be needed within the total area of impact, plus within a 150-foot buffer beyond the limits of total impact, for all route variations, access road improvements, ATWS, etc. that have not previously been surveyed or which come near the edge of the previously surveyed corridor. There are known populations of running buffalo clover along one access road planned for improvements, for example.</p>
57	227	5.13.5	Please provide a discussion of the potential impacts of the proposed project on the movement of water through the soil layer and potential effects to small whorled pogonia.
58	230	5.15.1	The effective date for the Final ruling for the rusty-patched bumblebee was delayed to March 21, 2017. It is now in effect.

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59	231	5.15.4	The Virginia Field Office has provided voluntary conservation measures for counties with historical occurrences of the rusty-patched bumblebee. It would be helpful to include those measures in the BA and explain how the proposed project would be meeting any of these measures.
60	Attachment B, Table B-2	5.14.3	Under Potential Impacts, please include a discussion of the potential impacts of the proposed project on the movement of water through the soil layer and potential effects to small whorled pogonia.
61	Attachment B, Table B-2	5.14.3	Under Major Conservation Measures, please include a discussion of the conservation measures to eliminate or mitigate potential impacts of the proposed project on the movement of water through the soil layer and potential effects to small whorled pogonia.
62		Attachment C 7.1	<p>BA Statement: Blasting in or near environmentally sensitive areas, such as streams and wildlife areas, may include additional restrictions. When blasting in streams, the following additional measures may be implemented, in consultation with the appropriate agencies, to avoid or minimize impacts on fisheries, aquatic resources, and habitats:</p> <ul style="list-style-type: none"> • Prior to the initiation of the designed blast and following audible warning signals, a single cap will be initiated in the stream to alert fish to move away from blasting area. • Removing fish from blasting area and relocating them downstream, this will only be used in smaller streams. <p>Comment: The second bullet should state, “Removing fish and other aquatic species from blasting area and relocating them downstream....” as is stated for dewatering for stream and wetland crossings.</p>
63		Attachment C 8.0	<p>BA Statement: If rock removal intercepts an open void, channel, or cave, construction activities will cease in the vicinity of the void, channel, or cave until a remedial assessment is performed by a qualified geologist or engineer with experience in karst terrain.</p> <p>Comment: A qualified biologist should also be consulted. Structure and hydrology are not the only concerns in the discovery of a karst feature. Microclimate, which may be altered with the opening of the structure, is vital to bat species, many of which are endangered, threatened, or regionally sensitive. The opening should be investigated by a qualified biologist to determine if bats are present in the structure, if the feature is suitable for bats (large enough, suitable microclimate), and to be consulted on remediation.</p> <p>BA Statement: If the track drill used to prepare drill holes for explosive charges encounters a subsurface void larger than 6 inches within the first 10 feet of bedrock, or a group of voids totaling more than 6 inches within the first 10 feet of bedrock, then explosives will not be used until a subsurface exploration is conducted to determine if the voids have connectivity to a deeper karst structure. The subsurface exploration will be carried out with track drill probes, coring drill, electrical resistivity, or other techniques</p>

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			<p>capable of resolving open voids in the underlying bedrock. If a track drill or coring rig is used, then all open holes will be grouted shut after the completion of the investigation.</p> <p>Comment: A qualified biologist should also be consulted. The opening should be investigated by a qualified biologist to determine if bats are present in the structure and if the feature is suitable for bats (large enough, suitable microclimate).</p>
64	Attachment D, p. 2	5.0 A	The Forest Service would not allow storage of chemicals, fuels, lubricating oils, pesticides uphill from, or in any area, that could permit movement of such materials such that small whorled pogonia is affected.
65	Level 2 Inspection of Features Intercepted During Construction	Attachment F	<p>BA statement: The KS will examine the feature and determine if it has potential impact to the subterranean environment based on potential connectivity with the phreatic aquifer via the epikarst stratum (Moore, et al, 2013).</p> <p>Comment: Impact to the subterranean environment cannot be based solely on hydrology. The microclimate, including temperature, above the aquifer is vital to endangered, threatened, and regionally sensitive bat species. A biologist should be consulted upon discovery of a feature.</p>
65	Level 2 Inspection of Features That Form During Construction	Attachment F	<p>BA statement: The KS will examine the feature and determine if it has potential impact to the subterranean environment based on potential connectivity with the phreatic aquifer via the epikarst stratum (Moore, et al, 2013).</p> <p>Comment: Impact to the subterranean environment cannot be based solely on hydrology. The microclimate, including temperature, above the aquifer is vital to endangered, threatened, and regionally sensitive bat species. A biologist should be consulted upon discovery of a feature.</p>
67	Measures to Avoid Impact to the Karst Aquifer and	Attachment F	<p>BA statement: They are intended to prevent impact to the karst aquifer and the subsurface habitat of obligate stygobiont species through protection of groundwater quantity and quality (Burden, 2012).</p> <p>Comment: Hydrology cannot be the only aspect considered when addressing karst impact. The microclimate, including temperature, above the aquifer is vital to endangered, threatened, and regionally sensitive bat species. A biologist should be consulted upon discovery of a feature.</p>

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68	Measur es to Avoid Impact to the Karst Aquifer and Environ ment	Attachment F	<p>BA statement: Statements in 6a and 6d of this section are identical to statements in the Attachment C section 8.0 above.</p> <p>Comment: Please see comments on Attachment C, section 8.0.</p>
69	In general for this docume nt	Attachment Q	<p>Because certain MNF Land and Resource Management Plan standards and guidelines will not be followed, resulting in the destruction of primary bat roosting trees, additional mitigation measures for bats need to be incorporated into this and other appropriate documents, including Appendix R, and a plan amendment may be needed. Mitigation measures will include snag creation and artificial roosting structures at a 1:1 ratio. To do this, it must be known how many shagbark hickory trees over 5 DBH and snags of particular specifications are taken, which requires timber cruisers to keep track of them. Attachment Q MNF Timber Cruising Specifications will need to be updated to reflect these details once bat surveys are complete.</p>