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Organization: VA Department of Conservation and Recreation- Division of Natural Heritage

Title: Project Review Assistant

Comments: August 19, 2024

Gregg Slezak
USDA Forest Service
401 Oakwood Drive
Harrisonburg, VA 22801

Re: Mad Lick Resiliency and Restoration

Dear Mr. Slezak:

The Department of Conservation and Recreation's Division of Natural Heritage (DCR) has searched its Biotics Data System for occurrences of natural heritage resources from the area outlined on the submitted map. Natural heritage resources are defined as the habitat of rare, threatened, or endangered plant and animal species, unique or exemplary natural communities, and significant geologic formations.

Aquatic and Terrestrial Resources

According to the information in our files, the North River at Rt. 715 and Moffett Creek at Rt. Stream Conservation Sites (SCS) are located within the project area. SCSs encompass stream/river reaches, waterbodies, and terrestrial contributing areas containing or associated with aquatic or semi-aquatic resources, including upstream and downstream reaches and tributaries up to 3-km stream distance from the aquatic resources. The size and dimensions of an SCS are based on the hydrology of the waterway and surrounding landscape, taking into consideration dam locations and whether the waterway is tidal. SCSs are also given a biodiversity significance ranking (B-rank) based on the rarity, quality, and number of element occurrences they contain. The North River at Rt. 715 SCS has been given a B-rank of B3, which represents a site of high significance. The natural heritage resource associated with this SCS is:

Aquatic Natural CommunityRV-South Fork Shenandoah Second Order StreamG2G3/S2S3/NL/NL

The Moffett Creek at Rt. 728 SCS has also been assigned a B-rank of B3, which represents a site of high significance. The natural heritage resource associated with this SCS is:

Aquatic Natural CommunityRV-South Fork Shenandoah First Order StreamG2?/S2?/NL/NL

The documented Aquatic Natural Communities are based on Virginia Commonwealth University's INSTAR (Interactive Stream Assessment Resource) database which includes over 2,000 aquatic (stream and river) collections statewide for fish and macroinvertebrate. These data represent fish and macroinvertebrate assemblages, instream habitat, and stream health assessments. The associated Aquatic Natural Communities are significant on multiple levels. First, both streams are a grade B per the VCU-Center for Environmental Sciences (CES), indicating its relative regional significance, considering its aquatic community composition and the present-day conditions of other streams in the region. Each stream reach also holds a "Healthy" stream designation per the INSTAR Virtual Stream Assessment (VSS) score. This score assesses the similarity of this stream to ideal stream conditions of biology and habitat for this region. Lastly, these streams contribute to high Biological Integrity at the watershed level (6th order) based on number of native/non-native, pollution-

tolerant/intolerant and rare, threatened or endangered fish and macroinvertebrate species present.

Threats to these significant Aquatic Natural Communities and the surrounding watershed include water quality degradation related to point and non-point pollution, water withdrawal and introduction of non-native species.

To minimize adverse impacts to the aquatic ecosystem as a result of the proposed activities, DCR recommends the implementation of and strict adherence to applicable state and local erosion and sediment control/storm water management laws and regulations, establishment/enhancement of riparian buffers with native plant species and maintaining natural stream flow.

Biotics also documents the presence of several terrestrial conservation sites within the project boundary including a 100ft buffer. However, due to the scope of the activity we do not anticipate that this project will adversely impact the associated natural heritage resources.

Additionally, DCR-Natural Heritage inventory staff are currently conducting surveys for natural heritage resources within the project area and will provide updated information and recommendations upon completion of those surveys in December 2024.

Karst Resources

This project has also intersected the karst bedrock screening layer. Encountering undocumented caves, sinkholes or other sensitive karst features in this area is possible. During every phase of the project, DCR recommends stabilization of the soil around the site. Minimizing surface disturbance, strict use of E&S control measures appropriate for the location and adherence to best management practices appropriate for karst will help to reduce any potential impact to the karst, groundwater and surface water resources as well as any associated fauna and flora.

If karst features such as sinkholes, caves, disappearing streams, and large springs are encountered during the project, please coordinate with Wil Orndorff (540-230-5960, Wil.Orndorff@dcr.virginia.gov) the Virginia DCR, Division of Natural Heritage Karst Protection Coordinator, to document and minimize adverse impacts. Activities such as discharge of runoff to sinkholes or sinking streams, filling of sinkholes, and alteration of cave entrances can lead to environmental impacts including surface collapse, flooding, erosion and sedimentation, contamination of groundwater and springs, and degradation of subterranean habitat for natural heritage resources (e.g. cave adapted invertebrates, bats). These potential impacts are not necessarily limited to the immediate project area, as karst systems can transport water and associated contaminants rapidly over relatively long distances, depending on the nature of the local karst system. If the project involves filling or "improvement" of sinkholes or cave openings, DCR would like detailed location information and copies of the design specifications. In cases where sinkhole improvement is for storm water discharge, copies of VDOT Form EQ-120 will suffice.

Additional Comments

If any harvested areas are not allowed to regrow to forest the proposed project will impact multiple Ecological Cores (C1 and C3) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnla>). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

Ecological Cores are areas of at least 100 acres of continuous interior, natural cover that provide habitat for a wide range of species, from interior-dependent forest species to habitat generalists, as well as species that utilize marsh, dune, and beach habitats. Interior core areas begin 100 meters inside core edges and continue to the deepest parts of cores. Cores also provide the natural, economic, and quality of life benefits of open space,

recreation, thermal moderation, water quality (including drinking water recharge and protection, and erosion prevention), and air quality (including sequestration of carbon, absorption of gaseous pollutants, and production of oxygen). Cores are ranked from C1 to C5 (C5 being the least significant) using nine prioritization criteria, including the habitats of natural heritage resources they contain.

Impacts to cores occur when their natural cover is partially or completely converted permanently to developed land uses. Habitat conversion to development causes reductions in ecosystem processes, native biodiversity, and habitat quality due to habitat loss; less viable plant and animal populations; increased predation; and increased introduction and establishment of invasive species.

DCR recommends avoidance of impacts to cores. When avoidance cannot be achieved, DCR recommends minimizing the area of impacts overall and concentrating the impacted area at the edges of cores, so that the most interior remains intact.

The proposed project has the potential to impact a core with outstanding (C1) ecological integrity. If any portion of a harvested area is not to be allowed to re-grow to forest (i.e. there is any development and thus permanent fragmentation of the core) further investigation of these impacts is recommended and DCR-DNH can conduct a formal impact analysis upon request. This analysis would estimate direct impacts to cores and habitat fragments and indirect impacts to cores. The final products of this analysis would include an estimate of the total impact of the project in terms of acres. For more information about the analysis and service charges, please contact Joe Weber, DCR Chief of Biodiversity Information and Conservation Tools at Joseph.Weber@dcr.virginia.gov.

Furthermore, DCR supports the treatment of non-native invasive species as indicated in the Proposed Action section of the Scoping Letter. As part of these efforts DCR recommends the development and implementation of an invasive species plan that includes an invasive species inventory for the project area based on the current DCR Invasive Species List (<https://www.dcr.virginia.gov/natural-heritage/document/nh-invasive-plant-list-2023.pdf>) and methods for treating the invasives. DCR also recommends the planting of Virginia native tree species appropriate for the region, where re-vegetation is proposed. Guidance on plant species can be found [here](#).

Under a Memorandum of Agreement established between the Virginia Department of Agriculture and Consumer Services (VDACS) and the DCR, DCR represents VDACS in comments regarding potential impacts on state-listed threatened and endangered plant and insect species. The current activity will not affect any documented state-listed plants or insects.

There are no State Natural Area Preserves under DCR's jurisdiction in the project vicinity.

New and updated information is continually added to Biotics. Please re-submit a completed order form and project map for an update on this natural heritage information if the scope of the project changes and/or six months has passed before it is utilized.

The Virginia Department of Wildlife Resources (VDWR) maintains a database of wildlife locations, including threatened and endangered species, trout streams, and anadromous fish waters that may contain information not documented in this letter. Their database may be accessed <https://services.dwr.virginia.gov/fwis/> or contact Hannah Schul at Hannah.Schul@dwr.virginia.gov. There is potential for the little brown bat (*Myotis lucifugus*), the tri-colored bat (*Perimyotis subflavus*), and the northern long-eared bat (*Myotis septentrionalis*) to occur within the project area. Therefore, DCR recommends coordination with the VDWR, Virginia's regulatory authority for the management and protection of these species to ensure compliance with the Virginia Endangered Species Act (VA ST §§ 29.1-563 - 570). Due to the legal status of the Northern long-eared bat DCR also recommends coordination with the USFWS to ensure compliance with protected species legislation.

The U.S. Fish and Wildlife Service (USFWS) utilizes an online project review process (<https://www.fws.gov/office/virginia-ecological-services/virginia-field-office-online-review-process>) to facilitate compliance with the Endangered Species Act (16 U.S.C. 1531-1544, 87 Stat. 884) (ESA), as amended. The process enables users to 1) follow step-by-step guidance; 2) access information that will allow them to identify threatened and endangered species, designated critical habitat, and other Federal trust resources that may be affected by their project; and 3) accurately reach determinations regarding the potential effects of their project on these resources as required under the ESA. If you have questions regarding the online review process, please contact Jackie Luu at jackie_luu@fws.gov.

Should you have any questions or concerns, feel free to contact me at 804-625-3979. Thank you for the opportunity to comment on this project.

Sincerely,

Nicki Gustafson
Natural Heritage Project Review Assistant

Cc: Wil Orndorff, DCR-Karst,
Hannah Schul, VDWR