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

Title: Environmental Review Coordinator

Comments: Dear Mr. Elliot:

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.

Terrestrial Resources

According to the information currently in our files, the Powell Mountain South and Good Spur Ridge - Cove Creek Conservation Sites are documented within the project area. Conservation sites are tools for representing key areas of the landscape that warrant further review for possible conservation action because of the natural heritage resources and habitat they support. Conservation sites are polygons built around one or more rare plant, animal, or natural community designed to include the element and, where possible, its associated habitat, and buffer or other adjacent land thought necessary for the element's conservation. Conservation sites are given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain; on a scale of 1-5, 1 being most significant. Powell Mountain South and Good Spur Ridge-Cove Creek have been given a biodiversity significance ranking of B2, which represents a site of very high significance for both sites. The natural heritage resources currently associated with the Powell Mountain South Conservation Site are:

Southern Appalachian Chestnut Oak - Northern Red Oak / Great Rhododendron Forest G4/S3/NL/NL

Central Appalachian Montane Oak - Hickory Forest (Rich Type) G3G4/S3S4/NL/NL

Southern Appalachian Acidic Cove Forest G5/S4S5/NL/NL

Southern Appalachian Rich Cove Forest (Sugar Maple - Buckeye Type) G3G4/S3/NL/NL

Appalachian Rich Cove Forest (Tuliptree - Mixed Hardwoods Type) G4/S4/NL/NL

Southern Appalachian Montane Mixed Oak Forest

(Northern Red Oak - Chestnut Oak Submesic Type) G4/S3S4/NL/NL

The natural heritage resources currently associated with the Good Spur Ridge-Cove Creek Conservation Site are:

Myotis septentrionalis Northern long-eared Myotis G1G2/S1S3/LT/LT

Empidonax alnorum Alder Flycatcher G5/S1S2B/NL/NL

Southern Appalachian Chestnut Oak Forest S4S5/NL/NL

Southern Appalachian Montane Mixed Oak Forest G4/S3S4/NL/NL

(Northern Red Oak - Chestnut Oak Submesic Type)

In addition, there are USFS Special Biological Areas in the vicinity of the proposed action.

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 2021. DCR anticipates the currently documented significant natural communities will be expanded and new communities mapped as part of the on-going inventory work.

Aquatic Resources

According to the information currently in our files, the Powell River [ndash] South Fork Stream Conservation Unit (SCU) is located within the project site including a 100 ft buffer. SCUs identify stream reaches that contain aquatic natural heritage resources, including 2 miles upstream and 1 mile downstream of documented occurrences, and all tributaries within this reach. SCUs are also given a biodiversity significance ranking based on the rarity, quality, and number of element occurrences they contain. The Powell River [ndash] South Fork SCU has been given a biodiversity ranking of B5, which represents a site of general significance. The natural heritage resource associated with this site is:

Cambarus jezerinaci	Spiny scale crayfish	G3/S2/NL/NL
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The Spiny scale crayfish has a restricted range in southwestern Virginia and eastern Kentucky and Tennessee. In Virginia, it is found in first and second order spring-fed streams draining into the Powell River, living under rocks in mid-stream and along stream edges (Thoma, 2000).

Threats to the Spiny scale crayfish include degradation of water quality due to deforestation and mining activities which may increase sediments, water temperatures, or pollutant loads (NatureServe, 2009). To minimize adverse impacts to the aquatic ecosystem the implementation of erosion and sediment control measures during all land disturbing activities should be undertaken.

Karst

This project is situated on karst-forming carbonate rock and can be characterized by sinkholes, caves, disappearing streams, and large springs. The Virginia DCR, Division of Natural Heritage karst staff screened this project against the Virginia Speleological Survey (VSS) database, the Virginia Department of Mines, Minerals and Energy (DMME) sinkhole coverage, and other karst layers for documented sensitive karst features.

Portions of this project intersect the Hairy Molly, Mabe, and Spurlock Cave Conservation sites. All of these contain cave and karst resources. Water flowing from this project site on the surface or through subterranean paths may possibly impact these cave resources. DCR recommends dye tracing to help establish recharge areas for these caves. In addition, the entrance to Sunbright Cave and a mine is located on private property but large portions of this approximately 4 mile long cave are mostly under this project footprint. DCR recommends a biological assessment of the Sunbright Cave.

Bowling Knob Cave is also located within the project area. This cave should be assessed for cave invertebrates and also bats. The VSS database indicates that the cave is in a small ravine and is a stream insurgence. It is estimated to be at least 25 foot long but has not been thoroughly explored or assessed much past the entrance being located. The VSS database indicated that the entrance is in the vicinity of the following coordinates:

36.770609/-82.755646

DCR recommends avoidance of any activities that would directly impact this cave and the drainage flowing into it. If surface disturbance is planned in areas where sediment transport could make its way to this cave entrance, DCR recommends adherence to erosion and sediment measures to protect this cave. Sinking streams such as this, may lead to water resources both on and off of National Forest lands. DCR recommends dye tracing of sinking streams to help establish and define the watersheds that these feed into and how activities in areas located in karst may impact springs and other water resources downstream or within subterranean aquifers. If other such karst features are encountered, DCR recommends avoidance and protection of these resources.

According to the DCR-Karst Program, bat species including the tri-colored bat (*Perimyotis subflavus*, G2G3/S1S3/SOC/LE), the little brown bat (*Myotis lucifugus*, G3/S1S3/NL/LE), the Indiana bat (*Myotis sodalis*, G2/S1/LE/LE) and the Northern Long-eared Myotis, as well as other species have all been documented in caves in this region. While none of these caves are within this project footprint, these species are likely to be present on the landscape of this project site.

In addition, a handful of old coal mines are located within the project footprint. Bats utilize abandoned mines for hibernation, rearing young, and as migratory stop-overs (Tuttle & Taylor, 1994). If conditions are appropriate, rare bat species may utilize these sites. Therefore, these mine openings should be assessed for bat use. Survey efforts should be coordinated with the United States Fish and Wildlife Service (USFWS) and the Virginia Department of Wildlife Resources (VDWR) to ensure compliance with protected species legislation.

Forest Fragmentation

If any portion of a harvested area is not allowed to re-grow to forest, the proposed project will fragment Ecological Cores (C2, C3, C4 and C5) as identified in the Virginia Natural Landscape Assessment (<https://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>), one of a suite of tools in Virginia ConservationVision that identify and prioritize lands for conservation and protection.

Ecological Cores are areas of unfragmented natural cover with at least 100 acres of interior 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. Cores also provide benefits in terms of open space, recreation, water quality (including drinking water protection and erosion prevention), and air quality (including carbon sequestration and oxygen production), along with the many associated economic benefits of these functions. The cores are ranked from C1 to C5 (C5 being the least ecologically relevant) using many prioritization criteria, such as the proportions of sensitive habitats of natural heritage resources they contain.

Fragmentation occurs when a large, contiguous block of natural cover is dissected by development, and other forms of permanent conversion, into one or more smaller patches. Habitat fragmentation results in biogeographic changes that disrupt species interactions and ecosystem processes, reducing biodiversity and habitat quality due to limited recolonization, increased predation and egg parasitism, and increased invasion by weedy species.

Therefore minimizing fragmentation is a key mitigation measure that will reduce deleterious effects and preserve the natural patterns and connectivity of habitats that are key components of biodiversity. DCR recommends efforts to minimize edge in remaining fragments, retain natural corridors that allow movement between fragments and designing the intervening landscape to minimize its hostility to native wildlife (natural cover versus lawns). Mapped cores in the project area can be viewed via the Virginia Natural Heritage Data Explorer, available here: <http://vanhde.org/content/map>.

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 from <http://vafwis.org/fwis/> or contact Ernie Aschenbach at (804-367-2733) or Ernie.Aschenbach@dwr.virginia.gov.

Should you have any questions or concerns, feel free to contact me at 804-371-2708. Thank you for the opportunity to comment on this project.

Sincerely,

S. Renée Hypes

Natural Heritage Project Review Coordinator