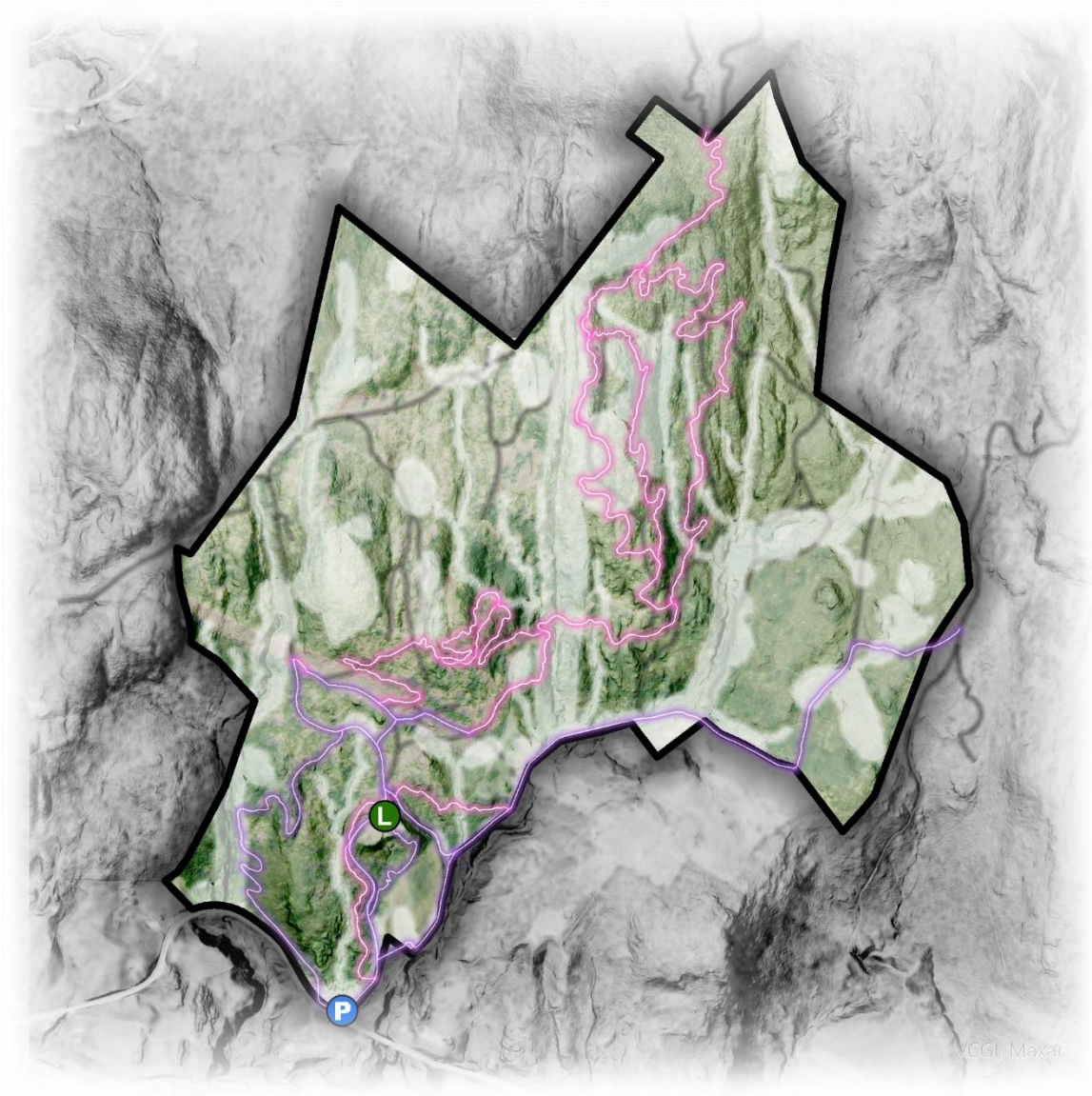


Andrews Community Forest

Ecological Trail Planning Project

Detailed Field Assessment in area of Select Proposed Trails



November 28, 2022

Team Contact:

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Project documents, maps, & data available at <https://arrowwoodvt.com/ACF>

Detailed Natural Resources Assessment

Introduction

In 2022, the Town of Richmond, through its Andrew's Community Forest Stewardship Committee, retained Arrowwood Environmental to conduct a detailed field review of select proposed trails identified in a previous Ecological Trail Design project conducted by Arrowwood Environmental and Sinuosity trail designers. The previous Ecological Trail Design project, as detailed in the December 15, 2020 proposal, included conducting and compiling an ecological assessment of Richmond, VT's Andrews Community Forest (ACF) from existing resources and additional targeted field surveys (as needed). The data from the ecological assessment as well as Vermont Land Trust (VLT) easement restrictions was used to design a trail network that considers both the ecological sensitivities of the forest and the needs of recreationists. Due to the timing of the previous project components, field work was not conducted during the growing season; resource identification was therefore limited or not possible.

The goal of this assessment was to conduct detailed field investigations of most of the proposed trail routes, with a particular focus on resource identification that could not be completed previously due to seasonal limitations. A Study Area at least 100' wide, with its center on the proposed trail line was investigated for observable sensitive natural resources that may impact trail layout on a more micro-scale than initially assessed.

The Richmond ACF Stewardship Committee had previously decided to abandon the development of the trail called "Ridge Top" in the initial assessment due to its proximity to a likely wildlife corridor running north—south through the middle of the Community Forest. The Ridge Top trail was therefore not further assessed in this evaluation.

Methodology

Arrowwood Environmental ecologists conducted two field visits during the growing season in 2022 to identify and map sensitive natural resources that may not have been identified in the earlier assessment. One visit was focused on conducting a plant inventory and identification of any rare, threatened, endangered or uncommon plant species. A second visit focused on detailed mapping of nearby wetland boundaries, and a general review of the trail corridor for other significant habitat features not previously noted.

Both field visits utilized a 100' wide study area centered on the proposed trail line- excluding the "Ridge Top" trail. Where still present, the original trail flagging was used as a guide on the ground, however the study area was pre-loaded onto GPS devices with detailed field maps to ensure the entire area was covered during the assessment.

Results and Recommendations

Plant Inventory

Three rare, threatened, endangered, or uncommon (RTE/U) plant species were identified within the project study area.

Table 1. RTE/U Plant Species

Species	Common Name	Vt. S- Rank	Status
<i>Phegopteris hexagonoptera</i>	broad beech fern	S2S3	Rare
<i>Carex argyrantha</i>	silver-flowered sedge	S3	Uncommon
<i>Asclepius exaltata</i>	poke milkweed	S3	Uncommon

Of these, 2 populations of broad beech fern were in direct conflict with the Middle Connector trail as designed. Table 2 below details the plant populations identified and their locations as depicted in the attached map. Approximate positions are indicated along the trail length as measured from the end lowest in elevation of each trail. The two populations of broad beech fern within the proposed Middle Connector trail were flagged in the field.

Table 2. RTE/U Plant Population Locations

Population	Common Name	Trail	Station (ft)	Comments
Phehex1	Broad Beech Fern	Middle Connector	550'	On trail
Phehex2	Broad Beech Fern	Middle Connector	500'	Outside study area by ~30'
Phehex3	Broad Beech Fern	Middle Connector	825'	On trail
Phehex4	Broad Beech Fern	Hemlock Valley	2125'	Just outside study area
Ascexa1	Poke Milkweed	Middle Connector	825'	Just off proposed trail
Ascexa2	Poke Milkweed	East Climb	2850'	Close to proposed trail
Ascexa3	Poke Milkweed	East Climb	2900'	Close to proposed trail
Cararg1	silvery-flowered sedge	East Climb	1350'	Within logging road, partially outside study area

Impacts to broad beech fern populations Phehex1 and Phehex3 can be avoided by rerouting the trail. During the rare plant inventory, the study area was expanded an additional 50 feet on both north and south sides of these populations to account for re-routing the trail around these plants. A small population of broad beech fern (Phehex2) was documented to the north, but no rare plants were documented to the south.

Recommendations

1. Trail Relocation: Re-route the Middle Connector trail to the south of populations Phehex1 and Phehex3 with no prescribed measures during stakeout or construction.

Alternatively, the Middle Connector trail could be routed through the two broad beech fern populations with specific construction measures. The polygons shown on the attached map show the outer boundaries of the plant locations, with individuals of broad beech fern scattered throughout these areas. It was noted during the field inventory that there was likely a route through these areas that could avoid direct impacts to these plants.

Recommendations

1. Trail Layout: Design the route with trained botanist present during actual trail layout in the Phehex1 and Phehex3 locations to identify the exact locations of the broad beech fern to be avoided.
2. Construction: Stake and flag areas outside of the proposed trail with high visibility flagging to ensure that no accidental impacts occur to the fern during construction.

Wetlands

Five wetlands were identified, flagged, and mapped within or close to the study area. Four of the wetlands were identified during the original project phases, with one new wetland added during the growing season assessment. In addition, two of the small wetlands preliminarily identified near proposed trails were eliminated based on a lack of growing-season wetland indicators. Wetland locations were adjusted following industry standard boundary delineation protocols and mapped with sub-meter grade GPS equipment.

Wetlands were reviewed based on their proximity to the proposed trail, likely classification under the Vermont Wetland Rules and resultant applicability of a protective buffer zone.

Table 3. Wetlands

Wetland ID	Trail Name	Size (sf)	Stream Assoc.	Likely Class	Comments
100	Roadside Trail	317	N	3	Off trail/outside study area, limited function
101	Roadside Trail	2400	Y	3	Streambank seepage along edge of study area
102	Lower Traverse	1725	Y	3	Headwater seepage in logging disturbance
103	Stream View	3470	Y	2	Headwater seepage, intersects proposed trail
104	Hemlock Valley	3970	Y	2	Nice woodland seepage, good habitat, close to trail

Wetlands 100 and 101 are located far enough from the proposed Roadside Trail that they are unlikely to be negatively impacted by any trail construction or usage. Wetland 100 is very small and exhibits very limited function and value. Wetland 101 is a linear seepage area long both banks of an intermittent stream. The Vermont Wetlands Program typically considers stream-associated wetlands under 2500 square feet to be Class 3, without required 50' buffers or specific protections under the Vermont Wetland Rules.

Recommendations

1. Confirm Wetland Classifications: Consult with the Vermont Wetlands Program prior to any earth disturbance or clearing of vegetation within 50' of wetlands 100 or 101.

Wetland 102 was newly identified during the growing season evaluation. This is a small, low-functioning wetland at the head of a small intermittent stream, and similarly to wetland 101, likely does not meet the requirements for a Class 2 designation. The proposed Lower Traverse trail crosses the stream near the outlet of this small wetland.

Recommendations

1. Confirm Wetland Classifications: Consult with the Vermont Wetlands Program prior to any structure placement, earth disturbance or vegetation clearing within 50' of this wetland.
2. Crossing: Small bridge or boardwalk.

Wetland 103 is also a small headwater seepage, but in this case, it meets the 2500 sf cut-off and therefore would likely be considered a Class 2 wetland with protective 50' buffer. As such, the wetland and its buffer are protected under the Vermont Wetland Rules.

Wetland 103 provides water quality benefits and therefore warrants special protection from disturbance that might cause siltation or other similar impacts. The proposed Stream View trail crosses the wetland.

Recommendations

1. Wetland Permitting: Consult with the Vermont Wetlands Program to confirm permit requirements prior to any structure placement, earth disturbance or vegetation clearing within 50' of this wetland.
2. Trail Relocation: Design trail to avoid direct impacts to the wetland and direct trail drainage away from the stream and wetland.
3. Crossing: Small bridge out of the wetland and over the stream, or a boardwalk meeting Vermont Wetland Program acceptable standards if crossing the wetland.

Wetland 104 is located on a small topographic bench and the highest elevation wetland thus far found on the property. Wetland 104 is a good example of a Woodland Seep wetland community. This wetland has a nice mix of natural vegetation and hydrology that makes it high quality habitat in an otherwise dry matrix of upland forest types. This is the highest functioning wetland identified during this phase of the project and based on size and functionality, should be considered a Class 2 wetland under the Vermont Wetland Rules. As proposed, the Hemlock Valley trail passes within 20' of the south end of this wetland. Relocation of this trail to the south would provide an additional visual barrier between the trail and the wetland and further protect this habitat feature on the upper elevation landscape.

Recommendations:

1. Trail Relocation: Relocate the Hemlock Valley Trail to the south to avoid this wetland and to provide a minimum 50' protective buffer.

Other Habitat Features

The potential wildlife corridor centered on the stream running north-south through the parcel continues to exhibit characteristic features such as topographic breaks, and varied canopy composition that provide visual and auditory protection often associated with quality wildlife corridors.

A small patch of low-bush blueberry was noted within the flagged line of the Hemlock Valley trail, just west of wetland 104 at approximately station 2650'. While this is not an uncommon plant, it is a vigorous patch that provides unique fruit forage to birds and other wildlife.

Recommendations:

1. Trail Relocation: Relocate the Hemlock Valley trail slightly to the east at approximately station 2650', by only a matter of feet, to avoid the patch of low-bush blueberry.

Occasionally standing dead trees (snags) were observed throughout the study area. These features provide a range of habitat function including forage, denning, and nesting opportunities for birds, mammals, and amphibians. In some cases, snags present specific safety concerns for trail users, but unless a critical danger is present such as a tree leaning strongly into the trail, the habitat value of such features outweighs the likely hazard on an infrequently used trail. Similarly, downed decaying woody debris on the forest floor in the vicinity of the trail in its naturally 'messy' state will provide cover, habitat, and forage for wildlife. rather than cleaned, removed, or neatly stacked.

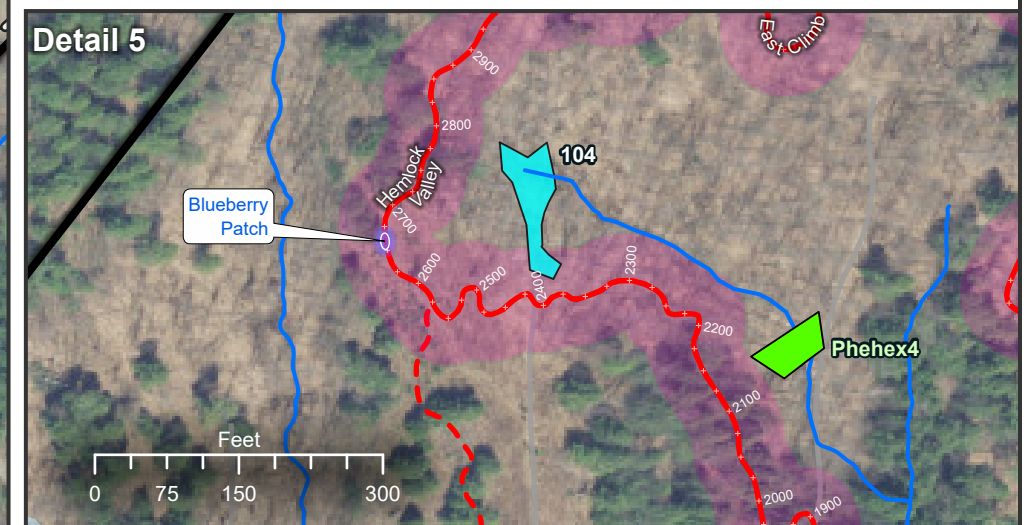
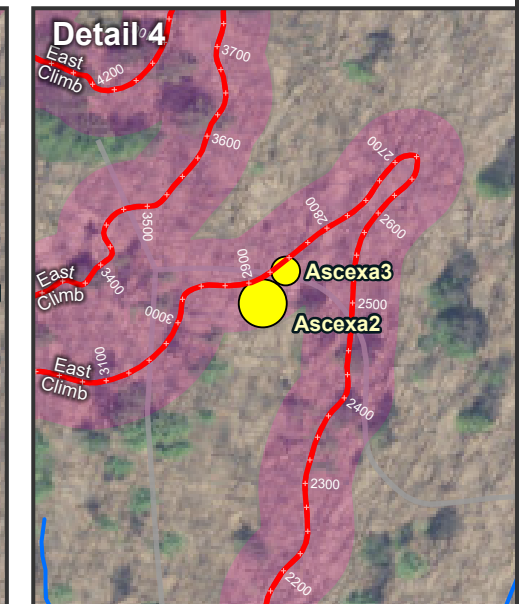
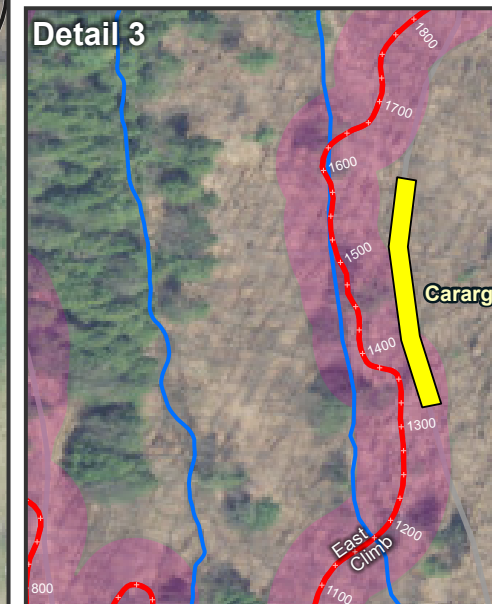
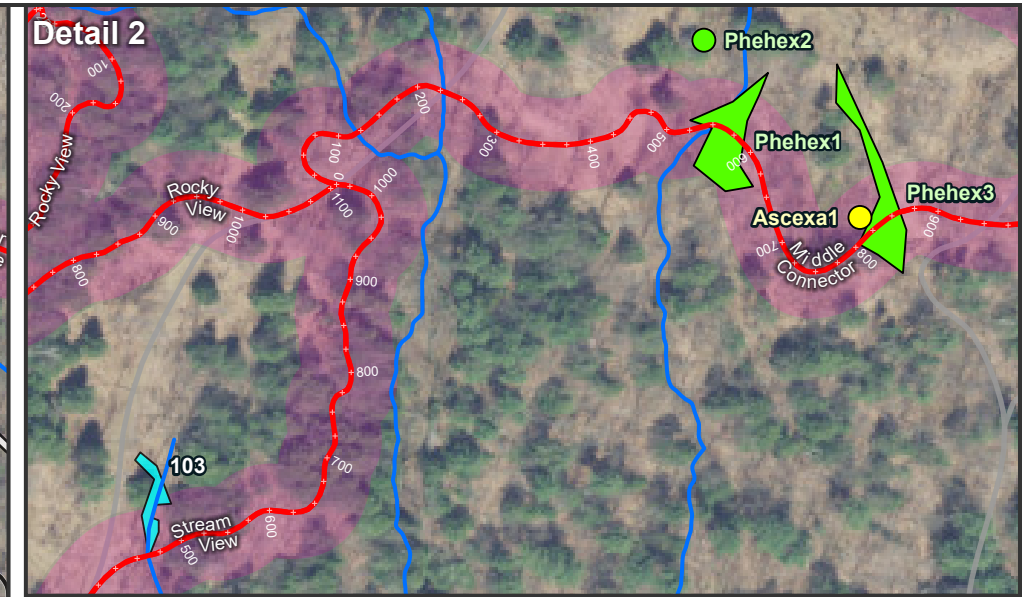
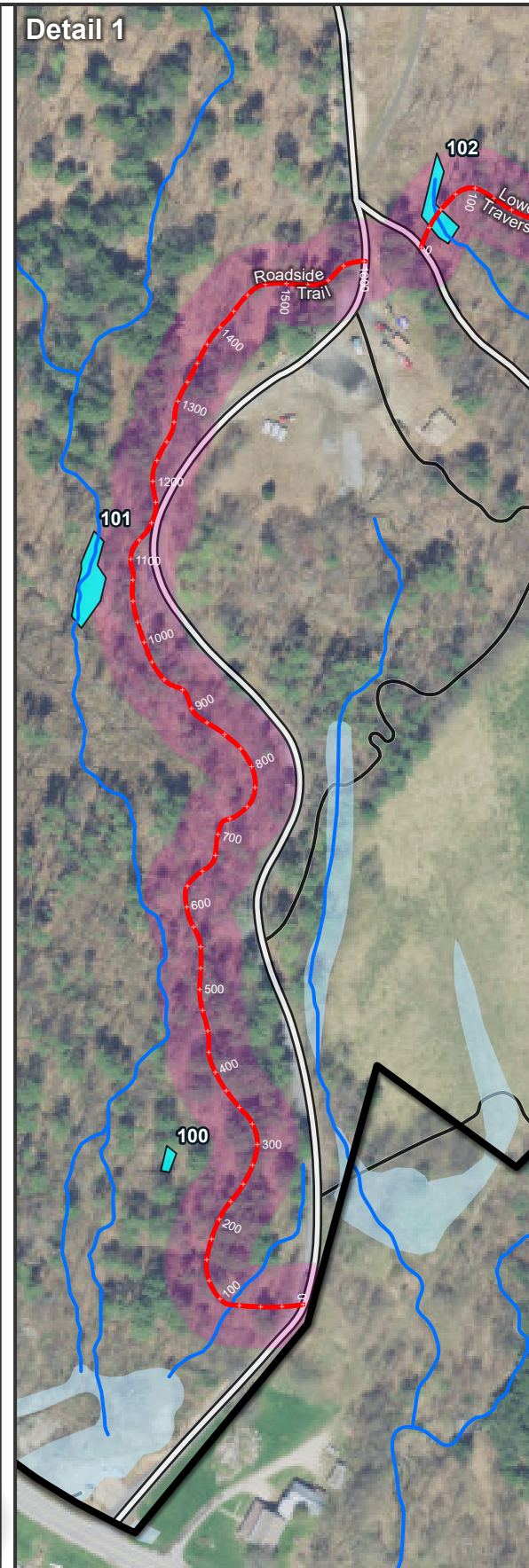
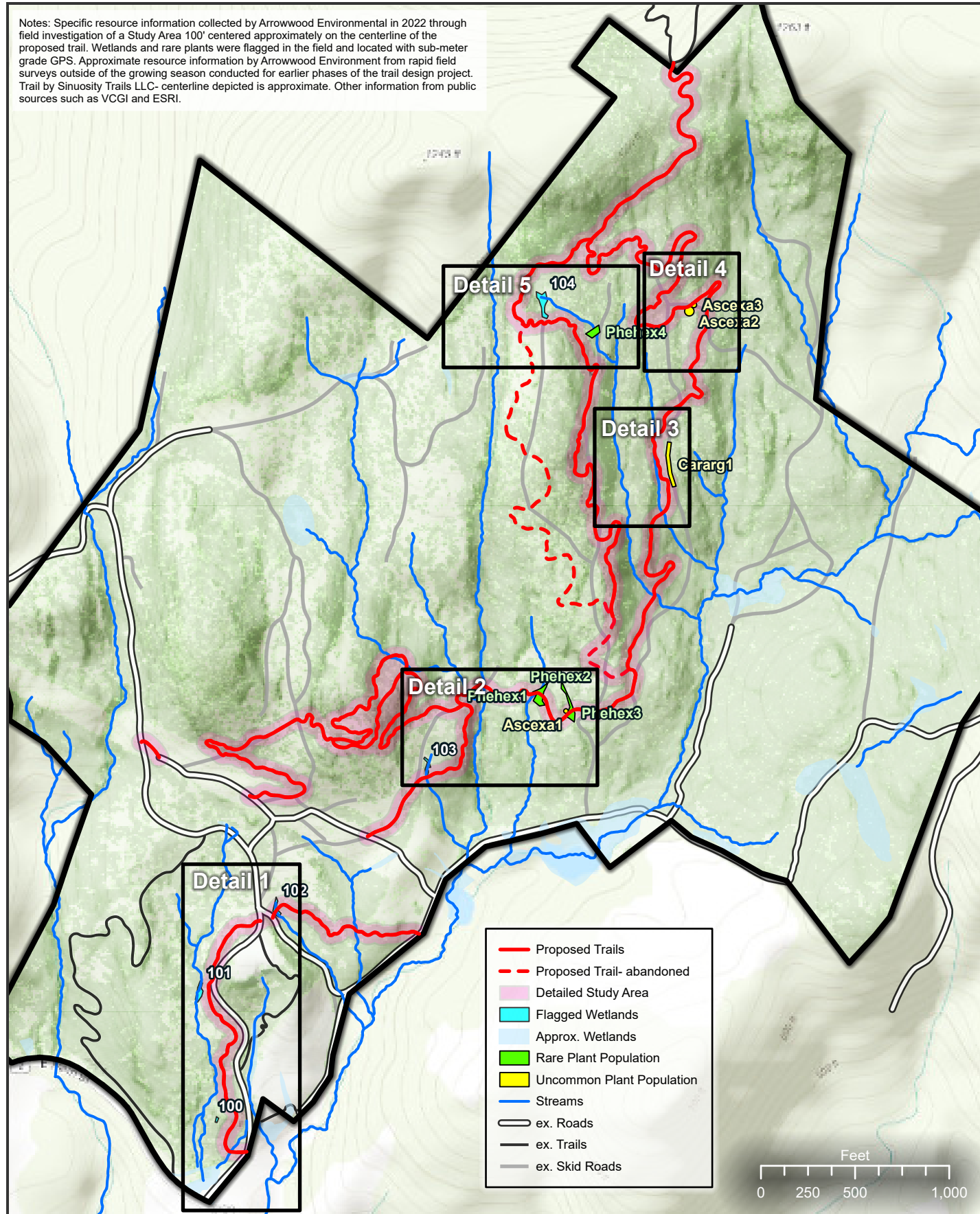
Recommendations:

1. Trail Construction: Avoid and retain standing dead snags during trail construction.
2. Trail Maintenance: Retain downed and decaying woody debris on the forest floor in the vicinity of the trail , rather than clearing, stacking or removing.

Conclusions

Based on the growing season field review of the proposed trail routes, some minor reconfiguration to avoid and protect sensitive resources and habitat elements are recommended. Wetlands and rare plant populations identified during this evaluation were flagged, but flagging may not persist until final trail layout and construction. Laying out the final trail location in consultation with a qualified ecologist, especially in the areas indicated above, will ensure that the proposed trails are located in ecologically appropriate locations. This report and the accompanying map provide detailed locations where heightened sensitivity is necessary, but additional consultation with regulatory authorities is recommended prior to construction and coordination of any reroutes with knowledgeable ecologists is suggested.

Notes: Specific resource information collected by Arrowwood Environmental in 2022 through field investigation of a Study Area 100' centered approximately on the centerline of the proposed trail. Wetlands and rare plants were flagged in the field and located with sub-meter grade GPS. Approximate resource information by Arrowwood Environmental from rapid field surveys outside of the growing season conducted for earlier phases of the trail design project. Trail by Sinuosity Trails LLC- centerline depicted is approximate. Other information from public sources such as VCGI and ESRI.



Andrews Community Forest- Proposed Trail Detailed Ecological Assessment

Tuesday, November 22, 2022

File: AndrewsTF_Trails

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Coordinate System:

