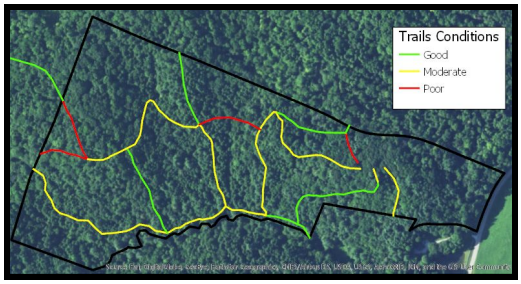
Pine Ridge Forest Assessment

Assessment of Natural Resources and Recreational Opportunities



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Prepared for:
Melinda Scott
Conservation Planner
Town of Williston
7900 Williston Road
Williston, VT 05495
(802) 764-1145

Project Consultants:
Tony D'Amato
awdamato@uvm.edu

Ethan Tapper
ethan.tapper@vermont.gov

Prepared by:
Colin McPhillips
cmcphill@uvm.edu
Louis Bonnet
lbonnet@uvm.edu
Tom Casper
tcasper@uvm.edu
Matt O'Donnell
Matthew.L.Odonnell@uvm.edu
Sadie Shelton
sadiewshelton@gmail.com
Will Dunkley
wdunkley65@gmail.com

Instructor:
Professor Zachary Ispa-Landa
zachary.ispa-landa@uvm.edu

Project Mentor:
Dan Cottle
daniel.cottle@uvm.edu

The University of Vermont

THE RUBENSTEIN SCHOOL OF ENVIRONMENT AND NATURAL RESOURCES

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Executive Summary

In 2015, the town of Williston, Vermont was granted a 42-acre parcel of forest as part of a redevelopment project on the former Pine Ridge School. This parcel, named the Pine Ridge Forest, is adjacent to other publicly owned property and is part of a larger 660-acre forested block. The town and conservation planner Melinda Scott knew little about the property, and our project presented an opportunity to provide valuable information to the town while gaining experience on a real-world project. The property is of high value as a wildlife corridor and deer wintering yard and also has value as a place for outdoor recreation in a town where such activity is in demand. We were tasked with assessing the natural resource values of the property, creating maps of existing trails and natural features, and drafting recommendations for future use and management of the property. We were also tasked with assessing the status of and creating recommendations for future use of a cabin that exists in the center of the property. Our deliverables included maps showing natural communities of the forest, locations of invasive plants, notable features, and existing trails. We also created maps of potential connections to adjacent properties owned by the town of Williston and highlighted potential parking areas which would provide access to the property. Written descriptions and recommendations for future activities accompanied most of these maps. Areas of high natural resource value, such as streams and riparian areas, were identified and recommendations to keep recreational activity away from such sensitive areas were made. The town of Williston can now make informed decisions using the results of our project.

Acknowledgments

This project was implemented as part of the Environmental Problem Solving and Impact Assessment class (NR 206) in the Rubenstein School of Environment and Natural Resources (RSENR) at the University of Vermont (UVM). This work was made possible by the collaboration of community partner Melinda Scott (Conservation Planner), project consultants Tony D'Amato and Ethan Tapper, and especially professor Zachary Ispa-Landa and graduate student mentor Dan Cottle.

Project Background

Our group maintained consistent contact throughout the semester with our community partner Melinda Scott. This project feedback was an integral component for the proper formation of our field visits and final products. Being able to relay information with Ms. Scott
ensured that the considerations and perspectives of the Williston Conservation Commission (WCC) were incorporated. Our project's objectives were guided by the interests expressed by Scott and, through her, the Conservation Commission and the Town of Williston, which facilitated what actions were prioritized. Discussing what aspects of natural resources and recreation used the WCC desired helped to narrow down and consolidate our group's focus. Exploring and assessing over 40 acres of land, including adjacent properties, is not a simple task. There is a multitude of details which must be thoroughly examined before our group could create and distribute any deliverables. This project was an opportunity to apply our skills regarding land assessment as well as exercise effective dialogue with our community partner and project consultants.

Methods and Strategies

Our project involves the assessment of both recreational and natural resources, so we split our six members into two groups. One group was designated to evaluate recreational possibilities (Colin, Tom, and Louis) and the other focused on determining the current natural resources (Will, Sadie, and Matt). Splitting into smaller groups allowed us to divide ourselves into who is best suited for tackling a particular topic, depending on our expertise and backgrounds. This made field visits to Pine Ridge more efficient and allowed us to work on deliverables without all colleagues being present. To facilitate and coordinate our project's progression throughout the semester our group designed a Gantt chart to establish a working schedule across the four months. This chart served as a timetable to ensure we were punctually completing our objectives. We spread out our objectives so that there was ample time to consider and complete each checkpoint.

An individual from each group was responsible for outreach with our community partner. Periodic meetings with our project mentor Dan Cottle also helped to visualize our progress and receive feedback from a perspective beyond our group. Establishing roles was a critical aspect of this project and helped to balance our group's dynamics. Communication and organization was a fundamental element for the advancement of

our deliverables – and led to the timely completion of our project and presentation. Please see the project proposal for more detail of our methods (McPhillips et al. 2018).

Results and Deliverables

Short reports were written to summarize our findings of land use history, the presence of invasive plants, existing natural communities, and notable features. Elemental maps of the sites geologic composition were also created to give a background to the sites history and potential of use. Maps included surficial geology, soil types, topography, and state mapped features; supplemental information was compiled, and a summary provided that addressed management implications of the landscape. These maps can be viewed in the supplemental deliverable documents.

Trail and Access Maps

To make informed suggestions for the properties recreational potential, we mapped the existing trail network using a GPS unit and ArcGIS Pro. We accessed both the widths and conditions of the trails in three categories. The width of the trail was measured in feet between each trail intersection, and the conditions were determined by estimating the amount of brush and downed wood laying on or across the trails as well as the general visibility and clearance of foliage along each segment. The map layout in Figure 1, as well as the vector line data (including the conditions/width attributes), have been shared with the Williston Conservation Planner in shapefile format.

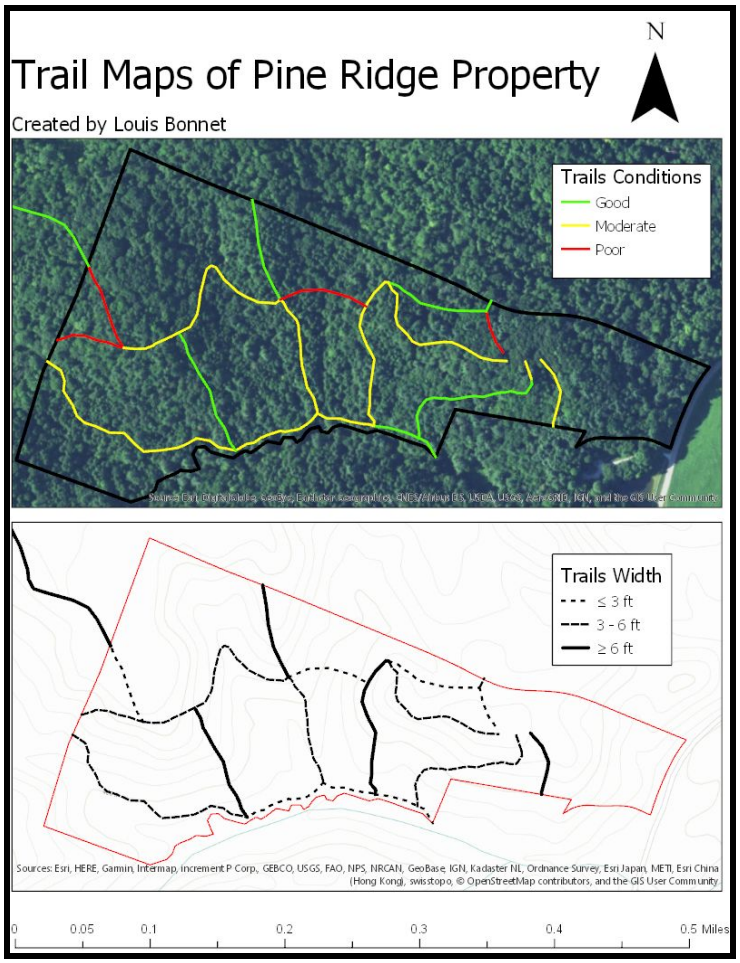


Figure 1. The above maps depict existing trail conditions and width of each section.

The access map was developed through many field visits and after several iterations. The main concerns considered in our approach included parking, terrain, and relationship with adjacent landowners. The path displayed on our map attempted to balance these factors to provide the

most feasible and practical approach to enter Pine Ridge Forest. However, we understand that there are limitations to the option presented below and we will go into greater detail and alternate options within the discussion section of this document. The map layout in Figure 2, as well as the vector line and point data (including their attributes), have been shared with the Williston Conservation Planner in shapefile format. By creating the trail and access maps, we generated enough information to provide the town of Williston with recommendations as to how they can manage this property and determine the extent of any potential recreational activities.

As far as the mapping component of this assessment of the property, all of the trails within the Pine Ridge Forest have been covered in our geospatial documentation. Concerning the access mapping and visualization – we provided one feasible option for entry – there is a chance that a connection could be made between Pine Ridge and Talcott through one of the southwestern boundaries/trails by the stream along the southern border of the property. Despite exploring the western boundary for a connection to Talcott, which we did not find, we did not have enough time to search the southern/southwestern border of Pine Ridge for any ideal points of access.

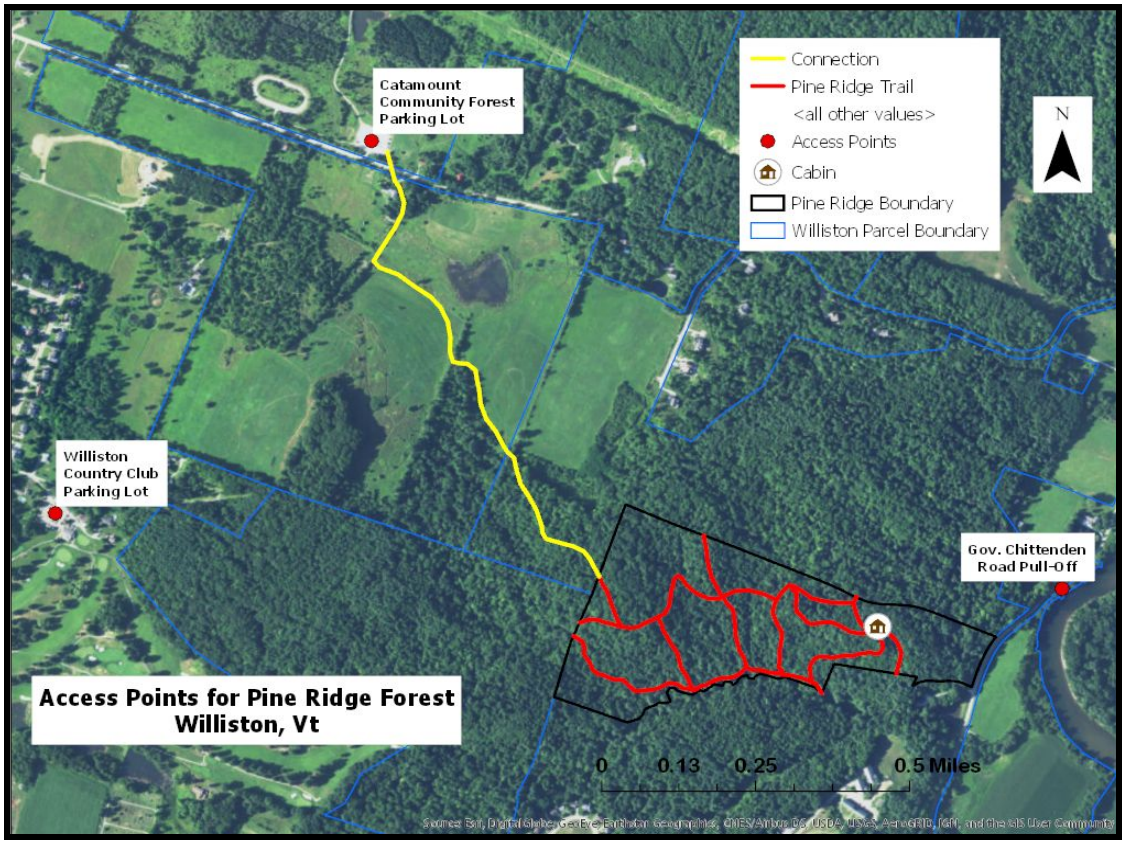
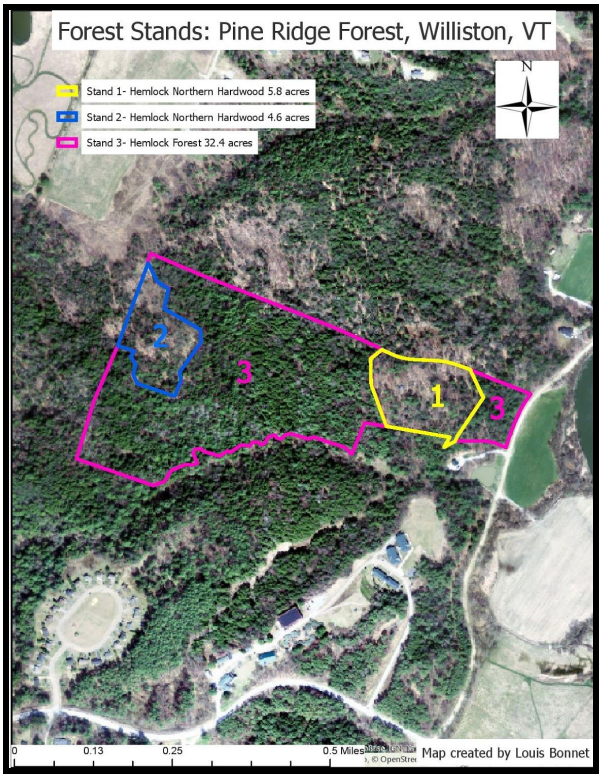


Figure 2. The above map shows various access point to the Pine Ridge Forest and potential trail connections.

Natural Resource Maps

We made several maps that highlight key natural features and unique areas within the property. A map of natural communities was created after assessing forest cover using GIS software and visiting the site several times. Figure 3 displays natural communities as well as the acreage of each community. A written description of each stand, the management history, the dominant tree species, and a general description of the stand was created. A variety of management options were given that varied in their impact on the forest wildlife community, aesthetics, and recreational users. We also mapped the



extent of invasive plant coverage within the property. Figure 4 shows the location of invasive plants across the property. A description of the severity of the invasive plant issue in each area of the property was given in addition to management recommendations. Written descriptions of land use history and general geologic history were created. Many more maps and written descriptions were created and submitted to our community partner, though not all of them are featured in this report.

Figure 3. The above map shows natural communities and the acreage of each natural community.

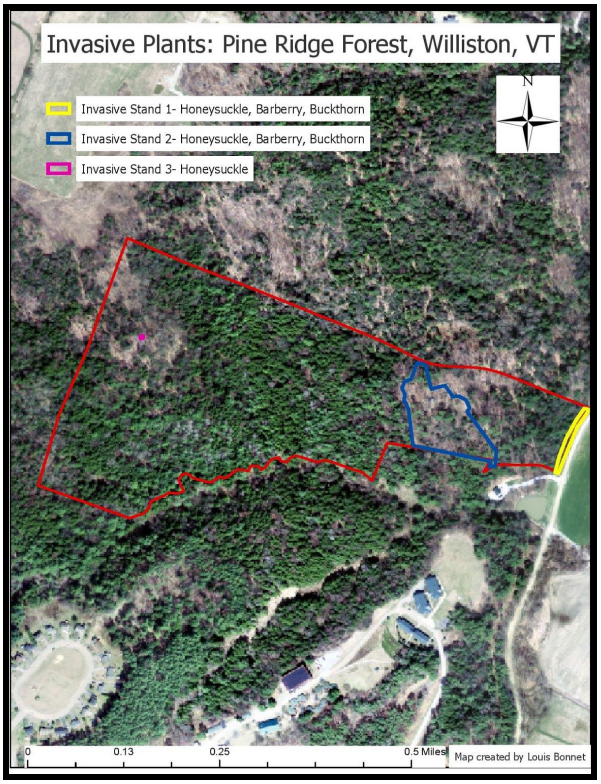


Figure 4. The above map shows the location of invasive plant coverage on the property.

Discussion, Recommendations, Conclusion

With little information as to the town of Williston's intentions and desired use of the property, it was somewhat difficult to know what type of data to collect and how we should implement our suggestions. Another complication was understanding the relationships and conflicts with adjacent landowners/stakeholders. Additionally, we were informed that the Riverhill Farm property owners would potentially agree to an easement allowing the use of trails through their property as a last resort to provide connections between Catamount and Pine Ridge. Although we were aware of this easement and information, understanding the full extent of its application was complicated, so we were unable to determine fully if our proposed access through a portion of the Riverhill Farm was applicable.

To expand upon this report and analysis of the property, we would propose that the town investigate the southern and southwestern border of the property for additional points of access and connections possibly through some trails crossing the stream or entering Talcott Woods. We would also suggest that the town initiate communication with the local community and adjacent landowners to further inform potential entry to the public, or any other specific groups that are granted access.

We believe there is an excellent opportunity for restoration of existing trails within Pine Ridge and construction of new connections. The terrain is hilly and undulating, with much variance in slope and aspect, lending to the desirable characteristics of any interesting outdoor recreational space. If this route is pursued, we would recommend collaborating with the Vermont Youth Conservation Corps (VYCC), a well-acclaimed local organization that specializes in the construction of safe and long-lasting trails for mountain biking, hiking, and other human-powered activities. The network of trails within Pine Ridge could relatively easily be linked to those of Catamount. By bushwhacking eastward through the undeveloped forest from Catamount's most southeastern trail, Gully Whumper, about a quarter mile or less we quickly found trails within Pine Ridge and recorded our tracks as a potential connection pathway. There is another point of access between Catamount and Pine Ridge through Riverhill Farm that could be faster and easier to establish. There is an opening in the fence acting as the north-south boundary between Catamount and Riverhill Farm which fairly directly connects the Catamount Bobolink trail with a wide doubletrack horse trail that leads through Riverhill Farm into Pine Ridge. If Ms. Scott and the WCC intend to go forward with establishing trail connections, our recommendations would be to use one or both of these routes.

Balancing the growing desire for new recreation opportunities with the need for landscape-level conservation poses a challenge for decision making on this property.

The opportunities for recreation on this site are promising. With an undulating landscape and interesting natural features, the area could serve hikers, bikers, and potentially skiers. However, this increased activity in the landscape also comes at a risk. High volume trail activity poses a greater threat of erosion and the spread of invasives, which are already present on the landscape. Also, this parcel is located within one of Williston's largest intact forests. It serves as an essential wildlife corridor for the surrounding area, and an increase in recreation causes a potential threat for these stakeholders. This group hopes that the work done throughout this project will aid the Williston Conservation Commission in making well-informed decisions moving forward.

References

McPhillips, C., Bonnet, L., Casper, T., O'Donnell, M., Shelton, S., Dunkely, W. (2018). *Pine Ridge Forest Assessment: of Natural Resources and Recreational Opportunities* [Project Proposal]. Rubenstein School of Environment and Natural Resources (NR 206).