

“A Living Museum”:

A Geographic Analysis of the Values, Meanings, and Uses of UVM’s Jericho Research Forest

Presented to the Rubenstein School of Environment and Natural Resources

**By the Students of Vermont Field Studies: Working Landscapes
Geography/ Service Learning 192, Fall Semester 2013**

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(photo: Mark Swank)

Table of Contents

- 1) Introduction, Methods, and The Geographic Approach**
 - a) Introduction
 - b) Methods
 - c) Our Geographic Approach: Looking for Traces
- 2) Change in the Jericho Research Forest: Environment, Human, and Land Use History**
 - a) A Brief Environmental History of Northern Vermont
 - b) Human Settlement of Vermont
 - c) Jericho Research Forest as a Human Landscape
 - d) Changing Values of Forest Management: A Comparison of the JRF 1937 and 2010 Forest Management Plans
 - e) Visualization of Landscape Change at the Jericho Research Forest
 - f) Telling the Story of Landscape Change at the Jericho Research Forest to Children
- 3) The Non-Human World of the Jericho Research Forest**
 - a) The Stories the Trees Tell
 - b) Important Trees of the Jericho Research Forest
 - c) Wildlife at the Jericho Research Forest
 - d) The Jericho Research Forest as “Home”: Interactions between Humans and Non-Human Residents
- 4) Outputs from the Jericho Research Forest**
 - a) Timber
 - b) Education
 - c) Research
 - d) Recreation
- 5) Landscape Use and Perception Analysis: Values, Meanings, and Recommendations**
 - a) Values: Education, Recreation, Aesthetics, and Research
 - b) Interviewee Concerns and Recommendations
- 6) Our Recommendations**
 - a) Create a Digital Archive
 - b) Hire an On-Site Caretaker
 - c) Renovate the Thompson House
 - d) Possible Scenarios
- 7) Acknowledgements**
- 8) References**

1. Introduction, Methods, and the Geographic Approach

a. Introduction

The Jericho Research Forest has been integral to many educational, ecological, and recreational pursuits over time. During the Fall 2013 semester, our Vermont Field Studies course studied the human history of, nature-human interactions within, and the numerous ‘outputs’ from the Jericho Research Forest (JRF). We also researched the various perceptions and values of those who engage with the Jericho Research Forest. **The goal of our research was to deliver an analysis of our geographic findings and highlight key recommendations for future uses of the Forest** to our Service-Learning partner, Ralph Tursini, Green Forestry Initiative Coordinator. The results of our research include a report, presentation, GIS imagery, a concept for a children’s book, and the start of a digital historic photo archive.

The results of this study exemplify the interdisciplinary approach that geographers strive for. We employed an interdisciplinary approach to this research by focusing on the physical landscape, human uses, and non-human habitat of the forest. This geographic research approach helped us to identify multiple recommendations for the JRF, which could serve the needs of many different users and maintain its function as a research site.

b. Methods

Our team used multiple methods to gather information about the JRF. These methods included:

- **Archival research** in the files at the JRF office, on-line resources, and UVM’s Special Collections Library (including maps, reports, and photographs)
- **A visual analysis of land cover change** employing aerial photographs and ArcMap GIS technology
- **A values analysis** of two Jericho Research Forest Management Plans, 1937 and 2010
- Twelve **in-depth interviews** with neighbors, researchers, instructors, and active users of the JRF

- **Experiential learning practices** including a field site visit to the JRF and an animal tracking session at JRF

We pieced together JRF's history and outputs using maps, land use records, photos, and written records. These sources, as well as our GIS aerial imagery and shapefiles, were taken from the UVM Library's Special Collections and the Jericho Research Forest office files. The interview-based data came from nine in-person, formal interviews with researchers, UVM employees, neighbors, and active users of the forest. These interviews were audio-recorded, transcribed, and coded to identify key themes, uses, and values associated with the JRF. Three additional interviews were conducted on the telephone or through email communication. The interview research was conducted after securing Human Subjects Research approval. The experiential learning methods involved doing a field visit to the JRF where we met with Dr. Walter Poleman who introduced us to the site, buildings, and two of the forest compartments. In addition, three students engaged in a valuable hands-on wildlife tracking experience with naturalist Mike Kessler. These multiple perspectives provided a broad range of facts of the forest's past and present uses, and spurred ideas about the JRF's future.

c. Our Geographic Approach: Looking for Traces

Cultural geographer Jon Anderson uses the idea of traces to investigate how places shift over time. He says, "traces are marks, residues, or remnants left in place by cultural life" (Anderson 2010, p.5). Traces tell us a story of something that may not be as obvious at first glance. In a forest setting, a broken branch or a hole in the ground may be a sign that a significant event occurred there. The type of traces found in Jericho Research Forest range from small to huge, and durable or fleeting. One example is the Thompson House. For as long as it stands the house will represent the stories of people who made their homes in the JRF. A second, more subtle example of traces are the impressions left by a deer walking over fallen leaves. These traces don't last nearly as long as a house, but are every bit as important. They allow us to

perceive the non-human without watching the events transpiring in front of us. They remind us that many different lives are lived in the JRF. These traces bring out the significance and beauty of the JRF. Traces can be found anywhere and everywhere in the forest as long as someone knows where and what to look for. We took on the task of looking closely for traces—in old manila file folders and in the oral histories of people who have deep experience at the JRF—so that we can take a broad view of the value and uses of the forest.

2. Change in the Jericho Research Forest: Environmental, Human, and Land Use History

a. A Brief Environmental History of Northern Vermont

The Jericho Research Forest is located in the southwestern corner of Jericho, Vermont, on the border of the Champlain Lowlands and the Green Mountains (Albers, 2000). The present condition of the Jericho Research Forest is the work of many ‘sculptors’: human, animal, plant, climate, and geologic. We begin our environmental history with a brief overview of the forest’s broader geologic context.

Twenty thousand years ago, the Laurentide Ice Sheet migrated south from Greenland and central Canada, burying Vermont under a mile of ice (Klyza & Trombulak, 1999). This massive block of ice traveled as far west as the Rocky Mountains, scraping the earth’s surface, widening valleys and carving gaps through the mountains in its path (Ibid, 1993). Thousands of years later the climate began to warm and the Laurentide Ice Sheet receded, leaving behind boggy wetlands, gravel, and rocky outcrops. These wetlands created the conditions for the leisurely formation of soils, tundra vegetation and sedges (Thompson & Sorenson, 2000). The retreating ice filled many of the small and large tarns caused by glaciation, leaving the New England landscape dotted with lakes and ponds. The Laurentide Glacier widened the valley to the East of the Green Mountains. As the glacier melted, Vermont’s largest western body of water, Lake Vermont, expanded, blocked by the shrinking glacier, and could not drain North to the Atlantic Ocean.

About twelve thousand years ago, the glacier disappeared from the St. Lawrence Seaway and the waters of the Atlantic Ocean flowed into the Champlain Valley, turning Lake Vermont into the salty Champlain Sea (Albers, 2000). As the depressed land began to rebound, the Champlain Sea eventually began to drain to the North, the water body reduced in size, and the salt water was replaced by fresh water, becoming the Lake Champlain we are familiar with today.

b. Human Settlement of Vermont

Around 9000 BCE Vermont's first human settlers, the Paleo-Indians moved in from the west (see Table 1), later joined by the Abenaki Native American tribes (Ibid, 2000). European settlers arrived in Vermont in 1609 and early French settlement occurred along sections of Lake Champlain. Extensive Euro-American settlement of Vermont, however, took place in the late 1700s after the end of the French and Indian War (Klyza & Trombulak, 1993; Wessels, 1997). When the Euro-Americans arrived, they came to an almost entirely forested landscape. Over several generations, they systematically transformed it into a largely cleared agricultural landscape, dotted with small villages and towns (Klyza & Trombulak, 1999).

Table 1. Human Settlement of Vermont

9300 BCE	7300 BCE	1000 BCE to 1600 CE	1609 TO PRESENT
<i>Late Ice Age</i>	<i>Archaic culture</i>	<i>Woodland Abenaki culture</i>	<i>Europeans arrive/ Abenaki culture persists</i>
Paleo-Indians gradually move into "Vermont."	Changing environment; migration and extinction of large animals.	Abenaki nation, culture and government develops and blooms; seasonal migrations mark the way of life.	Abenaki culture survives wars, diseases, cultural conflict, and diffusion. Euro-American practices significantly shape landscape.

(sources: Klyza & Trombulak, 1993 and Forrer, 2005)

In the nineteenth century, clearing of the forested land continued as thousands of farmsteads popped up across the state (Ibid, 1999). Each farmstead typically consisted of a farmhouse and cluster of farm

buildings surrounded by croplands, hay meadows, pastures, and woodlots. Humans had an exhaustive effect on the forested landscape throughout New England. By 1850, European colonists cleared 75% of Vermont's forests through agricultural land use and intensive logging (Albers, 2000).

Over the last 100 years, the Vermont landscape has returned to a primarily forested landscape, mainly due to the fact that agricultural practices have shifted over time. Today, the agricultural landscape has been reduced in size and is concentrated in regions with lower elevation, while the mid and high elevation hills are largely forested (Klyza & Trombulak, 1999).

The Vermont landscape we have today is the result of these co-constitutive natural and human histories. The site that would become the Jericho Research Forest is an ideal location to study Vermont's landscape and landuse history as its uses, land cover, and outputs have changed in tandem with the broader Vermont landscape.

c. Jericho Research Forest as a Human Landscape

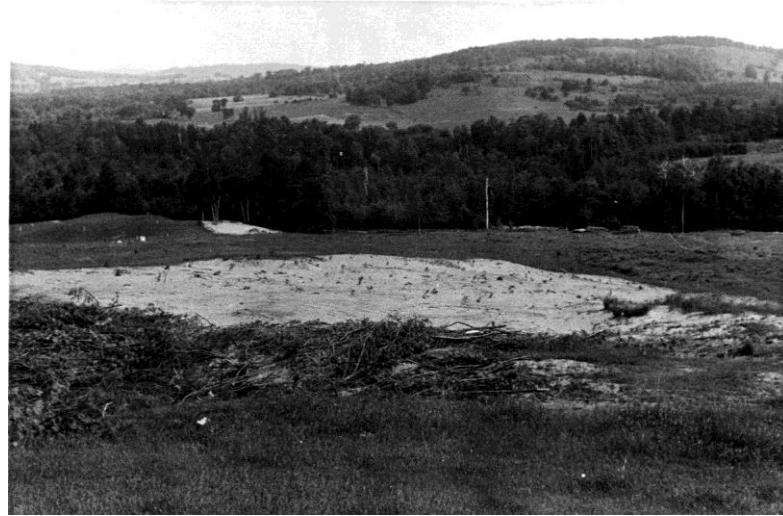
The first documented human contact with the Jericho Research Forest occurred in 1790, when John Thompson Sr. settled the property (Forrer, 2005). Thompson crafted the landscape into a working farm, which included saw timber operations, a small dairy, and two orchards –one quite productive, rumored to have nearly 1,000 apple trees (Ibid, 2005). These activities continued under Thompson's son Jesse, with timber accounting for a large source of income. However, in 1851 Jesse's son, Corey, sold the property to two brothers, Sylvester and Cyrus Tarbox, who focused their time on Vermont's new agricultural trend, sheep farming (Ibid, 2005). This form of agriculture continued until the turn of the century, when the farm was sold again (Goff, 2005). While few records exist for land use during this time, we know that crop and pastoral agriculture did occur until the late-1930s. By this time, the fertile soils of the land had all but disappeared, presumably due to overgrazing and erosion (see Figures 1 and 2).

Figure 1. Thompson House and Barns, 1936



(source: Jericho Research Forest office files)

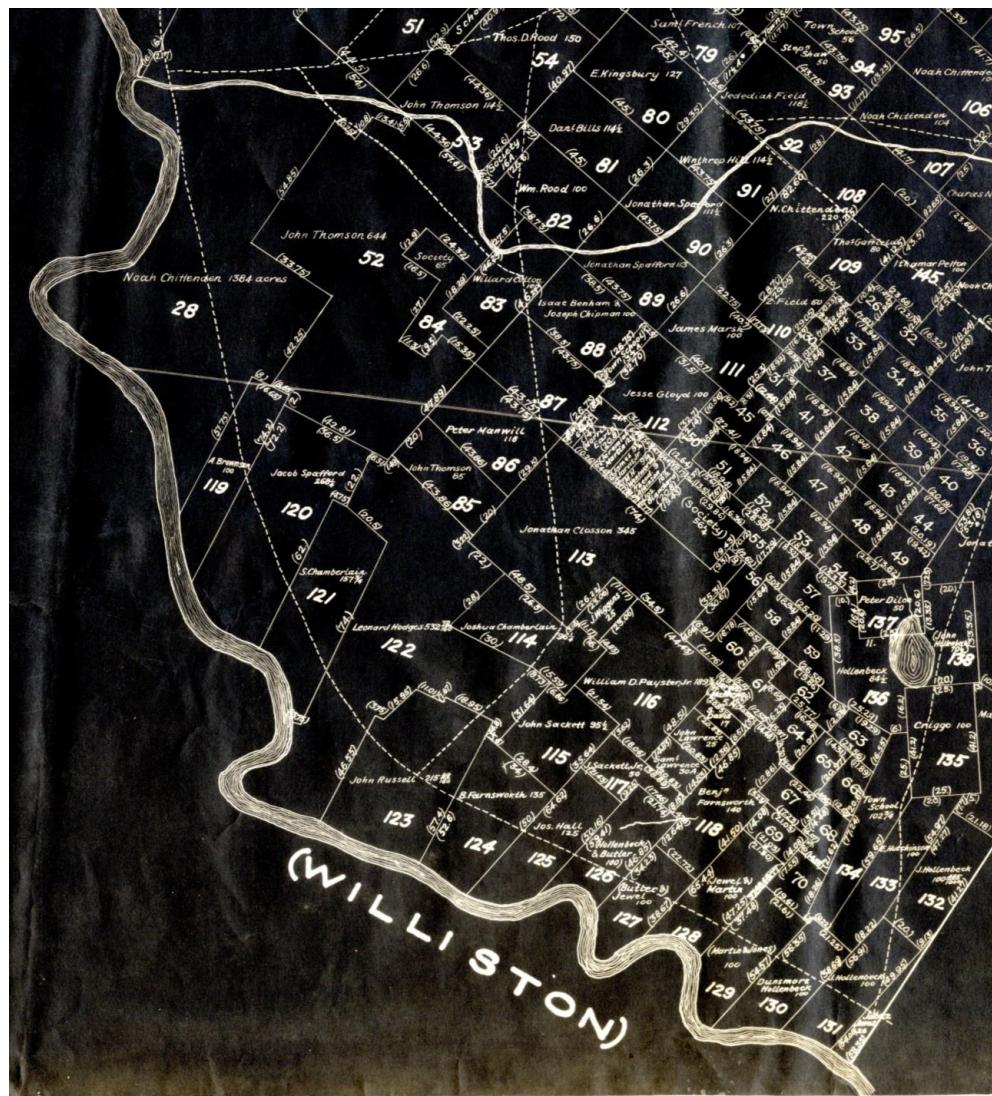
Figure 2. Sandy Ground, Jericho Research Forest site, no date



(source: Jericho Research Forest office files)

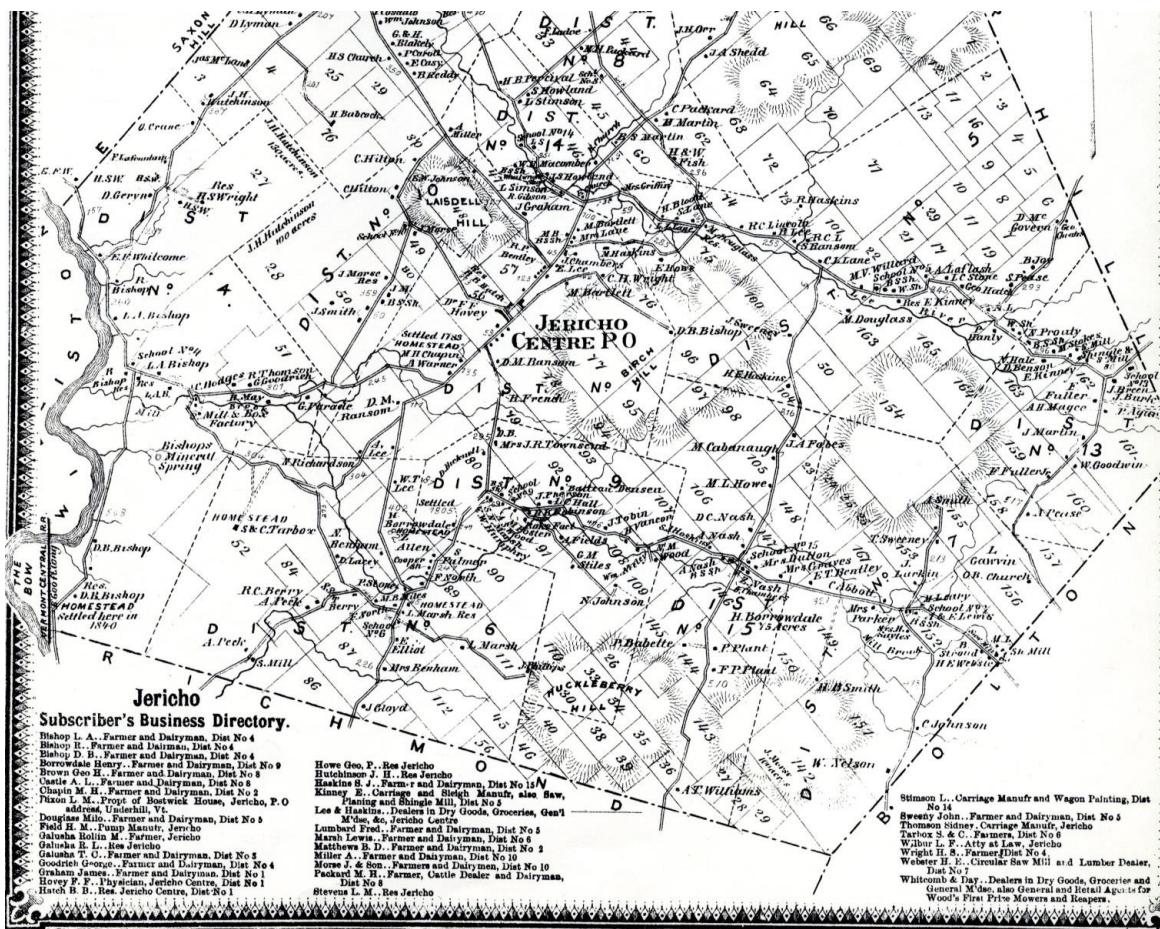
Figure 3. Map of south-west Jericho, 1802

John Thompson parcel (#52) is located in the north-west section of the map.



(source: UVM Special Collections)

Figure 4. Jericho Center Map, Beers Atlas, 1869



(source: UVM Special Collections)

No longer an active farm, the city of Burlington acquired the old Thompson Farm in 1941, and then swapped the property with the University of Vermont for land UVM owned and used as a tree plantation at the Burlington airport. (Forrer, 2005). This exchange resulted from the city's need to expand the Burlington Airport. The University initially viewed the Thompson property as a prime place to conduct research on managing unproductive farmland, with this research coming to a close in 1969 (Goff, 2005). Over this period of time the University planted trees to reforest the lands (see Figure 5). Since that time,

the University has used the property for research projects and other educational activities. Some of these educational classes include courses that teach students how to add value to forest products, like Ralph Tursini's bowl turning class. The class harvests trees on the JRF property to create wood bowls using a power lathe. Mr. Tursini simultaneously teaches students both how to create a fine wood product, and about the different properties of trees (Green Forest Educational Initiative, 2005).

Figure 5. Planting Douglas Fir and Japanese Larch, April 7, 1941



(source: Jericho Research Forest office files)

The Thompson house stands as an interesting piece of architecture, incorporating both Cape style and Greek Revival elements (Goff, 2005) (see Figures 6 and 7). This demonstrates the various additions and renovations the house underwent over its history. This changes mirror periods of time when the family experienced periods of wealth. Noticeable in the construction of the building is the use of vertical planks, a common practice dating back to the 1700s (Ibid, 2005). The Thompson house serves as a unique example of Vermont architecture, showing both the wealth and poverty of the owners over time. Table 2 summarizes the post-European settlement history of the Jericho Research Forest property.

Figure 6. Thompson House, circa 1941



(source Jericho Research Forest Office files)

Figure 5. Thompson House, 2013



(photo: M. Swank)

Table 2. Summary of Jericho Research Forest Ownership

Date	Name	Land Use
1790-1817	John Thompson	Subsistence farm, timber, apple orchard and milk production
1817-1851	Jesse Thompson (son of John)	Timber, apple cider, and milk production
1851-1900	Tarbox Brothers	Pastured sheep and cattle
1900-1906	Thomas Reeves	Agriculture, pasturing and timber
1906-1922	Burnaham	Agriculture and timber
1922-1939	John Bashaw	Pastured sheep and cows, strip crops, grasses and legumes for hay and various cultivated land, soil stabilization plantations
1939-1941	Thomas Reeves	Soil stabilization management
1941 (March 29) to present	University of Vermont	Experimental, research and education forest

(Source: Forrer, 2005)

d. Changing Values of Forest Management: A Comparison of the JRF 1937 and 2010 Forest Management Plans

The Soil Conservation Corps of Vermont wrote the property's first management plan in 1937 (Soil Conservation Corps, 1937). The intent of this plan was to provide the owners with the knowledge and understanding of how to best protect the soil from further erosion. At the time it was written, the property was suffering from major pockets of soil erosion from wind and deforestation. Wildlife had become scarce and plant species were suffering from poor harvest practices and inadequate management. In some parts of the land, trees and shrubs needed to anchor the soil were choked out by lack of sunlight and undergrowth. Other plant species were over tapped and harvested, restricting rejuvenation and growth.

The initial goal of the management plan was to inform the property owner about the processes occurring on the land and to introduce ways in which they might alter their production practices so that they are more agriculturally and economically sustainable. The intended effect of such changes was the return of native wildlife species, economic growth, the reduction of topsoil erosion, and the protection of the forest from further deforestation. The preservation and regrowth of the forest was also encouraged because the

creation of a natural-appearing landscape was an important part of the deliberate construction of the New England landscape (Ryden, 2011).

The plan also included detailed strategies and descriptions on how the owner might increase their income by supplying the community with a tree species that was currently in demand, and by describing steps on how to avoid over-tapping maple trees so that their sugaring practices would be more sustainable.

The current management plan, written in 2010, shows a clear shift in emphasis from economic agricultural production, to restoration and exploration of the ecology and forestry management practices (Weiner, 2010). This change is most likely a result of the return of the forest, a change in ownership, the UVM acquisition, and the development of the site as an educational resource for the forestry program at UVM. The differences in values between the management plans are also clearly seen in section 4.2 of the current management plan, under ‘values’. The two points listed are ‘ecological’ and ‘other.’ The first section carefully lists “a wide variety of ecological features that are valued by the RSEN [Rubenstein School of Environmental and Natural Resources] community,” while the second (listed under ‘other’), identifies the farmhouse as an important cultural feature and then goes on to mention opportunities for expansion. These statements clearly show a decline in emphasis on the human involvement and ownership of the property. They may also indicate waning interest in potential input from human stakeholders; as opposed to the original management plan, which stressed that care for the property may potential benefit the Jericho community (through resource supply and demand).

e. Visualization of Landscape Change at the Jericho Research Forest

One of the goals for this project was to incorporate Geospatial Information Systems visualization into our analysis. The University of Vermont Libraries Special Collections department shared with our team five different aerial photos (1937, 1962, 1974, 1980, and 1988). These photos were brought into ArcMap for geo-referencing. The purpose of geo-referencing is to create spatial links between coordinates for multiple

images. This process creates geo-referenced aerials by using non-geo-referenced imagery (the aerials) to make links with geo-referenced imagery (ArcMap imagery basemap). Geo-referencing was done for all five aerials using a minimum of 50 links and a spline transformation. This geo-referencing process was very successful with minimal Root-Mean-Square errors.

Due to the different area ranges of the aerial imagery, it was necessary to clip the images down. A current boundary of the Jericho Research Forest was obtained from the University of Vermont GIS database. Each geo-referenced image and the imagery basemap were then clipped to this boundary. Figure 6 and Figure 7 do not encompass the whole Jericho Research Forest boundary because of the multiple imagery ranges.

Figure 6 shows clear evidence of clear cutting in the middle of the image. Roughly 25 years later, Figure 7 shows rows of trees planted at the top-right boundary and general increases in vegetation across the boundary. There have also been changes in the JRF buildings. Figure 8 continues to show increases in vegetation growth. Figure 9 shows vegetation covering nearly the whole boundary with rows of trees planted post-1937 still visible. Figure 10 was most likely taken in the fall or winter because of diminished vegetation cover. The current basemap imagery shows the JRF covered by vegetation with no discernable openings besides the building locations.

In sum, the visual analysis of the JRF's land cover shows that the University of Vermont met its goal of re-foresting a deforested upland site.

Figure 6. Georeferenced 1937 aerial of the Jericho Research Forest

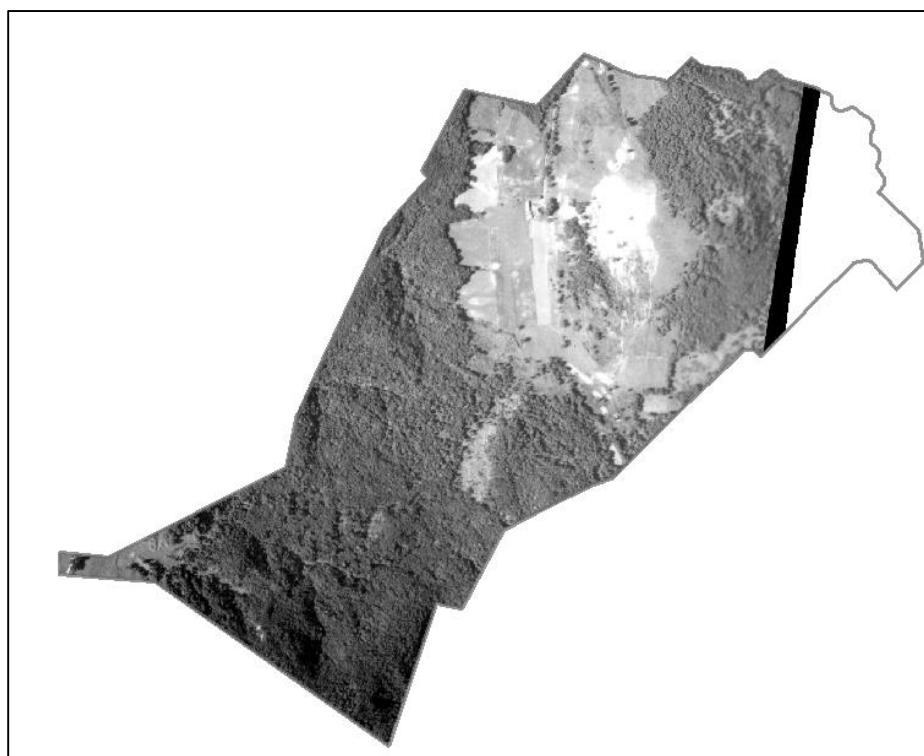


Figure 7. Georeferenced 1962 aerial of the Jericho Research Forest



Figure 8. Georeferenced 1974 aerial of the Jericho Research Forest

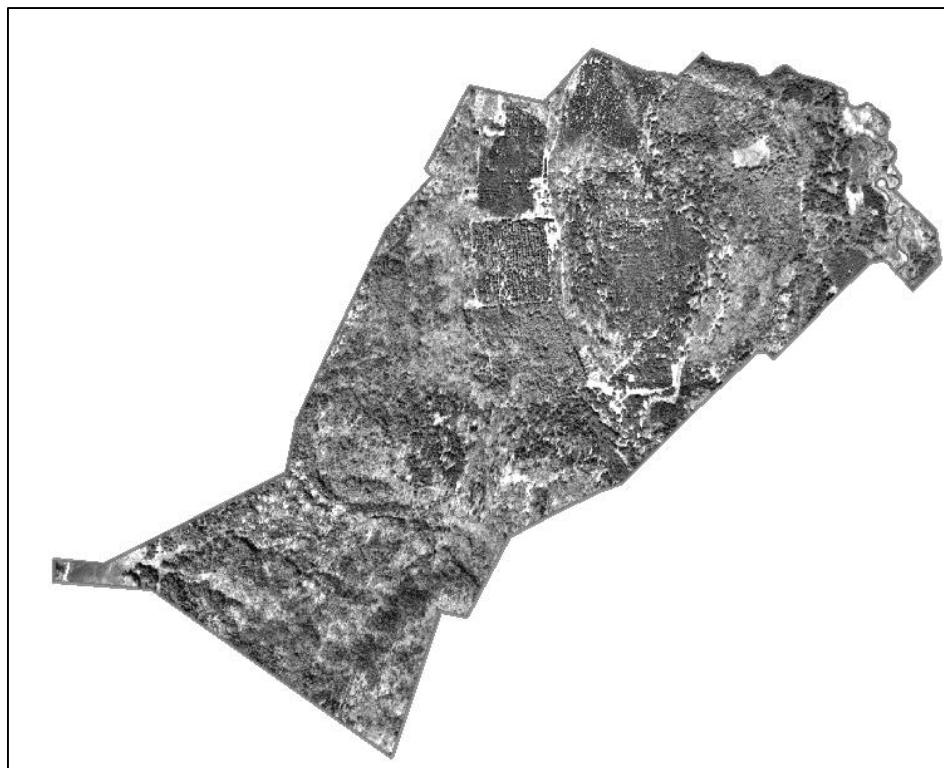


Figure 9. Georeferenced 1980 aerial of the Jericho Research Forest

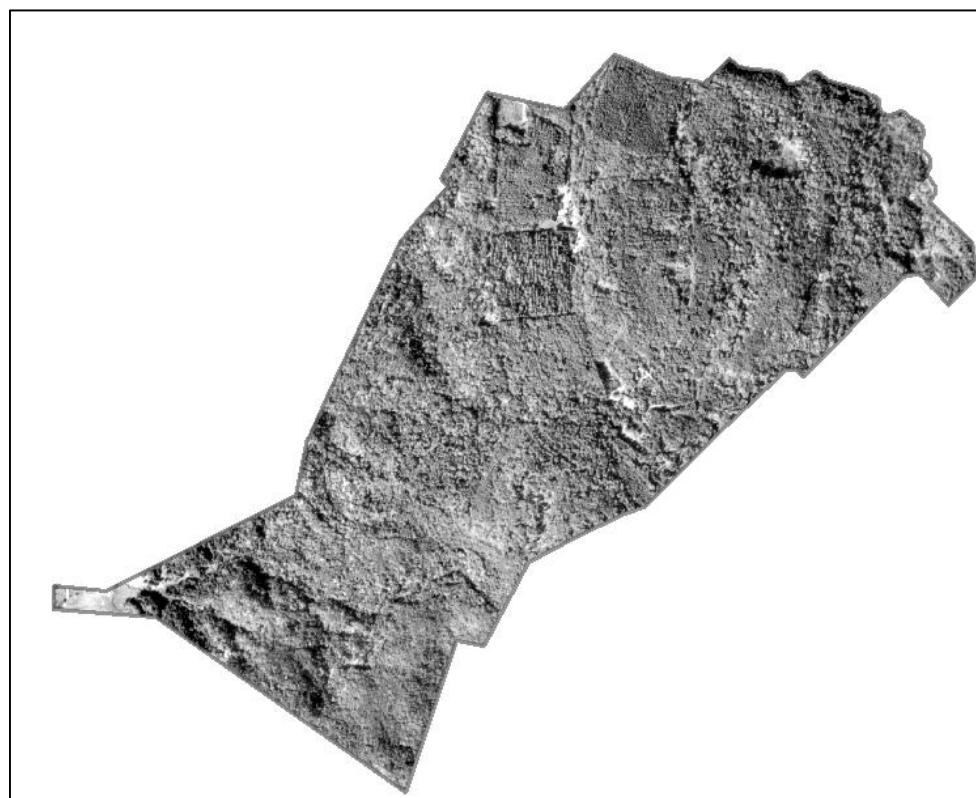


Figure 10. Georeferenced 1988 aerial of the Jericho Research Forest



Figure 11. ArcGIS basemap of the Jericho Research Forest



f. Telling the Story of Landscape Change at the Jericho Research Forest to Children

Throughout the semester, we explored different methods of conveying information and stories. We found that a children's book was a successful way to highlight visually the important aspects of the JRF's history; such as the species of trees (white pine), the animals (Goshawk) and the human impacts (land clearing and the Thompson house). Figures 12-14 are examples of the concept for a children's book. We believe that the children's book serves as a great medium to present the story of the Jericho Research Forest, as it provides both educational and entertainment value. By interweaving the story of the landscape with an entertaining tale, like *Letting Swift River Go* by Jane Yolen with illustrations by Barbara Cooney. Not only would this book tell the story of the landscape, it could also raise funding for the forest.

Figure 12 . Concept Design for a Jericho Research Forest Children's Book

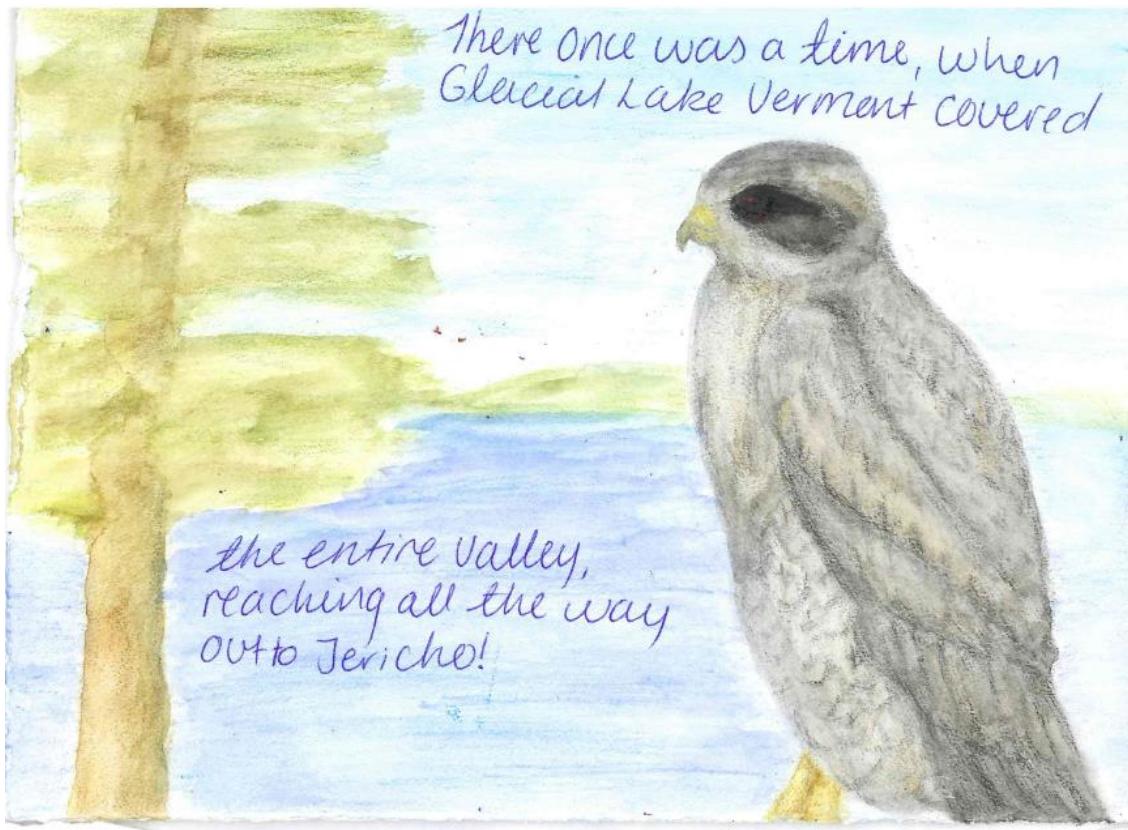


Figure. 13

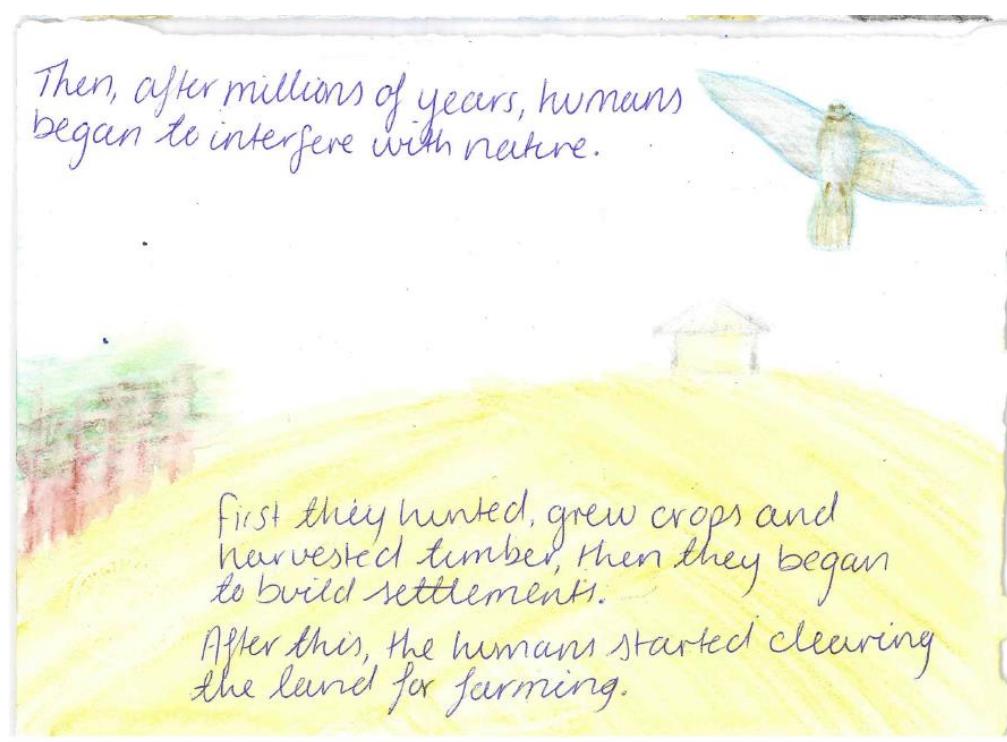
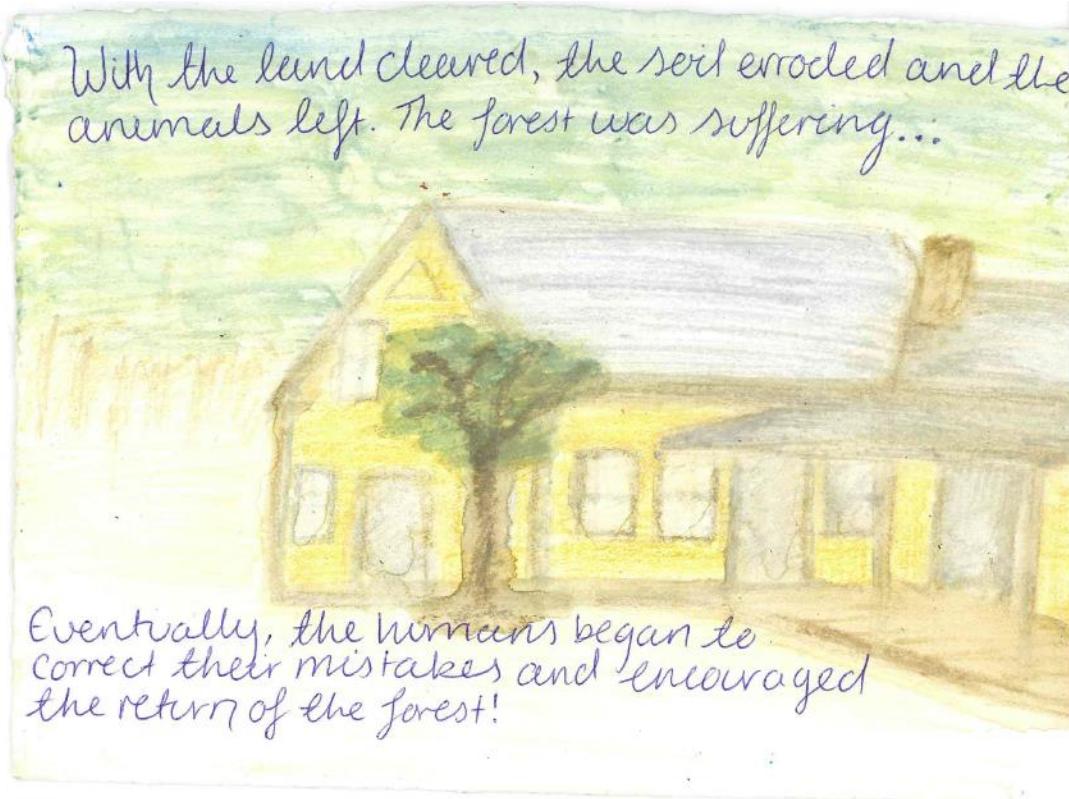


Figure. 14



3. The Non-Human World of the Jericho Research Forest

Our team's goal was to gain perspective on the non-human worlds of the Jericho Research Forest. To do this, we conducted a field site visit, went on a wildlife tracking experience with Dr. Mike Kessler, and gleaned information from interviews with people who know the forest well. This section does not intend to be an ecological inventory of the Forest; rather, we were seeking experiences and stories that would give us insight into the interactions between people, trees, diseases, wildlife, and plants in the forest.

Figure 15. The Stories the Trees Tell, September 2013



(photo: C. Morse)

a. The Stories the Trees Tell

During our field site visit to the Jericho Research Forest, Walter Poleman suggested our class stand in a certain spot in Jericho Research Forest for a group photo (Figure 15). He selected that location because the photo would include three species of trees that tell the story of the JRF's past, present, and possible future. The tree on the left is a Sugar Maple which symbolizes the present day. The trees in the center

background are White Pines that were planted in the past. To the right is a Tulip Poplar that signals the uncertain future of the forest.

Vermont's state tree, the Sugar Maple, is pictured in post cards, calendars, and photos of our state. It has brilliantly colored foliage in the fall, which attracts local admirers and tourists alike. It also produces the sap that sugarers transform into maple syrup, an important Vermont product. Without a doubt, the Sugar Maple plays an essential role in the economy and identity of the state. The White Pine is also a Vermont tree, although it is now more a relic of the past. Vermont used to be mostly forested until European settlers deforested around 80% of the land for use as pastures and croplands (Wessels, 1997). As these open spaces were abandoned (farmers moved west or shifted to other forms of agriculture), the forest came back. White Pine is a fast growing tree that is well-adapted to competing in open spaces, and soon became dominant in Vermont after this period of abandonment (mid 1800s). However, because White Pines cannot establish themselves in shade, the Sugar Maple, which do well in the shade, soon became dominant underneath the pines. As the pines died of old age, a Sugar Maple forest appeared, which continues to this day. However, a warming climate threatens Sugar Maples, and more trees species common to the south, such as the Tulip Poplar, may soon outcompete it. Climate change may affect the JRF forest composition, but precise understandings of how the northern forests of New England will respond to climate change are unknown.

b. Important Trees of the Jericho Research Forest

The Jericho Research Forest is home to a number of important tree species, including, but not limited to, the Eastern White Pine, the Sugar Maple, the Red Pine, the Tulip Popular, and the Butternut. While some of these trees occur naturally in the Vermont, many of the trees at the JRF result from large-scale plantings, like the Eastern White Pine.

c. Wildlife at the Jericho Research Forest

While on a wildlife tracking experience with Dr. Mike Kessler, we saw signs of the large variety of animals that make up the Jericho Research Forest. He showed us how to be more in-tune with the wildlife that inevitably surrounds us through an open-minded process of trying to think like animals. He explained that the forest is a safe haven for local wildlife, providing an important passageway for species as they move through the landscape. Many large species (deer, moose) and predators (foxes, bobcats, fisher cats) and small game animals inhabit the JRF. Dr. Kessler pointed out ways to track these animals' movements, and showed us methods for uncovering signs of past tracks, such as impressions on the ground.

We learned from Mike Kessler about “dead spots”: places where human activity is minimal; such as next to a main road or way off the beaten path in a ravine. Just as people leave traces such as buildings and trails in the JRF, animals leave tracks and evidence of their movements. These tracings are natural rather than cultural. Dr. Kessler sees the forest differently than most humans and is able to point out behavioral patterns among animals that may otherwise go undiscovered. A forest is like a canvas in which animals and humans paint with their individual actions and interactions with one another. The niches they carve for themselves in the forest are fascinating and they play a large role in shaping the forest.

d. The Jericho Research Forest as “Home”: Interactions between Human and Non-Human Residents

We interviewed a man who grew up in the Thompson house, to which the forest was home. Our conversation with him provided insight into the daily interactions between people and animals that both make their homes in the Jericho Research Forest.

“Henry” (a pseudonym) spent his childhood days growing up in the old farmhouse on the property, experiencing the forest with his parents and siblings in a way that is unique to his family and his life

specifically. His family knows the forest perhaps better than anyone else, as his father was the caretaker and spent a lot of time introducing them to the many aspects and offerings of the forest. Henry's childhood was unique in that he had hundreds of acres of forested land to explore, learning lessons along the way. He spent his free time using and exploring different parts of the forest, building forts, mountain biking, hunting, and learning about nature. As he said, "I was always learning about new animals, species and stuff." Whether it was helping his father prepare firewood for the upcoming winter, or watching a bear wrestle with the bird feeders on the front porch, Henry was exposed to a type of experiential learning that can only be achieved through residing in a remote area such as the JRF. The most important thing to note about JRF in regards to the Henry's family is that it provided an intimate understanding of what it is to live in a historic forested environment shared with many other non-humans.

4. Outputs from the Jericho Research Forest

The land on which the Jericho Research Forest is situated has been many things over the years. As the University moves forward in the process of determining the future of the forest, it is important to consider the different relationships people have had with this land in the past. There are many primary documents available to anyone interested in further exploring the historical uses of this land, which are located in the bibliography. We found the work of a former graduate student, Kate Forrer, particularly helpful in our quest to learn more about the past uses of this parcel of land.

Figure 16. Christmas Tree from Jericho Research Forest, 1949



(source: Jericho Research Forest office files)

a. Timber

While the harvesting of timber still occurs at JRF, the harvests are carefully selected to enrich an educational experience, like Ralph's wood turning course, or for use in University construction projects; including the 2005 "Greening of Aiken" project and the Redstone Dining Hall renovation. As Ralph Tursini noted during a meeting with him, the wood turning course provides numerous benefits including the experience of learning about value added products, like bowls or other goods crafted from lumber. To benefit the forest, there should be an emphasis on using its timber in value added projects. (As a side note, we discovered a photograph of a decorated Christmas Tree that had come from the JRF (Figure 19).

According to the note on the back of the photo, the Douglas Fir had been planted at the JRF in 1944 was harvested and decorated in 1949.)

b. Education

The Jericho Research Forest has been an invaluable resource for many students during their time at UVM. A great example of the connection to the forest is the priority of the requests made by members of the first graduating class of the UVM Forestry Program for a return trip to the forest during their 40-year reunion in 2009. Since that class graduated 44 years ago, hundreds of UVM students and faculty members have used the forest for research and other educational experiences. Jericho Research Forest has hosted a variety of courses over the past decade including Ecopsychology, Silviculture, Woodturning, Forest Conservation, and Wilderness First Aid (for a list, please see the courses sited in Table 3. (David Brinn; Green Forestry Initiative Website, 2013; JRF GIS Layer)).

The benefits of these educational outputs are not limited to members of the UVM community. Champlain College's field ecology program has taken advantage of the JRF (GFEI Website, 2013) It has also been used as an educational resource by local K-12 teachers. A science teacher at a local middle school close to the forest says his classes "always have a great time going out to winter track for a couple hours then back to the warmth of the building then back out again." Making note of the oven on the property, he says his classes have "always wanted to also do some fire roasted pizzas while we are there." Other middle school classes have also used the forest in science classes to monitor the vernal pools. (Walter Poleman, class visit). Private organizations, too, have used the space for the site for a variety of programs from the Game of Logging to American Patriot K9 Search and Rescue Training (GFEI Website, 2013).

The Green Forestry Education Initiative has been responsible for a great number of events that have been held at the Jericho Research Forest including many different workshops focusing on basket making, wood turning, wildlife tracking, portable sawmill demonstration, and other logging workshops. Beginning in 2007 the GFEI has led monthly Saturday Forest Walks and programs for the community. While the forest walks have been reduced in frequency to one or two per semester, they are an important linkage between the community and the Rubenstein School (GFEI Website, 2013).

Table 3. UVM Classes that Have Used the Jericho Research Forest as an Educational Site

ENVS 151 Intermediate Environmental Studies	FOR/WFB 015 Wildlife Tracking and Analysis
ENVS 195 Ecopsychology	FOR 223 Silviculture Laboratory
FOR 013 Intro to Wildlife Tracking	FOR 081 Forestry Seminar
FOR 021 Dendrology	NR 285 Biomass to Biofuels
FOR 121 Forest Ecology Laboratory	NR 001 Natural History and Field Ecology
FOR/WFB 185 Winter Tracking Specialty	WFB 150 Wildlife Habitat and Population Measurements
FOR 185 Woodturning and Forest Conservation	ENVS/295/FOR/HR 285 Community Based Natural Resource Management
GEOG 192 VT Field Studies: Working Landscapes	

(Sources: GIS Educational Use Layer, Green Forestry Initiative Website)

c. Research

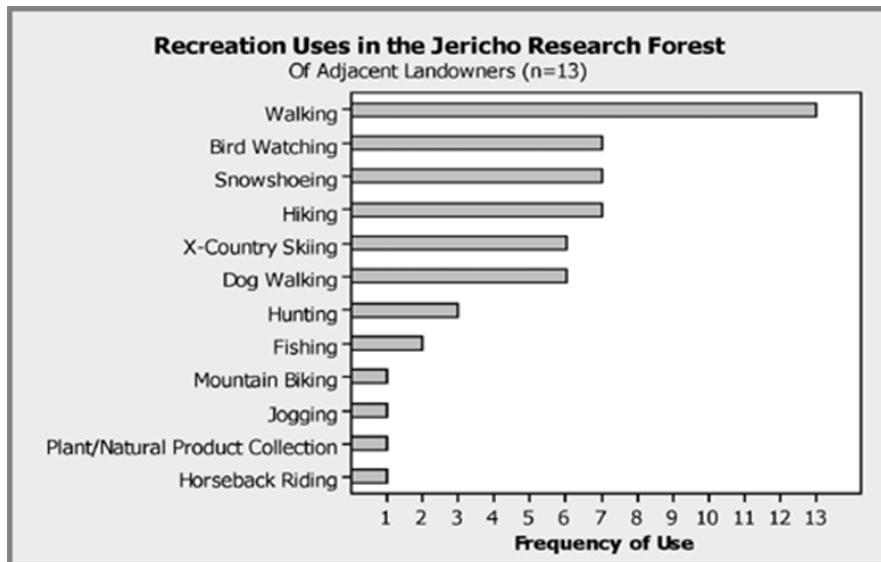
The Jericho Research Forest has been an essential resource for researchers from UVM's Rubenstein School. It has been used extensively by scientists to attempt to discover species best adapted for soil restoration, fast growth, economic value, wildlife habitat, disease resistance, and/or diversity. In addition, the JRF has served as a field site for research in the fields of forestry, wildlife biology, and climate-

change research (for example, see: McKenney et al., 2006; Lishawa, Bergdahl and Costa, 2007; Hannah, 1998; Keeton, 2006).

d. Recreation

The Jericho Research Forest serves as a recreational resource to the neighboring communities. Many of the people we interviewed used the forest for recreation year round, including UVM faculty members who use the forest in their courses and personal research as well. The location of the forest between the Green Mountains and the Champlain Lowlands, plus the existing network of old logging roads and trails provides terrain that is ideal for a variety of recreational uses including trail running, walking, hunting, and dogsledding (See Table 4 for a list and graph provided by former UVM students). A Vermont Association of Snow Travelers (VAST) trail runs through the property; which is maintained by a well-organized community association and is an important source of winter recreation for Vermonters and visitors to the Vermont.

Table 4. Recreational Uses in the Jericho Research Forest



(Source: Kargman, 2006)

5. Landscape Use and Perception Analysis: Values, Meanings, and Recommendations

We conducted twelve interviews with people who know and use the JRF in variety of ways. These individuals use the forest differently but a common theme appeared in their interviews –each believed the value of the forest was in the experience itself. Seeking to visually represent how the JRF space is variously used and valued by the people we interviewed, we created a Map of the Jericho Research Forest Uses (Figure 20). The map aims to show the liveliness of the forest and the fact that its entire extent is used or valued by someone. It also shows that the forest is not a bounded space, closed off to the world, but instead is traveled through and across by people, animals, weather systems, and plants.

Figure 17. Map of Jericho Research Forest Uses



(source: Rosie Jenkel)

a. Values: Education, Recreation, Aesthetics, and Research

The varying nature of these human experiences means that the JRF has come be valued for many things to different people. Educators, who were well represented in our interviews, widely agreed that the location's accessibility and proximity to Burlington adds value to it as a resource. It is important to note that many people use the JRF in multiple ways; for both work and pleasure, like a UVM professor who brings her students to the forest and uses it with her family for recreation. A lecturer in the Surgery Department at the UVM College of Medicine has used the forest in the past to teach Medical First Responder courses. In addition to the accessibility, he values the JRF as a “wild” setting that can simulate real world rescue situations.

A former director of the Green Forestry Education Initiative sees immense potential in the JRF and values it for the hands-on educational experiences it provides to students. Multiple people we spoke with agreed that the Forrest E. Orr Conservation Center has added significant value to the forest as an educational resource.

A former neighbor of the JRF who spent a great deal of time walking the forest trails likened the forest to a “living museum.” For her, it was both a sanctuary where she had many peaceful experiences and it was an educational opportunity. She saw her first Black Bear in the forest, for example. She shared the “museum” experience with friends and family when they visited. The people we spoke to who valued the forest for its recreational opportunities emphasized that its value as a space to “just be in nature” should not be overlooked. As well, those who use for forest for recreational experiences note the importance of the aesthetic values of the land: visual beauty and quiet. One snowmobile enthusiast told us, “"It's just a place we love to be." These individuals share an appreciation for the opportunity to access and use the JRF as a protected natural space.

b. Interviewee Concerns and Recommendations

At the close of each of our interviews we asked people what they thought the JRF would be in an ideal world with no constraints and what they think is the best use of the JRF. Their answers varied greatly according to the nature of their relationship with the forest, and generally took the form of fears and concerns or recommendations for the future of the JRF.

Concerns

Three themes appeared in their fears and concerns for the future of Jericho Research Forest. The first two themes are related to the preservation of the ecological and aesthetic values of the forest. The first theme we found is the **fear that the forest will deteriorate without proper maintenance**. Several interviewees said they see the forest as a **working landscape** and a **living museum** of natural history that they believe requires a constant (respectful) human presence if such an unsurpassed beauty of nature is to be sustained. Two men stated that they fear corrosion of the landscape through the involvement of disrespectful humans and their motorized and non-motorized recreational activities. One interviewee snowmobiles through the forest, but he stressed that he is respectful and works hard to preserve the forest.

The second theme concerning fears for JRF relates to **vandalism, illegal dumping, and other destructive activities**. Three research participants shared in their interviews a few anecdotes of how this misuse of the forest has occurred. The former caretaker of the property and a second UVM employee provided shocking instances of vandalism in their stories. One spoke of people storing evidence of crimes they've committed out on the forest land. He also mentioned that he interrupted one person who was attempting suicide on the property. Another interviewee spoke of illegal poaching and dumping on the site. Vandalism and its associated problems obviously have a strong negative impact on the forest.

One of the recurring themes in our interviews was that **the forest will not be utilized to its fullest potential as an educational and community resource**. The individuals we spoke with see the forest as a place with huge opportunities that they fear will not be realized. This includes the educational

opportunities available to the greater Vermont community as well as the UVM community, and the ability to strengthen the relationship between the two. The people we spoke with shared these perceived opportunities with us in the form of recommendations for future use.

Interviewee Recommendations

The people we interviewed provided us with several recommendations for future use of JRF. Suggestions included:

- keeping the forest as it is
- increased educational activity
- hiring an on-site caretaker
- the creation of a map of significant trails and locations for public use
- enhancement of living and classroom spaces

Everyone we spoke to agreed that there is no need to transform the forest from its natural state. They argue that keeping the forest natural is what creates a serene and beautiful landscape, providing people with their own interpretation of a wooded oasis.

There was a consensus among interviewees to maintain its use as an educational resource and encourage further use by UVM departments and community members outside of the Rubenstein School as well.

Four UVM employees and educators were **strong supporters of increased hands-on educational use of the forest**. One suggested the **creation of a semester or year-long residential program** based at the forest, with the students living in cabins they would build themselves as part of the program. This would allow them to take on many of the forest management responsibilities.

While the specific recommendations varied, one person's suggestion that "**overnight facilities would make it a good retreat space**" was supported on multiple occasions. This proximity to Burlington and UVM as well as other recreational activities makes this an excellent location for such a space. This UVM educator also suggested the creation of "additional research and teaching space" such as a computer and a dry lab. She noted that additions like this would require **an on -site caretaker**. This was a recurring

theme among our interviewees who agreed that maintaining a constant presence in the forest is important. Their recommendations for solutions included a proposal for a residential program at the forest and another person's suggestion that a caretaker be brought back to the forest. They argued that this would improve the condition and management of the forest.

One interviewee recommended **relocating the Outing Club cabin** from Bolton to JRF because of its proximity to a greater number of opportunities for outdoor recreation. He also recommended allowing other university affiliated groups to use the forest free of charge.

The recommendation for a **trail map for public use** came from a long time neighbor who found herself lost upon returning to the forest. She would love to see a map produced that community members could use for recreational purposes. She also mentioned that the addition of current research projects and ecologically important occurrences and species to a map or an interactive trail would be embraced by community members and would help to establish a better sense of place in the forest. By encouraging community use and involvement with the forest there is **potential for increased community connections** between UVM and the communities of Jericho and Richmond.

Another research participant spoke of the potential the Jericho Research Forest has to become a **strong community forestry center** that could be used as a resource by programs like the Vermont Urban and Community Forestry Program. She referenced a Community and Urban Forestry Center in Portsmouth, NH as an example of a similar space. What would be required to create a space like this is very similar to the additional resources mentioned by others – additional research and teaching space, as well as some sort of library of resources.

These discussions left us optimistic about the possibilities for the future of the JRF. Of course this is not an ideal world and there are very real constraints that limit the possibilities, but these recommendations provide an excellent starting point for discussion amongst our class and we hope the rest of those interested in the future of the forest.

6. Our Recommendations

Our class has come to a number of different recommendations for the future of the Jericho Research Forest. While these conclusions range from selling the property to undergoing a massive capital campaign to transforming the JRF into a leading green forestry research facility, we agree on one central recommendation: **the University must do *something*, as the current *status quo* does not best serve the University or the Forest.**

a. Create a Digital Archive

First, we recommend, regardless of any other decision, that the University creates a digital archive of all Jericho Research Forest documents. Using the Special Collections department, which already has some documents archived; this recommendation requires little effort or capital investment by the University. A work-study student could achieve it in a short period. We have already begun work on this project with the creation of a historic photo archive.

b. Hire an On-Site Caretaker

In our opinion, before any other changes can occur at the JRF, the University must hire an in-residence caretaker. This would help with security of the property, addressing concerns about vandalism, illegal dumping and other destructive activity. It will also provide a valuable resource in someone who understands the forest in a profound manner not possible to those who do not reside at the JRF. Furthermore, a caretaker could advise the University on current and future uses of the JRF. This person would also be a member of the Jericho community and would assist in developing on-going relationship with neighbors and local residents. A caretaker would require living accommodations and we do not believe that the Thompson House should house a caretaker. Instead we recommend the construction of an

additional dwelling somewhere else on the property. The question of the Thompson House leads to our next recommendation.

c. Renovate the Thompson House

At this time, we stress an extensive renovation of the Thompson House. While a renovation would improve the space and allow for multiple uses (ex. student sleeping space for extended research visits, conference center, community events hall, etc.), it would also protect the building from falling into a state of disrepair. This renovation would need to occur in quick fashion, as structural damage has already begun to take place.

The above two recommendations should occur only if the University decides to keep the JRF. If the University determines that selling the property fits their needs best, than neither a caretaker nor the Thompson House renovations would be necessary. In our opinion, the future holds three scenarios for the Jericho Research Forest.

d. Possible Scenarios:

1. The University either **sells or gifts the property** to another party, but **maintains research rights**. Potential options include gifting JRF to the State of Vermont, selling the property to a non-profit or to a private landowner. These options require further research if the University pursues scenario #1.
2. The University undertakes **a large-scale capital campaign** to transform JRF into a leading sustainable forestry research center. This would entail major renovations to the current structures, as well as expanding University groups that use the facility. Additionally, in order to promote community investment, part of this option could include increasing the involvement of the local community in the research forest. Possible community events could include the creation of recreation paths (with a map of trails available), community learning opportunities in

partnership with University classes, greater collaboration with local schools, and other educational activities.

3. The University **compromises** on the above options and sells part of the forest, using the proceeds to improve the facilities. Not only would this allow the necessary changes to occur, but also it would reduce the forest to a more manageable size.

While each of these scenarios requires change, we believe that change is necessary for the Jericho Research Forest. The current uses of the forest do not fully utilize the space and allow the property to become a “white-elephant” for the University. The Jericho Research Forest holds a proud history and a promising future, but the future can easily be tarnished by inaction on behalf of the University.

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