City of Keene, New Hampshire

AGENDA

GREATER GOOSE POND
FOREST STEWARDSHIP PLAN AD HOC COMMITTEE

Tuesday, January 15, 2019 **3:00 PM** **2nd Floor Conference Room**
City Hall

1. **Call to Order**
2. **Minutes of November 8, 2018**
3. **Review of Revised Draft Forest Stewardship Plan with Consultants Jeff Littleton of Moosewood Ecological Inc. and Swift Corwin**
4. **Community Forum and Council Presentation**
5. **Project Next Steps**
6. **New or Other Business**
7. **Adjournment**

DRAFT

City of Keene
New Hampshire

GREATER GOOSE POND FOREST STEWARDSHIP PLAN ADHOC COMMITTEE MEETING MINUTES

Thursday, December 7, 2017 **10:30 AM** **2nd Floor Conference Room, City Hall**

Members Present:
Bettina Chadbourne, Councilor
Andrew Madison
Dorothy Howard
Andrew Bohannon
Peter Poanessa
Tad Lacey

Staff Present:
Tara Kessler, Planner

1) Introductions

The meeting adjourned at 10:31 a.m. and introductions were made. Jeff Littleton of Moosewood Ecological LLC, the firm hired to oversee the project, introduced himself and the other members of his team. Josh Ryan noted that his role on the project is the completion of a trails assessment. Swift Corwin introduced himself as the consulting forester for the project.

2) Project Review

Tara Kessler explained the origins of the project. She noted that the conservation easement on the Greater Goose Pond Forest land, which is held by the Society for the Protection of NH Forests, references a Stewardship Plan to guide land management activities. Although there have been numerous studies and plans developed for the Forest, there is no current Stewardship Plan. The Conservation Commission developed the Scope of Services for this project with a focus on forest management, recreation/trails assessment, and wildlife/ecosystem protection. The City Council approved the use of Land Use Change Tax Funds to fund the project. The City Parks and Recreation Department has contributed some funding to support the trails assessment component of the project. After a competitive solicitation, Moosewood Ecological LLC was hired by the City to undertake the work of this project. The firm began work in the late fall of 2017. It is anticipated that the work will be completed in the summer of 2018.

Mr. Poanessa inquired about the timeframe for the plan. Mr. Littleton responded that it will be a ten year plan that may require minor updates over time to keep it current. Mr. Corwin responded that this is the standard length of time for a forest management plan.

3) Future Meetings

Mr. Littleton noted that he anticipates the Ad-Hoc Committee will be meeting again in early January to review land management goals and objectives and to discuss public outreach and education, specifically, the proposed walking tours of the forest. He noted that much of the trail and forest assessment work has been completed. He will be continuing to inventory the wildlife and habitat in the forest into next June of 2018. The public outreach will begin in the winter with

walking tours. In addition, there will be two presentations to City Council and two public presentations in the late spring/early summer.

4) Project Updates

a) Wildlife and Habitat Inventory

Mr. Littleton noted that he has been reviewing a number of documents that have been completed for the Forest. He has also been reviewing aerial photography and interpreting the vernal pools inventory that was completed for the Forest area in the 1990s. He has conducted preliminary mapping of habitat and natural communities and will be surveying winter mammals via tracking and wildlife cameras. He will also be conducting a survey of birds, amphibians, and reptiles.

b) Forest Inventory

Mr. Corwin noted that he looked at 12 separate parcels, but he is still in need of survey maps. He conducted a grid overlay with 335 points. At each point, he recorded the height of trees and record of sapling, gps its location, and took pictures. He began his survey at the north end of the Forest. In this area he observed iconic stands of red oak. The richest hardwood in the Forest is in this area.

Moving toward the center of the Forest there are high ledges, which flatten out. The Forest is thinner in the northern areas of this area of the forest. In this area there are the remains of old farm sites. However, he only observed one cellar hole. Ms. Howard noted that there is another cellar hole by Gunn Road on private property. Mr. Corwin noted there is little evidence of people living in this area and that the land had been cleared back to the 1880s. At that time, the land was all grass. Mr. Poanessa inquired about the Dam by Timberlane Drive. Mr. Corwin replied that he was unfamiliar with it. He noted that by East Surry Rd, he saw a foundation that looked like an old mill. The Historical Society found a picture of a mill there and at one time there had been four mills.

Mr. Corwin noted that the south central section of the Forest has a very rugged landscape with lots of fallen trees. The Forest is primarily pine-hemlock at the lower ledges. The understory is shade-tolerant beech-hemlock.

Mr. Corwin noted that some forest vulnerabilities include pests such as the hemlock wooly adelgid. Also, it is an even age forest and there are risks associated with forests growing at an even age. Mr. Corwin stated that there is evidence of catastrophic blowdown that predate the 1938 blowdowns. There is a sign of a blowdown from 1850, or potentially earlier. Mr. Lacey stated that it would be interesting to examine what the forest composition was in 1938 compared to today. He noted that the potential for damage as a result of a hurricane may be even greater today than it was in 1938. Mr. Corwin stated that there is a gigantic pine tree that is greater than 40” in diameter in the Forest that lived through the 1938 hurricane.

Mr. Corwin observed for invasive species in the Forest and observed some at the base of Drummer Hill by the residential neighborhoods. There is some burning bush, buckthorn, and honeysuckle concentrated in a few areas. He did observe a homeless encampment. Mr. Bohannon asked Mr. Corwin to inform him of the location of this encampment.

Mr. Corwin noted that the property lines are not well marked and should be. He observed a well-laid out sugar operation that has encroached onto the Forest from abutting private property.

Mr. Lacey inquired about the average volume and predominant species per acre of the Forest. Mr. Corwin responded that he doesn't have statistics compiled yet but that there is an incredible red oak stand in the north and a stand of large white plan in Drummer Hill. Ms. Howard inquired about maple trees. Mr. Corwin noted there is not much maple, but there is a lot of red maple saplings in the understory.

Mr. Littleton noted that he observed painted barbed wire in some areas near the property boundary to the Forest. He thought it was painted to draw attention to it to prevent hazards. Mr. Poanessa asked about the legality of cutting this wire out. Mr. Littleton noted that he often leaves it on the landscape, as it is part of the its history, but will identify it with either flagging tape or paint.

Mr. Poanessa asked if any wildlife were observed in the Forest during the surveys. Mr. Corwin noted that he did not see much because the understory is so wide open. He saw only a few deer when he was walking in the forest. Mr. Littleton noted that there is a lot of opportunity to provide habitat for wildlife. He will discuss this in more detail in his report.

Mr. Corwin, in response to a question about timber value, noted that the red oak stand is the most valuable in the Forest. To provide context, he joked that the value generated from the stand would equal only a small fraction of Keene School District's annual budget.

c) Trail Assessment

Mr. Ryan noted that he attended Antioch University New England Institute in the early 2000s. He became familiar with Keene and did a trail assessment of the Forest following his graduate studies.

He started his assessment in the main parking area of the Forest, with the goal of analyzing all trails from the lens of safety and sustainability. He uses measuring wheels to take a photo every 100' or so and to observe the trail conditions. He surveyed the Forest for 4 hours and realized there were many more miles of trail than had been initially estimated. Mr. Poanessa noted that there are approximately 25 miles of trails in the Forest. Mr. Ryan noted that they had budgeted for 8 miles of trails.

Mr. Ryan observed that the soils in the Forest are well-draining and, in general, there are not many issues. Many of his observations are related to maintenance and not necessarily management issues. However, he did find himself lost numerous times, and will be recommending the City focus on improved wayfinding.

Mr. Ryan explained that are two distinct areas of the Forest, with different user experiences. The area around Goose Pond, which is managed by the City, is catering to people walking or running either a few hundred feet or around the pond. These main trails are not blazed, the kiosk at the entrance needs maintenance, and there is lack of signage. The other areas of the Forest are catering to mountain bikers. These trails are well marked. At a trailhead in the Drummer Hill section of the Forest there is a kiosk with a clearer map and rules. He observed this to be a more welcoming entrance than the main parking area off East Surry Road. Mr. Poanessa noted that mountain bikers tend to stay away from Goose Pond, and that the Mountain Bike club maintains

the kiosk at Drummer Hill. They also produce the map that is at the kiosk. Mr. Bohannon noted that the City has a Memorandum of Understanding with the New England Mountain Bike Association (NEMBA), who is tasked with maintaining the trails that they build. A number of club members have attended training on trail maintenance and construction. He noted that an Eagle Scout installed the kiosk at the main entrance to Goose Pond.

Mr. Ryan noted that many of the trails are designed specifically for mountain bikers and would not be well suited for walkers. He observed that it is possible for these trails to be multi-use, but they are not welcoming for walkers. He noted that the trail around Goose Pond needs a fair amount of work.

Mr. Ryan stated that he spoke with the City about an upcoming project to improve the Dam at Goose Pond to identify opportunities to make improvements as a result of the construction effort. There is a plan to install a second parking area south of the existing primary parking area. This new parking area may afford the opportunity for a more inviting and accessible entrance into the Forest. The main trail off the current parking area is very steep and not very accessible.

Mr. Ryan recapped his primary observations of the trail system. These include that the trails and property boundaries are not marked well. He recommends remarking all the trails and that the City develop a marker with a City-specific logo that can be affixed to trees with aluminum nails at a height of 8' up from the tree's base. This style of marker should be used throughout the Forest for consistency. Another recommendation would be to install kiosks that are of the same style. One kiosk would be at Drummer Hill and one would be installed at each parking lot.

Mr. Ryan proposed a concept for a bike friendly trail, similar to the style of carriage roads in Arcadia National Park that would be approximately 8' wide and would provide a short, family-friendly bike loop that connects to the proposed parking area as well as to other areas of the Forest. When the construction occurs for the Dam, he encourages the City to ensure that the access road is developed with consideration for making this bike path.

Mr. Ryan observed that no part of the Forest is currently handicapped accessible. He noted that, following the creation of a second parking area, a short, handicapped accessible viewing trail could be installed that connects to the parking area. It would not loop around the Pond, but it would provide an opportunity to attract others to the Forest and for the less mobile to enjoy it. He stated that if the City is interested in this concept, he would volunteer to develop a design for it at no cost to the City.

Mr. Ryan stated that the main loop trail around Goose Pond has many exposed roots and that a lot of erosion is happening in the form of cupping. At the bridge near the delta of the stream there is a need to keep people on the trail and to keep water off of it. Mr. Ryan observed a more narrow area across the waterway and recommends the City consider relocating the bridge to this area. It would be a modest reroute. Mr. Ryan noted that there is a second bridge in the wetland. This bridge needs to be moved up and over to get it higher. This trail would not be relocated. The bridge would need to be longer. Councilor Chadbourne noted that many people fall in this area. Mr. Ryan noted that he proposes installing stone curbing along the trail to the right. There is a need for stone steps at the trail past the bridge.

Mr. Ryan recommended that viewing areas in the Forest be formalized by incorporating benches. Mr. Corwin noted that at the Far Side Black Trail there is an interesting set of ledges that could serve as a destination.

Mr. Ryan noted that the carrying capacity for trails in the lower quadrant (Drummer Hill area) has been reached. Mr. Poanessa noted that the Society for the Protection of NH Forests has made similar comments and that NEMBA is considering closing off some of these trails.

Mr. Ryan recommends that pressure treated lumber not be used for bridges, and instead white oak or black locust be used. Mr. Poanessa noted that NEMBA has been building with wood from blowdowns instead of hauling lumber into the forest.

Mr. Ryan noted that there is good signage in Drummer Hill and along the mountain bike trails; however, it is placed too low on the trees for mountain bikers and varies in style. Mr. Poanessa stated that he is unsure of who is installing these markers.

Councilor Chadbourne asked if snowmobiles are allowed in the Forest. Mr. Bohannon stated that snowmobiles are allowed; however, ATVs are not. She then asked if cross country skiing is popular in the Forest. Mr. Poanessa noted that there is a little activity of that nature, but fat-tire biking is more popular in the winter.

Mr. Ryan noted that many of the trails are well thought out. There is a hemlock blow down that is of concern where a trail goes underneath it. Mr. Lacey asked about frequency of trail use. Mr. Poanessa noted that every weekend there are approximately 50 people riding and for every walker there are approximately 4 riders. Mr. Corwin noted that he saw people out on the trails every time he was out surveying. Mr. Lacey stated that he wonders about wildlife management and the impacts of human use on habitat. He asked if this impact is part of the assessment. Mr. Littleton noted that he will be assessing this to a certain extent in his report. Mr. Bohannon noted that it is very difficult to balance all of the user groups and the Forest habitat. Mr. Corwin noted that any forest management will have an impact on the wildlife. However, he observed that while the trail network may appear dense on the map, it does not appear this way when out in the forest.

Mr. Ryan noted that the biggest safety hazard he observed was the bridge that goes over Lewis Pond that sits on top of railroad tracks in the middle of Drummer Hill. He recommends installing a railing on this bridge.

Mr. Ryan will work with City staff and Mr. Poanessa to further discuss the proposed recommendations before finalizing his draft report.

5) <u>Other Business</u> – None at this time.

6) <u>Adjournment</u> -
There being no further business, the meeting adjourned at 12:30 pm.

Respectfully submitted by,
Tara Kessler, Planner

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GREATER GOOSE POND FOREST LAND STEWARDSHIP PLAN

Prepared for:
City of Keene, NH
Conservation Commission

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GREATER GOOSE POND FOREST LAND STEWARDSHIP PLAN

Prepared for:
City of Keene, NH
Conservation Commission

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Calhoun and Corwin Forestry

JOSH RYAN
Timber and Stone LLC

December 2018

Cover photograph (Swift Corwin)– Goose Pond covered in ice.

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EXECUTIVE SUMMARY

The Greater Goose Pond Forest provides significant ecological and social benefits locally and regionally. Well known areas like Goose Pond and Drummer Hill attract many visitors throughout the year. However, there's more to the Greater Goose Pond Forest than one might think. It actually covers 1,044 acres of mostly forested habitat in a fairly rural part of Keene, NH. This rural setting provides trail users with various types of outdoor experiences within a short drive from the downtown area. It offers clean water and various habitats to support many wildlife species, while providing ample opportunities for recreation and outdoor education. The City of Keene has recognized the need to develop a Land Stewardship Plan to properly and responsibly manage this gem of open space for future generations to come.

Now more than ever, it is important to plan how the forests, wildlife habitats, and animals of the Greater Goose Pond Forest will remain healthy into the future, and how trail maintenance should proceed to ensure safe and enjoyable experiences for all users. This is particularly relevant in light of a changing climate, increase in non-native plants and insects, growing popularity of trail users, and presence of many species of conservation concern that would greatly benefit from responsible wildlife habitat and forest management. Therefore, land stewardship requires an integral and well-designed approach.

This Land Stewardship Plan was developed by a team of natural resources professionals with experience in ecology, silviculture, conservation, land stewardship management, recreational trail design and maintenance, and environmental education. Their expertise was selected to partner with the City of Keene Community Development Department, Keene Parks and Recreation, and Keene Conservation Commission to help craft the Plan. In addition, a special Ad Hoc Committee was organized to help provide additional project oversight and support throughout the planning process.

This Plan was created with public input in mind. It sought comments and thoughts from a broad range of stakeholders, including citizens, educators, passionate trail users, City of Keene planners and conservation commission members, and natural resources professionals. A community forum and public presentation provided avenues for community participation. [Need to insert statement on how public comments on the draft Plan were also solicited and incorporated into the final plan] Other community outreach efforts included a series of walking tours at the Greater Goose Pond Forest. These walks included topics on winter wildlife tracking, vernal pool ecology, interpreting past land use histories (such as agricultural use by early colonists), and forest and habitat management.

In addition to the City's long-standing management planning, a variety of natural resource studies have been previously conducted on the property. These studies have helped to develop a better sense of ecologically sensitive areas, habitats, wildlife, and

species of conservation concern. However, this did not provide a complete picture needed to produce a well-rounded and informed Land Stewardship Plan.
Until now, there has not been a single document that incorporates natural resources investigations into a stewardship plan of how best to manage the property. This project sought to collect additional natural resources data on wildlife, rare species, natural communities, sensitive habitats, and invasive plants, as well as trail use and conditions. Also, there was a lack of adequate information on the current state of the forest resources. How old are the forests, and what types of habitats do they provide? How has past land uses affected the Greater Goose Pond Forest? Are the forests healthy, and if not, why? What will the forests look like in light of a changing climate, increase in invasive species and pathogens, and will they be resilient in the future? Previous management plans have addressed the important need to collect more information on forest resources so it can be incorporated into responsible land management.

This Land Stewardship Plan was developed as a tool to guide the long-term management of the Greater Goose Pond Forest. It was conceived based on our current understanding of the property and surrounding landscape. The Plan is intended to manage for the health and diversity of wildlife and habitats, forest resources, recreation, and education.

Stewardship of the Greater Goose Pond Forest by the City of Keene is an ethic that embodies the careful and responsible management and supervision of the property, whereby safeguarding its natural resources. The purpose of this Stewardship Plan is to maintain the natural beauty of the Greater Goose Pond Forest while encouraging public use. The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, or snowshoe from various points and laced with clearly marked trails and woods roads which leads to ponds, nature walks, and scenic vistas. The objective of this Plan was to assess the current conditions of the property and site capabilities for habitat management, and to guide the implementation of management activities to benefit the following goals.

Stewardship Goals

Goal 1: Maintenance of the natural beauty of the Property while encouraging public use.

Goal 2: The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, horseback, or snowshoe from various points and laced with clearly marked trails and woods roads which lead to the ponds, nature walks and scenic vistas.

Goal 3: Protection of fragile or highly erodible soils and maintenance of soil productivity;

Goal 4: Protection of water quality, aquatic habitat, vernal pools and the ecological integrity of wetlands and riparian zones;

Goal 5: Maintenance or enhancement of native biological diversity and natural habitat features found on the Property and representative of the region;

Goal 6: Identification, protection, and conservation of exemplary natural communities, unique or fragile natural areas, and rare plant and animal species on the Property, particularly those identified by the Nongame and Endangered Wildlife Program, the New Hampshire Natural Heritage Bureau, or their successor entities;

Goal 7: Protection of unique historic and cultural features;

Goal 8: Conservation of scenic quality as seen from public roads, trails and waters; and

Goal 9: Encourage the use of the Greater Goose Pond Forest for public education.

Key Recommendations

The following provides some of the key recommendations for land stewardship. These were based on a well-rounded understanding of the property's current ecological, cultural, and recreational conditions. A complete list of recommendations and a 10-year action plan can be found in Sections 5 and 6, respectively. These should be revisited every 10 years, and it should be based on the outcomes of past management activities while incorporating newly acquired natural resources information in consideration of land stewardship planning.

Wildlife Habitat and Forest Management

- Establish permanent vegetative buffers dominated by woody plants around ecologically significant areas, such as Goose Pond, wetlands, streams, and vernal pools.
- Support the development of late successional/old growth forest characteristics within ecological reserves. This will add to the structural diversity of the forest, as well as the wildlife diversity.
- Support future ecological research and monitoring by citizen scientists, schools, and natural resource professionals.
- For water quality protection meet or exceed Best Management Practices (BMPs) for Forestry: Protecting New Hampshire's Water Quality (Moesswilde 2005) and Good Forestry in the Granit State: Recommended Voluntary Forest Management Practices for New Hampshire (Bennett 2010).
- Utilize the various publications produced as part of the Forestry for the Birds project described in this Plan to promote sustainable and responsible forest practices while stewarding multiple species of conservation concern.
- Conduct forest and wildlife habitat management projects that promote diverse, healthy, and resilient forests; enhance wildlife habitat that will provide long-tern stewardship for species of greatest conservation need; and protect fragile soils and maintain forest productivity.

- Wildlife habitat management activities should be conducted from mid-August through March to reduce disruption and mortality of wildlife during the height of the breeding season.
- When conducting forest and habitat management activities consult with a qualified wildlife ecologist to identify site-specific ecologically significant areas (i.e., vernal pools) and to mark the appropriate buffers.
- Establish an endowment fund for managing the property into the future. This endowment could provide the adequate funding needed for responsible management without the need of funding by tax dollars.
- Continue to encourage users with pets to keep them leashed at all times and to pick up their waste and pack it out of the property. These efforts will help minimize wildlife disturbance and help improve water and soil quality.
- Clearly mark all boundaries of the Greater Goose Pond Forest so trail users and adjacent landowners are aware of the property boundaries. This will also inform management activities.
- The Action Plan should be revisited and revised as necessary every 10 years.

<u>Recreational Trails Management</u>

- Trail Blazing and Signage
  - Caution should be exercised when blazing the trail system. The first priority for trail blazing should focus on the main trails and installing signs at trail junctions.
  - Install signs to inform trail users when they are leaving the property and entering private property.
  - Rename the City trails that currently have color-coded names, leaving the current names identified on the New England Mountain Biking Association trails.
- Replace the kiosk at the main parking lot on East Surry Road, and install a kiosk at the new parking lot south of the main parking lot on East Surry Road (previously known as the service road with the yellow iron gate).
- Install an accessible trail from the new parking lot to the old beaver pond to allow access for all members of the community.
- Close the main trail entrance located at the northern side of the East Surry Road parking lot, rerouting a new trail leading from the southern side of this parking lot. An informal trail currently exists. This change would allow for greater environmental sensitivity to reduce/eliminate the current soil erosion taking place.
- Improve the current conditions to the Goose Pond loop. This would help eliminate/reduce soil erosion and enhance the trail users experience since extensive roots are exposed and can be hazardous.
- Replace the bridge on Rope Tow trail as indicated in the trail assessment map and design plan.

<u>Community Outreach and Education</u>

- Promote community outreach and education, such as the development of a demonstration site(s) for forest and wildlife habitat management; hikes to explore the wildlife ecology and forest resources; engagement of primary and secondary schools

in the region to use it as an outdoor classroom; and activities that foster exercise activities for a wide range of age classes. Ideas for educational and outdoor experiences are nearly endless.

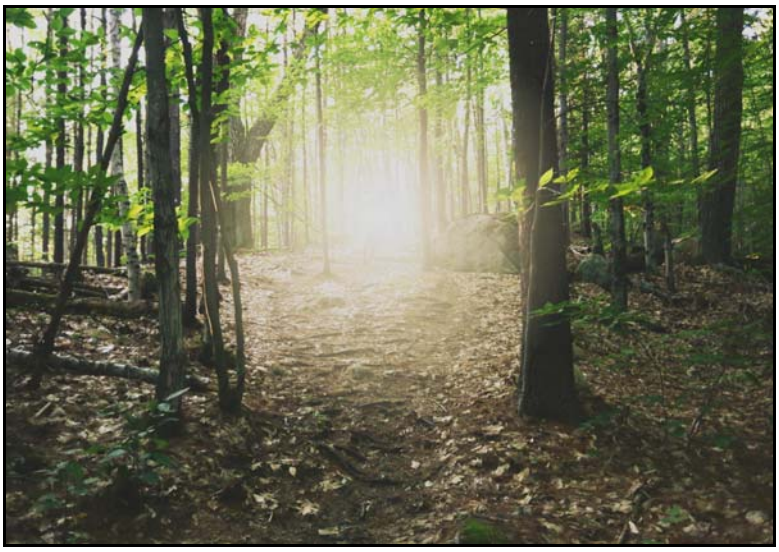
DRAFT 2

Section 1: INTRODUCTION

The Greater Goose Pond Forest provides significant ecological and social benefits to the City of Keene, Monadnock Region, and the greater New England landscape. It includes well-known areas like Goose Pond and Drummer Hill, as well as the surrounding lands covering 1,044 acres of mostly forested habitat. It is located in the northeastern part of Keene, NH in a fairly rural part of the city. This rural setting provides trail users with outdoor experiences within a short drive from downtown Keene – a very attractive feature that makes it a very popular destination. It offers clean water and various habitats to support many wildlife species, and the Greater Goose Pond Forest also provides ample opportunities for public access, recreation, and natural resources education.

The City of Keene Parks and Recreation is responsible for management activities at the Greater Goose Pond Forest. The mission of Parks and Recreation is "to provide the citizens of Keene with quality community services and amenities including a park and cemetery system, balanced environmental stewardship and diverse programming to inspire and support active lifestyles for all ages." This Plan will assist the City with achieving its mission, helping to manage the Greater Goose Pond Forest in a responsible and informed manner.

This Land Stewardship Plan was developed by a team of natural resources consultants, including Moosewood Ecological LLC, Calhoun and Corwin Forestry, and Timber and Stone LLC, in cooperation with the City of Keene Community Development Department, Keene Parks and Recreation, and Keene Conservation Commission. A special Ad Hoc Committee was organized to help provide project oversight and support throughout the planning process. The Plan was created with public input from a broad range of stakeholders, including citizens, educators, passionate trail users, City of Keene planners and conservation commission members, and various natural resources professionals. The hope is that the Plan will be used as a guide and tool to help with the long-term management of the Greater Goose Pond Forest for diverse wildlife, healthy forests, outdoor recreation, and education.



The extensive trail system at the Greater Goose Pond Forest provides its users with an outdoor experience in a forest-dominated, rural setting with excellent scenic views of Goose Pond.

Why Develop a Land Stewardship Plan for the Greater Goose Pond Forest?

Goose Pond was originally used as a public water source for the City of Keene in 1868; however, this use was discontinued in 1984. At this time, the City of Keene developed a Master Plan to guide land use and management of the property now that it was open for public use, whereby providing outdoor recreational opportunities for countless number of visitors. The Master Plan was revised in 1992 with the goal "to maintain the natural beauty of the GGPF while encouraging public use. The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, or snowshoe from various points and laced with clearly marked trails and woods roads which lead to ponds, nature walks and scenic vistas." Then in 2006, a Land Management Plan was developed by the City of Keene, which was consistent with the 1992 Master Plan goals.

In addition to the City's management planning, a variety of natural resource studies have been conducted on the property. These studies were designed to better understand the types and distribution of the various ecological attributes that the Greater Goose Pond Forest has to offer. The natural resource reports provide a sense of the ecologically sensitive areas, habitats, wildlife, and species of conservation concern. This wealth of knowledge was integral in developing this Land Stewardship Plan.

However, until now there has not been a single document that incorporates these natural resources data into a Plan of how best the property should be managed. Also, there was a lack of proper information on the current state of the forest resources. How old are the forests, and what types of habitats do they provide? How has past land use affected the Greater Goose Pond Forest? Are the forests healthy, and if not, why? What will the forests look like in light of a changing climate, and will they be resilient in the future? All previous management plans addressed the important need to collect these data on the forest resources by trained professionals that could then be incorporated into responsible land management.

In order to properly and responsibly manage the Greater Goose Pond Forest, the City of Keene recognized the need to develop a Land Stewardship Plan. This meant reviewing all existing information, identify information gaps, and gather new natural resource data needed to produce a well-rounded and informed Plan. Now more than ever it is important to plan how the forests, wildlife habitats, and animals of the Greater Goose Pond Forest will remain healthy into the future, and how trail maintenance should proceed to ensure safe and enjoyable experiences for all users. This is particularly relevant in light of a changing climate, increase in non-native pathogens, insects, and invasive plants, growing popularity of trail users, and presence of many species of conservation concern that would benefit through responsible habitat management. Therefore, land stewardship requires an integral and well-designed approach.

Intended Use of the Land Stewardship Plan

This Land Stewardship Plan was developed as a tool to guide the long-term management of the Greater Goose Pond Forest. It was developed on our current understanding of the property and surrounding landscape. It is intended to manage for the health and diversity of wildlife and habitats, forest resources, recreation, and education. The recommendations listed in Section 6: Action Plan have been prepared to help the City of Keene with land management activities over

the next 10 years. The action plan and recommendations should be revisited every 10 years, and it should be based on past management activities while incorporating newly acquired natural resources information to be considered in land stewardship planning.

Why is the Greater Goose Pond Forest So Special?

There are so many things that make the Greater Goose Pond Forest a great destination. It provides easy access to high quality outdoor recreation within minutes of downtown Keene. It offers over 20 miles of trails open for dog walking, hiking, biking, snowshoeing, and cross-country skiing. There are many scenic vistas around Goose Pond, offering users a sense of tranquility and inspiration. It's clear that people enjoy the property due to its natural beauty, as well as for photography, picnicking, bird watching, wildlife tracking, exercise, and so much more.

The New England Mountain Bike Association (NEMBA) has developed an extensive trail system enjoyed by many daily and seasonal users. NEMBA entered into an agreement with the City of Keene Parks and Recreation to help maintain these trails. Several volunteers provide approximately 500-750 hours of valuable assistance annually to make sure that trails are passable and safe for all to enjoy.

This mountain biker checks out NEMBA's extensive trail system at the Drummer Hill trailhead kiosk. The Greater Goose Pond Forest attracts visitors from all over New England to Keene and the Monadnock Region who then, in turn, find plenty of lodging accommodations, restaurants, and shopping to continue their experience in the area.

The Greater Goose Pond Forest has a diverse wildlife community that can be observed throughout the year. Many migratory birds use the property in the spring and fall as a critical stopover for resting and feeding, as well as using the various wildlife habitats in the breeding season. Multiple species of birds are considered species of conservation concern and would greatly benefit from management activities. Wide-ranging mammals such as bear, coyote, deer, mink, and moose find food sources, den sites, and plenty of space to move throughout the landscape. Turtles, frogs, and snakes can be seen using Goose Pond and its shoreline, as well as other wetlands. In spring, salamanders and wood frogs occupy the several vernal pools scattered across the property.

Planning Process and Community Outreach

From the beginning of this project, the City of Keene sought to solicit public input into the Land Stewardship Plan. On April 17, 2018, a Community Forum was held to share information on the Greater Goose Pond Forest Land Stewardship Plan project and to gather information and ideas from the community on future use and responsible management of the forested areas. Over 110 individuals participated in this event, which was held at the Parks and Recreation Center on Washington Street. Following an overview of the project, participants were divided into small groups and asked to discuss questions posed around three themes: Forest Ecology and Wildlife; Recreation and Use; and Education and Outreach. Each of these small group discussions were facilitated and summary notes were recorded (Appendix A). The information shared by participants were reviewed in consideration of proposing the various recommendations for the Land Stewardship Plan.

Other community outreach efforts included a series of walking tours at the Greater Goose Pond Forest. A total of five tours were conducted in winter and spring of 2018 to engage participants into understanding the various wildlife and forest resources on the property. These included topics on winter wildlife tracking, vernal pool ecology, interpreting past land use histories (such as agricultural use by early colonists), and forest and habitat management.

This winter outing led participants on an informative hike along-side of wetlands and Goose Pond. Focusing on winter wildlife ecology, we observed signs of mink, beaver, deer, coyote, and tons squirrels along the way. Winter resident birds such as chickadees, nuthatches, and woodpeckers were flitting about.

A draft of the Land Stewardship Plan was provided to the public to solicit input on the management recommendations prior to the public presentation in February 2019. At this presentation, comments were recorded and considered as the final Plan was developed. At the same time, the draft was provided to the Keene City Council for their review and input prior to their presentation.

Another important aspect in the planning process was the development of an Ad Hoc Committee. This committee provided comments and support that were integral into the overall project. Members included various stakeholders, including the following:

Tad Lacey (chair), retired licensed forester
Dorothy Howard, adjacent landowner
Peter Poanessa, New England Mountain Bike Association
Andrew Bohannon, City of Keene Parks and Recreation Director
Tom Haynes, City of Keene Conservation Commission
Andrew Madison, City of Keene Conservation Commission
Bettina Chadbourne, Keene City Councilor
Tara Kessler, City of Keene Planner

Purpose and Management Goals of the Plan

In 2009, the City of Keene entered into an agreement with the Society for the Protection of New Hampshire's Forests to protect the Greater Goose Pond Forest through a conservation easement. A conservation easement is a legally binding agreement that limits certain types of uses and/or prevents development on a property in perpetuity. The City of Keene sought this type of land conservation to protect the property for future generations. The next step to further protect the various natural resources is the development and implementation of this Land Stewardship Plan.

Stewardship of the Greater Goose Pond Forest by the City of Keene is an ethic that embodies the careful and responsible management and supervision of the property, whereby safeguarding its natural resources. The purpose of this Stewardship Plan is to maintain the natural beauty of the Greater Goose Pond Forest while encouraging public use. The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, or snowshoe from various points and laced with clearly marked trails and woods roads which leads to ponds, nature walks, and scenic vistas (Greater Goose Pond Forest Master Plan 1992).

Another important purpose is to meet the provisions of the Conservation Easement Deed, which includes the preparation of a Land Stewardship Plan. The objective of this Plan was to assess the current conditions of the property and site capabilities for habitat management, and to guide the implementation of management activities to benefit the following goals. These goals were derived from the Conservation Easement Deed (2009) that outlines the specifications of the Stewardship Plan, as well as input provided by the Ad Hoc Committee on January 25, 2018 (Goal #9). These goals are consistent with language provided in the Master Plans prepared in 1984 and 1992 and the Management Plan prepared in 2006.

Goal 1: Maintenance of the natural beauty of the Property while encouraging public use.

Goal 2: The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, horseback, or snowshoe from various points and laced with clearly marked trails and woods roads which lead to the ponds, nature walks and scenic vistas.

Goal 3: Protection of fragile or highly erodible soils and maintenance of soil productivity;

Goal 4: Protection of water quality, aquatic habitat, vernal pools and the ecological integrity of wetlands and riparian zones;

Goal 5: Maintenance or enhancement of native biological diversity and natural habitat features found on the Property and representative of the region;

Goal 6: Identification, protection, and conservation of exemplary natural communities, unique or fragile natural areas, and rare plant and animal species on the Property, particularly those identified by the Nongame and Endangered Wildlife Program, the New Hampshire Natural Heritage Bureau, or their successor entities;

Goal 7: Protection of unique historic and cultural features;

Goal 8: Conservation of scenic quality as seen from public roads, trails and waters; and

Goal 9: Encourage the use of the Greater Goose Pond Forest for public education.

Key Findings and Recommendations

For over three decades the City of Keene has sponsored various natural resource studies. In 1979 and 1985, timber reports and management plans were developed for the Minister's Lot and Goose Pond lot. Then, in the mid-1990s through the 2018 field season multiple investigations ensued to better understand wildlife biodiversity, habitats, natural communities, timber resources, and rare species. The compilation of this body of work provides a well-rounded view of the ecological and cultural conditions at the Greater Goose Pond Forest.

Below provides a snapshot of the key findings recorded over the years and key recommendations based on these findings in combination with the nine Land Stewardship Plan goals outlined above. Please see Section 5: Stewardship Recommendations for a detailed list of long-term recommendation, as well as Section 6: Action Plan that addresses management for the next 10 years.

Key Findings

- Numerous ecologically significant areas
    - 2 significant peatland communities in the northern part of the property; one of which supports 2 rare species
    - 3 stream inlets to Goose Pond and 3 stream outlets associated with the dams and spillway
    - Goose Pond and its narrow fringe wetlands
    - Numerous forested swamps
    - Marsh and shrub wetland south of Goose Pond
    - 18 confirmed vernal pools and 14 potential vernal pools
- 37 acres of significant shrublands associated with the utility right-of-way that support many wildlife species in decline

- Rural setting within a large unfragmented forest block and various habitats (noted above) to support a diverse wildlife community throughout the year
- 30 wildlife species of greatest conservation need have been recorded on the property
- 1 rare plant species previously recorded
- Relatively low level of invasive plants that are mostly associated with forest edges and relatively absent with the interior forest stands
- 24% of the property has farmland soils of local and statewide significance
- Nearly 50% of the property has significant forest soils that are productive for growing trees
- Even-aged forests dominated by a late successional understory that is susceptible to non-native, invasive pathogens and insects
- Some operational limitations exist due to extreme rockiness and steep slopes that would inhibit wildlife habitat management or would require special considerations (equipment, time of year) for management
- Extensive use of the property by outdoor recreationalists

Key Recommendations

Wildlife Habitat and Forest Management

- Establish permanent vegetative buffers dominated by woody plants buffers around ecologically significant areas, such as Goose Pond, wetlands, streams, and vernal pools.
- Support the development of late successional/old growth forest characteristics within ecological reserves. This will add to the structural diversity of the forest, as well as the wildlife diversity.
- Support future ecological research and monitoring by citizen scientists, schools, and natural resource professionals.
- For water quality protection meet or exceed Best Management Practices (BMPs) for Forestry: Protecting New Hampshire's Water Quality (Moesswilde 2005) and Good Forestry in the Granit State: Recommended Voluntary Forest Management Practices for New Hampshire (Bennett 2010)
- Utilize the various publications produced as part of the Forestry for the Birds project described in this Plan to promote sustainable and responsible forest practices while stewarding multiple species of conservation concern
- Conduct forest and wildlife habitat management projects that promote diverse, healthy, and resilient forests; enhance wildlife habitat that will provide long-tern stewardship for species of greatest conservation need; and protect fragile soils and maintain forest productivity.
- Wildlife habitat management activities should be conducted from mid-August through March to reduce disruption and mortality of wildlife during the height of the breeding season.
- When conducting forest and habitat management activities consult with a qualified wildlife ecologist to identify site-specific ecologically significant areas (i.e., vernal pools) and to mark the appropriate buffers
- Establish an endowment fund for managing the property into the future. This endowment could provide the adequate funding needed for responsible management without the need of funding by tax dollars.

- Continue to encourage users with pets to keep them leashed at all times and to pick up their waste and pack it out of the property. These efforts will help minimize wildlife disturbance and help improve water and soil quality.
- Clearly mark all boundaries of the Greater Goose Pond Forest so trail users and adjacent landowners are aware of the property boundaries. This will also inform management activities.
- The Action Plan should be revisited and revised as necessary every 10 years.

Recreational Trails Management

- Trail Blazing and Signage
  - Caution should be exercised when blazing the trail system. The first priority for trail blazing should focus on the main trails and installing signs at trail junctions.
  - Install signs to inform trail users when they are leaving the property and entering private property.
  - Rename the City trails that currently have color-coded names, leaving the current names identified on the New England Mountain Biking Association trails.
- Replace the kiosk at the main parking lot on East Surry Road, and install a kiosk at the new parking lot south of the main parking lot on East Surry Road (previously known as the service road with the yellow iron gate).
- Install an accessible trail from the new parking lot to the old beaver pond to allow access for all members of the community.
- Close the main trail entrance located at the northern side of the East Surry Road parking lot, rerouting a new trail leading from the southern side of this parking lot. An informal trail currently exists. This change would allow for greater environmental sensitivity to reduce/eliminate the current soil erosion taking place.
- Improve the current conditions to the Goose Pond loop. This would help eliminate/reduce soil erosion and enhance the trail users experience since extensive roots are exposed and can be hazardous.
- Replace the bridge on Rope Tow trail as indicated in the trail assessment map and design plan.

Community Outreach and Education

- Promote community outreach and education, such as the development of a demonstration site(s) for forest and wildlife habitat management; hikes to explore the wildlife ecology and forest resources; engagement of primary and secondary schools in the region to use it as an outdoor classroom; and activities that foster exercise activities for a wide range of age classes. Ideas for educational and outdoor experiences are nearly endless.

The list above provides a snapshot of the key recommendations developed for the Land Stewardship Plan. However, a comprehensive list can be found in Section 5: Stewardship Recommendations. These address topics related to wildlife habitat and forest management, recreational trails management, and community outreach and education. A 10-year Action Plan can also be found in Section 6 that details stewardship activities for the City of Keene to consider for wildlife habitat and forest management.

Stewardship Connections – Wildlife Habitat Management and Forest Health
Based on previous studies in concert with the data collected during the 2018 field season, we know a great deal about the ecology and natural resources at the Greater Goose Pond Forest. These include ecologically significant areas, natural communities and habitats, wildlife, timber resources and their health, and species of conservation concern. While appropriate buffers can help protect sensitive habitats and scenic resources, there are other types of management activities that are required to steward rare wildlife populations and to enhance healthy forests. Silviculture is an extremely valuable tool to help advance these types of stewardship activities.

We have identified a total of 30 wildlife species of conservation concern on the Greater Goose Pond Forest, including 27 species of birds that use the property for breeding, feeding, and young rearing. These species are listed in state and regional conservation plans. Birds such as eastern wood-pewee, wood thrush, veery, black-throated blue warbler, black-throated green warbler, prairie warbler, chestnut-sided warbler, and scarlet tanager were recorded during systematic breeding bird surveys in spring 2018. By conducting active forest management for these birds, the City of Keene can enhance their habitats, acting as stewards for birds that have been declining for decades while providing benefits for overall biological diversity.

Forestry for the Birds project began in 2009 as a partnership between Audubon Vermont and Vermont Department of Forests, Parks, and Recreation. These two entities recognized a real need to make a bigger difference for forests, birds, and landowners. County foresters and Audubon Vermont conservation biologists provided technical services and educational opportunities to help landowners incorporate responsible stewardship planning and management on their properties. Their focus was to support sustainable forestry while providing long-term benefits to many species of conservation concern.

Several publications were developed as part of the Forestry for the Birds project to assist with stewardship of our northern forests. Audubon Vermont developed a list of 40 responsibility birds that could benefit from responsible forest management (Appendix B). These responsibility birds were identified based on their long-term population declines, whereby serving as surrogates or “umbrella species” for forest stewardship activities that would benefit multiple wildlife species. This list was based on research conducted by the North American Bird Conservation Initiative (NABCI). The NABCI recognizes these responsibility birds since the bulk of the global population breeds in our region.

Another important publication includes Silviculture with Birds in Mind (Hagenbuch et al 2011). This guide outlines options for integrating timber and songbird habitat management. It is recommended to help guide forest management at the Greater Goose Pond Forest. This wonderful guide uses sound forest management as a tool to steward rare and declining birds. It uses a variety of silvicultural techniques that promote habitat complexity and structure to ensure that the Greater Goose Pond Forest continues to provide responsible management for wildlife.

Other aspects of this Land Stewardship Plan focus on forest and habitat management in response to invasive species, and how a changing climate may affect the future of forest resources. Various non-native forest pathogens and insects are known to be present at the Greater Goose Pond Forest or within the surrounding area. Major threats include beech bark scale disease and

hemlock wooly adelgid, especially since beech and hemlock dominate the forest understory, which represents the future of the current forest. These non-native species are affecting the future of our forests and managing for tree diversity and health is one way to help offset their threats.

Ecological research and applied habitat management have provided good evidence that silvicultural techniques can reduce the effects of some pathogens. Mature beech trees affected by the disease will send out root sprouts, creating a "beech hell" that will dominate the understory and exclude other species from germinating. However, reducing infected beech in forest stands to less than 40% while retaining healthy mature beech trees can help manage the issue, affording the opportunity to diversify the forest. Also, since beech is very shade tolerant and can easily germinate in closed forests, opening the canopy by 50% or more can encourage other species to regenerate. Given the dominance of beech and hemlock at the Greater Goose Pond Forest silviculture would benefit many areas of the forest, providing habitat diversification while stewarding species of conservation concern and enhancing overall forest health.

Silviculture can also help reduce the effects of native diseases such *Caliciopsis* canker, needle cast, and pine blister rust in our region, which affect our white pines. Consider monoculture crops such as corn, wheat, cotton, and soybeans. Large fields of the same plants invite pests and diseases that ultimately need to be managed in some way. The same if true about trees. There are a few dense white pine stands where this exists at the Greater Goose Pond Forest due to past human land use. As such, intervention through the use of silvicultural practices can reduce the effects of the disease by reducing the size of the white pine population, improving air flow, and increasing diversity of the forest.

Proper land stewardship calls upon multiple methods in the planning "tool chest." The implementation of buffer zones and ecological reserves provides an essential tool for the protection of sensitive habitats. Community outreach and education helps to inform the public on how they can actively participate in land stewardship. However, habitat and forest management offer another great tool to enhance wildlife conditions and maintain healthy forests using sustainable silvicultural techniques.

This twig observed at the spillway in the winter of 2018 demonstrates that beavers are active once again in Goose Pond.

Section 2: PROPERTY DESCRIPTION and MANAGEMENT SETTING

Location and Geographical Setting

The 1,044-acre Greater Goose Pond Forest is located in the northeastern section of the City of Keene, Cheshire County, New Hampshire (Figure 1). The property is accessible from East Surry Road, Timberland Road, Meetinghouse Road, Greenacres Road, and Old Gilsum Road. Greater Goose Pond Forest is owned by the City of Keene and consists of the following 15 parcels.

Tax Map 908 Lot 04-14
Tax Map 909 Lots 03-20, 03-21, 03-23, 03-99, 04-04, 04-05, 04-07, 04-11, 04-13
Tax Map 910 Lot 04-02
Tax Map 914 Lots 04-23, 04-24, 04-25, 04-30

The property is mostly a mixed hardwood-softwood forest comprised of hemlock-hardwood-pine forest ecosystem. The forests are even-aged, having mostly been abandoned from agricultural use in the late 1800s. Goose Pond provides a major destination to many that use the property. A variety of diverse wetlands, such as streams, marshes, peatlands, forest and shrub swamps, and vernal pools tremendously add to the diversity of the property. One cellar hole was located on the property as well as several stonewalls that provide testament to the use of the area by early colonists starting in the 1700s.

The serene beauty of Goose Pond provides a major destination for many visitors while hiking, dog walking, fishing, and picnicking.

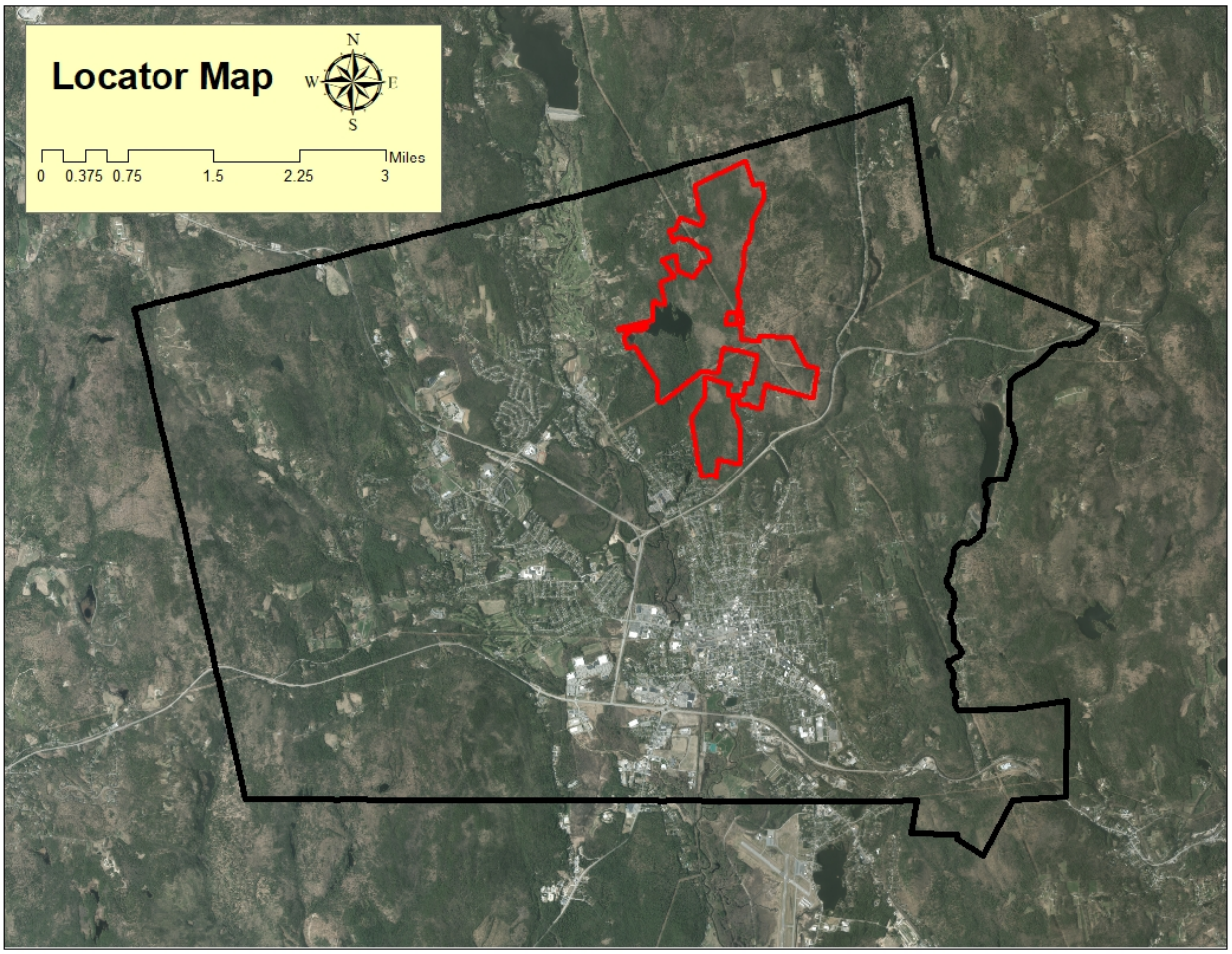


Figure 1 Location of the Greater Goose Pond Forest within the City of Keene, NH.

A Brief History

There are no known archeological sites on the property but several sites have been observed in the surrounding area. In 2010, Archeology Professor Robert Goodby made a discovery of shelters, bones, and artifacts of early inhabitants of Keene who lived in the area which is now occupied by the Keene Middle School (Goodby et al. 2014). He dated these findings to 13,000 years ago. Dr. Goodby and his team has also conducted similar studies south of the Greater Goose Pond Forest that documents the presence of Native Americans prior to European settlement in the 1600s and 1700s (Goodby 1994 and Goodby et al. 2015).

Evidence of the early colonists is visible throughout the property, which is dotted by numerous stonewalls and a cellar hole. Most of Greater Goose Pond Forest was used by the early colonists as livestock pastures however, many areas were also used as woodlots. These pastures were most likely developed and used during the "sheep craze," which started in 1810 and ended around the 1840s. Evidence of cultivated lands can also be found, especially near the parking area at East Surry Road and the southern section of Drummer Hill. Barbed wire can also be found at Greater Goose Pond Forest. This type of fencing was used for cattle and horses. As such, it appears that parts of the property were transitioned from sheep to cattle and/or horse. Lastly, a site adjacent to

the Greater Goose Pond Forest suggests the potential occupation of a single room cabin and adjacent cultivation by an early explorer. This has not been substantiated by historical accounts; however, the evidence is present to support such a conclusion.

Many farms in New England began to revert back to forest as early as the mid-1800s during the end of the "sheep craze" and as the productive lands of the Midwest were accessible by railroads. By the late 1800s more farms were abandoned. It appears that the majority of the Greater Goose Pond Forest has reverted to forest around the late 1800s. Since that time several disturbance events have helped to shape the composition and structure of the current forests of the Greater Goose Pond Forest.

Goose Pond was improved in 1868 to serve as the City of Keene's public water supply. Originally, the site was a small pond surrounded by peatland wetlands. Goose Pond continued to provide clean water for residents until 1984 when it was taken offline. At this time, the pond and surrounding forest was opened to the public for low-impact recreation.

The great hurricane of 1938 blew down great swaths of forest throughout much of New England. Obvious signs can be seen throughout the property, and it appears that most of the forest was about 50 years old when the hurricane passed through the Greater Goose Pond Forest. Various signs of the hurricane included hemlocks and white pines with bowed trunks, as well as pillows and cradles formed by trees that were blown down by the hurricane. Some of these trees may have been removed as a result of salvage logging, which was a common practice during this time. In fact, the lumber mills were so overrun with logs at this time that some were deposited in ponds and rivers to be preserved for later uses. Several hurricanes prior to 1938 have helped to shape the landscape at the GGPF. A large pillow and cradle located next to Goose Pond was most likely formed as a result of the Great Gale of 1816 hurricane.

Once the reverted forests became of merchantable size various logging events ensued. Logging occurred throughout the property in the 1960s, 1970s, and 1980s. Stumps and coppiced hardwood trees can still be seen as evidence of this past land use history at the Greater Goose Pond Forest. Past human activities have ultimately resulted in an even-aged forest with late successional species dominating the majority of the understory, including beech and hemlock.

Beech and hemlock are both adept at germinating on the forest litter and renowned for their shade tolerance. This is an important observation as it points to the direction of the forest over time. The issues with the understory forest are multiple.

First, our beech trees are affected by the beech bark scale disease that eventually kills the trees. The effects of the exotic insect and fungus can be seen throughout the property. Second, hemlocks are faced with a different exotic pest introduced from Asia, which also eventually kills the trees. The hemlock wooly adelgid is widespread throughout Cheshire County and was observed in Keene in 2010. In light of climate change and exotic, invasive species it is important to manage lands for biological diversity in order to promote resilient forests into the future.

It is with certainty that any work that is done to harvest timber will encourage beech to flourish. Various techniques can be used to tip the balance away from total beech invasion, including

timing of operations within a mast year, adequate scarification of the soil, recruitment of desirable seeds for germination, and opening the forest canopy to allow light to penetrate to the forest floor.

It is important to understand a property's past land use history to help guide stewardship planning. The history of the Greater Goose Pond Forest has led to its current state of ecological attributes. Having this understanding and planning for a changing climate provides managers with an adaptive approach that addresses current and past situations while anticipating change into the future.

Conservation and Right-of-way Easements

A conservation easement deed was conveyed to Society for the Protection of New Hampshire Forests, a non-profit corporation, for all the parcels associated with the Greater Goose Pond Forest. This deed has been recorded by and is on file at the Cheshire County Registry of Deeds. The Society for the Protection of New Hampshire Forests monitors the easement annually.

The purpose of the conservation easement is for the protection and conservation of the native plants and wildlife of the property, as well as the various habitats and ecologically significant areas. The easement also affords the opportunity to build upon the existing conservation lands surrounding the Greater Goose Pond Forest, whereby providing habitat connectivity for a diverse wildlife community. Other purposes include the continued use of outdoor passive recreation, scientific research, and public education. These purposes are consistent with the 1986 and 1992 Master Plans and the 2006 Greater Goose Pond Forest Management Plan. Lastly, forest management for the purposes of enhancing or managing wildlife habitat and agricultural activities are permitted on the property. See Appendix C for the complete text of the conservation easement deed.

Easement rights are provided for the management of vegetation within the utility right-of-ways that traverse the property. This type of management helps to create and maintain shrublands, a critical habitat used by many species of conservation concern. In addition, the Bauer property located just south of Goose Pond along East Surry Road is subject to certain water rights.

This brilliant ice sculpture was naturally created under a large rock outcropping found in the northern part of the Greater Goose Pond Forest.

Section 3: METHODOLOGY

To properly prepare the Land Stewardship Plan a variety of site investigations were completed to get a well-rounded picture of the Greater Goose Pond Forest. The three main components of these investigations included an ecological inventory, a forest resources inventory, and an inventory of trails.

The ecological inventory included a review of existing natural resources information previously completed on the property. This provided a base of knowledge that was currently known, which helped to identify gaps in information pertinent for stewardship planning. For instance, most of the wildlife habitats and ecological significant areas have been identified. However, there was an incomplete picture of the various wildlife using the property, particularly birds, and the potential for exemplary natural communities. Therefore, these elements were the main focus of the ecological inventory with an emphasis on species of greatest conservation concern, as well as rare plants and non-native, invasive species.

An assessment of mammals, birds, reptiles, amphibians, rare plants, and invasive species were completed using meander transects, direct searches, and/or systematic survey techniques. Surveys were conducted from the winter of 2017 through summer of 2018 by Moosewood Ecological LLC. A GPS unit and digital camera were used to document significant findings. All incidental observations were recorded, including visual and auditory detections, tracks, browsing, and scat. Winter snow tracking and wildlife cameras were used to sample mammals. Breeding birds were sampled using standardized point count surveys. Wetlands and upland forests were assessed for rare plants, invasive species, and exemplary natural communities.

Forest resources were inventoried using systematic point sampling in fall of 2017 through spring of 2018 by Calhoun and Corwin Forestry. The goal was to determine species composition and distribution, timber volume, size distribution, forest health, wildlife habitat quality, forest regeneration, and presence of invasive plants. This effort afforded the opportunity to better understand the value of the forest and its vulnerabilities. These data were collected at 327 points distributed throughout the property, including 18 separate lots. Each lot was inventoried and analyzed individually. These lots provided for the logical basis of identifying and describing management compartments. Forest stands were then mapped within each management compartment. These forest stands were identified by species composition and size class.

The variable radius plot sampling method was conducted using a 10-factor angle gauge to determine the basal area. Species, diameter, and a product classification of 16-foot log lengths were recorded at each point. The product classification choices included growing stock, pulp, saw timber, or cull. Trees were classified as pulp if they were of poor quality and had no promise of becoming an economically viable saw log. If a tree was deemed better than pulpwood but smaller than would be harvested (less than 16 inches in diameter) we designated it as growing stock. These typically included red oak and the best quality mixed hardwood stems that have promise to grow into saw logs, as well as a small amount of hemlock that fit into the growing stock category. The findings reveal the present quantity, quality, and value of timber, as well as

the origin and age of this forest and the makeup up of the regeneration of the next forest. Timber volume summaries and forest stand descriptions can be found in Appendix D.

The trail assessment was conducted from fall through early winter in 2017 by Timber and Stone LLC. There are over 20 miles of trails at the Greater Goose Pond Forest that have been developed by either the City of Keene or the New England Mountain Bike Association. Over 10 miles of trails were assessed as part of the stewardship plan. This provided for an accurate view of the property's trail status and allowed for the realization of consistent management recommendations. This assessment included an inventory of trail conditions, level of use, presence and condition of signage, and overall state of sustainability and safety. This Land Stewardship Plan includes the key recommendations for the City to move forward with management of its recreational trails. The full set of detailed findings and recommended actions can be found in the Greater Goose Pond Forest Trail Assessment and Design Plan by Timber and Stone LLC (2018) on file with the City of Keene.

This is a sprematophore that was deposited on the bottom of a vernal pool by a male spotted salamander in a vernal pool. The female uses it for internal fertilization.

Section 4: ECOLOGICAL SETTING

Landscape Setting

The Greater Goose Pond Forest property is located in the northeastern part of the City of Keene, which is located along the Ashuelot River. The City of Keene serves as the economic hub of southwestern New Hampshire. In the 2017 census Keene had a population of 22,949.

Goose Pond's watershed covers 1,080 acres located in the northeastern part of the Middle Ashuelot River sub watershed. This is one of several sub watersheds that drain into the Ashuelot River and eventually flows into the Connecticut River prior to entering the Long Island Sound in the Atlantic Ocean (Figure 2). Approximately half of the Greater Goose Pond Forest property is located within the Goose Pond watershed.

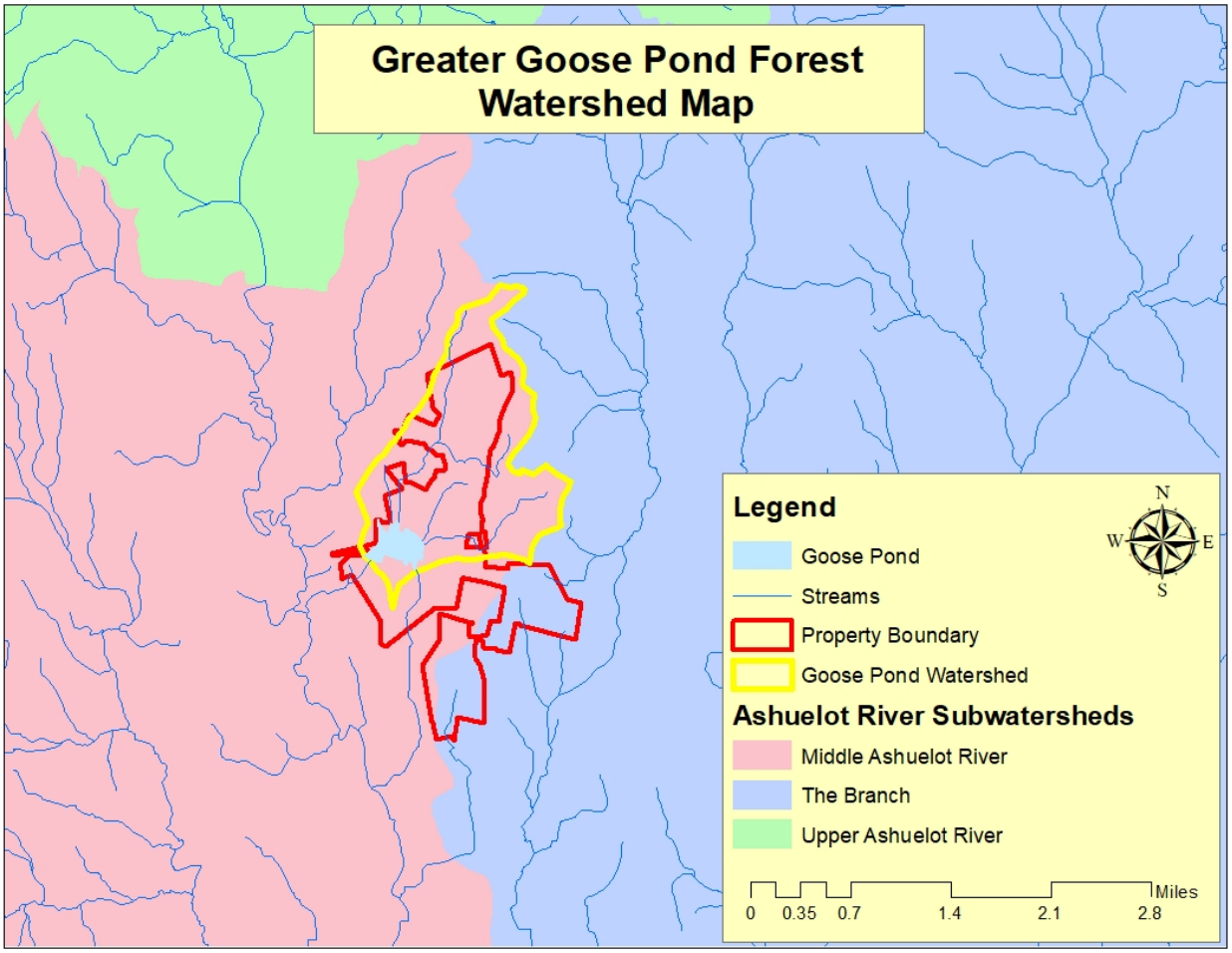


Figure 2 Location of the Goose Pond watershed, Keene, NH.

The property is located within a large unfragmented block of forests and embedded wetlands (Figure 3). This unfragmented block is estimated to be about 9,129 acres. Roughly 96% is comprised of upland forests while the remaining area includes a variety of wetland habitats. There are approximately 2,754 acres of protected or publicly-owned lands either adjacent to or near the property in the large unfragmented block. These include areas such as the Maynard Forest and Surry Mountain Lake. Other conservation lands located nearby include the Ashuelot River Park, Wheelock Park, Robinhood Park, Beech Hill Conservation Area, Otter Brook Lake, and the Keene Watershed property.

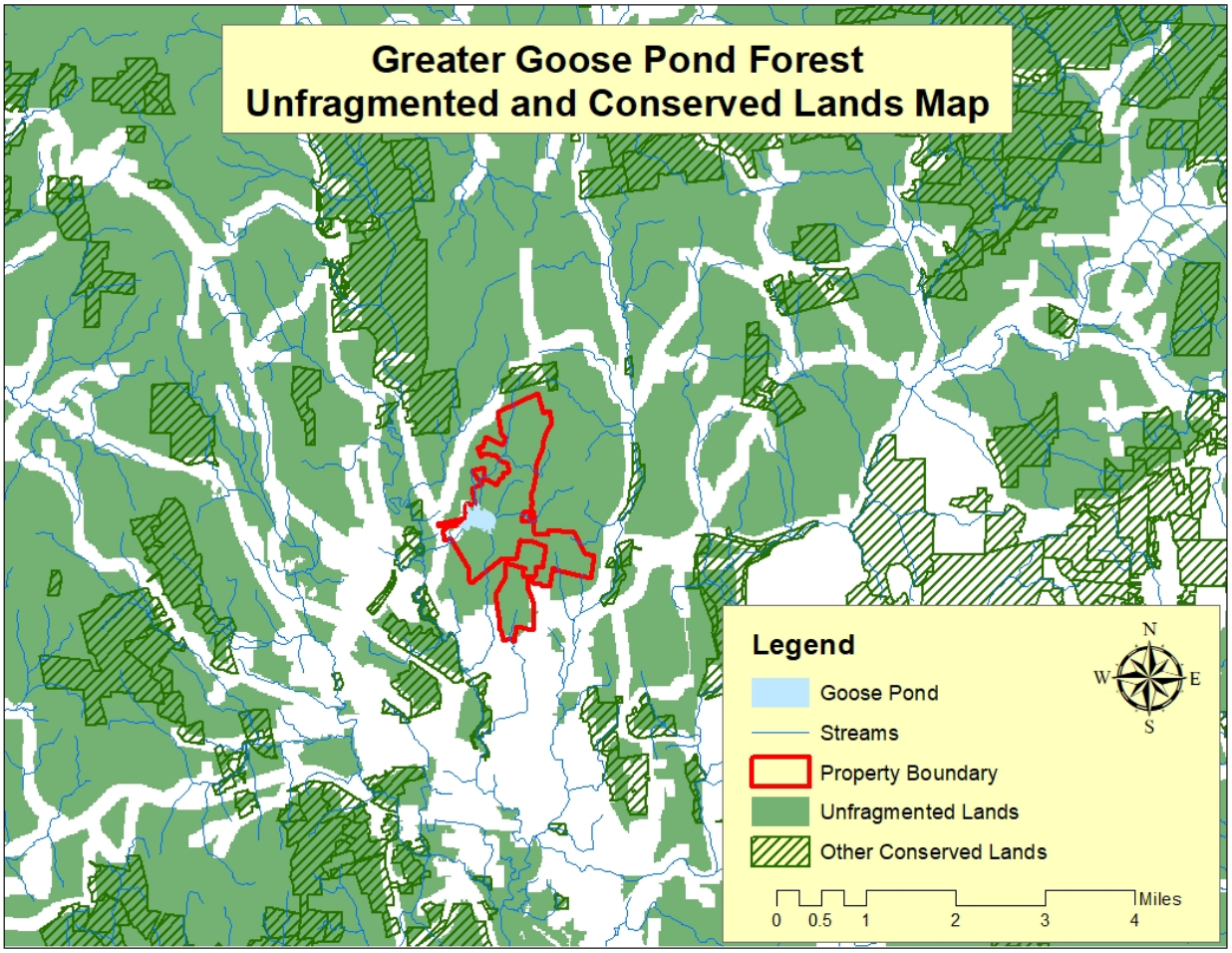


Figure 3 Unfragmented forest blocks and surrounding conservations lands of the Greater Goose Pond Forest, Keene, NH.

Topography, Geology, and Soils

Topography

The property has an undulating topography, with the lowest elevation at roughly 550 feet at the two outlets of Goose Pond. (Figure 4). The highest elevations are located in the eastern part of the property as the land rises, sometimes rather steeply, as one moves away from Goose Pond. These areas are associated with many surficial boulders and some large ledge outcropping and talus-like conditions. The extreme northeastern and southeastern sections are about 1,180 feet above sea level.

The topography supports a few wetlands, including a variety of vernal pools scattered throughout the property. In general, most of the property slopes to the west towards Goose Pond while the southeast sections associated with Drummer Hill slope to the south. This landscape was dramatically influenced by the last glacial event that receded from the region about 13,000 years ago.

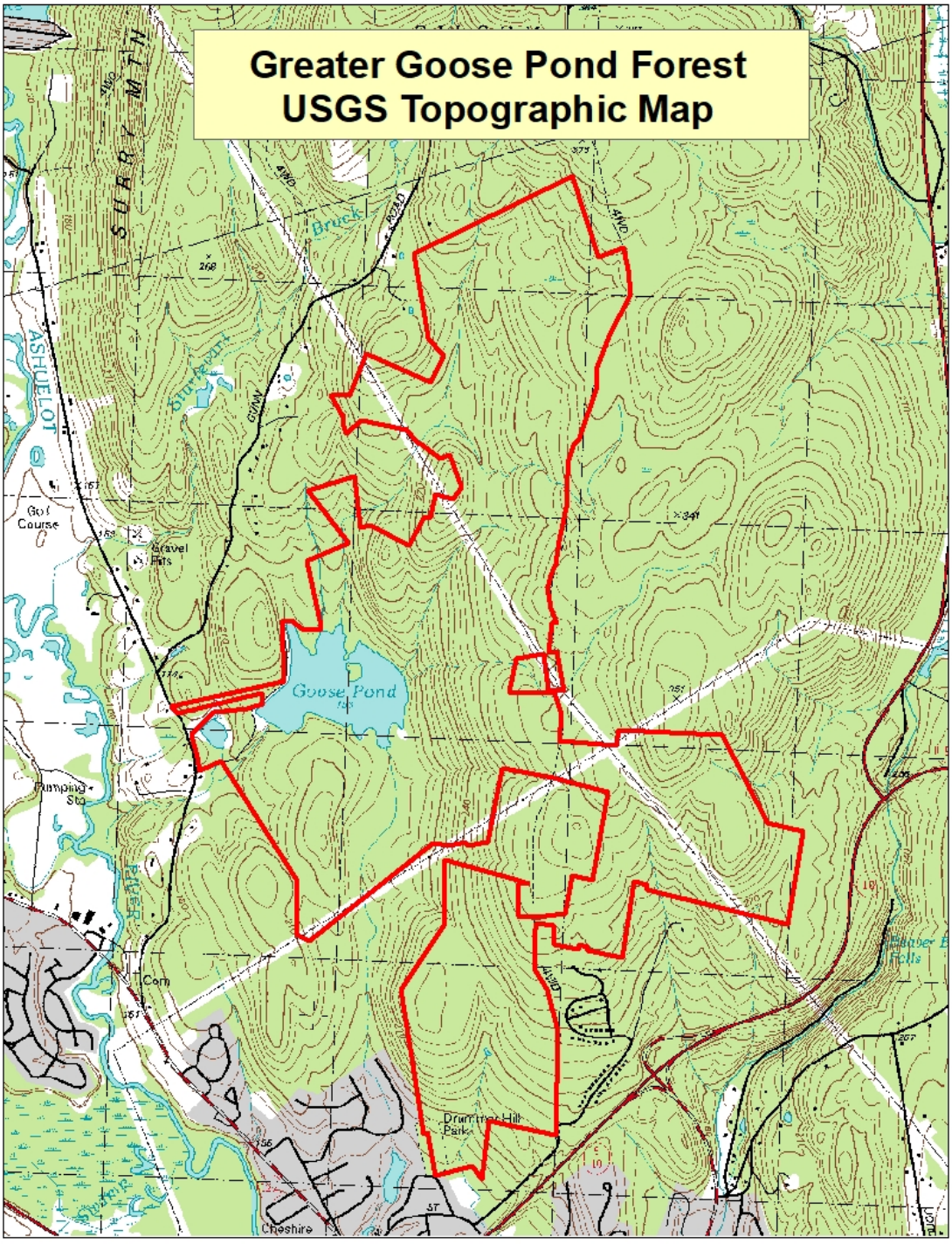


Figure 4 US Geologic Survey topographic map of the Greater Goose Pond Forest, Keene, NH.

Soils and Geology

Two main types of bedrock occur at the Greater Goose Pond Forest property. A very small area associated with the main parking lot on East Surry Road and the service entrance just to the south contributes to the property's slight nutrient enrichment. However, this covers only a minor part of the property. Most of the bedrock associated with the property is granitic in nature. This results in relatively nutrient poor soils that give rise to the current hemlock-hardwood-pine forest ecosystem.

Most of the property has well-drained to excessively well-drained soils, with only 4.4% having poorly drained or very poorly drained soils (Figure 5 and Table 1). Poorly drained soils include the Lyme and Moosilauke, Pillsbury fine sandy loam, and Rippowam-Saco complex soil series. These soils series can be found in wetlands in the northern part of the property, as well as along the outlet streams from Goose Pond. The Greenwood mucky peat soil series make up the very poorly drained soils. These can be found in the red maple forested swamp along the stream inlet to Goose Pond in the northwest, as well as the hemlock swamp along the stream outlet southeast of Goose Pond. Poorly drained and very poorly drained soils are closely aligned with wetland soil types.

Soil series associated with the upland forests were derived from glacial till that was deposited as the glaciers receded about 12,000 years ago. The Monadnock sandy loam and Turnbridge-Lyme-Rock outcrop complex soil series make up more than 85% of the upland forest soils.

Soil types have also been classified in terms of their rating for agriculture and forest productivity. This aspect is important since the conservation easement deed permits forestry and agricultural activities. Nearly 24% of the soils are identified as potential farmland soils of local and statewide significance. No prime farmland soils are present. See the glossary for definitions that correspond with the Forest Soils and Farmland Soils in Figures 6 and 7 and Table 1.

The stones that were used to build walls by the early colonists were lying scattered on the forest floor as a result of the retreat of the last glacial period.

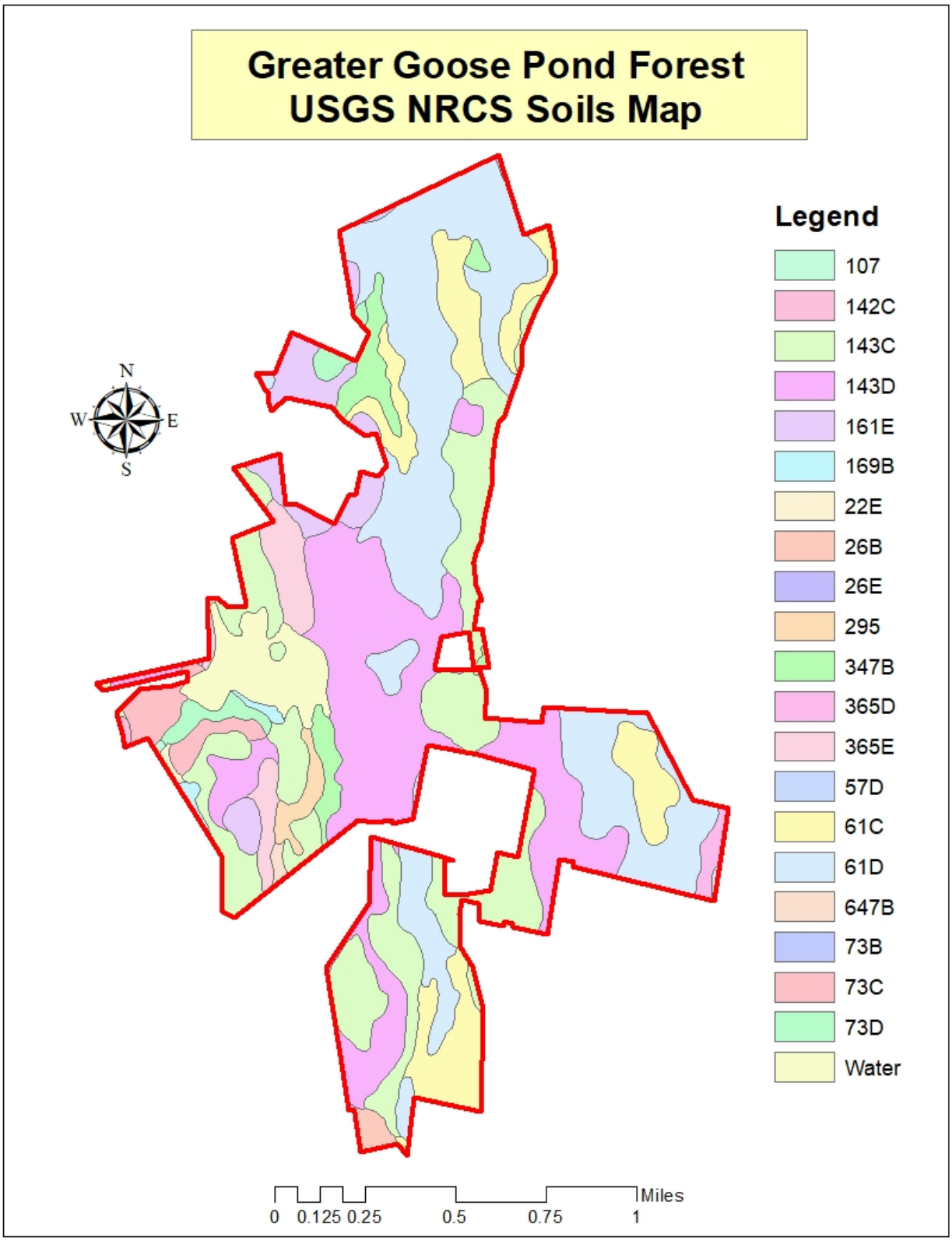


Figure 5 Natural Resources Conservation Service soils map of the Greater Goose Pond Forest, Keene, NH. See Table 1 for an explanation for the soils mapped above.

Table 1. List of soil types by drainage class, importance for farming and forest productivity, and acreage.

Soil Symbol	Soil Name	Drainage Class	Farmland Soils	Forest Soils	Acres
57D	Becket fine sandy loam 15 to 25 percent slopes, very stony	Well drained		IA	1.0
365D	Berkshire and Monadnock soils 15 to 25 percent slopes, extremely stony	Well drained		IB	7.0
365E	Berkshire and Monadnock soils 25 to 50 percent slopes, extremely stony	Well drained		IIA	32.7
73D	Berkshire fine sandy loam 15 to 25 percent slopes, very stony	Well drained		IA	15.0
73B	Berkshire fine sandy loam 3 to 8 percent slopes, very stony	Well drained	Local importance	IA	0.4
73C	Berkshire fine sandy loam 8 to 15 percent slopes, very stony	Well drained	Local importance	IA	23.7
22E	Colton loamy fine sand 15 to 50 percent slopes	Excessively drained		IIA	1.7
161E	Lyman-Tunbridge-Rock outcrop complex 25 to 50 percent slopes	Somewhat excessively drained		IIA	45.4
161E	Lyman-Tunbridge-Rock outcrop complex 25 to 50 percent slopes	Somewhat excessively drained		IIA	7.6
347B	Lyme and Moosilauke soils 0 to 5 percent slopes, very stony	Poorly drained		IIB	31.7
143D	Monadnock fine sandy loam 15 to 25 percent slopes, very stony	Well drained		IB	238.9
142C	Monadnock fine sandy loam 8 to 15 percent slopes	Well drained	Statewide importance	IB	1.2
143C	Monadnock fine sandy loam 8 to 15 percent slopes, very stony	Well drained	Local importance	IB	211.7
647B	Pillsbury fine sandy loam 0 to 5 percent slopes, very stony	Poorly drained		IIB	2.2
169B	Sunapee fine sandy loam 3 to 8 percent slopes, very stony	Moderately well drained	Local importance	IA	4.8
61D	Tunbridge-Lyman-Rock outcrop complex 15 to 25 percent slopes	Well drained		IIA	283.9
61C	Tunbridge-Lyman-Rock outcrop complex 8 to 15 percent slopes	Well drained		IIA	107.9
26E	Windsor loamy fine sand 15 to 50 percent slopes	Excessively drained		IIA	0.1
26B	Windsor loamy fine sand 3 to 8 percent slopes	Excessively drained	Local importance	IC	6.0
295	Greenwood mucky peat	Very poorly drained			10.7
107	Rippowam-Saco complex	Poorly drained		IIB	0.5
W	Water				47.8

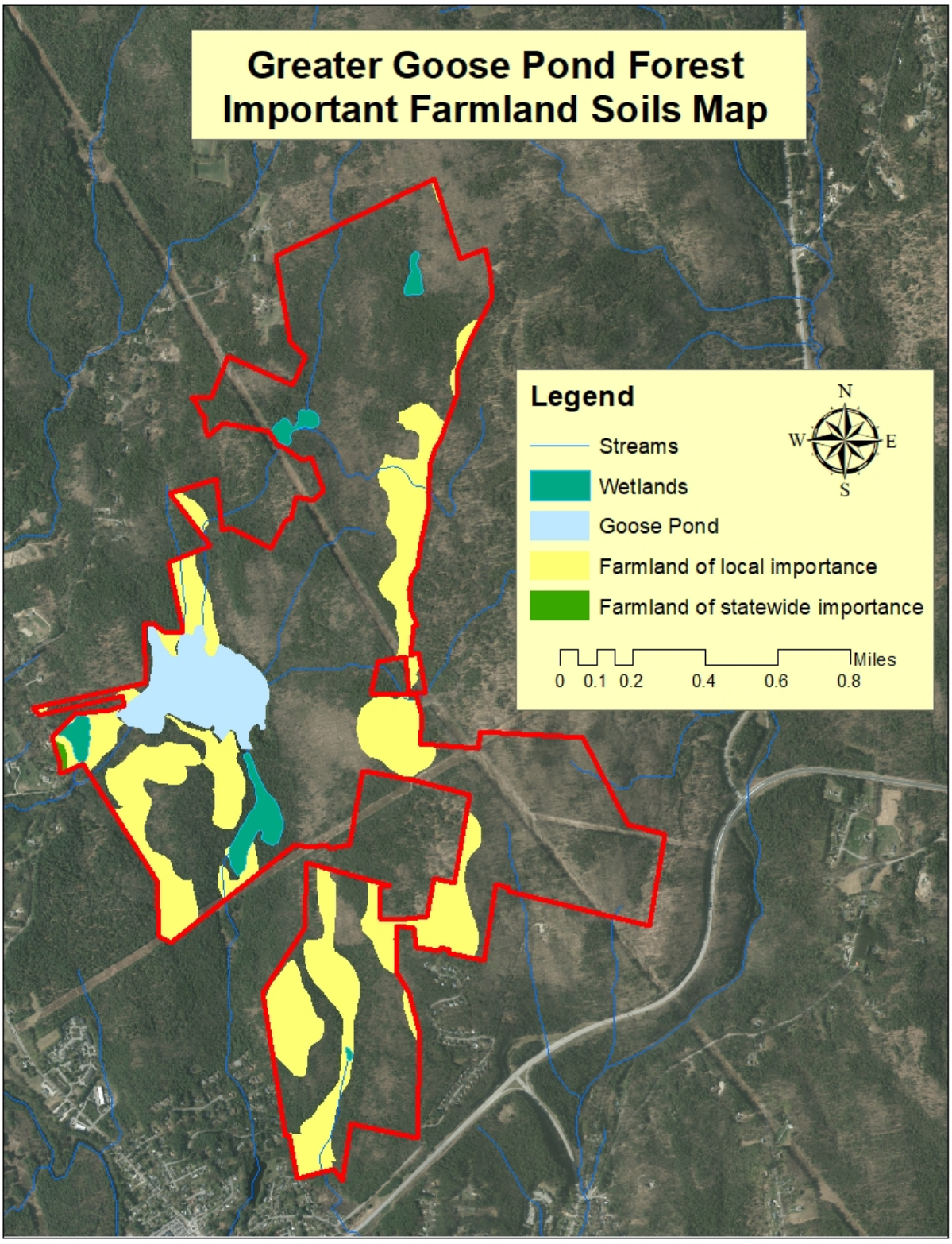


Figure 6 Natural Resources Conservation Service soils map showing important farmland soils of the Greater Goose Pond Forest, Keene, NH. See Table 1 for an explanation for the soils mapped above.

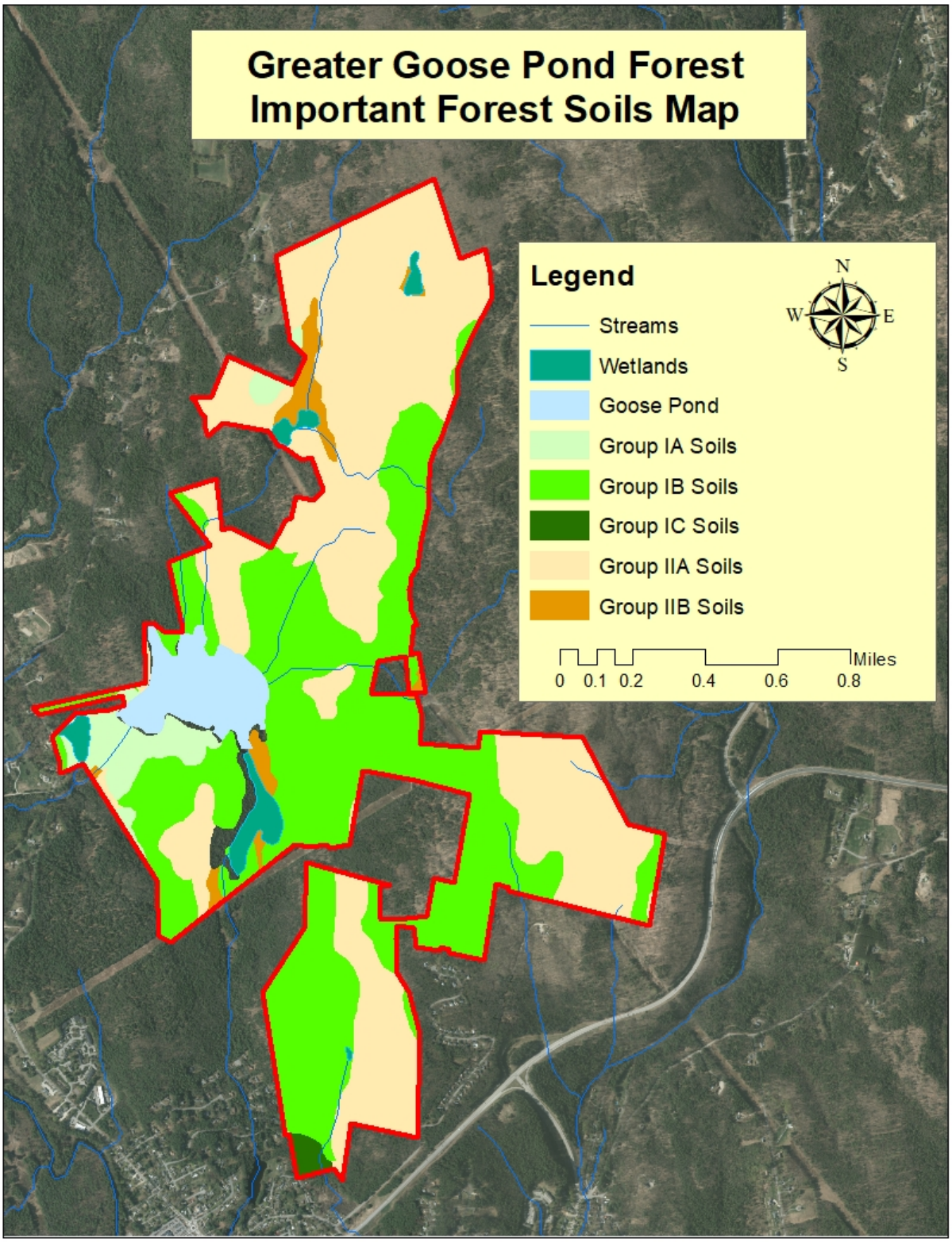


Figure 7 Natural Resources Conservation Service soils map showing important forest soils of the Greater Goose Pond Forest, Keene, NH. See Table 1 for an explanation for the soils mapped above.

Wildlife Habitats

The Greater Goose Pond Forest offers a diversity of habitats, including vernal pools, old beaver impoundments, marsh and shrub wetlands, streams, peatlands, and various upland forests supplying abundant food sources, as well as the popular and well-visited Goose Pond (Figure 8). Multiple studies (formal and informal) and reports have been completed over the past three decades that identify the wildlife and habitats at Greater Goose Pond Forest. Many of the reports listed in the Literature Resources section can be found at ci.keene.nh.us/ggpf. Each habitat type is briefly described below and follows the conventions set forth by the NH Wildlife Action Plan (2015).

Wetland Habitats

- Goose Pond – Goose Pond covers approximately 51 acres. It serves as an important resource for migratory birds, particularly waterfowl. It also serves as good habitat for fish, occasionally beaver and otter, as well as other aquatic organisms. It provided the City of Keene a public water supply until 1984.
- Peatlands – Two peatlands can be found in the northernmost part of the property location on the Paquette Lot. The peatland habitat adjacent to the utility rights-of-way has been impacted over the decades by beaver. This results in a mix of marsh-shrub wetlands and peatlands. As beavers move into the wetland, they change the water levels, pH, and species composition. In the absence of beaver, this wetland will become more acidic and the species composition will tend towards an acidic peatland. The other peatland can be found to the northeast. It contains at least one rare plant and a wildlife species of conservation concern. This peatland also functions as a vernal pool. These two peatlands cover about 6 acres.
- Vernal pools – The property contains numerous vernal pools. There is a total of 18 confirmed vernal pools, ranging from 0.1 to nearly 1 acre in size. In addition, there are at least 14 additional potential vernal pools. Based on the topography of the property there is the strong potential for additional vernal pools. In aggregation, these vernal pools total over 10 acres of critical habitat for a variety of species, including spotted turtles (a state threatened species), which have been observed within one mile of the property.
- Marsh and Shrub Wetlands – The marsh and shrub wetland habitats are mainly associated with the edges of Goose Pond, the beginning of the outlet stream that drains the temperate swamp, and the abandoned beaver pond located to the west of Goose Pond along another outlet stream. The shrub portion on the eastern side of this abandoned beaver pond is functioning as a vernal pool; spotted salamander egg masses were observed in the spring of 2018. This habitat totals approximately 8 acres.
- Temperate Forest Swamps – There are at least three temperate forest swamps on the property, totaling approximately 12 acres. These are either dominated by hemlock with lesser amounts of red maple and yellow birch, or dominated by red maples, such as the example found adjacent to the open peatland in the northwest part of the property. There's a good chance that other smaller examples of forest swamps are present.
- Streams – There are several perennial and intermittent inlet streams located to the north and east of Goose Pond in the upper portions of its watershed. Goose Pond has three outlet streams associated with the spillway and the two dams located along the southern shoreline. A few other minor drainages can be found on the Drummer, Grant, and Minister's Lots southeast of Goose Pond.

This vernal pool proved to be one of the most productive ones at the Great Goose Pond Forest.

This open peatland has a small component of shrub wetland adjacent to the utility right-of-way in the northwestern part of the property.

This seasonally flooded red maple swamp is adjacent to the peatland above.

Goose Pond provides aquatic habitat for fish, salamanders, and macroinvertebrates, as well as scenic vistas from the trail.

This perennial stream provides habitat for steam salamanders.

Upland Forests

The upland forests of the Greater Goose Pond Forest are part of the hemlock-hardwood-pine forest ecosystem. These upland forests cover approximately 974 acres. A variety of natural communities make up this forested ecosystem. The hemlock-beech-oak-pine forest community makes up the majority of the area. Smaller pockets of hemlock forest and hemlock-white pine forest communities are present as well. The forests at Greater Goose Pond Forest are typified as second and third growth forests as a result of the past agriculture history, as well as logging events from the 1960s through the 1980s.

The forest canopy at the Greater Goose Pond Forest is dominated by red oak, black oak, white pine, hemlock, red maple, and beech. Lesser abundance of white oak, black birch, yellow birch,

white birch, white ash, and sugar maple can be found scattered throughout. As mentioned above, the majority of the forest understory is dominated by beech or co-dominated by beech and hemlock. There are a few locations, such as Drummer Hill, that are void of understory regeneration.

The highest elevation in the northern part of the property is dominated by high-quality red oak, which has a mean diameter of about 11.5 inches. Red oak makes up 40% of the basal area on most of the lots. Generally, red oak gives way in dominance on the rockier sites with thinner soils along the ledges and down the hill as hemlock and black oak become more abundant. This area is associated with large bedrock outcroppings with some early talus rock formations that provide good denning sites for wildlife. As the land flattens out along the banks of Goose Pond there are concentrated stands of large white pine. In fact, in the apron around the pond there are some white pines larger than 40 inches in diameter. These pines survived the hurricane of 1938, as well as during the past heavy logging events.

The steep banks east of Goose Pond are dominated by red oak, beech, and red maple. Chestnut logs can be found on the forest floor. This course woody debris is a reminder of the near extinction of this species as a result of the chestnut blight that was accidentally introduced to North America from Asia around 1904.

The forest is quite different south of Goose Pond on the Burroughs Lot. It is a mix of species with hemlock as the dominant species with lesser amounts of white pine, red oak, red maple, and beech. The forest located east of Old Gilsum Road has undergone some harvesting in the late 1970s. There is a more pronounced beech, red maple, and occasional red oak saplings.

There are very large white pines running up along the main drainage in the southern part of the Drummer Hill lot. The drier sites are dominated by more red oak, red maple, and beech. Since little cutting has been done there is little forest regeneration in this area due to a lack of management.

Cavities such as this one in a hemlock provides nesting sites for many species of birds and denning sites for mammals.

The hemlock-beech-oak-pine community is common forest type.

This large coppiced red oak provides evidence of the past logging history at the Greater Goose Pond Forest.

Shrublands

Shrublands are dominated by young trees and shrubs with occasional mature trees, bare ground, and areas dominated with grasses and wildflowers. Shrubland habitat is declining in the state, and this decline has a profound effect on wildlife. Shrublands provide an important habitat for 139 species of reptiles, amphibians, mammals, birds in New Hampshire. Several of these species have been identified as species of greatest conservation need. In fact, 22 of 28 species of shrubland birds are currently in decline. The utility right-of-ways provide an uncommon and significant habitat at Greater Goose Pond Forest. These areas are periodically mowed to prevent

trees from hindering the utility lines. It appears that they were last mowed within the past 1-2 years. This habitat covers 37 acres and nearly two miles through Greater Goose Pond Forest.

Shrubland habitat is in decline in the state. It provides critical habitat for a variety of wildlife, including many species of conservation concern.

Ruffed grouse, a species of conservation concern, was observed on the property. They depend upon early successional habitat and shrublands for rearing their young, keeping them safe from hawks.

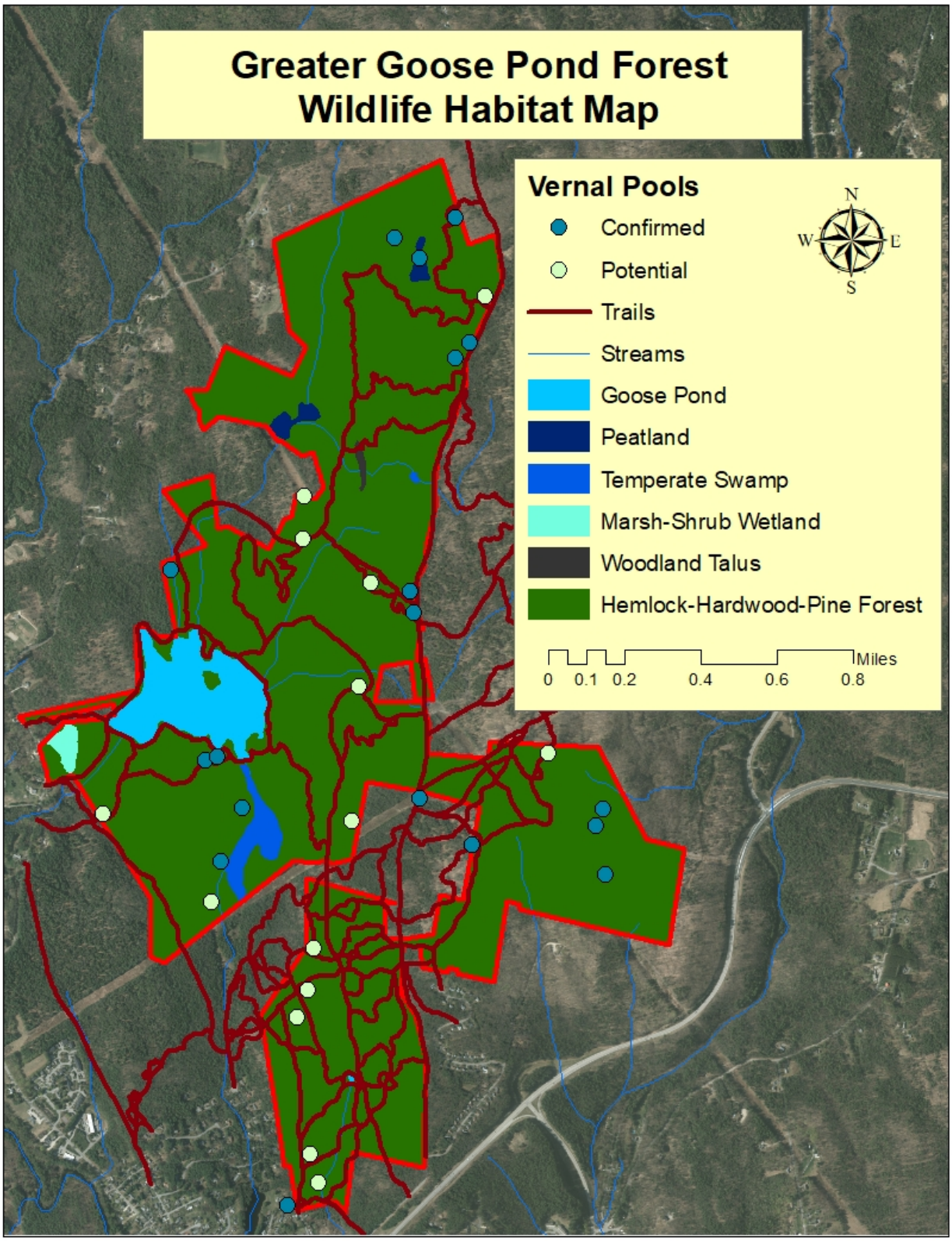


Figure 8 Wildlife habitats of the Greater Goose Pond Forest, Keene, NH.

Wildlife, Plants, and Natural Communities of Conservation Concern

Species of Greatest Conservation Need

A total of 30 species of wildlife of greatest conservation need have been observed on the Greater Goose Pond Forest property. These have been observed either during the 2017-2018 field season or during other studies previously conducted on the property. Birds were observed during the breeding season, as well as spring and fall migration. Species included moose, Blue-spotted salamander complex, ribbon snake, American black duck, mallard, wood duck, common loon, ruffed grouse, northern goshawk, northern flicker, yellow-bellied sapsucker, alder flycatcher, eastern wood-pewee, wood thrush, veery, brown creeper, blue-headed vireo, Canada warbler, northern parula, ovenbird, American redstart, bay-breasted warbler, prairie warbler, chestnut-sided warbler, blackburnian warbler, black-throated green warbler, black-throated blue warbler, eastern towhee, field sparrow, and scarlet tanager.

These species are identified in the NH Fish and Game Wildlife Action Plan (2015), Partners in Flight, and the North American Bird Conservation Initiative (Dettmers 2004 and Rich et al. 2004). The latter two lists are from a regional perspective, whereas the Wildlife Action Plan is focused solely on New Hampshire. Based on a review by the NH Natural Heritage Bureau, site characteristics, and location of the property in NH an additional species of concern may be using the property (Appendix E). The state-threatened spotted turtle was observed within one mile of the Greater Goose Pond Forest property in 2011.

Currently, there is only one rare plant species known to exist on the Greater Goose Pond Forest. Green adder's-mouth (*Malaxis unifolia*) was observed in 1995. Other rare plants may exist on the property.

Rare/Exemplary Natural Communities and Others of Significance

Rare/exemplary natural communities are listed as S1 or S2 by the NH Natural Heritage Bureau. There are no known rare/exemplary natural communities on the Greater Goose Pond Forest property. However, there are several communities of significance based on their biological diversity.

The fens located in the northern part of the property on the Paquette Lot are noted for their high biodiversity and their importance to wildlife. The fen to the northeast functions as a vernal pool and contains at least two species of greatest conservation need. The fens associated with the outlet stream are also considered significant. The peatlands are sensitive to sedimentation, pollutants, and other factors that could change the pH, resulting in a change in species composition. Other significant communities include the beaver pond west of Goose Pond, as well as all vernal pools.

Ecologically Significant Areas and Reserves

Ecologically significant areas represent sites that exhibit high sensitivity to human presence, species rarity, high biodiversity, and uniqueness. These areas are deserving of protective measures that include adjacent buffers to ensure ecological integrity is maintained over time. They include all wetlands, vernal pools, streams, and Goose Pond. These aquatic systems represent the some of the most significant and diverse areas on the Greater Goose Pond Forest

property. In addition, the large bedrock ledge and talus area provides a unique habitat not found elsewhere on the property.

Ecological reserves are representative areas of a property that are set aside to allow for natural processes and forest succession to occur in a relatively natural state. However, occasional management may be necessary for ecological restoration based on pressure from non-native, invasive species and pathogens that can have an overall negative affect on forested habitats. These areas were identified for a variety of reasons, including ecological sensitivity, inaccessibility, and landscape position.

The purpose of setting aside ecological reserves is to afford the opportunity of maximizing the diversity of forested habitat and wildlife in an area while allowing natural processes to dictate forest dynamics. This includes allowing space for trees to develop old-growth characteristics. This is a process that helps to create complex tree canopies not typically found in our forests today, supporting wildlife such as goshawk, Cooper's hawk, and sharp-shinned hawk, as well as other large woodland nesting birds. It promotes undisturbed forest floors littered with large downed trees, providing important habitat for terrestrial frogs, salamanders, and insects.

Figure 9 provides a basic visual of the buffers for ecologically significant areas, as well as the extension of ecological reserves recommended for the Greater Goose Pond Forest. This entire reserve system covers approximately 556 acres, including Goose Pond and other wetlands. The buffers for ecologically significant areas are based on scientific research that supports land management in a responsible and informed manner.

These wood frogs are on the bottom of a vernal pool engaged in amplexus, a type of mating behavior used for external fertilization.

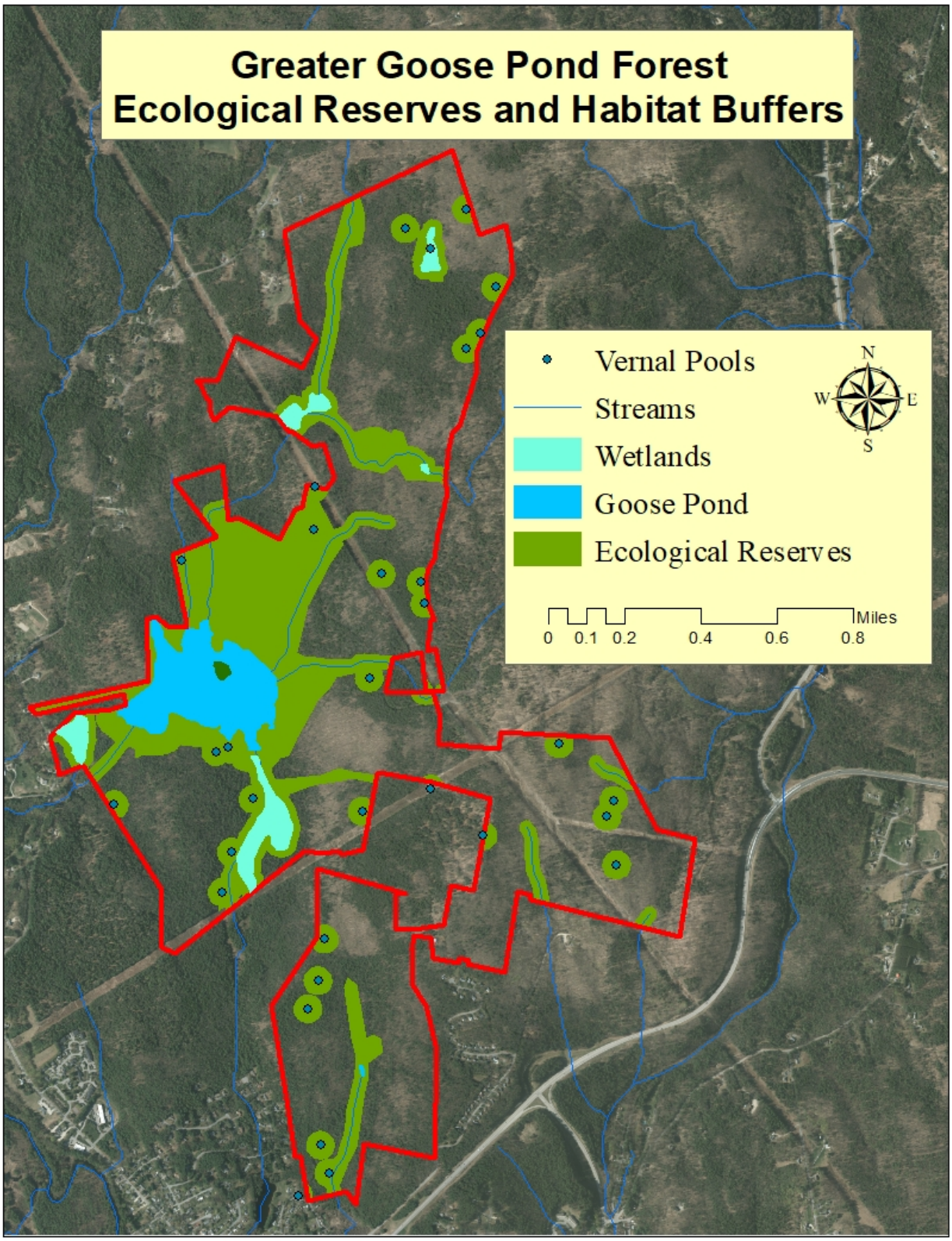


Figure 9 Proposed ecological reserves including buffers for sensitive habitats of the Greater Goose Pond Forest, Keene, NH.

Invasive Plants

Based on site investigations it appears that there are relatively low levels of invasive plants on the property especially as one moves into the interior forest. The majority of the observations of invasive plants at Greater Goose Pond Forest are along forest edges moving into the interior with less abundance. The largest concentration can be found at the Drummer Road gate and along the southern boundary of the Drummer Lot. Japanese barberry, glossy buckthorn, and bush honeysuckle are present in moderate abundance. There is also some barberry and buckthorn near the parking area on East Surry Road, as well as the access road to the south. The Kingsbury Lot also has some barberry. Other locations of invasive plants can be found along the edges of the utility rights-of-ways. An integrated pest management plan should be developed that integrates a variety of techniques to help control the spread of invasive plants, especially in future areas of wildlife habitat and forest management.

Potential Water Quality Contamination and Aquatic Connectivity

Nearly all of Goose Pond's watershed is in a natural state. Only three residences are present. As such, threats to water quality to Goose Pond and the wetlands in the watershed appear to be relatively minor. These include minor soil erosion from trails but this is not extensive. Old Gilsum Road can present issues with sedimentation from four-wheel drive vehicles and off-highway recreational vehicles. However, this Class VI road is public property and is not located on the Greater Goose Pond Forest property. The most serious issue to water quality to Goose Pond may be from domestic dog waste near the pond.

Aquatic connectivity refers to the ability for aquatic and semi-aquatic organisms to freely move throughout the watershed in order to perform various parts of their life cycles, such as breeding, feeding, and cover. It appears that the inlet streams to Goose Pond are impeded from obstructions that would limit connectivity to wildlife. However, the three outlet streams have major obstructions to providing free movement to and from the pond. These obstructions include two dams and the spillway.

This impressive bedrock outcropping has talus-like conditions that provide great den sites for wildlife.

Section 5: STEWARDSHIP RECOMMENDATIONS

The following stewardship recommendations are based on the nine management goals outlined above. These recommendations have been divided into three distinct categories, including wildlife habitat and forest management, recreational trails management, and community outreach and education. These categories are not a stand-alone approach but rather they are integral to one another. These provide both general and specific management recommendations to be used for the long-term stewardship of the Greater Goose Pond Forest. In addition, the Action Plan in Section 6 was developed to provide wildlife habitat and forest management options that the City of Keene can incorporate into its stewardship responsibilities over the next 10 years.

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Wildlife Habitat and Forest Management

Based on the findings of the field assessments, we recommend the following objectives to meet the stewardship goals for the property. These objectives were based on the presence of species of conservation concern, current forest conditions, past land use, and ecologically significant areas with a focus on increasing overall biodiversity on the property. They also address protection of soils and productivity, as well as the protection of historical and cultural features and scenic quality. These help to achieve various goals identified in the NH Wildlife Action Plan (NH Fish and Game 2015), as well as current techniques practiced by the UNH Cooperative Extension to create and maintain early successional habitats and shrublands.

<u>Protect Fragile Soils and Maintenance of Soil Productivity</u>

- Limit the area of compacted soils.
    - Operate equipment on established and newly designed roads and trails and minimize travel into the general forest area.
    - Operate equipment on woody debris in areas of sensitive or wet soils where subsurface hydrologic conditions exist.
    - Sequence forest management activities to limit the number of equipment passes.
    - Use smaller or lighter equipment, track equipment, low PSI tires, and lighter loads.
    - Restore heavily compacted areas to the extent possible.
- Limit impacts of roads and landings.
    - Follow natural contours when designing and conducting timber sales, and avoid disturbing natural drainage channels whereby minimizing stream crossings.
    - Establish cover on roads and landings that are not in use.
    - Limit soil disturbance and control erosion.
    - Protect roads through the use of water bars/rolling dips.
    - Retain downed tops and other unharvested materials for ground cover, nutrient cycling, organic matter retention, and wildlife habitat.
- Maintain favorable conditions for forest growth.
    - Control the amount of road use, and off-road travel, to prevent erosion, compaction, and disturbance of the soil surface.
    - Establish cover on disturbed areas.
- Retain and enhance carbon storage to support soil ecological functions.
    - Maintain forest stocking for proper canopy cover.

  - Maintain and add, as needed, woody material to the soil by girdling or cutting non-merchantable trees or trees of undesired species.
  - Use extended rotations to keep carbon on site for a longer period.
  - Retain fallen trees, branches, snags, downed tops, and other unharvested materials for ground cover, nutrient cycling, and organic matter retention, to the extent possible and practical based on prescribed silvicultural techniques. Leaving these materials will contribute to natural processes to promote healthy forests and allows woody material to support small wildlife such as mice, salamanders, frogs, snakes, and insects.
- Implement forest stand improvement activities in ways that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.
- Protect site resources by selecting the method, felling direction, and timing of tree felling and heavy equipment operation. Protect soil and site resources during use of trails and landings, and limit property access with iron gates, where applicable.
- Most of these objectives are recommendations provided to landowners by the USDA Natural Resources Conservation Service.

<u>Protect Water Quality, Ecologically Significant Areas, and Unique Natural Areas</u>

- For water quality protection meet or exceed Best Management Practices (BMPs) for Forestry: Protecting New Hampshire's Water Quality (Moesswilde 2005) and Good Forestry in the Granit State: Recommended Voluntary Forest Management Practices for New Hampshire (Bennett 2010).
- Continue to encourage trail users with pets to pick their waste during each visit. Insure that pet waste bags and trash cans are available to help with waste reduction. These efforts will have an increasingly positive effect on maintaining the quality of water, soil, and wildlife resources.
- Minimize stream crossings.
- Minimize construction of new roads and landings where possible. Keep sensitive habitats (such as vernal pools, seeps, wetlands) free of skidder roads and other mechanized operations, including new landings.
- Maintain or restore natural hydrological cycles of wetlands and streams to allow for natural processes, such as stream bank dynamics, as feasible. This includes restoring any current and future culverts that may contribute to sedimentation in streams and wetlands, as well as those limiting or inhibiting aquatic connectivity, particularly along Old Gilsum Road.
- Maintain naturally vegetated buffers, as described below, around streams and wetlands, including vernal pools and forest seeps. Exceptions may include the necessity for ecological restoration based on site-specific conditions and the threat to the ecosystem.
  - Maintain, at a minimum, a 300-foot forested buffer around Goose Pond. There shall not be any timber harvests within this zone, except for ecological restoration.
  - Maintain, at a minimum, 100-foot forested riparian buffers around wetlands and on either side of streams. The Riparian Buffer edge shall be measured from the stream edge of the normal high-water mark of the stream. In cases where the top of the embankment is less than 50 feet from the stream edge, the Riparian Buffer

edge shall be measured from the top of the embankment. In cases where wetlands surround the stream edge, the Riparian Buffer edge shall be measured from the boundary of the upland edge of the wetland area. There shall be no timber harvesting within 0-30 feet of perennial streams, and only 25% of the basal area may be harvested in any given year within 30-100 feet of perennial streams.

- Maintain habitat integrity of vernal pools by retaining a mostly closed forested canopy while minimizing forest floor disturbance in the upland terrestrial life zone around vernal pools for at least 200 feet. If harvesting timber adjacent to vernal pools adhere to the following:
  - Retain at least 75% canopy cover 0-100 feet from pool edge
  - Retain at least 50% canopy cover 100-200 feet from pool edge
  - Whenever possible increase buffer zones to maximize the benefit of wildlife and vernal pool habitat protection
  - Within 200-400 feet of vernal pools avoid forest openings greater than 1 acre.
- No skid trails, log landings or road construction shall be created within the above buffers, except in circumstances where complying with this provision results in a greater overall environmental impact or would preclude reasonable access to areas suitable for forestry. Existing roads as identified in the baseline documentation may be retained and used but must be maintained to minimize degradation of water quality and aquatic habitat.

- Exceptions to timber harvesting in the above buffer zones may include those operations associated with ecological restoration to manage for exotic, invasive insects that can have widespread negative and irreversible impacts to forest ecosystems, including but not limited to hemlock wooly adelgid, eastern long-horned beetle, and emerald ash borer. Consult with a qualified ecologist and forester prior to conducting ecological restoration within buffer zones and ecological reserves.
- When conducting forest and habitat management activities a qualified wildlife ecologist should assist in identifying site-specific ecologically significant areas (i.e., vernal pools) and mark appropriate buffers based on the recommendations outlined above.
- Support the development of late successional forest characteristics. These areas include buffer zones and ecological reserves identified in Figure 9.

<u>Maintain, Enhance, and Protect Native Biodiversity, Habitats, and Species of Concern</u>

- Maintain a diversity of forest age classes, densities, and structures that promote various stages of forest stand development. This will create various habitats to promote biodiversity, including uneven-aged forests, and enhance habitats for species of conservation concern. To this end, we recommend implementing the use of forestry techniques found in Silviculture with Birds in Mind (Hagenbuch et al 2011) to develop uneven-aged habitat management within mature forest habitats. This guide focuses on wildlife habitat and forest management that uses sustainable silvicultural methods to enhance habitats for a representative group of birds of conservation concern, most of which use the property during the breeding and migratory seasons.
- Create early successional and shrubland habitats to support species of conservation concern that currently use the property. Good locations to enhance shrublands are

adjacent to the utility right-of-ways where these species are currently breeding. Matt Tarr, Wildlife State Specialist at the University of NH Cooperative Extension, works in close partnership with NH Fish and Game to assist landowners to improve wildlife habitats. He has been successful with shrubland enhancement adjacent to utility right-of-ways to benefit many of NH's species of conservation concern. This type of management will also enhance populations of other species of conservation concern.

- Encourage land management activities that favor known and potential species of conservation concern.
- Limit timber harvests to mid-August to March. This will help to limit incidental impacts to wildlife particularly during the breeding season for vernal pool amphibians and birds.
- From a wildlife perspective it is highly recommended that no new trails should be constructed, particularly in the northern section of the property. It appears that the trails on Drummer Hill and around Goose Pond are the most frequently used and have the largest impact on diurnal and crepuscular wildlife. Construction of new trails in lesser used areas would most likely increase human traffic, which can have a negative effect on wildlife.
- Develop and maintain snag and cavity trees, which provide critical nesting and denning sites for many wildlife. The following size classes provides a guide 12-15 inches: softwoods = 5 trees/acre and hardwoods = 4 trees/acre; >15 inches: softwoods = 3 trees/acre and hardwoods = 1 tree/acre
- Minimize publicity of sensitive and unique areas to prevent poaching and indiscriminate killing of species of greatest conservation need.

Protect Unique Historical and Cultural Features

- Conduct a historical and cultural features survey to better understand the presence, type, and distribution of these resources. This could be completed in conjunction with a local educational institution.
- Identify and protect unique historical and cultural features in areas of active management.

Conserve Scenic Quality from Roads, Trails, and Scenic Vistas

- Maintain at least a 50-foot naturally vegetated buffer along roads, trails, and scenic vistas

Future Agricultural Uses

- Minimize the effects of potential future agricultural activities in close vicinity to aquatic/wetland habitats by using appropriate filter strips and buffers to ensure maintenance of good water quality while providing for a sustainable means for crop and feed production, as applicable.
- Develop an agricultural management plan, as applicable.

Invasive Species Management

- Avoid introduction of non-native terrestrial and aquatic species, and restrict vehicular public access to discourage unauthorized fish or any other aquatic species stocking. Do

not allow off-site fill to be placed on the property unless it is certified to be free of invasive species.

- Annually monitor property for invasive species, especially Japanese barberry, glossy buckthorn, autumn olive, and oriental bittersweet that were observed within or along the edge of the property. Remove and properly dispose of invasive plants as soon as possible and in accordance with NH laws governing invasive species.
- Develop an integrative invasive species management plan that utilizes a variety of techniques.

Establish an Ecological Monitoring Program

- Vernal pool investigations
  - Inventory potential vernal pools identified on the wildlife habitats map to better understand wildlife use, particularly amphibians and reptiles.
  - Develop a vernal pool monitoring program to account for seasonal and yearly variations to help inform future land management activities.
  - Document vernal pools using *Identification and Documentation of Vernal Pools in New Hampshire* by Tappan and Marchand (rev. 2013).
- Bird species of greatest conservation need
  - Develop a monitoring program to understand the distribution and relative abundance of birds, especially in light of land management activities to determine if the activities are increasing abundance and distribution of target species and providing habitat for such species. These data are vital for developing adaptive land stewardship management.
- Monitor species of conservation concern.

Identify and Mark Boundaries

- Property boundaries should be clearly marked with painting and blazing. The condition of the boundary markers should be assessed every 5 years. This will help to clearly identify the bounds 1) of the conservation easement, 2) where hunting is not permitted on City lands, and 3) to inform land management activities (such as habitat and trails management).

Establish an Endowment Fund

- Establish an endowment fund for managing the property into the future. This endowment could be funded through wildlife habitat and forest management projects. The 10-year Action Plan below illustrates projects that would enhance wildlife habitat while providing examples of projects that could be used to establish the endowment fund, providing adequate funding needed for responsible management while helping to alleviate the need for the use of funds provided by taxes.

Recreational Trails Management

A detailed trail assessment and design plan was prepared as part of the Land Stewardship Plan. The goal was to assess the current conditions of the property and the site capability for trails management, and to guide the implementation of management activities to benefit the goals outlined above. See the trails map in Appendix F. This map was developed by the New England Mountain Bike Association, representing the most comprehensive map of the trail system at Greater Goose Pond Forest.

The Greater Goose Pond Forest Ad Hoc Committee reviewed this report and provided a list of priorities from the comprehensive list of trail improvements and changes to be accomplished over the next 10-15 years. These recommended objectives are designed to improve the trail users experience and reduce environmental degradation to soils and adjacent habitats. The following is a summary of our recommendations for upgrading and improving the management of the property by way of a more unified and cohesive approach. For a more detailed account of the full recommended objectives see the Greater Goose Pond Forest Trail Assessment and Design Plan (Timber and Stone LLC, 2018).

Trail Blazing and Signage

Many of the highly used trails are located on pre-existing logging roads or access paths to the pond. Overall, these trails are well-trodden and obvious. There are, however, many trails that do not have trail blazes or signs. This, combined with the myriad of trails available on the property, leaves new visitors with one option: an out and back trail walk so as to stay on the same trail. We recommend re-blazing all trails within Greater Goose Pond Forest. This will involve the creation of a unified trail naming system and the installation of plastic trail blazes with the City of Keene's logo.

The blazes should be affixed to healthy trees with an aluminum nail. The current blazes were painted many years ago and have faded or are simply missing. In addition to helping orient trail users, trail blazes increase a visitor's sense of place and connection to the property.

Currently, trails of the Greater Goose Pond Forest are either named Green on White, Blue on White, Labyrinth, or Wild Thing. These are a mix of names from previous City managers and New England Mountain Bike Association designations. Our recommendation is to rename most, if not all, trails to fall within an agreed theme for the property. The use of "Green on White" leads to confusion as the blazes have either faded or disappeared, whereas trail names such as "Wild Thing" may be limited in their appreciation to the single-track biking community. Trail names that are rooted in the natural history of the area may help increase connection while also educating visitors what can be found on the property. A single-track trail named "Acorn Drop" or a meandering walking path named "Coyote Run" could be inviting and appreciated by all trail users.

Kiosk Installation

Included in the trails report are designs for primary kiosks to be located at trail heads and large trail intersections. The existing kiosks should be removed as they are either rotting or

inconsistent with a unified City presence of signage within the property. The kiosks should prominently display a revised trail map and provide use guidelines for all trail users. Kiosks also serve as a way of educating the public on upcoming events, health awareness bulletins (ticks, hunting, etc.) or as means of tracking use through sign in sheets. The absence of these at the main kiosk at East Surry Road is a missed opportunity for engaging and educating trail users.

Improved Partnership with New England Mountain Biking Association (NEMBA)

NEMBA has created an impressive network of trails within the Greater Goose Pond Forest. The trails link all segments of the property and provide challenging mountain biking for all users to enjoy. Old Gilsum Road can be used as a quick entrance or exit along the border of the property with many trails dropping down steep terrain and eventually leading to Goose Pond. Many of the trails were laid out and constructed with thought and in line with sustainable construction guidelines.

During planning meetings, we noted a need for improved communication between the City of Keene and NEMBA in regards to the creation of trails and the installation of signage. It is possible that the City is not aware of the full volume of trails present on the property and the installation of what could be over dozens of homemade trail signs. Although the signage helps to guide users, they are only located along the NEMBA specific trails and are not present along the Pond Loop Trail or other general use trails. Additionally, the blazes are installed at a level most appreciated by a biker with their head down. This furthers their “use specific” intent.

Although the tread of the NEMBA trails was constructed with sustainability in mind, it is recommended to encourage a similar attention to detail on the bridge structures. A bridge was installed by the lower pond that has a drop of 8 feet with no railings. Additionally, many of the smaller bridges are built within active waterways with high flows that can and have displaced the bridges. As noted in the Construction Specifications at the end of the trails report, we recommend using non- pressure treated lumber for the decking as pressure treated lumber becomes quite slippery when wet. Additionally, and where possible, anchoring the bridge sills to base stones will help them remain in place during high water events.

Installation of a Multi-Use Pathway

The City of Keene plans on installing a 12-car parking lot off East Surry Road as part of its effort to improve parking and access to Goose Pond. Additionally, a maintenance road will be installed to provide access to the dams for any scheduled maintenance event. Given that the road will need to be built in a manner to sustainably support trucks, we recommend further transforming this road into a multi-use bike path. Currently, the only biking available at Greater Goose Pond Forest is along the NEMBA bike trails. Most of those trails are located along steep terrain. In order to open the property to more visitors with varied biking abilities, the maintenance road could easily be left in a state that would be welcoming to family bikers. This concept is further described in the Lower and Upper Green Trail assessments found in the trails report.

Installation of an Accessible Trail

Currently, no portion of the Greater Goose Pond Forest is accessible to wheelchairs or those with limited mobility. This puts a significant limitation to the potential users of the property and highlights the need for more diverse trail conditions. During our assessment of the trails at the Greater Goose Pond Forest, we noted a location where an accessible trail could be incorporated. The trail would begin adjacent to the new parking area off East Surry Road and would access the lower pond.

Although short in length, the trail will provide excellent views and an unparalleled opportunity to enjoy the woods, wetlands, and diverse tree species of the Greater Goose Pond Forest. Specific conditions of this particular trail are described in the trails report as are the specifications for an accessible trail. Given the site conditions, this trail would be fiscally responsible to construct. In the end, a trail open to all users would be created with modest expenditure and limitless community impact.

Maintenance of Existing Trails

The overall condition of the Greater Goose Pond Forest trail system is good. With some exceptions, most trails only require brushing of the trail corridor, installation of trail blazing, and removal of berms that are capturing standing water. There are some actions, suggested in the trails report, that require more extensive effort to bring the trails to a more sustainable level. This would include:

- Replacement of existing trail bridges, particularly the bridge in Segment III on railroad tracks.
- Close the main trail entrance located at the northern side of the East Surry Road parking lot, rerouting a new trail leading from the southern side of the parking lot. An informal trail currently exists. This change would allow for greater environmental sensitivity to reduce/eliminate the current soil erosion taking place.
- Improve the current conditions to the Goose Pond loop. This would help eliminate/reduce soil erosion and enhance the trail users experience since extensive roots are exposed and can be hazardous.

In the end, the work described in the trails report is aimed at improving the safety and sustainability of the Greater Goose Pond Trails. This report provides more detailed descriptions of the work prescribed for the Greater Goose Pond Forest.

Community Outreach and Education

The Greater Goose Pond Forest offers many opportunities to engage the public in natural resource education and other community activities supported by the City of Keene and its partners. Opportunities for educational and outdoor experiences are nearly endless. This section provides a springboard of potential ideas for various types of programs and partnerships. As one participant noted at the community forum, “education is good stewardship.”

Natural Outdoor Classroom

Encourage the use of the Greater Goose Pond Forest for educational purposes such as an outdoor classroom. Local schools should be encouraged to use the property for field trips or after school programs to cover a variety of natural resource topics, such as water quality monitoring, wildlife tracking, vernal pool ecology, wetlands ecology, and stream macroinvertebrate surveys, as well as art classes for painting, drawing, photography, and writing in nature. Schools could incorporate the Greater Goose Pond Forest into classroom curricula. To facilitate the use of the outdoor natural classroom, an area near Goose Pond with easy access to the parking lot on East Surry Road could be developed as a site with picnic tables, benches or cut logs for sitting.

Self-guided Interpretive Guide

Develop a self-guided interpretive guide for the Goose Pond trail. This could be in the form of a brochure and/or phone application. This is by far the most frequently used trails on the property, particularly those travelling on foot. It would an excellent way to help educate visitors on the natural and cultural history. It could include various aspects such as plant identification, stonewalls built by early colonists, signs of the 1938 hurricane, areas used as cultivation and livestock pastures, past logging activities, history of Goose Pond as the city's water supply, and wildlife habitat and ecology. Many other topics could be incorporated. The self-guided interpretive guide can be developed in partnership with the City of Keene, various school groups and other volunteers in combination with an experienced naturalist. The Horatio Colony Preserve at West Hill could be used as a great example.

Natural and Cultural History Walks

The City of Keene and its partners could organize a series of walks focused on the property's natural and cultural history. A variety of topics could be covered, including wildlife ecology, botany, wetlands and vernal pool ecology, wildlife habitat and forest management, geology, mushrooms, and land use history (such as, early agriculture by colonists, use as a water supply for the City, natural disturbances such as the 1938 hurricane, and past logging). These walks should be organized in a way that offer walks with a variety of levels of difficulty. This would encourage a diverse group of participants with different levels of hiking abilities and age groups to attend these educational walks.

Wildlife Habitat and Forest Management Demonstration Sites

Active land management presents a wonderful opportunity for community education. Two of the proposed wildlife habitat and forest management projects in the 10-year Action Plan in Section 6 would provide good opportunities for setting up demonstration sites. These sites can help to educate the public about how silviculture can be used to restore healthy forests, improve forest regeneration, and enhance wildlife habitat. Proposed projects on the Bauer and Drummer Hill lots would provide sites for easy access with a relatively short walk. These areas also provide educational opportunities to discuss the effects of invasive plants and diseases that are affecting our white pines.

Build Partnerships for Program Development and Implementation

The Monadnock Region has a wealth of institutions, businesses, and organizations that could provide assistance in developing programs and curricula for the Greater Goose Pond Forest. These partnerships could be used for similar programming on other City-owned properties. Below includes, but are not limited, an example of potential partners:

- Educational Institutions: Primary and secondary schools, Keene State College, Franklin Pierce University, Antioch University, River Valley Community College
- Land Trusts: Monadnock Conservancy, Harris Center for Conservation and Education
- Businesses: Ted's Shoe and Sport, Norm's Ski and Bike, Andy's Cycle Shop, Sam's outdoor Outfitters, Moosewood Ecological LLC, Calhoun and Corwin Forestry
- Cheshire County Conservation District
- Cheshire County Cooperative Extension
- New England Mountain Bike Association
- YMCA
- Church Groups
- Boys and Girls Scouts
- Cheshire Walkers, a program organized by Cheshire Medical Center

Develop an Outdoor Education and Recreation Committee

The City of Keene could develop a committee under the auspices of the City Council, Parks and Recreation and/or the Conservation Commission to organize and coordinate activities at the Greater Goose Pond Forest. The committee members should represent a broad range of stakeholders, including, but not limited to, Keene and regional residents, professional educators, naturalists, outdoor enthusiasts, sports coaches, City personnel, and marketing professionals.

Get the Word Out

Marketing of the various community outreach and educational opportunities is a critical component to the success of the program. Creating a "brand" for Keene's outdoor activities could provide for name recognition that could more easily draw in participants. A calendar of events should be posted on multiple City websites and social media to attract multiple age groups. Information and maps on key highlights, features, and history could be included on the Greater Goose Pond Forest website. In addition, the kiosks could be better utilized to educate the public on current activities such as habitat management, upcoming events, and maps of habitats and trails. Pamphlets on trails could also be made available to visitors so they can more easily orient themselves as they traverse the trail system.

Sponsor Events on Health and Well-being

Competitive and noncompetitive sports events are a great way to engage the community in outdoor activities. Typical sporting events such as cross-country running, cross-country skiing, and mountain biking may already be occurring at the Greater Goose Pond Forest in an organized or non-organized manner. Other events could include geocaching (an outdoor recreational activity that uses a GPS unit or mobile device to find hidden objects), orienteering, and

scavenger hunts. Walking groups, such as the Cheshire Walkers, could be encouraged to use the property for their outing events.

Additional Parking

Parking was noted as a challenge by many participants at the community forum. While additional parking is being added just south of the main parking lot on East Surry Road, the City should consider other areas to develop parking access or improve exiting sites to accommodate additional space without impacting adjacent landowners.

Survey on Property Users

We recommend conducting a survey of property users to better understand the number of visitors and the ways they use the property throughout the year. A survey was completed for the 2006 land management plan (City of Keene 2006), and this survey can be used as a basis for constructing a revised survey. Surveys can be conducted in numerous ways, such as in person at trailheads; access through website or other social media; and use of a sign-in sheet at trail entrances. The results of the survey can be used for future program development and adapt land management planning.

This young bull moose was caught on a wildlife camera walking through a hemlock-white pine forest near Goose Pond.

Section 6: ACTION PLAN

The following recommendations provide the City of Keene with an Action Plan for the Wildlife Habitat and Forest Management objectives for the next 10 years. Figures 10, 11, and 12 illustrate the management compartments, forest stands, and areas for the proposed land stewardship practices. See Appendix D for timber volume summaries and forest stand descriptions.

These actions have been recommended based on current conditions and management goals defined as part of the Land Stewardship Plan. This action plan should be revised every 10 years and in consideration of the past stewardship practices and results. This provides for an informative process to continually evolve the Plan to adapt according to past management in light of additional information gathered about the Greater Goose Pond Forest.

2019 Mark Boundary Lines

The Greater Goose Pond Forest should be blazed and painted in 2019 prior to any land management activities. This is the highest recommended priority for several reasons, including the guidance of hunters on adjacent properties since hunting is not allowed on lands owned by the City of Keene (Code of Ordinances City of Keene, NH, Chapter 58, Section 58-33); preparation for and conducting wildlife habitat and forest management practices; management of the recreational trail network; and management and avoidance of trespass related to the terms of the Conservation Easement Deed.

2020 Improve Property Access

If forest management is to be conducted on the Greater Goose Pond Forest, access must be considered and improved. This will provide guidance on access for trucks and other machinery to get into the forest. The Old Gilsum Road is the best route to gain access to a large part of the forest. Before it can be used, it needs to be improved. Erosion must be controlled and monitored. The road should be shaped with a crown and/or employ out sloping to divert water. If large crushed stones are used to fill the road washouts, then additional gravel should be added to the surface to accommodate cyclists and walkers. In addition to these repairs, landing areas should be created to conduct forestry activities, which will accommodate harvested logs and allow trucks to turn around or negotiate alternatives. These areas include Paquette Lot Stand 3, Costantino Lot Stand 25, Leigh Lot East Stand 43, and Grant Lot South Stand 60.

Summer 2020 – mid-August or later

Management Compartment 11: Grant Lot North, Stand 47

Conduct a series of 4 patch cuts, totaling approximately 6 acres, adjacent to the utility right-of-way, utilizing a log landing on Leigh Lot East in late summer. This timber stand presents an excellent opportunity to improve the browse and cover for wildlife. By cutting a patch next to the utility right-of-way, the City will be capitalizing on the opportunity to set up an alternating even-age forest system of three age classes, as well as enhancing the extent and quality of shrubland habitat within the right-of-way and providing stewardship for several species of conservation concern such as chestnut-sided warblers, eastern towhee, prairie warbler, field sparrow,

American woodcock, and ruffed grouse. This operation can also create diversity as it regenerates. As is, there is low diversity in the forest regeneration layer, which mostly includes beech and hemlock. This will be a substantial improvement of wildlife habitat over the present condition. We recommend conducting additional patch cuts in 10-year intervals. Special considerations include buffers for vernal pools and invasive species management.

Management Compartment 11: Grant Lot North, Stands 47 and 49
Conduct a combination of group selection of intermediate red maple, black oak, beech and birch, and single-tree selections of one-quarter of the canopy of red oak to improve the conditions for regenerating seedlings in the understory, as well as improvement of the red oak and red maple. This area covers approximately 6 acres and should be conducted in late summer. For single-tree selection areas, aim for 60 sq. ft. of basal area. This will benefit species of conservation concern such as black-throated blue warbler, eastern wood-pewee, wood thrush, and scarlet tanager. Special considerations include buffers for vernal pools and invasive species management.

Management Compartment 7: Leigh2 Lot, Stand 45
Conduct a 2-acre patch cut adjacent to the utility right-of-way in late summer. This timber stand presents an excellent opportunity to improve the browse and cover for wildlife. By cutting a patch next to the utility right-of-way, the City will be capitalizing on the opportunity to set up an alternating even-age forest system of three age classes, as well as enhancing the extent and quality of shrubland habitat within the right-of-way and providing stewardship for several species of conservation concern such as chestnut-sided warblers, eastern towhee, prairie warbler, field sparrow, American woodcock, and ruffed grouse. This operation can also create diversity as it regenerates. As is, there is low diversity in the forest regeneration layer, which mostly includes beech and hemlock. This operation is being considered as part of the similar patch cuts proposed on the Grant North Lot in 2020. This will be a substantial improvement of wildlife habitat over the present condition. We recommend conducting additional patch cuts in 10-year intervals. Special considerations include invasive species management.

Summer 2021 – mid-August or later
Management Compartment 11: Grant Lot South, Stands 58 and 59
Conduct a series of 10, 1.5-acre regeneration patch cuts, creating early successional and shrubland habitats in late summer. The structure of this forest is even-aged. Cutting with patch cuts mimics natural disturbances and will regenerate diversity in the forest. Browse and edge resulting from this sort of harvest is valuable and can be an interesting addition to the trail users. This type of management helps to steward various species of conservation concern such ruffed grouse, American woodcock, chestnut-sided warblers, prairie warbler, and eastern towhee. Saplings will provide good cover for deer and other wildlife. We recommend conducting additional patch cuts in 10-year intervals. Special considerations include buffers for vernal pools and invasive species management.

Management Compartment 12: Ministers Lot, Stand 52 and 53
Conduct a combination of group and single-tree selections in late summer with the intention of reducing the black oak and hemlock in favor of growing red oak. Proceed with harvesting decisions based of form, visible defects, and crown quality. Retain the best red oak trees. The purpose of performing this practice will be to encourage better trees to grow with more vitality. This will, in turn, produce more acorns, increasing food for wildlife and enhancing red oak regeneration. With no management, the forest will continue its slow conversion to beech dominance under the oak stand. Special considerations include buffers for vernal pools and invasive species management.

Management Compartment 12: Ministers Lot, Stand 55
Conduct a 2-acre patch cut adjacent to the utility right-of-way in late summer. This timber stand presents an opportunity to improve the browse and cover for wildlife. By cutting a patch next to the powerline, it will effectively create a three stage, even-aged forest with open vegetation under the utility right-of-way, the early successional shrubland habitat of the patch cut, and the neighboring mature forest. This will enhance habitat for many species of conservation concern such as chestnut-sided warbler, prairie warbler, eastern towhee, and smooth green snake, as well as create cover snowshoe hare, deer, and moose. We recommend conducting additional patch cuts in 10-year intervals. Special considerations include invasive species management.

Summer 2022 – mid-August or later
Management Compartment 4: Thompson Lot, Stand 42
This forest stand is in a healed-in condition, which is slowly evolving over time. Beech and red maple are shade tolerant saplings growing in the understory. The stand is undergoing a slow state of change with little promise for a future productive forest. It is lacking good thickets of diverse saplings. Since the compartment's canopy is all of the same age, it is also missing valuable diversity in the overstory. Management within this forest stand would help with its vigor and diversity while adding complexity for wildlife.

As such, we recommend conducting a harvest of group selections that focuses on intermediate red maple, beech, and birch. In addition, harvest 1/3 of the red oak trees within the canopy. The goal is to bring the forest to 60 sq. ft. of basal area. This will enhance light penetration into the forest, helping with forest regeneration. In about 10 years, there will be an improved sapling understory habitat. This will benefit chestnut-sided warbler, scarlet tanager, eastern wood-pewee, black-throated green warbler, and black-throated blue warbler while providing cover for many other species of wildlife. Special considerations include buffers for vernal pools and drainages, adherence to the ecological reserve system, and minimizing conflict with trails. Also, leave the lower elevation of Stand 42 untreated due to the steep slope. The recommended cutting method is cut-to-length or whole tree chipping.

Management Compartment 6: Sylvester Lot, Stand 40
We recommend conducting an improvement cutting with the intention of improving the overall genetic quality of the stand and regenerating a better, more resilient forest. Focus on removing

intermediate hemlock and black oak in groups and single tree selections. Areas should be thinned to 60 sq. ft. basal area. The criteria for harvest should be to remove the lower quality trees in favor of growing the better stems, especially red oak and white pine. Snags should be retained for cavity nesters. Performing this harvest will set back the heavy beech understory and encourage a more diverse understory. The consequences of no management in this stand include the dominance of the beech understory with intermediate hemlock and overall low tree diversity. Then, after a period of about 10 years the habitat will be substantially improved for nesting and cover for a variety of wildlife. Species of conservation concern benefiting from this stewardship activity include black-throated blue warbler, black-throated green warbler, blue headed vireo, eastern wood-pewee, veery, and white-throated sparrow. This operation should be combined with the proposed work in the Thompson Lot, Stand 42 as described above. Special considerations include invasive species management and minimizing conflict with trails.

Summer 2024 – mid-August or later

Management Compartment 1: Paquette Lot, Stands 1, 3, and 4

The Paquette Lot offers an impressive forest tract at the Greater Goose Pond Forest. It includes some significant areas set aside within the ecological reserve system, which includes specific buffers to protect sensitive habitats. As with most of the forest regeneration on the property, this compartment also has an influx of beech moving into many stands. Multiple management opportunities exist on the Paquette Lot, and we have taken a conservative approach in an area that could benefit from management activities.

Management goals are multiple based on current site conditions. Increase regeneration for the long-term forest. The shade tolerant intermediate beech, red maple, and hemlock are increasing. The understory is lacking a good sapling component. The sapling layer is important for a number of important bird species of concern. Saplings habitat is important for nesting bird habitat and deer and other mammals that are using this forest. Harvesting will encourage a more diverse understory which will establish a more promising future forest. Immediately following harvesting the forest understory will be open at first, but it will grow in with saplings of mixed species. While value considerations rank lower in the hierarchy of objectives, value and resilience are still worth considering. Managing to regenerate red oak will ensure a more resilient forest in the future. Harvesting can produce value for the city, while setting the stage for improved regeneration with a larger concentration of red oak than is currently growing. The risk in harvesting is to bring on more beech. This has happened on adjacent land and on other parts of the Greater Goose Pond Forest. To limit the incursion of beech following a harvest, the following steps should be taken. Schedule the harvest into blocks that can be accomplished in the late summer when it is driest after the nesting birds have fledged. Harvest after a good acorn year. Focus harvesting on taking out a 30-40% of the mature timber and 50-60% of the intermediate shade tolerant trees. Also, while doing the harvest, cut and remove as much beech in the sapling layer. Species of concern that would benefit from this type of management include black-throated green warbler, black-throated blue warbler, scarlet tanager, yellow-bellied sapsucker, and chestnut-sided warbler. It will also improve habitat for small mammals, deer, and avian predators.

The expected result of this harvesting will be to encourage a diverse mixed hardwood and softwood understory. In 10 years, there will be understory thickets of hardwood about 20 feet high, which will create a critical habitat that is currently lacking in the forest. In 20 years, as the overstory grows, more overstory should be removed to encourage the growth of the established understory.

Special considerations include buffers for ecologically sensitive areas such as vernal pools and wetlands, invasive species management, and minimizing conflict with trails. Haul roads should be laid out at 90 degrees to recreational trails and drainages. Leave western stands alone due to difficult access. Timber in the west part of the Paquette Lot could be managed. However, making access to the western stands will require the construction of a new access road would be expensive and probably not cost effective.

Summer 2025 – mid-August or later

Management Compartment 3: Costantino Lot, Stand 25

This mature stand of white pine, red oak, and hemlock is lacking a good sapling component; the part of the forest that helps to provide cover and breeding habitat for various wildlife, representing a missing habitat element. There is an opportunity to regenerate the forest through harvesting while making use of mature and intermediate trees. The recommended technique is to conduct small group selections of a combination of intermediate white pine, hardwoods, and hemlock with poor stem quality, and single-tree selections of one-quarter to one-third of the red oak canopy. This management technique will open the canopy to allow light penetration to the forest floor, encouraging tree regeneration and diversity over the next decade. This will also steward habitat enhancement for wildlife, including many species of concern such as the black-throated blue warbler that only inhabits forest with a dense understory. It is recommended to thin the proposed area to 60 square feet of basal area. Special considerations include buffers for streams and minimizing conflict with trails.

Management Compartment 3: Costantino Lot, Stand 26

Conduct a 2-acre patch cut adjacent to the utility right-of-way in late summer. This timber stand presents an excellent opportunity to improve the browse and cover for wildlife. By cutting a patch next to the utility right-of-way, the City will be capitalizing on the opportunity to set up an alternating even-age forest system of three age classes, including perpetual open shrubland habitat in the utility right-of-way, early succession/shrubland habitat within the proposed patch cut, and the adjacent mature forest. This will also enhance the extent and quality of shrubland habitat within the right-of-way and providing stewardship for several species of conservation concern such as chestnut-sided warblers, eastern towhee, prairie warbler, field sparrow, American woodcock, and ruffed grouse. This operation can also create diversity as it regenerates. As is, there is low diversity in the forest regeneration layer, which mostly includes beech and hemlock. This operation is being considered as part of the similar patch cuts proposed other areas adjacent to the utility right-of-way. This will be a substantial improvement of wildlife habitat over the present condition. We recommend conducting additional patch cuts in 10-year intervals. Special considerations include buffers for vernal pools, minimizing conflict with trails, and invasive species management.

Summer 2026 – mid-August or later

Management Compartment 8: Bauer Lot, Stands 84 and 86

Conduct silvicultural activities to thin the white pine, whereby removing the lowest quality trees, and release the mixed hardwoods. White pines in these stands are affected by *Caliciopsis* canker (*Caliciopsis pinea*) and needle cast (*Canavirgella banfieldii* and/or *Mycosphaerella dearnessii*). It is recommended to keep the timber harvest above 70 sq. ft. basal area to avoid blowdowns. The lack of management would result in the continual demise of white pines, which would increase the amount of fallen trees in close proximity to East Surry Road and adjacent residences. Special considerations include buffers for wetlands, invasive species management, and protection of scenic quality from the road.

Summer 2026 – mid-August or later

Management Compartment 9: Burroughs Lot, Stands 75, 76, and 77

Conduct wildlife habitat management on roughly 25 acres in late summer. Management objectives include group selections of low-grade intermediate hemlock, red maple, ash, and beech trees, and single-tree selections for about 1/3 of the red oak saw timber trees over 16 inches in diameter. This activity will encourage light resources to allow for red oak and white pine recruitment. We recommend this treatment to create 69 sq. ft. of basal area with the intention of doing an additional harvest within 10 years to release the seedling regeneration. The benefits to wildlife will be to create an uneven-aged, open forest structure with a denser sapling layer that will benefit birds like the chestnut-sided warbler, scarlet tanager, black-throated blue warbler, black-throated green warbler, veery, and eastern wood-pewee, as well as other wildlife. Special considerations include buffers for vernal pools, minimizing conflict with trails, and potential invasive species management.

Summer 2027 – mid-August or later

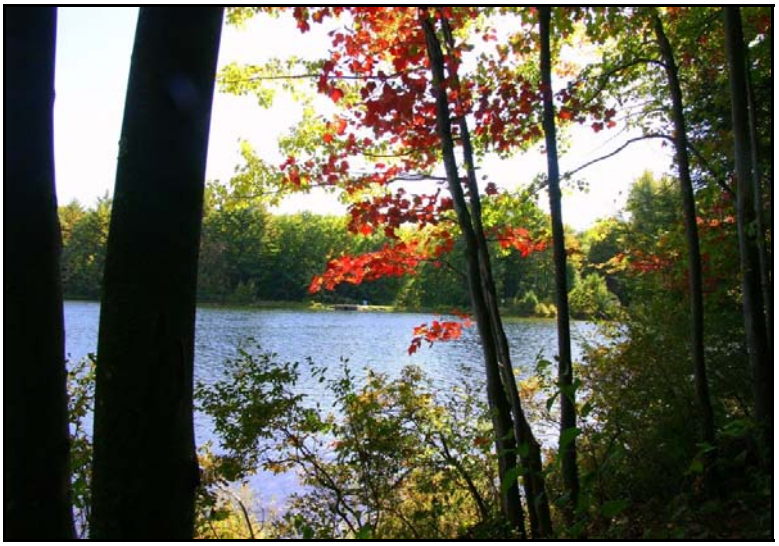
Management Compartment 15: Drummer Hill Lot, Stands 64, 65, 66, and 67

Conduct silvicultural activities to thin the white pine and release the mixed hardwoods. Harvest intermediate hemlock, red maple, beech, white birch and ash, as well as 1/3 of dominant white pine affected by *Caliciopsis* canker (*Caliciopsis pinea*) and needle cast (*Canavirgella banfieldii* and/or *Mycosphaerella dearnessii*), leaving a residual basal area of 60 sq. ft. Conduct group selections in pockets of low-quality intermediate trees with beech bark disease, as well as red maple and hemlock with poor form. The lack of management would result in an increased level of beech dominance in the understory and the continued decline of mature white pine. Special considerations include buffers for vernal pools and stream habitats, minimizing conflict with trails, and invasive species management.

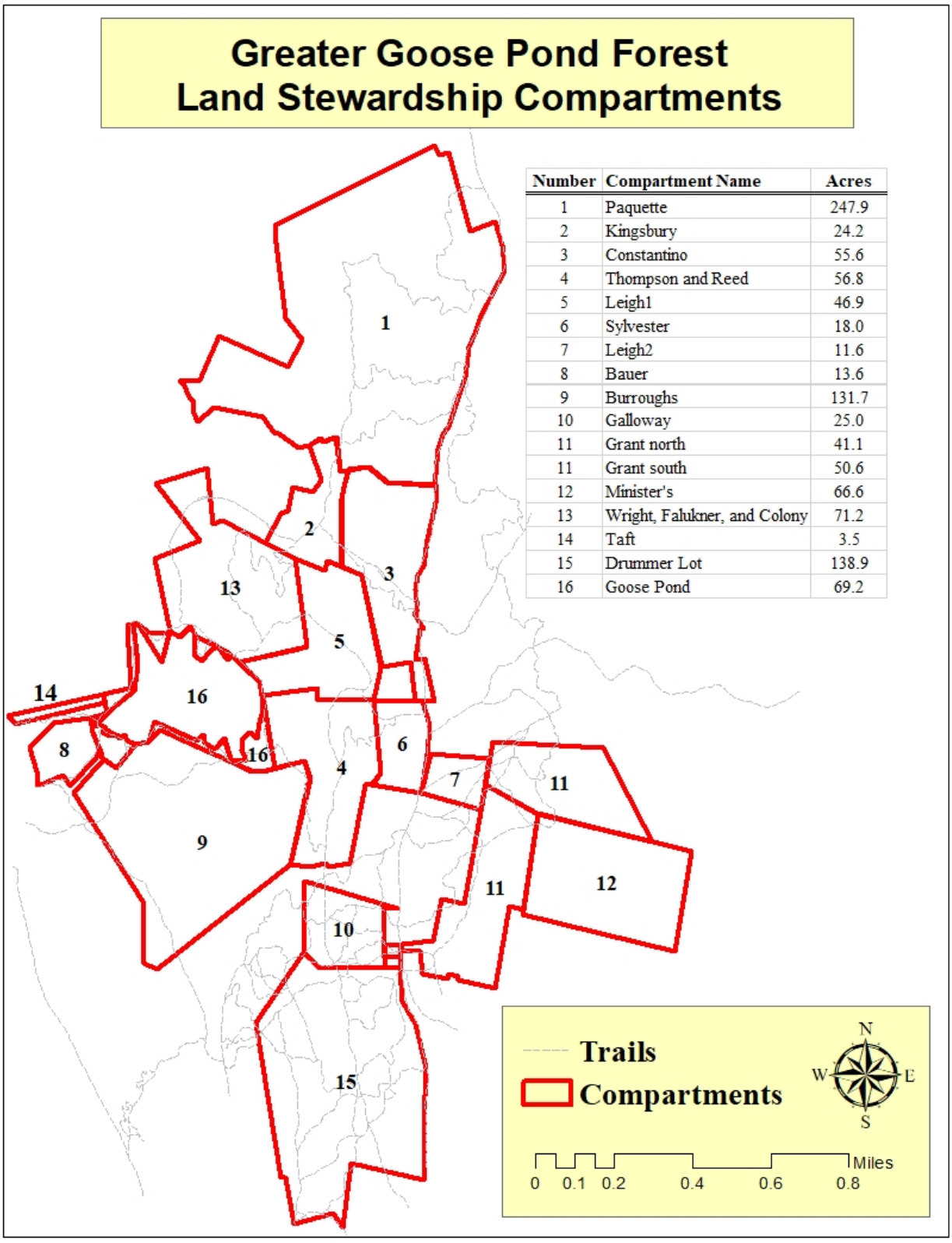
2028 Revise 10-Year Action Plan

During 2028, we recommend reviewing the results of the previous 9 years of management activities, including their intent and outcomes, in order to develop a revised 10-year Action Plan. The revised Plan should incorporate adaptive management that would further steward the purpose and goals of the Greater Goose Pond Forest. The results of previous ecological monitoring are paramount to the success of this Land Stewardship Plan. It provides as basis from

which adaptive management and future action plans should be derived. The revised 10-Year Action Plan should be developed in conjunction with a qualified wildlife ecologist and licensed forester.



As autumn draws near, red maples begin to change to vibrant red colors along the edge of Goose Pond, providing visitors a scenic experience as they stroll around the trail.



Number	Compartment Name	Acres
1	Paquette	247.9
2	Kingsbury	24.2
3	Constantino	55.6
4	Thompson and Reed	56.8
5	Leigh1	46.9
6	Sylvester	18.0
7	Leigh2	11.6
8	Bauer	13.6
9	Burroughs	131.7
10	Galloway	25.0
11	Grant north	41.1
11	Grant south	50.6
12	Minister's	66.6
13	Wright, Falukner, and Colony	71.2
14	Taft	3.5
15	Drummer Lot	138.9
16	Goose Pond	69.2

Figure 10 Land stewardship compartments of the Greater Goose Pond Forest, Keene, NH.

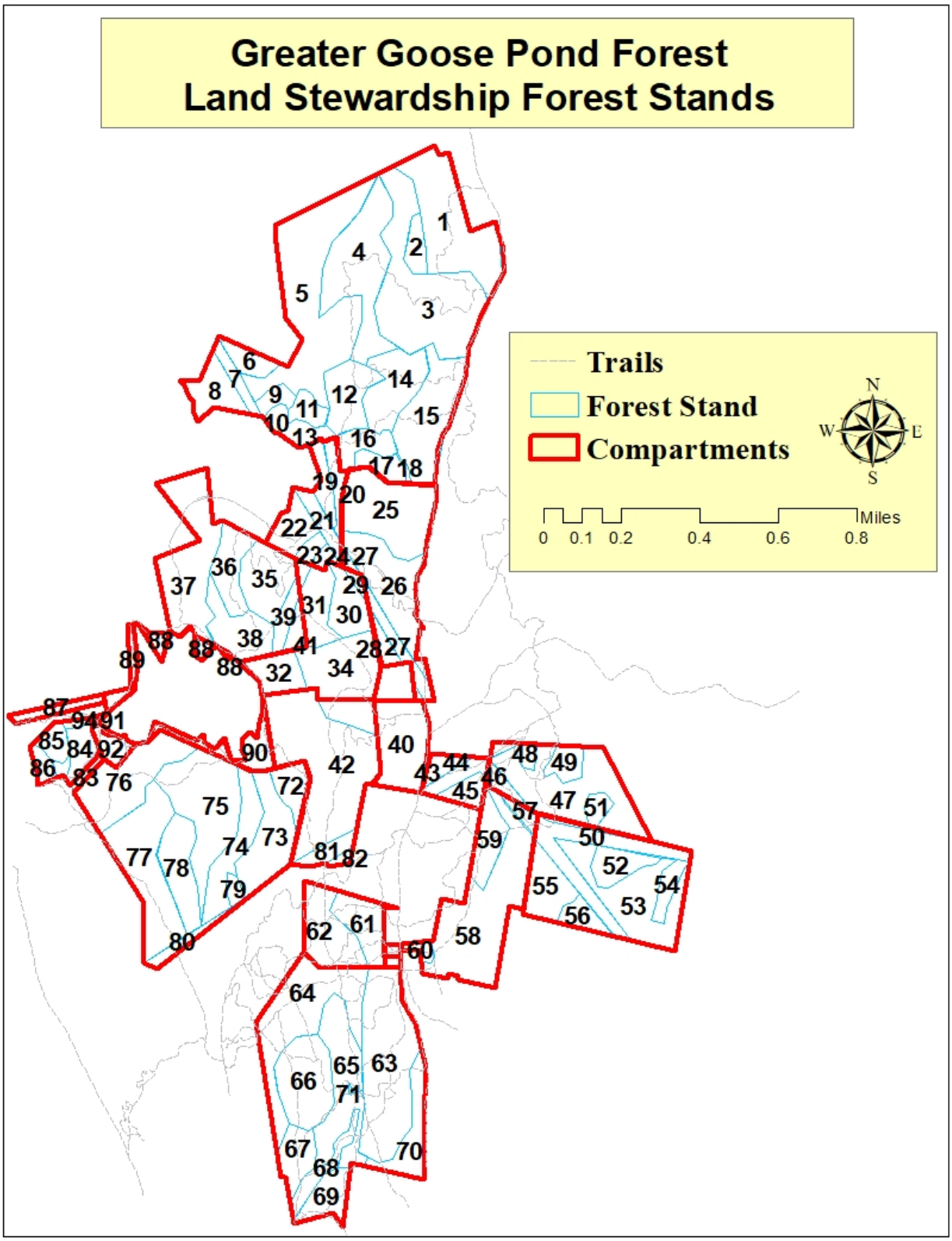


Figure 11 Land stewardship forest stands by compartments for the Greater Goose Pond Forest, Keene, NH.

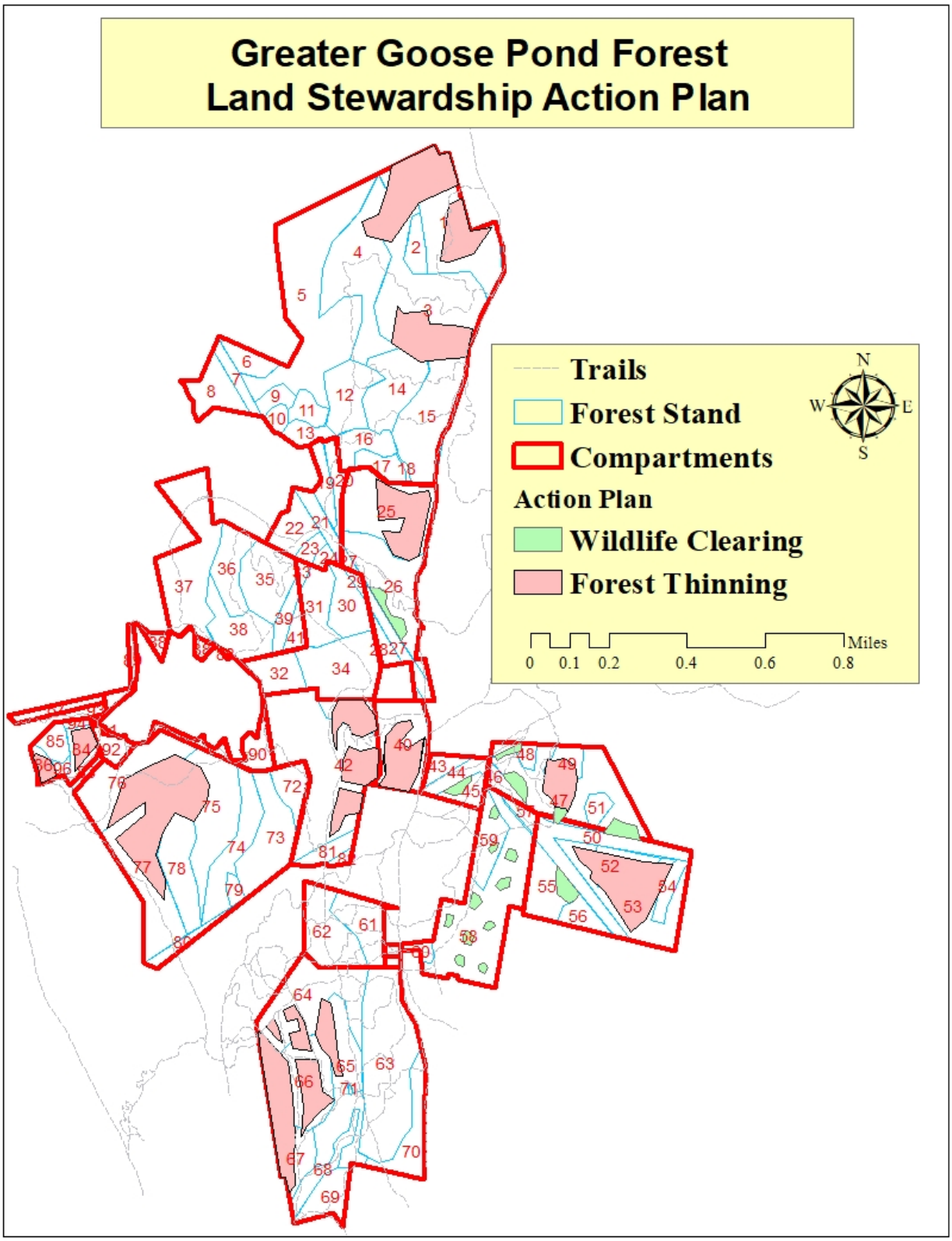


Figure 12 Land stewardship action plan proposed for wildlife habitat and forest management activities over the next 10-year for the Greater Goose Pond Forest, Keene, NH.

Section 7: CONCLUSIONS

The stewardship and management of lands in the City of Keene should not be considered lightly. It should embrace a process that includes input from various stakeholders, including citizens and property users, as well as natural resource professionals and City officials. It should encapsulate the various state, regional, and federal planning guides designed for stewardship planning to provide context of land conservation on multiple scales. The findings of well-rounded ecological and cultural assessments and current conditions are vital components as well.

Forests not only change from internal activities but external ones as well. The continued human development surrounding forest blocks affects wildlife populations, as well as the overall health, vitality, and resilience of the forested ecosystem. The internal and external forces are not static as they change over time and in response to human activities and natural disturbances.

The Greater Goose Pond Forest provides an excellent source for outdoor enthusiasts interested in an easy walk or extended hiking and biking, as well as nature exploration, inspiration, or just relaxation. While maintenance of the recreational trails occurs on an annual basis there has been very little overall land management since the 1980s.

Deciding not to conduct management is always an option, but what would this mean for the future forests and wildlife of the Greater Goose Pond Forest? How would this impact visitors who appreciate and cherish this place for daily, weekly, or monthly outings? We live in a complex and complicated ecology these days that has left us to decide how best to be stewards of our lands. Sometimes its not just as easy to let go and see what happens. Rather, we can intervene in the process to promote diverse habitats in a way that mimics natural disturbances that have driven these lands before European colonization.

We've had a heavy presence on our landscape since the 1700s. We've cleared about 80% of the land to cultivate crops and graze livestock, sometimes overgrazing to the detriment of our environment. We then abandoned these lands when it wasn't as lucrative for farming, allowing them to luckily revert back to forests. Since then our society has repeatable logged these second growth forests, reaping the benefits of its forest resources while providing good opportunities for local employment.

The forests at the Greater Goose Pond Forest have seen all these changes. The land and resident wildlife have been healing itself since land abandonment in the late 1800s. However, there are external forces that call upon us as stewards. Wildlife that use this property throughout the year for corridors, migration, breeding, resting, and feeding have been influenced by past and present human land use and they respond accordingly, although some more favorable than others.

We have developed a well-rounded understanding of the ecological and cultural elements of the Greater Goose Pond Forest. This Land Stewardship Plan offers the City of Keene a variety of options for responsible management that focuses on improving the conditions for recreation, wildlife, and forests. These actions can in turn improve the experience and education of all visitors.

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GLOSSARY

Aspect

This is a term referencing the topography of the land. It refers to the tilt of the land. This is important because the tilt affects the micro climate of the forest. A steep northern face sees little direct sun. While a south or west face gets periodic strong sun. This has an effect on the energy penetrating the forest and has implications about the forest reproduction with seedling germination and understory development.

Basal Area

This is a theoretical measure of the surface area if all of the trees in an acre were cut at 4.5 feet off the ground. It provides a basis on which timber inventories are done because it is easy to measure the basal area with an angle gauge. If one has a 10-factor angle gauge, the tool either confirms or denies that a tree at a given point is to be measured. Each tree on the point represents 10 square feet of basal area. This information taken with the diameter of the trees on the point gives a representation of the diameter distribution and the trees per acre.

Cavities

Cavities are often found on snag trees. A few species of birds and mammals animals have the natural tools to make cavities (woodpeckers) and many species of birds (blue birds, wood ducks,) and mammals (bats, flying squirrels, porcupines) use cavities. Therefore, in forest management, we regard cavity trees as an important part of the whole system. Cavity trees are important trees to leave.

DBH

Diameter Breast Height this is an important measure of the standing tree outside of the bark. It is the fundamental measurement taken when a forester does a timber inventory of standing timber.

Farmland Soils of Statewide Importance

These soils refer to land that is not prime or unique but is considered farmland of statewide importance for the production of food, feed, fiber, forage and oilseed crops. Criteria for defining and delineating farmland of statewide importance are determined by a state committee chaired by the Commissioner, New Hampshire Department of Agriculture, Markets and Food, with members representing the University of New Hampshire Cooperative Extension, New Hampshire Association of Conservation Districts and the New Hampshire Office of State Planning. The NRCS State Soil Scientist serves on this committee in an advisory capacity. The original criteria were established on June 20, 1983. It was updated on December 7, 2000. Soils of statewide importance are soils that are not prime or unique and:

- Have slopes of less than 15 percent
- Are not stony, very stony or bouldery
- Are not somewhat poorly, poorly or very poorly drained
- Includes soil complexes comprised of less than 30 percent shallow soils and rock outcrop and slopes do not exceed 8 percent.

- Are not excessively drained soils developed in stratified glacial drift, generally having low available water holding capacity.

Farmland Soils of Local Importance

Farmland of local importance is farmland that is not prime, unique or of statewide importance, but has local significance for the production of food, feed, fiber and forage. Criteria for the identification and delineation of local farmland are determined on a county-wide basis by the individual County Conservation District Boards. The original criteria were established on June 20, 1983. Updates are noted according to the county initiating the update. The criteria for soils of local importance in Rindge are as follows:

- Soils that are poorly drained, have artificial drainage established and are being farmed.
- Specific soil map units identified from the NRCS county soil survey legend, as determined by the Conservation District Board.

Forest Soil IA

The successional trends on these soils are toward stands of shade tolerant hardwood, i.e., beech and sugar maple. Successional stands frequently contain a variety of hardwoods such as beech, sugar maple, red maple, white birch, yellow birch, aspen, white ash, and northern red oak in varying combinations with red and white spruce, balsam fir, hemlock, and occasionally white pine. Hardwood competition is severe on these soils. Softwood regeneration is usually dependent upon persistent hardwood control efforts. This group consists of the deeper, loamy textured, moderately well, and well-drained soils. Generally, these soils are more fertile and have the most favorable soil moisture relationships.

Forest Soil IB

Soils in this group have successional trends toward a climax of tolerant hardwoods, predominantly beech. Successional stands, especially those which are heavily cutover, are commonly composed of a variety of hardwood species such as red maple, aspen, paper birch, yellow birch, sugar maple, and beech, in combinations with red spruce, balsam fir, and hemlock. The soils in this group are generally sandy or loamy over sandy textures and slightly less fertile than those in group IA. These soils are moderately well and well drained. Soil moisture is adequate for good tree growth, but may not be quite as abundant as in group IA soils. Hardwood competition is moderate to severe on these soils. Successful softwood regeneration is dependent upon hardwood control.

Forest Soil IC

Because these soils are highly responsive to softwood production, especially white pine, they are ideally suited for forest management. The soils in this group are outwash sands and gravels. Soil drainage is somewhat excessively to excessively drained and moderately well drained. Soil moisture is adequate for good softwood growth, but is limited for hardwoods. Hardwood competition is moderate to slight on these soils. Due to less hardwood competition, these soils are ideally suited for softwood production. With modest levels of management, white pine can be maintained and reproduced on these soils. Successional trends on these coarse textured, somewhat droughty and less fertile soils are toward stands of shade tolerant softwoods, i.e., red spruce and hemlock. Balsam fir is a persistent component in many

stands, but is shorter lived than red spruce and hemlock. White pine, red maple, aspen, and paper birch are common in early and mid-successional stands.

Forest Soil IIA

This diverse group includes many of the same soils as in groups IA and IB. However, these mapping units have been separated because of physical limitations which make forest management more difficult and costly, i.e., steep slopes, bedrock outcrops, erosive textures, surface boulders, and extreme rockiness. Usually, productivity of these soils is not greatly affected by their physical limitations. However, management activities such as tree planting, thinning, and harvesting are more difficult and more costly. Due to the diverse nature of this group, it is not possible to generalize about successional trends or to identify special management opportunities.

Forest Soil IIB

The soils in this group are poorly drained. The seasonal highwater table is generally within 12 inches of the surface. Productivity of these poorly drained soils is generally less than soils in other groups. Successional trends are toward climax stands of shade tolerant softwoods, i.e., spruce in the north and hemlock further south. Balsam fir is a persistent component in stands in northern New Hampshire and red maple is common on these soils further south. Due to abundant natural reproduction in northern New Hampshire, these soils are generally desirable for production of spruce and balsam fir, especially pulpwood. Red maple cordwood stands or slow-growing hemlock sawtimber are common in more southerly areas. However, due to poor soil drainage, forest management is somewhat limited. Severe windthrow hazard limits partial cutting, frost action threatens survival of planted seedlings, and harvesting is generally restricted to periods when the ground is frozen.

Geotropism

Is the tendency for trees to straighten out perpendicular to the earth magnetism. Where trees have been blown over in the hurricane, after many years, they take the form of a bow ultimately straightening out due to geotropism. This can be seen in especially on the east facing slopes of Compartment 2, North of Goose Pond.

G.I.S.

Geographic Information System is a way of making maps with multiple files of information. Each file contains markers that tie them exactly to where they reside on the earth. Files can be added as layers to a map. These can be turned on and off to illustrate features of the land. Layer files are available from UNH including topographic information, Roads, Property lines, aerial photos. Old surveys can be fit onto G.I.S. maps by using an image of the survey and geo referencing it to its residence points. This is useful because the old survey maps come alive when they are layered with the topography and aerial photography. This was done as part of the discovery in this plan to accurately determine where each lot is located.

Group Selection

A type of silvicultural technique that is used to harvest groups of trees to create forest openings generally between ½ acre to 2 acres. This provides space for new trees to establish, and results in an uneven-aged forest.

Growing stock

When we did the inventory, we looked at each tree to determine how it should be categorized. If a tree was a low quality, defective stem with little promise, it would be considered pulp. If it was a straight softwood tree with few defects above 12 inches DBH and a tip diameter of 9 inches it was considered a sawlog. If it was a hardwood and 16 inches with a tip diameter of 11 inches it was considered a sawlog. If the tree had good stem quality and was below a sawlog in size it was considered growing stock. Growing stock are trees that have promise for the future to grow into good sawlogs and would not be cut if harvesting were done now.

Haul Roads

Are necessary to move the logs from where they are cut in the woods to a landing. Haul road layout is important where the land is also being used for trails. With careful planning haul roads can minimize impact on well-loved trails by crossing them perpendicular where the soil is dry.

Inclusions

We attempt to make sense of a complex forest by grouping areas of like timber into stands. Within these stands, we can make recommendations. Sometimes there are inclusions of a small separate timber type within a bigger one too small to discuss separately. It is important to recognize the inclusions when doing field work to set up forestry activities in case a different silviculture system may be appropriate.

Intermediate canopy layer

This is a canopy layer formed in an even aged forest by trees that are suppressed by the dominant trees. In this forest beech, red maple, yellow birch, black birch, hemlock, aspen are all common intermediate trees. These trees will not jump to become dominant trees if dominant canopy is removed. They will more often just continue to be trees with low stature and often poor form.

Inventory

Taking inventory of the forest is also called timber cruising. It involves doing a sample of the forest. In this case we made a grid to cover each individual lot. At the intersection of the grid lines, we took a sample point. At each sample point, we used a 10 factor angle gauge (see basal area) and we measured DBH, tree height of the trees we determined to be “in” and recorded the species. In this way we were able to determine the basal area of each point to develop an average basal area for each compartment. Information that followed from this was species diameter distribution and volume of the standing timber.

MBF

One thousand board feet. This is the unit of measure of sawn timber. It is also the predictive measurement of how much sawn timber will be recovered from a tree as determined by a timber cruise.

1000 board feet = MBF= about 10000 lbs

One board foot is 1” X 12” X 12”

Merchantable Height

The height of a tree to the small end diameter of a product is a merchantable height. When we evaluate a tree in the woods we might measure a white pine that is 18" DBH and it might have four 16 foot log sections or 48 feet of merchantable height to the minimum diameter at the tip or 9 inches. Above that there is pulp measured to a 4 inch top.

Overstory

The overstory is that part of the forest where the tree tops are it is made up of dominant, co-dominant,. Below the overstory is the intermediate and understory layers.

Pulp

This is a categorization of trees by the product they would make if they were cut and marketed. Pulp trees would not make sawtimber and are not good enough to be considered as growing stock.

Regeneration

The process of forest renewal. In the simplest terms, seeds fall on the forest floor and germinate. Different tree species produce seed at different annual intervals. Seed viability varies by tree species. Different tree species produce seeds that have unique requirements to germinate. Beech has the ability to germinate in the leaf litter of an established forest and grow in the shade. This is why an established forest has a tendency to become populated with beech. Oak is more challenging to establish. It requires scarification to mineral soil in order to germinate. Acorns usually germinate best when they are slightly covered with soil. Then, once a seedling has germinated, it needs light to grow. White pine similarly needs scarified soil and sun light. Hemlock can germinate in disturbed soil and slowly grow in the shade.

Shade Tolerance

All tree species have different light requirements to thrive. Low shade tolerant trees are white birch, white ash, red oak, white pine, black cherry and aspen. Trees with high shade tolerance are red maple, sugar maple, hemlock and beech.

Silviculture

Silviculture is the art and science of growing and tending forest. Using knowledge about forest regeneration and shade tolerance, land managers can have an influence on the species that repopulate a forest by timing a particular operation. Ground conditions, canopy openings, and predictions of available seed are all factors in producing the desirable affects through the concepts of silviculture.

Snags

Snags are dead or dying trees typically in a state of decay with cavities and dead and broken branches. These trees can be hazardous in places to buildings and people especially where there is a lot of traffic. On the other hand, they are a natural part of the forest and highly valuable wildlife trees

Sawlogs and Sawtimber

This is a categorization of trees by the product they would make if they were cut and marketed. If a tree is cut and sent to a sawmill to be sawed, it is a sawlog. When estimating timber, a forester predicts how the tree will be used categorizing it as growing stock, pulp, or saw log. Stands of trees are called saw timber stands if they contain a high proportion of trees that contain sawlogs.

Timber stands

Timber stands are areas of similar timber. One hand a stand might have mostly white pine. While another stand has a mixture of red oak, beech, and red maple. There are subtleties from one stand to another that foresters read to make recommendations about how the forest can be treated.

Tons

Tons is the unit of measure for Pulpwood. A cord is about 2.5 tone depending on the hardwood. One thousand board feet of timber is about 5 tons also depending on the species.

Understory

The understory is that part of the forest under the overstory canopy and the intermediate canopy layer. It is where seedlings, shrubs and saplings reside. The understory is often populated with shade tolerant trees like beech and hemlock. The seedling and sapling understory can be important habitat for birds and cover for deer and other small mammals.

APPENDIX A
Community Forum Summary

GREATER GOOSE POND FOREST STEWARDSHIP PLAN
COMMUNITY FORUM #1 SUMMARY NOTES

On April 17, 2018, a Community Forum was held to share information on the Greater Goose Pond Forest Stewardship Plan Project and to gather information and ideas from the community on future use and management of the forest area. Over 110 individuals participated in this event, which was held at the Parks and Recreation Center on Washington Street. Following a review of the project, participants were divided into small groups and asked to discuss questions posed around three themes: Forest Ecology and Wildlife; Recreation and Use; and Education and Outreach. Each of these small group discussions were facilitated and summary notes were recorded.

The information shared by participants will be used by the Consultants overseeing this project to inform the creation of recommendations for the Forest Stewardship Plan.

A summary of the information collected during these small group discussions is included below.

I. FOREST ECOLOGY & WILDLIFE

Participants were asked to respond to the following questions:

- ***What does stewardship mean to you?***
- ***What resources do you value most in the forest?***

The feedback received from discussions around these questions is summarized below:

- Stewardship was defined in multiple ways, a summary of what stewardship means to people generally is included below:
  - Active in service to the natural world
  - Being a responsible user
  - Management Plan in place that ties in to education, encourages wildlife habitat, builds public awareness
  - Mindfully maintain land for current enjoyment and future generations
  - Reflect interdependency with natural world
  - Respect for others
  - Working forest that is self-sustaining economically
  - Planning for the future
  - Providing a future for the land
  - Caring for the land
  - Understanding and support
  - An organized plan
  - Prioritization of land use concerns
- Groups discussed actions or areas that impact or relate to stewardship of the forest. A summary of these thoughts are listed below:
  - Greater ecological diversity and improved habitat diversity.
    - Timber management is important for wildlife habitat.
    - Maintaining wildlife corridors is important.
    - There is a need to minimize wildlife disruption.
      - Old habitat edges are on powerlines.
      - Trails need to be managed to minimize effect on wildlife habitat.

        - Need to identify species that need habitat management.
        - There is concern regarding the impact of tree cutting and its effect on wild lands.
    - Caring for and improving the conditions of trails in the forest.
        - Develop 'friends of Goose Pond" to help with trail clearing and involve groups such as the Student Conservation Association, NEMBA, and mountain bike associations to help with trail maintenance.
        - Address erosion issues in the forest along mountain bike trails.
    - Education is important for building respect for the forest.
        - Partnerships and collaboration with schools, land trusts, organizations, and other volunteers to do educational programming and signage in the forest.
        - People protect what they know and love.
        - There should be mobile apps for sharing info about the forest.
        - There should be clear instructions for adjacent land owners.
        - There should be more creative signs that do not get vandalized.
    - Enforcement of rules to minimize impact of users on the forest.
        - Enforce / police the "no swimming" rules in Goose Pond
            - Some noted there is a need to reconsider the swimming ban.
        - Enforce rules regarding pets (e.g. pets on leash, picking up pet waste)
        - Control trash and partying. Consider more waste barrels, installing signs at access points, implementing fines for littering/partying.
        - Parking on the roadway should be patrolled. New parking locations should be evaluated.
    - Evaluation of the number of people / level of use that the forest can support without impacting the environment. Some feel that more users is positive, while others feel that there should be limits on the number of users.
    - Climate change considerations should be incorporated into stewardship planning/management.
    - Control for invasive species
- Individuals discussed the resources they value most in the forest. A summary of their feedback is included below:
    - Value all equally
    - Wildlife and animals such as: Newts, deer, bull moose, birds
    - Clean and clear water
    - Vernal pools
    - Flora, plant life such as: red oaks, mushrooms
    - Peace and quiet
    - Trails
    - Drummer Hill
        - "It's a gem"; beautiful trails; polite trail users

II. RECREATION & USE

Participants were asked to respond to the following questions:

- ***How do you use the forest?***
- ***How could your experience in the forest be enhanced?***

The following is a summary of the ways that the forest is being used?

- Biking
- Birding/Bird watching
- Wildlife
- Blueberry picking

- Connecting to nature
- Creating memories with family and friends
- Dog walking
- Hiking
- Enlightenment
- Exploring
- Fishing
- General exercise
- Great family area
- Meditation
- Mental wellness
- Mountain Biking / Mountain Biking year round
- Mushroom hunting
- Photography
- Picnic
- Playing
- Running
- Sitting on dock
- Snowmobiles
- Snowshoeing
- Social
- Solitude
- Walking/Walk year round
- Wildlife tracking
- Wildlife watching
- Winter activities
- XC Skiing

The following is a summary of how people noted the experience in the forest could be enhanced?

- Improved communication about the forest using city website
  - Alert the public about tree blow-downs
- Improved safety
  - Signage with phone numbers to call
  - Increased patrols
  - Patrol for homeless camps
- Improved trail markers/blazing, color identification
- Sharing trails information on the City website and having trails maps available with current trail info as well as the All Trails App on the website
- Update trail map to share with rescue team for Keene Fire and Police Department
- More maintenance of trails (focus on trail design, drainage, new trails for mountain bikes, more main trail maintenance, and more family friendly hiking trails)
- Balance between different uses, and balance between improving access and keeping it the way it is today
  - Caution for expansion
  - Leave it the way it is
  - There has to be a “too much” point
  - Be sensitive of creating a "too familiar" feeling
  - Sensitive to conservation needs
  - Keep the nature aspect of Goose Pond and Drummer Hill
- Maintaining diverse pockets for wildlife
- Allowing for or having uses such as: Boating, Camping, Ice Skating, Kayaking/Canoeing, Swimming, Dog Park, Geocaching, Outdoor yoga
- A donation bin
- More educational information and programming
- A kiosk at trailhead with history, trail map, with the ability to grab map
- More trash bins in the parking lot
- Connect Goose Pond Forest to the rail trails
- More parking at the trail entrances
- More accessible trails
- Parking meters

III. EDUCATION & OUTREACH

Participants were asked to respond to the following questions:

- ***How can the forest serve as an educational resource?***
- ***What programs or events would you like to see in the forest?***

The feedback received from discussions around these questions is summarized below:

- There is an opportunity to use the forest as a place to host guided, educational walks or hikes on an array of topics for diverse ages. Some ideas shared for walk topics include: amphibians; geology; mushroom identification; a tour of cellar holes; and birds.
- There is interest in having opportunities for "self-guided" educational walks/hikes of the forest. Signs, brochures or phone applications could be used for leading these self-guided walks.
- There is an interest in continuing to use and expand use of the forest as an outdoor learning laboratory.
    - Although college classes and some local primary/secondary schools currently use the forest as part of classroom curriculum, there is interest in having more opportunities for youth to be exposed to the forest through:
        - school field trips
        - after school programs (e.g. working with YMCA children programs)
        - organized youth mountain bike outings
        - activities such as treasure/scavenger hunts
    - There is interest in having demonstration areas with signage in the forest to display good forest management practices with educational information
- There is interest for having space (e.g. an outdoor classroom, an area of picnic tables, or a clearing in the forest with stumps) in the forest (or nearby) to hold year round programs and for teachers to use or for families to gather.
- A suggestion was made for hosting an orienteering program
- The suggestion for having organized camping for youth or groups in the forest was shared in multiple group discussions.
- There is interest in hosting events in the forest such as:
    - Those geared towards families with a focus on younger children to orient them to the forest
    - Seasonal, themed events that are supported by the City
    - Art show that features the forest but could be hosted at the library or a public space
    - Sporting events such as cross country runs, snow shoeing, cross country skiing on old roads
    - Coordinated mountain bike rides
- There is an interest in having quiet and small events that do not exceed a manageable size.
- There is an interest in partnerships with scout programs, church groups, etc. for maintaining the trails and for sharing information with the general community.
- It was suggested that the Harris Center and Monadnock Conservancy be used as a source of ideas for programming.
- It was noted that there needs to be transportation provided for events (e.g. shuttle from the YMCA).
-
- Groups identified parking as a challenge. There are not enough spaces available in the main parking lot off East Surry Road and at the Gilsum Road entrance to the Forest. There is

also a need to make parking more accessible for users. It was suggested that any new parking should not impact private property.

- It was suggested that there is a need for facilities, such as bathrooms and electricity, to accommodate school groups or other groups using the forest.
- An individual suggested the creation of a skills park, an area where youth and/or adults can learn basic mountain bike skills.
- With respect to trails, some discussed interest in having trails that are appropriate for children to learn and explore; some feel that there should be trails of varying degrees of difficulty for mountain biking; some think the mountain bike trails should be separated from walking trails; some feel that accessibility for different users with respect to age and mobility should be considered.
- It was suggested that information on the forest and its trails be better promoted online via the City website and/or creating a social media page for the Forest. The information to be shared could include trails maps, smart phone apps that promote trails like Trail Fork and Trail Find map, the NEMBA mountain bike trail map, etc.
- Information on the forest's highlights, features, and history should be shared via maps/brochures/website/and programming.
- It was expressed by multiple individuals that there is a need for improved wayfaring signage in the forest. However, it was also expressed that too much signage may deter from the user experience.
- In addition to wayfaring, it was suggested that there could be interpretive/educational signs throughout the forest to identify areas that are environmentally sensitive or to share information on the past land use/history.
- Signs should be maintained and updated.
- There could be an inventory of the forest's resources (e.g. inventory of stone walls) that is made available via the City website or a phone app that can serve as a virtual kiosk.
- There should be kiosks at the forest's entrances that have trail maps and pamphlets with a trail map that visitors can take. Kiosks could also display educational information about what lives and grows in the forest and why it is important to Keene.
- An educational tool for different age groups could be created to share information on things like vernal pools and other topics for families and schools to use.
- It was suggested there could be education (either through info on the website, via programming, or on signs or kiosks in the forest) on topics such as:
    - the history of the land;
    - how trails are built; how to enjoy nature in a respectful and sustainable way;
    - a history of the pond and how it came to be;
    - what is a conservation easement;
    - how Goose Pond fits into the larger landscape;
    - how users (walkers, bikers) should interact with each other;
    - when/how to protect trails and the pond, species in the forest.
- There is an opportunity to cross promote the mountain biking resources like the forest and biking resources like the rail trails and pathways in Keene.

  There is an opportunity to cross promote Keene's hiking opportunities with the Region's hiking resources.
- UNH and Coop Extension could hold teacher trainings on topics like GIS.

- Creating hiking groups could be a way to connect people together for hiking.
- It was suggested that a long term, multi-generational study of the forest be conducted to monitor change over time.
- There is strong interest in keeping parts of the forest “wild” and in keeping events and programs of a small group size and facilities limited (if any) to ensure that the forest remains a quiet and tranquil environment. There is a concern for the potential impacts that may come with events and programming in the forest.
- It was noted that “education is good stewardship.”
- It was suggested that the forest become an area for “Green Up Keene” stewards.
- There is a need to consider money/funding for maintenance of the forest.

APPENDIX B
Responsibility Bird Species List

Appendix I

Audubon VERMONT

Fact Sheet

Responsibility Bird Species

The Atlantic Northern Forest of Vermont, New Hampshire, Maine and New York provide breeding habitat to dozens of bird species. For some species, as much as 90% of their global population is breeding in this region. Many of these birds are seeing long-term declines that may be indicating larger ecosystem problems. The North American Bird Conservation Initiative (NABCI) defines birds like these as responsibility birds. A responsibility bird has a high proportion of its global population breeding in the region, and therefore species conservation efforts should be focused in this area. The following are birds Audubon Vermont has recognized as responsibility species in our region based on the work by NABCI.

Alder Flycatcher	Magnolia Warbler
American Redstart	Mourning Warbler
American Woodcock	Nashville Warbler
Bay-breasted Warbler	Northern Flicker
Bicknell's Thrush	Northern Parula
Black-backed Woodpecker	Olive-sided Flycatcher
Blackburnian Warbler	Ovenbird
Blackpoll Warbler	Palm Warbler
Black-throated Blue Warbler	Purple Finch
Black-throated Green Warbler	Ruffed Grouse
Blue-headed Vireo	Rusty Blackbird
Boreal Chickadee	Scarlet Tanager
Canada Warbler	Spruce Grouse
Cape May Warbler	Swamp Sparrow
Chestnut-sided Warbler	Tennessee Warbler
Chimney Swift	Veery
Eastern Wood-Pewee	White-throated Sparrow
Gray Jay	Wood Thrush
Lincoln's Sparrow	Yellow-bellied Flycatcher
Louisiana Waterthrush	Yellow-bellied Sapsucker

Photos from top to bottom: Magnolia Warbler, Blackburnian Warbler, Bicknell's Thrush, Scarlet Tanager. Bicknell's Thrush photo provided by the Vermont Institute of Natural Science, Blackburnian Warbler and Scarlet Tanager by Charlie Eiseman, Magnolia Warbler by Powdermill Banding Station in PA.

APPENDIX C
Conservation Easement Deed

CONSERVATION EASEMENT DEED

CITY OF KEENE, a municipal corporation, situated in Cheshire County, State of New Hampshire, with a mailing address of 3 Washington Street, City of Keene, State of New Hampshire, (hereinafter referred to as the "Grantor" which shall, unless the context clearly indicates otherwise, include the Grantor's legal representatives, successors and assigns)

for consideration paid, with Quitclaim covenants, grants in perpetuity to

the **SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS**, a corporation duly organized and existing under the laws of the State of New Hampshire, with a principal place of business at 54 Portsmouth Street, City of Concord, County of Merrimack, State of New Hampshire, 03301-5400, having been determined by the Internal Revenue Service to be an income tax exempt, publicly supported corporation, contributions to which are deductible for federal income tax purposes pursuant to the United States Internal Revenue Code (hereinafter referred to as the "Grantee" which shall, unless the context clearly indicates otherwise, include the Grantee's successors and assigns),

the Conservation Easement (herein referred to as the "Easement") hereinafter described with respect to those certain tracts of land (herein referred to as the "Property") with any and all buildings, structures, and improvements thereon, consisting of approximately 1,044 acres, situated on Surry Road in the City of Keene, County of Cheshire, State of New Hampshire, more particularly bounded and described in Appendix "A" attached hereto and made a part hereof.

1. PURPOSES

The Easement hereby granted is pursuant to NH RSA 477:45-47, exclusively for the following conservation Purposes (herein referred to as the “Purposes”) for the public benefit:

A. The protection and conservation on the Property of natural habitats of plants and animal species native to New Hampshire, including Goose Pond, fen wetlands, vernal pools, beaver ponds and meadows, forested seeps, intermittent streams, deer wintering areas, second-growth forests dominated by red oak, red maple, white pine and hemlock all providing habitat for species such as, but not limited to, deer, moose, bear, fisher, small

rodents (mice, mole, voles, lagomorphs), turkeys, coyotes, fox, mink, numerous amphibians, reptiles and birds which have been observed on the property;

B. The protection of the "Biologically Significant Interest Areas" thereon identified and mapped by Van de Poll (1995);

C. The enlargement of the protected land within this vicinity as the Property is near the 23 acre Surry Mountain Lake Property owned by the U.S. Army Corps of Engineers, 94 acre Maynard Forest owned by the Monadnock Conservancy, 189 acre Ashuelot River Park owned by the City of Keene, and the 28 acre Beaver Brook Canyon Park, also owned by the City of Keene;

D. The protection of the quality and availability of ground water and surface water resources on and under the Property including Goose Pond and its undeveloped shoreline which drains into the Ashuelot River; and

E. The protection of the Property for outdoor passive recreation, scientific research and the education of the general public subject to the Easement granted hereby.

The above Purposes are consistent with the clearly delineated open space conservation goals and/or objectives as stated in the 2006 Greater Goose Pond Forest (GGPF) Management Plan, Keene, NH, which states as a goal:

> "Greater Goose Pond Forest should continue as a natural, open space resource where the citizens of Keene can enjoy nature",

And the 1992 Greater Goose Pond Forest Management Plan:

> "maintain the natural beauty of the GGPF while encouraging public use. The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, or snowshoe from various points and laced with clearly marked trails and woods roads which lead to the ponds, nature walks and scenic vistas"

And consistent with the N.H. Fish and Game Department's Wildlife Action Plan, approved by the U.S. Fish and Wildlife Service in 2006, whose relevance to the Property is described in Section 1.B., D., E, and F. thereof, and whose "Strategy 700, Land Protection states:

> "Highly threatened and essential habitat resources should be priorities, such as riparian/shoreland habitat, larger unfragmented blocks, and wildlife corridors that connect significant habitat," "701 Objective: Protect riparian/shoreland habitat and other wildlife corridors," and "702 Objective: Protect unfragmented blocks and other key wildlife habitats."

and with New Hampshire RSA Chapter 79-A which states:

> "It is hereby declared to be in the public interest to encourage the preservation of open space, thus providing a healthful and attractive outdoor environment for work and recreation of the state's citizens, maintaining the character of the state's landscape, and conserving the land, water, forest, agricultural and wildlife resources."

All of these Purposes are consistent and in accordance with the U.S. Internal Revenue Code, Section 170(h).

The Easement hereby granted with respect to the Property is as follows:

2. <u>Use Limitations</u> (Subject to the reserved rights specified in Section 4 below)

Any activity on or use of the Property inconsistent with the Purposes of this Easement is prohibited. Without limiting the generality of the foregoing, the following use limitations shall apply to the Property except as otherwise specifically provided by the Easement:

A. The Property shall be maintained in perpetuity as open space without there being conducted thereon any industrial or commercial activities, except forestry and agriculture, including timber harvesting for the primary purposes of enhancing or managing wildlife habitat or educational and scientific study and in accordance with a stewardship plan approved by Grantee as described in Section 3 herein and provided that the productive capacity of the Property to support diverse wildlife populations shall not be degraded by on-site activities.

i. For the purposes hereof, “forestry" shall include the growing, stocking, cutting, and sale of forest trees of any size for forest products or wildlife habitat management but not for nursery production; the construction of roads or other access ways for the purpose of removing forest products from the Property; and the processing and sale of products produced on the Property (such as maple syrup), all as not to be detrimental to the Purposes of this Easement and guided by a Stewardship Plan outlined in Section 3.

ii. For the purposes hereof, “agriculture” shall include, floriculture and horticulture activities and the production of plants for domestic or commercial purposes; the construction of roads or other access ways for the purpose of removing agricultural products form the Property, the use of farm equipment; and the processing and sale of agricultural products produced on the Property, all as not to be detrimental to the Purposes of this Easement and guided by said Stewardship Plan. Agriculture shall not include aquaculture, greenhouse agriculture or the growing and removal of sod.

iii. For the purposes hereof, “wildlife habitat management” shall include, but not be limited to, alteration of vegetation and soil and the placement of structures to provide habitat for a wide range of wildlife species; the construction and modification of roads or other access ways for the purpose of performing such activities, the use of farm or forest equipment, the processing and sale of agricultural or forest products in association with such management, all as not to be detrimental to the Purposes of this

Easement and guided by said Stewardship Plan.

B. The Property shall not be subdivided and none of the individual tracts which together comprise the Property shall be conveyed separately from one another beyond what is permitted below, except that the lease of any portion of the Property for any use permitted by this Easement shall not violate this provision. The Property may be subdivided and conveyed separately into not more than three (3) tracts each containing not less than 100 acres only for assignment to the State of New Hampshire, the U.S. Government, or any subdivision of either of them, consistent with Section 170(c)(1) of the U.S. Internal Revenue Code of 1986, as amended, or to any qualified organization within the meaning of Section 170(h)(3) of said Code, which organization has among its purposes the conservation and preservation of land and water areas, agrees to and is capable of observing and protecting the conservation purposes of this Easement, and has the resources to do so.

C. Except as specifically provided for below, no structure or improvement, including, but not limited to, a dwelling, any portion of a septic system, portable or composting toilet, educational building, tennis court, swimming pool, dock, athletic field, pavilion, shooting range, aircraft landing strip, tower or mobile home, shall be constructed, placed, or introduced onto the Property. However,

   i. ancillary structures and improvements including, but not limited to, an unpaved road, dam, gate, fence, bridge, culvert, wildlife blind, barn, or maple sugar house or wildlife nest structure may be constructed, placed, or introduced onto the Property only to the extent necessary to accomplish the forestry, agricultural, conservation, recreation, educational or wildlife habitat management uses of the Property as permitted by this Easement and provided that they are not detrimental to the Purposes of this Easement; and

   ii. Existing parking lots and trails documented in the Baseline Documentation Report on file at the offices of the Grantee and Grantors may be used, maintained and repaired. Provided that they are not detrimental to the Purposes of this Easement, the Grantor may also install, use, maintain, and repair on the Property recreational and educational trails, including parking areas and erect informational kiosks and other signs relating to the recreational and educational uses thereon. Additionally, the Grantor may install, maintain, repair, and improve gates, barriers, signs and fences necessary to guide or control public access on the Property. Other than routine maintenance of existing parking lots and trails any installation or development of new parking lots and trails shall be in accordance with said Stewardship Plan.

D. No removal, filling, or other disturbances of soil surface, nor any changes in topography, surface or subsurface water systems, wetlands, or natural habitat shall be allowed unless such activities:

   a. are commonly necessary in the accomplishment of the forestry, agricultural, conservation, scientific research, wildlife habitat management, or low-impact non-commercial outdoor recreational uses of the Property as permitted by this Easement;

   b. do not harm state or federally recognized rare, threatened, endangered species or

other species of conservation concern, or exemplary natural communities, such determination of harm to be made at the sole discretion of the Grantee and to be based upon information from the New Hampshire Natural Heritage Inventory or the agency then recognized by the State as having responsibility for identification and/or conservation of such species; and

c. are not detrimental to the Purposes of this Easement; and

d. are permitted and approved by all federal, state, local, and other governmental entities, as necessary before said activities take place.

E. No outdoor advertising structures such as signs and billboards shall be displayed on the Property except as desirable or necessary in the accomplishment of the forestry, agricultural, conservation, education, or low-impact noncommercial outdoor recreational uses of the Property, and provided such signs are not detrimental to the Purposes of this Easement. No sign shall exceed 50 square feet in size and no sign shall be artificially illuminated.

F. There shall be no mining, quarrying, or excavation of rocks, minerals, gravel, sand, topsoil, or other similar materials on the Property, except in connection with any improvements made pursuant to the provisions of Sections 1.A., C., D. or E., , above. No such rocks, minerals, gravel, sand, topsoil, or other similar materials shall be removed from the Property.

G. There shall be no dumping, spreading, injection, burning, or burial of biosolids, man-made materials or materials then known to be environmentally hazardous.

H. The Property shall in no way be used to satisfy the density, frontage or setback requirements of any applicable zoning ordinance or subdivision regulation with respect to the development of any other property.

I. Use of pesticides or herbicides in connection with the permitted activities must be approved in advance in writing by the Grantee.

J. The use of snowmobiles and/or other motorized vehicles for recreational purposes shall not be permitted, except as otherwise specifically provided for in Section 4 below.

K. No rights-of-way or easements of ingress or egress in favor of any third party shall be created or developed into, on, over, or across the Property without the prior written approval of the Grantee, except those of record as of the execution of this Easement and those specifically permitted in the provisions of this Easement.

N. The Property shall not be posted against, and the Grantor shall keep access to and use of the Property open to the public for pedestrian non-commercial, outdoor recreational and outdoor educational purposes as will have minimal impact on the Property, except as otherwise specifically provided for in Section 4 below**.**

3. STEWARDSHIP PLANNING

STEWARDSHIP GOALS

A. The right to undertake or continue any activity or use of the Property consistent with the Purposes as defined in Section 1, above, and not otherwise prohibited by this Easement, provided that all substantial changes in land uses and management activities shall be in accordance with a written wildlife habitat and land management plan (the "Stewardship Plan") consistent with the following stewardship goals at the time of execution of this Easement and in a manner not detrimental to the Purposes of the Easement.

i. The stewardship goals are:

- Maintenance of the natural beauty of the Property while encouraging public use.
- The area should provide the citizens of Keene a large woodland area accessible only on foot, ski, peddle bike, horseback, or snowshoe from various points and laced with clearly marked trails and woods roads which lead to the ponds, nature walks and scenic vistas.
- Protection of fragile or highly erodible soils and maintenance of soil productivity;
- Protection of water quality, aquatic habitat, vernal pools and the ecological integrity of wetlands and riparian zones;
- Maintenance or enhancement of native biological diversity and natural habitat features found on the Property and representative of the region;
- Identification, protection, and conservation of exemplary natural communities, unique or fragile natural areas, and rare plant and animal species on the Property, particularly those identified by the Nongame and Endangered Wildlife Program, the New Hampshire Natural Heritage Bureau, or their successor entities; and
- Protection of unique historic and cultural features.
- Conservation of scenic quality as seen from public roads, trails and waters.

PLAN PREPARATION AND APPROVAL

B. Forestry, agricultural, recreation, scientific study and wildlife habitat management activities ("Land Activities") shall be conducted in accordance with the said Stewardship Plan, prepared by a licensed professional forester, a certified wildlife biologist, qualified city employee or by other qualified person (the "Resource Professional"). Any person other than a licensed professional forester, certified wildlife biologist, or qualified city employee shall be considered a Resource Professional under this Easement only if approved in advance and in writing by the Grantee. Said Stewardship Plan must be prepared, approved and implemented in accordance with this Easement.

i. Prior to the Grantor conducting Land Activities on the Property, and if there is no existing plan that meets all the requirements of this Section 3; the Grantor shall prepare the Stewardship Plan as follows:

a. The Grantor's Resource Professional shall draft a Plan, prepared as outlined herein.

b. The Grantor shall submit said Plan to Grantee for review and input regarding the wildlife habitat impacts, consistency with the Purposes stated in Section 1, the above stated stewardship goals and compliance with this Easement.

c. At least forty five (45) days prior to commencing Land Activities, Grantor shall submit the Stewardship Plan to the Grantee for approval.

d. Within forty five (45) days after Grantee's receipt of said Plan, the Grantee shall approve or disapprove the same with respect to its wildlife habitat impacts, consistency with the Purposes stated in Section 1, said stewardship goals stated in Section 3.A. and compliance with this Easement, and so inform the Grantor in writing. Any disapproval shall specify in detail the reasons therefor. If the Grantee fails to so approve or disapprove within said period, Grantor may proceed with Land Activities recognizing that the paragraph below applies.

e. Grantor and Grantee acknowledge that the Stewardship Plan's purpose is to guide Land Activities in compliance with this Easement and that the actual activities will determine compliance therewith.

ii. The Stewardship Plan shall specifically address and include at least the following elements:

a. The long-term protection of the Purposes for which this Easement is granted, as described in Section 1. above;

b. The above stated stewardship goals set;

c. A statement of landowner management objectives consistent with the Purposes of this Easement and said stewardship goals;

d. A map showing the Property's boundaries, access roads, public use areas and forest stand types;

e. A description of the Property's existing conditions and natural features including land cover, topography, soils, geology, wetlands, streams and ponds, wildlife habitat features, low-impact non-commercial recreational and educational uses, and boundary conditions;

f. Identification of plant and wildlife species of conservation concern, and how management will enhance or avoid detrimental impacts to them;

g. Proposed management prescriptions for wildlife habitat management, forestry, conservation, low-impact non-commercial recreation, and education; and

h. Proposed schedule of implementation of management prescriptions, including a schedule for boundary, road and trail maintenance.

iii. The Stewardship Plan shall have been prepared not more than ten (10) years prior to the date of any Land Activity. Plans prepared more than ten (10) years prior to commencement of the date of the anticipated Land Activities must be reviewed and updated for Grantee's approval in accordance with the provisions hereof.

iv. In the event that the Grantor proposes a new Land Activities (outside of routine maintenance activities) not included in a previously approved Plan, the Grantor shall submit an amendment to the existing Stewardship Plan for Grantee's approval in

accordance here with prior to conducting any such new Land Activities. Any such amendment shall include any changes and additions to or deletions from the approved Stewardship Plan.

C. Timber harvesting shall be conducted in accordance with the approved Stewardship Plan, be supervised by a Resource Professional and be subject to the following additional requirements:

   i. Harvesting shall be carried out in accordance with all applicable local, state, federal, and other laws and regulations, and in accordance with then-current, generally accepted best management practices for the sites, soils, and terrain of the Property. For references, see "Best Management Practices for Erosion Control on Timber Harvesting Operations in New Hampshire" (J.B. Cullen, 1996), and "Good Forestry in the Granite State: Recommended Voluntary Forest Management Practices for New Hampshire" (New Hampshire Forest Sustainability Standards Work Team, 1997), and "Best Management Practices for Erosion Control During Trail Maintenance and Construction" (State of New Hampshire, Department of Resources and Economic Development, Division of Parks and Recreation, Trails Bureau, 1996), or similar successor publications; and

   ii. In areas used by, or visible to, the general public, harvesting shall be carried out, to the extent reasonably practicable, in accordance with the recommendations contained in "A Guide to Logging Aesthetics: Practical Tips for Loggers, Foresters, and Landowners" (Geoffrey Jones, 1993) or similar successor publications.

D. Agriculture for industrial or commercial purposes shall be conducted in accordance with the approved Stewardship Plan and shall be subject to the following additional requirements:

   i. Said agricultural management activities shall be in accordance with the then-current scientifically based practices recommended by the University of New Hampshire's Cooperative Extension Service, by the U.S. Department of Agriculture's Natural Resources Conservation Service, by the New Hampshire Department of Agriculture, Markets, and Food, including but not limited to recommended practices in said NH Department's "Manual of Best Management Practices (BMPs) for Agriculture in New Hampshire" as may be revised, updated, or superseded from time to time, or by other successor governmental natural resource conservation and management agencies then active.

   ii. The Grantor may cut and remove forest vegetation and natural regeneration to establish and maintain open areas for permitted agricultural use provided that prior notice and approval is provided by the Grantee in accordance with the, Stewardship Plan and, provided further, that no land within 200 feet of the normal high water mark of the shore or the upland edge of any wetlands may be cleared for these purposes and, further provided, that all such work shall be conducted in accordance with a written clearing and field establishment plan for each specific site approved in advance and in writing by Grantee, designed to assure completion of such clearing, grading, and reseeding, as soon as practicable and in a manner to

minimize erosion and sedimentation, and to preserve the scenic character of the Property when viewed from public vantage points.

4. RESERVED RIGHTS

A. **Restrictions on Public Access** - Grantor reserves the right to control, limit access or post against, any non-pedestrian access or uses, including any motorized vehicles including: boating, snowmobiles, all terrain vehicles, and motorcycles. Additionally, the Grantor may control, limit access or post against camping, swimming, trapping, hunting, and temporarily restrict access to recreational areas or trails, parking areas, agricultural croplands, and forest land during harvesting or maintenance activities, or to protect wildlife breeding areas.

B. **Access Roads and Utilities -** Grantor reserves the right to install, repair, replace and maintain access roads and utilities across the Property solely to serve any facilities permitted by this Easement. . Other then routine maintenance of existing access roads and utilities any installation or development of new access roads and utilities shall be in accordance with said Stewardship Plan above.

C. **Camping -** Grantor reserves the right to allow the public to conduct non-commercial, low-impact, recreational camping and/or outdoor educational activities on the Property. Said camping may include the erection of tents.

D. **Beach Area or Outdoor Recreational Area -** Grantor reserves the right to install and maintain a beach and swimming/recreation area on or near the shore of Goose Pond including accessory structures, such as; picnics tables, docks, gazebos, sheds, changing areas, and toilet facilities with associated septic field, wells, electrical power, and other necessary structures. Said area shall not exceed two acres in size not including utilities and access roads. At least forty five (45) days prior to any land clearing, earth moving, alteration of terrain, or construction of buildings, structures, or improvements for said recreational use, the Grantor shall provide a written notice. Said notice shall include the specific details of said exercise, including but not limited to location, scope, size, timing, duration, method of construction, and other details sufficient for the Grantee to assess conformance with: a) the provisions hereof; b) the impact of the proposed use, building, structure, or improvement on the Property and on the Purposes of this Easement. Said activities may commence only after written approval by the Grantee, following Grantee's determination that the proposed uses, buildings, structures, and improvements conform to the provisions hereof. Within forty five (45) days after Grantee's receipt of such notice and plan, the Grantee shall approve or disapprove in writing the proposed exercise, such approval not to be unreasonably withheld, and the Grantee shall so inform the Grantor. Any disapproval shall specify in detail the reasons therefor. Grantee's failure to so approve or disapprove within said period shall constitute an approval of the proposed exercise. Prior to commencement of any such activities, all necessary federal, state, local, and other governmental permits and approvals shall be secured. This reserved right is exerciseable only by the City of Keene, the State of New Hampshire, the U.S. Government, or any subdivision of either of them, and no others in any capacity.

E. **Limited Commercial Recreational Use** - The Grantor reserves the right, subject to Grantee's approval which shall not be unreasonably withheld, to use the Property for low-impact, dispersed, commercial outdoor recreational uses with minimal detrimental impacts to the Purposes of this Easement, including but not limited to cross-country skiing, riding horses, camping, swimming, hiking, and fishing. Furthermore in connection therewith, the Grantor reserves the right to construct, utilize, maintain, repair, relocate, or replace buildings, structures, and improvements on the Property which are ancillary to and necessary for said recreational uses, as provided below. Notwithstanding the foregoing there shall not be construction, placed or established onto the Property any of the following buildings, structures, and improvements athletic fields, golf courses, courses for motorized wheeled vehicles, and facilities or improvements requiring significant alteration of terrain or natural drainage patterns. Said right is exerciseable only by the City of Keene, the State of New Hampshire, the U.S. Government, or any subdivision of either of them, and no others in any capacity. All of the following provisions shall apply to the exercise of this reserved right:

i. The total footprint of all buildings, including decks, porches, storage sheds, outhouses, or other outbuildings, or of any structures ancillary to said recreational uses shall not exceed 300 square feet in size. Furthermore, the cumulative footprint of all said buildings and ancillary structures shall not exceed 500 square feet in size.

ii. The height of any such building or ancillary structure shall not exceed 25 feet as measured from the average grade to the highest elevation of any structure.

iii. Above ground and underground public utility lines, including but not limited to power, communication, water, and sewer lines, are permitted only as necessary.

iv. Septic systems, outhouses, composting toilets and similarly self-contained disposal systems, are permitted only as necessary.

v. Any such recreational buildings, structures and improvements and the sites therefor shall be located and constructed, to the extent reasonably practicable, so as to minimize any detrimental impacts on the Purposes of this Easement, including without limitation, the scenic qualities of the Property as viewed from public roads and public waters.

vi. At least forty five (45) days prior to any land clearing, earth moving, alteration of terrain, or construction of buildings, structures, or improvements for any said recreational uses, the Grantor shall provide a written notice and "Commercial Recreational Use Plan" to the Grantee for Grantee's approval. Said notice and plan shall include the specific details of said exercise, including but not limited to location, scope, size, timing, duration, method of construction, and other details sufficient for the Grantee to assess conformance with: a) the provisions of this Section 3.G.; b) the impact of the proposed use, building, structure, or improvement on the Property and on the Purposes of this Easement. Said activities may commence only after written approval by the Grantee, following Grantee's determination that the proposed uses, buildings, structures, and improvements conform to the provisions hereof . Within forty five (45) days after Grantee's receipt of such notice and plan, the Grantee shall approve or disapprove in writing the proposed exercise, such approval not to

be unreasonably withheld, and the Grantee shall so inform the Grantor. Any disapproval shall specify in detail the reasons therefor. Grantee's failure to so approve or disapprove within said period shall constitute an approval of the proposed exercise. Prior to the commencement of any such activities, all necessary, State and other governmental permits and approvals shall be secured.

F. **Archaeological Investigations** - Grantor reserves the right to permit archaeological investigations on the Property after receiving written approval from the Grantee. Prior to permitting any such investigations, Grantor shall send written notice to the New Hampshire State Archaeologist (or other person or agency then recognized by the State as having responsibility for archaeological resources) for review and comment, and to the Grantee, such notice describing the nature, scope, location, timetable, qualifications of investigators, site restoration, research proposal, and any other material aspect of the proposed activity. The Grantor and Grantee shall request the State Archaeologist (or other person or agency, as above) to consider the proposal, to apply the standards as specified in rules implementing RSA 227-C:7 (Permits Issued for State Lands and Waters), and to provide written comments to the Grantor and Grantee. The Grantee may, in its sole discretion, approve the proposed investigations only if it finds that all of the following conditions are met:

i. The archaeological investigations shall be conducted by qualified individuals and according to a specific research proposal;

ii. The proposed activities will not harm state or federally recognized rare, endangered, or threatened species, or exemplary natural communities, such determination of harm to be based upon information from the New Hampshire Natural Heritage Bureau or the agency then recognized by the State of New Hampshire as having responsibility for identification and/or conservation of such species; and

iii. The proposed activities will not be materially detrimental to the Purposes of this Easement.

G. **Existing Public Water Supply Facilities** - The Grantor reserves the right to maintain and repair the existing water storage and supply facilities found on Tract M of the Property, documented in the said Baseline Documentation Report on file at the offices of the Grantor and Grantee, for the sole purposes of providing a public water supply system, as defined by NH R.S.A. 485:1-a, XV, as may be amended from time to time. Additionally the Grantor reserves the right to withdraw surface or groundwater on a sustainable yield basis and to remove said groundwater from the Property only for the purpose of providing a public water supply system, as defined by said NH R.S.A. 485:1-a, XV,. Withdrawal or removal of groundwater for private, commercial purposes is expressly prohibited. For the purposes hereof, permitted activities in conjunction with said withdrawal and/or removal shall consist of but not be limited to the use, maintenance, monitoring, repair and replacement of existing water supply facilities, water production wells, water distribution system, pumping stations, holding tanks and ancillary improvements such as but not limited to roads, signs, utilities, and security facilities; and the extraction and removal of groundwater from the Property. This provision is an exception to Sections 2.C., D., E., and F. above. Said right is exerciseable only by the City of Keene, the

State of New Hampshire, the U.S. Government, or any subdivision of either of them and no others in any capacity. The following provisions shall apply to the exercise of said rights:

a. In order to conduct any replacement activities or significant alterations of said facilities, the Grantor shall provide written notice to the Grantee of the proposed exercise at least forty five (45) days prior to the commencement of any thereof. No approval or notification is necessary for general monitoring, maintenance or routine repairs. Said notice shall include the specific details of said exercise, including but not limited to location, scope, size, timing, duration, method of construction, and changes in pumping rates. Said notice of replacement activities or significant alterations shall also minimize detrimental impacts on the Purposes of this Easement, including the protection of: scenic features as viewed from public roads and trails; conservation features of the Property which are dependent on water quality and quantity, such as but not limited to Goose Pond, streams, wetlands, vernal pools and other aquatic habitat. Said replacement or significant alterations activities may commence only after written approval by the Grantee, following Grantee's determination that the proposed activities shall minimize any detrimental impacts on the Purposes of this Easement and the aforesaid features. Within forty five (45) days after Grantee's receipt of such notice, the Grantee shall approve or disapprove in writing the proposed exercise, such approval not to be unreasonably withheld, and the Grantee shall so inform the Grantor. Any disapproval shall specify in detail the reasons therefor. Grantee's failure to so approve or disapprove within said period shall constitute an approval of the proposed exercise.

H. **Snowmobile Trails -** Grantor reserves the right to permit the use of and maintain the existing snowmobile trails located only on Old Gilsum Road and adjacent utility right of ways, along with any associated improvements including, but not limited to signs, fences, bridges, culverts, so long as said use is only minimally detrimental to the Purposes of the Easement. It is understood that Old Gilsum Road is a class VI Town Road at this time but could become part of the Easement Property in the future. Said right for snowmobile trails shall not include the construction of any buildings.

5. NOTIFICATION OF TRANSFER, TAXES, MAINTENANCE

A. The Grantor agrees to notify the Grantee in writing at least 10 days before the transfer of title to the Property.

B. The Grantee shall be under no obligation to maintain the Property or pay any taxes or assessments thereon.

6. BENEFITS AND BURDENS

The burden of the Easement conveyed hereby shall run with the Property and shall be enforceable against all future owners and tenants in perpetuity; the benefits of this Easement

shall not be appurtenant to any particular parcel of land but shall be in gross and assignable or transferable only to the State of New Hampshire, the U.S. Government, or any subdivision of either of them, consistent with Section 170(c)(1) of the U.S. Internal Revenue Code of 1986, as amended, or to any qualified organization within the meaning of Section 170(h)(3) of said Code, which organization has among its purposes the conservation and preservation of land and water areas, agrees to and is capable of protecting the conservation purposes of this Easement, and has the resources to enforce the restrictions of this Easement. Any such assignee or transferee shall have like power of assignment or transfer.

7. AFFIRMATIVE RIGHTS OF GRANTEE

A. The Grantee shall have reasonable access to the Property and all of its parts for such inspection as is necessary to determine compliance with and to enforce this Easement and exercise the rights conveyed hereby and fulfill the responsibilities and carry out the duties assumed by the acceptance of this Easement.

B. To facilitate such inspection and to identify the Property as conservation land protected by the Grantee, the Grantee shall have the right to place signs, each of which shall not exceed 24 square inches in size, along the Property's boundaries.

8. RESOLUTION OF DISAGREEMENTS

A. The Grantor and the Grantee desire that issues arising from time to time concerning uses or activities in light of the provisions of the Easement will first be addressed through candid and open communication between the parties rather than unnecessarily formal or adversarial action. Therefore, the Grantor and the Grantee agree that if either party becomes concerned whether any use or activity (which together for the purposes of this Section, "Resolution of Disagreements," shall be referred to as the "Activity") complies with the provisions of this Easement, wherever reasonably possible the concerned party shall notify the other party of the perceived or potential problem, and the parties shall explore the possibility of reaching an agreeable resolution by informal dialogue.

B. If informal dialogue does not resolve a disagreement regarding the Activity, and the Grantor agrees not to proceed or to continue with the Activity pending resolution of the disagreement concerning the Activity, either party may refer the disagreement to mediation by written notice to the other. Within ten (10) days of the delivery of such a notice, the parties shall agree on a single impartial mediator. Mediation shall be conducted in Concord, New Hampshire, or such other location as the parties shall agree. Each party shall pay its own attorneys' fees and the costs of mediation shall be split equally between the parties.

C. If the parties agree to bypass mediation, if the disagreement concerning the Activity has not been resolved by mediation within sixty (60) days after delivery of the notice of mediation, or if the parties are unable to agree on a mediator within ten (10) days after delivery of the notice of mediation, the disagreement shall be submitted to binding

arbitration in accordance with New Hampshire RSA 542. The Grantor and the Grantee shall each choose an arbitrator within twenty (20) days of the delivery of written notice from either party referring the matter to arbitration. The arbitrators so chosen shall in turn choose a third arbitrator within twenty (20) days of the selection of the second arbitrator. The arbitrators so chosen shall forthwith set as early a hearing date as is practicable, which they may postpone only for good cause shown. The arbitration hearing shall be conducted in Concord, New Hampshire, or such other location as the parties shall agree. A decision by two of the three arbitrators, made as soon as practicable after submission of the matter, shall be binding upon the parties and shall be enforceable as part of this Easement.

D. Notwithstanding the availability of mediation and arbitration to address disagreements concerning the compliance of any Activity with the provisions of this Easement, if the Grantee believes that some action or inaction of the Grantor or a third party is causing irreparable harm or damage to the Property, the Grantee may seek a temporary restraining order, preliminary injunction or other form of equitable relief from any court of competent jurisdiction to cause the cessation of any such damage or harm, to enforce the terms of this Easement, to enjoin any violation by permanent injunction, and to require the restoration of the Property to its condition prior to any breach.

9. **BREACH OF EASEMENT – GRANTEE'S REMEDIES**

A. If the Grantee determines that a breach of this Easement has occurred or is threatened, the Grantee shall notify the Grantor in writing of such breach and demand corrective action to cure the breach and, where the breach involves injury to the Property, to restore the portion of the Property so injured to its prior condition.

B. The Grantor shall, within thirty (30) days after receipt of such notice or after otherwise learning of such breach, undertake those actions, including restoration, which are reasonably calculated to cure swiftly said breach and to repair any damage. The Grantor shall promptly notify the Grantee of its actions taken hereunder.

C. If the Grantor fails to perform its obligations under the immediately preceding paragraph B. above, or fails to continue diligently to cure any breach until finally cured, the Grantee may undertake any actions that are reasonably necessary to repair any damage in the Grantor's name or to cure such breach, including an action at law or in equity in a court of competent jurisdiction to enforce the terms of this Easement, to enjoin the violation, *ex parte* as necessary, by temporary or permanent injunction, and to require the restoration of the Property to the condition that existed prior to any such injury.

D. If the Grantee, in its sole discretion, determines that circumstances require immediate action to prevent or mitigate significant damage to the conservation features of the Property, the Grantee may pursue its remedies under this Section, "Breach of Easement…," without prior notice to the Grantor or without waiting for the period provided for cure to expire.

E. The Grantee shall be entitled to recover damages from the party directly or primarily responsible for violation of the provisions of this Easement or injury to any conservation features protected hereby, including, but not limited to, damages for the loss of scenic, aesthetic, or environmental attributes of the Property. Without limiting the Grantor's liability therefore, the Grantee, in its sole discretion, may apply any damages recovered to the cost of undertaking any corrective action on the Property.

F. The Grantee's rights under this Section, "Breach of Easement…," apply equally in the event of either actual or threatened breach of this Easement, and are in addition to the provisions of the preceding Section, "Resolution of Disagreements," which section shall also apply to any disagreement that may arise with respect to activities undertaken in response to a notice of breach and the exercise of the Grantee's rights hereunder.

G. The Grantor and the Grantee acknowledge and agree that should the Grantee determine, in its sole discretion, that the conservation features protected by this Easement are in immediate danger of irreparable harm, the Grantee may seek the injunctive relief described in the third paragraph of this Section, "Breach of Easement…," both prohibitive and mandatory, in addition to such other relief to which the Grantee may be entitled, including specific performance of the terms of this Easement, without the necessity of proving either actual damages or the inadequacy of otherwise available legal remedies. The Grantee's remedies described in this Section, "Breach of Easement…," shall be cumulative and shall be in addition to all remedies now or hereafter existing at law or in equity.

H. Provided that the Grantor is directly or primarily responsible for the breach, all reasonable costs incurred by the Grantee in enforcing the terms of this Easement against the Grantor, including, without limitation, staff and consultant costs, reasonable attorneys' fees and costs and expenses of suit, and any costs of restoration necessitated by the Grantor's breach of this Easement shall be borne by the Grantor; and provided further, however, that if the Grantor ultimately prevails in a judicial enforcement action each party shall bear its own costs. Notwithstanding the foregoing, if the Grantee initiates litigation against the Grantor to enforce this Conservation Easement, and if the court determines that the litigation was initiated without reasonable cause or in bad faith, then the court may require the Grantee to reimburse the Grantor's reasonable costs and reasonable attorney's fees in defending the action.

I. Forbearance by the Grantee to exercise its rights under this Easement in the event of any breach of any term thereof by the Grantor shall not be deemed or construed to be a waiver by the Grantee of such term or of any subsequent breach of the same or any other term of this Easement or of any of the Grantee's rights hereunder. No delay or omission by the Grantee in the exercise of any right or remedy upon any breach by the Grantor shall impair such right or remedy or be construed as a waiver. The Grantor hereby waives any defense of laches or estoppel.

J. Nothing contained in this Easement shall be construed to entitle the Grantee to bring any action against the Grantor for any injury to or change in the Property resulting from

causes beyond the Grantor's control, including, but not limited to, unauthorized actions by third parties, natural disasters such as fire, flood, storm, disease, infestation and earth movement, or from any prudent action taken by the Grantor under emergency conditions to prevent, abate, or mitigate significant injury to the Property resulting from such causes. The Grantee and the Grantor reserve the right, separately or collectively, to pursue all legal and/or equitable remedies, as set forth in this Section, "Breach of Easement…," against any third party responsible for any actions inconsistent with the provisions of this Easement.

10. **NOTICES**

All notices, requests and other communications, required to be given under this Easement shall be in writing, except as otherwise provided herein, and shall be delivered in hand or sent by certified mail, postage prepaid, return receipt requested to the appropriate address set forth above or at such other address as the Grantor or the Grantee may hereafter designate by notice given in accordance herewith. Notice shall be deemed to have been given when so delivered or so mailed.

11. **SEVERABILITY**

If any provision of this Easement, or the application thereof to any person or circumstance, is found to be invalid by a court of competent jurisdiction, by confirmation of an arbitration award or otherwise, the remainder of the provisions of this Easement or the application of such provision to persons or circumstances other than those to which it is found to be invalid, as the case may be, shall not be affected thereby.

12. **CONDEMNATION/EXTINGUISHMENT**

A. Whenever all or part of the Property is taken in exercise of eminent domain by public, corporate, or other authority so as to abrogate in whole or in part the Easement conveyed hereby, or whenever all or a part of the Property is lawfully sold without the restrictions imposed hereunder in lieu of exercise of eminent domain, the Grantor and the Grantee shall thereupon act jointly to recover the full damages resulting from such taking with all incidental or direct damages and expenses incurred by them thereby to be paid out of the damages recovered.

B. The balance of the land damages recovered from such taking or lawful sale in lieu of exercise of eminent domain shall be divided between the Grantor and the Grantee in proportion to the fair market value of their respective interests in the Property on the date of execution of this Easement. For this purpose and that of any other judicial extinguishment of this Easement, in whole or in part, the Grantee's interest shall be 1/3 of the value of the Property and the Grantor interest shall be 2/3 of the value of the Property. For this purpose and that of any other judicial extinguishment of this Easement, in whole or in part, the values of the Grantor's and Grantee's interests shall be determined by an

appraisal prepared by a qualified appraiser at the time of condemnation or extinguishment.

C. The Grantee shall use its share of the proceeds resulting from condemnation or extinguishment in a manner consistent with and in furtherance of one or more of the conservation purposes set forth herein.

13. ADDITIONAL EASEMENT

Should the Grantor determine that the expressed Purposes of this Easement could better be effectuated by the conveyance of an additional easement, the Grantor may execute an additional instrument to that effect, provided that the conservation purposes of this Easement are not diminished thereby and that a public agency or qualified organization described in the Section "Benefits and Burdens," above, accepts and records the additional easement.

14. AMENDMENT

If owing to unforeseen or changed circumstances Grantor and Grantee agree that an amendment to, or modification of this Easement would be appropriate and desirable, Grantor and Grantee may jointly amend this Easement under the following circumstances: The amendment shall be consistent with the Purpose of this Easement, and shall enhance protection of or further clarify, but not impair, the conservation attributes of the Property protected by this Easement. The amendment shall not affect the qualification of this Easement or the status of the Grantee under any applicable laws, including Section 170(h) of the Internal Revenue Code of 1986, as amended, or Sections NH RSA 477:45-47 of the General Laws of New Hampshire, nor shall the amendment affect the perpetual duration of this Easement. All state laws regarding amendments of easements will be followed. Proposed amendments will be evaluated according to the guiding principles for amendments of the Grantee. Any such amendment shall be recorded at the Cheshire County Registry of Deeds, after any and all approvals required by law have been obtained.

15. DISCRETIONARY CONSENT

A. The Grantee's consent for activities otherwise prohibited herein may be given under the following conditions and circumstances: If, owing to unforeseen or changed circumstances, any of the activities limited or prohibited by the provisions of Section 2 are deemed desirable by the Grantor and the Grantee, the Grantee may, in its sole discretion, give permission for such activities, subject to the limitations herein. Such requests for permission shall be in writing and shall describe the proposed activity in sufficient detail to allow the Grantee to judge the consistency of the proposed activity with the Purposes of this Easement. The Grantee may give its permission only if it determines, in its sole discretion, that such activities (i) do not violate the Purposes of this Easement and (ii) either enhance or do not impair any significant conservation features associated with the Property.

B. Notwithstanding the foregoing, the Grantor and the Grantee shall have no right or power

to agree to any activities that would result in the termination of this Easement or to allow any residential, commercial or industrial structures, or any commercial or industrial activities, not provided for therein.

THIS IS A NON-CONTRACTUAL CONVEYANCE PURSUANT TO NEW HAMPSHIRE RSA 78-B:2 AND IS EXEMPT FROM THE NEW HAMPSHIRE REAL ESTATE TRANSFER TAX.

The Grantee, by accepting and recording this Easement, agrees to be bound by and to observe and enforce the provisions hereof and assumes the rights and responsibilities herein granted to and incumbent upon the Grantee, all in the furtherance of the conservation purposes for which this Easement is delivered.

IN WITNESS WHEREOF, the City of Keene by its duly authorized officer has hereunto set its hand this _____ day of _____, 2009.

CITY OF KEENE

By: _____

John MacLean, Keene City Manager
Duly Authorized

The State of New Hampshire

County of Cheshire

Personally appeared John MacLean, Keene City Manager of the City of Keene, this _____ day of _____, 2009 and acknowledged the foregoing on behalf of the City of Keene.

Before me, _____
Justice of the Peace/Notary Public

My commission expires: _____

ACCEPTED: SOCIETY FOR THE PROTECTION OF NEW HAMPSHIRE FORESTS

By: _____

Title: _____
Duly Authorized

Date: _____

The State of New Hampshire

County of Merrimack

Personally appeared _____
Title

of the Society for the Protection of New Hampshire Forests, this _____ day of _____, 2009 and acknowledged the foregoing on behalf of the Society for the Protection of New Hampshire Forests.

Before me, _____
Justice of the Peace/Notary Public

My commission expires: _____

APPENDIX A

The Property subject to the Conservation Easement granted hereby consists of these certain tracts of land (herein referred to collectively as the "Property") with the improvements located thereon, consisting of approximately 1,044 +/- acres, situated on easterly side of the Surry Road and both sides of Old Gilsum Road in the City of Keene, Cheshire County, State of New Hampshire more particularly bounded and described as follows:

Tracts A – O described below are shown on a City of Keene's Public Works plan entitled "Plan of Goose Pond Recreation Area, Keene, NH, dated February 1988, on file at the City of Keene's Public Work's Department identified as Draw #37, Plan #313.

Tract A (Goose Pond Lot)
A certain parcel of land off East Surry Road, being shown on a survey plan entitled "Plan of Land Surrounding Sylvan Lake (Goose Pond) Keene, NH, Dec. 1900)", by Samuel Wadsworth, on file in the Cheshire County Registry of Deeds. Said survey may also be found on file at the City of Keene's Public Work's Department and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises acquired by virtue of Act of the Legislature of the State of New Hampshire, approved July 3, 1861, entitled "An act to enable the Town of Keene to establish water works", and the Act approved June 24, 1868, in affirmance and amendment thereof, accepted by the Town of Keene, through the exercise of eminent domain authorized thereby. See petition to the Cheshire County Commissioner dated September 15, 1886 and the said Commissioner's Report thereon describing the lands and rights taken and the damages awarded therefore, dated September 29, 1886, all as recorded in Cheshire County Registry of Deeds at Book 359, Page 183, on May 11, 1911.

Consisting of 74 +/- acres and being identified on the City of Keene's Tax Map #914 as a portion of Tax Lot 4- 30.

Also identified as Parcel Number 1 – Goose Pond on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract B (Wright Lot)
A certain parcel of land off East Surry Road.

MEANING AND INTENDING to describe Parcel 2 of the same premises conveyed to the City of Keene by Fiduciary Deed of Donald R. Bryant, Administrator of the Estate of John X. Carr, dated January 7, 1972, recorded in Cheshire County Registry of Deeds at Book 839, Page 164 on January 19, 1972.

Consisting of 40 +/- acres and being identified on the City of Keene's Tax Map #914 as a portion of Tax Lot 4- 30.

Also identified as Parcel Number 2 - Wright Lot on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract C (Faulkner-Colony Lot)

A certain parcel of land off East Surry Road, being shown on a survey entitled "Plan of Faulkner & Colony Land North East of Goose Pond", by Samuel Wadsworth, on file in the Cheshire County Registry of Deeds. Said survey may also be found on file at the City of Keene's Public Work's Department identified as Draw #24, Plan #106 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Jeanne Mae Ann Galloway and Jerome S. Galloway, dated August 24, 1976, recorded in Cheshire County Registry of Deeds at Book 920, Page 209.

Consisting of 30 +/- acres and being identified on the City of Keene's Tax Map #914 as a portion of Tax Lot 4- 30.

Also identified as Parcel Number 3 - Faulkner & Colony Lot on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract D (Minster's Lot)

A certain parcel of land east of Old Gilsum Road, being shown on a survey plan entitled "Plan of land owned by the city of Keene, NH, Known as the Minister's Lot", dated 1982. Said plan may be found on file at the City of Keene's Public Work's Department identified as Draw #32, Plan #126 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises Owned by the City of Keene.

Consisting of 55 +/- acres and being identified on the City of Keene's Tax Map #909 as a portion of Tax Lot 03- 021.

Also identified as Parcel Number 4 - Minister's Lot on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract E (Drummer Lot)

A certain parcel of land off Old Gilsum Road, being shown on a survey plan entitled "Plan of Land Conveyed to the City of Keene by Will of John A. Drummer", by Samuel Wadsworth, dated May 1920, recorded in the Cheshire County Registry of Deeds. Said survey may also be found on file at the City of Keene's Public Work's Department identified as Draw #24, Plan #161 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises devised to the City of Keene by the last will and testament of John A. Drummer, See Cheshire County Registry of Probate.

Consisting of 135 +/- acres and being identified on the City of Keene's Tax Map #908 as Tax Lot 4- 14.

Also identified as Parcel Number 5 - Drummer on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract F (Thompson & Reed)

A certain parcel of land off Old Gilsum Road, being shown on a survey plan entitled "Plan of Thompson & Reed , Keene, area 53 acres", by Samuel Wadsworth, dated June 1890, on file in the Cheshire County Registry of Deeds. Said survey may also be found on file at the City of Keene's Public Work's Department identified as Draw #24, Plan #215 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe Parcel 1 of the premises conveyed to the City of Keene by Fiduciary Deed of Donald R. Bryant, Administrator of the Estate of John X. Carr, dated January 7, 1972, recorded in Cheshire County Registry of Deeds at Book 839, Page 164.

Consisting of 53 +/- acres and being identified on the City of Keene's Tax Map #914 as a portion of Tax Lot 4- 30.

Also identified as Parcel Number 6 - Thompson & Reed on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract G (Burrws Lot)

A certain parcel of land off East Surry Road, being shown on a survey plan entitled "Plan of WM. L. Isham and Others, area 124 acres", by Samuel Wadsworth, dated June 1902, recorded in the Cheshire County Registry of Deeds. Said survey may also be found on file at the City of Keene's Public Work's Department identified as Draw #24, Plan #343 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of John P. Burrows, dated December 22, 1981 recorded in Cheshire County Registry of Deeds at Book 1101, Page 371.

Consisting of 124 +/- acres and being identified on the City of Keene's Tax Map #914 as a portion of Tax Lot 4- 23.

Also identified as Parcel Number 7 - Burroughs on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract H (Sylvester Lot)

A certain parcel of land located on Old Gilsum Road, being shown on a recorded survey plan entitled **"**Land Owned by the City of Keene, Formerly of the "Sylvester" Located on the Old

Gilsum Road in the North Woods", by the City of Keene, Engineering Department, Said survey may also be found on file at the City of Keene's Public Work's Department identified as Draw #49, Plan #39 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Anthony T. Sylvester, dated September 13, 1979 recorded in Cheshire County Registry of Deeds at Book 973, Page 559.

Consisting of 20.5 acres and being identified on the City of Keene's Tax Map #909 as Tax Lot 4-11.

Also identified as Parcel Number 8 - Sylvester on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract I (Galloway Lot)

A certain parcel of land located on Old Gilsum Road, being shown on a recorded survey plan entitled **"**Land Owned by the City of Keene, Formerly of the "Galloway Lot" Located on the Old Gilsum Road, Vol. 986 – Pg. 87", by The City of Keene, Engineering Department, dated 1982. Said survey may also be found on file at the City of Keene's Public Work's Department identified as Draw #49, Plan #44 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Ellis G. Galloway, dated July 14, 1980 recorded in Cheshire County Registry of Deeds at Book 986, Page 87.

Consisting of 26.7 acres and being identified on the City of Keene's Tax Map #909 as Tax Lot 4-13.

Also identified as Parcel Number 9 - Galloway on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract J (Paquette Lot)

A certain parcel of land located on Old Gilsum Road, being shown on a survey plan entitled "Countryside Subdivision – Final Plan" dated November 26, 1973, revised April 3, 1974, further revised April 25, 1974, recorded in said Registry of Deeds in Plan Book 29, Page 66. Also shown on an unrecorded plan entitled **"**Land Owned by the City of Keene Formerly of the "Paquette Lot" Located on the Old Gilsum Road, North Woods, Keene, NH", by The City of Keene, Engineering Department, in 1981 & 1982. Said unrecorded plan may also be found on file at the City of Keene's Public Work's Department identified as Draw #38, Plan #45 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Armmand R. Paquette, dated February 7, 1975 recorded in Cheshire County Registry of Deeds at Book 894, Page 489.

Consisting of 237 acres and being identified on the City of Keene's Map #910 as Tax Lot 04-02.

Also identified as Parcel Number 10 - Paquette on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract K (Costantino Lot)

A certain tract of land located on Old Gilsum Road, containing 53 acres and being shown on a plan entitled **"**Land Owned by the City of Keene Former Costantino Lot Old Gilsum Road, Keene, NH Vol 1171 – PG - 190", by The City of Keene, Engineering Department, dated February 1991. Said plan may be found on file at the City of Keene's Public Work's Department identified as Draw #49, Plan #54 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Marino J. and Antonia B. Costantino, dated December 23, 1986 recorded in Cheshire County Registry of Deeds at Book 1171, Page 190.

Consisting of 53 acres and being identified on the City of Keene's Map #909 as Tax Lot 4-4.

Also identified as Parcel Number 11 - Costantino on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract L (Leigh Lots)

Two certain tracts of land designated Lot 1 and Lot 2 located off Old Gilsum Road, no known existing survey for Lot 1, but Lot 2 being shown on a plan entitled **"**Land Owned by the City of Keene Former Leigh Lot Near Goose Pond, Keene, NH", by The City of Keene, Engineering Department,. Said plan may be found on file at the City of Keene's Public Work's Department identified as Draw #48, Plan #16 and on file at the offices of the Grantee.

MEANING AND INTENDING to describe Lots 1 and 2 conveyed to the City of Keene by Warranty Deed of Samuel F. Leigh dated September 22, 1987 recorded in Cheshire County Registry of Deeds at Book 1213, Page 478.

Lot 1 - Consisting of 12 acres and being identified on the City of Keene's Map #909 as Tax Lot 003-023. Also identified as Parcel Number 13 - Leigh on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Lot 2 - Consisting of 48 acres and being identified on the City of Keene's Map #909 as Tax Lot 004-007. Also identified as Parcel Number 12 - Leigh on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract M (Taft)

A certain tract of land situated off East Surry Road, being shown on a plan entitled **"**Land of The City of Keene Located on East Surry Road, Keene, NH, Formerly "Taft" Property", by The City of Keene, Engineering Department, dated May 1986. Said plan may be found on file at the City of Keene's Public Work's Department identified as Draw #28, Plan #54 and on file at the offices of the Grantee.

For further reference see a plan entitled "Sketch of land surveyed for G. W. Stone & Son, Inc., Keene, N.H." dated August 1, 1968, drawn by R. K. Piper, surveyor, recorded in Cheshire County Registry of Deeds.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Tax Collector's Deed of Maurice M. Barrett, dated June 9, 1981, recorded in Cheshire County Registry of Deeds at Book 1001, Page 940.

Consisting of 3.4 acres and being identified on the City of Keene's Tax Map #914 as Tax Lot 04-25.

Also identified as Parcel Number 14 - Taft on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract N (Grant Lot)

Two certain tracts of land being all of Lot 1 and Lot 2 on a plan entitled "Proposed 3 Lot Subdivision, Land of Winter Development Corp., Keene, New Hampshire", scale 1"- 200', dated April 29, 1987, by Southern Vermont Engineering recorded at Cabinet 9, Plan 34 in Cheshire County Registry of Deeds.

MEANING AND INTENDING to describe Lot 2 conveyed to the City of Keene by Quitclaim Deed of the Winter Development Corporation, dated August 4, 1987 recorded in Cheshire County Registry of Deeds at Book 1214, Page 766 and Lot 1 by Quitclaim Deed of the Winter Development Corporation, dated November 2, 1988 recorded in Cheshire County Registry of Deeds at Book 1272, Page 756.

Subject to the following:

1. Restrictive covenants noted in the deeds..
2. A right of way to the Connecticut River Power Company as shown on said plan.

Lot 1 - consists of 50.7 acres and is identified on the City of Keene's Tax Map #909 as Tax Lot 003-099.
Lot 2 - consists of 45 acres and is identified on the City of Keene's Map #909 as Tax Lot 003-020.

Also identified as Parcel Number 15 - Grant on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Tract O (Bauer Lot)
a certain tract of land situated on the easterly side of East Surry Road, as shown on a plan entitled "Survey of Christine E. Bauer Property East Surry Road, Keene, N.H, VOL. 484, PG. 316 July, 1990" prepared by Thomas L. Dutton, LLS and recorded at Cabinet 11, Draw 5, Number 597 in Cheshire County Registry of Deeds on April 19, 1991.

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Christina E. Bauer, dated June 26, 1991 recorded in Cheshire County Registry of Deeds at Book 1373, Page 461.

Consisting of 9.8 acres, more or less and being identified on the City of Keene's Tax Map #914 as Tax Lot 04-24.

Also identified as Parcel Number 16 - Bauer on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

Subject to any and all existing water rights.

Together with any ownership rights said Christina E. Bauer may have to property located on or adjacent to the road leading to Goose Pond.

And the conveyance to the City of Keene having been made pursuant to the New Hampshire Land Conservation Investment Program to further conservation according to purposes as set forth in R.S.A. 221-A.

Tract P (Kingsbury Lot)
A certain tract of land without buildings thereon, but with all improvements and sometimes referred to as the "Ruffle Lot".

MEANING AND INTENDING to describe the same premises conveyed to the City of Keene by Warranty Deed of Vera Kingsbury and Edward A. Kingsbury, dated November 18, 1994 recorded in Cheshire County Registry of Deeds at Book 1508, Page 843.

Consisting of 24 acres, more or less and being identified on the City of Keene's Tax Map #909 as Tax Lot 04-005.

Not identified on the City of Keene's Public Works Plan of Goose Pond Recreation Area mentioned above.

The Easement Property is subject to and together with any and all easements and rights of way of record.

APPENDIX D
Timber Volume Summaries
And
Forest Stand Descriptions

		Goose Pond Timber Inventory, Keene NH 2018						948 acres				
		Summarized Timber Value										
		Sawtimber					Pulp					
				MBF	$/mbf				Tons	$/ton		
		White Pine		1477.17	$ 150	$ 221,576		White Pine	999.7	$ 1	$ 1,000	
		Hemlock		896.4	$ 50	$ 44,820		Hemlock	3850.7	$ 5	$ 19,254	
		Sugar maple		29	$ 250	$ 7,250		Sugar maple	180.6	$ 5	$ 903	
		Red maple		123.5	$ 100	$ 12,350		Red maple	3305.3	$ 5	$ 16,527	
		White Ash		41.2	$ 150	$ 6,180		White Ash	362.8	$ 5	$ 1,814	
		Black Cherry		1.8	$ 100	$ 180		Black Cherry	31.3	$ 5	$ 157	
		Quaking Aspen		13	$ 50	$ 650		Quaking Asp	193	$ 5	$ 965	
		White Birch		8.7	$ 100	$ 870		White Birch	485.8	$ 5	$ 2,429	
		Yellow Birch		5.4	$ 200	$ 1,080		Yellow Birch	121	$ 5	$ 605	
		Sweet Birch		3.8	$ 250	$ 950		Sweet Birch	222	$ 5	$ 1,110	
		Beech		14.2	$ 40	$ 568		Beech	2616.1	$ 5	$ 13,081	
		Red Oak		2258.8	$ 450	$ 1,016,460		Red Oak	5215	$ 5	$ 26,075	
		Black oak		134.6	$ 100	$ 13,460		Black Oak	1444	$ 5	$ 7,220	
		All Sawtimber Excluding Growing Stock				$ 1,326,394		All Pulpwood excluding Growing Stoc				$ 91,138
								Total timber value excluding growing				$ 1,417,531
	This is for planning purposes only, it is not intended to be a target for a future timber harvest											
	Sample Method: Variable Radius Point Sample Method 10 factor Angle Guage											
	Sawtimber is the volume of sawable logs.											
	Softwood sawlogs 10 inches to a merchantable sawtimber top											
	Hardwood sawlogs to a 11 inch Merchantable sawtimber top											
	Timber growth assumed at 2.5% per year growth-mortality											

Goose Pond Timber Inventory, Keene NH 2018

Sawtimber in Thousand board Feet

Lot Name	Paquette	Sylvester	Leigh East	Galloway	Grant Lot South	Grant Lot North	Ministers	Burroughs	Drummer	Bauer	Constantino	Thompson	Leigh West	Wright and Faulkner Lots	Kingsbury Farm Lot	Total
Acres	244	19	9	20	46	42	47	132	140	12	50	53	48	66	20	948
White Pine	306	5.27	25	41	35.3			142	634	116	27.1	9		76.5	60	1477.2
Hemlock	241	77.7	17	23.1	55.5	21.4	37.2	208	73.5	9.5	11.4	14	30.6	69.9	6.6	896.4
Sugar maple	5						6	5	5.4	7.6						29
Red maple	57	1.5	2.2		15	3		18	11.1	1	4.2	8.5		2		123.5
White Ash	6						3.2	15	5.8	1.7			9.5			41.2
Black Cherry										1.8						1.8
Quaking Aspen	13															13
White Birch			0.4			3.3		2.3				2.7				8.7
Yellow Birch	5		0.4													5.4
Sweet Birch							2.6								1.2	3.8
Beech	10													4.2		14.2
Red Oak	801	26.3	25.6	39.9	85	33.9	123.4	376	161	13	164.9	181	28	179	20.8	2258.8
Hornbeam																0
Black Oak		78.5	4.1	2.1	12.5	12.7	7	13.5						4.2		134.6
Lot Total	1444	189.27	74.7	106.1	203.3	74.3	179.4	779.8	890.8	150.6	207.6	215.2	68.1	336	88.6	5007.6

Timber Inventory done by Swift Corwin of Calhoun and Corwin Forestry Winter of 2018

This is for planning purposes only, it is not intended to be a target for a future timber harvest

Sample Method: Variable Radius Point Sample Method 10 factor Angle Guage

Sawtimber is the volume of sawable logs.

Softwood sawlogs 10 inches to a merchantable sawtimber top

Hardwood sawlogs to a 11 inch Merchantable sawtimber top

Based on 427 Points

90% Confidence Level

Sampling Error 8%

www.swiftcorwin.com

Goose Pond Timber Inventory, Keene NH 2018

Pulpwood in Tons

	Paquette	Sylvester	Leigh East	Galloway	Grant Lot South	Grant Lot North	Ministers	Burroughs	Drummer	Bauer	Constantino	Thompson	Leigh West	Wright and Faulkner Lots	Kingsbury Farm Lot	Total
Acres	244	19	9	20	46	42	51	132	140	12	50	53	48	66	20	952
White Pine	122	10	13	32	31		71	71	413	87.7		36		46	67	999.7
Hemlock	812	275	80	84	86	27	647	647	250	34	101	259	108	383.7	57	3850.7
Sugar maple	24		3.1				31	31	6	12.6		22	14		36.9	180.6
Red maple	1332	79	26	7	153	60	57	527	153	57.3	117	264	168	185	120	3305.3
White Ash	76		4		9		12	176	21	3			49	8	4.8	362.8
Black Cherry					15					16.3						31.3
Quaking Aspen	6								43				144			193
White Birch	227		5.1		46	23		54	19	11	9.2	33.5		13	45	485.8
Yellow Birch	31		9								34		38	9		121
Sweet Birch	20		15		24		24	20	21			23	39	29	7	222
Beech	740		1.9		262	362	286	238	408	3.6	9.6	241	14	42	8	2616.1
Red Oak	1612	44	59	95	229	79	197	522	481	29	450	619	267	486	46	5215
Hornbeam																
Black Oak		747	30	142	92	179	81	128		32				13		1444
	5002	1155	246.1	360	947	730	1406	2414	1815	286.5	720.8	1497.5	841	1214.7	391.7	19027

Timber Inventory done by Swift Corwin of Calhoun and Corwin Forestry Winter of 2018

This is for planning purposes only, it is not intended to be a target for a future timber harvest

Sample Method: Variable Radius Point Sample Method 10 factor Angle Guage

Pulp is timber not of sawlog quality

Softwood topwood < 10 inches merchantable diameter to a > 4 inch top

Hardwood topwood < 11 inches merchantable diameter to > 4 inch top

Based on 427 Points

90% Confidence Level

Sampling Error 8%

www.swiftcorwin.com

Goose Pond Timber Inventory, Keene NH 2018

Growing Stock in tons

Lot Name	Paquette	Sylvester	Leigh East	Galloway	Grant Lot South	Grant Lot North	Ministers	Burroughs	Drummer	Bauer	Constantino	Thompson	Leigh West	Wright and Faulkner Lots	Kingsbury Farm Lot	Total
Acres	244	19	9	20	46	42	47	132	140	12	50	53	48	66	20	948
White Pine			17	85		38				34						174
Hemlock	240	25	25	18	27	20	126	41		91	55	20	26	294	26	1034
Sugar maple	36		3				41	267		45						392
Red maple	463	11	11	13	88	128	90	202	154	17	34	26	12	72		1321
White Ash									11		37			8		56
Black Cherry										8						8
Quaking Aspen																0
White Birch	30															30
Yellow Birch	178				16			51			10		38.7			293.7
Sweet Birch	176		5		25	19	24	64	108	13		11.5	33	9		487.5
Beech			2		90	87	66		12					8		265
Red Oak	2926	111	92	598	363	660	182	1337	1951	125	786	618	407	830	175	11161
Hornbeam																0
Black Oak				28	9	20		17								74
Lot Total	4049	147	155	742	618	972	529	1979	2236	333	922	675.5	516.7	1221	201	15296

Timber Inventory done by Swift Corwin of Calhoun and Corwin Forestry Winter of 2018

This is for planning purposes only, it is not intended to be a target for a future timber harvest

Sample Method: Variable Radius Point Sample Method 10 factor Angle Guage

Growing stock are the trees not big enough to be considered as sawlogs but have promise and quality to be future sawtim

Softwood topwood < 10 inches merchantable diameter to a > 4 inch top

Hardwood topwood < 11 inches merchantable diameter to > 4 inch top

Based on 427 Points

90% Confidence Level

Sampling Error 8%

www.swiftcorwin.com

Paquette Lot

Compartment 1

Volume by Species and Product, per acre

Stand Acre 244

Stands::Stand TextName 15

Tree Status (All)

Data												
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	27%	46%	3,129.7	-	6.3	-	11.4	0.3	-	-	34.3
	06 Red Maple	33%	20%	217.8	-	5.2	-	1.8	0.2	-	0.0	8.3
	13 Beech	8%	6%	37.2	-	2.9	-	-	-	-	-	3.1
	10 White Birch	3%	2%	-	-	0.9	-	0.1	-	-	-	1.0
	11 Yellow Birch	3%	2%	19.4	-	0.1	-	0.7	-	-	-	0.9
	12 Sweet Birch	2%	2%	-	-	0.1	-	0.7	-	-	0.0	0.8
	07 White Ash	1%	1%	37.2	-	0.3	-	-	-	-	-	0.5
	05 Sugar Maple	1%	1%	19.4	-	0.1	-	0.1	-	-	-	0.3
	09 Quaking Aspen	0%	0%	48.9	-	0.0	-	-	-	-	-	0.3
HW Total		**77%**	**79%**	**3,509.6**	**-**	**15.9**	**-**	**14.9**	**0.4**	**-**	**0.0**	**49.5**
SW	02 Hemlock	22%	15%	941.3	-	3.2	-	0.9	-	-	0.0	8.6
	01 White Pine	2%	6%	1,196.2	6.0	0.5	-	-	-	-	-	6.2
SW Total		**23%**	**21%**	**2,137.5**	**6.0**	**3.7**	**-**	**0.9**	**-**	**-**	**0.0**	**14.9**
Stand Total		**100%**	**100%**	**5,647.0**	**6.0**	**19.6**	**-**	**15.8**	**0.4**	**-**	**0.0**	**64.4**

Paquette Lot 244 Acres

Compartment 1

91.3 sq ft basal area

Stand 15 10.2 DBH quadradic mean

TPA	DBH (inches)																						
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC	RM	8	23	11	-	8	-	1	1	-	1	-	0	0	-	-	-	-	-	-	-	-	-	53
	RO	-	3	5	-	9	-	7	8	-	6	3	2	1	0	0	-	-	-	0	0	-	-	43
	HM	12	12	4	-	3	-	1	0	-	0	1	1	0	0	0	-	-	-	-	-	-	-	35
	BE	-	5	3	-	3	-	1	1	-	-	0	-	-	-	-	-	-	-	-	-	-	-	13
	YB	-	1	2	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	WB	-	-	2	-	2	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	4
	SB	-	-	2	-	0	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	3
	WP	-	-	-	-	-	-	-	0	-	0	0	0	0	0	0	-	-	0	-	-	0	-	2
	SM	-	1	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	WA	-	-	1	-	-	-	-	0	-	-	0	-	-	-	-	-	-	-	-	-	-	-	1
	QA	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0
NC Total		**19**	**46**	**28**	**-**	**26**	**-**	**11**	**12**	**-**	**8**	**5**	**3**	**1**	**1**	**0**	**-**	**-**	**0**	**0**	**0**	**0**	**-**	**160**
Stand Total		**19**	**46**	**28**	**-**	**26**	**-**	**11**	**12**	**-**	**8**	**5**	**3**	**1**	**1**	**0**	**-**	**-**	**0**	**0**	**0**	**0**	**-**	**160**

Kingsbury Farm Lot 20 acres

Compartment 2

78.2 sq ft basal area

Stand 5 10.2 DBH quadradic mean

TPA Tree	Speci	DBH (inch 5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
A	RM	-	14	5	-	12	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	33
	RO	-	-	-	-	8	-	9	3	-	2	1	0	1	-	-	-	-	-	-	-	-	-	24
	HM	-	5	10	-	5	-	2	-	-	1	-	0	-	-	-	-	-	-	-	-	-	-	23
	WB	-	9	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
	WA	-	9	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	SM	-	5	5	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12
	WP	-	-	-	-	-	-	1	1	-	1	1	1	1	2	0	0	-	-	-	-	-	-	8
	BE	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	SB	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
A Total		**-**	**46**	**34**	**-**	**27**	**-**	**15**	**4**	**-**	**3**	**2**	**2**	**1**	**2**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**137**
C	WP	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	HM	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	0
C Total		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
Stand Total		**-**	**46**	**34**	**-**	**27**	**-**	**15**	**5**	**-**	**3**	**2**	**2**	**1**	**2**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**139**

Kingsbury Farm Lot

Compartment 2

Volume by Species and Product, per acre

Stand Acre: 20

Stands::StandTextName 5

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 red oak	17%	28%	1,042.5	-	2.3	-	8.8	-	-	-	16.5
	06 red maple	24%	16%	-	-	6.0	-	-	-	-	-	6.0
	10 white birch	14%	7%	-	-	2.3	-	-	-	-	-	2.3
	05 sugar maple	8%	5%	-	-	1.8	-	-	-	-	-	1.8
	07 white ash	9%	3%	-	-	0.2	-	0.6	-	-	-	0.9
	13 beech	3%	1%	-	-	0.4	-	-	-	-	-	0.4
	12 sweet birch	1%	1%	64.4	-	0.3	-	-	-	-	-	0.7
HW Total		**76%**	**62%**	**1,106.9**	**-**	**13.5**	**-**	**9.4**	**-**	**-**	**-**	**28.6**
SW	01 white pine	6%	23%	3,001.7	-	3.4	-	-	0.4	-	-	18.1
	02 hemlock	17%	15%	333.9	-	2.8	-	1.3	0.2	-	-	6.0
SW Total		**24%**	**38%**	**3,335.6**	**-**	**6.2**	**-**	**1.3**	**0.6**	**-**	**-**	**24.2**
Stand Total		**100%**	**100%**	**4,442.5**	**-**	**19.7**	**-**	**10.7**	**0.6**	**-**	**-**	**52.8**

Kingsbury Farm Lot

Compartment 2

Volume by Species and Product, expanded by acres

Stand Acre: 20

Stands::StandTextName 5

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	17%	28%	20,850.3	-	46.7	-	175.8	-	-	-	330.9
	06 Red Maple	24%	16%	-	-	120.4	-	-	-	-	-	120.4
	10 White Birch	14%	7%	-	-	45.4	-	-	-	-	-	45.4
	05 Sugar Maple	8%	5%	-	-	36.9	-	-	-	-	-	36.9
	07 White Ash	9%	3%	-	-	4.8	-	12.6	-	-	-	17.4
	13 Beech	3%	1%	-	-	8.3	-	-	-	-	-	8.3
	12 Sweet Birch	1%	1%	1,288.3	-	6.6	-	-	-	-	-	13.3
HW Total		**76%**	**62%**	**22,138.6**	**-**	**269.1**	**-**	**188.4**	**-**	**-**	**-**	**572.6**
SW	01 White Pine	6%	23%	60,034.1	-	67.3	-	-	7.5	-	-	362.9
	02 Hemlock	17%	15%	6,677.4	-	56.6	-	26.5	5.0	-	-	120.2
SW Total		**24%**	**38%**	**66,711.5**	**-**	**123.9**	**-**	**26.5**	**12.5**	**-**	**-**	**483.1**
Stand Total		**100%**	**100%**	**88,850.1**	**-**	**393.1**	**-**	**214.8**	**12.5**	**-**	**-**	**1,055.7**

Goose Pond Stand Forest Data Trees Per acre

Constantino Lot 50 acres

Compartment 3

85.3 sq ft basal area

Stand 1 10.2 DBH quadradic mean

TPA	DBH (inches)																							
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
A	RO	-	10	11	-	17	-	12	8	-	4	5	2	1	0	-	-	-	-	-	-	-	-	70
	RM	-	20	4	-	4	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28
	HM	-	7	8	-	4	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	21
	WA	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
	YB	-	3	2	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	BE	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	WB	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	SM	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	WP	-	-	-	-	-	-	-	-	-	0	-	0	-	0	-	-	-	-	-	-	-	-	1
A Total		**-**	**51**	**31**	**-**	**24**	**-**	**14**	**9**	**-**	**5**	**5**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**143**
NC	RO	-	-	-	-	2	-	2	2	-	-	-	0	0	-	-	-	-	-	-	-	-	-	7
	RM	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
NC Total		**-**	**-**	**-**	**-**	**4**	**-**	**2**	**2**	**-**	**-**	**-**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**8**
Stand Total		**-**	**51**	**31**	**-**	**28**	**-**	**16**	**11**	**-**	**5**	**5**	**2**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**151**

Costantino Lot

Compartment 3

Volume by Species and Product, per acre

Stand Acres 50

Stands::StandTex
tName 1

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 red oak	51%	69%	3,298.2	-	9.0	-	15.7	-	-	-	41.9
	06 red maple	20%	10%	85.6	-	2.4	-	0.7	-	-	-	3.5
	11 yellow birch	4%	2%	-	-	0.7	-	0.2	-	-	-	0.9
	07 white ash	5%	2%	-	-	-	-	0.7	-	-	-	0.7
	13 beech	2%	1%	-	-	0.2	-	-	-	-	-	0.2
	05 sugar maple	1%	1%	-	-	-	-	0.3	-	-	-	0.3
	10 white birch	2%	1%	-	-	0.2	-	-	-	-	-	0.2
HW Total		**85%**	**86%**	**3,383.8**	**-**	**12.4**	**-**	**17.7**	**-**	**-**	**-**	**47.7**
SW	02 hemlock	14%	11%	228.1	-	2.0	-	1.1	-	-	-	4.2
	01 white pine	1%	3%	543.5	-	-	-	-	-	-	-	2.6
SW Total		**15%**	**14%**	**771.7**	**-**	**2.0**	**-**	**1.1**	**-**	**-**	**-**	**6.8**
Stand Total		**100%**	**100%**	**4,155.5**	**-**	**14.4**	**-**	**18.8**	**-**	**-**	**-**	**54.5**

Costantino Lot

Volume by Species and Product, expanded by acres

Stand Acres 50

Compartment 3

Stands::StandTex
tName 1

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	51%	69%	164,912.3	-	450.4	-	786.2	-	-	-	2,094.1
	06 Red Maple	20%	10%	4,277.8	-	117.7	-	34.7	-	-	-	174.7
	11 Yellow Birch	4%	2%	-	-	34.0	-	10.2	-	-	-	44.2
	07 White Ash	5%	2%	-	-	-	-	37.4	-	-	-	37.4
	13 Beech	2%	1%	-	-	9.6	-	-	-	-	-	9.6
	05 Sugar Maple	1%	1%	-	-	-	-	15.9	-	-	-	15.9
	10 White Birch	2%	1%	-	-	9.2	-	-	-	-	-	9.2
HW Total		**85%**	**86%**	**169,190.1**	**-**	**620.9**	**-**	**884.4**	**-**	**-**	**-**	**2,385.1**
SW	02 Hemlock	14%	11%	11,406.6	-	101.1	-	55.0	-	-	-	210.9
	01 White Pine	1%	3%	27,176.7	-	-	-	-	-	-	-	130.4
SW Total		**15%**	**14%**	**38,583.3**	**-**	**101.1**	**-**	**55.0**	**-**	**-**	**-**	**341.3**
Stand Total		**100%**	**100%**	**207,773.4**	**-**	**722.0**	**-**	**939.4**	**-**	**-**	**-**	**2,726.4**

Leigh Lot Lower 48 Acres

Compartment 4

69.0 sq ft basal area

Stan 3 9.0 DBH quadradic mean

TPA DBH Tree	Spec	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
A	RO	-	15	3	-	17	-	6	6	-	3	-	-	-	-	-	-	-	-	-	-	-	-	49
	RM	-	15	17	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	34
	YB	-	10	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	HM	-	10	-	-	2	-	-	1	-	1	1	1	-	-	-	-	-	-	-	-	-	-	16
	WA	-	5	-	-	-	-	3	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9
	SM	-	5	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	SB	-	5	-	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	QA	-	-	-	-	2	-	5	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8
	BE	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
A Total		**-**	**71**	**29**	**-**	**24**	**-**	**14**	**9**	**-**	**4**	**1**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**153**
C	HM	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1
C Total		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
U	RO	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
U Total		**-**	**-**	**3**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**3**
Stand Tot		**-**	**71**	**32**	**-**	**24**	**-**	**14**	**9**	**-**	**4**	**2**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**156**

Leigh Lot Lower

Compartment 4

Volume by Species and Product, per acre

Stand Acres 48

Stands::StandTex tName 3

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 red oak	34%	42%	583.9	-	5.6	-	8.5	-	-	-	17.1
	06 red maple	22%	14%	-	-	3.5	-	0.3	-	-	-	3.8
	09 quaking aspen	5%	9%	-	-	3.0	-	-	-	-	-	3.0
	11 yellow birch	10%	6%	-	-	0.8	-	0.8	-	-	-	1.6
	07 white ash	5%	6%	199.2	-	1.0	-	-	-	-	-	2.1
	12 sweet birch	5%	4%	-	-	0.8	-	0.7	-	-	-	1.5
	05 sugar maple	5%	3%	-	-	0.3	-	0.3	-	-	-	0.6
	13 beech	3%	1%	-	-	0.3	-	-	-	-	-	0.3
HW Total		**90%**	**86%**	**783.1**	**-**	**15.3**	**-**	**10.5**	**-**	**-**	**-**	**29.9**
SW	02 hemlock	10%	14%	638.7	-	2.3	-	0.5	0.4	0.3	-	6.5
SW Total		**10%**	**14%**	**638.7**	**-**	**2.3**	**-**	**0.5**	**0.4**	**0.3**	**-**	**6.5**
Stand Total		**100%**	**100%**	**1,421.8**	**-**	**17.5**	**-**	**11.1**	**0.4**	**0.3**	**-**	**36.4**

Leigh Lot Lower

Compartment 4

Volume by Species and Product, expanded by acres

Stand Acres 48

Stands::StandTex tName 3

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	34%	42%	28,025.9	-	267.0	-	407.4	-	-	-	820.2
	06 Red Maple	22%	14%	-	-	168.2	-	12.5	-	-	-	180.7
	09 Quaking Aspen	5%	9%	-	-	144.6	-	-	-	-	-	144.6
	11 Yellow Birch	10%	6%	-	-	37.8	-	38.7	-	-	-	76.5
	07 White Ash	5%	6%	9,561.2	-	49.0	-	-	-	-	-	98.7
	12 Sweet Birch	5%	4%	-	-	39.2	-	33.1	-	-	-	72.3
	05 Sugar Maple	5%	3%	-	-	14.0	-	14.0	-	-	-	28.0
	13 Beech	3%	1%	-	-	13.9	-	-	-	-	-	13.9
HW Total		**90%**	**86%**	**37,587.1**	**-**	**733.7**	**-**	**505.7**	**-**	**-**	**-**	**1,434.9**
SW	02 Hemlock	10%	14%	30,657.5	-	108.1	-	26.4	17.6	13.2	-	312.4
SW Total		**10%**	**14%**	**30,657.5**	**-**	**108.1**	**-**	**26.4**	**17.6**	**13.2**	**-**	**312.4**
Stand Total		**100%**	**100%**	**68,244.7**	**-**	**841.8**	**-**	**532.1**	**17.6**	**13.2**	**-**	**1,747.3**

Goose Pond Stand Forest Data Trees per acre

Wright and Faulkner Lots 66 acres

Compartment 5

100.0 sq ft basal area

Stand 4 10.1 DBH quadradic mean

TPA Tree	Speci	DBH (inch 5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
A	RO	-	7	12	-	17	-	7	6	-	7	3	1	1	0	0	-	-	-	-	-	-	-	60
	HM	-	20	21	-	10	-	4	3	-	0	1	1	-	-	0	-	-	-	-	-	-	-	60
	RM	-	20	11	-	4	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	36
	BE	-	2	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	SB	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	WP	-	-	-	-	-	-	-	-	-	1	1	0	0	0	-	-	-	-	-	-	-	-	3
	SM	-	2	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	WA	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	YB	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	BO	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	WB	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
A Total		**-**	**55**	**49**	**-**	**33**	**-**	**12**	**11**	**-**	**8**	**5**	**3**	**1**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**###**
C	HM	-	-	-	-	-	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	1
	RO	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
C Total		**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0**	**0**	**-**	**-**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**1**
NC	HM	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	RM	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
NC Total		**-**	**-**	**1**	**-**	**1**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**2**
Stand Total		**-**	**55**	**50**	**-**	**33**	**-**	**12**	**11**	**-**	**8**	**5**	**3**	**1**	**1**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**###**

Wright and Faulkner Lots

Compartment 5

Volume by Species and Product, per acre

Stand Acre: 66

Stands::StandTextName 4

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 red oak	34%	47%	2,712.8	-	7.4	-	12.6	0.1	1.8	-	36.0
	06 red maple	21%	12%	32.0	-	2.8	-	1.1	-	-	-	4.1
	13 beech	2%	2%	-	-	0.6	-	0.1	-	-	-	0.8
	12 sweet birch	2%	1%	-	-	0.4	-	0.1	-	-	-	0.6
	05 sugar maple	2%	1%	-	-	-	-	0.3	-	-	-	0.3
	26 Black oak	0%	1%	64.0	-	0.2	-	-	-	-	-	0.5
	07 white ash	1%	0%	-	-	-	-	0.1	-	-	-	0.1
	10 white birch	0%	0%	-	-	0.2	-	-	-	-	-	0.2
	11 yellow birch	1%	0%	-	-	0.1	-	-	-	-	-	0.1
HW Total		**64%**	**65%**	**2,808.9**	**-**	**11.8**	**-**	**14.4**	**0.1**	**1.8**	**-**	**42.7**
SW	02 hemlock	35%	29%	1,059.4	-	5.8	-	4.5	0.4	-	0.1	15.9
	01 white pine	2%	6%	1,159.4	-	0.7	-	-	-	-	-	6.3
SW Total		**36%**	**35%**	**2,218.8**	**-**	**6.5**	**-**	**4.5**	**0.4**	**-**	**0.1**	**22.2**
Stand Total		**100%**	**100%**	**5,027.7**	**-**	**18.3**	**-**	**18.8**	**0.5**	**1.8**	**0.1**	**64.9**

Compartment 5

Wright and Faulkner Lots

Volume by Species and Product, expanded by acres

Stand Acre: 66

Stands::StandTextName 4

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	34%	47%	179,047.8	-	486.3	-	830.1	9.2	121.3	-	2,377.8
	06 Red Maple	21%	12%	2,112.4	-	185.0	-	72.6	-	-	-	268.6
	13 Beech	2%	2%	-	-	42.0	-	8.3	-	-	-	50.3
	12 Sweet Birch	2%	1%	-	-	29.0	-	8.8	-	-	-	37.8
	05 Sugar Maple	2%	1%	-	-	-	-	22.4	-	-	-	22.4
	26 Black Oak	0%	1%	4,224.8	-	12.9	-	-	-	-	-	34.9
	07 White Ash	1%	0%	-	-	-	-	7.6	-	-	-	7.6
	10 White Birch	0%	0%	-	-	13.2	-	-	-	-	-	13.2
	11 Yellow Birch	1%	0%	-	-	8.8	-	-	-	-	-	8.8
HW Total		**64%**	**65%**	**185,385.1**	**-**	**777.1**	**-**	**949.7**	**9.2**	**121.3**	**-**	**2,821.2**
SW	02 Hemlock	35%	29%	69,922.6	-	383.7	-	294.0	26.3	-	3.7	1,048.9
	01 White Pine	2%	6%	76,520.1	-	46.1	-	-	-	-	-	413.4
SW Total		**36%**	**35%**	**146,442.7**	**-**	**429.8**	**-**	**294.0**	**26.3**	**-**	**3.7**	**1,462.3**
Stand Total		**100%**	**100%**	**331,827.7**	**-**	**1,206.9**	**-**	**1,243.7**	**35.5**	**121.3**	**3.7**	**4,283.5**

Goose Pond Stand Forest Data Trees Per acre

Sylvester Lot 19 acres

Compartment 6

163.3 sq ft basal area

Stand 19 11.3 DBH quadradic mean

TPA (inch																							
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC	BO	-	17	13	-	16	-	23	24	-	9	2	2	0	-	-	-	-	-	-	-	-	-	105
	HM	-	11	10	-	16	-	8	9	-	7	3	1	1	-	-	-	-	-	-	-	-	-	67
	RM	-	23	19	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	45
	RO	-	-	-	-	2	-	10	-	-	-	3	2	-	-	-	-	-	-	-	-	-	-	16
	WP	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	3
NC Total		**-**	**51**	**45**	**-**	**37**	**-**	**41**	**33**	**-**	**17**	**7**	**5**	**1**	**-**	**-**	**-**	**-**	**0**	**-**	**-**	**-**	**-**	**236**
Stand Total		**-**	**51**	**45**	**-**	**37**	**-**	**41**	**33**	**-**	**17**	**7**	**5**	**1**	**-**	**-**	**-**	**-**	**0**	**-**	**-**	**-**	**-**	**236**

Sylvester Lot

Compartment 6

Volume by Species and Product, per acre

Stand Acres 19

Stands::StandTex
tName 19
Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	26 Black Oak	45%	49%	4,126.6	-	39.3	-	-	-	-	-	60.8
	14 Red Oak	7%	11%	1,389.1	-	2.3	-	5.9	-	-	-	15.4
	06 Red Maple	19%	8%	84.0	-	4.2	-	0.6	-	-	-	5.2
HW Total		**70%**	**68%**	**5,599.8**	**-**	**45.9**	**-**	**6.5**	**-**	**-**	**-**	**81.5**
SW	02 Hemlock	28%	31%	4,091.6	-	14.5	-	1.3	0.8	-	-	36.3
	01 White Pine	1%	1%	277.8	-	0.5	-	-	-	-	-	1.9
SW Total		**30%**	**32%**	**4,369.4**	**-**	**15.0**	**-**	**1.3**	**0.8**	**-**	**-**	**38.1**
Stand Total		**100%**	**100%**	**9,969.1**	**-**	**60.9**	**-**	**7.8**	**0.8**	**-**	**-**	**119.6**

Sylvester Lot

Compartment 6

Volume by Species and Product, expanded by acres

Stand Acres 19

Stands::StandTex
tName 19
Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	26 Black Oak	45%	49%	78,405.9	-	747.4	-	-	-	-	-	1,155.1
	14 Red Oak	7%	11%	26,392.9	-	44.4	-	111.4	-	-	-	293.1
	06 Red Maple	19%	8%	1,596.8	-	79.5	-	11.6	-	-	-	99.4
HW Total		**70%**	**68%**	**106,395.6**	**-**	**871.3**	**-**	**123.1**	**-**	**-**	**-**	**1,547.6**
SW	02 Hemlock	28%	31%	77,740.0	-	275.5	-	25.0	15.3	-	-	688.9
	01 White Pine	1%	1%	5,277.7	-	10.2	-	-	-	-	-	35.5
SW Total		**30%**	**32%**	**83,017.7**	**-**	**285.6**	**-**	**25.0**	**15.3**	**-**	**-**	**724.4**
Stand Total		**100%**	**100%**	**189,413.4**	**-**	**1,157.0**	**-**	**148.0**	**15.3**	**-**	**-**	**2,272.0**

Goose Pond Stand Forest Data Trees Per acre

Leigh Lot Crossing Powere Lines 9 acres

Compartment 7

123.6 sq ft basal area

Stand 20 10.0 DBH quadradic mean

TPA	(inch																						
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC	HM	26	33	2	-	13	-	4	3	-	3	2	1	0	-	0	-	-	-	-	-	-	-	87
	SM	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	RM	5	11	4	-	4	-	-	2	-	1	0	-	-	-	-	-	-	-	-	-	-	-	27
	WA	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	0
	WB	-	-	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	WP	-	11	2	-	-	-	5	2	-	1	4	1	1	0	-	-	-	-	-	-	-	-	26
	YB	-	-	-	-	3	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	SB	5	4	4	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	BE	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	RO	-	7	4	-	13	-	3	7	-	7	3	1	1	1	-	-	-	-	-	-	-	-	46
	BO	-	-	6	-	-	-	2	1	-	1	-	1	0	-	-	-	-	-	-	-	-	-	11
NC Total		**42**	**65**	**27**	**-**	**35**	**-**	**13**	**16**	**-**	**12**	**8**	**4**	**2**	**1**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**226**
Stand Total		**42**	**65**	**27**	**-**	**35**	**-**	**13**	**16**	**-**	**12**	**8**	**4**	**2**	**1**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**226**

Leigh Lot Crossing Power Line

Compartment 7

Volume by Species and Product, per acre

Stand Acre: 9

Stands::StandTextName 20

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	20%	32%	2,847.1	-	6.6	-	10.3	-	-	-	31.7
	06 Red Maple	12%	8%	250.4	-	2.9	-	1.2	-	-	-	5.3
	26 Black Oak	5%	6%	444.6	-	3.3	-	-	-	-	-	5.6
	12 Sweet Birch	7%	3%	-	-	1.6	-	0.6	-	-	-	2.2
	11 Yellow Birch	1%	2%	52.6	-	1.0	-	-	-	-	-	1.3
	10 White Birch	1%	1%	52.6	-	0.6	-	-	-	-	-	0.8
	05 Sugar Maple	1%	1%	-	-	0.3	-	-	-	-	-	0.3
	07 White Ash	0%	1%	-	-	0.4	-	-	-	-	-	0.4
	13 Beech	2%	1%	-	-	-	-	0.2	-	-	-	0.2
HW Total		**50%**	**55%**	**3,647.2**	**-**	**16.8**	**-**	**12.3**	**-**	**-**	**-**	**48.0**
SW	02 Hemlock	38%	28%	1,872.5	-	9.0	-	2.8	-	-	-	20.8
	01 White Pine	11%	17%	2,713.5	-	1.4	-	2.0	-	-	-	16.4
SW Total		**50%**	**45%**	**4,585.9**	**-**	**10.4**	**-**	**4.8**	**-**	**-**	**-**	**37.2**
Stand Total		**100%**	**100%**	**8,233.1**	**-**	**27.2**	**-**	**17.0**	**-**	**-**	**-**	**85.2**

Leigh Lot Crossing Power Line

Compartment 7

Volume by Species and Product, expanded by acres

Stand Acre: 9

Stands::StandTextName 20

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	20%	32%	25,623.7	-	59.6	-	92.9	-	-	-	285.7
	06 Red Maple	12%	8%	2,253.2	-	25.7	-	10.6	-	-	-	48.0
	26 Black Oak	5%	6%	4,001.5	-	30.0	-	-	-	-	-	50.8
	12 Sweet Birch	7%	3%	-	-	14.7	-	5.1	-	-	-	19.8
	11 Yellow Birch	1%	2%	473.2	-	9.0	-	-	-	-	-	11.5
	10 White Birch	1%	1%	473.2	-	5.1	-	-	-	-	-	7.6
	05 Sugar Maple	1%	1%	-	-	3.1	-	-	-	-	-	3.1
	07 White Ash	0%	1%	-	-	4.0	-	-	-	-	-	4.0
	13 Beech	2%	1%	-	-	-	-	1.9	-	-	-	1.9
HW Total		**50%**	**55%**	**32,824.9**	**-**	**151.3**	**-**	**110.4**	**-**	**-**	**-**	**432.4**
SW	02 Hemlock	38%	28%	16,852.2	-	80.6	-	25.2	-	-	-	186.8
	01 White Pine	11%	17%	24,421.2	-	12.9	-	17.7	-	-	-	147.8
SW Total		**50%**	**45%**	**41,273.4**	**-**	**93.5**	**-**	**42.9**	**-**	**-**	**-**	**334.6**
Stand Total		**100%**	**100%**	**74,098.3**	**-**	**244.8**	**-**	**153.4**	**-**	**-**	**-**	**767.0**

Goose Pond Stand Forest Data Trees per acre

Thompson Lot 53 acres

Compartment 8

Stand BA: 88.1
Stand 2 Stand QMD 10.2

TPA	DBH (inch																						
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand T
A	14 Re	-	3	9	-	14	-	6	8	-	5	2	2	1	0	0	-	-	-	-	-	-	-	51
	06 Re	-	13	5	-	6	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	28
	13 Be	-	10	9	-	2	-	2	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	23
	02 He	-	10	4	-	2	-	7	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	23
	12 Sw	-	3	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7
	05 Su	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	10 W	-	3	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	01 W	-	-	4	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
A Total		-	45	38	-	25	-	18	9	-	7	2	2	1	0	0	-	-	-	-	-	-	-	147
NC	06 Re	-	-	2	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	14 Re	-	-	-	-	1	-	-	1	-	0	-	-	0	-	-	-	-	-	-	-	-	-	2
	10 W	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	02 He	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	0
	01 W	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	0
NC Total		-	-	2	-	3	-	-	1	-	0	-	-	0	-	0	-	-	-	-	-	-	-	7
U	14 Re	-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
U Total		-	-	-	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	0
Stand Total		-	45	39	-	29	-	18	10	-	8	2	2	1	0	0	-	-	-	-	-	-	-	154

Thompson Lot

Compartment 8

Volume by Species and Product, per acre

Stand Acres 53

Stands::StandTex
tName 2
Tree Status (All)

Data													
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 red oak	34%	53%	3,021.4	-	10.3	-	7.5	-	0.6	-	34.1
	06 red maple	21%	16%	141.8	-	4.4	-	0.4	-	-	-	5.6
	13 beech	15%	10%	-	-	4.0	-	-	-	-	-	4.0
	12 sweet birch	4%	2%	-	-	0.4	-	0.2	-	-	-	0.6
	10 white birch	4%	2%	46.0	-	0.6	-	-	-	-	-	0.8
	05 sugar maple	3%	1%	-	-	0.4	-	-	-	-	-	0.4
HW Total		**82%**	**84%**	**3,209.2**	**-**	**20.1**	**-**	**8.2**	**-**	**0.6**	**-**	**45.5**
SW	02 hemlock	15%	13%	233.0	-	4.3	-	0.3	-	-	-	5.8
	01 white pine	3%	3%	156.3	-	0.6	-	-	-	-	-	1.3
SW Total		**18%**	**16%**	**389.3**	**-**	**4.9**	**-**	**0.3**	**-**	**-**	**-**	**7.1**
Stand Total		**100%**	**100%**	**3,598.5**	**-**	**25.0**	**-**	**8.5**	**-**	**0.6**	**-**	**52.6**

Thompson Lot

Compartment 8

Volume by Species and Product, expanded by acres

Stand Acres 53

Stands::StandTex
tName 2

Tree Status (All)

		Data										
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	34%	53%	181,282.3	-	618.7	-	452.2	-	33.0	-	2,046.7
	06 Red Maple	21%	16%	8,509.5	-	264.8	-	26.5	-	-	-	335.6
	13 Beech	15%	10%	-	-	241.8	-	-	-	-	-	241.8
	12 Sweet Birch	4%	2%	-	-	23.0	-	11.5	-	-	-	34.5
	10 White Birch	4%	2%	2,760.5	-	33.5	-	-	-	-	-	47.9
	05 Sugar Maple	3%	1%	-	-	21.9	-	-	-	-	-	21.9
HW Total		**82%**	**84%**	**192,552.4**	**-**	**1,203.8**	**-**	**490.2**	**-**	**33.0**	**-**	**2,728.3**
SW	02 Hemlock	15%	13%	13,979.4	-	259.9	-	20.6	-	-	-	347.6
	01 White Pine	3%	3%	9,375.7	-	35.7	-	-	-	-	-	80.7
SW Total		**18%**	**16%**	**23,355.1**	**-**	**295.6**	**-**	**20.6**	**-**	**-**	**-**	**428.3**
Stand Total		**100%**	**100%**	**215,907.5**	**-**	**1,499.4**	**-**	**510.8**	**-**	**33.0**	**-**	**3,156.7**

Goose Pond Stand Forest Data Trees Per acre

Grant Lot North 42 acres

Compartment 9 and 11

71.6 sq ft basal area

Stand 25 9.3 DBH quadradic mean

TPA	DBH (inches)																						
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC	BE	9	24	13	-	9	-	4	2	-	0	-	-	-	-	-	-	-	-	-	-	-	-	61
	RO	-	4	3	-	4	-	2	8	-	4	0	0	-	-	-	-	-	-	-	-	-	-	25
	RM	3	6	7	-	4	-	2	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	22
	HM	3	4	2	-	2	-	3	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	17
	BO	-	-	1	-	5	-	3	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	13
	WB	-	2	2	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	SB	-	2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	YB	-	2	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
NC Total		**15**	**45**	**31**	**-**	**25**	**-**	**13**	**16**	**-**	**5**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**151**
Stand Total		**15**	**45**	**31**	**-**	**25**	**-**	**13**	**16**	**-**	**5**	**0**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**151**

Grant Lot North

Compartment 9 and 11

Volume by Species and Product, per acre

Stand Acres 42

Stands::StandTex tName 25

Tree Status (All)

		Data										
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	13 Beech	41%	30%	-	-	8.6	-	2.1	-	-	-	10.8
	14 Red Oak	17%	28%	808.9	-	1.9	-	8.7	-	-	-	14.8
	26 Black Oak	9%	13%	303.8	-	4.3	-	0.2	-	-	-	6.1
	06 Red Maple	15%	11%	71.9	-	1.4	-	2.1	-	-	-	3.9
	10 White Birch	3%	3%	80.8	-	0.5	-	0.2	-	-	-	1.1
	12 Sweet Birch	3%	2%	-	-	-	-	0.6	-	-	-	0.6
	11 Yellow Birch	2%	1%	-	-	-	-	0.4	-	-	-	0.4
HW Total		**89%**	**88%**	**1,265.5**	**-**	**16.8**	**-**	**14.3**	**-**	**-**	**-**	**37.6**
SW	02 Hemlock	11%	12%	510.2	-	0.6	-	2.7	-	-	-	5.8
SW Total		**11%**	**12%**	**510.2**	**-**	**0.6**	**-**	**2.7**	**-**	**-**	**-**	**5.8**
Stand Total		**100%**	**100%**	**1,775.7**	**-**	**17.4**	**-**	**16.9**	**-**	**-**	**-**	**43.4**

Grant Lot North

Compartment 9 and 11

Volume by Species and Product, expanded by acres

Stand Acres 42

Stands::StandTextName 25

Tree Status (All)

Data												
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	13 Beech	41%	30%	-	-	362.6	-	90.2	-	-	-	452.7
	14 Red Oak	17%	28%	33,975.7	-	79.4	-	363.5	-	-	-	619.5
	26 Black Oak	9%	13%	12,760.9	-	179.2	-	8.8	-	-	-	254.4
	06 Red Maple	15%	11%	3,020.4	-	60.1	-	87.8	-	-	-	163.6
	10 White Birch	3%	3%	3,392.8	-	23.1	-	7.2	-	-	-	48.0
	12 Sweet Birch	3%	2%	-	-	-	-	25.1	-	-	-	25.1
	11 Yellow Birch	2%	1%	-	-	-	-	16.5	-	-	-	16.5
HW Total		**89%**	**88%**	**53,149.7**	**-**	**704.4**	**-**	**599.0**	**-**	**-**	**-**	**1,579.8**
SW	02 Hemlock	11%	12%	21,428.2	-	27.2	-	112.6	-	-	-	242.6
SW Total		**11%**	**12%**	**21,428.2**	**-**	**27.2**	**-**	**112.6**	**-**	**-**	**-**	**242.6**
Stand Total		**100%**	**100%**	**74,578.0**	**-**	**731.6**	**-**	**711.6**	**-**	**-**	**-**	**1,822.4**

Grant Lot South 46 Acres

Compartment 9 and 11

Stand BA: 100.0
Stand 23 Stand QMD 10.1

TPA Tree	Speci	DBH (inch 5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand T
NC	14 Re	-	2	11	-	10	-	10	8	-	6	2	1	0	-	-	-	-	-	-	-	-	-	51
	06 Re	6	22	14	-	7	-	-	1	-	1	0	-	-	-	-	-	-	-	-	-	-	-	51
	13 Be	-	9	9	-	9	-	2	2	-	0	-	-	-	-	-	-	-	-	-	-	-	-	31
	02 He	-	2	5	-	2	-	2	2	-	1	1	-	0	-	-	-	-	-	-	-	-	-	15
	26 Bl	-	-	6	-	-	-	-	2	-	1	-	0	-	-	-	-	-	-	-	-	-	-	9
	01 W	-	-	5	-	-	-	1	1	-	0	1	1	-	-	-	-	-	-	-	-	-	-	9
	12 Sw	-	2	2	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	10 W	-	-	-	-	2	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3
	08 Bl	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	07 W	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
NC Total		6	38	55	-	31	-	16	16	-	9	5	1	0	-	-	-	-	-	-	-	-	-	178
Stand Total		6	38	55	-	31	-	16	16	-	9	5	1	0	-	-	-	-	-	-	-	-	-	178

Compartment 9 and 11

Grant Lot South

Volume by Species and Product, expanded by acres

Stand Acre: 46

Stands::StandTextName 23

Tree Status (All)

Data

Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	29%	41%	85,030.9	-	229.2	-	660.9	4.6	-	-	1,336.8
	06 Red Maple	29%	17%	15,033.2	-	153.6	-	128.9	-	-	-	360.7
	13 Beech	18%	14%	-	-	262.4	-	87.0	-	-	-	349.4
	26 Black Oak	5%	6%	12,506.4	-	92.0	-	20.5	-	-	-	177.5
	12 Sweet Birch	3%	2%	-	-	23.8	-	19.6	-	-	-	43.4
	10 White Birch	2%	2%	-	-	46.9	-	-	-	-	-	46.9
	08 Black Cherry	1%	1%	-	-	15.3	-	-	-	-	-	15.3
	07 White Ash	1%	0%	-	-	8.6	-	-	-	-	-	8.6
HW Total		87%	83%	112,570.5	-	831.8	-	916.8	4.6	-	-	2,338.6
SW	02 Hemlock	9%	11%	55,543.0	-	86.7	-	20.2	-	-	-	373.4
	01 White Pine	5%	7%	35,356.4	-	31.1	-	38.6	-	-	-	239.4
SW Total		13%	17%	90,899.5	-	117.8	-	58.8	-	-	-	612.9
Stand Total		100%	100%	203,470.0	-	949.6	-	975.6	4.6	-	-	2,951.4

Grant Lot South

Compartment 9 and 11

Volume by Species and Product, per acre

Stand Acre 46

Stands::StandTextName 23

Tree Status (All)

Data

Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	29%	41%	1,848.5	-	5.0	-	14.4	0.1	-	-	29.1
	06 Red Maple	29%	17%	326.8	-	3.3	-	2.8	-	-	-	7.8
	13 Beech	18%	14%	-	-	5.7	-	1.9	-	-	-	7.6
	26 Black Oak	5%	6%	271.9	-	2.0	-	0.4	-	-	-	3.9
	12 Sweet Birch	3%	2%	-	-	0.5	-	0.4	-	-	-	0.9
	10 White Birch	2%	2%	-	-	1.0	-	-	-	-	-	1.0
	08 Black Cherry	1%	1%	-	-	0.3	-	-	-	-	-	0.3
	07 White Ash	1%	0%	-	-	0.2	-	-	-	-	-	0.2
HW Total		87%	83%	2,447.2	-	18.1	-	19.9	0.1	-	-	50.8
SW	02 Hemlock	9%	11%	1,207.5	-	1.9	-	0.4	-	-	-	8.1
	01 White Pine	5%	7%	768.6	-	0.7	-	0.8	-	-	-	5.2
SW Total		13%	17%	1,976.1	-	2.6	-	1.3	-	-	-	13.3
Stand Total		100%	100%	4,423.3	-	20.6	-	21.2	0.1	-	-	64.2

Galloway Lot

Compartment 10

112.9 sq ft basal area

Stand 22 10.8 DBH quadradic mean

TPA		DBH (inches)																					
Tree !	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40 Stand T
NC	14 Re	-	2	12	-	20	-	23	14	-	5	1	0	1	0	-	-	-	-	-	-	-	- 79
	26 Bl	-	2	14	-	9	-	6	1	-	-	-	-	-	-	-	-	-	-	-	-	-	- 32
	01 W	3	7	8	-	3	-	4	2	-	1	2	1	0	0	0	0	-	-	-	-	-	- 32
	02 He	-	5	14	-	3	-	2	2	-	1	1	0	-	-	-	-	-	-	-	-	-	- 28
	06 Re	-	5	1	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	- 7
NC Total		3	22	49	-	36	-	35	20	-	7	3	1	1	1	0	0	-	-	-	-	-	- 178
Stand Total		3	22	49	-	36	-	35	20	-	7	3	1	1	1	0	0	-	-	-	-	-	- 178

Galloway Lot

Compartment 10

Volume by Species and Product, per acre

Stand Acres 20

Stands::StandTextName 22

Tree Status (All)

		Data											
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	44%	54%	1,815.8	-	4.3	-	27.2	0.3	-	-	41.2
	26 Black Oak	18%	14%	96.2	-	6.5	-	1.3	-	-	-	8.3
	06 Red Maple	4%	2%	-	-	0.3	-	0.6	-	-	-	0.9
HW Total		**66%**	**70%**	**1,912.0**	**-**	**11.1**	**-**	**29.1**	**0.3**	**-**	**-**	**50.4**
SW	01 White Pine	18%	17%	1,867.1	-	1.5	-	3.9	-	-	-	14.3
	02 Hemlock	16%	14%	1,050.2	-	3.8	-	0.8	-	-	-	9.7
SW Total		**34%**	**30%**	**2,917.3**	**-**	**5.3**	**-**	**4.7**	**-**	**-**	**-**	**24.0**
Stand Total		**100%**	**100%**	**4,829.2**	**-**	**16.5**	**-**	**33.8**	**0.3**	**-**	**-**	**74.5**

Compartment 10

Galloway Lot

Volume by Species and Product, expanded by acres

Stand Acres 20

Stands::StandTextName 22

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	44%	54%	39,947.8	-	95.0	-	598.3	5.6	-	-	906.6
	26 Black Oak	18%	14%	2,115.7	-	142.9	-	28.0	-	-	-	181.8
	06 Red Maple	4%	2%	-	-	7.2	-	13.6	-	-	-	20.7
HW Total		**66%**	**70%**	**42,063.4**	**-**	**245.0**	**-**	**639.8**	**5.6**	**-**	**-**	**1,109.2**
SW	01 White Pine	18%	17%	41,075.8	-	32.5	-	85.5	-	-	-	315.2
	02 Hemlock	16%	14%	23,104.3	-	84.5	-	18.4	-	-	-	213.8
SW Total		**34%**	**30%**	**64,180.1**	**-**	**117.0**	**-**	**103.9**	**-**	**-**	**-**	**529.0**
Stand Total		**100%**	**100%**	**106,243.5**	**-**	**362.0**	**-**	**743.8**	**5.6**	**-**	**-**	**1,638.2**

Minister's Lot 51 acres

Compartment 12

80.3 sq ft basal area

Stand 24 9.8 DBH quadradic mean

TPA Tree : Speci	DBH (inches) 5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC 13	17	19	11	-	10	1	1	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	60
HM	5	8	3	-	4	-	5	3	-	1	0	-	0	-	-	-	-	-	-	-	-	-	30
RM	-	12	8	-	2	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
RO	-	2	1	-	2	-	1	5	-	5	2	2	1	0	-	-	-	-	-	-	-	-	22
SM	-	-	3	-	2	-	-	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	6
BO	-	-	1	-	2	-	1	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	6
SB	-	-	1	1	1	-	0	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	4
HB	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
WA	-	-	-	-	1	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
YB	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
NC Total	**22**	**42**	**28**	**1**	**24**	**1**	**10**	**13**	**-**	**8**	**3**	**2**	**1**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**155**
Stand Total	**22**	**42**	**28**	**1**	**24**	**1**	**10**	**13**	**-**	**8**	**3**	**2**	**1**	**0**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**155**

Minister's Lot

Volume by Species and Product, per acre

Compartment 12

Stand Acres 47

Stands::StandTex tName 24

Tree Status (All)

Data													
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	14%	34%	2,626.8	-	4.2	-	3.9	0.1	-	-	21.8
	13 Beech	39%	23%	-	-	6.2	-	1.4	-	-	-	7.6
	06 Red Maple	15%	10%	-	-	1.2	-	1.9	-	-	-	3.1
	26 Black Oak	4%	5%	148.6	-	1.7	-	-	-	-	-	2.5
	05 Sugar Maple	4%	4%	127.2	-	0.5	-	0.9	-	-	-	2.1
	12 Sweet Birch	2%	3%	56.5	-	0.5	-	0.5	-	-	-	1.3
	07 White Ash	1%	1%	69.1	-	0.3	-	-	-	-	-	0.6
	11 Yellow Birch	1%	1%	-	-	-	-	0.3	-	-	-	0.3
	18 Hornbeam	1%	0%	-	-	-	-	0.1	-	-	-	0.1
HW Total		**81%**	**81%**	**3,028.2**	**-**	**14.6**	**-**	**9.1**	**0.1**	**-**	**-**	**39.5**
SW	02 Hemlock	19%	19%	792.9	-	2.2	-	2.8	0.1	-	-	8.8
SW Total		**19%**	**19%**	**792.9**	**-**	**2.2**	**-**	**2.8**	**0.1**	**-**	**-**	**8.8**
Stand Total		**100%**	**100%**	**3,821.1**	**-**	**16.8**	**-**	**11.8**	**0.2**	**-**	**-**	**48.3**

Minister's Lot

Compartment 12

Volume by Species and Product, expanded by acres

Stand Acres 47

Stands::StandTex
tName 24

Tree Status (All)

		Data										
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	14%	34%	123,459.1	-	197.0	-	182.8	5.0	-	-	1,026.7
	13 Beech	39%	23%	-	-	289.4	-	66.5	-	-	-	355.9
	06 Red Maple	15%	10%	-	-	57.4	-	90.4	-	-	-	147.8
	26 Black Oak	4%	5%	6,983.2	-	81.1	-	-	-	-	-	117.4
	05 Sugar Maple	4%	4%	5,980.5	-	24.4	-	41.4	-	-	-	96.8
	12 Sweet Birch	2%	3%	2,654.4	-	24.3	-	24.1	-	-	-	62.1
	07 White Ash	1%	1%	3,249.2	-	12.5	-	-	-	-	-	29.4
	11 Yellow Birch	1%	1%	-	-	-	-	16.0	-	-	-	16.0
	18 Hornbeam	1%	0%	-	-	-	-	4.5	-	-	-	4.5
HW Total		**81%**	**81%**	**142,326.4**	**-**	**686.0**	**-**	**425.6**	**5.0**	**-**	**-**	**1,856.7**
SW	02 Hemlock	19%	19%	37,266.2	-	102.4	-	129.6	4.3	-	-	415.2
SW Total		**19%**	**19%**	**37,266.2**	**-**	**102.4**	**-**	**129.6**	**4.3**	**-**	**-**	**415.2**
Stand Total		**100%**	**100%**	**179,592.5**	**-**	**788.4**	**-**	**555.2**	**9.3**	**-**	**-**	**2,271.9**

Goose Pond Stand Forest Data Trees Per acre

Burroughs Lot 132 acres

Compartment 13

123.4 sq ft basal area

Stand 26 10.5 DBH quadradic mean

TPA	DBH (inches)																						
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC	RM	3	16	11	-	11	-	3	1	-	0	0	0	-	-	-	-	-	-	-	-	-	-	44
	RO	-	-	3	-	9	-	9	8	-	6	4	3	0	0	0	0	0	-	-	-	-	-	43
	HM	3	11	8	-	4	-	6	3	-	3	2	0	1	0	-	-	-	-	-	-	-	-	40
	BE	10	7	2	-	3	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	23
	SM	-	9	6	-	4	-	0	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	19
	WA	3	2	2	-	3	-	0	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	11
	SB	-	4	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	WP	-	-	1	-	1	-	1	1	-	0	1	-	0	0	0	0	-	0	-	-	-	-	6
	BO	-	-	1	-	2	-	2	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	5
	WB	-	2	1	-	1	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	YB	-	-	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
NC Total		**18**	**49**	**36**	**-**	**41**	**-**	**23**	**13**	**-**	**11**	**6**	**3**	**1**	**1**	**1**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**203**
Stand Total		**18**	**49**	**36**	**-**	**41**	**-**	**23**	**13**	**-**	**11**	**6**	**3**	**1**	**1**	**1**	**0**	**0**	**0**	**-**	**-**	**-**	**-**	**203**

Goose Pond Stand Forest Data Timber Volume

Burroughs Lot 132 acres

Compartment 13

Volume by Species and Product, per acre

Stand Acres 132

Stands::StandTe
xtName 26

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible	Topwood (Cords)	Total Tons
HW	14 Red Oak	21%	38%	3,875.6	-	5.4	-	13.8	-	-	-	39.3
	06 Red Maple	22%	14%	187.1	-	5.4	-	2.1	-	-	-	8.5
	05 Sugar Maple	9%	5%	47.0	-	0.3	-	2.8	-	-	-	3.3
	13 Beech	11%	5%	-	-	2.5	-	-	-	-	-	2.5
	07 White Ash	6%	4%	160.4	-	1.8	-	-	0.2	-	-	2.8
	26 Black Oak	3%	3%	138.9	-	1.3	-	0.2	-	-	-	2.2
	12 Sweet Birch	3%	2%	-	-	0.2	-	0.7	-	-	-	0.9
	10 White Birch	2%	1%	24.4	-	0.6	-	-	-	-	-	0.7
	11 Yellow Birch	1%	1%	-	-	-	-	0.5	-	-	-	0.5
HW Total		**78%**	**73%**	**4,433.4**	**-**	**17.5**	**-**	**20.0**	**0.2**	**-**	**-**	**60.7**
SW	02 Hemlock	20%	21%	2,146.6	-	6.7	-	0.4	-	-	-	17.4
	01 White Pine	3%	6%	1,460.2	-	0.7	-	-	-	-	-	7.7
SW Total		**22%**	**27%**	**3,606.9**	**-**	**7.4**	**-**	**0.4**	**-**	**-**	**-**	**25.1**
Stand Total		**100%**	**100%**	**8,040.3**	**-**	**24.9**	**-**	**20.4**	**0.2**	**-**	**-**	**85.9**

Burroughs Lot 132 acres

Volume by Species and Product, expanded by acres

Compartment 13

Stand Acres 132

Stands::StandTe
xtName 26

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible	Topwood (Cords)	Total Tons
HW	14 Red Oak	21%	38%	375,933.2	-	522.4	-	1,336.1	-	-	-	3,813.3
	06 Red Maple	22%	14%	18,146.7	-	527.5	-	202.4	-	-	-	824.2
	05 Sugar Maple	9%	5%	4,557.4	-	31.5	-	267.2	-	-	-	322.4
	13 Beech	11%	5%	-	-	238.5	-	-	-	-	-	238.5
	07 White Ash	6%	4%	15,557.5	-	176.1	-	-	15.2	-	-	272.3
	26 Black Oak	3%	3%	13,475.0	-	128.4	-	17.6	-	-	-	216.1
	12 Sweet Birch	3%	2%	-	-	20.5	-	64.1	-	-	-	84.6
	10 White Birch	2%	1%	2,370.1	-	54.6	-	-	-	-	-	66.9
	11 Yellow Birch	1%	1%	-	-	-	-	50.9	-	-	-	50.9
HW Total		**78%**	**73%**	**430,039.8**	**-**	**1,699.4**	**-**	**1,938.3**	**15.2**	**-**	**-**	**5,889.1**
SW	02 Hemlock	20%	21%	208,221.7	-	647.3	-	40.8	-	-	-	1,687.5
	01 White Pine	3%	6%	141,643.3	-	71.1	-	-	-	-	-	751.0
SW Total		**22%**	**27%**	**349,865.0**	**-**	**718.4**	**-**	**40.8**	**-**	**-**	**-**	**2,438.5**
Stand Total		**100%**	**100%**	**779,904.7**	**-**	**2,417.8**	**-**	**1,979.0**	**15.2**	**-**	**-**	**8,327.6**

Goose Pond Stand Forest Data Trees Per acre

Bauer Lot 12 acres

Compartment 14

116.2 sq ft basal area

Stand 29 12.0 DBH quadradic mean

TPA	DBH (inches)																						
Tree	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand
NC	WP	-	-	4	-	4	-	10	5	-	10	6	3	1	0	-	0	0	0	-	0	-	-	44
	RO	-	-	4	-	8	-	5	3	-	3	0	1	-	-	-	-	-	-	-	-	-	-	25
	HM	-	8	4	-	3	-	3	4	-	-	0	-	-	-	-	-	-	-	-	-	-	-	23
	RM	-	8	4	-	3	-	4	1	-	-	0	0	-	-	-	-	-	-	-	-	-	-	20
	SM	-	4	-	-	1	-	4	-	-	1	2	-	-	-	-	-	-	-	-	-	-	-	12
	SB	-	4	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	BO	-	-	-	-	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	6
	BE	-	4	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5
	WB	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	BC	-	-	-	-	1	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
	WA	-	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	0
NC Total		**-**	**27**	**24**	**-**	**24**	**-**	**30**	**14**	**-**	**13**	**9**	**4**	**1**	**0**	**-**	**0**	**0**	**0**	**-**	**0**	**-**	**-**	**149**
Stand Total		**-**	**27**	**24**	**-**	**24**	**-**	**30**	**14**	**-**	**13**	**9**	**4**	**1**	**0**	**-**	**0**	**0**	**0**	**-**	**0**	**-**	**-**	**149**

Bauer Lot

Compartment 14

Volume by Species and Product, per acre

Stand Acres 12

Stands::StandTex
tName 29
Tree Status (All)

Data													
Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	17%	17%	841.9	-	1.8	-	7.8	-	-	-	14.0
	06 Red Maple	14%	9%	56.6	-	3.6	-	1.1	-	-	-	5.0
	05 Sugar Maple	8%	7%	476.0	-	0.8	-	2.8	-	-	-	6.1
	26 Black Oak	4%	3%	-	-	2.0	-	-	-	-	-	2.0
	08 Black Cherry	3%	3%	113.3	-	1.0	-	0.5	-	-	-	2.1
	13 Beech	3%	1%	-	-	0.2	-	0.5	-	-	-	0.7
	12 Sweet Birch	4%	1%	-	-	-	-	0.8	-	-	-	0.8
	10 White Birch	3%	1%	-	-	0.7	-	-	-	-	-	0.7
	07 White Ash	0%	1%	108.8	-	0.2	-	-	-	-	-	0.8
HW Total		**55%**	**43%**	**1,596.5**	**-**	**10.3**	**-**	**13.5**	**-**	**-**	**-**	**32.1**
SW	01 White Pine	29%	46%	7,278.3	-	5.5	-	5.7	0.4	-	-	46.5
	02 Hemlock	15%	11%	598.5	-	2.1	-	2.2	0.5	-	-	7.6
SW Total		**45%**	**57%**	**7,876.8**	**-**	**7.6**	**-**	**7.8**	**0.9**	**-**	**-**	**54.2**
Stand Total		**100%**	**100%**	**9,473.3**	**-**	**18.0**	**-**	**21.3**	**0.9**	**-**	**-**	**86.3**

Bauer Lot

Compartment 14

Volume by Species and Product, expanded by acres

Stand Acres 12

Stands::StandTex
tName 29

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	17%	17%	13,470.5	-	28.8	-	125.0	-	-	-	223.8
	06 Red Maple	14%	9%	906.0	-	57.3	-	17.5	-	-	-	79.5
	05 Sugar Maple	8%	7%	7,615.5	-	12.6	-	44.8	-	-	-	97.0
	26 Black Oak	4%	3%	-	-	32.6	-	-	-	-	-	32.6
	08 Black Cherry	3%	3%	1,812.0	-	16.3	-	7.7	-	-	-	33.4
	13 Beech	3%	1%	-	-	3.6	-	7.8	-	-	-	11.4
	12 Sweet Birch	4%	1%	-	-	-	-	13.1	-	-	-	13.1
	10 White Birch	3%	1%	-	-	11.0	-	-	-	-	-	11.0
	07 White Ash	0%	1%	1,740.2	-	3.1	-	-	-	-	-	12.1
HW Total		**55%**	**43%**	**25,544.4**	**-**	**165.3**	**-**	**215.9**	**-**	**-**	**-**	**514.0**
SW	01 White Pine	29%	46%	116,453.4	-	87.7	-	90.6	7.1	-	-	744.4
	02 Hemlock	15%	11%	9,575.5	-	34.3	-	34.5	7.6	-	-	122.4
SW Total		**45%**	**57%**	**126,028.9**	**-**	**121.9**	**-**	**125.1**	**14.7**	**-**	**-**	**866.7**
Stand Total		**100%**	**100%**	**151,573.3**	**-**	**287.3**	**-**	**341.0**	**14.7**	**-**	**-**	**1,380.8**

Compartment 15

Drummer Lot 140 acres

99.1 sq ft basal area
Stand 27 9.6 DBH quadradic mean

TPA	DBH (inches)																					
Tree !	Speci	5	6	8	9	10	11	12	14	15	16	18	20	22	24	26	28	30	32	34	36	38	40	Stand T
NC	14 Re	2	12	25	-	14	-	6	4	-	3	2	0	1	0	0	-	-	-	-	-	-	-	69
	02 He	19	3	7	-	2	-	1	1	-	-	0	0	-	0	0	-	-	-	-	-	-	-	34
	01 W	-	6	4	-	6	-	3	2	-	3	1	2	1	1	0	0	0	0	0	-	-	0	31
	13 Be	4	7	5	-	4	-	0	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	22
	06 Re	2	10	2	-	3	-	-	1	-	0	-	0	-	-	-	-	-	-	-	-	-	-	18
	12 Sw	13	3	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
	07 W	2	1	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	4
	09 Qu	-	-	1	-	-	-	-	0	-	0	-	-	-	-	-	-	-	-	-	-	-	-	1
	10 W	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
	05 Su	-	-	-	-	-	-	-	-	-	0	-	-	-	-	-	-	-	-	-	-	-	-	0
NC Total		43	43	44	-	29	-	11	9	-	7	4	2	2	1	1	0	0	0	0	-	-	0	197
Stand Total		43	43	44	-	29	-	11	9	-	7	4	2	2	1	1	0	0	0	0	-	-	0	197

Drummer Hill Lot

Compartment 15

Volume by Species and Product, expanded by acres

Stand Acres 140

Stands::StandTex
tName 27
Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock (Tons)	Cull (Tons)	Non Merchantible (Tons)	Topwood (Cords)	Total Tons
HW	14 Red Oak	35%	39%	161,125.3	7,942.9	481.1	1.8	1,951.8	67.9	-	-	3,384.6
	13 Beech	11%	7%	-	-	408.0	-	11.9	-	-	-	419.9
	06 Red Maple	9%	6%	11,191.6	-	153.7	-	154.3	-	-	-	366.2
	12 Sweet Birch	8%	3%	-	-	21.4	-	108.1	-	-	-	129.5
	07 White Ash	2%	1%	5,822.1	-	21.1	-	10.8	-	-	-	62.2
	09 Quaking Aspen	1%	1%	-	-	42.6	-	-	-	-	1.0	45.2
	05 Sugar Maple	0%	0%	5,468.6	-	6.3	-	-	-	-	-	34.7
	10 White Birch	0%	0%	-	-	18.9	-	-	-	-	-	18.9
HW Total		**67%**	**57%**	**183,607.6**	**7,942.9**	**1,152.9**	**1.8**	**2,237.0**	**67.9**	**-**	**1.0**	**4,461.1**
SW	01 White Pine	16%	33%	633,545.1	3,031.2	413.0	-	272.7	133.0	-	-	3,874.3
	02 Hemlock	17%	11%	73,530.6	-	250.1	-	164.3	-	-	-	767.4
SW Total		**33%**	**43%**	**707,075.7**	**3,031.2**	**663.1**	**-**	**437.1**	**133.0**	**-**	**-**	**4,641.8**
Stand Total		**100%**	**100%**	**890,683.3**	**10,974.0**	**1,816.0**	**1.8**	**2,674.1**	**200.9**	**-**	**1.0**	**9,102.8**

Goose Pond Shore

Compartment 16

90.0 sq ft Basal area

Stands::St 1

10.8 DBH quadradic mean

TPA		DBH (inches)												
Tree Statı	Species	6	8	10	12	14	16	18	20	22	24	26	28	Stand Totı
A	01 white p	12	10	4	1	1	2	1	1	1	3	0	0	37
	14 red oal	3	8	10	7	2	2	1	0	-	1	-	-	34
	02 hemlo	3	10	4	4	1	1	2	0	1	0	-	-	28
	06 red ma	12	12	1	2	-	-	-	-	-	-	-	-	27
	12 sweet	-	3	2	-	-	-	-	-	-	-	-	-	6
	10 white l	-	-	2	-	-	-	-	-	-	-	-	-	2
	11 yellow	-	2	-	-	-	-	-	-	-	-	-	-	2
	13 beech	-	2	-	-	-	-	-	-	-	-	-	-	2
A Total		30	47	24	15	4	5	4	2	2	4	0	0	137
NC	02 hemlo	3	-	-	-	-	-	-	-	-	-	-	-	3
NC Total		3	-	-	-	-	-	-	-	-	-	-	-	3
Stand Total		33	47	24	15	4	5	4	2	2	4	0	0	140

Goose Pond Shore

Compartment 16

Volume by Species and Product, per acre

Stand Acr 14

Stands::StandTextName 1

Tree Status (All)

Data

Type	Species	% TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Stock (Tons)	Cull (Tons)	Merchantible	Topwood (Tons)	Total Tons
HW	14 red oak	24%	26%	239.9	-	0.3	-	10.9	-	-	-	12.4
	06 red maple	19%	10%	-	-	-	-	3.3	-	-	-	3.3
	12 sweet birch	4%	3%	-	-	-	-	1.1	-	-	-	1.1
	10 white birch	2%	1%	-	-	-	-	0.5	-	-	-	0.5
	13 beech	1%	1%	-	-	-	-	0.3	-	-	-	0.3
	11 yellow birch	1%	1%	-	-	-	-	0.2	-	-	-	0.2
HW Total		52%	41%	239.9	-	0.3	-	16.2	-	-	-	17.8
SW	01 white pine	26%	35%	82.5	-	0.1	-	14.6	-	-	-	15.1
	02 hemlock	22%	24%	-	-	-	-	9.2	-	-	0.0	9.2
SW Total		48%	59%	82.5	-	0.1	-	23.8	-	-	0.0	24.4
Stand Total		100%	100%	322.5	-	0.4	-	40.0	-	-	0.0	42.1

Goose Pond Shore

Compartment 16

Volume by Species and Product, expanded by acres

Stand Acr 14

Stands::StandTextName 1

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Stock (Tons)	Cull (Tons)	Merchantible	Topwood (Tons)	Total Tons
HW	14 red oak	24%	26%	3,358.9	-	4.2	-	152.1	-	-	-	173.8
	06 red maple	19%	10%	-	-	-	-	45.8	-	-	-	45.8
	12 sweet birch	4%	3%	-	-	-	-	15.1	-	-	-	15.1
	10 white birch	2%	1%	-	-	-	-	7.6	-	-	-	7.6
	13 beech	1%	1%	-	-	-	-	3.9	-	-	-	3.9
	11 yellow birch	1%	1%	-	-	-	-	2.5	-	-	-	2.5
HW Total		52%	41%	3,358.9	-	4.2	-	227.0	-	-	-	248.6
SW	01 white pine	26%	35%	1,155.5	-	2.0	-	204.5	-	-	-	212.1
	02 hemlock	22%	24%	-	-	-	-	128.7	-	-	0.4	129.1
SW Total		48%	59%	1,155.5	-	2.0	-	333.2	-	-	0.4	341.1
Stand Total		100%	100%	4,514.4	-	6.2	-	560.2	-	-	0.4	589.8

Volume by Species and Product, expanded by acres

Stand Acr 4

Compartment 17

Stands::Stan dTextName 2

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock	Cull (Tons)	Non Merchantibl	Topwood (Tons)	Total Tons
HW	14 red oak	3%	10%	-	-	-	-	22.0	-	-	-	22.0
	06 red maple	7%	5%	-	-	-	-	5.2	-	-	-	5.2
	12 sweet birch	10%	5%	-	-	-	-	9.6	-	-	-	9.6
	07 white ash	6%	5%	-	-	-	-	8.6	-	-	-	8.6
	09 quaking aspen	2%	3%	-	-	-	-	4.3	-	-	-	4.3
HW Total		28%	28%	-	-	-	-	49.7	-	-	-	49.7
SW	01 white pine	63%	62%	-	-	-	-	92.4	-	-	-	92.4
	02 hemlock	9%	10%	-	-	-	-	18.1	-	-	-	18.1
SW Total		72%	72%	-	-	-	-	110.5	-	-	-	110.5
Stand Total		100%	100%	-	-	-	-	160.2	-	-	-	160.2

Crown Cla (All)

Stands::St 2

Compartment 17

Volume by Species and Product, per acre

Stand Acr 4

Stands::StandTextName 2

Tree Status (All)

Type	Species	Data % TPA	% BA	Sawlog (BF)	Veneer (BF)	Pulp (Tons)	Firewood (Cords)	Growing Stock	Cull (Tons)	Non Merchantibl	Topwood (Tons)	Total Tons
HW	14 red oak	3%	10%	-	-	-	-	5.5	-	-	-	5.5
	06 red maple	7%	5%	-	-	-	-	1.3	-	-	-	1.3
	12 sweet birch	10%	5%	-	-	-	-	2.4	-	-	-	2.4
	07 white ash	6%	5%	-	-	-	-	2.2	-	-	-	2.2
	09 quaking aspen	2%	3%	-	-	-	-	1.1	-	-	-	1.1
HW Total		28%	28%	-	-	-	-	12.4	-	-	-	12.4
SW	01 white pine	63%	62%	-	-	-	-	23.1	-	-	-	23.1
	02 hemlock	9%	10%	-	-	-	-	4.5	-	-	-	4.5
SW Total		72%	72%	-	-	-	-	27.6	-	-	-	27.6
Stand Total		100%	100%	-	-	-	-	40.1	-	-	-	40.1

Taft Lot 4 acres

Compartment 17

Stand BA: 97.5

Stands::St 2 Stand QMD: 8.4

TPA DBH (inches)

Tree Stat	Species	6	8	10	12	14	16	18	20	22	24	26	28	Stand Tot
A	01 white	140	-	5	6	-	2	4	-	1	3	-	1	162
	12 sweet	25	-	-	-	-	-	-	-	-	-	-	-	25
	02 hemlo	13	7	-	-	2	-	1	-	-	-	-	-	24
	06 red ma	13	-	5	-	-	-	-	-	-	-	-	-	17
	07 white	13	-	-	-	2	-	-	-	-	-	-	-	15
	14 red oa	-	-	-	-	5	4	-	-	-	-	-	-	8
	09 quakin	-	-	5	-	-	-	-	-	-	-	-	-	5
A Total		204	7	14	6	9	5	6	-	1	3	-	1	256
Stand Total		204	7	14	6	9	5	6	-	1	3	-	1	256

Forest Stand Descriptions

Compartment 1

Lot Name: Paquette
Tax Map/Block/Lot: 910-004-002
Acres: 247
Topography: This is the high point of the land along The Gilsum Mine Road. The land drops away to the south and west with drainages carrying water toward Goose Pond.
Aspect: South
Accessibility: The Lot is easily accessible from Gilsum Mine Road in the eastern two thirds. It is less practical in the west part of the land because it is all up hill and over 2/3 of a mile.
Soils: Predominately Tunbridge-Lyman-Rock Outcrop complex. They are very well suited to growing red oak.
Special features: There is a 2-acre wetland located in the northeast end of the property. Otherwise this is a very heavy stand of Northern Red Oak, mixed with Beech, Red maple, Hemlock, White pine

Timber Stands

Stand 1: 32 acres
Species Composition: Red Oak, Red Maple, Beech
Diameter Distribution: Red Oak 12-30"; Red Maple and Beech 8-18"
Basal Area: 120 square feet
Understory: Beech and Red Maple
Description:

This is an excellent stand of primarily tall red oak with intermediate red maple and beech. Many of the red oaks have more than 40 feet of clear stems making them quite valuable. The understory is lightly stocked with beech. Cutting on nearby woodland in similar type has shown that the beech will take over the stand it is allowed to be released. There is very little red oak in the understory to replace the mature trees. The prolific seeding can be controlled at the time of harvest if work is done in the snowless times of the year.

Stand 2: 4 acres
Description: This is a forested wetland with scattered 2-8 inches Red maple, hemlock, and spruce in the overstory growing over winter berry and alder.

Stand 3: 43 acres
Species Composition: Red Oak, Hemlock, White Pine
Diameter Distribution: 10-20"
Basal Area: 130 square feet
Understory: Hemlock and Beech
Description:

West and south of the wetland area hemlock and white pine are mixed with the red oak. There is still good red oak, but it is a bit shorter. And the stem quality is not as good. The high basal areas are due to the shade tolerant hemlock growing as a dense intermediate species. The red oaks crowns are above the hemlock so they are not competing for light. White pine is

scattered through the stand. The stem quality is good and the crowns are healthy. In the understory there is a light occurrence shade tolerant beech and hemlock saplings.

Stand 4: 29 acres
Species Composition: Red Oak, White Pine, Hemlock, Red maple, Beech
Diameter Distribution: 8-24"
Basal Area: 110 square feet
Understory: Beech, Red Maple and Hemlock
Description:

This stand is a good mix of mature Red oak, White Pine. There is mature hemlock in the stand but it is not as packed in as Stand 3. The red oak and pine are between 14 and 24" in diameter While the hemlock, red maple, and beech are intermediate trees between 8 and 14 inches. In the understory there is beech over the whole stand poised to take over when the forest is opened up.

Stand 5: 51 acres
Species Composition: Red oak, Hemlock, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 8-24"
Understory: Beech, Hemlock and Red Maple are common understory species. Red Oak or White Pine seedlings and saplings are nearly absent.
Description:

This stand is forms the top of a drainage 12-24" diameter Red oak, Hemlock, and White pine are all growing here as dominant trees. The trees crowns are well spaced as are the stems giving the stand an open quality. The trees are tall with at least 40 feet of clear stem in hardwoods and hemlock and 48 feet of good stems in the white pine. There is intermediate 8-14" red maple and beech. As it is elsewhere in the compartment beech saplings are found everywhere within the stand.

Stand 6: 5 acres
Species Composition: Red Oak, Red Maple, White Birch, Aspen
Basal Area: 90 square feet
Diameter Distribution: 8-16"
Understory: Beech, Red Maple, Hemlock
Description:

This stand is the result of a blowdown. Most likely in the hurricane of 1938. The stand is facing the south east. Red oak is the dominant species in the stand but they are scattered. Making up a greater part of the basal area is small intermediate red maple, white birch, beech and quaking aspen. There are remnants of the blown down white pine in the stand with bowed stems and tipped up stumps from which logs were salvaged. Beech is established in the understory.

Stand 7: 4 acres
Utility rights-of-way

Stand 8: 9 acres
Species Composition: White Pine, Hemlock, Red Maple, White ash, Red Oak, Beech
Basal Area: 120 square feet
Diameter Distribution: 12 – 26”
Understory: Beech and Hemlock
Description:

This stand is on the west side of the powerline at the top of the hill. It is definitely old pasture as the stone wall defines the edge of the stand and the property line. The white pine are very large with many stems over 20 inches. Many of the trees are multi stems or the trees are poor quality with large limbs. Growing with the pine is a mix of large white ash, red maple and red oak. Red maple are also found in the intermediate stages of the forest with beech. And as usual sapling beech is in the understory with hemlock.

Stand 9: 3 acres
Species Composition: White pine, red maple, quaking aspen, white ash
Basal Area: 90 square feet
Diameter Distribution: 10-24”
Understory: Beech and Hemlock
Description:

Just east of the powerline, the slope flattens out and forms a shelf adjacent to a wetland area. There is plenty of moisture in the soil to grow some very tall white pine. White pine are growing with 10-20” red maple, white ash, and quaking aspen indicating that this is a rich site. Beech and yellow birch are saplings in the understory. The stand feels somewhat vulnerable to getting blown down in some future hurricane as the soil the tall trees are growing in is light and somewhat sandy.

Stand 10: 2 acres
Marsh-Shrub Wetland
Description:

This is a saucer where several streams come together. The ground is rocky sand hummocky due to repeated blow downs on the edges and a sedge marsh in the interior.

Stand 11: 4 acres
Species Composition: Red Maple, Beech, Yellow Birch, Quaking Aspen, White Ash
Basal Area: 90 Square Feet
Diameter Distribution: 10 – 16”
Understory: Beech and Hemlock
Description:

This is the feeder area where several streams come together. The stand is very rocky. Pit and troughs are testament to the trees that have blown down in thes stand over the centuries. The stand is a mixture of pole sized hardwood 10 to 16 “ DBH. Beech is again a common component of the understory.

Stand 12: 12 acres
Species Composition: Red Oak, Red Maple, Beech, White Ash, and Quaking Aspen
Basal Area: 110 square feet

Diameter Distribution: 12 -24”
Understory: Beech, Hemlock, Red Maple
Description:

This is a stand of upland hardwood with dominant, well-spaced, tall Red oak 12-24” DBH excellent stem quality growing intermediate with red maple, beech, yellow birch 10 – 14” DBH. There are occasional scattered white pine 12-18” DBH pine in the stand. The crowns are closed. But given the well-spaced trees, the stand has an open character.

Stand 13: 4 acres
Soil: Tunbridge-Lyman-Rock outcrop complex. This is a well-drained soil with 2-4 foot surface rocks and rock outcrop.
Aspect: North.
Access: The access is poor because the stand is over 1800’ from Old Gilsum Road.
Species Composition: White Pine, Hemlock, Red Maple, Beech, Hemlock
Basal Area: 110 Square Feet
Diameter Distribution: 10-20”
Understory: Beech and Hemlock
Description:

This is a stand of upland mixed hemlock and white pine with red maple and beech. The canopy is closed up and the interior of the stand is dense. Little light gets to the ground so there little regeneration. Beech and hemlock are the only understory trees present. The last time the stand was logged was before the 1960s.

The white pine will be ready to log within the next 10 years. The hemlock is vulnerable to hemlock wooly adelgid. Also the lack of sunlight is an issue for the regeneration. The north slope would have to be cut harder in order to accomplish a productive reforestation.

Stand 14: 15 acres
Soil: Tunbridge-Lyman-Rock outcrop complex. This is a well-drained soil with 2-4 foot surface rocks and rock outcrop.
Aspect: Southwest
Access: The access is good as it is within 500’ of the Old Gilsum Road.
Species Composition: Hemlock, Red Oak and White Pine/ Hemlock beech
Basal Area: 120+ square feet
Diameter Distribution: 10-20”
Understory: Hemlock and beech
Description:

This is a dense stand of good quality hemlock 8-20” with mixed straight white pine and red oak. The trees are growing on well drained rocky soil. The site is good so the trees are tall. There is a open understory with few trees limited to hemlock and beech. The last logging was before the 1960s.

Stand 15: 23 acres
Soil: Monadnock Fine Sandy Loam. This is a well-drained soil type with 2-4 feet surface rocks and rock outcrop.
Aspect: Southwest with a gentle slope.
Access: The access is good as it is within 500’ of the Old Gilsum Road.

Species Composition: Red Oak, Beech, White Pine, Hemlock
Basal Area: 90 square feet
Diameter Distribution: 10-20”
Understory: Beech
Description:

This is an open growing stand of Mature red oak and intermediate beech with scattered large, straight white pine and hemlock. The site is good so the trees are tall. Tree vigor is good. The understory is open a few beech and hemlock saplings.

Stand 16: 7 acres
Soil: Monadnock Fine Sandy Loam. This is a well-drained soil with 2-4 feet surface rocks and rock outcrop.
Aspect: Southwest with a gentle slope.
Access: The access is somewhat difficult as it is 1500’ of the Old Gilsum Road 100’ down hill from the best access point.
Species Composition: Mature Red Oak, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 8-20” DBH
Understory: Beech
Description:

This is a dense stand of closed canopy hardwood with scattered large white pine. The site is very good so the trees are tall. The closed crowns favoring shade tolerant beech in the understory. The last logging in the stand was before the 1960s. There are few stumps or evidence of disturbance.

Stand 17: 4 acres
Soil: Monadnock Fine Sandy Loam. This is a poorly-drained site with 2-6 feet surface rocks and rock outcrop.
Aspect: The stand faces west at the base of the big ledge water courses through in several channels.
Access: It is doubtful that this stand would be logged as the ground conditions are too rocky and wet. The stand is about 750’ form the old Gilsum Road down hill 100’.
Species Composition: Red Oak, Red Maple, White Ash, Beech, Yellow Birch
Basal Area: 90 square feet
Diameter Distribution: 10-20”
Understory: Beech, Yellow Birch saplings
Description:

This is a seasonally wet site. It is not a forested wetland as the soil is well drained rocky soil. There are several channels that take water that flows off the big ledge outcrop and sends it south toward goose pond. The stand is less dense than some of the other equally mature stands as there has been some blowdown due to the saturated soils. There is good quality red oak and it is the largest average diameter. This stand has white ash in it which will be vulnerable to the emerald ash borer sometime in the next 10 years. There is also red maple, yellow birch, and beech all growing intermediate smaller average diameter and crown presence to the red oak.

Stand 18: 1 acre
Soil: Rock outcrop
Aspect and Topography: This is a dramatic rock ledge that juts out of the ground for about 400' sometimes as much as 60' tall. There are many cracks and boulders piled along the ledge, suggesting places for porcupine, bobcat, and other mammals, as well as snakes, to inhabit. The outcrop faces west but has a good exposure to the south so on bright winter days the rocks can get a lot of sunshine.
Access: It is doubtful that this stand would be logged as the ground conditions are too rocky. The stand is about 500' form the old Gilsum Road down hill 100'.
Species Composition: Red Oak, Beech
Basal Area:
Diameter Distribution:
Understory: Beech
Description:

This site is poor and difficult to work so the trees found on it are very old but often gnarled. This is un- merchantable stand. There are large Beech, Red oak, Yellow birch and short hemlocks some of which have been stripped by porcupines.

Compartment 2

Lot Name: Kingsbury Lot
Tax Map/Block/Lot: 909-04-005
Acres: 26
Topography: This lot is part of a former farm. It runs from a drainage in the southeast to a smooth sloped drumlin hilltop in the west.
Aspect: South, so most of the lot gets plenty of sun.
Accessibility: This area was accessed by a farm road, now badly washed out, that rises up steeply from the Old Surrey Road.
Soils: On the west side of the powerline there is a gentle drumlin hilltop of excessively drained that was definitely used as pasture. On the east side of the powerline the soil is more Tunbridge-Lyman-Outcrop a hardpan prone to blowdown. There is evidence of a major blowdown in the 1938 hurricane.
Special features: The powerline goes down south through the area splitting the lot in half. At the lower elevation, on the east side of the power line there is an old farm site.

Timber Stands

Stand 19: 4 acres
Soil: Tunbridge-Lyman-Rock Outcrop complex with hardpan characteristics.
Aspect: Southeast
Access: Poor. The old farm road to Old Surry Road leaves the property before it gets to the main road and it is steep and washed out in several places.
Species Composition: Red Oak, White Pine, White birch, Quaking Aspen, Ash
Basal Area: 90 square feet
Diameter Distribution: 12-24”
Understory: Beech
Description:

This is a young hardwood stand with remnant old trees as a result of the Hurricane of 1938. The big pine show signs of being tipped where they have tried to regrow and have formed a bowed structure. There are also smaller tipped over hardwoods that have reformed their main stem to grow straight up. The site is good but it is prone to further blowdown because the soil is hardpan and the trees are poorly rooted. The understory is small wiry beech with a few pockets of pine saplings.

Stand 20: 5 acres
Species Composition: Red Oak, Red Maple, Beech, White Ash, White Birch scattered Hemlock and White Pine
Soil: Tunbridge-Lyman-Rock Outcrop complex observation also suggests greenwood mucky peat. The soil is often saturated. There is occasional blowdown because the trees are poorly rooted.
Aspect and Topography: This is a drainage area at the base of the hill.
Access: Poor
Basal Area: 70 square feet
Diameter Distribution: 8-20”
Understory: Beech, Yellow Birch

Description:

This is a mixed stand of hardwood and hemlock and scattered poorly formed large white pine growing in rocky wet soil. Most of the hardwood is poor quality.

Stand 21: 4 acres
Soil: Tunbridge-Lyman-Rock Outcrop complex with hardpan characteristics.
Aspect: South
Access: Poor
Species Composition: Open; Juniper, Beech and White stubs some White Pine saplings
Basal Area: Open
Diameter Distribution: less than 2"
Understory: N/A
Description:

This area is maintained as a powerline. It does have edge value to wildlife as it creates a diverse edge habitat not found in the interior forest.

Stand 22: 7.5 acres
Soil: Tunbridge Lyman Rock Outcrop complex with hardpan characteristics.
Aspect: South
Access: There is long distance access to the east and the Old Gilsum Road it is about 2000 feet.
Species Composition: White Pine, Red Oak, Beech, Quaking Aspen, White Ash
Basal Area: 120 square feet
Diameter Distribution: 12 – 28"
Understory: Beech and Hemlock
Description:

This is the old pasture area near the smoothly rounded hilltop. There are not a lot of rocks because they have been removed for the pasture. The stand is made up of very large , poorly formed, multiple stemmed white pine with large dead branches. These trees would make boards with big black knots. There is also large short stemmed red oak and tall quaking aspen. The white ash is large and poorly formed. The understory is beech saplings.

Stand 23: 2.5 acres
Soil: Tunbridge-Lyman-Rock Outcrop complex with hardpan characteristics.
Aspect and Topography: South-facing drainage
Access: Poor
Species Composition: Hemlock, Red Maple, Beech, White Birch
Basal Area: 120 square feet
Diameter Distribution: 8 – 16"
Understory: Beech and Hemlock
Description:

This drainage area is made up of dense hemlock growing with red maple and beech. Hemlock is dominant registering the larger diameters in the stand with the hardwood growing as intermediate. This is a poor site as the trees are short.

Stand 24: 1.5 acres
Soil: Tunbridge-Lyman-Rock Outcrop complex with hardpan characteristics.
Aspect: West
Access: Poor
Species Composition: White Pine, Hemlock, Red Oak
Basal Area: 110 square feet
Diameter Distribution: 10 – 20”
Understory: Beech and Hemlock
Description:

This is a good stand of good straight well formed white pine, hemlock and red oak. The crowns are closed. Hemlock and red oak are intermediate to the white pine.

Stand 24: 1.5 acres
Soil: Tunbridge-Lyman-Rock Outcrop complex with hardpan characteristics.
Aspect: West
Access: Poor
Species Composition: White Pine, Hemlock, Red Oak
Basal Area: 110 square feet
Diameter Distribution: 10 – 20”
Understory: Beech and Hemlock
Description:

This is a good stand of good straight well formed white pine, hemlock and red oak. The crowns are closed. Hemlock and red oak are intermediate to the white pine.

Compartment 3
Lot Name: Costantino Lot
Tax Map/Block/Lot: 909-04-004
Acres: 55
Topography: This land slopes gently from the Old Gilsum Road
Aspect: West
Accessibility: Good with plenty of frontage on the Old Gilsum Road
Soils: Monadnock Fine Sandy Loam in the east part in upper elevations, Lyman-Tunbridge in the lower west part.
Trails: Two mountain bike trails drop down off Old Gilsum Road

Timber Stands
Stand 25: 25 acres
Soil: Monadnock Fine Sandy Loam
Aspect: West
Access: Good
Species Composition: White Pine, Hemlock, Red Oak
Basal Area: 110 square feet
Diameter Distribution: 10 – 20"
Understory: Beech and Hemlock
Description:
This is a good stand of good straight well-formed white pine, hemlock and red oak. The crowns are closed. Hemlock and red oak are intermediate to the white pine.

Stand 26: 20 acres
Soil: Monadnock Fine Sandy Loam
Aspect: West
Species Composition: White Pine, Hemlock, Red Oak
Basal Area: 110 square feet
Diameter Distribution: 10 – 20"
Understory: Beech and Hemlock
Description:
This is a good stand of good straight well formed white pine, hemlock and red oak. The crowns are closed. Hemlock and red oak are intermediate to the white pine.

Stand 27: 6 acres
Utility Rights-of-Way

Stand 28: 3 acres
Soil: Monadnock Stony Fine Sandy Loam
Aspect: West
Access: Good
Species Composition: Hemlock, Black Oak, Red Oak
Basal Area:
Diameter Distribution: 12 – 24"
Understory: Beech and Hemlock

Description:

This is a stand fair quality hemlock and poor black oak and red oak. The crowns are thin but closed. Tree heights are short. The site is very well drained.

Compartment 4
Lot Name: Thompson and Reed Lot
Tax Map/Block/Lot: 914-04-030
Acres: 57
Topography: Strong slope
Aspect: West
Accessibility: Fair to poor
Soils: Monadnock Fine Sandy loam
Trails: Two main trails pass through this land following the contours about half way up the elevation and at the lower elevations.
Special features: This is an excellent stand of oak timber.

Timber Stands
Stand 42: 46 acres
Soil: Monadnock fine sandy loam
Aspect and Topography: Moderate slope facing west
Access: Good to poor. On the upper elevations the access is good to the Old Gilsum Road. On the lower elevations access is more difficult.
Species Composition: Red Oak, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 10-24"
Understory: Sparse Beech
Description:
This is a stand of excellent red oak. There the trees are well spaced with spreading crowns. Beech and red maple are growing with smaller diameters as intermediate trees in the shade below the big red oaks. The site is excellent as many of the trees are 45 feet to the first branch making this very high quality hardwood.

Stand 81: 4 acres
Utility Rights-of-Way

Stand 82: 1 acre
Soil: Monadnock fine sandy loam
Aspect and Topography: Gentle sloping to the west.
Access: Good
Species Composition: Hemlock, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 8-18"
Understory: Beech
Description:
This is primarily a hemlock stand on the south side of the powerline. It looks as the stand was logged in the 1970s.

Stand 96: 6 acres
Soil: Monadnock fine sandy loam
Aspect and Topography: Gently sloping to the west

Access: Good
Species Composition: Hemlock, Red Oak, Black Oak, White Birch, Beech
Basal Area: 110 square feet
Diameter Distribution: 8-18”
Understory: Beech saplings
Description:

This part of the lot was logged with the Sylvester lot in the 1970s . As a result there are beech saplings in the understory. Hemlock, poor beech and black oak dominate the overstory. Diameters are comparatively smaller than stand 42 where the oak is exceptional.

Compartment 5
Lot Name: Leigh1 Lot
Tax Map/Block/Lot: 909-04-007
Acres: 48
Topography: Steep
Aspect: West
Accessibility: This is a difficult piece of land to access. About 1/3 of the lot in the upper elevations are accessible to the Old Gilsum Road. The land runs all the way to Goose Pond. It is not possible to access the lower elevations without a creating a heavy impact and probably causing erosion.
Soils: Very well-drained, erodible. Monadnock stony fine sandy loam; 15-25% slope.
Trails: There is one main trail that drops down the hill diagonally from southeast to northwest.
Special features: There is a lot of down course woody debris on the hill. It looks like it is remnant dead, chestnut and red oak.

Timber Stands
Stand 29: 1 acre
Utility Rights-of Way

Stand 30: 9 acres
Soil: Very well-drained Monadnock stony fine sandy loam
Access: Fair
Species Composition: Red Oak, Hemlock, Beech, Red Maple
Basal Area: 110 square feet
Diameter Distribution: 12-20"
Understory: Beech
Description:
This is a stand primarily of medium quality Red oak and hemlock growing with intermediate red maple, and beech. The understory is dark and there is scattered hemlock seedlings.

Stand 31: 10 acres
Soil: Monadnock stony fine sandy loam
Access: Poor
Species Composition: Hemlock, White Pine, Black Oak, Red Oak, Beech
Basal Area: 110 square feet
Diameter Distribution: 10-18"
Understory: scattered Hemlock seedlings/ open
Description:
This is a stand of mixed oak, hemlock and pine all in the overstory growing on a steep west slope. Beech is scattered as an intermediate growing in the shade. There is beech and red maple in the understory as saplings.

Stand 32: 8 acres
Soil: Monadnock stony fine sandy loam with broken ledge
Aspect and Topography: Steep and west facing

Access: Poor
Species Composition: Red Oak, Red Maple, Beech, Hemlock
Basal Area: 120 square feet
Diameter Distribution: 10- 24”
Understory: Beech
Description:

This is primarily a mixed hardwood stand on a steep hill with oak being the dominant species. Hemlock is scattered and beech is present in small diameters scattered growing in the shade of the closed red oak canopy. There are scattered beech seedlings. The stand is also notable for its downed course woody debris. Some of this may be from fallen chestnuts that died back in the 1920s.

Stand 33: 1 acre
Soil: Monadnock stony fine sandy loam
Access: Poor
Species Composition: White Pine, Red Oak, Black Oak, Beech
Basal Area: 120 square feet
Diameter Distribution: 10-12”
Understory: scattered Hemlock seedlings/ open
Description:

This is a ravine with difficult access. This is a stand of mixed oak, and pine all in the overstory growing on a steep west slope. Beech is scattered as an intermediate growing in the shade. There is beech and red maple in the understory as saplings.

Stand 34: 19 acres
Soil: Monadnock stony fine sandy loam
Aspect and Topography: West and steep
Access: Poor
Species Composition: Hemlock, Black Oak, Red Maple, Beech
Basal Area: 120 square feet
Diameter Distribution: 6-18”
Understory: Hemlock
Description:

This is a mixed stand of hemlock and BlackOak. The trees are short in comparison to other oak growing on the Goose Pond Forest. The quality is also fair to poor. This is because this is a poor site. The stand is dense because of the hemlock. Generally, the black oak are a bit taller than the hemlock.

Compartment 6
Lot Name: Sylvester Lot
Tax Map/Block/Lot: 909-04-011
Acres: 18
Topography: Gently sloping
Aspect: West
Accessibility: Easy as there is good frontage on Old Gilsum Road
Soils: Monadnock stony fine sandy loam
Trails: one main trail heads from the Gilsum Road through to the west and down the hill.

Timber Stands
Stand 40: 18 acres
Soil: Monadnock fine sandy loam
Aspect and Topography: West and gently falling to the west
Access: Very good
Species Composition: Hemlock, Red Oak, Black Oak, Beech
Basal Area: 110 square feet
Diameter Distribution: 8-16”
Understory: Hemlock and Beech
Description:

This stand is a smaller mix of trees. This is primarily and oak and hemlock stand, but there are scattered white pine in the mix. Beech is growing as an intermediate in the midstory and beech is prevalent in the understory and a thick sapling growth. Stumps look to be about 25-30 years old. So this stand is growing back from logging. Beech is extremely aggressive in colonizing thin the aftermath of logging in this zone.

Compartment 7
Lot Name: Leigh2 Lot
Tax Map/Block/Lot: 909-03-023
Acres: 12
Topography: Gentle hilltop
Aspect: Westerly
Accessibility: Very good
Soils: Tunbridge-Lyman-Rock outcrop complex
Trails: There are none in the woods but there is a trail along the powerline.
Special features: There is a major junction of powerlines in the middle of this small lot.

Timber Stands
Stand 43 and 45: 8 acres
Species Composition: Hemlock, Beech, Red Oak, Black Oak
Basal Area: 110 square feet
Diameter Distribution: 10-18"
Understory: Thick Beech and Hemlock saplings
Description:

This stand was logged in the 1970s or 1980s for white pine and red oak. Hemlock and beech are the most common tree in these two stands. There is a heavy regeneration of beech. The red oak and remaining white pine is low quality and short in stature.

Insects and diseases: Much of the beech is infected with Beech Bark disease. Many of these trees will be dying in the next 10 years.

Stand 44: 4 acres
Utility Rights-of-Way

Compartment 9

Lot Name: Burroughs Lot

Tax Map/Block/Lot: 914-04-023

Acres: 132

Topography: This land is south of Goose Pond. It forms a rugged rock outcrop hilltop and drops off to the south. There is a flowage on the east side of the land that includes some small but interesting wetlands. On the east side of this flowage the land continues on a slope facing west.

Aspect: All aspects are represented

Accessibility: All of this land is accessible for management by way of the Bauer Lot. Although some of the parcel is on the outside of the feasible range

Soils: There are a wide range of soils on this parcel, including on the east part Monadnock Fine Sandy Loam 15 to 20% slope, Berkshire Fine Sandy Loam, Lyman-Tunbridge Rock Outcrop Complex, and Greenwood Mucky Peat. The vegetation follows the soil. This is a diverse piece of land.

Trails: There is a light network of trails on this parcel. Concentrated mostly on the west side of the land with Wild Thing, and near the pond with Green on White

Special features: The hill top is interesting and the sets of ledges around it. At the back of the hilltop on the west side is an interesting wetland area with black ash and black gum.

Timber Stands

Stand 72: 6 acres

Soil: Monadnock Fine Sandy Loam Very Stony. The soil is well-drained.

Aspect and Topography: West-facing with 10-15% slope

Accessibility: This is a long range away from the Old Surrey Road but possible. It is about 3,500 feet to the access point.

Species Composition: Red Oak, Hemlock, White Pine, Beech, Red Maple

Basal Area: 120 square feet

Diameter Distribution: 8-24”

Understory: Beech

Description:

This is primarily a red oak stand 12-24” DBH with good quality and healthy crowns with intermediate hemlock and beech 8 to 14”. Beech and red maple is growing as saplings in the understory. The slope and rocks pose an operational challenge.

Stand 73: 17 acres

Soil: Monadnock Fine Sandy Loam

Aspect and Topography: West-facing

Accessibility: Good to the East Surry Road

Species Composition: Hemlock, White Pine, Red Oak, Beech, Red Maple

Basal Area: 130 square feet

Diameter Distribution: 8-20”

Understory: Hemlock, Beech, Red Maple

Description:

This is primarily a hemlock stand 12-18" DBH with scattered large 12-20" DBH white pines and red oaks. Logging was done in this stand in the 1980s. At the time, white pine and hemlock were harvested. Now, beech and hemlock saplings are in the understory.

Stand 74: 13 acres
Soil: Greenwood Mucky Peat and Monadnock Fine Sandy Loam
Aspect and Topography: This is a slow-moving drainage feeding the south end of the Goose pond. The banks are sometimes up to 10% but it is more often gentle.
Accessibility: Good to the East Surry Road
Species Composition: Hemlock, Red Maple, Beech, White Ash, Black Ash, Black Gum, Red Oak/Beech and Hemlock
Basal Area: 110 square feet
Diameter Distribution: 8-16"
Understory: Beech, Red Maple, and Hemlock with blueberry
Description:

This is a wet site with a diverse mix of species. It is unlikely that forest management would be done in the stand because it is a buffer to the stream that runs into the south side of Goose Pond. The stand is Primarily a Hemlock stand with a scattering of red oak and the other things listed. . It. There is also a small number of 4-8" black ash and black gum in the stand. Since it is wet, and the trees are poorly rooted, there have been a number of blowdowns. So it is a common site to stt big root mats usually of hemlocks thrown up with the downed trees and raw exposed soil.

Stand 75: 28 acres
Soil: Monadnock Fine Sandy Loam Very Stony
Aspect and Topography: East
Accessibility: Good to the East Surry Road
Species Composition: Hemlock, White Pine, Red Oak, Black Birch, Red Maple/Beech
Basal Area: 120 square feet
Diameter Distribution: 8-24"
Understory: Beech and Hemlock
Description:

This stand is primarily a dense hemlock stand with white pine and red oak in the canopy. Red maple and black birch are intermediate 8-16" DBH. Sparse beech and hemlock saplings are in the understory. The hemlock often has good quality in this stand. Red oak and black birch are also promising as vigorous healthy trees in the overstory.

Stands 76 and 77: 22 acres and 28 acres
Soil: Berkshire Fine Sandy Loam
Aspect and Topography: Northwest-facing with gentle slopes
Accessibility: Good to the East Surry Road
Species Composition: Hemlock, White Pine, Red Oak, Red Maple, Beech, White Ash, Sweet Birch, Aspen
Basal Area: 120 square feet
Diameter Distribution: 8-24"

Understory: Beech and Hemlock
Description:

This is primarily a hemlock stand 8-18" but within it there are diverse components. There is Red Oak and White Pine 14 -24" in the canopy which is unevenly scattered through the stand. Pine is showing signs of decline with Calipsiopsis. Where their crowns are thinning out. There are the intermediate hardwoods Red Maple, Beech, White Ash, Quaking Aspen and Sweet Birch 8-16". White Birch is scattered and dying back. Cavities on the large white pine and hemlocks are not uncommon. Beech and hemlock saplings are sparsely growing in the understory.

Stand 78: 13 acres
Soil: Lyman-Tunbridge Rock Outcrop Complex
Aspect and Topography: Hilltop – poor very well-drained site
Accessibility: Good to East Surry Road
Species Composition: Hemlock, Black Oak, Beech
Basal Area: 100 square feet
Diameter Distribution: 6-18"
Understory: Hemlock
Description:

This stand is primarily short hemlock with black oak and beech. Hemlock is growing in the understory. Hemlocks that have been chewed by porcupines are common in the hemlocks.

Stand 79: 2 acres
Soil: Greenwood mucky Peat
Aspect and Topography: Nearly flat wetland area
Accessibility: Distant to East Surry Road
Species Composition: Wetland
Description:

In this stand there are scattered hemlocks and red maple growing over sphagnum moss, and bog blueberry bushes. There is a blowdown in the stand with large upturned rootmats.

Stand 80: 3 acres
Utility Rights-of-Way

Compartment 10
Lot Name: Galloway Lot
Tax Map/Block/Lot: 909-04-013
Acres: 25
Topography: Moderately steep; well drained
Aspect: West-facing
Accessibility: Very good from the Old Gilsum Road
Soils:
Trails: The trail network is heavy in this compartment

Timber Stands
Stand 61: 10 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: West-facing; moderate slope and well-drained
Species Composition: Hemlock, Black Oak, Red Oak, White Pine, Beech/Beech and Hemlock
Basal Area: 90-110 square feet
Diameter Distribution: 8-18"
Understory: Beech and Hemlock
Description:

This stand was logged in the 1970s of oak and white pine. The stand is has a prevelance of Hemlock with a mixture of the oaks in the overstory. There is scattered, occasional white pine. This makes up the larger diameters 12-18" dbh. Beech and hemlock are intermediate with diameters in the 8-12'dbh range. And there is a heavy, wirey beech understory brought on by this light logging.

Stand 62: 15 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: West-facing with a moderate slope
Access: Good from the Old Gilsum Road
Species Composition: Black Oak, Red Oak, Beech, Red Maple, Black Birch/Beech and Black Birch
Basal Area: 100 square feet
Diameter Distribution: 8-18"
Understory: Beech and Black Birch
Description:

This is a closed canopy stand of black oak and red oak with diameters of 12-18" dbh. Tree trees have. The intermediate trees are beech, red maple, and black birch. The crowns of these trees are just below the red oak overstory and they have diameters from 8 – 14". Overstory and intermediate tree quality is fair to good. Almost all of the beech has beech bark disease. Some logging was done in the 1970s which has brought on the beech and black birch sapling understory. There is an absence of oak in the sapling stage.

Compartment 11

Lot Name: Grant North and South Lots
Tax Map/Block/Lot: 909-03-020 and 909-03-099
Acres: 92
Topography: The Grant Lot is on the east side of the Old Gilsum Road. It rises to the top of a hill in the north part of the land. There is a drainage to the southeast discharging into the Minister's lot. Other than a steep ledgy place in the northeast part of the land, the slopes are mostly gentle. In the east part of the lot there is a flat place that is a red maple white pine blueberry flat.
Aspect: The land tilt to the southeast away from the Old Gilsum Road.
Accessibility: The land is completely accessible.
Soils: Lyman-Tunbridge rock outcrop complex is the soil in the northwest. Monadnock fine sandy loam runs through the body of the piece. The hilltop has exposed ledge.

Timber Stands

Stand 46: 4 acres
Utility Rights-of-Way

Stand 47: 28 acres
Soil: Tunbridge-Lyman Rock Outcrop Complex
Aspect and Topography: South-facing
Access: Good from the old Gilsum Road. 2700' maximum
Species Composition: Red Oak, Black Oak, Red Maple, Beech/ Beech, Red Maple
Basal Area: 90-110 square feet
Diameter Distribution: 8-20"
Understory: Red Maple and Beech
Description:

This is a dry south facing site growing a mixture of red oak and black on a medium quality site. The black oak and red oak make up most of the canopy and the larger diameters of 12 to 20" dbh white the red maple and beech are intermediate trees of 8 to 14" dbh. There is some beech in the understory as saplings. There is an absence of oak in the understory.

Stand 48 and 49: 6 acres
Soil: Tunbridge-Lyman Rock Outcrop Complex
Aspect and Topography: South-facing sometimes steep with 8-20% slopes
Access: Fair with maximum 2500' reach range
Species Composition: Hemlock, Black Oak, Beech
Basal Area: 90-110 square feet
Diameter Distribution: 10 – 20"
Understory: Beech and sparse Hemlock saplings
Description:

This is short Hemlock, Black Oak, and beech growing on thin rocky hillside on well-drained soil. The stand is dense due to the hemlock overstory and understory.

Stand 51: 3 acres
Soil: Mucky peat
Aspect and Topography: This is an almost flat area with a slight southern tilt. It is wet in the leaf off seasons and will dry up in the summer months.
Access: Fair from the Old Gilsum Road
Species Composition: Red Maple, poor White Pine, hemlock
Basal Area: 40-50 square feet
Diameter Distribution: 6-12"
Understory: Red Maple, blueberry
Description:

This flat area is a blueberry marsh with sparse red maple and poorly formed slow growing white pine. The site is poor for growing trees.

Stand 57: 2.5 acres
Utility Rights-of-Way

Stand 58: 38 acres
Soil: Monadnock Fine Sandy Loam Very Stony. This is a well-drained soil
Aspect and Topography: South-facing with a drainage in the north end flowing southeast and away from Goose Pond.
Access: Very good
Species Composition: Red Oak, Black Oak, Beech and Red Maple/Beech
Basal Area: 90-110"
Diameter Distribution: 8-18"
Understory: Beech
Description:

This stand was thinned in the 1980's. The thinning was often light opening up the canopy to stimulate the understory to sprout to beech. The canopy is mostly closed at this time so there isn't much energy in the understory to propel the beech beyond its current sapling state. The oak in the overstory is good to fair quality 12-18" in diameter. There are more black oak stems than red oak but the bigger better trees are red oak. Merchantable tree heights are fair, not outstanding as compared to the better oak sites on the forest.

Stand 59: 9 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: Gentle convex shape southeast facing, well drained
Access: Very good
Species Composition: Hemlock Beech Black Oak Red Oak/be hm
Basal Area: 90 to 110 square feet
Diameter Distribution: 10 -20"
Understory: Beech and Hemlock
Description:

There was some logging in this stand in the 1970's or early 1980's. Mostly red oak and black oak was harvested at the time. The stand is a moderately dense stand with a prevalence of hemlock mixed with black oak and a few red oaks in the larger diameters 14-20 " dbh. Beech is

intermediate 10 – 14” dbh. Much of the beech is infected with beech bark disease. In this, and all areas of the forest hemlock is vulnerable to wooly adelgid.

Stand 60: 1.6 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: This is a gentle south facing area
Access: Very good from the Old Gilsum Road
Description:

This area is open. It is the site of the watertower. Around the edge is a mix of mature black oak, red oak, beech, and red maple.

Compartment 12
Lot Name: Minister's Lot
Tax Map/Block/Lot: 909-03-021
Acres: 67
Topography: It has a convex land form so it is well drained. The slopes are gentle.
Aspect: This whole lot is south-facing. There are two drainages flowing south. One on the west and one on the east. All water is flowing away from Goose Pond.
Accessibility: Very good from Old Gilsum Road.
Soils: Well-drained Tunbridge-Lyman Rock Outcrop Complex, Monadnock Fine Sandy Loam, and Berkshire Monadnock soil.
Trails: Light concentration
Special features: Powerlines take up a big part of this lot. One runs across the north end, another runs southeast diagonally through the land.

Timber Stands
Stand 50: 16 acres
Utility Rights-of-Way

Stand 53: 23 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: South-facing, with a moderate slope up to 25%
Accessibility: Good from Old Gilsum Road
Species Composition: Red Oak, Black Oak, Beech, Red Maple/Beech
Basal Area: 110 square feet
Diameter Distribution: 8-18"
Understory: Beech
Description:
This stand features a consistent stand of oak with beech. Oak is in the 14-18" diameter range. Black oak is more plentiful but red oak is better quality and represented by the larger trees. Beech and red maple are growing as smaller intermediate trees below the upper canopy 8 to 14" dbh. Dominant saplings are beech. There are oak seedlings but they are under dense shade. They will not grow without increased overhead light

Stand 54: 4 acres
Soil: Berkshire and Monadnock
Aspect and Topography: Southeasterly-facing; 8-15% slope
Accessibility: Good from Old Gilsum Road
Species Composition: Hemlock, Red Black Oak, Red Oak, Beech/Beech and Hemlock
Basal Area: 120 square feet
Diameter Distribution: 8-18"
Understory: Hemlock and Beech
Description:
This is a dominant hemlock with black oak and red oak. This area was logged in the early 1980s. The site is droughty and poor. Beech sapling are regenerating in the understory mixed with hemlock.

Stand 55: 11 acres
Soil: Tunbridge-Lyman Rock Outcrop complex
Aspect and Topography: South
Access: Very good from the Old Gilsum Road
Species Composition: Black Oak, Red Oak, Beech, Hemlock/Beech and Hemlock
Basal Area: 110 square feet
Diameter Distribution: 8-30”
Understory: Beech and Hemlock
Description:

This stand was part of the 1980’s logging. It is a primary black oak and red oak stand growing on a droughty soil. Black oak is more common than red oak but the larger ranges are represented by red oak. Black oak is generally poor quality. Hemlock is scattered as an intermediate with beech and red maple. Beech is in the understory regenerating from the harvest.

Compartment 15
Lot Name: Drummer Lot
Tax Map/Block/Lot: 908-04-014
Acres: 139 acres
Topography: Gentle 5-15% slope with a central drainage.
Aspect: South
Accessibility: Very good. From both the Old Gilsum Road and the Drummer Road
Soils: Monadnock Fine Sandy Loam
Trails: Dense network -- Double Dip, Jump, Kamikaze Slalom, Rope Tow, Lewis Pond, Brian's Wood Gap
Special features: This lot has is a collection of three smaller lots. This has significance to the current condition of the stands. There is an interesting little pond in the middle of the lot fed by a south flowing drainage.

Timber Stands
Stand 63: 37 acres
Soil: Tunbridge-Lyman Rock Outcrop Complex
Aspect and Topography: Southwest-facing with slopes 5-15%
Accessibility: Excellent from the Old Gilsum Road
Species Composition: Red Oak, Red Maple, Beech, White Pine, Hemlock/Beech, Red Maple, Hemlock
Basal Area: 110 square feet
Diameter Distribution: 8-20"
Understory: Beech, Red Maple, Hemlock, scant White Pine, and Red Oak seedlings
Description:
This is an open growing mixed red oak stand with intermediate red maple, beech, white pine, and hemlock. The oak with diameters ranging from 10 -20" DBH have crowns that are small by comparison to other sites pointing to slow growth. The stand was last thinned in the 1960s as there stumps dating from that time. White pine was harvested. Since then the stand has filled in with hardwood with residual white pine. Most of the understory is Beech and hemlock saplings. There is little white pine in the understory. That which exists has been starved for light for so long that it is past the point that it can be released. There are also a large number of red oak seedlings that are choked in the shade.

Stand 64: 30 acres
Soil: Monadnock Fine Sandy Loam. Well-drained somewhat droughty
Aspect and Topography: South and southeast-facing
Accessibility: Very good from the Old Gilsum Road
Species Composition: White Pine, Hemlock, Red Oak, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 10-24"
Understory: Beech, Hemlock, Red Oak and White Pine
Description:
This is primarily a white pine 14-24" DBH stand with scattered red oaks. The stand was last logged in the 1960s or before. The quality of the white pine is fair to poor with many of the large trees being crooked with large knots. The red oaks have good quality and large crowns.

There are also dominant hemlocks. The intermediate trees are red maple and beech. Those species are also in the sapling stage in the understory.

Stand 65: 22 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: This stand resides on both sides a south flowing drainage. The slope is 5-15% with the steepest part running down to the stream. The stream usually has water in it but dries up in the driest part of the summer.
Accessibility: Very good from the Old Gilsum Road
Species Composition: White Pine, Red Oak, Beech, White Ash, Yellow Birch
Basal Area: 130 square feet
Diameter Distribution: 8-30"
Understory: Beech and Hemlock
Description:

This is a stand dense White pine, Hemlock and Mixed hardwood. The white pine are 12-30" DBH. The quality is low. Often the large white pine stems have multiple tops and cavities. There are also some large diameter White Ash and Yellow Birch also with poor form. Intermediate trees are hemlock, red maple, beech 8 to 14". The understory is hemlock and beech.

Stand 66: 18 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: South-facing
Accessibility: Very good from the Old Gilsum Road or The Drummer Road.
Species Composition: White Pine, Red Oak, Beech, Red Maple, Sweet Birch, Aspen /Beech
Basal Area: 120 square feet
Diameter Distribution: 8-24"
Understory: Beech
Description:

This is a mixed stand of White Pine and Red Oak overstory 12-24"DBH with Red Maple, Beech, and Black birch, Aspen as intermediate trees 8-16"DBH. The White pine is fair quality but is showing signs of decline with the tops being affected by both calipsiopsis and needlecast. The stand appears to be in conversion primarily hardwood. Red oak crowns are robust and the form is good. Aspen is getting to be at the limit of its biological lifespan the crowns are starting to show decline.

Stand 67: 8 acres
Soil: Monadnock Fine Sandy Loam
Aspect and Topography: South-facing with a gentle slope.
Accessibility: Excellent to the Drummer Road
Species Composition: White Pine, Hemlock, Red Oak, Beech
Basal Area: 110 square feet
Diameter Distribution: 8-20"
Understory: Beech, Hemlock, and Black Birch

Description:

This is primarily a White pine stand growing with Hemlock and Red Oak in the overstory. Beech and hemlock are intermediate and in the understory as saplings. The white pine is in decline with Calipsiopsis with heavily affected crowns. There are also some invasive species coming into this stand. Buckthorn, barberry and honeysuckle are all present.

Stand 68: 5 acres
Soil: Monadnock Fine Sandy Loam Very Stony
Aspect and Topography: South-facing; 5-10% slope
Accessibility: Very good to Drummer Road
Species Composition: Hemlock, White Pine, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 10-18"
Understory: Hemlock and Beech
Description:

This is a mixed Hemlock and White Pine overstory with a mix of Hemlock and Red Maple intermediate trees in the understory. White pine in these lower elevations of the land are afflicted with calipsiopsis and have declining crowns. Hemlock and beech are saplings in the understory.

Stand 69: 8 acres
Soil: Monadnock Fine Sandy Loam Very Stony
Aspect and Topography: South-facing and gentle. The central brook flows through this stand.
Accessibility: Very good to the Drummer Road
Species Composition: White Pine, Hemlock, Red Oak, Beech, Red Maple/Beech and Hemlock
Basal Area: 120 square feet
Diameter Distribution: 8-22"
Understory: Beech and Hemlock
Description:

This is primarily a white pine stand with hemlock and red oak mixed in the canopy. Hemlock, beech and red maple are both intermediate and in the understory as saplings. Again the White Pine is affected by calipsiopsis and needle cast so the tops are in decline. The white pine hemlock and red oak are all of good quality with straight and tall stems.

Stand 70: 10 acres
Soil: Tunbridge-Lyman Rock Outcrop Complex
Aspect and Topography: Southwest-facing with a gentle slope. There is a man-made vernal pool in the stand just off of the Old Gilsum Road.
Accessibility: Excellent to the Old Gilsum Road
Species Composition: Hemlock, Red Oak, White Pine
Basal Area: 120 square feet
Diameter Distribution: 6-18"
Understory: Beech, Hemlock, and Black Birch

Description:

This is a dense Hemlock stand with low quality red oak mixed in with the overstory. White pine is also scattered. The canopy is dense so there is not much understory. There is occasional hemlock and beech saplings.

Compartment 16
Lot Name: Bauer Lot
Tax Map/Block/Lot: 914-04-024
Acres: 14 acres
Topography: The land has gentle topography forming a basin sloping
Aspect: Basin
Accessibility: There is improved access from the East Surry Road
Soils: Monadnock Fine Sandy Loam, Berkshire Fine Sandy Loam
Trails: Goose Pond Access
Special features: There is a mill pond that acts to buffer runoff before the water leaves the property and enters the Ashuelot Flowage

Timber Stands
Stand 83: 1 acre
Soil: Berkshire Fine Sandy Loam
Aspect and Topography: This is an east facing drainage.
Accessibility: Very good
Species Composition: Hemlock, White Pine, Red Maple, Yellow Birch, Red Maple, Red Oak.
Description:
This stand is not manageable as it is part of a flowage. It contains hemlock and white pine 8-16" DBH and intermediate red maple, red oak, and yellow birch 8-10" DBH.

Stands 84 and 86: 9 acres 9
Soil: Monadnock Fine Sandy loam and Berkshire Fine Sandy Loam
Aspect and Topography: Stand 84 is west-facing and stand 86 is east-facing
Accessibility: Excellent
Species Composition: Basal Area: 110 square feet
Diameter Distribution: 8-18"
Understory: Beech saplings
Description:
These are primarily White Pine Stand 8-18" DBH growing with intermediate red maple, Red Oak, Beech. White pine is exhibiting signs of Calipsiopsis and needle cast with their crowns declining. There is white pine mortality in the stand. It is particularly affecting the intermediate and suppressed trees. But some of the dominant pines are affected as well. Beech is also commonly afflicted with beech bark disease. With Red Oak and Red maple the best of the rest of the stand, this stand will be making a conversion to hardwood over the coming decades. Beech is in the understory.

Stand 85 and 96: 4 acres and 1 acre
Description: 84 is the mill pond. The water is tannic-stained and 96 is the wetland area outflow.

Compartment 17

Lot Name: Wright, Faulkner, and Colony
Tax Map/Block/Lot: 914-04-030
Acres: 70
Topography: This land rises up from the pond and is rolling, then rising to a highpoint. Two drainages flow down through the compartment on the east and west side of the lot.
Accessibility: Difficult without affecting the shoreline of the pond.
Soils: Excessively drained Monadnock fine sandy loam.
Trails: There are trails running all over this piece of land. One climbs the hill on the western drainage and the other one climbs to the hilltop and winds over to the northeast corner and connects with trails headed to points north.
Special features: The lower elevations feature some very large whit pine and red oak as well as beautiful lake shore. The steep western face of the hill is interesting. It is covered with dense hemlock rooted to ledge and broken rock. The trail goes gingerely up the edge of the steep part of this slope.

Timber Stands

Stand 35: 19 acres
Soil: Monadnock stony fine sandy loam
Aspect and Topography: Sharply draining to the southeast
Access: Poor
Species Composition: Red Oak, Beech, Red Maple, Hemlock
Basal Area: 110 square feet
Diameter Distribution: 10-18”
Understory: sparse Hemlock
Description:

This is a mixed stand of hemlock and mostly black oak and a mixed understory of beech and red maple. This is the upper part of the hilltop. There is a drainage running through the middle of the stand. The site is poor so the trees are short in this stand.

Stand 36: 10 acres
Soil: Berkshire and Mondnock soils , very stony
Aspect and Topography: South-facing and steep
Access: Poor
Species Composition: Hemlock, Red Oak, Black Oak
Basal Area: 120 square feet
Diameter Distribution: 10-20”
Understory: Hemlock
Description:

This is primarily a hemlock stand with poor quality red oak and black oak growing with them. The trees are short. There is a scattered hemlock understory.

Stand 37: 29 acres
Soil: Monadnock fine sandy loam very stony
Aspect and Topography: South and steep including a stream that drains about 680 acres so it is prone to some very flashy runs.

Access: Poor
Species Composition: Hemlock, White Pine, Red Oak, Beech
Basal Area: 120 square feet
Diameter Distribution: 8-24”
Understory: Hemlock and Beech
Description:

This stand sits on the west side of the compartment. It is a mix of hemlock, red oak and white pine. All of these species are represented by large good quality tall stems. Red maple, beech, and hemlock are growing in the understory as intermediate trees in the shade. Beech and hemlock are sparsly growing as saplings.

Stand 38: 12 acres
Soil: Monadnock fine sandy loam
Aspect and Topography: This is the rolling section of the compartment generally leaning with a southern aspect.
Access: Poor
Species Composition: White Pine, Red Oak, Beech, Red Maple, Yellow Birch, White Birch, and Ash
Basal Area: 130 square feet
Diameter Distribution: 12 – 36”
Understory: Beech and Hemlock
Description:

This is a stand of mixed white pine, red oak, and hemlock with some very large white pine and red oak especially in the lower elevations. Hemlock is also exceptionally tall and healthy in this stand. The white birch and ash are falling apart as they are at the end of their lifespan. Yellow birch in wet pockets is growing very well as an intermediate tree growing in the shade of the big pines, oaks, and hemlocks.

There is evidence of pit and hump soil structure pointing to a blowdoen of a large number of trees in this stand in 1938 but it could have also been from hurricane in the mid 1800s as the stumps have completely disappeared. People who walk the goose Pond perimeter trail go through this stand when they are on the northwest part of the pond.

Stand 39: 4 acres
Soil: Monadnock stony fine sandy loam
Aspect and Topography: South facing drainage
Access: Poor
Species Composition: Red Oak, Red Maple, Beech, White Ash
Basal Area: 90 square feet
Diameter Distribution: 8-20”
Understory: Beech and Red Maple saplings
Description:

This is a nice widely spaced hardwood stand growing in a ravine. Red oak in dominant but there are good red maples beech and a few white ash. These make up the mix of the stands larger trees. The mid story is beech and red maple and the understory is beech.

Stand 41: 4 acres
Soil: Monadnock stony fine sandy loam
Aspect and Topography: West and steep
Access: Poor
Species Composition: Hemlock, Red Oak, Black Oak, Red Maple
Basal Area: 110 square feet
Diameter Distribution: 8-18”
Understory: Hemlock and Beech
Description:

This is a mixed hemlock Oak and beech stand with hemlock and oak having equal prominence and beech growing as an intermediate in the shade.

Compartment 18
Lot Name: Shore of Goose Pond
Tax Map/Block/Lot: 914-04-030
Acres: 14
Topography: This is land down on the shore of the pond. There is not much relief.
Aspect: Nearly flat
Accessibility: Poor
Soils: Monadnock Fine Sandy Loam, Very Stony on the north side of the pond, Sunapee Fine Sandy Loam on the south side.
Trails: There is a network of trails around the pond including Goose Pond Trail and the Penninsula

Timber Stands
Stand 88: 3 acres
Soil: Monadnock Fine Sandy Loam, Very Stony
Aspect and Topography: Level
Accessibility: It is not likely that access would be necessary to harvest timber within any of these stands around the pond because they are all within a buffer area to the pond. But access would be poor unless it was to the Bauer Lot.
Species Composition: White Pine, Hemlock, Red Oak, Red Maple, Beech, White Birch
Basal Area: 120 square feet
Diameter Distribution: 10 -24"
Understory: Beech and Hemlock
Description:

This is part of the shoreline of the Goose Pond. It is made up of the trees one sees when gazing across the pond. This is a mature stand with a closed crown of primarily white pine with scattered Red Oak. Beneath the overstory are intermediate hemlock, and red maple. The white pine are growing well with healthy crowns not afflicted with the decline elsewhere in the Bauer Lot and the Burrows Land. Some of the Beech has beech bark disease. The white birch is coming to the end of its lifespan and dying back.

Stand 89: 3 acres
Soil: Berkshire and Monadnock Fine Sandy Loam, Very Stony
Aspect and Topography: The land is slightly east facing.
Accessibility: Poor
Species Composition: Red oak, Red Maple, Beech
Basal Area: 110 square feet
Diameter Distribution: 8-16"
Understory: Beech
Description:

This stand is primarily of pole sized red oak and mixed hardwood. In the north part of the stand there is an inclusion of White Pine and Hemlock.

Stand 90: 8 acres
Soil: Sunapee Fine Sandy Loam Very Stony
Aspect and Topography: Nearly level

Accessibility: Good to the Bauer Lot
Species Composition: White Pine, Hemlock, Red Oak, Beech, Red Maple
Basal Area: 120 square feet
Diameter Distribution: 10-24" DBH
Understory: Beech and hemlock
Description:

This is a stand that gets a lot of foot traffic. It is primarily a mature white pine stand with a closed canopy. There are scattered red oaks 16-24"DBH. Hemlock, red maple and beech are intermediate and in the understory. It appears that the stand has not been logged since it grew back from field. The warn soil around the bases is often rooty due to foot traffic.

Stand 91: <0.5 acres
Description: Grassy Shoreline

Stand 92: 4 acres
Soil: Berkshire Fine Sandy Loam
Aspect and Topography: West-facing
Accessibility: Very good
Species Composition: White Pine, Red Maple, Beech, Aspen
Basal Area: 110 square feet
Diameter Distribution: 8-16"
Understory: Beech and Hemlock
Description:

This is primarily a white pine stand growing with intermediate hardwoods. The white pine is afflicted by Calipsiopsis and is in decline.

Stand 93: 0.2 acres
Description: Spillway

Stand 94: 1 acre
Soil: Berkshire Fine Sandy loam, very stony
Aspect and Topography: Drainage is facing west.
Species Composition: Hemlock, White Pine, Beech, Red Maple, Aspen
Description:
This is the outflow of Goose Pond. It is a manmade ditch in which hemlock and white pine have reforested. The banks are heavily eroded and may pose a problem in the future. Trees are uprooted and undermined along the ditch.

Compartment 19
Lot Name: Taft Lot
Tax Map/Block/Lot: 914-04-025
Acres: 3.5
Topography: 5-15% slope
Aspect: West
Accessibility: Very good by foot, poor for forest management.
Soils: Monadnock Fine Sandy Loam, Very Stony
Trails: The main trail to Goose Pond from the Parking Lot called White Blazes goes through this compartment.

Timber Stands
Stand 87: 3.5 acres
Soil: Monadnock Fine Sandy Loam, Very Stony
Aspect and Topography: West-facing
Accessibility: Poor
Species Composition: White Pine, Hemlock
Basal Area: 120 square feet
Diameter Distribution: 8-20"
Understory: Beech and Hemlock
Description:

This is primarily a white pine stand of poorly formed, declining trees. Hemlock and Red Maple, Beech and Aspen are intermediate and beech and hemlock are saplings in the understory. The crown is closed but more light is able to get into the stand as the white pine continues to decline. Beech is afflicted with beech bark disease and the aspen is declining due to its age.

APPENDIX E

NH Natural Heritage Bureau Report

New Hampshire Natural Heritage Bureau

DNCR - Division of Forests & Lands
172 Pembroke Road, Concord, NH 03301
Phone: (603) 271-2214 Fax: (603) 271-6488

To: Jeffry Littleton
Moosewood Ecological LLC
PO Box 9
Chesterfield, NH, 03443

From: Sara Cairns, NH Natural Heritage Bureau
Date: 2018-03-29
Re: Review by NH Natural Heritage Bureau of request dated 2018-03-08

NHB File ID: 2939
Project type: Landowner Request

Town: Keene, NH
Location: Map 908, Lot 4-14; Map 909,Lots 3-20;3-21;3-23;3-99;4-4;4-5;4-7;4-11;4-13; Map 910, Lot 4-2; Map 914, Lot 4-23; 4-24; 4-25; 4-30

I have searched our database for records of rare species and exemplary natural communities on the property(s) identified in your request. Our database includes known records for species officially listed as Threatened or Endangered by either the state of New Hampshire or the federal government, as well as species and natural communities judged by experts to be at risk in New Hampshire but not yet formally listed.

NHB records on the property(s): **None**

NHB records within one mile of the property(s):

	Last Reported	Listing Status		Conservation Rank	
Invertebrate Species (For more information, contact Kim Tuttle, NH F&G at 271-6544)		**Federal**	**NH**	**Global**	**State**
Dwarf Wedge Mussel *(Alasmidonta heterodon)*	2007	E	E	G1	S1
Natural Community		**Federal**	**NH**	**Global**	**State**
Rich red oak rocky woods	1984	--	--		S2
Vertebrate species (For more information, contact Kim Tuttle, NH F&G at 271-6544)		**Federal**	**NH**	**Global**	**State**
Spotted Turtle *(Clemmys guttata)*	2011	--	T	G5	S2
Wood Turtle *(Glyptemys insculpta)*	2016	--	SC	G4	S3

Listing codes: T = Threatened, E = Endangered SC = Special Concern
Rank prefix: G = Global, S = State, T = Global or state rank for a sub-species or variety (taxon)
Rank suffix: 1-5 = Most (1) to least (5) imperiled. "--", U, NR = Not ranked, B = Breeding population, N = Non-breeding. H = Historical, X = Extirpated.

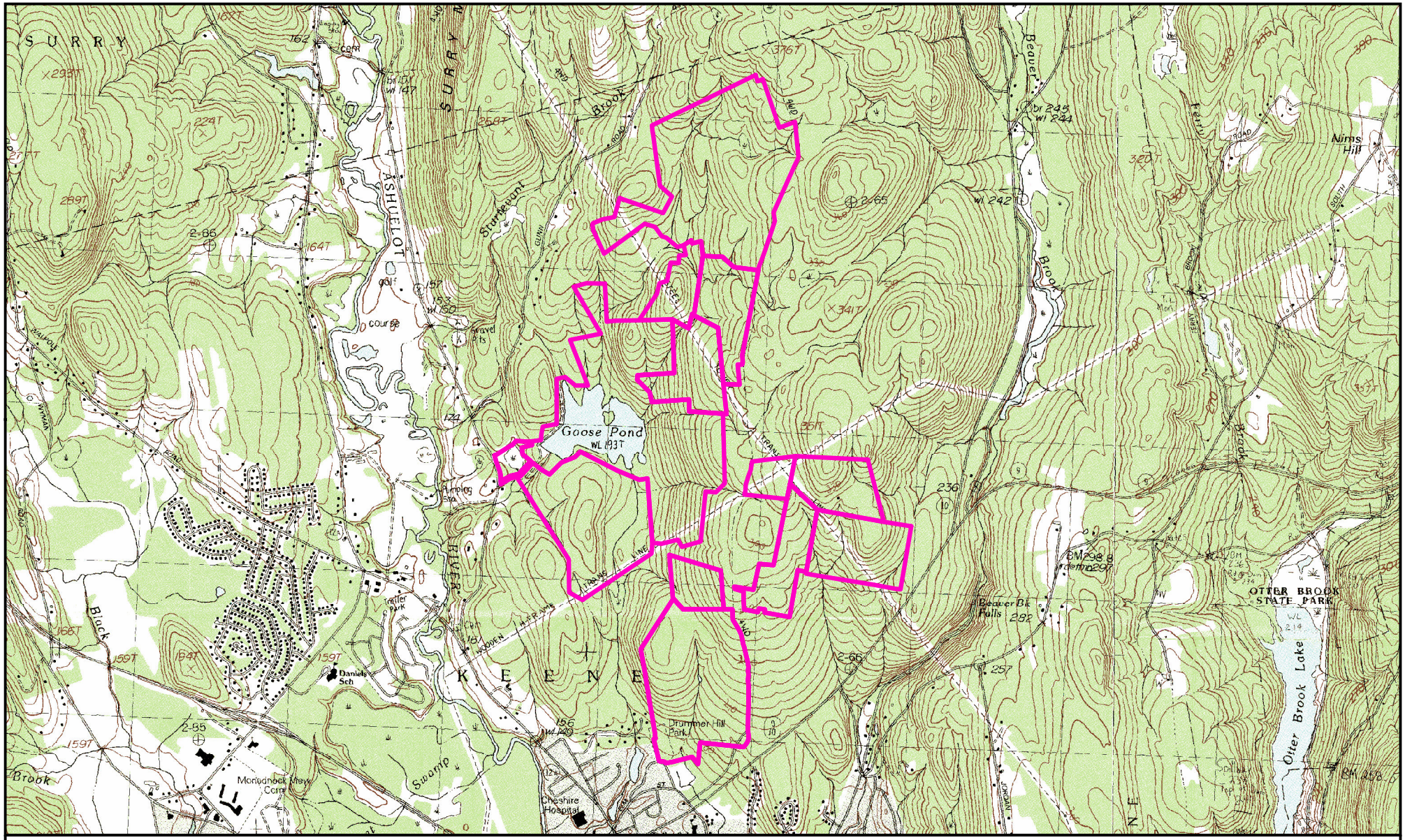
NOTE: This review *cannot* be used to satisfy a permit or other regulatory requirement to check for rare species or habitats that could be affected by a proposed project, since it provides detailed information only for records actually on the property.

New Hampshire Natural Heritage Bureau

DRED - Division of Forests & Lands
172 Pembroke Road, Concord, NH 03301
Phone: (603) 271-2214 Fax: (603) 271-6488

A negative result (no record in our database) does not mean that no rare species are present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

NOTE: This review *cannot* be used to satisfy a permit or other regulatory requirement to check for rare species or habitats that could be affected by a proposed project, since it provides detailed information only for records actually on the property.



Natural Heritage Bureau Landowner Report

Project ID Number: 2939

NOTE: Any rare species and/or exemplary natural communities in this area are not shown unless they occur, at least in part, within the property bounds.

0 0.1 0.2 Mile

	# of Records
Property Bounds	
Plant Occurence:	0
Animal Occurence:	0
Natural Community:	0
Ecological System:	0

N W E S

DEPARTMENT OF RESOURCES AND ECONOMIC DEVELOPMENT
NEW HAMPSHIRE
FORESTS & LANDS

APPENDIX F
New England Mountain Bike Association Trails at the Greater Goose Pond Forest

Drummer Hill and Goose Pond

to Gilsum Trails

N

Far Side
Far Side
Far Side
Far Side Spur
Old Gilsum Rd
1247'
1200'
1010'
1000'
48T
48T
1100'
Drop and Chute
Old Gilsum Rd
Exit 2
Gunn Rd
Steel Power Line
Far Side
971'
900'
1106'
Exit 2
Red on White
Ursa Major
Red on White
Ursa Major
Ursa Minor
Ursa Minor
Labyrinth
Labyrinth
Labyrinth
Red on White
Mike's Trail
Mike's Trail
Mike's Spur
Old Woods Rd
Exit 2
Old Woods Rd
Exit 1
NH Snowmobile Trail 6
Backdoor
Wooden Power Line
Old Gilsum Rd
Goose Pond Trail
Blue on White
Blue on White
Goose Pond Trail
700'
Goose Pond Trail
White Blazes
Goose Pond Trail
Goose Pond Trail
NH Snowmobile Trail 6
Glavin
Glavin
Puckerbrush
Phil's Corners
Ya Motha
1148'
1100'
Bitten
Threader
East Surry Rd
Green on White
Flying Dog
Outback
Lower Drummer Rd
800'
Old Gilsum Rd
Old Gilsum Rd
Bitten
Threader
728'
700'
Wild Things
Bitten
Bitten-Threader
1004'
Timbert
Steel Power Line
1000'
Bitten
Threader
Go Around
Threader
Watertower Rd
Root Route
700'
Wooden Power Line
700'
Wild Things
Cul de Sac Rd
Cul de Sac Rd
Crossover
Goat
Crossover
Step Down
Crossover
Goat
Brian's Wood Gap
Goat
Old Gilsum Rd
Double Drop
Warning Track
Jump
Sacrifice
Class Corners
Butter
Rope Tow
Kamikaze Slalom
Kamikaze Slalom
Social
Brad's
Brad's
Root Route
600'
Acre Brook Rd
Rope Tow
Lewis Pond Rd
Lower Drummer Rd
Old Gilsum Rd
Timberlane Dr
Algonquin Dr
Acre Brook Rd
Kings Ln
Evergreen Av
Evergreen Av
Rope Tow
Jump
Jump
Dog Walk
Allen Ct
Knoll Av
New Acres Rd
Stevens St
Riverview St
Greenacres Rd
Drummer Rd
Gilsum St
500'

Trails

- Extremely Difficult
- Very Difficult
- More Difficult
- Easy

Contours

- 20 Foot Contour
- 100 Foot Contour

NEMBA

0 0.047 0.095 0.19 0.285 0.38 0.475
Miles

http://www.nemba.org/trails/new-hampshire/drummer-hill-goose-pond

Do Not Block Gates When Parking

Created: 4/4/2016
by BK-NEMBA