

FOREST MANAGEMENT PLAN

For

Cedarlands Scout Reservation

Long Lake, New York

4,383 +/- Acres

Revolutionary Trails Council

1401 Genesee Street

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April, 2007

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EXECUTIVE SUMMARY

LAND & TIMBER				
Inventory Date				Aug-06
Timber Capital Value				2,990,996 Dollars
Total Acres				4,383 Acres
Commercial Forest Acres				3,111 Acres
Non-Commercial Acres				1,272 Acres
Forest Cover (Acres)	H	Hardwood	1,793	Acres
	R	Red Maple	463	Acres
	M	Mixed	477	Acres
	S	Softwood	378	Acres
Non-Commercial (Acres)		Wetland	12	Acres
		Steep ground	217	Acres
		Water	466	Acres
		Easement Buffer	555	Acres
Stocking Levels	A		1671	
	B		1,440	

Timber Volume Estimate – August, 2006

Sawlogs		Hardwood	6,706 MBF	
		Softwood	4,134 MBF	
		Pallet	3,780 MBF	
		Total Volume	14,620 MBF	
Pulpwood		Hardwood	36,774 Cords	
		Softwood	3,861 Cords	
		Total Volume	40,634 Cords	
Average Volume per Commercial Acre	=	4.699 MBF	13.06 Cords	
Timber Value Estimate – Aug. 2006	=	\$2,990,996	\$682 Per Acre	

Timber & Financial Projection Estimates 2007 – 2016

Cut Through 2016	3,641 MBF & 26,335 CDS
Growth Through 2016	4,055 MBF & 4,836
2016 Stocking	3.046 MBF & 10.63 CDS
2016 Timber Value	\$3,914,815
Gross Timber Income	\$748,110
Net Cash Flow	\$640,457
2016 Asset Value	\$3,914,815
IRR	6.38%

Introduction:

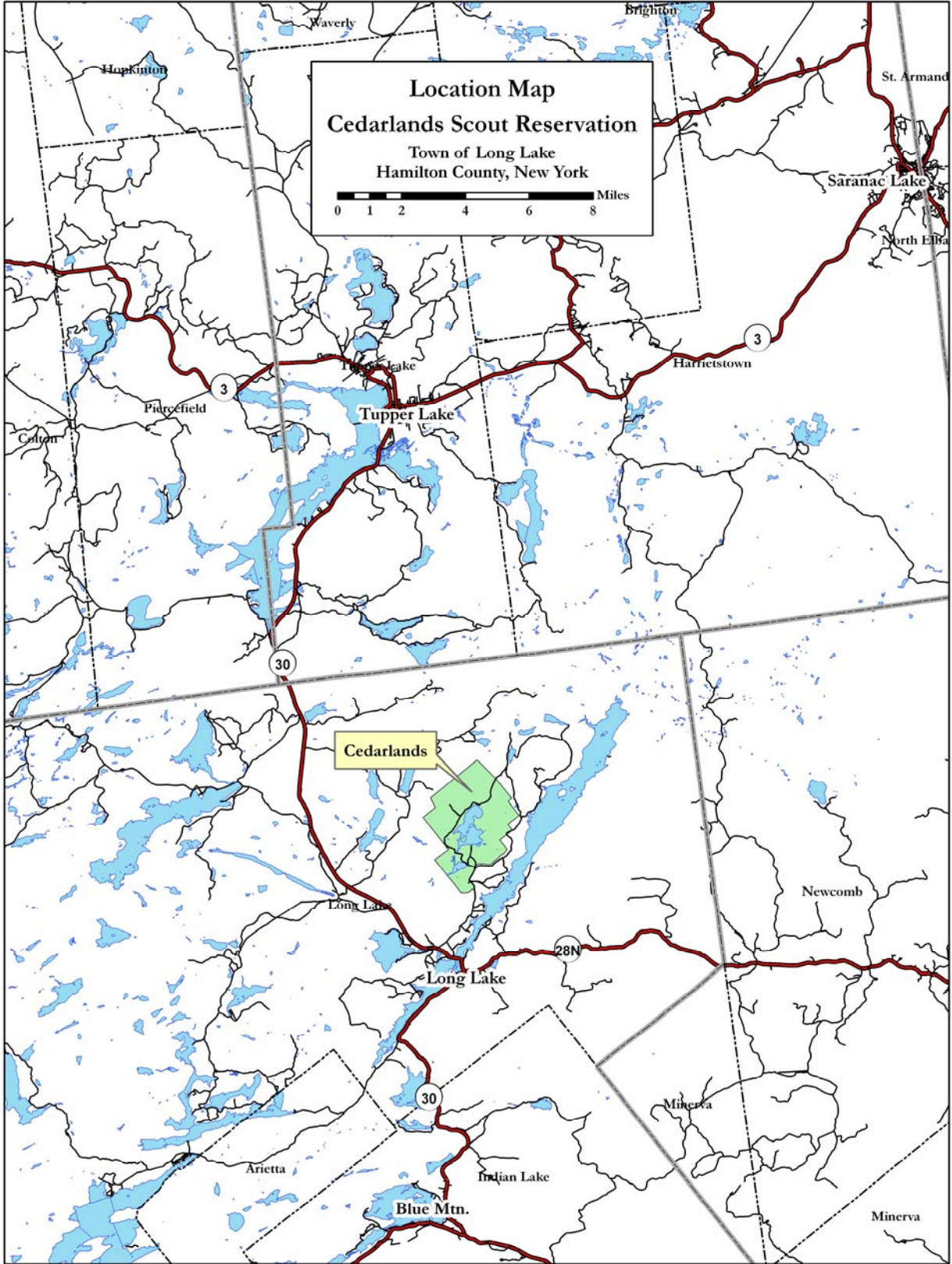
The Revolutionary Trails Council of the Boy Scouts of America has retained LandVest, Inc., Timberland Division, (LV), to write a Forest Management Plan (FMP) for the Cedarlands Scout Reservation, an ownership consisting of one tract, totaling 4,383 acres located in the Town of Long Lake, Hamilton County, New York. The goal of this plan is to develop a strategy to manage the timber resource on the property, through the practice of responsible forest management that will produce an annual income, while working within the constraints of sustainable forestry and the terms of the easements held by the State of New York. It will also take into consideration the recreation, wildlife, and aesthetic values of the property, as well as the needs and concerns of the owners.

In the summer of 2006, LandVest conducted a forest inventory as the first step in the process of developing a management plan. The inventory data was used to generate stand and stocking tables to give an accurate estimate of the state of the existing forest. That data was then used in growth simulations to estimate how the forest will grow under different silvicultural treatments. These tools allowed for a sound decision making process in the construction of this plan.

Goals & Objectives:

The primary goals and objectives of this management plan are:

- Manage the forest using sustainable forestry and proper forest management.
- Protect or enhance wildlife populations through habitat improvement using forest management activities.
- Protect and enhance the recreational appeal of the property.
- Improve the forest health and quality through silvicultural treatments and comprehensive analysis.
- Develop a set of operational standards that will maintain the soil productivity of the forest and protect water quality.
- Protect the scenic quality of the forest lands.
- Maintain or enhance the overall quality of the timber resources on the forest lands.
- Create a continuous cash flow from forest management activities by managing the property to produce a sustainable flow of sawlog, pulpwood and other forest products.



Location:

Cedarlands is located in the northwest corner of the Town of Long Lake, a rural community in the central Adirondack region. The landscape surrounding the property is mostly wooded, mountainous terrain that slopes southward towards the water body Long Lake, for which the town is named after. The Town of Long Lake is located in northern Hamilton County, one of the more rural counties in the state. One of the larger counties acreage wise with the smallest population in the state, this sparsely populated county is at the epicenter of the Adirondack Park. The Adirondacks is a popular destination for outdoor recreational activities, with many of the local communities relying on tourist dollars as the mainstay to the local economies. Some of the main attractions of the area are skiing and snowmobiling during the winter months and during the summer visitors enjoy camping, hiking, fishing, and canoeing on the many trail systems and water bodies the area has to offer.

Frontage & Access:

To reach the property, take the Kickerville road, a town maintained paved road, northeast off of NYS Route 30 in Long Lake. About two miles from the intersection of Route 30, the town road ends, from this point the road continues as a shared use right of way on a gravel road. A little over a quarter mile from the end of the town road, the shared use road crosses a bridge on Big Brook. At this point, the property begins on the western side of the road with the road serving as the eastern boundary and the brook as the southern boundary. From this point, the road is the eastern boundary of the property for about 4000 feet where the main access to the property exits the shared road. The shared access road provides access to another portion of the property about two miles beyond the main entrance to the tract, where it bisects a portion of the eastern end of the property.

History:

The Scouts acquired the property in 1963 and developed it into a seasonal use, Boy Scout Camp Facility. The property has been well cared for within the tenure of this ownership and has provided for and been developed into a multiple use complex that many have benefited from. Other uses besides the primary summer scout camp include: off season use by scouts, a recreational hunt lease program, and public recreational opportunities provided for by the easement with the State of New York. Other uses that are not recreational include a small permitted gravel mine operation and the production of forest products.

The forest management history of the property began in 1972 when the acting council decided to recoup some value from the timber standing on the property. This continued through the mid to late seventies when the entire ownership was covered. The timber marketplace at the time was limited. While the hardwood sawlog and softwood pulp market was strong, the hardwood pulp market had yet to develop in the area. The only market for low-grade hardwood was in firewood, a product market that was very limited in volume. Since there was little or no hardwood pulp market at the time, very few of the poor quality stems were cut. Unfortunately, this high-grade of the forest, resulted in a high number of unacceptable residual stems that comprise a high percentage of the forest today. With the exception of one small area treated under Forecon's management in 1995, the majority of the property has been recovering from the last round of cutting and is ready for treatment.

Easements:

In 2002 the Revolutionary Trails, Inc. Boy Scouts of America sold an easement to the State of New York. The easement sold was multifaceted granting limited recreational rights to the State while placing some constraints on development and timber harvesting. The degree the easement regulates activities on the property is dependant on location. When the easement was drafted, the tract was divided into four different areas, and in each of these areas there are various levels of restrictions. The easement also banned harvesting timber from designated wetland and buffer areas. The four different main areas are: The Base Camp Area, the Long Lake Area, The Undevelopable Area, and the Mud Pond Area. A brief summary of the easement in each of these areas is as follows.

Base Camp Area: The easement in base camp is not very restrictive. The only public access allowed in this area is during the off season on designated trails only. There are some restrictions put on development, the number of structures is limited based on ownership use of the area. No timber harvesting may be done inside the designated water and wetland buffer.

Long Lake Area: This area is actually in two separate lots along the southern and eastern boundary. In these areas, some minor limitations were put on development. No public access is aloud. (Since the easement agreement was made the Long Lake areas have been sold.)

Undeveloped Area: The easement in the undeveloped area is a little more restrictive. No timber harvesting may be done inside the designated water and wetland buffer. The recreational rights are open to the public during the designated off season. Development rights are restricted to support structures and lean-tos.

Mud Pond Area: This area is the most restricted by the easement. Again, no timber harvesting may be done within the designated wetland and water buffer. Development rights are restricted. This area is open to the public for recreational purposes year round.

There are more restrictions in the easement, and the owners did reserve more rights than stated above. This section was a brief summary of the easement; the full easement agreement is included in the appendix for further review.

Boundaries:

There are about 11.5 miles of boundary line (excepting roads) around the perimeter of the ownership. Much of the boundary consists of blazed and painted line trees, usually painted yellow, red or orange. Corners are most often marked by stone piles or iron pipes.

While most line segments are in evidence, a maintenance program should be initiated. Fortunately, some of the abutters to these tracts include the state and other owners who perform boundary maintenance. This should lessen the amount of line to do over the next cycle as they maintain some sections of common line.

The planned maintenance schedule will prioritize lines based on the following criteria. Lines that are not evident or are in ill repair should be the highest priority to be established. Lines that are adjacent to planned harvest areas should also be a high priority. Pre-harvest recons will include boundary line inspection, at which time it will be recommended or not to do maintenance prior to harvesting.

The following table is a prioritized list of boundaries for maintenance and work over the next five years.

<u>Boundary Line Segments</u>	<u>Year Scheduled</u>	<u>Maintenance Recommended</u>
Eastern Line	2007	Recon, blaze/paint, +/- 7,700' of line
Southern Line Along Long Lake Area	2007	Recon, blaze/paint if needed, +/- 6,800' of line
SE Line between Long Lake Area and E Line	2008	Recon, blaze/paint if needed, +/- 8,200' of line
W Line From Woods Rd. To Grampus Lake Mtn.	2009	Recon, blaze/paint if needed, +/- 6,800' of line
NW Corner 2 Lines On Grampus Lake Mtn.	2010	Recon, blaze/paint if needed, +/- 4,300' of line
N Line From Grampus To Rock Pond Mtn.	2011	Recon, blaze/paint if needed, +/- 10,000' of line

TOPOGRAPHY, SOILS AND SITE CONDITIONS:

The Cedarlands tract is located in the northern part of Hamilton County on the very edge of the High Peaks Region of the Adirondack Mountains. While the property is not located in the high peaks it certainly does have mountainous terrain. The higher elevations on the property are located on the northern end of the tract where several mountains dominate the landscape. The highest point on the property is the peak of Rocky Pond Mountain at 2,926 feet. The terrain on the top of this mountain is rugged, but the majestic views make it worth the climb. Moving southwest, the boundary of the property straddles the peak of Grampus Lake Mountain at 2,766 feet. Along the same rise is Mud Pond Mountain, a southern extension of Grampus Lake Mountain that peaks out at 2,297 feet. These three mountains form a valley that slopes southward to the lowest point of the property, with an elevation of 1,670 feet, at the southern boundary on Big Brook.

In the middle of the valley is the most pronounced feature, McRorie Lake. This body of water is approximately 400 acres in size and provides for innumerable recreational opportunities. McRorie Lake is plenty deep enough to sustain a healthy fish population, motor boat use is restricted on the lake to enhance the experience of canoeing and kayaking on the picturesque water and protect water quality. Along the outlet of McRorie is the smaller body of water Mud Pond. This 65 acre body of water is shallow and surrounded by mostly wetland. While shallow, it does support a fish population and is open to the public year round for fishing and canoeing. Flowing southward, the outlet of Mud Pond leaves the property and flows into Big Brook. A large stream that makes up the southern boundary of the property that flows from Slim Pond into Long Lake.

There are 15 different soil types found on the property, more if you consider that one soil type can be divided into five sub-types (A,B,C,D,E) based on percentage of slope. The most common soil type found here is # 651 a Monadnock-Tunbridge-Sabattis complex; this soil type is typically found on the lower slopes of mountains and on rolling bouldery terrain that tends to be somewhat poorly drained. Many different tree species can grow on these sites, some better than others. These soils can produce good quality fast growing spruce-fir, Red maple and Yellow birch. Sugar maple and American beech can occupy these sites, however, they are marginal sites for the species and usually are slow growing and of poor quality. Along the mid slopes, the Tunbridge-Lyman Association # 831 can be found. These sites are some of the most productive soils on the property. They are bouldery, well drained, deep soils that have the potential to grow good quality Sugar maple, Yellow birch, and Black cherry. Following up the contour, The Rawsonville-Hogback complex can be found. These soils are somewhat drier than the previously mentioned types, located on the mid to upper slopes this type is also very fertile. Species composition on these soils tends to lean towards Sugar maple, White ash, American beech, and Yellow birch. Other common soil types are # 945 Hogback-Ricker on the mountain tops, and # 653 another Monadnock soil in some of the more poorly drained sites. In general, most of the soils here are stony, with scattered boulders and well drained. The exceptions are the fine sands and loamy sands found on the low lying areas. A soils map of the property as well as a soils key may be found in the appendix.

Site indicators show a wide range as might be expected. On the most common types, Tunbridge and Monadnock, Lyman, Rawsonville the Sugar maple site index ranges from 50 to

60. These numbers indicate in the best conditions that the trees can put on enough growth to make long term management viable. Site stresses common to this area which could impact on the long term growth of the species include weather related phenomena such as drought, ice and snow loads. Insect infestations and defoliations can affect growth; some of the more common defoliators of Sugar maple include Gypsy moth or Forest tent caterpillars. Other factors that can affect forest health can be human factors such as logging damage.

Climate:

This area of Hamilton County has cold winters and moderately warm summers. The mountainous areas are markedly cooler than the low areas and temperature extremes have been measured at 94 degrees in the summertime and -34 degrees in the winter. Total annual precipitation is nearly always adequate for crops and for tree growth with the average annual precipitation between 40-45 inches, with rain in the summer months and snow during the winter months. This climate supports the northern hardwood and softwood type's well, and in the absence of extremes, is an adequate regime to foster good growth on the common timber species found on the parcel.

Threatened and Endangered Species:

The New York Natural heritage program is a plant and wildlife population monitoring system born through a partnership between the New York State Department of Environmental Conservation and the Nature Conservancy. The purpose of this program is to identify and enhance the conservation of rare animals, rare plants, and significant natural communities in New York State. The program keeps an updated inventory of rare, threatened, and endangered species, historical occurrences of populations, and critical vulnerable habitats. This database was reviewed to identify any populations on the Cedarlands tract, three different species have been identified on or adjacent to the ownership. A map showing the location of each occurrence and the description of each can be found in the appendix.

On McRorie Lake, Common Loon's have been identified. While the Common Loon is not threatened or endangered, the database lists it because it is a "special species of concern". This classification is given to those species that are not yet recognized as threatened or endangered, but for which documented concern exists. The habitat for this species is limited to the immediate shoreline of the lake. No special forest management precautions are necessary beyond normal waterfront buffers to preserve habitat for this species.

On Big Brook, the southern boundary of the property, an occurrence of Pied-billed Grebe has been identified. This species is listed as threatened in New York State. A small diving bird, the Pied-billed Grebe is common on lakes and ponds across North America. New York state is located along the fringe of its natural range, and the number of breeding pairs has been on the decline. It is rarely seen flying and prefers to sink out of sight when danger threatens. It lives on the water with the exception of the first week of its life. After that it stays on the water, both day and night. Again similarly to the management precautions for the loon, no special forest management precautions need to be taken other than the normal streamside buffers.

The third and probably most significant occurrence identified on the tract is a historical presence of Cloud Sedge. This wetland species is typically found in bogs and open wetlands. It is listed as endangered in New York State. The natural heritage database lists this site as a historical occurrence. This classification is given when at some point the species was there but it has not been sited in some time. The majority of the habitat this plant can be found in is unsuitable for growing timber. However, we will have to be careful when operating adjacent to wetlands and make sure buffers are flagged in place before snowfall so that any possible population of Cloud sedge may be identified and protected.

The Forest:

The Cedarlands tract is located in the Central Adirondacks and on the edge of the high peaks region. The Adirondack Park is six million acres of public and private land roughly made up of 47% privately owned land and 53% New York State owned, Forever Wild, Forest Preserve.

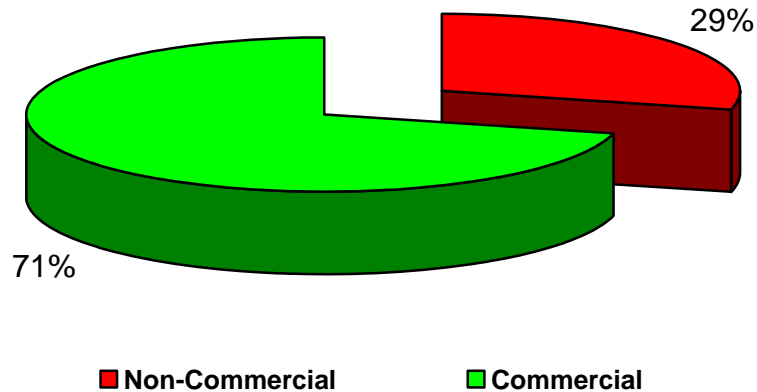
The Cedarlands tract is typical of the traditional large private parcels in the Adirondack Mountains. The history of events including past logging practices as well as fire has shaped the forest into its current state. Approximately 71% of the ownership is in commercially viable harvestable forest area. The remaining 29% can be broken down into Water, Non-Commercial Wetlands, Inoperable steep ground, Road areas, And Easement Buffers,

Most of the past harvesting on the property was conducted more than 20 years ago. At that time, no hardwood pulp was being cut so the only products being removed from the forest were hardwood sawlogs and softwood pulp. In the hardwood areas diameter limit harvesting was the common practice; this method removes most of the high value trees leaving a lower quality residual stand. In the softwood areas, a similar practice was implemented except most of the trees were cut for pulpwood and in most cases the residual stand succumbed to blow down, starting a new age class, resulting in an even aged stand. After the property had been mostly covered, the landowner then decided to cease operations and let it grow in a natural state.

The residual stands from these operations have now had ample time to grow and most of them are stagnated. While these stands have a high stocking level, they have plenty of room for improvement due to past harvest practices. This plan will give us a priority of treatments and a strategy on how to treat each area to improve the overall health of the forest.

Sites overall, are productive, the best sites are occupied by a classic Northern hardwood Forest type of Sugar maple, American beech, Yellow birch, with some Black cherry and White ash mixed in. On lesser sites, the hardwood associations are often dominated by stands of Red maple, Black cherry, Red spruce, Yellow birch, and Beech. In more poorly drained sites Red and Black spruce and Balsam fir can be found with occasionally some White pine mixed in.

Commercial Vs. Non-Commercial Acreage



Northern Hardwood Type:

These stands grow good Sugar maple, Yellow birch, Black cherry, White ash, and Red maple. On the Cedarlands tract this stratum occupies about 40% of the total acreage. These areas represent the better well-drained sites that have the potential to produce the most valuable timber on the property. The majority of these stands are located on the mid to higher slopes. Due to the value of the timber in this type, most of it has seen past harvest activity. Since a hardwood pulp market did not open up in the Adirondacks until the early 1980's, any previous harvesting in these areas removed hardwood logs only. This practice leaves a high percentage of small diameter American beech and poor quality stems, degrading the overall quality of the stand. With further treatment, we should be able to remedy this imbalance and bring the species composition and quality of these stands back into alignment.

Northern Hardwood/ Red Maple Type:

The Red Maple dominated hardwood sites "R type" is generally found towards the bottom of hill slopes where the topography has a concave slope and soils are poorly drained. These are also transition types between the softwood areas and the better northern hardwood types. This type can be divided into two separate categories:

First are the previous mentioned natural Red maple types that will grow good quality Red maple, Black cherry, and Yellow birch. On these sites, the Red maple has enough quality to produce some sawlogs and can be managed to promote the in-growth of other more preferable species.

The second would be the areas that were naturally either mixedwood stands or softwood stands where Spruce-fir had been mined out in the past, leaving a residual stand of poor quality Red maple. These sites tend to have a softwood component. The two most prevalent would be either scattered large spruce in the overstory or well established spruce-fir in the under-story. These areas will not grow very good quality hardwood and the strategy should be to convert them back to the natural softwood state.

Mixedwood Types:

These are predominantly softwood sites with a large Red maple component. Again, this is most likely a residual of the softwood mining done in the past. These sites will never grow good quality Red maple. The Yellow birch can do well on these sites, except it will have to compete with softwood in the understory. These sites will most likely convert to softwood if left alone but it would be better to remove most of the hardwood and regenerate spruce fir to speed up the process.

Softwood Types:

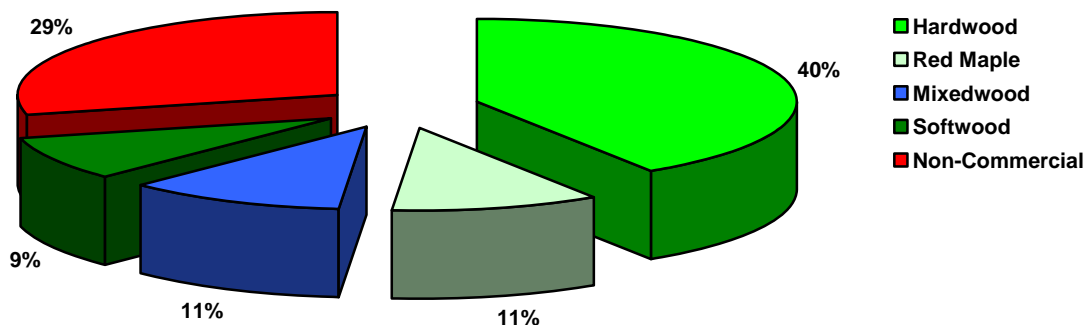
The majority of the softwood stands are in low lying poorly drained sites. On the better sites, we can find stands of Spruce-Fir and the lesser sites are occupied by White cedar and Tamarack. These stands are even aged, and because of their susceptibility to wind throw, they should be managed under an even aged regime.

Inoperable:

The Inoperable ground is steep and most likely inaccessible by equipment to harvest any timber. The stands that are growing on these sites are indicative of the thin and shallow soils that are present. The trees tend to be shorter and of poor quality. Some call this type protection forest, or high elevation stands. The composition of these stands can be variable and usually have high percentages of spruce, birch and beech. Most likely we will not be operating in these types. However, if working adjacent to one of these stands, the opportunity may present itself to reach in and salvage a few at risk or mature stems.

Forest Stand Type

Percentage of Total Acreage



Area by Forest Type and Percentage of Total Acreage Table

Cover Type	Acreage	Percentage
H3-4A	1,540	35.1%
H3-4B	253	5.8%
Total H Types	1,793	40.9%
R3-4B	64	1.5%
R4B	399	9.1%
Total R Types	463	10.6%
M3-4B	374	8.5%
M4B	103	2.4%
Total M Types	477	10.9%
S3-4A	131	3.0%
S3-4B	247	5.6%
Total S Types	377	8.6%
Total Commercial	3,111	71.0%
Open	22	0.5%
Inoperable	217	5.0%
Buffer	555	12.7%
Water	466	10.6%
Wetland	12	0.3%
Total Non-Commercial	1,272	29.0%
Total	4,383	100.0%

FOREST INVENTORY AND MAPPING:

In the summer of 2006, LandVest completed a timber cruise using a point sample method. This process began in the office with the creation of a cruise map. Cruise points were placed on a map in a ten by ten chain grid, these points were then grouped into cruise lines.

Each cruise line ran on a true bearing in one of the four cardinal directions dependant on the stand type being sampled. Each line contained approximately 20 points, with 10 chains between points. On each point a ten-factor prism (10BAF) was used to identify trees to measure. Calipers were used to measure diameter at breast height (4.5ft) and clinometers were used to determine tree height. All trees 0.5 inches and greater were tallied; trees 5.1 inches and greater were measured for products. Cruisers used tally cards to record data collected on each point. Over story and under story stand types were identified. Species, DBH, tree grade, merchantable products were all identified and recorded.

The data collected was compiled and calculated using a LandVest modified version of the Multicruise inventory software program. The program created stand and stocking tables by the identified cover types. The program used International board foot volume equations to calculate sawtimber volume and it used cubic foot volume equation to calculate pulpwood volume. The volume equations used are those suggested by the USDA United States Forest Service for the northeast. The specifications for the timber cruise as well as the inventory output are presented in Appendix C. This information provides the basis for the stand stratum descriptions and subsequent management recommendations.

Mapping has been done using our Geographic Information System (GIS) to produce a Forest Type Map. LandVest used ESRI's ArcGis 9.2 software to develop the map by taking GPS data in the field, notes taken during the cruise, and aerial orthoimagery to accurately create a stratified map of the property. The map can be easily updated in the future to reflect changes in forest types after harvest. The base data created in the type map process can also be used to create recreational trail maps, or other kinds of maps the owner may desire.

TOTAL VOLUME & VALUE

CEDARLANDS BSA RESERVATION 2007

PRODUCT/SPECIES	VOLUME ESTIMATE	VALUE / UNIT	TOTAL
SAWTIMBER			
WHITE PINE	275 MBF	125 /MBF	\$34,338
SPRUCE	1,355	125	\$169,338
BALSAM FIR	1,111	125	\$138,838
HEMLOCK	1,046	50	\$52,275
OTHERSOFTWOOD	348	25	\$8,698
SUGAR MAPLE	2,337	450	\$1,051,785
RED MAPLE	655	160	\$104,736
YELLOW BIRCH	1,914	275	\$526,323
BEECH	217	50	\$10,865
WHITE ASH	812	180	\$146,070
WHITE BIRCH	18	135	\$2,457
BLACK CHERRY	335	750	\$251,325
BASSWOOD	86	100	\$8,600
OTHERHARDWOOD	5	50	\$235
ASPEN	328	40	\$13,108
PALLET/TIE	3,780	40	\$151,208
TOTAL SAWTIMBER	14,620 MBF		\$2,670,197
GROWING STOCK			
HARDWOOD	4,746 CORDS	8 /CD	\$37,966
SPRUCE/FIR	531	8	\$4,245
HEMLOCK	43.7	10	\$437
OTHER	45.4	4	\$182
TOTAL GROWINGSTOCK	5,366 CORDS		\$42,830
PULPWOOD			
HARDWOOD	32,028 CORDS	8 /CD	\$256,222
SPRUCE/FIR	973	8	\$7,784
HEMLOCK	816	10	\$8,155
OTHER	1,452	4	\$5,808
TOTAL PULPWOOD	35,268 CORDS		\$277,970
GRAND TOTAL	14,620 MBF	40633.9 CORDS	\$2,990,996
AVERAGE PER ACRE		3,336 BF	9.27 CDS
			\$682
AVERAGE PER FORESTED ACRE		4,699 BF	13.06 CDS
			\$961

NOTE: The Volumes and Values presented here are an estimate in total, not a liquidation estimate. Volumes based on LandVest, timber inventory, August 2006.

GROWTH AND MODELING:

In estimating the future growth of the timber resources, we must examine the current stocking and health of the forest. As stated previously, with a minor exception, the forest has been preserved for approximately 25 years without any management activities. This means that most of the stands on the property have not been treated for an even longer period. The majority of the stands have grown into a “high B” level of stocking are approaching the point at which they will start to slow in growth due to increased competition.

In reviewing the results of our timber cruise, we can see that the forest is approaching an overstocked state. The cruise also shows that there is a high pulp to log ratio signaling overall that the stands are not healthy and are in a declining state. In order to resolve this, we will need to cover most of the property with a series of improvement thinning as soon as possible. This will give the landowner the needed income and improve the forest health as a whole.

The following table shows the relationship of total sawtimber volume this plan proposes to harvest in the first ten years of management versus the total sawtimber growth in that time period. LandVest has tempered these simulations with our experience in managing Adirondack timberland, and have summarized the projection on the Running Volume Chart.

<i>RUNNING VOLUME CHART</i>				
Year	Sawtimber MBF	Sawtimber Removals	Pulpwood Cords	Pulpwood Removals
2007	14,620	273	40,634	1,526
2008	14,807	903	39,929	7,076
2009	14,349	854	33,543	7,376
2010	13,927	278	26,717	1,998
2011	14,086	254	25,238	1,624
2012	14,275	285	24,110	2,052
2013	14,438	215	22,521	1,204
2014	14,678	180	21,764	1,152
2015	14,962	199	21,045	1,193
2016	15,236	203	20,270	1,134
Ending Volume		15,033 MBF		19,135.71 Cords
Total Removals		3,641 MBF		26,334.50 Cords
Total Net Growth		4,055 MBF		4,836.31 Cords
Average Growth / Acre/ Year		103 BF		0.12 Cords
Average Growth / Forested Acre		145 BF		0.17 Cords
Ending Vol. Per Forested Acre		4,832 BF		6.15 Cords

In order to make silvicultural recommendations for the Cedarlands tract, we need to have some idea of how the forest is growing and how that growth will be affected by any number of silvicultural options, including doing nothing. For the purposes of this FMP, we will use the summer, 2006 forest inventory as our source data in order to calculate growth and yield, and how best to achieve the highest internal rates of return while practicing good forestry. The stand data was

modeled through LandVest's in-house *Simulate II* program. Growth is adjusted by using the Forest Vegetation Simulator (*FVS*) *Northeastern TWIGS*, built by Forest Service, or *FlexFiber*, a joint project of the University of Maine and the USDA Forest Service Northeastern Research Station at Durham, NH.

Growth Modeling:

Physical growth was also modeled on *FVS*, *FlexFiber* and Stand Table Projection with or without CFI data. According to our simulations, the annual growth rates from those three methods were very close. It confirmed that the overall growth of each forest type should be close to the real world. However, since we did not use CFI data in the *FlexFiber* simulation, we thought that the growth might not be as reliable as that from *FVS* and Stand Table Projection. Therefore, *Simulate II* was adjusted to produce physical growth close to what *FVS* or *Stand Table Project* forecasts. In most cases the results are close, and we often use the average. In other cases there is a divergence of results, and we usually make a judgment that the *FVS* is a better predictor (particularly at the outside margins of BA).

Our calculations lead us to believe that the Cedarlands forest is growing an estimated 0.45 gross cords/acre/year. Using this number to estimate annual growth on the productive forest acres, we estimate that about 1,400 gross cords of volume per year is being added presently, in the absence of ongoing harvesting. With our Cutting Plan through Year 2016, we estimate that the ending volume of sawtimber volume will be close to, if not more than, the starting standing sawtimber volume. We are estimating that standing pulpwood volumes will be lower than starting volumes do to the improvement thinning being proposed. These thinnings will remove large volumes of unacceptable growingstock, concentrating growth on potential sawtimber.

Simulate II:

An LV developed software program called *Simulate II* is an Excel spreadsheet that takes the inventory and subjects it to a series of silvicultural treatments, including doing nothing, to generate the highest Internal Rate of Return (IRR). It can be run at the stand, stand type or forest level.

The first input is the standing inventory, in this case the summer, 2006 inventory. Stumpage values at the time of cruise are applied to the estimated timber volumes. These area average stumpage values are applied to each product and species to come up with timber capital value for the management unit. Then a series of treatments (Intermediate Thinning, Regeneration Cut, or No Activity) are applied and an IRR calculated each. These are compared and the action that produces the highest IRR is selected. This was done for a 10-15 year period. The highest IRR by stand type are then compared relative to each other a list of priorities result, with the highest gain in IRR by stand type being the number one priority and so forth down the line. There are other factors to consider when deriving the final Cutting Plan. Some of these factors are access and operational efficiencies. These inputs have been analyzed and the priorities laid out in the Cutting Plan are designed to utilize the best silviculture to produce the highest IRR.

Using the proper values for input variables and assumptions are critical when using *Simulate II*.

One of the important ones in this case is price appreciation for the various forest products. This percentage is applied to unit value. Source material for these rates comes from two main sources; research done by the US Forest Service, Sendak, et al, and LV's historical stumpage data going back 30 years. These rates are generally 1-2 percentage points below historical trends.

Another important input variable is the rate used for physical growth. This percentage rate is assumed to be net Regular Growth and the range is generally between .5% - 5% on sawtimber and 1% - 3% on cordwood products (due to outgrowth into sawtimber and quality issues). Rates are based on available research and LV data and historical records.

Fourth we assign a "Stand Growth" factor to adjust Regular Growth. These rates are based on estimates of Basal Area growth based on stocking levels and Cover Type, and calculated as a percentage. We have the option to add .5% for Site 1 and subtract .5% for Site 2. The Regular Growth percentage gets 2/3rds of the weight and Stand Growth 1/3 to reach the Adjusted Reg. Growth rate.

The final element used to calculate total growth is ingrowth. Our model calculates sawlog ingrowth by moving a percentage of the sub-sawtimber growing stock into sawtimber, in each 5-year period. For pulpwood, a percentage of sub-merchantable stems in the 3"-5" size classes are shifted upwards into the merchantable size classes.

After this process is completed, we run the subject strata on FVS or Flex-Fiber (or both), and if actual property specific growth information is available we use that too. Using one, two or three of these methods provides an estimate of growth in gross cords/acre/year. This growth rate is then used as the result of Simulate II, and the Stand Growth Rate is adjusted to make certain the "No Cut" or baseline simulation equals the estimate from the peer reviewed models (and/or stand table projection).

Response to Treatment in Simulate II:

Having established the "No Cut" baseline, we proceed to simulate the effect of thinnings and regeneration cuts on two attached spreadsheets. To do this we first test for feasibility. The rule of thumb is that no cut can be implemented unless the yield is at least 7 gross cords per acre. We also add a practical level; for example, an H3B type with a basal area of 80 and a high degree of AGS, is not a likely candidate for thinning, thus we forego the simulation in this case.

Typically on the thinning level we will try an improvement thinning to the B-Level first. We simulate cutting a percentage of each species and product based on analysis of the stand and stock tables, the Stand Type Description, the goal of "value growth". We then look for the optimal approach, which becomes the base strategy (we have an automatic optimizer).

Our usual first attempt at a regeneration cut will usually be something on the order of a 50% removal, again based on analysis of the stand and stock tables, the Stand Type Description, the goal of "value growth". We will also try a treatment in the second 5-year period as an option as well.

The only adjustment to Simulate II is to change the Stand Growth percentage to reflect the “new” stand conditions – and we add .5% if the treatment can be considered an improvement thinning, and subtract .5% on regeneration cuts to account for shock.

From those simulations, we will have a near optimal thinning simulation and a near optimal regeneration simulation, with which to compare to the “No Cut” base. With that information, we make a decision on which of the three will be our “Managed Simulation”. IRR is primary, but other objectives can be factored in: For example – if a sub-goal is to cut a lot of Spruce-fir in the first 5-years, and the difference between No Cut and Regeneration is minimal, we would opt for the Regeneration Cut.

Forest Management:

As stated in the introduction, the goal of management is to manage the forest to produce a sustainable income to the landowner while protecting the ecological and recreational resources of the property. With this as the primary objective some of the treatments suggested for some areas will not produce the highest possible rate of return because of the impact intense management could have on the owner’s primary uses of the property.

As a whole, the forest is overstocked and in a declining state. Since there hasn’t been any activity for so long on the property, it has had more than ample time to recover from the last round of harvesting. Many of the stands are almost stagnated and need to be treated as soon as possible to get them growing again.

In the process of deciding treatment types and schedules, we ran a series of simulations to maximize the internal rate of return. In this process what we saw was that almost all stands wanted to be treated immediately. Some types needed to be treated more than others so they were classified as priority 1. The majority of the stands seemed to want to be treated but they could wait a few years without any major loss. These stands were classified as priority 2. The rest of types didn’t need to be treated now and would do better if left alone for a few years. These stands were classified as 3 & 4. Given this distribution of acreages and landowner objective of annual income, a fifteen-year cutting regime is ideal. Stands thinned in the first few years of management will be ready for another treatment to start the next cycle.

In prioritizing stands to maximize the internal rate of return, we simulated different treatments using removals at different percentages of volume by species. In doing this, we found the optimum silvicultural treatment to implement in each stand. These treatments will be summarized by forest type below. Specific stand-by-stand recommendations are in the appendix under the stand diagnostics and recommendation section, and the simulations themselves are available for review in our files.

Northern Hardwood Types:

These are the most valuable stands on the property. As stated previously, they have been harvested in before, using traditional diameter limit and high-grade cuts. These cuts removed only the best quality logs degrading the overall quality of the stands. Some of these stands have re-grown for over 20 years and become overstocked with a high volume of unacceptable

growing stock (UGS). These are ranked in the high priority class and are in need of an improvement thinning removing some of the “at risk” and poor quality stems while releasing the acceptable good quality growing stock.

Most of these stands are either at or approaching “A” level stocking. As a result of the high density of these stands advanced regeneration is either nonexistent or limited to undesirable shade tolerant beech brush or herbaceous plants.

In areas where nothing is in the under story we can establish regeneration using group selection systems, opening small holes in the over story to regenerate more favorable shade intolerant hardwoods.

In other areas where there are problems with herbaceous competition (Grass and Ferns) or and overabundance of Beech, steps will have to be taken to overcome these problems. Possible treatments are herbicide and controlled burning. However, with the high cost and low rate of return associated with these operations we are not recommending them. One alternative to these operations is to wait until the Beech is of merchantable size and do a low thinning combined with some patch cuts; removing most of the beech understory and creating openings in the overstory along with scarification to get something else started.

Red maple – Northern Hardwood Type:

Again these stands have been harvested before, but because these sites do not produce as much high quality timber these areas were not cut as heavily. In the last harvest, they most likely mined out the birch and good quality spruce. That was a general practice of the time in these types and the lack of these species in these stands gives us that impression. These stands are all at or approaching the “A” level with some of them overstocked.

Because of the sheer density of these stands they can be thinned. However, they probably actually should be regenerated. In most of these stands we recommend a two stage Shelterwood cut. This type of treatment removes about 40% of the basal area in the first entry creating openings to stimulate regeneration, preferably Yellow birch and Black cherry on these sites. The second entry releases this regeneration after it has been established. Then the treatment is completed with an over story removal.

This full schedule of treatments may not coincide with some of the landowners other uses in some areas. However, we can modify the intensity of management in those areas.

Mixedwood Types:

These types should be regenerated. The overstory in these stands is stocked with very poor quality Red maple that is not growing, mixed in with scattered spruce and Balsam fir. This poor overstory is mostly the result of the past harvest practices. The Softwood and Yellow birch mining of the past left poor quality Red maple as the primary species in these stands. These stands are not very dense but in most cases the understory is adequately regenerated with softwood. Some Spruce-fir had naturally regenerated and should be released. To do this we suggest patch cuts to remove roughly 50% of the basal area, leaving some Spruce-fir for seed.

Softwood Type:

The softwood areas are even aged and will be managed as such. Most of the larger Softwood stands are in the eastern end of the property in low lying poorly drained areas that must be operated during the winter. In stands that have a higher density, 33% block cut treatments should be done. These blocks should not make the stands more susceptible to blow down. They will also help establish regeneration where needed. In stands where adequate regeneration is present the overstory should be removed in two stages whether done via strip cuts or patch removals.

CUTTING REGIMEN AND LOCATION

YEAR	STANDS	ACRES	MBF	CORDS	GROSS	MARKETING	MARKING	NET
2007	7,11,12,18,19	218	273	1,526	\$48,536	\$4,854	\$4,142	\$39,540
2008	1,3,4,5,6,8,9,13,14,15 16,17,21,22,23	722	903	7,076	\$181,900	\$18,190	\$17,761	\$145,949
2009	30,31,32,33,34,45,52	683	854	7,376	\$198,085	\$19,809	\$18,168	\$160,109
2010	46,53	222	278	1,998	\$73,547	\$7,355	\$5,106	\$61,086
2011	46,47,53	203	254	1,624	\$46,516	\$4,652	\$4,263	\$37,601
2012	46,47,48,54	228	285	2,052	\$62,102	\$6,210	\$5,244	\$50,648
2013	48,54	172	215	1,204	\$41,271	\$4,127	\$3,268	\$33,876
2014	42,43,44,49,50,51	144	180	1,152	\$33,124	\$3,312	\$3,024	\$26,788
2015	42,43,44	159	199	1,193	\$34,134	\$3,413	\$3,180	\$27,541
2016	35,36,41,43	162	203	1,134	\$28,895	\$2,890	\$3,078	\$22,928
TOTALS		2,913	3,641	26,335	\$748,110	\$74,811	\$67,234	\$606,065

MARKETING & LOGGING:

Markets for forest products in the Hamilton County region are strong and diversified. There are numerous outlets for logs and pulp with New York, Vermont, and Canadian markets all in striking distance of the property. Both the International Paper facility in Ticonderoga and the Finch & Pruyn mill in Glens Falls provide an outlet for low grade fiber, and the numerous sawmills and manufacturing facilities throughout the northeast provide for an excellent competitive marketplace for the higher end materials.

Marketing of the timber will be a collaborative effort between the forest manager and the logging contractor. As scale based sales are preferred by the landowners, careful marketing of the forest products from a timber sale must be done. Through good marketing and sorting of products, a range of markets can be utilized to produce an above average return to the landowner.

Some of the major buyers of Adirondack timber, beyond the local market, include Ethan Allen in Beecher Falls, Columbia Plywood in Newport, Vermont, J.M. Champeau, and various Canadian Sawmills in both Ontario and Quebec. There are also numerous middle-sized mills whose purchasing circles overlap the property.

LOGICAL MARKETS

<u>MILL</u>	<u>LOCATION</u>	<u>PRODUCTS</u>
Tupper Lake Hardwoods	Tupper Lake, NY	Hardwood logs
A. Johnson	Elizabethtown, NY	Hardwood logs
Dalkeith Lumber	Dalkeith, Ont.	Hardwood logs
Ethan Allen	Beecher Falls, VT	Cherry & Hardwood logs
Harden Furniture	McConnellsville, NY	Cherry logs
Columbia Plywood	Newport, VT	Veneer
Ward Lumber	Jay, NY	Softwood logs
International Paper	Ticonderoga, NY	Hardwood & Softwood pulp
Finch-Pruyn	Glens Falls, NY	Hardwood & Hemlock pulp
Allegheny Veneer	Colton, NY	Veneer and Hardwood
Richards Logging	Tupper Lake, NY	Spruce-fir logs
Daiquam Forest Products	Quebec	Spruce-fir logs
Rawlings Adirondack	Dodgeville, NY	White ash logs
J.M. Champeau	Quebec	Hardwood logs

Best Management Practices for Forestry (BMPs) will be used and all operations will follow the guidelines as suggested in the State of New York's 'Best Management Practices and Timber Harvesting Guidelines'. These BMP's are essential to minimizing soil erosion and water quality concerns during and after harvest operations. While not a requirement, efforts will be made to utilize professional logging contractors who are certified through the various logger training programs that are now widely available.

FINANCIAL ANALYSIS

PRESENT VALUE OF TIMBER:

As of August, 2006, based on the inventory and applying area average stumpage rates, the total timber value on this parcel is: \$ 2,990,996. This figure includes the accumulated value of all trees in commercial timber types over 5" DBH. It is important to note that this is an estimate of total timber capital value and cannot be considered as a liquidation estimate. Prices used for unit values were arrived at by adjusting values from ongoing LandVest operations in the region and various stumpage surveys to reflect conditions on the subject tract.

PRICES & VALUES FOR ESTIMATES:

For future values, constant year 1 U.S. dollars are used in all projections. This means no inflationary rise in costs or price is imputed. Documented historic increases above inflation and commonly accepted rates for value added by forest management are factored into the projections.

A minimum bare land value is used in these calculations. Immediate cash flow is anticipated from the cutting regimen and location chart and is imputed in the cash flow for the property. Year 10 asset value is \$ 3,914,814 or \$ 901/total acre.

2007

Cedarlands BSA Reservation

PROJECTION ASSUMPTIONS

	PURCHASE PRICE	2,990,996	100% TIMBER CAPITAL VALUE
	BEGINNING TOTAL ACRES	4,383	
	BEGINNING FORESTED ACRES	3,111	
	ENDING TOTAL ACRES	4,383	
	ENDING FORESTED ACRES	3,111	
	BEGINNING FMV OF IMPROVEMENTS	\$0	
	BEGIN FMV OF BARE LAND w/PRE-MERCH	\$0	ASSUMES FMV=(AQ COST)-(TIMBER)-(IMP) IF NEGATIVE, OVERRIDE
	TIMBER MARKING FEES/M	\$4.00	
	TIMBER MARKING FEES/CORD	\$2.00	
	TIMBER MARKETING FEE	10%	
	LAND BROKERAGE COMMISSION RATE	8%	
	BEGINNING YEAR	2007	
	INVESTMENT PERIOD (YEARS)	9	
	BF GROWTH RATE	0.032	
	CD GROWTH RATE	0.021	
	AVERAGE INFLATION RATE	0	
	REAL LAND APPRECIATION RATE	2.50%	
	REAL CAPITAL IMPROVEMENT APP. RATE	2.50%	
	REAL MBF APPRECIATION RATE	3.50%	
	REAL CORD APPRECIATION RATE	1.50%	
	TRANSFER TAX RATE	0.40%	
:	:
FACTORS			
	LAND APPRECIATION FACTOR	1.249	
	CAPITAL IMPROVEMENT FACTOR	1.249	
	MBF FACTOR	1.363	
	CORD FACTOR	1.143	
:	:
END VALUES			
	ENDING VALUE/MBF	\$248.92	
	ENDING VALUE/CORD	\$9.03	
	ENDING TIMBER VALUE/ACRE	\$893.18	
	ENDING LAND VALUE PER ACRE	\$0.00	
	ENDING TOTAL TIMBER VALUE	\$3,914,814.50	
	ENDING TOTAL LAND VALUE	\$0.00	
	ENDING TOTAL IMPROVEMENT VALUE	\$0.00	
	ENDING GRAND TOTAL VALUE	\$3,914,814.50	= MAY ADJUST TO REFLECT % OF TCV SALE ON EXIT

2007

**Cedarlands BSA Reservation
PROJECTED CASH FLOW (all entries X \$1000)**

Prepared by LandVest

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	GRAND TOTALS
PROJECTED ACTIVITY											
1.Timber Sales	48.5	181.9	198.1	73.5	46.5	62.1	41.3	33.1	34.1	28.9	748.1
2.Projected Ending Value										3914.8	3914.8
3.Timber Sale Administration Fees	-4.9	-18.2	-19.8	-7.4	-4.7	-6.2	-4.1	-3.3	-3.4	-2.9	-74.8
4.Timber Marking Fees	-4.1	-17.8	-18.2	-5.1	-4.3	-5.2	-3.3	-3.0	-3.2	-3.1	-67.2
TOTAL NET RECEIPTS	39.5	145.9	160.1	61.1	37.6	50.6	33.9	26.8	27.5	3937.7	4520.9
5.Begining Value	-2991.0										-2991.0
6.Survey & Boundary Maintenance	-2.175	-1.230	-1.020	-0.645	-1.500						-6.570
7.Easement Administration											0.0
8.Road Construction	-2.0	-10.0	-3.0	-4.0	-3.0	-5.0	-3.0	-6.0	-5.0	-5.0	-46.0
9.Other Improvements	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-10.0
10.TOTAL A&D COSTS	-2996.2	-12.2	-5.0	-5.6	-5.5	-6.0	-4.0	-7.0	-6.0	-6.0	-3053.6
11.Management-LV											0.0
12.Management-Others					-1.0					-1.0	-2.0
13.Forest Maintenance											0.0
14.Miscellaneous	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-1.0	-10.0
15.TOTAL CARRYING COSTS	-1.0	-1.0	-1.0	-1.0	-2.0	-1.0	-1.0	-1.0	-1.0	-2.0	-12.0
16.TOTAL EXPENDEED	-2997.2	-13.2	-6.0	-6.6	-7.5	-7.0	-5.0	-8.0	-7.0	-8.0	-3065.6
17.Cash Flow Receipts +(-) Expenditures	-2957.6	132.7	154.1	54.4	30.1	43.6	28.9	18.8	20.5	3929.7	1455.3
18.Cumulative Cash Flow +(-)	-2957.6	-2824.9	-2670.8	-2616.4	-2586.3	-2542.6	-2513.8	-2495.0	-2474.4	1455.3	XXXXXXXXXX
19.TOTAL ASSET VALUE	2994.0	3133.2	3099.0	3065.2	3192.9	3337.6	3476.9	3650.6	3842.2	4039.6	XXXXXXXXXX
20.NET ASSET INCREMENT	3.0	139.2	-34.2	-33.8	127.7	144.8	139.3	173.7	191.5	197.4	1048.6
21.Total Receipts +(-) Expenditures	-2954.6	272.0	119.8	20.6	157.8	188.4	168.1	192.5	212.0	3276.0	XXXXXXXXXX

INTERNAL RATE OF RETURN-----

4.98%

26

Date Prepared:

05/11/07

APPENDIX A:

Stand Type Descriptions and Recommendations

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: H3-4A

Description:

Acreage:	1,540
Site/type:	Northern Hardwood
Site Quality:	I-II
Species Composition:	Beech (44%), Sugar Maple (23%), Yellow Birch (15%), Red Maple (6%)

Stocking: (Per Acre)

Number of Trees:	422
Mean Stand Diameter:	Merchantable 9.2 in. Total 6.4 in.
Basal Area (sq.ft./acre) -	95.5 (47.5 AGS)
Volume: (BF/Acre & Cords/Acre) -	4,182 BF & 13.8 Cords

Stand Type Description & Management Objective:

Located on the more productive soils on the property, these stands have the potential to grow some of the highest quality timber on the ownership. As in most cases, the last round of harvesting on the property provided the bases for the current stand structure. The lack of low grade markets of the time dictated that log cuts or high grading was done. The property was and as it still is today, used primarily as a Boy Scout Camp facility. This use caused most of the harvesting to be done in the winter months. As a result of the winter harvesting and the movement of the necrotic fungus or "Beech Bark Disease" through the area, the majority younger age classes in these stands are heavily stocked with American beech. How this "beech brush" understory is managed will dictate the future structure of these stands and it must be taken into consideration when treating the overstory.

The overstory is mostly stocked with Sugar maple, American beech, and Yellow birch with some small pockets of Black cherry and Red maple. This overstory is approaching the "A-level", an overstocked state where growth rates begin to decline. Growth simulations place these stands at the top of the treatment priority list because overall health and quality is in a declining state. The management of these stands should concentrate on salvage of at risk mature stems and removal of the unacceptable and declining beech.

Management Prescription:

These stands should be treated with single tree and group selection treatments. Group selection treatments will be used in areas where openings must be created to provide a platform for more shade intolerant species to regenerate. In the removal patches, the majority of the beech understory should be removed to minimize its affect on regeneration efforts. Efforts should be made to operate as much of this ground as possible in the early fall, after the scouts have left, to obtain the limited scarification needed to seed in a new understory.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: H3-4B

Description:

Acreage:	253
Site/type:	Northern Hardwood
Site Quality:	II
Species Composition:	Beech (34%), Sugar Maple (19%), Yellow Birch (18%), White Ash (10%)

Stocking: (Per Acre)

Number of Trees:	273
Mean Stand Diameter:	Merchantable 8.6 in. Total 7.6 in.
Basal Area (sq.ft./acre) -	86.8 (44.4 AGS)
Volume: (BF/Acre & Cords/Acre) -	3,569 BF & 13 Cords

Stand Type Description & Management Objective:

The overstory in these stands is dominated by good quality Sugar maple, Yellow birch, and White ash. Currently stocked in the middle of the "B" range on the stocking guides, these stands have a good potential to produce some high quality sawtimber. These stands are classified as a second priority on the harvest schedule. At current stocking levels these stands could be left to grow for another 5 years. At that time these stands will start to slow in growth signifying treatment is needed. The understory in these stands is dominated by poor quality beech, something that will have to be addressed in the next harvest.

Management Prescription:

These stands should be treated with a cluster thinning; removing groups of poor quality beech, concentrating growth on clusters of more desirable Sugar maple, Yellow birch, and White ash. This treatment would create openings in the canopy to stimulate another age class of a more desirable species mix.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: R3-4B

Description:

Acreage:	64
Site/type:	Northern Hardwood Red Maple
Site Quality:	II
Species Composition:	Beech (31%), Red Maple (27%), Yellow Birch (22%), Hemlock (11%)

Stocking: (Per Acre)

Number of Trees:	915
Mean Stand Diameter:	Merchantable 8.7 in. Total 4.5 in.
Basal Area (sq.ft./acre) -	102.5 (37.5 AGS)
Volume: (BF/Acre & Cords/Acre) -	3,321 BF & 13.4 Cords

Stand Type Description & Management Objective:

These Red maple dominated northern hardwood stands have the ability to grow good quality Yellow birch, and Eastern hemlock, and Spruce-fir. These stands are located on the low rolling hills amid the Softwood areas east of McRorie Lake. At one time, these sites were covered in large diameter good quality Eastern hemlock, White pine Yellow birch, and Red spruce. After these areas were cut, Red maple and beech seeded in and occupied the sites. While it would be ideal to convert these sites back to softwood stands it would be near impossible, unless they were clearcut and planted. These areas should be managed to increase the percentage of softwood in the overstory to bring the stand composition closer to its natural condition, growing trees that will be more productive on the site.

Management Prescription:

Shelterwood treatments are suggested for these stands. Releasing patches of spruce regeneration, and creating openings where regeneration is not present. This treatment should concentrate on removing the over mature Red maple, and poorer quality Beech and Yellow birch trying to leave good quality Birch and softwood to seed in openings created by the operation.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: R4B

Description:

Acreage:	399
Site/type:	Northern Hardwood Red Maple
Site Quality:	II
Species Composition:	Beech (34%), Sugar Maple (21%), Yellow Birch (15%), Red Maple (8%), Poplar (8%)

Stocking: (Per Acre)

Number of Trees:	327
Mean Stand Diameter:	Merchantable 9.5 in. Total 7.5 in.
Basal Area (sq.ft./acre) -	100.7 (45.5 AGS)
Volume: (BF/Acre & Cords/Acre) -	5,082 BF & 13.9 Cords

Stand Type Description & Management Objective:

These stands are two aged stands, the overstory is made up of larger diameter American beech, Red maple, Yellow birch, and Sugar maple, the understory is occupied by softwood on poorer drained sites and beech and maples on upland areas. These stands are stagnated in their current state and will need treatment to get them growing. These sites are marginal Sugar maple sites, but they have the ability to grow good Red maple and Yellow birch.

Management Prescription:

These areas should be thinned, concentrating growth on the better quality growing stock. In areas where good advanced regeneration is present, thinnings should be done in groups and patches to release understory and foster the growth of the future forest.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: M3-4B

Description:

Acreage:	374
Site/type:	Mixedwood
Site Quality:	II
Species Composition:	Beech (27%), Red Maple (13%), Sugar Maple (11%), Yellow Birch (10%), Hemlock (10%), Balsam Fir (9%)

Stocking: (Per Acre)

Number of Trees:	996
Mean Stand Diameter:	Merchantable 8.8 in. Total 4.6 in.
Basal Area (sq.ft./acre) -	113.1 (63.6 AGS)
Volume: (BF/Acre & Cords/Acre) -	5,673 BF & 12.7 Cords

Stand Type Description & Management Objective:

Mostly located along the fringes of wetlands and poorly drained flats between hardwood ridges, these sites have the ability to grow good quality Spruce-fir, Yellow birch, and Eastern hemlock. These stands are at the cusp of the "A-level" and are starting to slow in growth.

Management Prescription:

In these stands future harvest should concentrate on removal of the poor quality Red maple and beech and concentrate growth on softwood and Yellow birch.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: M4B

Description:

Acreage:	103
Site/type:	Mixedwood
Site Quality:	II
Species Composition:	Beech (41%), Hemlock (19%), Yellow Birch (12%), Red Maple (9%), Spruce (8%)

Stocking: (Per Acre)

Number of Trees:	608
Mean Stand Diameter:	Merchantable 7.8 in. Total 5.4 in.
Basal Area (sq.ft./acre) -	96.4 (51.8 AGS)
Volume: (BF/Acre & Cords/Acre) -	3,818 BF & 10.6 Cords

Stand Type Description & Management Objective:

Located on drier ground this stand is a classic Eastern hemlock – northern hardwood mixedwood stand. There are two distinct age classes present. The overstory is mostly large diameter hemlock, beech, birch, and maple. The understory consists of beech brush with scattered Yellow birch, and Red maple throughout. This stand is at the end of its natural ecological succession and it is time to regenerate it.

Management Prescription:

This stand should be treated with a group selection system, opening the canopy using groups of removals to promote the regeneration of more shade intolerants. Preferably this operation would be done before freeze up to promote scarification of the soils, preparing the seedbed for the next age class.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: S3-4A

Description:

Acreage:	131
Site/type:	Softwood
Site Quality:	III
Species Composition:	Balsam Fir (42%), White Pine (20%), N. White Cedar (11%), Black Cherry (6%)

Stocking: (Per Acre)

Number of Trees:	701
Mean Stand Diameter:	Merchantable 7.6 in. Total 6.0 in.
Basal Area (sq.ft./acre) -	138.9 (103.3 AGS)
Volume: (BF/Acre & Cords/Acre) -	7,399 BF & 13.3 Cords

Stand Type Description & Management Objective:

The more productive of the two different softwood types, located on superior sites, they are growing some of the better softwood on the property. These stands have reached an overstocked state and many are starting to decline. The over mature Balsam fir has started to blow over, creating openings in the canopy, releasing the carpet of balsam in understory.

Management Prescription:

The over mature balsam should be salvaged in these stands. Removing other at risk stems in the process, should create enough openings in the canopy to release the balsam in the understory and provide enough sunlight to regenerate shade intolerant White pine where the seed source is present.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: S3-4B

Description:

Acreage: 247
Site/type: Softwood
Site Quality: III

Species Composition: Balsam Fir (30%), Spruce (23%),
Red Maple (17%), N. White Cedar (12%),
Yellow Birch (10%)

Stocking: (Per Acre)

Number of Trees: 690
Mean Stand Diameter: Merchantable 7.5 in.
Total 5.7 in.
Basal Area (sq.ft./acre) - 122.5 (74.0 AGS)
Volume: (BF/Acre & Cords/Acre) - 6,284 BF & 10 Cords

Stand Type Description & Management Objective:

Located on some of the more poorly drained soils on the property, these stands are the classic Spruce-fir stands on the property. These stands are at a high "B-level" on the stocking charts and are ready to be treated.

Management Prescription:

Softwood stands like these must be managed under an even aged regime, because of their susceptibility to wind throw. Because the easement and Adirondack Park Agency Regulation prohibits clear cutting large acreages, and the landowner would like to see a steady cash flow from the property, the treatment of these stands will be in two stages using small patch clear cuts or strip cuts.

Stand Diagnosis & Prescription:

Cedarlands Scout Reservation

Type: Inoperable

Description:

Acreage: 217
Site/type: High Elevation Mixedwood
Site Quality: III

Species Composition: Spruce (38%), Beech (21%),
Yellow Birch (13%), Red Maple (9%),
Sugar Maple (7%), White Birch (7%)

Stocking: (Per Acre)

Number of Trees: 347
Mean Stand Diameter: Merchantable 8.2 in.
Total 5.6 in.
Basal Area (sq.ft./acre) - 58.4 (16.1 AGS)
Volume: (BF/Acre & Cords/Acre) - 1,866 BF & 6.7 Cords

Stand Type Description & Management Objective:

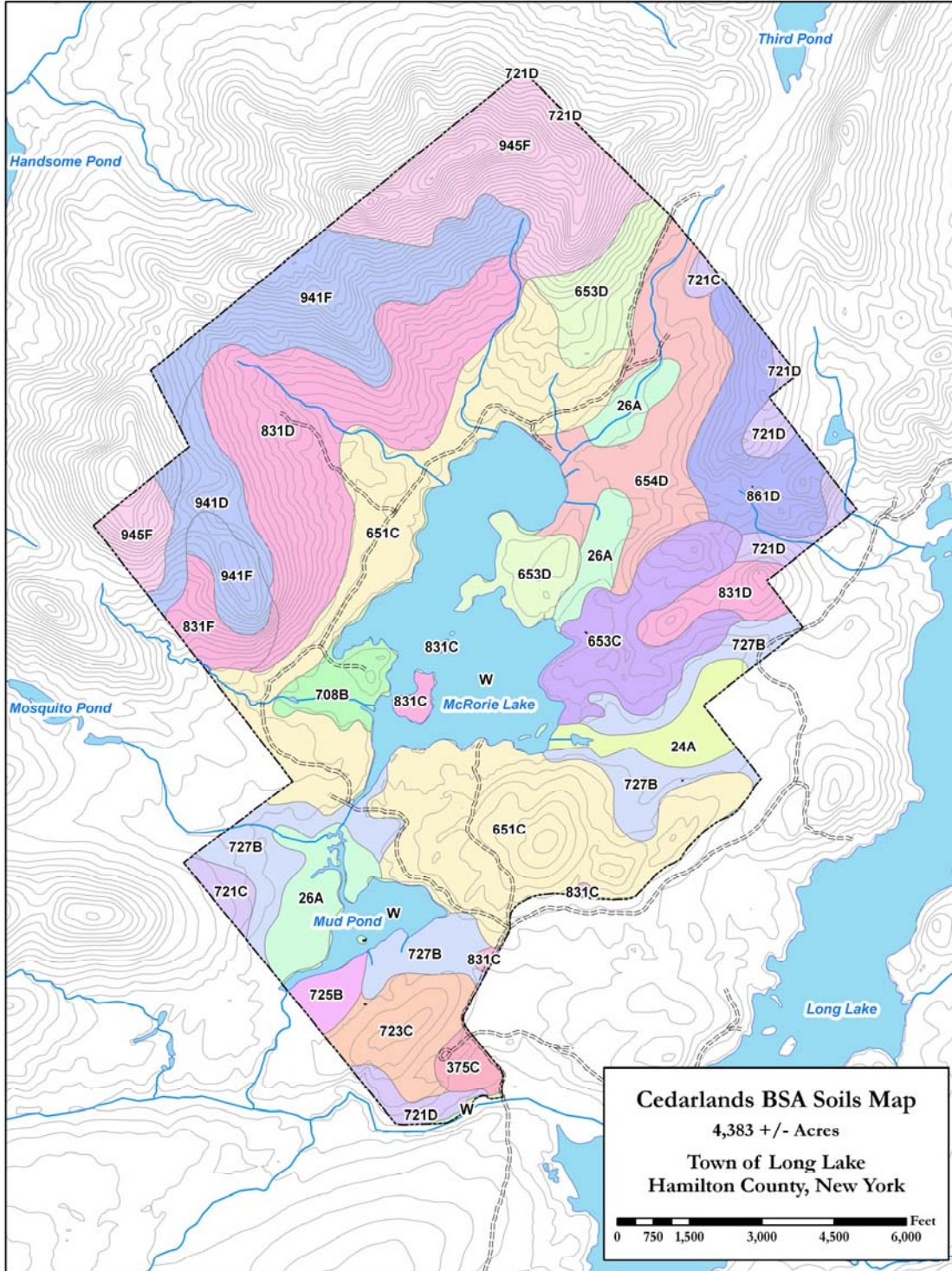
These stands are located on the steep upper slopes of the mountains on the property that are deemed inoperable using current logging equipment. For the most part, these areas have thin shallow bouldery soils, growing timber that tends to be shorter and of poor quality. However, scattered throughout these areas through the natural erosion of the soil, deep pockets of rich mineral soil have collected in small areas. The timber growing on these sites is of excellent quality. These areas have been added to the harvest schedule, however the timber on these sites was not considered in cash flow projections. When operating in adjacent stands, we anticipate the opportunity of entering into the fringes of these stands.

Management Prescription:

The limiting factor to treating these areas is in the topography of the sites. Because of concerns of operating on these slopes, small entries will be made salvaging at risk and mature timber.

APPENDIX B

Soil Map Soil Descriptions



Forestland Productivity

Hamilton County, New York

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
<i>Cu ft/ac</i>				
24A:				
Buckspout	Balsam fir	30	57	Black spruce, Tamarack
	Black spruce	25	29	
	Eastern arborvitae	---	0	
	Red maple	---	0	
	Tamarack	---	0	
Wonsqueak	Balsam fir	---	0	Black spruce, Tamarack
	Black spruce	20	29	
	Eastern arborvitae	---	0	
	Quaking aspen	---	0	
	Red maple	---	0	
	Tamarack	---	0	
26A:				
Wonsqueak, Flooded	Balsam fir	---	0	Black spruce, Tamarack
	Black spruce	20	29	
	Eastern arborvitae	---	0	
	Quaking aspen	---	0	
	Red maple	---	0	
	Tamarack	---	0	
Rumney	Eastern white pine	56	100	Eastern arborvitae, Eastern white pine, White spruce
	Red maple	65	43	
	Red spruce	45	100	
Buckspout	Balsam fir	30	57	Black spruce, Tamarack
	Black spruce	25	29	
	Eastern arborvitae	---	0	
	Red maple	---	0	
	Tamarack	---	0	
375C:				
Colton, rolling	Eastern white pine	62	114	Eastern white pine, European larch, Red pine
	Red pine	52	86	
	Red spruce	39	86	
	Sugar maple	61	43	
	White spruce	52	114	
Adams	American beech	---	0	Eastern white pine, European larch, Red pine
	Eastern hemlock	---	0	
	Eastern white pine	66	114	
	Red maple	---	0	
	Sugar maple	61	43	

Forestland Productivity

Hamilton County, New York

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
<i>Cu ft/ac</i>				
651C: Monadnock, very bouldery	Eastern white pine	63	114	Eastern white pine, Red pine, White spruce
	Northern red oak	53	43	
	Red pine	60	100	
	White spruce	55	129	
Tunbridge, rolling, very bouldery	Eastern white pine	50	86	Eastern white pine, Red spruce, White spruce
	Northern red oak	---	0	
	Sugar maple	60	43	
Sabattis, very bouldery	Balsam fir	45	86	Balsam fir, Red spruce, White spruce
	Eastern hemlock	50	0	
	Red maple	55	29	
	Red spruce	35	72	
	Yellow birch	55	29	
653C: Monadnock, very bouldery	Eastern white pine	63	114	Eastern white pine, Red pine, White spruce
	Northern red oak	53	43	
	Red pine	60	100	
	White spruce	55	129	
653D: Monadnock, very bouldery	Eastern white pine	63	114	Eastern white pine, Red pine, White spruce
	Northern red oak	53	43	
	Red pine	60	100	
	White spruce	55	129	
654D: Monadnock, hilly, very bouldery	Eastern white pine	63	114	Eastern white pine, Red pine, White spruce
	Northern red oak	53	43	
	Red pine	60	100	
	White spruce	55	129	
Sabattis, very bouldery; undrained	Balsam fir	45	86	Balsam fir, Red spruce, White spruce
	Eastern hemlock	50	0	
	Red maple	55	29	
	Red spruce	35	72	
	Yellow birch	55	29	
708B: Adirondack, very bouldery	Red maple	65	43	Balsam fir, Red spruce, White spruce
	White ash	---	0	
	Yellow birch	50	29	

Forestland Productivity

Hamilton County, New York

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
<i>Cu ft/ac</i>				
708B:				
Sabattis, very bouldery; undrained	Balsam fir	45	86	Balsam fir, Red spruce, White spruce
	Eastern hemlock	50	0	
	Red maple	55	29	
	Red spruce	35	72	
	Yellow birch	55	29	
Tughill, very bouldery	Balsam fir	45	86	Balsam fir, Eastern white pine
	Eastern hemlock	50	0	
	Red maple	50	29	
	Red spruce	35	72	
721C:				
Becket, very bouldery	Balsam fir	55	114	Eastern white pine, Red pine, White spruce
	Eastern white pine	69	129	
	Paper birch	71	86	
	Sugar maple	60	43	
	White spruce	55	129	
Tunbridge, very bouldery	Eastern white pine	50	86	Eastern white pine, Red spruce, White spruce
	Northern red oak	---	0	
	Sugar maple	60	43	
Skerry, very bouldery	Balsam fir	57	114	Eastern white pine, White spruce
	Eastern white pine	80	143	
	Sugar maple	60	43	
	White spruce	60	143	
721D:				
Becket, very bouldery	Balsam fir	55	114	Eastern white pine, Red pine, White spruce
	Eastern white pine	69	129	
	Paper birch	71	86	
	Sugar maple	60	43	
	White spruce	55	129	
Tunbridge, very bouldery	Eastern white pine	50	86	Eastern white pine, Red spruce, White spruce
	Northern red oak	---	0	
	Sugar maple	60	43	
723C:				
Becket, very bouldery	Balsam fir	55	114	Eastern white pine, Red pine, White spruce
	Eastern white pine	69	129	
	Paper birch	71	86	
	Sugar maple	60	43	
	White spruce	55	129	

Forestland Productivity

Hamilton County, New York

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
<i>Cu ft/ac</i>				
725B:				
Skerry, very bouldery	Balsam fir	57	114	Eastern white pine, White spruce
	Eastern white pine	80	143	
	Sugar maple	60	43	
	White spruce	60	143	
Becket, very bouldery	Balsam fir	55	114	Eastern white pine, Red pine, White spruce
	Eastern white pine	69	129	
	Paper birch	71	86	
	Sugar maple	60	43	
	White spruce	55	129	
727B:				
Skerry, very bouldery	Balsam fir	57	114	Eastern white pine, White spruce
	Eastern white pine	80	143	
	Sugar maple	60	43	
	White spruce	60	143	
Adirondack, very bouldery	Red maple	65	43	Balsam fir, Red spruce, White spruce
	White ash	---	0	
	Yellow birch	50	29	
831C:				
Tunbridge, very bouldery	Eastern white pine	50	86	Eastern white pine, Red spruce, White spruce
	Northern red oak	---	0	
	Sugar maple	60	43	
Lyman, very bouldery	Balsam fir	60	114	Balsam fir, Eastern white pine, Red pine, White spruce
	Red spruce	40	86	
	Sugar maple	50	29	
	White spruce	55	129	
831D:				
Tunbridge, very bouldery	Eastern white pine	50	86	Eastern white pine, Red spruce, White spruce
	Northern red oak	---	0	
	Sugar maple	60	43	
Lyman, very bouldery	Balsam fir	60	114	Balsam fir, Eastern white pine, Red pine, White spruce
	Red spruce	40	86	
	Sugar maple	50	29	
	White spruce	55	129	

Forestland Productivity

Hamilton County, New York

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
<i>Cu ft/ac</i>				
831F:				
Tunbridge, very bouldery	Eastern white pine	50	86	Eastern white pine, Red spruce, White spruce
	Northern red oak	---	0	
	Sugar maple	60	43	
Lyman, very bouldery	Balsam fir	60	114	Balsam fir, Eastern white pine, Red pine, White spruce
	Red spruce	40	86	
	Sugar maple	50	29	
	White spruce	55	129	
861D:				
Lyman, very bouldery	Balsam fir	60	114	Balsam fir, Eastern white pine, Red pine, White spruce
	Red spruce	40	86	
	Sugar maple	50	29	
	White spruce	55	129	
Ricker	American mountainash	---	0	Tamarack
	Balsam fir	20	57	
	Paper birch	---	0	
	Red spruce	20	29	
	Yellow birch	---	0	
941D:				
Rawsonville, very bouldery	American beech	64	43	Balsam fir, Eastern white pine, Red spruce, Tamarack, White spruce
	Balsam fir	---	0	
	Red spruce	45	100	
	Sugar maple	60	43	
	White ash	67	43	
	White spruce	55	129	
	Yellow birch	55	29	
Hogback, very bouldery	Balsam fir	48	86	Balsam fir, Eastern white pine, Red spruce
	Eastern white pine	55	86	
	Northern red oak	63	43	
	Red spruce	42	86	
	Sugar maple	50	29	
	White spruce	55	129	
	Yellow birch	---	0	

Forestland Productivity

Hamilton County, New York

Map symbol and soil name	Potential productivity			Trees to manage
	Common trees	Site index	Volume of wood fiber	
<i>Cu ft/ac</i>				
941F:				
Rawsonville, very bouldery	American beech	64	43	Balsam fir, Eastern white pine, Red spruce, Tamarack, White spruce
	Balsam fir	---	0	
	Red spruce	45	100	
	Sugar maple	60	43	
	White ash	67	43	
	White spruce	55	129	
	Yellow birch	55	29	
Hogback, very bouldery	Balsam fir	48	86	Balsam fir, Eastern white pine, Red spruce
	Eastern white pine	55	86	
	Northern red oak	63	43	
	Red spruce	42	86	
	Sugar maple	50	29	
	White spruce	55	129	
	Yellow birch	---	0	
945F:				
Hogback, very bouldery	Balsam fir	48	86	Balsam fir, Eastern white pine, Red spruce
	Eastern white pine	55	86	
	Northern red oak	63	43	
	Red spruce	42	86	
	Sugar maple	50	29	
	White spruce	55	129	
	Yellow birch	---	0	
Ricker	American mountainash	---	0	Tamarack
	Balsam fir	20	57	
	Paper birch	---	0	
	Red spruce	20	29	
	Yellow birch	---	0	

APPENDIX C

Forestry Terms Abbreviations & Definitions:

Forest Typing Nomenclature:

Forest Inventory Specifications:

Cruise Summary Reports:

ABBREVIATIONS AND DEFINITIONS:

BA	Basal Area. A measurement of relative density in a stand of timber.
BF	Board Feet
CDS	Cords. A standard measure of pulpwood or growing stock either stacked or standing.
DBH	Diameter Breast Height. A measurement of individual trees taken 4.5 feet above the ground.
EVEN-AGE	Applied to a stand or management strategy in which there are relatively small age differences between trees (generally no more than 20 years difference). Stands made up of two separate age classes are also considered even-aged.
GS:PW RATIO	An index used to assess relative quality of the forest. The greater the proportion of growing stock, the better the overall quality of the timber in the forest.
INTOLERANT	An intolerant species is one which develops best in full or nearly full sunlight.
IRR	Internal rate of return. The rate at which discounted future cash flows equal the initial cash outlay <u>OR</u> the discount rate at which Net Present Value equals zero.
MBF	Thousand Board Feet. A standard measure of lumber, either sawn or standing.
NON-COMMERCIAL	These are the areas on the forest, which are not capable of producing a commercial crop of timber. Examples are swamps or rock outcroppings.
SILVICULTURE	The activities associated with tending a forest.
STAND	An aggregate of trees occupying a specific area and sufficiently uniform in species, age, arrangement and condition as to be distinguishable from the forest cover on adjoining areas.
TOLERANT	A tolerant species is one which can develop in something less than full sunlight.
UNEVEN-AGE	Applied to a stand or management strategy in which there are considerable differences in age of trees and at least 3 age classes are represented.

Forest Stand Type Classification:

The forest stands of similar characteristic with respect to composition; development and other factors have been grouped together and classified into forest stand types according to the following characteristics:

Stand Composition:

- H Northern Hardwoods dominated by Sugar Maple.
- R Northern Hardwood dominated by Red Maple.
- M Mixed Wood, less than 70% hardwood or softwood.
- S Softwood, Spruce-Fir or Tamarack.

Stand Size Class:

- 1 Seedling-Sapling Class: Stand dominated by trees < 1" up to 3.5" size
- 2 Sapling-Poletimber Class: Stand dominated by trees in the 1" DBH to 6" DBH classes
- 3 Poletimber-Small Sawtimber Class: Stand dominated by trees in the 6" to 12" classes
- 4 Sawtimber Class: Stand dominated by trees > 12" DBH

Note: a stand can occupy more than one class, ex. H3-4A

Forest Density Classes:

- A Fully stocked to overstocked; at or near the A line on the appropriate stocking guide
- B Adequately stocked; at or near the B line on the appropriate stocking guide
- C Inadequately stocked; at or near the C line on the appropriate stocking guide; should reach the line in +/- 10 years
- D Understocked; very scattered overstory that still plays a role in the management of the stand

**PROJECT # 5957
LANDVEST TIMBERLANDS
CEDARLANDS BSA RESERVATION
CRUISE SPECIFICATIONS MANUAL**

**JULY 2006
VERSION 1.1**

PLEASE NOTE ALL CRUISE CARDS, SPECIFICATION MANUALS, FIELD MAPS, KEYS AND OTHER DATA, EQUIPMENT OR SUPPLIES PROVIDED BY LANDVEST OR ACQUIRED AS A RESULT OF WORKING ON THIS PROJECT, REMAIN THE PROPERTY OF LANDVEST AND ARE REQUIRED TO BE RETURNED COMPLETELY, EXCEPT THOSE ITEMS LEFT IN THE FIELD TO DOCUMENT POINTS. ALL OF THIS DATA, THE PROJECT, THE CLIENT AND ANY OTHER INFORMATION PROVIDED OR GATHERED IN THE FIELD IS THE PROPERTY OF LANDVEST AND MUST BE HELD IN COMPLETE CONFIDENTIALITY. FAILURE TO RETURN ALL INFORMATION PROVIDED, AS WELL AS ANY COPIES MADE BY THE CRUISER OR HIS EMPLOYEES, UPON THE SUCCESSFUL CONCLUSION OF THE INVENTORY, WILL LEAD TO PENALTIES OF REDUCED PAYMENTS OF 50%.

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A) OVERVIEW AND PURPOSE: This document is the LandVest baseline cruising specifications manual for all cruisers working on the July, 2006 inventory of the lands of the Cedarlands Boy Scout Reservation in Hamilton County of New York. These specifications will serve as the basis for practices to be used in the field, on each plot and in the overall gathering of data by all cruisers.

It is very critical for all cruisers to appreciate and understand that failure to comply completely with all elements of the cruise specifications will lead to failed check cruises and the retaking of all plots taken before the failed cruise. Something as simple as an incomplete field map, improperly completed cruise cards, or any other failure to comply will lead to a complete retaking of all of the cruisers previously completed points.

1. **B) BASELINE STANDARDS FOR DATA COLLECTION: Cruise Line Location and Documentation:** It is very critical to pass the check cruise that cruise lines are started accurately as represented on the cruise map, and that they be neatly and clearly identified on the ground. Therefore, each cruiser will mark the starting point of each line with two pink flags, one of which will indicate the cruiser's initials, the date and the project number (5957), along with the distance and bearing to be traveled from that point to the first sample point to be tallied on that segment of the line. If a cruiser passes across a road cruise line designating flags (two pink with the proper notation) with the same information shall be placed on the flag. Please note distance and bearing to both the previous and next plot when crossing a road (summer or winter).
2. **Plot Location:** Plot location can be either by hip chain or GPS. If GPS is used one must navigate the last chain to the point by hip chain and compass to avoid any bias in the location of plot center. **If one uses GPS to locate points they must fall within +/- 30 feet of where a hip chain and compass check would find the plot. It is required that if one uses GPS that the cruiser stop +/- 1 chain from the point and tie a flag with the bearing and distance to the point. Then this distance is covered with a hip chain and compass to locate the point to avoid any wander bias, selective cruise point center locations, or other potential point location bias, associated with the GPS.**
3. **GPS Data Collection:** Whenever a cruiser is near a boundary, corner, or other recognizable feature that will assist in the development of an accurate map of the parcel it is required that the cruiser collect GPS data and mark the point on the cruise field map. Also if in the process of cruising one comes to a line too soon then drop the points that are off the parcel. But at the same time one needs to investigate the boundary and GPS it to insure accurate mapping afterwards. If one is on a grid and doesn't find the boundary where expected then add points to fill the void on the same spacing as all other points on the lot. Use the next highest point number that is higher than the point number that is highest as provided for the project on data and cruise field map. Each point must be collected with an accurate and unique point number.
4. **Plot Monumentation:** In all instances plots need to be carefully monumented both for use by the cruiser, as well as if the need arises for other LVI staff or outside observers will re-visit the plot. A plot should have a pink flag hanging at or above eye level that has the following information: Point #, Cruiser's initials, LVI, Date and Project Number, in this case 5957. There should also be a point center flag or stick with flagging placed on the ground with at least the plot number on it. **MAKE CERTAIN THAT YOUR POINTS ARE WELL DOCUMENTED, FAILURE TO CAREFULLY AND WITH A REASONABLE LEVEL OF CERTAIN PLACE DOCUMENTATION AT THE POINT TO INSURE THAT FOR THE NEXT 6 MONTHS A FORESTER CAN LOCATE THE POINT CENTER ACCURATELY.** Even if the cruiser doesn't believe others will need to find the plot it is useful in many instances that a documented point

can serve as ground control for other activities such as timber sale layout.

5. **Starting point for first tree to tally:** Always start at the first tree at or to the east of magnetic north. It is required that the cruiser marks the first tallied tree with a # 1 in red crayon. Then from that point it is critical to follow in a tree-by-tree movement clockwise. If you miss a tree collect the data when you find it and then if on a paper tally use an arrow to indicate its real location on the point. Please use field and cruise notes to indicate tree location changes for digitally collected data so we can move the tree to its proper place in the point sequence. There is no greater frustration as a check cruiser to be unable to follow the path of the trees as collected.
6. **SPECIES:** Each cruiser will use the species codes on the attached cruise specification card. Any failures to utilize the correct species will be an error.
7. **DIAMETER:** This cruise will utilize one (1) inch diameter classes and collect trees down to one inch in size. All diameters will be measured perpendicular to the line of site from plot center, at 4.5 feet (DBH) and with calipers. To affect better check cruising, the placement of a red crayon line at the location of the cruiser's measurement of d.b.h. is required. All diameters should be done with calipers at a carefully established d.b.h. and on the face perpendicular to plot center. This is critically important when measuring trees for limiting distance. Keep in mind that the 1-3 inch classes will all fall within 8.25 feet of plot center with a 10 Factor prism. Therefore, fears of a great addition of time will be unrealized as there will not be a great deal of time associated with the location and measurement of these stems. ***The 1.0 class should be from .51 inches to 1.5 and from there on up the line. A 4 inch class tree would be > 3.5 to 4.5 inches. The issue to be wary of is the area from 3.5 to 3.6, or .5 to .6 in any size class. In essence any tree that is greater than 3.5 inches, nominally 3.51 to 4.5 is a four-inch tree.*** Failure to accurately locate DBH, using normally accepted DBH rules will be considered an error. Any tree found tallied without a DBH crayon mark would be considered an error.
8. **LEVEL:** This data call will be used to all Acceptable (A) and Unacceptable (U) calls for the entire tree, not a segment call. This call has been one of the most difficult to get some level of stability or consistency from our cruisers, both internally and from subs. The definition we now want to put forth as the LV standard is as follows: Use the U call for tree with veneer, sawtimber, boltwood or tie/pallet call in it only if you are willing to bet your wallet that within 10 years that tree will no longer have a sawtimber product of any type in it. Basically, you would look to salvage this tree ASAP if you use the U call, trees that contain one of our current 2, 3, and 4 calls. Keep in mind that the idea of salvage is not a reality call, but if you were operating in that stand the tree would be a salvage call. With salvage not meaning due to poor vigor or damage, but more correctly that the sawtimber value of the tree in question potentially is lost within the 10-year window. For trees without 2, 3, or 4 calls use the U only, if again you will bet your wallet, that the tree will never have any of those 4 calls, including tie/pallet. U can continue to readily be used for those stems of pulpwood quality now and that have absolutely no potential to develop any portion of the stem into a sawlog product in the 10 year window, or farther out into the future depending on the size and estimated age of the stem.
9. **PRODUCT CALLS:** The calls in this cruise will be as follows: 2 = sawlog, 3 = tie/pallet, 4 = boltwood for White Birch and Flooring Material for Hard/Sugar maple, Yellow birch and Black cherry, 5 = pulpwood, and 6 = growing stock, 7 = cull. We are not calling veneer in this cruise. It is important to note and utilize the different specifications on the 4 grade for White birch versus the 4 grade for Hard/Sugar maple, Yellow birch and Black Cherry.

- a. **Cull Calls (7):** Only call a seven for a segment that is cull, if the tree on the whole is considered a cull follow the following procedure: Collect the species, diameter and level call, then write/type cull in the product blocks adjacent to the level column on the tally sheet. This gives the check cruiser the knowledge you had the tree in, but that it is a cull. Example; a 3-foot diameter beech full of cavities with a very limited live crown. When one finds a cull (8') stick in a tree simply call it a cull, 7, stick.
 - b. **Sawlog Calls (2):** The number 2 call in the base LV system will remain for hardwoods a 10-inch DIB on the small end 2 clear face stick. This will generally require an 11-inch DBH tree with the 1-inch diameter class calls now in use. For the Spruce-fir sawtimber calls the minimum DIB will be 5 inches. Therefore, if you end a tree with a 2 call, the top diameter call must be 5 or greater. A default of 4 is used and if there is no pulp called above the sawtimber in Spruce -fir there needs to be a top diameter call made on the tally card of at a minimum of 5 inches. For pine and hemlock generally the 2 call will have a top DIB of 8 inches.
 - c. **Tie-Pallet (3):** A 3 call would continue to cover the straight and sound lowest grade and value sawlog products. The minimum top DIB is 9 inches as the default specification, meaning a 10-inch DBH minimum for 3 calls. Keep in mind that some 3 calls for Hard/Sugar maple, Yellow birch and Black Cherry will be called as 4 calls.
 - d. **Boltwood (4):** White birch boltwood must be straight and sound, with nearly 4 clear faces. The tree can be a DBH of 8 and a Top DIB of 7 inches. Generally not more than three to four very small blemishes on an 8-foot section are allowed for the White birch segment to be boltwood. We will call a 4 call in Hard/Sugar maple, Yellow birch, Red Oak and Black Cherry for 10 inch DBH with a 9 inch Top DIB minimum for very straight and sound 0 and 1 clear face segments. If the faces are very rough, or the is any anticipated large heart or other sound internal defects more than likely place the segment in a 3 Tie/Pallet call. This 4 call is for the growing flooring market for these species.
 - e. **Pulpwood (5):** Use this call for segments that are of pulpwood quality now and into the future. Typically the minimum top DIB should be 4 inches as the default specification, with a minimum inch DBH call for a tree with one stick of product.
 - f. **Growing Stock (6):** This call should basically be used for undersized sawlog quality stem sections. **When a 5 (pulpwood) call has been made don't call a 6 (growing stock) call above it in the stem.**
 - g. **No Product Call Trees:** If a tree in the 4 and 5-inch classes does not have a single segment of any product simple record the species, diameter, and A-U level code call. **Make sure you change the top diameter call to be the same size 3, 2, or 1, or at least one size class smaller. You will get an error message indicating the top diameter is larger than the DBH if you don't make this change on the PDA recorder.**
10. **Top Diameters:** We will dramatically reduce the use of top diameters as a means of tallying sawtimber. Only call a top diameter, other than the 4 inch prescribed default minimum top diameter under the conditions and specifications found as follows:
- a. **Default Top Diameter:** For the CEDARLANDS cruise the default Top Diameter is 4

inches for all species.

- b. **Form Class Change Blow-out Trees Definition:** If the crown of the tree being reviewed changes rapidly in diameter and height so that there would be more than a 4 inch drop within one stick above the last full diameter taper in the stem call an estimate of the DIB at the top of the last segment to be called on the cruise card. If there were ample pulp height above the “change” in the stem diameter to compensate then the call would be unnecessary. What we want are calls that accurately represent the cone that is the shape of the tree, especially for the sawtimber component. But with this system the very great majority of cruised trees will be run up to a default top diameter of 4 inches DIB. This element of the cruise will be carefully considered and will greatly impact the check cruiser’s determination of a successful call. If in the eye of the check cruiser the tree was “cut off” unnecessarily the call will be considered an error.
 - c. **Height Measurement:** The calls of height are most important to the development of accurate volume tallies in point sampling. Therefore, we need to emphasize the accurate determination of heights to all cruisers. ***In reality the use of a clinometer is more critical than the use of calipers!*** A solid cruising tip is to accurately measure a baseline height tree on complicated plots. This tree is one that is readily seen from most of the plot. Measure it with a clinometer and set in your mind where differing heights are on the stem. Then when doing ocular measurements on adjacent trees on the plot one can look to the baseline tree as a guide. The use of the 8-foot cruising stick that can be set at the base of the tallied tree while ascertaining height is another useful trick. ***If there are questions on height calls, take the time to get them right, especially for sawtimber calls.***
- 11. **Repetition Calls:** ***We will no longer use the repetition call to tally two or more identical trees. Each tree must be tallied and recorded separately.***
 - 12. **Operability:** This call is based on a 1-5 scoring system with 1 inoperable and 5 Excellent
 - 13. **Silviculture:** We will not be using this call on this cruise.
 - 14. **Fiber Habitat Types:** We have developed a cruiser cheat sheet for the 6 FF Habitat Classifications and the means for calling these types in the field. This is a critical factor in the growth modeling portion LV data processing. (See Appendix) ***The key to these calls is what is the site habitat type naturally, not what management has created as the current overstory composition.*** An example is a SH stand dominated by Spruce-fir is mined for SF leaving a HS or H overstory. The cruiser, through their on-the-ground observations on the line and plots must differentiate from calling this a hardwood site, where in reality the soils, etc, wants to grow Spruce-fir. From a growth modeling standpoint that is how the site conditions will respond and we want Fiber to move forward that way. It is also wise for the PM to know this when determining where the stand is today, where the PM wants it to go in the future and what is the best silvicultural scheme to move the forest to where nature assists us the most to achieve management goals and objectives.

Several additional thoughts that arose from our FF consulting session; The 1 and 5 calls for the Beech-Red maple and Sugar maple-Ash habitat types can only be used effectively by FF for true hardwood types, not for mixed wood. The 3 (Oak-White pine), 4 (Hemlock-Red spruce) and 6 (Spruce-fir) calls can effectively be use for Mixed wood of the SH and HS considerations. The 2 calls for Cedar –Black spruce

is a pure softwood type call that should be limited to the very poorest muck and lowland softwood sites.

15. **Forest Typing:** Again it appears as if we have lost a consistent means for typing forests across the LV land base. The expected system across LVI should be as clarified below as follows:

a. **Forest Cover Type Species Composition:**

1. Hardwood H More than 75% hardwood
2. Softwood S More Than 75% softwood
3. HW Mixed HS 50-75 % Hardwood
4. SW Mixed SH 50-75% Softwood
5. R (Red Maple), P (Pine), CE (Cedar swamp), PO (Aspen), and WB (White birch), are to be used where stands are very pure to these types as needed. If you have a question note the information on the tally card and your field map.

b. **Forest over Type Size Classes:** The following are the practice for use for this cruise.

1. **1- SEEDLING-SAPLING CLASS:** Stand dominated by trees of less than 1 inch d.b.h. and up to 3.5 inches. This is generally a regenerating stand that is either occupying an old field, or is the result of a heavy overstory removal cut or mortality of the overstory from insects, disease, or a weather event.
2. **2- SAPLING-POLETIMBER CLASS:** Stand dominated by trees of 1 - 6 inches d.b.h. This is generally a well established regeneration class that is approaching a stand size that will look more like a forest than an old field or clear-cut, also approaching commercial size, or having some volume in the smallest merchantable size classes.
3. **3- POLETIMBER-SMALL SAWTIMBER CLASS:** Stand dominated by trees of 6 - 12 inches d.b.h. This is generally a stand dominated by small and nearly sawtimber sized trees. It can have a mix of trees of all sizes, but the majority of the volume falls into this size range. Stands such as these are typical of older, yet not mature even-aged stands.
4. **4- SAWTIMBER CLASS:** Stand dominated by trees of greater than 12 inches d.b.h. This is generally a stand dominated by sawtimber-sized trees. It can have a mix of trees of all sizes, but the majority of the volume will fall into this size range. Typically these are older and maturing stands that have not had harvests for a period of over 30 years or very light selective harvests that were designed to develop trees of large diameter in the overstory.
5. **One can use mixtures, but try to be very limited in this application unless the stand truly is a tweener.**

c. **Forest Cover Type Density/Stocking Level:** These changes are designed to get away from too many different stand types. In all instances the cruiser, or the photo-interpreter must try to do their best "lumping" job that reflects typical on-the-ground management realities. Too many types are being created as a B-C then a C-B **From now on no use of backward hyphenates.** The goal is if a stand is adequately stocked call it a B. If it is really between adequately and fully stocked conditions then an A-B call is correct and appropriate. Another consideration is that too many stands are being called a 2-3 when in reality the stand should be typed as an over and under type for example a H3C/H1B. The use of over and under typing is a more accurate reflection on these multiple age class and/or size class stands. This

practice is tough from aerial photo interpretation, but is an effective field method.

1. **A** Fully stocked to Overstocked
2. **A-B** Falling near the mid-range of the A and B lines
3. **B** Adequately Stocked
4. **B-C** Falling near the mid-range of the B and C lines
5. **C** Inadequately stocked by should reach B line in +/- 10 years
6. **D** Very scattered overstory that still plays a role in the management of the stand.

Keep in mind that technically the stocking guides don't utilize the basal area represented in suppressed trees. Therefore, as you look at your stocking levels to record on your map and in your field notes consider carefully whether to include the basal area represented in the 1-3 inch diameter classes, as well as any stems in other size classes, especially the 4 and 5 inch classes that while alive, will have little or no impact on the management and future growth and stocking of the overstory.

Please note that first cut typing can be more detailed so that cruisers and managers have more detail on maps and for decision making once the cruise is completed. The difficulty is that if there are too many types up front in a stratified cruise, the required number of points may be difficult to achieve economically for the client and their budget. There is a concern that why type HS and SH when M will be the lumping call. In almost all instances mixed-wood stands are in effect HW or SW dominated. Keep in mind that forest typing should reflect the current overstory, but also how the stand will develop over a 10-15 year period as management and stand development move forward. Another important consideration, when typing, is what is the type currently on-the-ground for the stand that is, in effect, the management situation being considered. What will the manager, or management plan developer, address as the stand to be managed. If you call a well-developed seedling-sapling stand a 4D, instead of a 1A, due to a scattered overstory of remnant snag trees the type is more than likely wrong. Those trees, while having provided seed, will effectively never be addressed again in any implemented management strategies employed to move the understory forward into the future. The clarification in this instance is that there must be a clearly defined management overstory for the type to be a D, or in some instances a C. Will that OS typed be there in 1, 10, or 15 years, and should the plan address it as a factor. If it does there is often a need to create the over/under typing because in many instances those scattered overstories have a viable and critical to future management decisions understory.

Once typed and mapped there is then a tendency to try to lump types so that there is a reasonable number of stand types to cruise, map and/or manage. The danger here is that too many similar, but distinctively different types are lumped and while variability is eliminated the mixed type does not truly reflect the on-the-ground stand differences. For example an H3-4B, H3-4C, H3C, and H3B combination that is called a H3-4B-C might make the data so melded that in reality the stand type you are describing might be difficult to actually identify on-the-ground. The flip is not combining a H3C with 55 square feet of Basal area on average with an H3B with 60 square feet of BA. If species composition, diameter distribution, and ultimately prescriptions are in effect going to be the same the best bet would be to combine those types and run one stand type. I found this out on the CIC cruise when the first run created several H3 considerations, when in reality the bulk of those stands were really H3C and will be structured and managed as such. Stand types should be distinctive, well described and demonstrate a dynamic variance from the other stand types.

- d. **Regeneration Tally:** At each plot a mil acre plot (*radius of 3.72 feet*) should be used to tally four 1/4-mil acre samples. This sub plot should be centered on the same plot center to be used for your regular 10-factor plot. Using combined D.B.H. and Regen Tally plot stick check four quadrants centered on PC starting at North as follows: NE, SE, SW, and NW. If you are using an eight-foot plus cruising stick one can mark the middle of the stick and two points 3.72 feet from the center. If you lay the stick on-the-ground centered at your PC you can easily visualize the total mil-acre diameter and the four quadrants. The cruiser is looking to determine what if any advanced regeneration, of a commercial species, occupies each quadrant. The location of where the stem of the selected seedling-sapling enters the ground determines which quadrant is in effect occupied. For example, do not consider a stem for the NE quadrant if its stem is within the SE quad, but the crown is in the NE quad. If it is a dominant stem and the cruiser views it as acceptable advanced regeneration that tree would be tallied in the SE quad. If there is a suitable seedling/sapling of less than 1.35 inches and not tallied as an overstory stem in the 10 factor plot tally record on the tally card the species using the same codes as utilized for the regular plot tally. Keep in mind that 3.72 feet is the limiting distance of a 1.35 inch diameter tree so there should not be a great deal of overlap between the overstory and regeneration tally. As the overstory tally of 1-3 inch stems is for FF use, and the mil-acre tally is for a rough regeneration survey having a tree tallied in both is not a problem. If the quad is stocked by 30 seedlings simply select the one that is most dominant. The cruiser can record in the notes additional thoughts on the stand's and/or a plot's regeneration conditions. If no vegetation occupies the quadrant mark it as non-stocked (NS) or if it occupied by dominant vegetative plants of a non-commercial nature mark it NC. Examples of non-commercial species are ferns, raspberries, grasses etc. These are tallied if the cruiser views them as an impediment to the establishment or growth of commercially desirable species. The determination of advanced regeneration is based on the cruisers judgment that the stem in question has the form and vigor to continue to develop and survive, as a viable tree over the next 10-15 years and in all likelihood will become a viable part of a future stand.

There was a concern expressed about confusion on these small quads between overlapping trees. If we use the stem enters the ground in which quad rule most of that confusion should be alleviated. It is critical to remember that this is a quick and dirty regeneration tally and that cruisers will find that once they initiate this revised system the quads will make it very easy to make decisions. We are looking for trends here, not absolutes. Drop your cruising stick, make the calls and move forward. Quick, easy and reliable should be the cruisers mantra here. The results will quickly translate into stems per acre of regeneration in total or by various species or species groups.

16. **Field Maps and GPS: We need to remember to record an accurate field map and notes while in the field cruising.** You are being provided with excellent GIS develop base maps for the cruise. Each cruiser is required to collect a detailed cruise field map. **Failure to do so will fail the entire day of cruising.** See appendix for the required notes and a model field map. If you want to collect and provide GPS data that is fine, but not required. Your cruise map has GPS coordinant grids on the border of the map. See the Appendix for an example of an acceptable field notebook layout and detail for a field map built as one cruises along a designated cruise line. The information collected on these field maps can be enormously valuable in the determination of forest types, location of infrastructure such as old roads and trails, and source of information for the PM writing a plan or developing harvesting operations. Neatness and thoroughness are critical to the preparation of good field notes. In addition the field book notes, the tally cards and the cruise map all are places where more

data can be collected. When others do cruising good field notes makes the use of the inventory results considerable easier.

17. **Limiting Distance:** A limiting distance for all borderline or difficult to see trees is required to be taken. Keep in mind that an accurate measurement of diameter at the correct point where DBH should be taken is critical to this process. Failure to accurately measure limiting distance will result in errors. There are means for reducing the number of trees you need to measure limiting distance on by following some simple practices as follows:
- a. **Un-calibrated Prism or Angle Gauge:** It becomes very apparent to me when I check cruise when a cruiser has a prism that is improperly laying out a 10-factor wedge. It is very critical that each and every one of us carefully calibrates all their prisms. To calibrate a prism the easiest means is to cut a piece of paper made of a color that will show up on the background you select that is exactly 10 inches wide. The measure off a line that is exactly 27.5 feet from where you hang the target 10 inch paper with the 10 inch length parallel to the ground. Check the prism by holding it exactly over the 27.5-foot line and the paper should show as an exact borderline tree. This method is better than measuring a tree and then finding where it is borderline and measuring that distance to see if it is the correct limiting distance. The measured paper method takes more variables out of the process. If you have questions please ask. ***We can and should control and limit this problem.***
 - b. **Improper Use of Prism:** The second factor that most commonly leads to missed in and out trees and extra measuring of LD is the failure to hold a prism at plot center and parallel to the stem being measured and perpendicular to the line of site that follows the lean of a tree. Too often consistent missed trees are a reflection of a poorly held and utilized prism. There are tricks for slope correction, looking up a tree well above d.b.h. etc and others that need to be carefully spelled out in the "book" to pass this information and practices along to all our staff and subs. For example if a cruiser cannot see D.B.H. on a subject tree, but can clearly see several or more feet above D.B.H. then if the cruiser can see that the stem is clearly in above D.B.H. then it most certainly should be in at D.B.H. Slope correction can be just as easily done. If you turn the prism 90 degrees so that you can sight from your eye down the axis of the prism to D.B.H. you are finding the correction angle to hold the prism. Once you have this angle simply turn the prism on a pivot holding the angle so that you are looking through a cocked prism at D.B.H., this will correct the linear distance so that you are in effect sighting a horizontal, not slope, distance. A very effective time saver. Simple tricks that can save a good deal of time.
 - c. **Vegetation Obstacles and Poor Light Conditions:** There are times when it will be impossible to see trees. But with the use of amber prisms for low light and different forms of angle gauges one can often see trees. I have found carrying a machete to cut off a few branches to be quicker than measuring trees. Keep in mind to keep the machete at or below your waist so it will not interfere with your compass.
 - d. When you have checked a tree for limiting distance and have found it to be out always mark the tree with an X to acknowledge to the check cruiser, or to the cruiser themselves when checking a plot tally before leaving the plot, that the tree was indeed considered a borderline tree and it was checked and determined to be out. Can note measured in trees on the tally card.

18. **Time Savers and Potential Problems and Errors:**

- a. **D.B.H. and Mil Acre Tally Stick:** The use of a wooden stick or other materials for the measuring of Breast Height (D.B.H.) and the 7.44 regeneration mil acre tally plot is highly recommended. It is understood that cruisers don't like to carry more than they have too. From personal experience I have used a PVC staff of 8 feet that is lightweight and does three jobs, D.B.H., regeneration plot and serves as a guide on the first 8-16 feet, with reach, on log calls.

- b. **Avoid Our Mistakes/ Learn From Our Experience:** Examples are don't put ferrous metals or electronic gear near compasses. Spelling out little tricks or procedures to get through plots more consistently and focused. We have to be able to get the cruisers in a state of mind that they are confident and not constantly questioning their calls and procedures. Check cruising is great and we need to do it, but we can't have our cruisers tied in knots and unproductive. There are times when they simply need to move forward utilizing their skills and knowledge.

Cruise Specification Field Cards:

CEDARLANDS BSA CRUISE LANDVEST TIMBERLANDS CRUISE SPECIFICATIONS VERSION 1.1 JULY, 2006 JOB NUMBER: 5957

TYPING: Forest typing will be done utilizing LandVest's revised system which is detailed below. Use of Overstory/Understory calls are welcome. Type the stand on the cruise map note sheets you develop while cruising based on the Map Typing System A) below. Type the stand on the tally card with this LandVest system A) below as well. Always type the stand based on the dominant overstory on the site. Typing of the understory on the cruise tally card is critical. Management decisions will be greatly influenced by both the understory typing and the regeneration sampling that occurs during the cruise. In addition if in the process of observing a stand it is dominated by RM, CE, WP, WB, or PO please replace the H with R, CE, WP, WB, or PO. Regional Forest Types are often distinctly different based on these three species. The Overstory & Understory species composition are critical in typing of these stands for management treatment decisions. Cruising errors will include mis-typed Overstory or Understory, or missed typing of Overstory/Understory

A) LANDVEST SYSTEM		SIZE	DENSITY: Never use backward mixes like C-B
TYPE			
Can use specific type designations such as R, P, RO, etc to differentiate a very specific or critical forest type for valuation or management needs		'1 Seedlings-Saplings .5 to 3" DBH '2 Saplings-Poletimber 3-6" DBH '3 Poletimber-Small Sawtimber 7-12" DBH '4 Sawtimber HW > 12" DBH; SW > 12" DBH This system should reduce mixed calls of 2-3 etc	A fully stocked condition, to overstocked A-B Falling anywhere in the mid-range of the A-B lines B adequately stocked so that site is fully utilized, but not A B-C Falling anywhere in the mid range of the B-C lines C inadequately stocked +/-10 yrs to grow to a minimal B stk D < than 10% canopy closure yet still plays role in mgt. rare
H: Greater than 75% HW S: Greater than 75% SW HS: HW Dominated Mixed Wood 50-75% HW SH: SW Dominated Mixed Wood 50-75% SW On HS/SH calls consider the site and its factors		PLEASE NOTE: Observe the dominant component of the overstory and understory to create over and under typing Utilize combinations to reflect stand conditions for both OS and US such as an H3B/H1B Stands that are truly found to be mixtures can use a 3-4 or call such as that, use this terminology judiciously	

SPECIES CODES					
SPECIES	CODE	SPECIES	CODE	SPECIES	CODE
WHITE PINE	WP	SUGAR OR HARD MAPLE	HM	BROWN ASH	BA
RED PINE	RP	RED OR SOFT MAPLE	RM	ASPEN/ POPPLE	PO
SPRUCE	SP	YELLOW BIRCH	YB	BLACK CHERRY	BC
BALSAM FIR	BF	WHITE BIRCH	WB	BASSWOOD	BW
HEMLOCK	HE	WHITE ASH	WA	BUTTERNUT	BN
NORTHERN WHITE CEDAR	CE	RED OAK	RO	OTHER HARDWOODS	OH
TAMARACK OR LARCH	TA	AMERICAN BEECH	BE	NON-COMMERCIAL*	NC

REGENERATION TALLY: At plot or a regeneration plot will be taken. The cruiser will look at four quadrants based on a mil acre radius (7.44 feet) . NE, SE, SW, NW. The cruiser will determine if there is a stem of advanced regen. or competing vegetation located within each quadrant. If the quadrant is determined to be occupied the cruiser records the species of the dominant stem within 1/4 mil acre sample. These tallied seedling/saplings s/b under .5 inches in diameter and considered of suitable vigor and quality to continue to grow and develop into the next size class. The recording of competing non-commercial species, if dominating the site should occur as well. * If a plot is not occupied, the code NS is used, all non-woody vegetative plants, woody shrubs, and non commercial tree species (OH), are coded NC.

CEDARLANDS BSA CRUISE LANDVEST TIMBERLANDS CRUISE SPECIFICATIONS VERSION 1.1 JULY, 2006 JOB NUMBER: 5957

MERCHANTABILITY: In order to have a merchantable product a tree must be alive, have a minimal measured diameter of 5.1 inches, & have an 8 ft product of any type. Use 1 inch Classes. Tally trees of .5 to 5.0 " DBH, (1,2,3, and 4 inch classes) but assign no products to them. (5.1 to 6.5 is the 6" class)

TREE GRADE: This is your Ag or Ug Level Call. Use an A for acceptable growing stock trees, a U for Unacceptable, see manual for spcs.

TOP DIAMETERS: Utilize the calling of top diameters where, in the judgment of the cruiser, significant sawtimber volume will be lost if one carries the product calls into the upper portion of the merchantable height. See Cruise Specificatin Manual for direction on this call. This call should be used very judiciously

Rule of Thumb: To estimate top diameters consider 1" of taper per 8 foot section of tree. Can have a top diameter call on pulpwood portions of a tree. Accurate total merchantable heights is critical, be sure to call pulpwood & growing stock above sawtimber, but no growing stock once pulp is called. Call Fiber Habitat Classifications with 1-6. See attached Habitat Specification Card.

OTHER HARDWOOD: Pin Cherry, Striped Maple, Mountain Ash, Mountain Maple, Grey Birch, Hop Hornbeam Tally as OH, pulpwood and UGS calls only

OPERABILITY: Score 1-5, with 1 inoperable and 5 very operable. Factors considered site, access, and CURRENT timber quality, volume and need of a harvest.

CODE	PRODUCT	SPECIES	MIN. DBH CLASS	MIN. TOP DIA. ISB	MIN. LENGTH	DESCRIPTION
2	SAWTIMBER	ALL HW	11"	10"	8'	Minimum 2 sides clear, maximum 25% estimated internal defect
		SP-FIR	7"	5"	16'	Sound, Straight, Free of Excessive knots, can call an 8 foot section after 16' call
		HEM/ TAM PINE/ CED	10" 10"	8" 8"	16' 14'	Sound, Straight, Free of Excessive knots, go to Tie Category for rougher stems Sound, Straight, Free of Excessive knots, go to Tie/Pallet for rough stems, 75% Rule
3	TIE/PALLET	ALL HW	10"	9"	8'	Straight and Sound, No estimated internal defect or rot, other than sound heart 0-1 CLF
		HEM/ TAM	10"	8"	8'	Falls into this category if, straight and sound, but excessively limby
		PINE (No Cedar!)	10"	8"	8'	Falls into this category if, straight and sound, but excessively limby
4	FLOORING	HM, YB, BC	10"	9"	8'	Straight and Sound, 0-1 Clear Face, good vigor for reasonable heart size, esp sm diam.
4	BOLTWOOD	WB	8"	7"	8'	Straight and sound with only two small defects per 4 foot of length, s/b nearly 4 clear faces
5	PULPWOOD	ALL SPECIES CE MUST BE SOUND	5"	4"	8'	Call pulpwood above sawtimber & other products to merchantable hgt If Top Diameter Used no products called above the selected point on stem. Undersized CE stem sections must be sound to be considered CE pulpwood
6	GROWING STOCK	ALL SPECIES	5"	4"	8'	Currently does not meet minimum size requirements for a sawlog of any grade, but has potential for a sawlog of any grade from pallet to veneer in the future. Smooth and straight.
7	CULL	ALL SPECIES	5"	4"	8'	If Entire Tree Tally Species & Dia. write CULL TREE as Product, can use in a 8' segment

957 Cedarlands Scout Reservation

Basal Area by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

H3-4A

Total Acres: 1,540.00 Sampling Method: POINT
 Forested Acres: 1,540.00 BAF: 10

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
BALSAM FIR	5	0.3%	2.5	0.6%	0.3	0.3%
HEMLOCK	29	2.0%	1.4	0.3%	1.9	2.0%
SPRUCE	24	1.6%	10.8	2.6%	1.6	1.6%
BASSWOOD	6	0.4%	0.5	0.1%	0.4	0.4%
BEECH	640	43.5%	240.7	57.0%	41.6	43.5%
BLACK CHERRY	23	1.6%	5.0	1.2%	1.5	1.6%
OTHER HARDWOODS	37	2.5%	46.9	11.1%	2.4	2.5%
POPLAR	18	1.2%	1.2	0.3%	1.2	1.2%
RED MAPLE	92	6.3%	16.6	3.9%	6.0	6.3%
SUGAR MAPLE	332	22.6%	63.2	15.0%	21.6	22.6%
WHITE ASH	49	3.3%	5.4	1.3%	3.2	3.3%
WHITE BIRCH	2	0.1%	0.2	0.0%	0.1	0.1%
YELLOW BIRCH	213	14.5%	27.8	6.6%	13.8	14.5%
Softwood:					3.8	
Hardwood:					91.8	
Stand Totals:	1,470		422.2		95.5 sq. ft.	

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation

Basal Area by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

H3-4B

Total Acres: 253.00 Sampling Method: POINT
 Forested Acres: 253.00 BAF: 10

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
BALSAM FIR	2	0.9%	1.1	0.4%	0.8	0.9%
HEMLOCK	1	0.5%	0.4	0.2%	0.4	0.5%
SPRUCE	4	1.8%	10.5	3.9%	1.6	1.8%
BASSWOOD	12	5.5%	9.7	3.6%	4.8	5.5%
BEECH	74	34.1%	129.6	47.4%	29.6	34.1%
BLACK CHERRY	10	4.6%	3.0	1.1%	4.0	4.6%
OTHER HARDWOODS	2	0.9%	12.7	4.7%	0.8	0.9%
POPLAR	1	0.5%	0.3	0.1%	0.4	0.5%
RED MAPLE	8	3.7%	13.8	5.0%	3.2	3.7%
SUGAR MAPLE	42	19.4%	46.4	17.0%	16.8	19.4%
WHITE ASH	21	9.7%	8.3	3.0%	8.4	9.7%
WHITE BIRCH	2	0.9%	1.4	0.5%	0.8	0.9%
YELLOW BIRCH	38	17.5%	36.3	13.3%	15.2	17.5%
Softwood:					2.8	
Hardwood:					84.0	
Stand Totals:	217		273.6		86.8	sq. ft.

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation

Basal Area by Species

Level: All
 All Stands
 All Products
 Diameter Classes 1 to 36
 Forested Acreage

Inoperable

Total Acres: 217.00 Sampling Method: POINT
 Forested Acres: 217.00 BAF: 10

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
BALSAM FIR	2	2.6%	17.9	5.2%	1.5	2.6%
SPRUCE	29	38.2%	95.4	27.5%	22.3	38.2%
BEECH	16	21.1%	101.7	29.3%	12.3	21.1%
OTHER HARDWOODS	2	2.6%	50.9	14.7%	1.5	2.6%
RED MAPLE	7	9.2%	17.8	5.1%	5.4	9.2%
SUGAR MAPLE	5	6.6%	2.3	0.7%	3.8	6.6%
WHITE BIRCH	5	6.6%	42.7	12.3%	3.8	6.6%
YELLOW BIRCH	10	13.2%	18.2	5.2%	7.7	13.2%
Softwood:					23.8	
Hardwood:					34.6	
Stand Totals:	76		346.9		58.4	sq. ft.

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation

Basal Area by Species

Level: All
 All Stands
 All Products
 Diameter Classes 1 to 36
 Forested Acreage

M3-4B

Total Acres: 374.00 Sampling Method: POINT
 Forested Acres: 374.00 BAF: 10

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
BALSAM FIR	37	8.6%	37.6	3.8%	9.7	8.6%
HEMLOCK	41	9.5%	8.4	0.8%	10.8	9.5%
N. WHITE CEDAR	23	5.3%	7.1	0.7%	6.0	5.3%
SPRUCE	39	9.1%	47.2	4.7%	10.3	9.1%
WHITE PINE	1	0.2%	0.1	0.0%	0.3	0.2%
BEECH	118	27.4%	439.6	44.1%	31.0	27.4%
BLACK CHERRY	4	0.9%	1.6	0.2%	1.1	0.9%
BROWN ASH	5	1.2%	3.2	0.3%	1.3	1.2%
OTHER HARDWOODS	7	1.6%	150.1	15.1%	1.8	1.6%
POPLAR	6	1.4%	45.6	4.6%	1.6	1.4%
RED MAPLE	56	13.0%	189.7	19.1%	14.7	13.0%
SUGAR MAPLE	45	10.5%	12.9	1.3%	11.8	10.5%
WHITE ASH	4	0.9%	1.4	0.1%	1.1	0.9%
YELLOW BIRCH	44	10.2%	51.1	5.1%	11.6	10.2%
Softwood:					37.1	
Hardwood:					76.0	
Stand Totals:	430		995.6		113.1	sq. ft.

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation

Basal Area by Species

Level: All
 All Stands
 All Products
 Diameter Classes 1 to 36
 Forested Acreage

All Plots
 All Species

M4B

Total Acres: 103.00 Sampling Method: POINT
 Forested Acres: 103.00 BAF: 10

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
HEMLOCK	20	18.9%	15.7	2.6%	18.2	18.9%
SPRUCE	8	7.5%	28.5	4.7%	7.3	7.5%
BEECH	43	40.6%	348.0	57.2%	39.1	40.6%
OTHER HARDWOODS	4	3.8%	63.4	10.4%	3.6	3.8%
RED MAPLE	10	9.4%	91.5	15.1%	9.1	9.4%
SUGAR MAPLE	6	5.7%	7.5	1.2%	5.5	5.7%
WHITE ASH	2	1.9%	19.2	3.2%	1.8	1.9%
YELLOW BIRCH	13	12.3%	34.5	5.7%	11.8	12.3%
Softwood:					25.5	
Hardwood:					70.9	
Stand Totals:	106		608.2		96.4 sq. ft.	

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation
Basal Area by Species

Level: All
All Stands
All Products
Diameter Classes 1 to 36
Forested Acreage

All Plots
All Species

R3-4B

Total Acres: 64.00 **Sampling Method: POINT**
Forested Acres: 64.00 **BAF: 10**

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
	Count	Percentage	Count	Percentage	Sq. ft.	Percentage
HEMLOCK	9	11.0%	6.4	0.7%	11.3	11.0%
N. WHITE CEDAR	1	1.2%	0.6	0.1%	1.3	1.2%
SPRUCE	3	3.7%	65.0	7.1%	3.8	3.7%
BEECH	25	30.5%	300.2	32.8%	31.3	30.5%
BLACK CHERRY	1	1.2%	0.7	0.1%	1.3	1.2%
OTHER HARDWOODS	2	2.4%	66.5	7.3%	2.5	2.4%
POPLAR	1	1.2%	0.7	0.1%	1.3	1.2%
RED MAPLE	22	26.8%	361.6	39.5%	27.5	26.8%
YELLOW BIRCH	18	22.0%	112.8	12.3%	22.5	22.0%
Softwood:					16.3	
Hardwood:					86.3	
Stand Totals:	82		914.6		102.5	sq. ft.

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation
Basal Area by Species

Level: All
All Stands
All Products
Diameter Classes 1 to 36
Forested Acreage

All Plots
All Species

R4B

Total Acres: 399.00 **Sampling Method: POINT**
Forested Acres: 399.00 **BAF: 10**

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
BALSAM FIR	1	0.3%	0.2	0.1%	0.3	0.3%
HEMLOCK	8	2.7%	1.9	0.6%	2.8	2.7%
N. WHITE CEDAR	1	0.3%	0.1	0.0%	0.3	0.3%
SPRUCE	8	2.7%	8.2	2.5%	2.8	2.7%
BASSWOOD	1	0.3%	1.8	0.5%	0.3	0.3%
BEECH	99	33.9%	191.0	58.4%	34.2	33.9%
BLACK CHERRY	2	0.7%	2.0	0.6%	0.7	0.7%
OTHER HARDWOODS	5	1.7%	22.8	7.0%	1.7	1.7%
POPLAR	22	7.5%	9.5	2.9%	7.6	7.5%
RED MAPLE	23	7.9%	12.2	3.7%	7.9	7.9%
SUGAR MAPLE	61	20.9%	47.2	14.5%	21.0	20.9%
WHITE ASH	18	6.2%	10.9	3.3%	6.2	6.2%
YELLOW BIRCH	43	14.7%	18.9	5.8%	14.8	14.7%
Softwood:					6.2	
Hardwood:					94.5	
Stand Totals:	292		326.7		100.7 sq. ft.	

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation
Basal Area by Species

Level: All
All Stands
All Products
Diameter Classes 1 to 36
Forested Acreage

All Plots
All Species

S3-4A

Total Acres: 131.00 **Sampling Method: POINT**
Forested Acres: 131.00 **BAF: 10**

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
	Count	Percentage	Count	Percentage	sq. ft.	Percentage
BALSAM FIR	53	42.4%	513.2	73.2%	58.9	42.4%
HEMLOCK	1	0.8%	0.8	0.1%	1.1	0.8%
N. WHITE CEDAR	14	11.2%	19.5	2.8%	15.6	11.2%
SPRUCE	4	3.2%	11.1	1.6%	4.4	3.2%
TAMARACK	2	1.6%	23.4	3.3%	2.2	1.6%
WHITE PINE	25	20.0%	26.1	3.7%	27.8	20.0%
BLACK CHERRY	8	6.4%	30.3	4.3%	8.9	6.4%
OTHER HARDWOODS	2	1.6%	25.5	3.6%	2.2	1.6%
POPLAR	3	2.4%	4.1	0.6%	3.3	2.4%
RED MAPLE	3	2.4%	6.9	1.0%	3.3	2.4%
SUGAR MAPLE	2	1.6%	8.3	1.2%	2.2	1.6%
WHITE ASH	3	2.4%	18.3	2.6%	3.3	2.4%
YELLOW BIRCH	5	4.0%	13.8	2.0%	5.6	4.0%
Softwood:					110.0	
Hardwood:					28.9	
Stand Totals:	125		701.4		138.9 sq. ft.	

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation

Basal Area by Species

Level: All
 All Stands
 All Products
 Diameter Classes 1 to 36
 Forested Acreage
 All Plots
 All Species

S3-4B

Total Acres: 247.00 Sampling Method: POINT
 Forested Acres: 247.00 BAF: 10

Species	Tally Trees		Trees Per Acre		Basal Area Per Acre	
	Count	Percentage	Count	Percentage	Sq. ft.	Percentage
BALSAM FIR	71	29.0%	302.6	43.9%	35.5	29.0%
HEMLOCK	14	5.7%	6.0	0.9%	7.0	5.7%
N. WHITE CEDAR	30	12.2%	16.4	2.4%	15.0	12.2%
SPRUCE	57	23.3%	210.6	30.5%	28.5	23.3%
BEECH	5	2.0%	6.7	1.0%	2.5	2.0%
BROWN ASH	1	0.4%	1.9	0.3%	0.5	0.4%
RED MAPLE	41	16.7%	107.3	15.6%	20.5	16.7%
SUGAR MAPLE	1	0.4%	0.4	0.1%	0.5	0.4%
YELLOW BIRCH	25	10.2%	37.7	5.5%	12.5	10.2%
Softwood:					86.0	
Hardwood:					36.5	
Stand Totals:	245		689.5		122.5	sq. ft.

Merchantable MSD = 0.0 in. Min Merchantable Diam = 4 in.

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

H3-4A

Total Acres: 1,540.00 Sampling Method: POINT
 Forested Acres: 1,540.00 BAF: 10

Species	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK				CULL	Species
	BF/Acre	%	BF/Acre	%	BF/Acre	%	CDS/Acre	%	CDS/Acre	%	CDS/Acre	%	CDS/Acre	
Total														
BALSAM FIR	5.0	0%					0.0	0%	0.0	0%			0.0	
HEMLOCK	117.6	4%	48.3	5%			0.2	1%					0.5	
SPRUCE	131.1	4%					0.0	0%	0.0	1%			0.3	
BASSWOOD	29.8	1%	7.7	1%			0.1	0%					0.1	
BEECH	88.0	3%	392.4	43%	9.5	3%	6.7	56%	0.7	38%	0.0	54%	8.4	
BLACK CHERRY	144.1	5%	1.7	0%	15.9	5%	0.1	1%	0.0	1%			0.5	
OTHER							0.1	1%					0.1	
POPLAR	108.7	4%	16.2	2%			0.1	1%	0.0	1%			0.4	
RED MAPLE	178.6	6%	95.5	11%			0.8	7%	0.1	8%	0.0	10%	1.5	
SUGAR MAPLE	1,112.2	38%	175.6	19%	195.6	59%	2.1	18%	0.6	36%	0.0	18%	5.7	
WHITE ASH	271.9	9%	34.6	4%	11.6	4%	0.3	2%	0.1	5%			1.0	
WHITE BIRCH	8.9	0%					0.0	0%					0.0	
YELLOW BIRCH	754.3	26%	130.1	14%	97.2	29%	1.4	12%	0.2	9%	0.0	18%	3.5	
Softwood:	253.7	9%	48.3	5%	0.0	0%	0.2	2%	0.0	1%	0.0	0%	0.8	CDS/Ac 4%
Hardwood:	2,696.5	91%	853.9	95%	329.9	100%	11.7	98%	1.7	99%	0.1	100%	21.2	CDS/Ac 96%
Stand Totals:	2,950.2	BF/Ac	902.2	BF/Ac	329.9	BF/Ac	12.0	CDS/Ac	1.7	CDS/Ac	0.1	CDS/Ac	22.1	CDS/Ac

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

H3-4B

Total Acres: 253.00 Sampling Method: POINT
 Forested Acres: 253.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK		CULL	Species
	BF/Acre	%	BF/Acre	%	BF/Acre	%	CDS/Acre	%	CDS/Acre	%		
BALSAM FIR	119.2	4%					0.0	0%			0.2	
HEMLOCK			12.5	2%			0.1	1%			0.1	
SPRUCE	131.0	5%					0.0	0%			0.3	
BASSWOOD	158.6	6%	57.6	8%			0.4	4%	0.4	16%	1.3	
BEECH	120.1	5%	162.4	24%			4.2	41%	0.8	32%	5.7	
BLACK CHERRY	291.7	11%	46.6	7%	18.6	8%	0.4	4%			1.1	
POPLAR			21.7	3%			0.1	1%			0.1	
RED MAPLE	36.7	1%	38.4	6%			0.5	5%			0.6	
SUGAR MAPLE	656.0	25%	118.2	17%	105.9	48%	2.0	19%	0.4	15%	4.1	
WHITE ASH	812.0	31%	144.9	21%			0.9	9%	0.1	3%	2.9	
WHITE BIRCH	17.8	1%			31.5	14%	0.1	1%	0.0	1%	0.2	
YELLOW BIRCH	316.7	12%	85.2	12%	65.7	30%	1.7	16%	0.9	33%	3.5	
Softwood:	250.2	9%	12.5	2%	0.0	0%	0.1	1%	0.0	0%	0.0	0.6 CDS/Ac 3%
Hardwood:	2,409.6	91%	674.9	98%	221.8	100%	10.3	99%	2.6	100%	0.0	19.5 CDS/Ac 97%
Stand Totals:	2,659.8	BF/Ac	687.4	BF/Ac	221.8	BF/Ac	10.4	CDS/Ac	2.6	CDS/Ac	CDS/Ac	20.2 CDS/Ac

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

Inoperable

Total Acres: 217.00 Sampling Method: POINT
 Forested Acres: 217.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK		CULL	Species	
	BF/Acre		BF/Acre		BF/Acre		CDS/Acre		CDS/Acre				CDS/Acre
BALSAM FIR	35.2	2%										0.1	
SPRUCE	1,128.9	74%					1.6	25%				3.8	
BEECH			59.9	20%			1.9	30%	0.2	82%		2.2	
RED MAPLE							1.1	17%				1.1	
SUGAR MAPLE	211.7	14%	80.6	28%			0.6	9%				1.2	
WHITE BIRCH					57.7	100%	0.4	6%	0.0	18%		0.5	
YELLOW BIRCH	139.7	9%	152.5	52%			0.9	13%				1.4	
Softwood:	1,164.0	77%	0.0	0%	0.0	0%	1.6	25%	0.0	0%	0.0	3.9 CDS/Ac	38%
Hardwood:	351.4	23%	293.0	100%	57.7	100%	4.9	75%	0.2	100%	0.0	6.5 CDS/Ac	62%
Stand Totals:	1,515.4	BF/Ac	293.0	BF/Ac	57.7	BF/Ac	6.5	CDS/Ac	0.2	CDS/Ac		10.4	CDS/Ac

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

M3-4B

Total Acres: 374.00 Sampling Method: POINT
 Forested Acres: 374.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK		CULL	Species		
	BF/Acre		BF/Acre		BF/Acre		CDS/Acre		CDS/Acre				CDS/Acre	
BALSAM FIR	842.7	18%					0.3	2%	0.2	15%		2.2		
HEMLOCK	1,034.3	22%	204.3	26%			0.6	5%	0.1	5%		3.1		
N. WHITE CEDAR	227.9	5%	31.8	4%			1.0	9%				1.5		
SPRUCE	899.5	19%					0.2	2%	0.1	4%		2.1		
WHITE PINE	40.8	1%					0.0	0%				0.1		
BEECH	33.0	1%	153.6	20%			3.7	34%	0.6	39%	0.2	100%	4.8	
BLACK CHERRY	45.4	1%			8.0	4%	0.1	1%	0.0	2%		0.2		
BROWN ASH	12.5	0%	9.1	1%			0.3	2%	0.0	2%		0.3		
RED MAPLE	405.8	9%	173.2	22%	21.7	12%	2.0	18%	0.2	17%		3.4		
SUGAR MAPLE	430.1	9%	78.5	10%	104.2	57%	2.1	19%	0.0	2%		3.3		
WHITE ASH	102.0	2%	16.6	2%			0.0	0%	0.0	3%		0.3		
YELLOW BIRCH	641.0	14%	108.6	14%	47.9	26%	0.9	8%	0.2	11%		2.6		
Softwood:	3,045.3	65%	236.2	30%	0.0	0%	2.0	18%	0.3	24%	0.0	0%	8.9 CDS/Ac	37%
Hardwood:	1,669.7	35%	539.6	70%	181.9	100%	9.1	82%	1.1	76%	0.2	100%	15.1 CDS/Ac	63%
Stand Totals:	4,715.0	BF/Ac	775.8	BF/Ac	181.9	BF/Ac	11.1	CDS/Ac	1.4	CDS/Ac	0.2	CDS/Ac	24.0 CDS/Ac	

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

M4B

Total Acres: 103.00 Sampling Method: POINT
 Forested Acres: 103.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK		CULL CDS/Acre	Species	
	BF/Acre	%	BF/Acre	%	BF/Acre	%	CDS/Acre	%	CDS/Acre	%			
HEMLOCK	1,530.0	54%	403.9	46%			1.2	15%	0.2	8%	5.3		
SPRUCE	483.1	17%					0.2	2%	0.2	8%	1.3		
BEECH	84.7	3%	237.8	27%			4.3	54%	0.9	35%	5.8		
OTHER							0.2	2%			0.2		
RED MAPLE	264.4	9%	96.2	11%			0.4	4%	0.1	6%	1.2		
SUGAR MAPLE	250.9	9%	37.7	4%	66.5	61%	0.9	11%			1.6		
WHITE ASH	136.5	5%	13.7	2%			0.0	1%			0.3		
YELLOW BIRCH	89.1	3%	82.1	9%	41.9	39%	1.0	12%	1.1	44%	2.5		
Softwood:	2,013.0	71%	403.9	46%	0.0	0%	1.4	17%	0.4	16%	0.0	6.6 CDS/Ac	36%
Hardwood:	825.6	29%	467.5	54%	108.3	100%	6.7	83%	2.1	84%	0.0	11.6 CDS/Ac	64%
Stand Totals:	2,838.7	BF/Ac	871.4	BF/Ac	108.3	BF/Ac	8.1	CDS/Ac	2.5	CDS/Ac	CDS/Ac	18.2	CDS/Ac

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

R3-4B

Total Acres: 64.00 Sampling Method: POINT
 Forested Acres: 64.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING	PULPWOOD		GROWING STOCK		CULL	Species
	BF/Acre	%	BF/Acre	%	BF/Acre	CDS/Acre	%	CDS/Acre	%	CDS/Acre	
HEMLOCK	814.4	40%	313.1	24%		0.9	7%			3.2	
N. WHITE CEDAR						0.3	2%			0.3	
SPRUCE	183.5	9%				0.2	2%			0.6	
BEECH			435.8	34%		3.6	28%	0.7	100%	5.1	
BLACK CHERRY						0.4	3%			0.4	
OTHER						0.1	1%			0.1	
POPLAR						0.4	3%			0.4	
RED MAPLE	615.3	30%	327.8	26%		3.7	29%			5.6	
YELLOW BIRCH	422.3	21%	207.9	16%		3.1	24%			4.4	
Softwood:	997.9	49%	313.1	24%	0.0	1.4	11%	0.0	0%	4.0	CDS/Ac 20%
Hardwood:	1,037.6	51%	971.4	76%	0.0	11.3	89%	0.7	100%	16.0	CDS/Ac 80%
Stand Totals:	2,035.5	BF/Ac	1,284.6	BF/Ac	BF/Ac	12.7	CDS/Ac	0.7	CDS/Ac	CDS/Ac	20.0 CDS/Ac

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

R4B

Total Acres: 399.00 Sampling Method: POINT
 Forested Acres: 399.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK			CULL	Species
	BF/Acre		BF/Acre		BF/Acre		CDS/Acre		CDS/Acre		CDS/Acre	CDS/Acre	
BALSAM FIR	53.4	2%					0.0	0%					0.1
HEMLOCK	255.1	8%	35.9	2%			0.1	1%					0.7
N. WHITE CEDAR							0.1	1%					0.1
SPRUCE	269.1	8%					0.1	1%			0.0	10%	0.7
BASSWOOD							0.1	0%					0.1
BEECH	76.1	2%	516.3	30%	35.7	24%	4.6	37%	0.7	50%	0.0	90%	6.6
BLACK CHERRY	43.1	1%					0.0	0%					0.1
POPLAR	401.6	13%	263.2	15%			1.2	10%	0.1	6%			2.6
RED MAPLE	274.4	9%	150.6	9%			1.2	10%					2.1
SUGAR MAPLE	681.3	21%	447.8	26%	15.9	11%	3.2	25%	0.1	8%			5.6
WHITE ASH	338.7	11%	128.1	7%			0.7	5%	0.2	15%			1.8
YELLOW BIRCH	816.3	25%	181.2	11%	97.9	65%	1.2	10%	0.3	21%			3.7
Softwood:	577.6	18%	35.9	2%	0.0	0%	0.3	3%	0.0	0%	0.0	10%	1.6 CDS/Ac 7%
Hardwood:	2,631.6	82%	1,687.2	98%	149.5	100%	12.2	97%	1.3	100%	0.0	90%	22.5 CDS/Ac 93%
Stand Totals:	3,209.2	BF/Ac	1,723.1	BF/Ac	149.5	BF/Ac	12.6	CDS/Ac	1.3	CDS/Ac	0.0	CDS/Ac	24.1 CDS/Ac

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

S3-4A

Total Acres: 131.00 Sampling Method: POINT
 Forested Acres: 131.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK		CULL	Species	
	BF/Acre		BF/Acre		BF/Acre		CDS/Acre		CDS/Acre	CDS/Acre			CDS/Acre
BALSAM FIR	2,580.9	42%					1.8	17%	1.2	46%		8.2	
HEMLOCK	154.2	3%					0.1	1%				0.4	
N. WHITE CEDAR	764.6	13%					2.3	22%	0.1	4%		4.0	
SPRUCE	341.3	6%					0.2	2%				0.9	
TAMARACK	166.2	3%					0.0	0%				0.4	
WHITE PINE	1,980.1	33%	880.8	74%			2.1	20%	0.2	9%		8.0	
BLACK CHERRY	39.9	1%			124.3	100%	1.2	11%	0.4	14%		1.9	
POPLAR			131.5	11%			0.8	8%				1.1	
RED MAPLE							0.8	8%				0.8	
SUGAR MAPLE							0.5	4%				0.5	
WHITE ASH			51.2	4%			0.1	1%	0.5	18%		0.7	
YELLOW BIRCH	50.3	1%	133.5	11%			0.6	6%	0.2	9%		1.2	
Softwood:	5,987.3	99%	880.8	74%	0.0	0%	6.5	61%	1.6	59%	0.0	21.9 CDS/Ac	78%
Hardwood:	90.2	1%	316.2	26%	124.3	100%	4.1	39%	1.1	41%	0.0	6.2 CDS/Ac	22%
Stand Totals:	6,077.5	BF/Ac	1,197.0	BF/Ac	124.3	BF/Ac	10.7	CDS/Ac	2.6	CDS/Ac		CDS/Ac	28.1

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

S3-4B

Total Acres: 247.00 Sampling Method: POINT
 Forested Acres: 247.00 BAF: 10

Species Total	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK			CULL CDS/Acre	Species	
	BF/Acre		BF/Acre		BF/Acre		CDS/Acre		CDS/Acre		CDS/Acre			
BALSAM FIR	1,612.3	29%					1.0	12%	0.7	47%			5.0	
HEMLOCK	590.6	11%	181.6	25%			0.4	4%					1.9	
N. WHITE CEDAR	569.7	10%	198.1	28%			1.9	23%					3.4	
SPRUCE	2,306.4	42%					0.5	6%	0.2	12%			5.3	
BEECH			39.0	5%			0.2	3%	0.1	8%	0.1	57%	0.5	
BROWN ASH									0.1	6%			0.1	
RED MAPLE	171.7	3%	135.6	19%	16.7	31%	2.8	34%	0.3	19%			3.8	
SUGAR MAPLE							0.1	1%					0.1	
YELLOW BIRCH	258.9	5%	164.5	23%	38.2	69%	1.4	17%	0.1	7%	0.1	43%	2.5	
Softwood:	5,078.9	92%	379.7	53%	0.0	0%	3.7	45%	0.9	59%	0.0	0%	15.5 CDS/Ac	69%
Hardwood:	430.6	8%	339.1	47%	54.9	100%	4.6	55%	0.7	41%	0.1	100%	7.0 CDS/Ac	31%
Stand Totals:	5,509.5	BF/Ac	718.8	BF/Ac	54.9	BF/Ac	8.3	CDS/Ac	1.6	CDS/Ac	0.1	CDS/Ac	22.6	CDS/Ac

957 Cedarlands Scout Reservation

Volume Per Acre by Species

957 Cedarlands Scout Reservation

Volume per Acre by Species

Level: All
 All Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

JOB TOTALS

	SAWLOGS BF/Acre	PALLET BF/Acre	FLOORING BF/Acre	PULPWOOD CDS/Acre	GROWING STOCK CDS/Acre	CULL CDS/Acre	Total
Total Acres:	3,328.00						
Forested	3,328.00						
Per Acre: CDS/Ac	3,356.0 BF/Ac	934.8 BF/Ac	224.0 BF/Ac	11.0 CDS/Ac	1.6 CDS/Ac	0.1 CDS/Ac	21.7
Total:	11,168,644.7 BF	3,110,892.9 BF	745,393.1 BF	36,674.5 CDS	5,412.611 CDS	202.924 CDS	72,339.9 CDS

957 Cedarlands Scout Reservation

Volume by Species Expanded by Acreage

Level: All
 Selected Stands All Plots
 All Products All Species
 Diameter Classes 1 to 36
 Forested Acreage

Total of Selected Stands

Total Acres: 3,111.00
 Forested Acres: 3,111.00

Sampling Method:
 BAF:

Species	SAWLOGS		PALLET		FLOORING		PULPWOOD		GROWING STOCK			CULL	Species
	BF		BF		BF		CDS		CDS		CDS	CDS	
Total													
BALSAM FIR	1,110,715.	10%					631.0	2%	428.4	8%			3,280.8
HEMLOCK	1,045,504.	10%	274,815.9	9%			815.5	2%	43.7	1%			3,499.8
N. WHITE CEDAR	326,100.7	3%	60,839.5	2%			1,174.4	3%	13.8	0%			1,962.1
SPRUCE	1,354,706.	12%					342.2	1%	102.2	2%	1.5	1%	3,155.3
TAMARACK	21,768.1	0%					3.8	0%					47.4
WHITE PINE	274,663.0	3%	115,381.8	4%			273.9	1%	31.6	1%			1,085.6
BASSWOOD	86,021.4	1%	26,421.8	1%			220.2	1%	106.9	2%			552.0
BEECH	217,348.5	2%	970,827.6	32%	28,920.5	4%	15,352.2	44%	1,854.8	35%	143.9	71%	19,785.0
BLACK CHERRY	335,073.9	3%	14,462.0	0%	48,523.8	7%	532.6	2%	77.7	1%			1,406.4
BROWN ASH	4,668.7	0%	3,402.9	0%			99.2	0%	34.4	1%			149.7
OTHER							236.8	1%					236.8
POPLAR	327,650.2	3%	152,691.2	5%			856.8	2%	46.7	1%			1,864.1
RED MAPLE	654,630.2	6%	346,034.2	11%	12,249.9	2%	3,651.0	10%	395.3	7%	9.5	5%	6,081.7
SUGAR MAPLE	2,337,329.	22%	512,282.3	17%	380,246.5	52%	5,969.1	17%	1,108.3	21%	16.3	8%	13,553.4
WHITE ASH	811,546.5	7%	155,359.3	5%	17,867.1	2%	959.0	3%	312.7	6%			3,241.3
WHITE BIRCH	18,206.1	0%			7,975.0	1%	40.6	0%	6.3	0%			99.3
YELLOW BIRCH	1,913,863.	18%	414,796.0	14%	237,091.3	32%	4,110.5	12%	802.7	15%	31.7	16%	10,076.5
Softwood:	4,133,458.0	38%	451,037.3	15%	0.0	0%	3,240.8	9%	619.7	12%	1.5	1%	13,031.0 CDS 19%
Hardwood:	6,706,338.0	62%	2,596,278.0	85%	732,874.3	100%	32,027.8	91%	4,745.8	88%	201.4	99%	57,046.0 CDS 81%
Stand Totals:	10,839,796.	BF	3,047,314.5	BF	732,874.2	BF	35,268.6	CDS	5,365.5	CDS	202.9	CDS	70,077.0 CDS

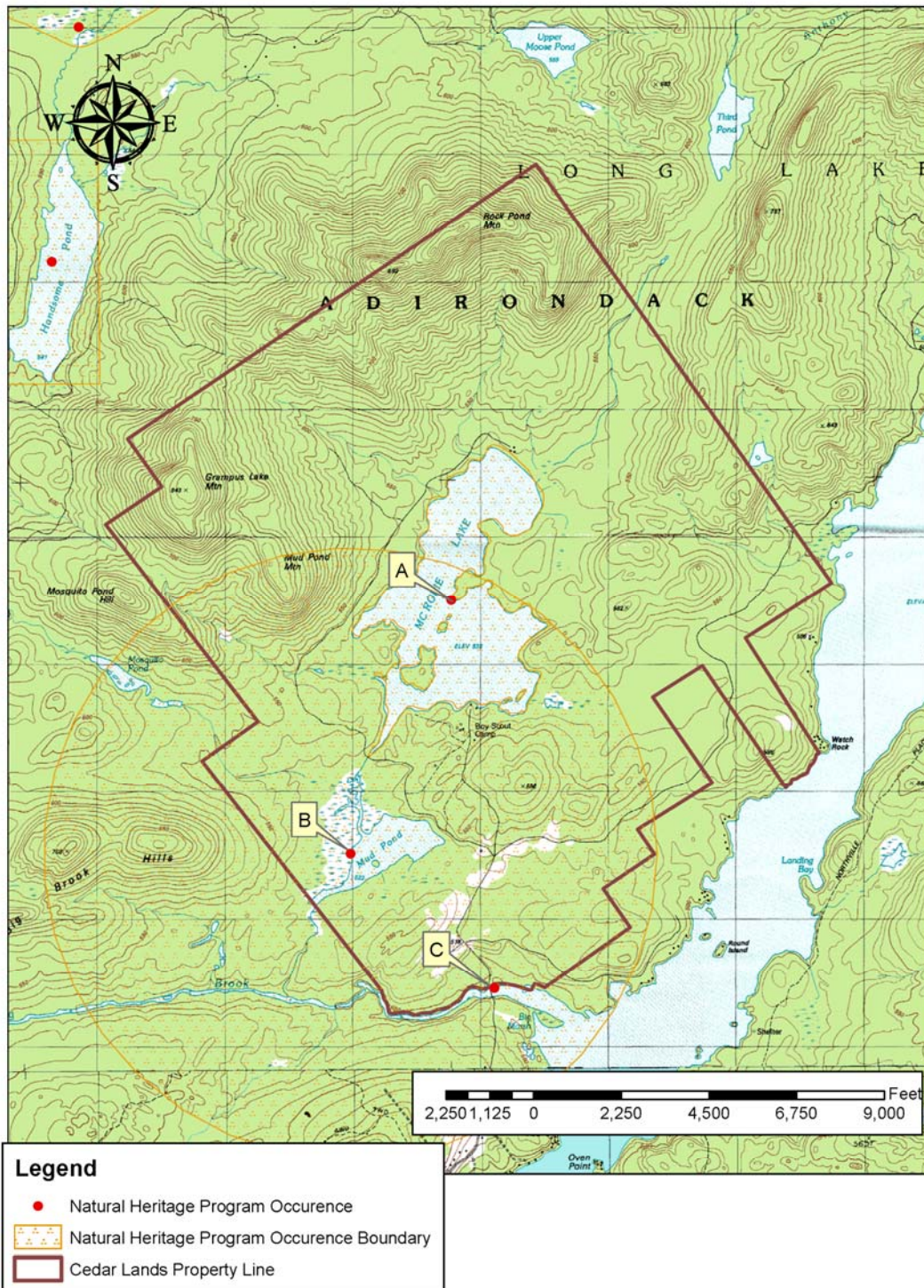
Appendix D
Conservation Easement

Appendix E

Endangered & Threatened Species

Cedar Lands Easement Property

Natural Heritage Map of Threatened and Endangered Species



**New York State Department of Environmental Conservation
Division of Lands & Forests, Bureau of Private Land Services**

1115 Route 86, P.O. Box 296, Ray Brook, NY 12977-0296
Phone: (518) 897-1200 FAX: (518) 897-1370

Bruce Barnard, Senior Forester

Phone: (518) 897-1283 FAX: (518) 897-1372
E-mail: bbarnard@gw.dec.state.ny.us



July 17, 2007

Nathan Gibbs
LandVest, Inc.
29 Park Street, Suite I
P.O. Box 873
Tupper Lake, NY 12986

Dear Nate: **RE: Threatened and Endangered Species on Cedar Lands Property**

I have reviewed the latest edition of the Natural Heritage Program Database for occurrences of Threatened and Endangered Species on, or near, the Cedar Lands Boy Scout Ownership. I have attached a map of these locations and give the explanation below for the points labeled with letters.

Point **A** represents the location of the Common Loon, *Gavia immer*, a vertebrate animal. It has a state ranking of S3, and a global ranking G5, with an element occurrence rank of C, and a NY listing of SC.

Point **B** is a location for Cloud Sedge, *Carex haydenii*, a vascular plant. It has a state ranking of S1, and a global ranking of G5, with an element occurrence rank of H, and a NY listing of Endangered. A site to familiarize you with this plant is: <http://www.acris.nynhp.org/guide.php?id=9488>.

Point **C** is the location of Pied-billed Grebe, *Podilymbus podiceps*, a vertebrate animal. It has a state ranking of S3B,S1N, (suffix "B" = Breeding Populations and suffix "N" = Non-breeding populations) and a global ranking of G5, with an element occurrence rank of C, and a NY listing of Threatened.

I have enclosed a sheet explaining the ratings and rankings given above. I hope that this helps you with your management planning process. If I can be of any further assistance, please do not hesitate to contact me.

Sincerely,

Bruce Barnard,
Senior Forester

EXPLANATION OF NEW YORK NATURAL HERITAGE RANKS AND CODES

GLOBAL RANK:

- G1 = Critically imperiled globally because of extreme rarity (5 or fewer occurrences), or very few remaining acres, or miles of stream) or especially vulnerable to extinction because of some factor of its biology.
- G2 = Imperiled globally because of rarity (6 - 20 occurrences, or few remaining acres, or miles of stream) or very vulnerable to extinction throughout its range because of other factors.
- G3 = Either rare and local throughout its range (21 to 100 occurrences), or found locally (even abundantly at some of its locations) in a restricted range (e.g. a physiographic region), or vulnerable to extinction throughout its range because of other factors.
- G4 = Apparently secure globally, though it may be quite rare in parts of its range, especially at the periphery.
- G5 = Demonstrably secure globally, though it may be quite rare

STATE RANK:

- S1 = Typically 5 or fewer occurrences, very few remaining individuals, acres, or miles of stream, or some factor of its biology making it especially vulnerable in New York State.
- S2 = Typically 6 to 20 occurrences, few remaining individuals, acres, or miles of stream, or factors demonstrably making it very vulnerable in New York State.
- S3 = Typically 21 to 100 occurrences, limited acreage, or miles of stream in New York State.
- S4 = Apparently secure in New York State.
- S5 = Demonstrably secure in New York State.

EO RANK: Code for the status and relative quality or viability of the element occurrence.

- A = excellent
- B = good
- C = fair
- D = poor
- E = extant with insufficient information to rank A-D.
- F = failed to find during most recent survey, based on a limited search; possibly still present.
- H = historical with no recent information; unknown whether is still present.
- X = extirpated; determined to be no longer present.

NY LISTING: (ANIMALS)

- SC = Special Concern Species: those species which are not yet recognized as endangered or threatened, but for which documented concern exists for their continued welfare in New York. Unlike the first two categories, E & T, species of special concern receive no additional legal protection under Environmental Conservation Law section 11-0535 (Endangered and Threatened Species).
- U = Unprotected (defined in Environmental Conservation Law section 11-0103): the species may be taken at any time without limit; however a license to take may be required.

NY LISTING: (PLANTS)

- E = Endangered Species: listed species are those with:
 1. 5 or fewer extant sites, or
 2. Fewer than 1,000 individuals, or
 3. Restricted to fewer than 4 U.S.G.S. 7 1/2 minute topographical maps, or
 4. Species listed as endangered by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.
- T = Threatened: listed species are those with:
 1. 6 to fewer than 20 extant sites, or
 2. 1,000 to fewer than 3,000 individuals, or
 3. Restricted to not less than 4 or more than 7 U.S.G.S. 7 1/2 minute topographical maps, or
 4. Listed as threatened by U.S. Department of Interior, as enumerated in Code of Federal Regulations 50 CFR 17.11.

Appendix F
Stewardship and Implementation Policies

**Revolutionary Trails Council, Inc. BSA
Stewardship and Implementation Policies
Cedarlands Forest Management Plan**

The following written policies shall serve to provide a source of direction for the Revolutionary Trails Council and their “responsibility for forest stewardship”. These policies include the following:

1. **FOREST MANAGEMENT PLAN AMENDMENTS**- This Forest Management Plan must be reviewed, updated and/or amended, at a minimum interval, of every five years. Thus cited, to allow the Council stewards of this Forest Management Plan (current or in the future) to respond to events beyond the Council’s control. Examples of these could include wind and ice damage, mill closings, market fluctuation, etc. Amendments and updates would provide the opportunity to review the work schedules and change or revise them as needed and appropriate.
2. **CONSULTING FORESTER**-A qualified consulting forester will be engaged to design and supervise all timber harvesting and other forest management activities.
3. **BEST MANAGEMENT PRACTICES**-All harvesting activities, as well as trail and road construction must comply with New York State Forestry Best Management Practices for Water Quality BMP Field Guide.
4. **SAFETY PLANS**-All harvesting operations on this property will have a safety plan containing contact information for emergency personnel, directions to the work site and general advice on how to respond to an accident. All those involved in the harvesting operations, including the owners, loggers, foresters, state forest ranger and others will be given a copy of this information prior to the start of work.
5. **TIMBER CONTRACTS**- All timber harvesting operations will require a written contract specifying the obligations of both parties. All contractors will be required to supply proof of adequate liability and workmen's compensation insurance.
6. **CAMP SESSIONS**- Cedarlands Scout Reservation is in session, at a minimum, during the month of July thru the first two weeks of August of each year. Under no circumstances will timber harvesting be allowed during this period of time. A strict "special condition" of any and all, Forest Management Agreements and Contracts must state, that “the Harvesting Period will be from September through April. Clean up will occur on the site April through June and will continue only through the expressed written permission of the property owner”.