

# FOREST MANAGEMENT PLAN

## THOMPSON WOODLOT

Somerset County

Tree, Maine  
Map 10, lots 32, 37, 39, 40, 41, & 42

Walter Thompson  
240 Apple Hill Rd.  
Tree, ME 04962

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January 18, 2007

### BACKGROUND

The 204 acre Thompson property, split by an old rail line, is on the west side of the Apple Hill Rd. about 0.5 miles south of its intersection with Rte. 44 in North Tree, Maine. Walter acquired and traded lands for the property in stages during the 1980s and resides there now. The property includes two old farmsites, though the farmhouse closest to Walter's new house has collapsed; the other is rented. Maine's Historic Preservation Commission has no records of other early homesteads, and it doesn't expect to find any native or prehistoric sites on the property either. The woodlot drains the northwestern slopes of Apple Hill via a tributary of Sevenmile Stream before ultimately entering the Orange River. About one quarter of the property is open pasture or retired gravel pits, the likely source of fill for the rail line. Most of the woodlot is well stocked with predominantly even-age and 60 to 70 feet tall hardwood, hemlock, and pine poletimber, though north of the rail line younger shorter hardwood poletimber is the norm. Most of the woodlot was heavily harvested, at various points since 1960, with the Bickford lot most recently cut in 2003. The quality and productivity of the forest is nonetheless quite high. The woodlot contains 265,000 - 345,000 board feet of sawtimber and 2,300 - 2,800 cords of cordwood, worth \$60,000 - \$72,000.

J. S. Kachnovich (RLS 1134) surveyed all the properties during the 1980s and calculated that the lots include 204 acres. Boundaries are generally highly visible stonewalls, wire fences, and blazed trees in all areas but across the back of the Mosher lot. There, though I could find no evidence, Kachnovich's survey suggests that iron pins mark the corners of the abutting trailer park. Tree's tax records are mostly consistent with the combined surveyed acreage (see Appendix), though individual lots vary slightly. Tree does however assess Walter taxes on a 1.8 acre lot in the southwestern corner, though Kachnovich suggests that the small piece west of the rail spur line belongs now or formerly to W. Clark. None of Walter's land is currently enrolled in Maine's Tree Growth Tax Law.

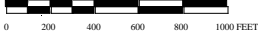
Access to the property has historically occurred from the Apple Hill Rd. Walter also owns two small sections of frontage in the White Ave. subdivision, though neither are particularly well suited for woodlot access given the nearby brook and wetland. From an operational standpoint, the old rail line is a distinct barrier to north south travel. Though the now removed railroad tracks no longer block traffic, the cuts and fills are often quite shear and significantly limit crossing traffic except in a few places. Farm and former gravel excavation operations enable good access to the woods, though the southwestern corner of the woodlot is quite gullied, which should hinder operability.

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SCALE



To Rte. 25  
1.0 miles

Charleston Rd.

State Rte. 44

White Ave.

Apple Hill Rd.

Murphy's Lane

Bickford Rd.

abandoned rail line - now TRS 99

abandoned rail line

Land that Town of Tree falsely believes is Thompson's

## MAP KEY

- Line of blazed trees
- x—x— Wire fence
- ~ Stone wall
- - - Unconfirmed line
- - - Road, trail
- Stream, SLZ
- Stream, NRPA
- Buildings
- Ruins, cellar hole
- ⊙ (Y) Yard, proposed yard
- ○ △ Iron rod, pipe, benchmark
- Spring
- Vernal pool
- ⊥ Wetland <1ac

TYPE	DESCRIPTION	ACRES
P4/H3A	Pine sawtimber and hardwood poles	10
H2/3A	Hardwood poletimber	30
HS3A	Hardwood and fir poletimber	38
SH3/4B	Hemlock sawtimber and hardwood poles	44
H3B	2003 logging - hardwood poles	19
H1A	2003 logging - view strip	7
	Fields	51
	Non-forest wetland	5

**TOTAL 204**

Map detail from USGS 1:24,000 digital maps, Somerset County FSA aerial photos, and 12/04 field reconnaissance. NOT A LEGAL BOUNDARY SURVEY.



Two Trees Forestry  
Consulting Foresters  
Winthrop, Maine  
HKBurnett, LPF 993 -- January 2007

S=75% Softwood, SH and HS = 25-75% hardwood  
1 = 0-3" dbh, 2 = 4-6" dbh, 3 = 7-10", 4 = 11"+  
A = 80%+ crown cover, B = 60-80%, C = 0-60%

No portion of the property is regulated under Tree's shoreland zoning law, though the seasonal brooks are regulated by Maine's Natural Resources Protection Act. NRPA essentially mandates that concerted efforts must be made to ensure that soils don't wash into the brooks. Working within guidelines described in the Maine Forest Service's Best Management Practices for Forestry should facilitate compliance. Other state laws affect slash disposal, crown opening size, and road siting, but pose minimal limits to management. They also require harvest notification and reporting, restrict clearcut size, and prohibit stream sedimentation.

## **MANAGEMENT OBJECTIVES**

Walter lives on the property and uses it for walking and nature and wildlife appreciation and wants to manage the lot for long term timber production and his own enjoyment. He rents the lower house, is actively reclaiming many of the former field lands with a bushhog and mower, and seeks to lower ownership costs by enrolling in Maine's Tree Growth Tax Law. Walter would like to clean up the mess left by Walter McCourt's 2003 logging and then manage the forest to ensure that it remains vigorously, healthy, and income generating, though he would also like to preserve the lot's scenic beauty and maintain and improve wildlife habitats. Though forestry activities probably won't impact views from the house to the western hills, Walter would like to protect the corridor of woods along the old rail line, so users continue to be surrounded by large and shady trees. In the long run Walter would like to consider preserving the land with a conservation easement or outright gift/sale to a land trust, or similar type organization.

## **SOIL AND FOREST RESOURCES**

The property's terrain can be divided into three general geographic areas:

- westerly sloping gullied uplands that drain the westernmost portion of the land -- very deep, gently sloping, poorly drained Brayton-Colonel fine sandy loam soils, which formed in glacial till. These often wet soils are varyingly productive sites, but generally well suited only to shallow rooting trees such as hemlock, spruce, pine, red maple and beech, though higher quality hardwoods are present and grow best on the high ground between the brooks. Operability is not very good, as rutting is common except on the lowest ground, where a seasonally high water table lowers the soils' weight bearing capability.
- northerly sloping productive uplands south of the rail line -- deep, well drained, and productive Dixfield-Marlow fine sandy loam soils, which underlie glaciated uplands. Though occasionally wet, due to a seasonally high water table, these soils are the best on the woodlot and can grow high quality northern hardwoods well, though hemlock may develop over time. Operability is generally good, except near the small brooks.
- rolling to flat terrain north of the rail line -- very deep, well drained, and nearly level Adams-Naumburg-Croghan sandy loams, which resulted from water laid sands. Though the sites are very stable, available water is moderate to low, and productivity is also poor. Though red maple and popple dominate these sites, white pine could grow well there, if competition were reduced/removed. Operability is generally good, though numerous wetruns in and around the fields limit access to some areas.

For management purposes, the wooded areas were divided into six stands (see map): All stocking and volume figures list a range of values, accurate to a 67% confidence interval.

Pine sawtimber and hardwood poles (P4/H3A - 10 acres) -- Along several field edges 16 - 20 inches dbh and 80 - 90 feet tall white pine sawtimber dominate stands that include smaller and shorter red oak, white ash, red maple, and popple poletimber. The stands developed on agricultural land abandoned during the 1940s and 1950s. In 2003 loggers selectively harvested some pine from the portions closest to Walter's two houses. The other two areas weren't logged, though the quality of pine there is poorer, owing to white pine blister rust infection and pine weevil damage; both have caused the stems to deform or fork. Large limbs are common. Average stocking rates total 85 - 125 sq.ft. of basal area per acre, with about 71% considered quality growing stock. Annual growth likely averages 0.5 - 0.75 cords per acre.

Stocking by basal area (sq. ft. per acre)

DBH	White ash			Popple		All species	Snags
	White pine	Hemlock	W/Y birch	Red oak	Red maple		
5 - 8"		2	10	2	10	25	8
9 - 12"	5	5	2	2	12	28	2
13 - 16"	15	2		2	2	22	
17 - 20"	18					18	
>20"	12					12	
<b>total BA</b>	<b>50</b>	<b>10</b>	<b>12</b>	<b>8</b>	<b>25</b>	<b>105</b>	<b>10</b>
<b>% of total</b>	<b>48%</b>	<b>10%</b>	<b>12%</b>	<b>7%</b>	<b>24%</b>	<b>100%</b>	

Current volumes average 3,700 - 7,400 board feet of sawtimber and 16 to 23 cords of pulpwood per acre. In many places regeneration is lacking, due to the very shady conditions, though white pine and sugar maple seedlings are scattered throughout the area.

Hardwood poletimber (H2/3A - 30 acres) -- During the 1970s loggers cleared an area north of the old rail line, which has since regenerated into five to eight inches dbh and 40 - 50 feet tall popple, red maple, and scattered higher quality hardwoods including white birch, white ash, and red oak. Virtually no trees remain from before the harvest and the well shady forest floor is devoid of young growth. Pockets of popple overtop many areas. Average stocking rates total 30 - 54 sq.ft. of basal area per acre, with only about 28% considered quality growing stock. Annual growth likely averages less than 0.25 cords per acre.

Stocking by basal area (sq. ft. per acre)

DBH			Red oak				All species	Snags
	White pine	B. fir	Y birch	Popple	Red maple			
5 - 8"	3	2	5	18	8	37	3	
9 - 12"				7		7		
13 - 16"						0		
17 - 20"						0		
>20"						0		
<b>total BA</b>	<b>3</b>	<b>2</b>	<b>5</b>	<b>25</b>	<b>8</b>	<b>43</b>	<b>3</b>	
<b>% of total</b>	<b>8%</b>	<b>4%</b>	<b>12%</b>	<b>58%</b>	<b>19%</b>			

Current volumes average zero sawtimber and 9 to 16 cords of pulpwood per acre. The area is quite operable and easily accessible from the gravel pits and old fields.

Hardwood, fir, and pine poletimber (HS3A - 38 acres) -- In the 1950s south of the old rail line, loggers cleared much of the predominantly northwest facing slopes. Since then the area has regenerated well and now supports eight to 10 inches dbh and 60 - 70 feet tall popple, red maple, white birch, balsam fir, and white pine, along with pockets of higher quality red oak, sugar maple, and white ash. Average stocking rates total 74 - 92 sq.ft. of basal area per acre, with over 54% considered quality growing stock. Annual growth likely averages 0.5 - 0.75 cords per acre.

Stocking by basal area (sq. ft. per acre)

DBH	Spruce/fir		White ash		Other		All species	Snags
	White pine	Hemlock	W/Y birch	Popple	Hardwood			
5 - 8"	4	13	6	11	5	<b>39</b>	12	
9 - 12"	4	9	1	9	2	<b>24</b>	6	
13 - 16"	1	4		2	4	<b>10</b>		
17 - 20"	2	4				<b>6</b>		
>20"	3	1				<b>4</b>		
<b>total BA</b>	<b>13</b>	<b>30</b>	<b>7</b>	<b>22</b>	<b>10</b>	<b>83</b>	18	
<b>% of total</b>	<b>16%</b>	<b>37%</b>	<b>8%</b>	<b>26%</b>	<b>13%</b>			

Current volumes average 1,200 - 2,300 board feet of sawtimber and 19 to 25 cords of pulpwood per acre. In many places regeneration is lacking, due to the very shady conditions, though white pine and sugar maple seedlings have developed on the dry upper slopes.

Hemlock sawtimber and hardwood poletimber (SH3/4B - 44 acres) -- The southwestern corner of the woodlot slopes sharply westward and is drained by multiple brooks. It appears the area was wooded for much of the 20th century, though loggers have entered at least twice since 1960. As a result the stand is dominated by 12 to 16 inches dbh and 60 - 70 feet tall hemlock sawtimber amid pockets of red maple, white birch, and sugar maple, some 50 feet tall (1960s regeneration) and 30 feet saplings. Balsam fir is common near the low end of the brooks. Vigor and quality are quite high. It appears that the most recent logging occurred during summer/fall as many of the skid trails are rutted, especially around the many stream crossings. Stocking levels are modest, though not uniform, and individual tree quality tends to be quite high. Average stocking rates total 88 - 110 sq.ft. of basal area per acre, which places most of the stand between the A and B lines on stocking charts. Upwards of 68% are currently, or capable of becoming, sawlog grade or better.

Stocking by basal area (sq. ft. per acre)

DBH	B. fir		White ash		Other		All species	Snags
	White pine	Hemlock	W/Y birch	Red maple	Hardwood			
5 - 8"		12	6	2	11	<b>31</b>	6	
9 - 12"		16	2	5	5	<b>28</b>	2	
13 - 16"	1	15	1	4	3	<b>24</b>	1	
17 - 20"	2	5	1	2		<b>10</b>	2	
>20"	5					<b>5</b>		
<b>total BA</b>	<b>8</b>	<b>48</b>	<b>10</b>	<b>13</b>	<b>19</b>	<b>98</b>	11	
<b>% of total</b>	<b>8%</b>	<b>49%</b>	<b>10%</b>	<b>13%</b>	<b>19%</b>			

Current volumes average 3,100 - 4,500 board feet of sawtimber and 15 - 19 cords of pulpwood per acre. Excepting the saplings described above the only present regeneration are balsam fir and hemlock seedlings. Current growth is good, and with the moderate stocking likely averages about 0.35 - 0.5 cords per acre per year.

Hardwood poletimber (H3B - 19 acres) -- Most of the Bickford lot slopes gently westward and supports vigorous six to eight inches dbh and 60 - 70 feet tall white birch, white ash, and red maple poletimber, along with some midcanopy, 40 feet tall, hemlock poletimber. During the 1950s loggers cleared most of the site, excepting scattered, and now large and low grade, sugar maple and yellow birch. Then during 2003 Matt McCourt removed upwards of half the standing volume on the northern half of the stand and cut a swath along the southern boundary; in some areas they left felled and bundled trees on the ground. Average stocking rates of all species total 50 - 115 sq.ft. of basal area per acre, which places the stand between the A and B lines on stocking charts, with about 52% currently, or capable of becoming, sawlog grade or better.

Stocking by basal area (sq. ft. per acre)

DBH			White ash		Other		All species	Snags
	White pine	Hemlock	W/Y birch	Red maple	Hardwood			
5 - 8"	3	9	20	17	3	52	9	
9 - 12"	11	9	6			26	3	
13 - 16"	3					3	3	
17 - 20"			3			3		
>20"						0		
<b>total BA</b>	<b>17</b>	<b>17</b>	<b>29</b>	<b>17</b>	<b>3</b>	<b>83</b>	<b>14</b>	
<b>% of total</b>	<b>21%</b>	<b>21%</b>	<b>35%</b>	<b>21%</b>	<b>3%</b>			

Current volumes average 200 - 1,200 board feet of sawtimber and 12 - 29 cords of pulpwood per acre. Current growth likely averages less than 0.25 cords per acre per year. The shady southern half of the stand supports no regeneration, while to the north the developing understory is dominated by popple and red maple sprouts, which now stand two to three feet tall. The stand could be operating during most seasons but the wettest, though occasional wet runs would have to be avoided.

2003 clearcut (H1A - 7 acres) -- On the Bickford lot, below the last house on the road, McCourt cleared a swath 300 - 400 feet wide to provide a clear view of the western hills. He left about a dozen isolated 60 feet tall white birch, which surprisingly don't exhibit signs of shock. Throughout slash is lying low on the gentle slopes, with regeneration, now one year later, beginning to develop. Popple and red maple sprouts are most common though in some areas, especially near the road no seedlings were evident.

Current volumes average less than five cords of pulpwood per acre. Current commercial growth is virtually nil. The stand could be operating during most seasons but the wettest.

## **BIODIVERSITY AND AREA LANDSCAPE FEATURES**

Maine Dept. of Inland Fisheries and Wildlife has not identified any significant habitats on or near the property, though the woodlot is certainly well used by a variety of wildlife, as beaver, moose, deer, foxes, coyotes, raccoons, porcupines, hares, grouse, and numerous songbirds were seen or evidenced. The most valuable habitats include the brook and wetland areas, especially where beavers have flooded sections behind the northernmost field. I expect that fish live in the streams. In the upland areas pockets of relatively dense softwood cover, notably hemlock, provide potential wintering areas for deer during times of deep snow. As well the variety of hard mast (i.e. oak and beech) provide good fall food sources for a multitude of animals. Following the recent logging on and near the Bickford lot, the forest floor has flushed with regenerating seedlings along with shrubs, which helped create two, and sometimes three, age classes and canopy layers. Such layering of tree heights is highly beneficial for many bird species, each of whom prefers perching, feeding, nesting, etc. at distinct heights above the forest floor. Finally, the extensive woods and field boundaries are well used habitats, owing to their unique blend of plant life, coupled with adjacent areas of browse and protective cover. No threatened or endangered wildlife species were seen on this woodlot, and it is unlikely that any are present. Maine's Natural Areas Program has no record of rare plants or plant communities on this property.

There are a significant number of snags, principally dead balsam fir. However, their generally small size, six to 10 inches dbh, limits their value to excavators. Large, coarse woody debris is not common, though on the Bickford lot dozens of twitches of felled trees remain on the ground. These are all valuable to insects, birds, and ground dwellers who desire this organic matter.

The habitat conditions most lacking are maturing stands of large diameter trees.

The property, in general, is on the edge of the broad rolling terrain stretching southward into the lower Orange River watershed and the distinctly hillier terrain to the west from which the river originates. The area transitioned during the early-to mid-1900s from one dominated by orchards and open fields to a well wooded one, though now residential development has pushed out from Dover and converted numerous woodlots and farms into houselots. Commercial development remains concentrated only along the major routes such as state highways 25 and 44, which are within two miles of the woodlot.

## **LONG TERM MANAGEMENT RECOMMENDATIONS**

The top two ownership priorities are deciding whether and/or how much forestland to enroll in Maine's Tree Growth Tax program and clarifying physical evidence of property lines.

It appears that Walter could save over \$1,100 annually on property taxes by enrolling all forestland into the TGTL, a current use tax program. I've detailed a comparison, which appears in the Appendix. As virtually all the developable land is open hayfields, Walter's additional development options that could impact forestland are very limited. The wooded Bickford lot has been judged by Tree planners to be unbuildable, while other roadside woods are adjacent to more easily developed hayfields. Current property tax methodology charges Walter for a building lot on the back of the old Mosher lot, as they assume access from White Ave., though its suitability, as mentioned earlier is poor. Enrolling in Tree Growth includes a potential penalty if any of the forestland is ever converted to a nonforest use, such as residential development or gravel excavation. As an example, developing a two acre houselot on TGTL enrolled woods could cost an additional \$4,000, given the TGTL withdrawal penalty. To enroll in Tree Growth requires landowners to apply prior to April 1, of the year they would like to receive the reduced assessment and tax.

If any of the property becomes enrolled under Maine's Tree Growth Tax Law, Walter will be required to follow a few rules or risk losing the preferential tax status and becoming liable for a financial penalty on the entire lot. Once this plan is completed and a TGTL application submitted to the Tree assessors, Walter will be under no obligation to the town until 2015. At which point, assuming the land remains in TGTL, he will be asked to contract with a forester to certify that the general intent of this plan has been followed and to create a new plan. However, if his goals change prior to the anniversary date, he is expected to amend the plan to reflect the new direction and management intent.

In the long term managers should strive to manage the forest in a way that minimizes ownership costs, protects soil and water quality, preserves and protects large trees and unique habitats, and generates periodic income.

Naturally Walter's woodlot should become dominated by long lived species, including hemlock, red oak, yellow birch, pine, and beech. Long term management should for the most part mimic, but speed, these natural tendencies while retaining a variety of other species.

From the stand point of maintaining wildlife habitat, the managed forest should include mostly undisturbed areas along the stream corridors and wetland edges, a greater abundance of large diameter trees (ultimately snags and cavity trees), and wide diversity of tree canopy layers. Generally conscientious timber management should complement these wildlife habitat efforts. Buffering streams, wetland edges, and vernal pools (no potential pools noted) should greatly protect water quality from potential sediment flows, eliminate soil compaction in sensitive sites, and minimize disturbance wildlife who depend on small water pockets and surrounding uplands throughout their life. Similarly, brook buffers and minimal equipment crossings should help maintain good fish habitat, with cool and clear water plentiful and leafy detritus pumping energy into the riparian system.

In addition, though the block of hemlock cover, in the lot's southwestern corner, is likely used by deer during heavy snow winters it is unlikely that deer or moose would increase their use of the otherwise hardwood-dominated woodlot, though abundant fall acorn and beechnut production coupled with more and varied browse should benefit these and other animals during all other seasons. Additionally, as roads and skid trails are temporarily retired, after use, herbaceous seeding should help feed and/or protect an abundance of birds and small mammals.

Natural succession should, over time, change the appearance of the woodlot from its current often even-age structure to one characterized by trees of all ages and species more suited to shady conditions. The most recent logging accelerated this transition by enabling sunlight to reach the forest floor in and around the Bickford lot, which has helped a young cohort of trees become established there. As a result of succession, white pine should decline or barely maintain its long term presence, as these remnants of the land's agricultural past recede in time. However such succession could be checked if a natural disturbance (i.e. fire, wind storm, gypsy moth outbreak, etc.) allows more sunlight to reach the forest floor, exposes mineral soil, and/or hinders competition. Naturally, individual tree mortality should continue as the primary disturbance agent, but likely at a pace that is hardly noticeable.

However, foresters and loggers can protect and encourage some valuable, sun loving species, by continuing to manage the overstory as a relatively even-aged block, and only begin breaking it up after desirable regeneration develops. Then, managers should over time remove nearby and overtopping trees to enlarge the regenerated gaps on the forest floor.

This general notion of expanding the size of openings, while retaining blocks of uniformly large trees, should ultimately create a forest comprised of numerous species, age classes, tree sizes, and heights. Such forests provide the diversity that best resists insect and disease problems, benefits a multitude of wildlife, and provides a solid foundation for a regular income stream.

Thus the woods should be managed to produce large diameter (18 - 22" dbh), high value trees, under mostly uneven-aged conditions. Harvest levels should be set to ensure that harvest volumes do not exceed volumes grown, currently 50 - 60 cords per year. Harvesting should generally feature individual tree selection and group selection to create stands with two to three age classes. Prior to each harvest short notes and prescriptions should be prepared to document the intended harvest.

Finally, per Walter's interest consideration should be given to researching long term conservation options. Two opportunities come to mind: placing a no-development restriction on the land's deed or giving/selling the land to a land trust. The former would require working with a suitable easement holding organization to detach the mineral and development rights from the deed, while retaining the grass, timber, water, and existing residential rights. Such separation has become quite common during the later half of the 20th century, and numerous organizations exist to help landowners. Given Walter's location and interest, I suggest that the most suitable groups include the New England Forestry Foundation, Small Woodland Owners Association of Maine, and the Orange Land Trust, though I consider the former two to be much more experienced with properties retained for long term forestry than the OLT. Contact information for all are listed in the Appendices.

## **SHORT TERM MANAGEMENT RECOMMENDATIONS**

As stated earlier, one of the top ownership priority should be to maintain the blazes and paint along all boundaries. If contracted should work would cost upwards of \$650, to reblaze around 1.5 of the 1.75 miles of boundary line; abutter Kachnovich recently blazed and painted the additional 0.25 miles of common boundary.

As Walter would like someone to finish and clean up McCourt's work on the Bickford lot, I recommend that the bundles of pulpwood sized wood remaining on the lot be yarded and trucked, the most badly rutted trails smoothed if feasible, all wood chunks and bumped trees removed from near the yard, and the yard graded, seeded, and mulched. Removing the 20 - 30 cords of bundled trees may or may not be economical, given the drying effect of two summers. The wood weighs very little now (its merchantability is thus considerably reduced) and is likely quite brittle and thus difficult to move. Thus removing such wood may require paying a contractor to collect and haul it. I estimate that such work combined with backdragging the skid trails will likely require a skidder and chainsaw operator about three days and cost about \$1,500. Cleaning the yard, grading the surrounding terrain, and seeding and mulching the yard will likely cost an additional \$500. Such work should be done during the dry summer or early fall. Elsewhere I recommend that the logging slash (tree tops and branches) be left in place. Most lies within two feet of the ground, where it will decay most rapidly, and will soon be obscured by developing young trees, forbs, and shrubs.

From a wildlife management standpoint little is cost effective to implement on its own, though coupled with forest management recommendations some could become income opportunities. Specifically, though time and natural processes are necessary to diversify the existing habitat features to include large diameter snags, vigorous acorn and beechnut producing trees, and dense softwood concentrations, some of these attributes can be created earlier by releasing large crowned oak and beech trees from competition and removing some low value and short lived hardwoods from within existing hemlock groves. These activities, along with water quality protection efforts should help sustain the existing wildlife populations until time and tree growth create the large trees necessary to attract large-cavity dwelling animals and birds.

From a forest management standpoint the top priority during 2005 - 2010 over most of the woodlot should be to let the forest grow, though consideration should be given to improving the growing conditions within the stand south of the rail line (stand HS3A) for the best oak, pine, ash, yellow birch, and hemlock by removing as much popple and mature balsam fir as possible. The inventory suggests that the stand includes 2 - 3 cords of fir and 3 - 13 cords of popple per acre (about 400 cords total), though such are not uniformly growing across the stand. Portions east of the main trail that enters the woods below Walter's house support the greatest concentrations of quality northern hardwoods and some of the largest blocks of popple. I recommend harvesting those areas during winter, with wood yard to and trucked from an area near the cellar hole and existing barn along Walter's driveway. Winter operations should protect soils, minimize damage to residual trees, and help protect the paved driveway from heavy trucks.

Such an operation should also include the small portions of other stands that adjoin that field (stands SH3/4B and P4/H3A). Combined the cutting should likely remove upwards of 400 cords of mostly low grade pulpwood, and thus earn \$3,000 - \$5,000. With little sawtimber removed and small income projected, the primary beneficiaries would be the valuable residual trees, which would grow more rapidly in the absence of popple. A small volume of other low value hardwoods, such as red maple would likely be cut to enable the logger to access the pockets of popple.

Undertaking such a harvest, while retaining the lot's scenic values would require a skilled logger, capable of protecting the residual trees and keeping slash close to the ground, with Walter's understanding that the slash would be a temporary esthetic setback. Viewers generally like a uniformly thinned forest, and generally benefit from the extended views and increased opportunities to view wildlife.

**Necessary Best Management Practices (BMPs): The most important resources to protect are the stream corridors on the stand's lower side. Though portions of the brook network could be avoided by looping above it, if the east end is to be harvested a new and second entrance into the woods would have to be made through the stonewall around the field. Once finished, the stonewall could be replaced and the second opening closed, or the opening could be allowed to remain. As well any sections of steeply inclined skid trails should be revegetated with grass and clover and mulched with hay, to ensure that the resulting herbaceous layer slows any moving water in the skid trail and enables the sediments to settle out before nearing the streams.**

It is not likely that a second commercial harvest would be efficient or economical before 2012 - 2015 and then only in the hemlock dominant stand (stand SH3/4B). Cutting there would again strive to improve the conditions for the best hemlock and developing hardwood, while liquidating mature fir. Such a harvest would likely be accessed from the same spot below Walter's house, but would necessarily require a series of temporary skidder bridges. However, with permission from the western abutter and use of the spur rail line no brooks would have to be crossed; wood on the western half of the stand would be yarded to the road at the junction of the two rail lines. The eastern half would come up Walter's hill.

Such cutting could occur during a dry summer or cold winter and would likely yield 20,000 - 30,000 board feet of hemlock sawtimber and 250 - 300 cords of pulpwood worth \$5,000 - \$10,000.

**MANAGEMENT PRIORITIES  
2005 - 2015**

<u>year</u>	<u>location</u>	<u>activity</u>	<u>net income/(cost)</u>
2005	all	Enroll forest land in Tree Growth	\$0
2005 - 10	Bickford lot perimeter stand HS3A	Clean up McCourt's mess Blaze and paint lines (1.5 miles) Commercially harvest	(\$1,500 - \$2,000) (\$650) \$4,000
2012 - 15	stand SH3/4B	Commercially harvest	\$5,000 - \$10,000
2015	all perimeter	Certify TGTL compliance; update plan Blaze and paint lines (1.75 miles)	? ?

## WOODLOT SUMMARY BY WOOD PRODUCT

Thompson Woodlot - Walter Thompson  
Tree, Maine - December 2006

Product	Volume	Stumpage Rate	
<b>Sawtimber (10" minimum top diameter):</b>	<u>MBF</u>	<u>\$/MBF</u>	<u>Value</u>
White pine - grade (8" top)	75	\$200	\$15,000
White pine - pallet	65	\$75	\$4,875
Hemlock	95	\$60	\$5,700
Balsam fir	30	\$120	\$3,600
Red oak	10	\$400	\$4,000
Yellow birch	10	\$120	\$1,200
Sugar maple	10	\$350	\$3,500
Red maple	15	\$60	\$900
<b>Cordwood (4" top diameter):</b>	<u>cords</u>	<u>\$/cord</u>	
White pine	230	\$8.00	\$1,840
Hemlock	490	\$12.00	\$5,880
Red spruce	30	\$15.00	\$450
Balsam fir	150	\$15.00	\$2,250
Red oak	50	\$10.00	\$500
White birch	130	\$10.00	\$1,300
Yellow birch	110	\$10.00	\$1,100
Sugar maple	80	\$10.00	\$800
Red maple	370	\$10.00	\$3,700
White ash	140	\$10.00	\$1,400
Beech	40	\$10.00	\$400
Popple	700	\$10.00	\$7,000
Other hardwood	30	\$10.00	\$300
			<u>error</u>
<b>Total Estimated Volume (cords)</b>	<b>3,140</b>	$\pm 17.4\%$	$@19:1$
statistically significant range:	2590 - 3690 cords		0.174
			<u>error</u>
<b>Gross Estimated Value</b>	<b>\$65,695</b>	$\pm 18\%$	$@19:1$
statistically significant range:	\$53900 - \$77500		0.180

**ABOUT STATISTICS:** There is an element of error in any sampling scheme. The sampling errors of the estimates of total volume and gross value are within a 95 percent confidence interval. That means that if the woodlot were recruised, new estimates would fall within the above stated statistically significant range 19 times in 20 (assuming the same product utilization and stumpage rates). However, individual product numbers, such as pine sawtimber volume, have considerably higher sampling errors than those for total volume or value, and are therefore much less reliable.

**ABOUT STUMPAGE RATES:** Stumpage rates are based on current market conditions. The value stated may not represent a liquidation value, given that regulatory restrictions may not allow all the timber on the lot to be removed at one time. Rates are derived from private data collected by Two Trees Forestry during the course of business. No reliable public information about local stumpage rates is currently available.

**ABOUT THE CRUISE:** The woodlot summary values were derived from a field cruise of 72 variable radius plots, on systematically located transect lines, using a 20 BAF prism. Volume tables were derived from tables created by the U.S. Forest Service and the Univ. of Maine. Sawtimber volumes use the International 1/4" Log Rule, which converts to cordwood at a ratio of one MBF to two cords. Cordwood volumes include topwood of sawtimber trees.

## **GLOSSARY**

- A-line stocking - the density of trees which exceeds a site's growth potential, to the point that overcrowding is causing mortality; varies with average tree diameter
- B-line stocking - the density of trees which optimize a site's growth potential;
- Basal area - stocking statistic; cross sectional area of a tree(s) measured at 4.5 feet above ground. Often stated in square feet per acre.
- Board foot - log measurement statistic; One board foot equals a board 1 foot square and one inch thick
- C-line stocking - a density of trees too sparse to fully utilize a site's growth potential; will grow to B-line stocking within 10 years
- Commercial harvest - a harvest operation that results in a net landowner income
- Cord - wood measurement statistic; 128 cubic feet; a pile of wood four feet high, four feet tall, and eight feet long
- DBH - tree measurement; diameter at breast height (4.5 feet above ground)
- Mature - condition of optimal tree value, after tree vigor and growth have slowed, yet before the onset of decay
- MBF - thousand board feet
- Operability - ease with which logging machinery could work a site; often limited by rockiness, steep slopes, wetness, etc.
- Pre-commercial - a timber stand improvement practice that has a net cost
- Poletimber - tree between 5.0 inches and 9.9 inches DBH
- Regenerate - to establish a new stand of tree seedlings, or regeneration
- Sawtimber - tree generally greater than 10.0 inches DBH
- Seedling - tree greater than six inches tall but less than one inch DBH
- Snag - standing dead and/or dying tree. Important habitat element for numerous wildlife species
- Stand - a homogeneous unit of forestland, delineated because it supports trees of common species, age, potential, etc.
- Stocking - stand measurement relative to the optimal number of trees that a unit of forestland could grow
- Stumpage - the value of timber that landowners receive for their wood, after logging and trucking expenses are deducted.

## **FURTHER SOURCES OF ASSISTANCE**

1. Two Trees Forestry: We can mark trees to harvest, select competent loggers, ensure a favorable timber sale contract and best market prices, and oversee harvests to meet landowners' objectives. We also maintain boundary lines and administer FSA Federal cost-share programs.  
Two Trees Forestry P.O. Box 356 Winthrop, ME 04364. 377-7196
2. Maine Forest Service: A good source of educational material. Consult with the Entomology Laboratory for Christmas tree assistance. Taxation and utilization specialists are also on staff.  
#22 State House Station, Augusta, ME 04333-0022. 800-367-0223
3. Maine Natural Areas Program (MNAP): Excellent source of information about rare, threatened, and endangered species along with invasive plants #93 State House Station, Augusta, ME 04333-0093
4. New England Forestry Foundation: 50 Forest Falls Rd. Yarmouth, ME 04096 847-9313
5. Small Woodland Owners Association of Maine P.O. Box 836 Augusta, ME 04332 626-0005
6. Orange Land Trust P.O. Box 3145 Dover, ME 04699 359-2302

## Comparison of property tax options

	Current assessment				Assessment if forestland in TGTL			
	Category	Rate	Acres	Assessment	Category	Rate	Acres	Assessment
<b>Bickford</b>	1	\$12500	1.0	\$12500				
	2-5	\$950	4.0	\$3800				
	6-10	\$750	5.0	\$3750	hardwood	\$93.90	21.1	\$1981
	11-20	\$650	10.0	\$6500				
	21-50	\$500	2.9	\$1450				
			22.9	\$28000			21.1	\$1981
			Tax	\$456			Tax	\$32
<b>Home place</b>	1	\$12500	1.0	\$12500	fields	various	24.0	\$28550
	2-5	\$950	4.0	\$3800	softwood	\$155.60	3.0	\$467
	6-10	\$750	5.0	\$3750	hardwood	\$93.90	3.0	\$282
	11-20	\$650	10.0	\$6500	mixedwood	\$116.40	73.2	\$8520
	21-50	\$500	30.0	\$15000				\$0
	51-100	\$350	48.7	\$17045				\$0
			98.7	\$58595			103.2	\$37819
			Tax	\$955			Tax	\$616
<b>Deans</b>								
	6-10	\$750	8.0	\$6000	mixedwood	\$116.40	8.5	\$989
			8.0	\$6000			8.5	\$989
			Tax	\$98			Tax	\$16
<b>Mosher</b>	1	\$12500	1.0	\$12500	fields	various	23.0	\$27050
<b>Farmhouse</b>	2-5	\$950	4.0	\$3800	softwood	\$155.60	4.0	\$622
	6-10	\$750	5.0	\$3750	hardwood	\$93.90	9.5	\$892
	11-20	\$650	10.0	\$6500				
	21-50	\$500	15.9	\$7950				
			35.9	\$34500			36.5	\$28564
			Tax	\$562			Tax	\$466
<b>Shedd</b>	6-10	\$750	1.5	\$1125	hardwood	\$93.90	1.5	\$141
			1.5	\$1125			1.5	\$141
			Tax	\$18			Tax	\$2
<b>Mosher</b>	1	\$12500	1.0	\$12500	fields	various	11.0	\$20800
<b>back land</b>	2-5	\$950	4.0	\$3800	softwood	\$155.60	1.5	\$233
	6-10	\$750	5.0	\$3750	hardwood	\$93.90	20.6	\$1934
	11-20	\$650	10.0	\$6500				
	21-50	\$500	17.4	\$8700				
			37.4	\$35250			33.1	\$22968
			Tax	\$575			Tax	\$374
			<b>204.4</b>	<b>Total acres</b>			<b>203.9</b>	
<b>\$163,470</b>				<b>Combined land assessment</b>				<b>\$92,463</b>
<b>\$2,665</b>				<b>Total annual land taxes, at 2004 rates</b>				<b>\$1,507</b>