

PROPERTY DESCRIPTION

The property is located in Lewes on the eastern side of Route #23, the Selkirk Road, in Queens County. The property has never been ploughed and no plantations were established in any of the stands. Much of the balsam fir, which resulted from heavy cutting in the past, is now starting to die. Two stands on the western end of the property were tendered out for strip cutting by the provincial government in 2005 but were not planted. Both have substantial amounts of pin cherry and raspberry growing in the cuts.

Three stands were clear cut 20-25 years ago and are located in the eastern half of the property. These cut areas have mostly grown up in red maple, balsam fir and white birch. The red maple and some of the birch regeneration are multi stemmed trees which originated from stump sprouts. The remaining stands are mostly composed of deciduous trees, with varying amounts of balsam fir. The property has a good forest road that runs through the property. The forest road is starting to show signs of regrowth and will need to be maintained. No trash was found on the property except for two or three sections of culvert near the entrance.

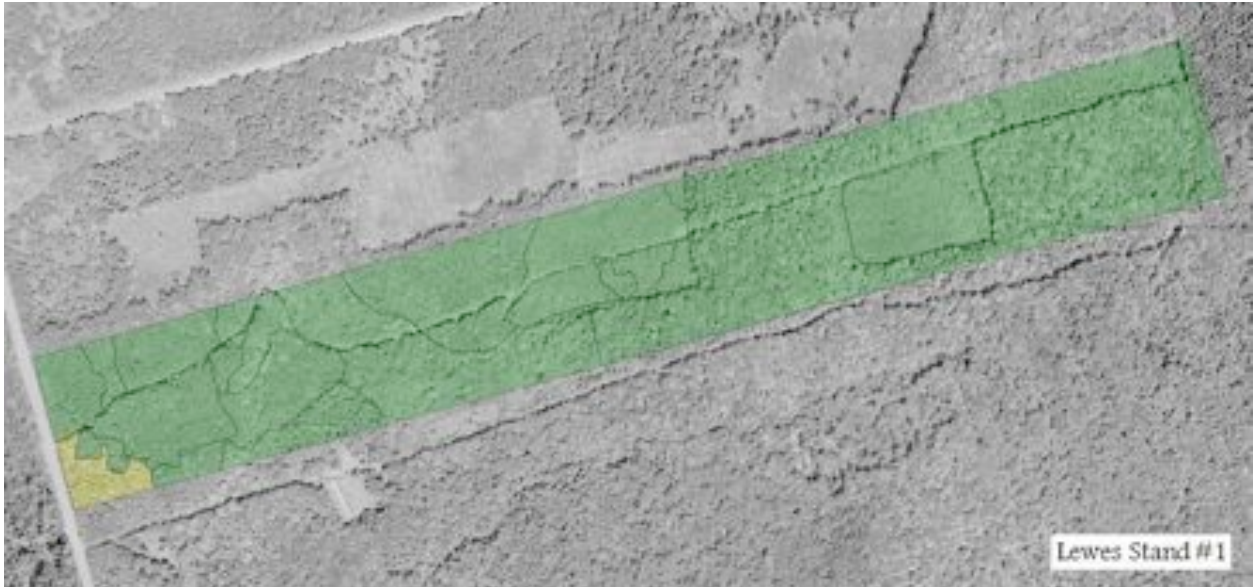
Special notes:

This property will be able to produce a variety of fuelwood and hardwood lumber, just from the removal of poor quality trees that can be found throughout the forest. Generally, a sustainable harvest level is approximately ½ cord per acre (4.5 cubic meters per hectare) annually from most Island forests. Sustainable harvesting practices will actually improve the quality of trees within the woodland by the strategic extraction of trees, such as the removal of a cankered American beech overshadowing a young yellow birch. At the same time, it is critical to ensure that there are still adequate wildlife trees throughout the property. In all stands, improving forest health and future woodland value through proper pruning and enhancement plantings makes good sense. The income generated from the sale of wood products will help fund some of the other silviculture practices we will be carrying out on the property that will have no financial returns for many years.

One unusual plant found on this property is spotted coral-root. This saprophytic orchid does not photosynthesize, obtaining its nutrients from decaying plant material.

Many shrews were seen on the property during the surveys, indicating a high population.

STAND TREATMENTS



Stand #1 (0.60ha): This stand is located in the southwest corner of the property adjacent to the Selkirk Road. It is relatively flat with a slope to the southeast. The stand is dominated by large cankered American beech, yellow birch and red maple, with some balsam fir mixed in. Regeneration is strong throughout the stand with lots of young trees from all of the main species. A small area in the middle of the stand was heavily cut and has many multi-stemmed red maples as well as some white birch. The stand has volume but not value.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: American beech	35% of stand	age: 80	Diameter: 37.5cm	Ht: 15.7m
#2: yellow birch	30% of stand	age: 70	Diameter: 21.5cm	Ht: 16.3m
#3: red maple	25% of stand	age: 80-90	Diameter: 26.7cm	Ht: 18m
#4: balsam fir	10% of stand	age: 60	Diameter: 25.6cm	Ht: 16.4m

Tree source: stump sprout: 10% seed: 90% plantation: 0%

Maturity class: mature

Canopy description: tall, open with side light

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: high #1: red maple Ht: 0.2m #2: balsam fir Ht: 0.3m

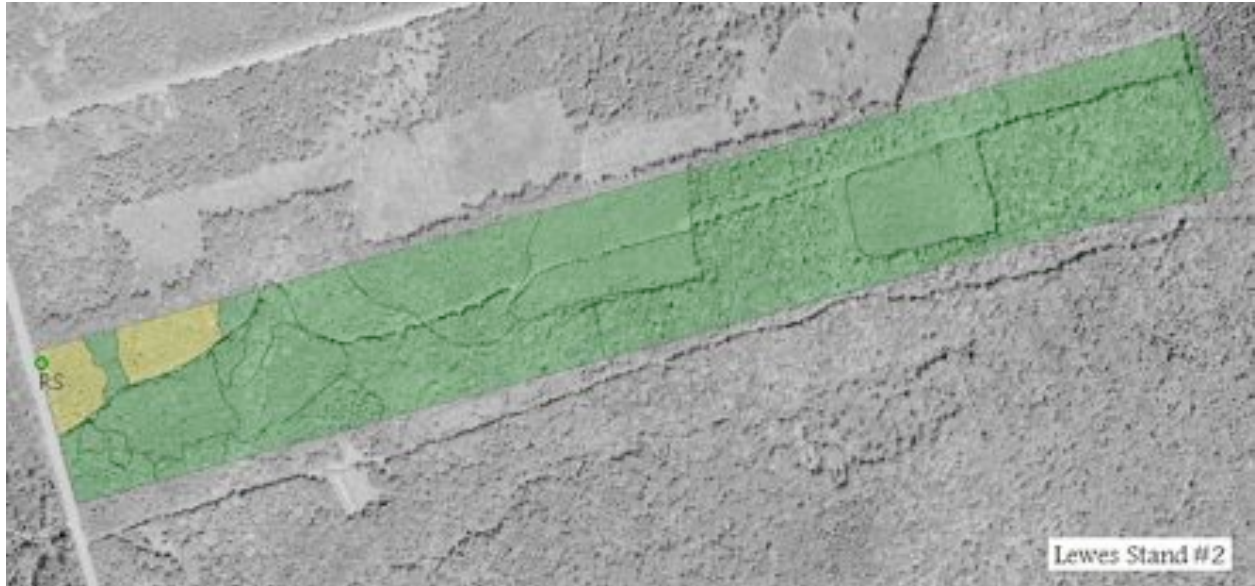
#3: American beech Ht: 0.2m

Other plant species: white birch, European mountain ash, pin cherry, wild raisin, starflower, hay scented fern, wood fern, running clubmoss, lung lichen, old man's beard, spotted coral-root, Indian pipe

Total % ground cover: 0% moss 0% shrub 0% flower 60% tree 25%fern

Coarse woody debris: high # **Snag trees:** medium high **Quality of snags:** medium
Wildlife: witnessed a house cat hunting and catching a shrew, black-capped chickadee

Treatment: The multi-stemmed red maple and white birch in the recently cut section of the stand should have the number of their stems reduced. Any single stem trees in this area should be pruned and released and the balsam fir removed where ever possible. Throughout the rest of the stand are a number of large cankered American beech that can be harvested for fuelwood and hardwood lumber. The removal of each tree would create a patch large enough to plant 3 trees and six shrubs. Use red spruce, sugar maple, white ash, red oak, striped maple, eastern hemlock, alternate-leaf dogwood, highbush cranberry, beaked hazelnut, witch hazel and a variety of wildflowers.



Stand #2 (1.57 ha): The stand is located in the northwest corner of the property along the Selkirk Road. The ground is even with a steady slope to the south. The stand is split in two by Stand #6. This stand has three distinct sections. The first section is an area of 45 year old balsam fir mixed with white birch, red maple and trembling aspen. Most of the balsam fir is in decline but the sound ones could be harvested for soft wood lumber. The second section is an area of five year old strip cuts roughly 15m wide that have grown up in pin cherrie that are now 7m tall. Thick patches of raspberry cover much of the ground in this area. The third area is a narrow strip of low quality deciduous and coniferous trees that stretch along the Selkirk Road with a tall and densely closed canopy. This section contains large American beech, red spruce, balsam fir, red maple and white birch. In the northeast corner of the stand, four red spruce were found with an average height of 14.7m and an average diameter of 29.2cm (see map waypoint). There are also some 1m white pine saplings that were planted along the edge of the strip cuts.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut and strip cut

Dominant and codominant trees:

#1: balsam fir 60% of stand age: 45 Diameter: 18cm Ht: 13.5m

#2: white birch 20% of stand age: 45 Diameter: 10.6cm Ht: 12.9m

#3: red maple 10% of stand age: 35 Diameter: 9.3cm Ht: 13.5m

#4: trembling aspen 10% of stand age: 45 Diameter: 23.7cm Ht: 19.3m

Tree source: stump sprout: 10% seed: 90% plantation: 0%

Maturity class: mature

Canopy description: tall and closed with abundant side light

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: high #1: balsam fir Ht: 0.2m #2: white birch Ht: 0.1m #3: red maple Ht: 0.1m #4: American beech Ht: 0.1m

Other plant species: American beech, red spruce, white pine, white spruce, striped maple, mountain ash, red elderberry, blueberry, bayberry, black berry, prince's pine, wild strawberry, starflower, narrow-leaf goldenrod, common lady's slipper, wild lily-of-the-valley, violet (spp), hay-scented fern, wood fern, bracken fern, old man's beard, ground pine,

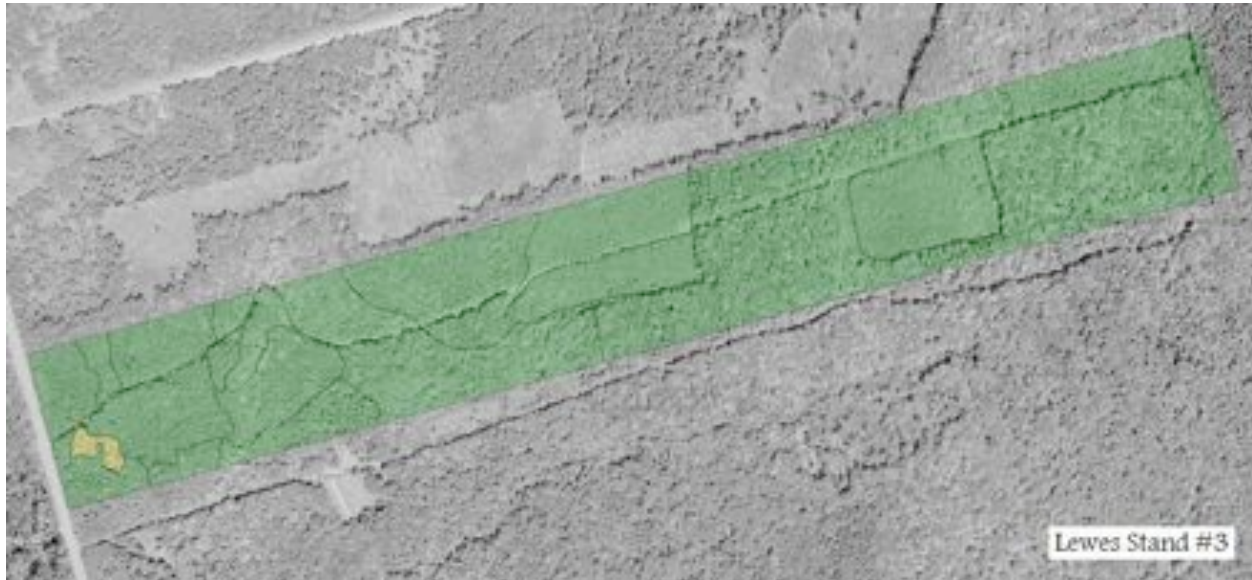
Total % ground cover: 30% moss 30% shrub 0% flower 20% tree

Coarse woody debris: high # **Snag trees:** high **Quality of snags:** medium

Wildlife: black-capped chickadee, raccoon scat, skunk scent, snowshoe hare pellets

Treatment: This stand has beautiful regeneration in the uncut balsam fir sections. Remove sound balsam fir, for softwood lumber, to create 15m wide patches that will allow the existing white birch, red maple and American beech seedlings to grow faster. Any dead fallen balsam fir that is hung up in other trees should be felled to speed decomposition. Large sound snags should be left standing. Plant patches with maple, red oak, white ash, eastern hemlock, ironwood, alternate-leaf dogwood, beaked hazelnut, witch hazel, ferns and wildflowers. Leave all trembling aspen to become large diameter snags for cavity-nesting birds.

Plant strip cuts with sugar maple, striped maple, red oak, white ash, eastern hemlock, ironwood, alternate-leaf dogwood, beaked hazelnut, witch hazel, hobblebush and wild raisin. Planting sites will need to have the raspberry and woody debris cleared and the pin cherry thinned. To do this, remove a one to two meter swath of raspberry and use the brush to mulch. Cut any pin cherry in the immediate area to allow just enough sunlight to reach the planting site without encouraging pin cherry regrowth.



Stand #3 (0.20 ha): The stand is located close to the entrance of the property south of the forest road. The stand is almost completely made up of balsam fir that are naturally thinning themselves, except for a small amount of American beech. The eastern section of the stand is composed of immature balsam fir, unlike the western section which has more mature fir. The interior of the stand is dark and overstocked, particularly in the younger fir section.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: clear cut

Dominant and codominant trees:

#1: balsam fir 95% of stand age: 30-40 Diameter: 11.2cm Ht: 11.3m

#2: American beech 5% of stand age: 50-60 Diameter: 21 cm Ht: 14.2 m

Tree source: stump sprout: 0% seed: 100% plantation: 0%

Maturity class: immature

Canopy description: closed and dark

Stocking: overstocked

Tree quality: medium

Regeneration <5m: low #1: balsam fir Ht: 0.05m

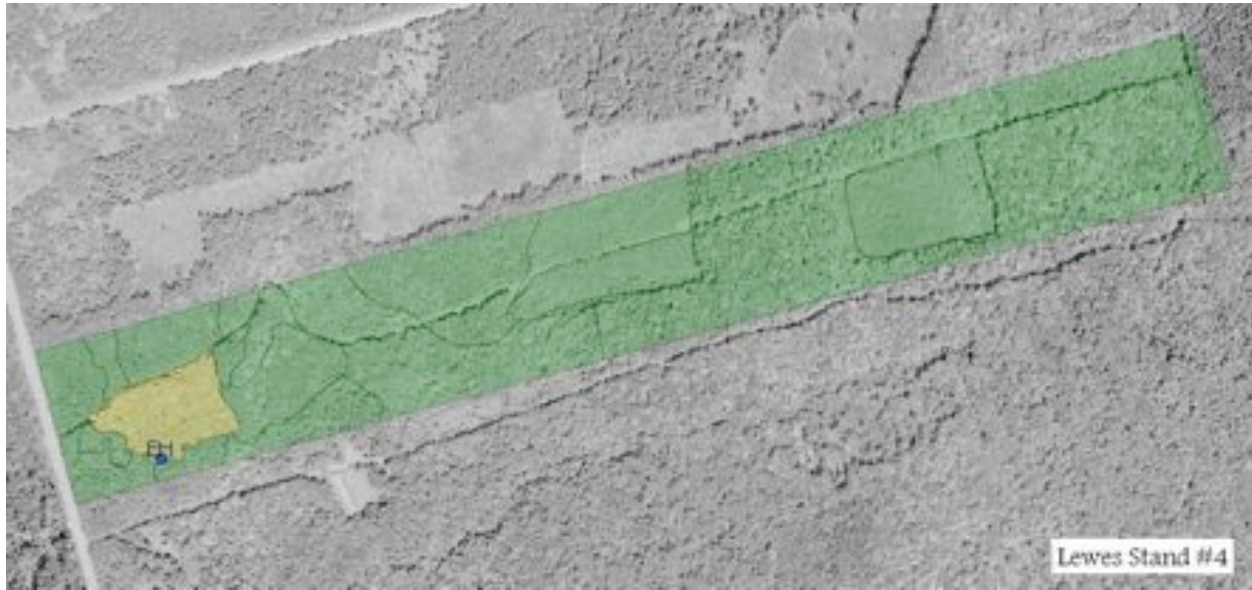
Other plant species: American beech, red maple, yellow birch, white birch, ground hemlock, starflower, wood fern, old man's beard, Indian pipe

Total % ground cover: 5% moss 0% shrub 0% flower 0% tree 95% leaf litter

Coarse woody debris: medium # Snag trees: medium low **Quality of snags:** low

Wildlife:

Treatment: Create 2 or 3 12m openings by removing balsam fir and plant white pine, sugar maple, red spruce, eastern hemlock, alternate-leaved dogwood, beaked hazelnut, and witch hazel.



Stand #4 (1.46 ha): This south-sloping stand is located on the western side of the property and is a balsam fir stand that is rapidly dying. The white birch and red maple are generally confined to the edges of the stand especially along the forest road. There is scattered white spruce growing throughout the balsam fir. A large eastern hemlock (68cm diameter and 17.7m tall) is growing in the southern section of the stand (see waypoint on map).

Drainage: high **Watercourse:** no

Ploughed: no

Origin: clear cut

Dominant and codominant trees:

#1: balsam fir	75% of stand	age: 35	Diameter: 15.1cm	Ht: 15.5m
#2: white birch	10% of stand	age: 35	Diameter: 15cm	Ht: 16m
#3: red maple	10% of stand	age: 35	Diameter: 15.1cm	Ht: 16.5m
#4: white spruce	0% of stand	age: 35	Diameter: 18.5cm	Ht: 16.5m

Tree source: stump sprout: 10% seed: 90% plantation: 0%

Maturity class: over mature

Canopy description: tall and open with plenty of side light

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: high #1: balsam fir Ht: 0.1m #2: red maple Ht: 0.1m

#3: American beech Ht: 0.1m

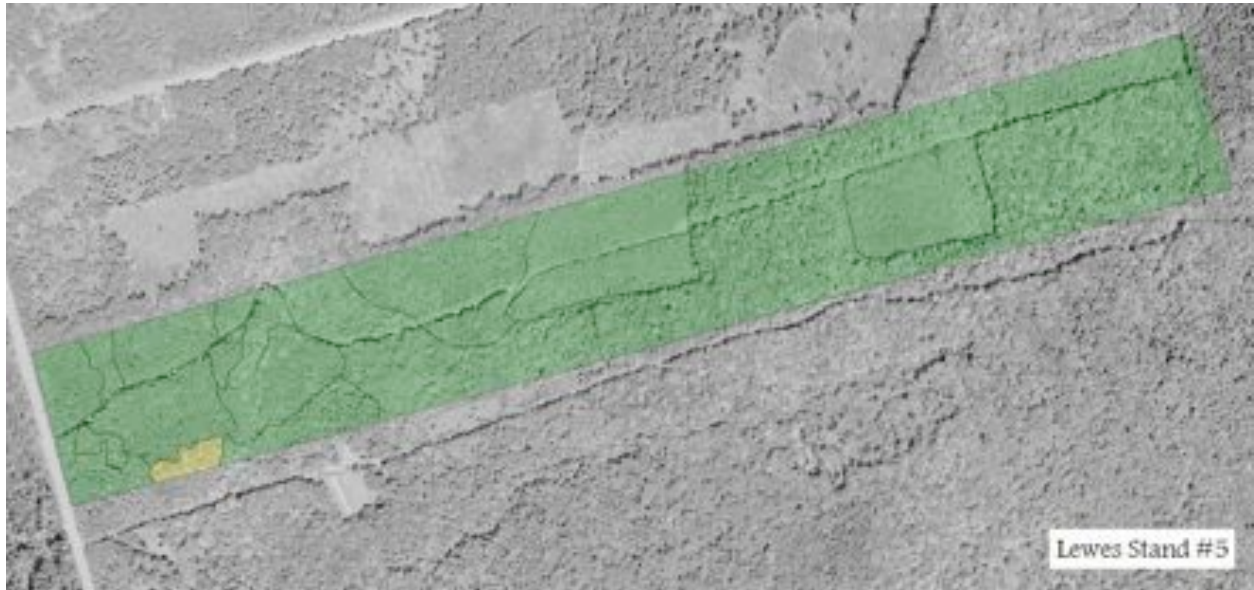
Other plant species: American beech, trembling aspen, sugar maple, striped maple, pin cherry, European mountain ash, raspberry, wild raisin, common lady's slipper, wild lily-of-the-valley, ground pine, hay-scented fern, wood fern, bracken fern, old man's beard, Indian pipe,

Total % ground cover: 90% moss 2% shrub 3% flower 5% tree

Coarse woody debris: high # **Snag trees:** high **Quality of snags:** low medium

Wildlife:

Treatment: Create 15-20 openings, 12-15m in diameter, throughout the stand for planting. As this stand lacks a strong biodiversity, a healthy mix of plants would benefit the site. Add a mix of white ash, red oak, white pine, red spruce, sugar maple, yellow birch, eastern hemlock, alternate-leaf dogwood, beaked hazelnut, witch hazel, hobblebush, ferns and wildflowers.



Stand #5 (0.28 ha): This small stand in the western end section of the property runs along the southern border. It is relatively flat with a gentle southern slope. The stand is primarily composed of red maple and white birch with some yellow birch, American beech and balsam fir. The majority of the standing balsam fir is dead.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: red maple	50% of stand	age: 40	Diameter: 14.6 cm	Ht: 17.6m
#2: white birch	20% of stand	age: 40	Diameter: 14.5cm	Ht: 16.4m
#3: American beech	15% of stand	age: 60-80	Diameter: 31cm	Ht: 12m
#4: yellow birch	10% of stand	age: 40	Diameter: 17.7cm	Ht: 14.2m
#5: balsam fir	5% of stand	age: 40	Diameter: 11.8cm	Ht: 13m

Tree source: stump sprout: 15% seed: 85% plantation: 0%

Maturity class: mature

Canopy description: tall and closed with plenty of side light

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: low-medium #1: red maple Ht: 0.1m #2: balsam fir Ht: 0.1m

#3: American beech Ht: 0.1m

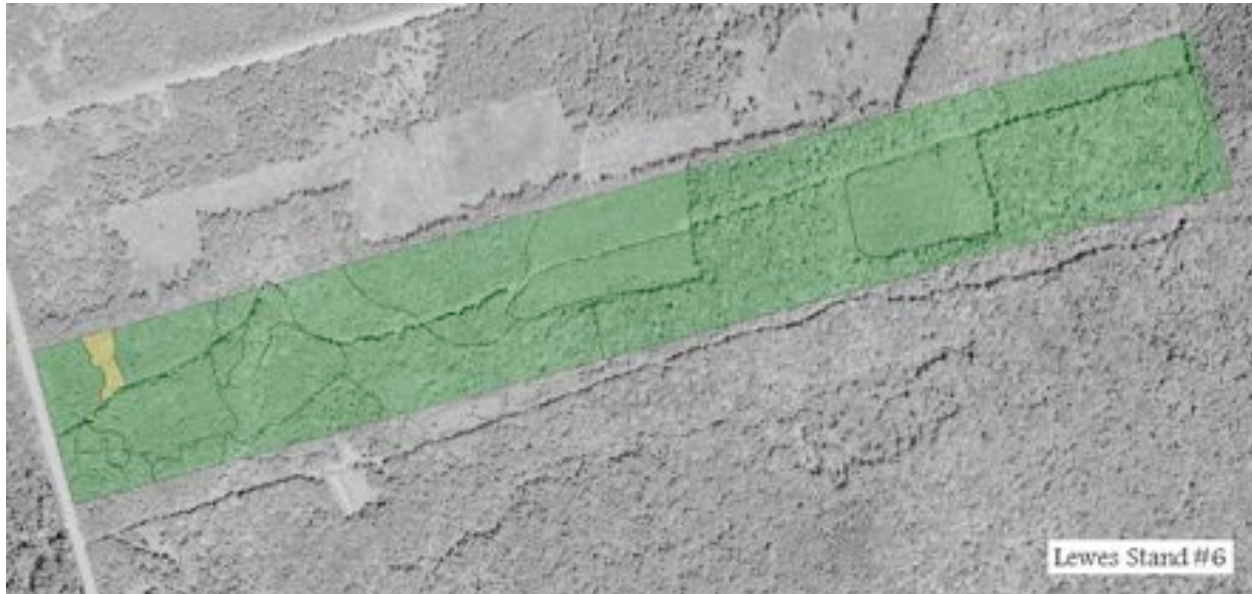
Other plant species: striped maple, European mountain ash, wild lily-of-the-valley, clintonia, starflower, lung lichen, old man's beard, Indian pipe

Total % ground cover: 10% moss 20% shrub 20% flower 20% tree

Coarse woody debris: high # **Snag trees:** high **Quality of snags:** medium

Wildlife: hairy woodpecker

Treatment: Harvesting some red maple for fuelwood will open up planting sites throughout the stand. Suitable species to introduce include yellow birch, sugar maple, ironwood, red spruce, eastern hemlock, white pine, alternate-leaf dogwood, witch hazel, beaked hazelnut and hobblebush.



Stand #6 (0.24 ha): This stand is a dry, narrow valley which bisects Stand #2. It runs from the northern boundary to the forest road and is a mix of deciduous and coniferous trees. The main tree species are balsam fir, American beech, white birch and some yellow birch, and there is little ground cover. There is no culvert where the road crosses the valley, indicating infrequent to no runoff.

Drainage: high **Watercourse:** occasionally in the spring and during rain storms

Ploughed: no

Origin: clear cut

Dominant and codominant trees:

#1: balsam fir	50% of stand	age: 40	Diameter: 16.9cm	Ht: 15.6m
#2: American beech	30% of stand	age: 60-70	Diameter: 20.3cm	Ht: 15.6m
#3: white birch	10% of stand	age: 40	Diameter: 10.2cm	Ht: 15.8m
#4: yellow birch	10% of stand	age: 60	Diameter: 14cm	Ht: 15.5m

Tree source: stump sprout: 30% seed: 70% plantation: 0%

Maturity class: mature

Canopy description: closed with side light

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: some #1: balsam fir Ht: 0.2m #2: American beech Ht: 0.1m

#3: red maple Ht: 0.2m

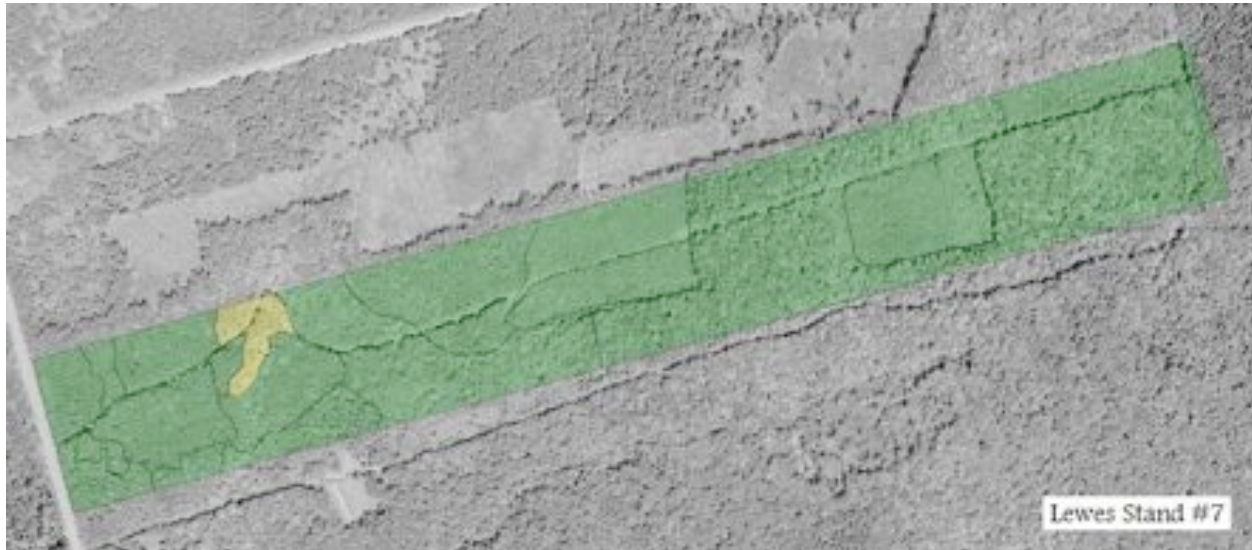
Other plant species: European mountain ash, pin cherry, red-berried elder, wild raisin, violet spp., wood fern, old man's beard, spotted coral-root, Indian pipe

Total % ground cover: 0% moss 0% shrub 0% flower 15% tree 85% leaf litter

Coarse woody debris: medium high # **Snag trees:** medium **Quality of snags:** medium

Wildlife: hairy woodpecker, black-capped chickadee

Treatment: Focusing on the back section of the stand, remove some of the cankered beech for fuelwood as well as some of the balsam fir to create openings. Appropriate plants to use are a mix of sugar maple, white pine, red spruce, eastern hemlock, alternate-leaf dogwood, witch hazel, hobblebush, beaked hazelnut, royal fern and Christmas fern.



Stand #7 (0.63ha): This stand is located alongside the second small valley where the forest road runs to the northern property boundary. For the most part, the stand slopes southeast at 20 percent. The stand is primarily made up of American beech, with some balsam fir and yellow birch. There are also trembling aspen and white birch mainly growing in the northern section of the stand and sugar maple and red maple in the southwest section. The young trembling aspen are mostly grouped together and are of good quality where as the American beech, although of larger size, have poor form. The forest floor has little regeneration and is largely covered by leaf litter.

Drainage: high **Watercourse:** yes, there were signs of water runoff but in the small valley that presumably only happens during the spring and heavy rains.

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: American beech	35% of stand	age: 80	Diameter: 27.1cm	Ht: 18.2m
#2: balsam fir	20% of stand	age: 40	Diameter: 21.9cm	Ht: 17m
#3: yellow birch	15% of stand	age: 60	Diameter: 20.7cm	Ht: 21.1m
#4: trembling aspen	10% of stand	age: 40	Diameter: 18.6cm	Ht: 21.7m
#5: white birch	10% of stand	age: 55	Diameter: 16.6cm	Ht: 21.7m
#6: sugar maple	5% of stand	age: 50	Diameter: 20.2cm	Ht: 17.1m
#7: red maple	5% of stand	age: 50	Diameter: 21.9cm	Ht: 18.3m

Tree source: stump sprout: 20% seed: 80% plantation: 0%

Maturity class: mature

Canopy description: tall, closed with side light

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: low #1: balsam fir Ht: 0.5m #2: red maple Ht: 0.1m

#3: sugar maple Ht: 0.1m #4: striped maple Ht: 0.1m

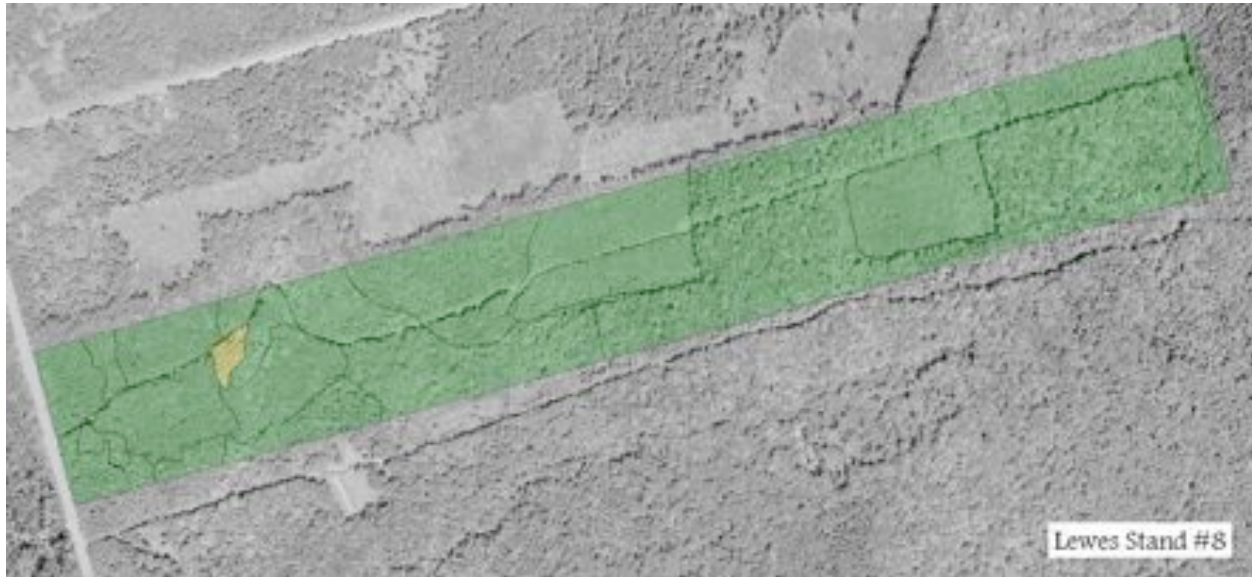
Other plant species: trembling aspen, white birch, white spruce, wild raisin, sarsaparilla, starflower, wood fern, interrupted fern, bracken fern, ground pine, Indian pipe,

Total % ground cover: 5% moss 0% shrub 0% flower 10% tree 85% leaf litter

Coarse woody debris: medium # **Snag trees:** medium **Quality of snags:** low

Wildlife: shrew, hermit thrush, black-capped chickadee, and a covey of 3 ruffed grouse

Treatment: Cankered beech and other low quality trees could be harvested for fuelwood which would create openings for plantings. Where ever a tree is removed plant white pine, red spruce, alternate-leaved dogwood, beaked hazelnut, and witch hazel. Red oak, eastern hemlock, hobblebush, wildflowers and ferns can also be planted but would be best suited in the southeast section where more favorable conditions exist for those species.



Stand #8 (0.21 ha): The topography of this stand is even but gently slopes to the southeast. The stand is located close to the second small valley along the forest road. Although the balsam fir is the dominant species of the stand, the canopy is dominated by the large-tooth aspen which are considerably taller than the balsam fir and white birch in that stand. The large-tooth aspen trees, for the most part, have good and straight looking stems.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: balsam fir 45% of stand age: 35 Diameter: 11cm Ht: 13.5m

#2: large-tooth aspen 40% of stand age: 35 Diameter: 24.1cm Ht: 23.5m

#3: white birch 10% of stand age: 35 Diameter: 10cm Ht: 14.5m

Tree source: stump sprout: 20% seed: 80% plantation: 0%

Maturity class: mature

Canopy description: tall and closed

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: very low #1: red maple Ht: 0.05m #2: balsam fir Ht: 0.05m

Other plant species: white birch, red maple, American beech, wood fern

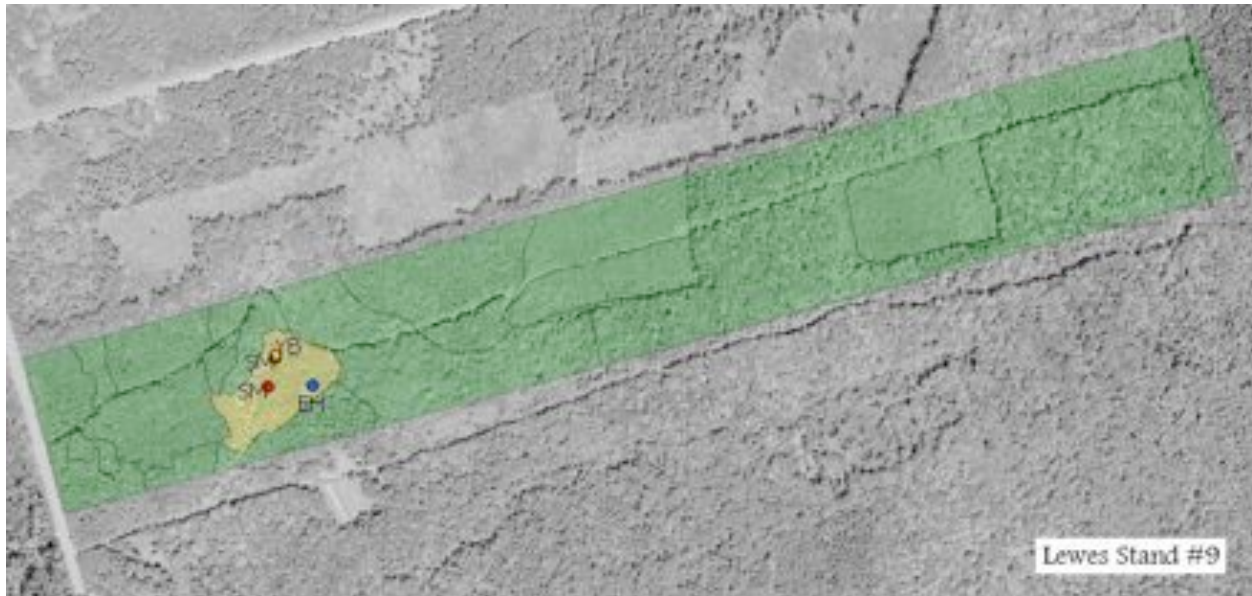
Total % ground cover: 3% moss 0% shrub 0% flower 2% tree 95% leaf liter

Coarse woody debris: medium # **Snag trees:** low **Quality of snags:** low

Wildlife: signs of woodpecker activity

Treatment: Some of the large-tooth aspen can be harvested for very high quality wood products like flooring or walls but it wouldn't hurt to let them grow to maximize their size. Create three patch cuts by removing balsam fir. These patches should be planted with American beech, yellow birch, sugar maple, striped maple, red spruce, alternate leaf dogwood, and witch hazel. The

nearby forest road could provide species such as striped maple, sugar maple, and perhaps even some American beech if they are resistant to canker.



Stand #9 (1.23 ha): This stand starts in the second small valley and climbs up northeast to the forest road. The stand used to be a balsam fir dominated stand but is now a mix of red maple, and white birch with some balsam fir, American beech and yellow birch. Most of the balsam firs in the stand is dead leaving many standing snags and much fallen woody debris. There are some large trees present in the stand including a yellow birch 64.5 diameter and 21.1 m tall, two sugar maples one being 57.2cm diameter and 19.3m tall and the other being 67.2cm diameter and 25.5m tall, and a eastern hemlock 35cm diameter and 13m tall (see waypoints on map).

Drainage: high **Watercourse:** seasonal flow

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: red maple	30% of stand	age: 35	Diameter: 13.9cm	Ht: 16.6m
#2: white birch	30% of stand	age: 35	Diameter: 14.9cm	Ht: 14.6m
#3: American beech	20% of stand	age: 35	Diameter: 21.4cm	Ht: 14.1m
#4: yellow birch	10% of stand	age: 35	Diameter: 13.7cm	Ht: 15.8m

Tree source: stump sprout: 0% seed: 100% plantation: 0%

Maturity class: mature

Canopy description: tall and open with plenty of side light

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: high #1: red maple Ht: 0.1m #2: balsam fir Ht: 0.1m #3: American beech Ht: 0.1m #4: sugar maple Ht: 0.1m

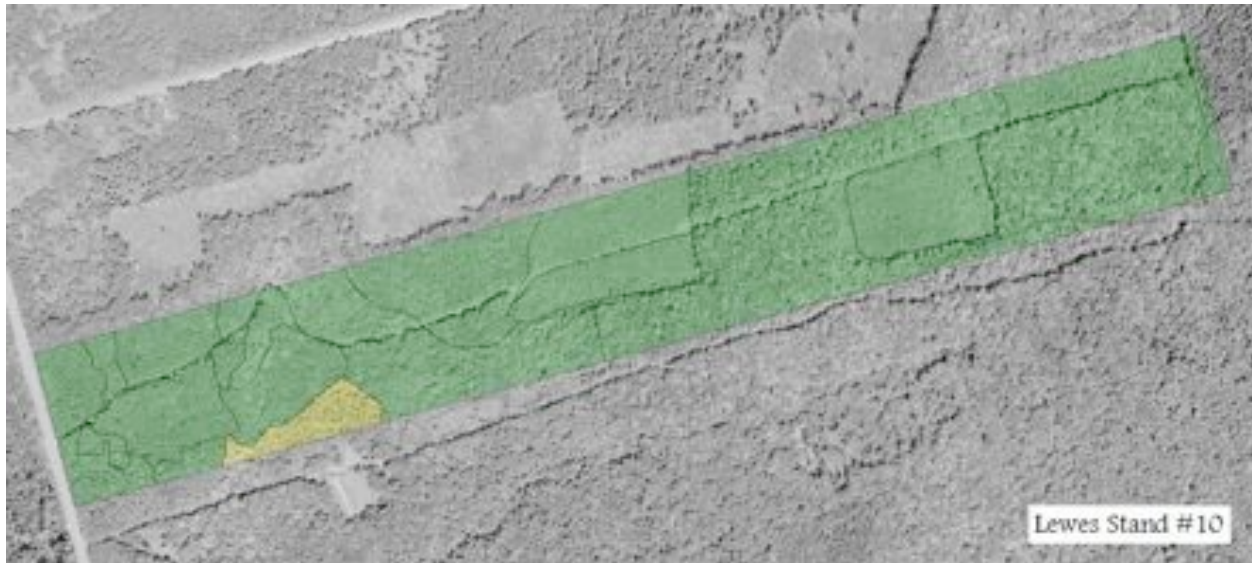
Other plant species: white spruce, sugar maple, striped maple, pin cherry, European mountain ash, elderberry, wild raisin, raspberry, sarsaparilla, starflower, common lady's slipper, wild lily-of-the-valley, ground pine, wood fern, bracken fern, lung lichen, old man's beard, Indian pipe,

Total % ground cover: 0% moss 0% shrub 0% flower 30% tree

Coarse woody debris: high # **Snag trees:** high **Quality of snags:** medium

Wildlife:

Treatment: Near the western area of the stand is an opening ready for plantings. Prune trees that would benefit from it to increase the stand's health and value. It would be nice to add white pine and red spruce to provide coniferous diversity in the stand and would also be an appropriate stand for red oak, white ash, hobblebush and witch hazel. The stand has no harvesting value at the moment.



Stand #10 (0.82 ha): This stand is located along the southern boundary of the property and slopes northwest on a 15% angle. The stand is dominated with American beech, red maple and balsam fir with some yellow birch. Many of the American beech are cankered and rarely have a straight stem. Although generally closed and relatively dense, the stand opens up towards its centre where many of the shrubs and flower species grow.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: American beech	45% of stand	age: 70-80	Diameter: 23.4cm	Ht: 21.5m
#2: red maple	30% of stand	age: 80	Diameter: 29.5cm	Ht: 17.1m
#3: balsam fir	20% of stand	age: 40	Diameter: 21.2cm	Ht: 15.3m
#4: yellow birch	5% of stand	age: 30	Diameter: 17cm	Ht: 18.6m

Tree source: stump sprout: 0% seed: 100% plantation: 0%

Maturity class: mature

Canopy description: tall and closed with side light

Stocking: fully stocked

Tree quality: medium low

Regeneration <5m: some #1: Ht: balsam fir 0.3m #2: red maple Ht: 0.1m #3: American beech Ht: 0.2m #4: sugar maple 0.3m

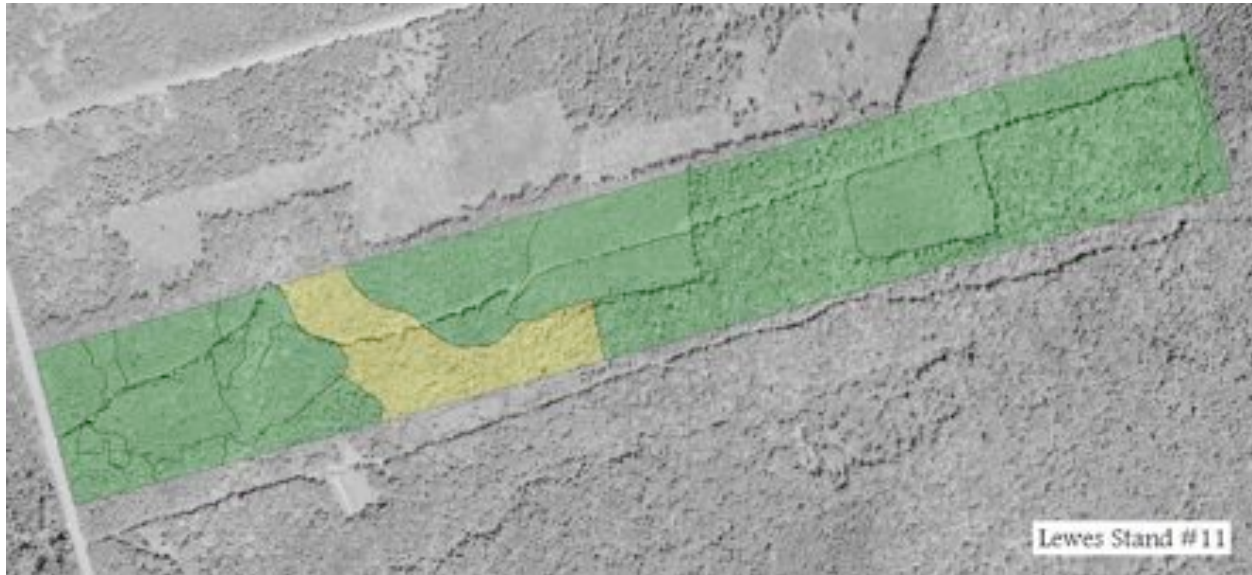
Other plant species: striped maple, sugar maple, white birch, red spruce, large-tooth aspen, pin cherry, raspberry, clintonia, sarsaparilla, starflower, common lady's slipper, ground pine, wood fern, bracken fern, lung lichen, old man's beard, Indian pipe,

Total % ground cover: 10% moss 0% shrub 0% flower 10% tree

Coarse woody debris: high # Snag trees: high **Quality of snags:** low

Wildlife:

Treatment: Some choice trees can be harvested for fuelwood, particularly any cankered beech and some of the red maple to increase the health of the stand. With the diversity of plants occurring on site, no large plantings are direly needed for this stand, although with fuelwood harvests small areas will be opened up which could be planted with eastern hemlock, red spruce, more yellow birch, alternate leaf dogwood, witch hazel, and fern species.



Stand #11 (3.45 ha): This large stand is located after the bend in the forest road past the clump of smaller stands on the western end of the property. The stand is mainly composed of American beech with some white birch and yellow birch. There is a large amount of balsam fir regeneration throughout the stand about one meter tall but the southern section of the stand also has some mature balsam fir. A good chunk of the American beech has signs of canker but the trees usually have a straight stem and look healthy. The white birch trees also have clean stems and a general nice shape to them.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: American beech	75% of stand	age: 60	Diameter: 26.3cm	Ht: 16m
#2: white birch	10% of stand	age: 50	Diameter: 20.5cm	Ht: 16.2m
#3: balsam fir	10% of stand	age: 40	Diameter: 14.5cm	Ht: 12.4m
#4: yellow birch	5% of stand	age: 50	Diameter: 19.5cm	Ht: 17.6m

Tree source: stump sprout: 0% seed: 100% plantation: 0%

Maturity class: mature

Canopy description: tall and closed

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: high #1: balsam fir Ht: 1m #2: sugar maple Ht: 0.1m #3: striped maple Ht: 0.1m #4: red maple Ht: 0.1m #5: American beech Ht: 0.1m

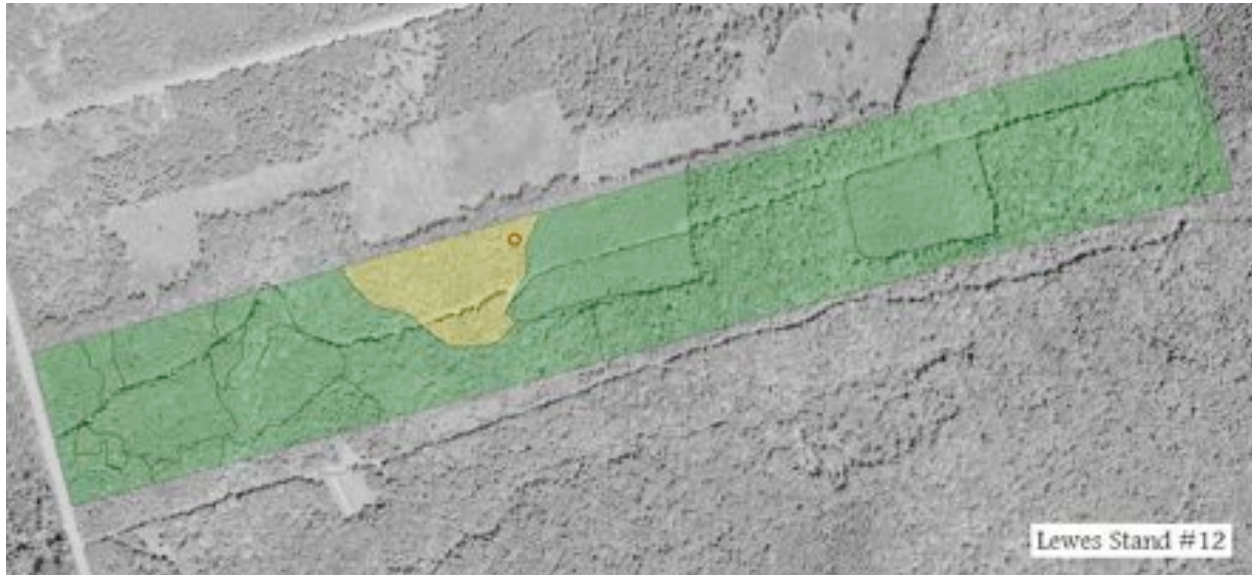
Other plant species: wild raisin, common elderberry, starflower, wild lily-of-the-valley, wood fern, lung lichen, spotted coral-root, Indian pipe

Total % ground cover: 5% moss 0% shrub 0% flower 20% tree

Coarse woody debris: medium # **Snag trees:** low **Quality of snags:** medium

Wildlife: hermit thrush, black-capped chickadee, raccoon scat, blue jay, crow

Treatment: Some of the denser areas of balsam fir could be opened up to create open patches for plantings. Some of the less valuable trees, particularly any cankered beech, could be cut for fuelwood which again would create openings for planting sites. These openings can be planted with red spruce, white pine, eastern hemlock, red oak, sugar maple, alternate leaf dogwood, witch hazel, and beaked hazelnut.



Stand #12 (0.94 ha): The stand is located along the centre of the northern property boundary. Its topography is relatively flat with a slight southern slope. This stand has several strip cuts in most of the stand but leaving about two fifths uncut. The clear cut areas have large amounts of pin cherry about 7m tall and many raspberry thickets. There is also some coarse woody debris in piles within the cuts. In the mature uncut sections of the stand grows balsam fir with a mix of red maple and white birch. Many of the balsam fir are dead or will die in the next 10 to 20 years. There is a large yellow birch 54cm diameter and 16 m tall in the stand (see waypoint on map). This stand has a few very nice tall trees throughout the uncut portion.

Drainage: high

Watercourse: no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: balsam fir	30% of stand	age: 50	Diameter: 17.5cm	Ht: 14.1m
#2: red maple	25% of stand	age: 50	Diameter: 15.5cm	Ht: 16.5m
#3: white birch	20% of stand	age: 60	Diameter: 18.8cm	Ht: 15.1m
#4: trembling aspen	10% of stand	age: 50	Diameter: 17.5cm	Ht: 17m

Tree source: stump sprout: 15% seed: 85% plantation: 0%

Maturity class: mature

Canopy description: tall and closed with side light

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: medium #1: red maple Ht: 0.2m #2: striped maple Ht: 2m #3: balsam fir Ht: 0.1m #4: sugar maple Ht: 0.2m

Other plant species: American beech, yellow birch, white pine, sugar maple, pin cherry, mountain ash, skunk currant, raspberry, blueberry, smooth blackberry, blanchard's dewberry, sarsaparilla, starflower, wild lily-of-the-valley, ground pine, wood fern, bracken fern, old man's beard, lung lichen, Indian pipe,

Total % ground cover: 0% moss 0% shrub 5% flower 15% tree

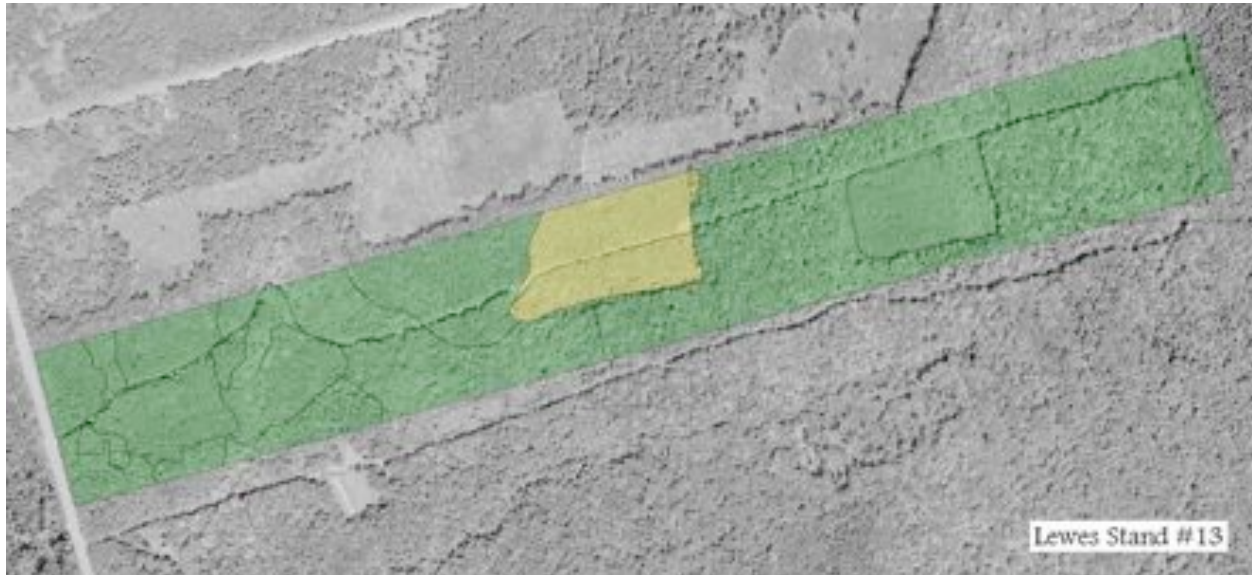
Coarse woody debris: high # **Snag trees:** high **Quality of snags:** low medium

Wildlife: black-capped chickadee, hairy woodpecker, raccoon scat,

Treatment: Scatter piles of coarse woody debris to facilitate decomposition and create planting sites. Plant strip cuts with yellow birch, sugar maple, red oak, white ash, ironwood, eastern hemlock, alternate-leaf dogwood, beaked hazelnut, witch hazel, hobblebush and wild raisin.

Planting sites will need to have the raspberry and woody debris cleared and the pin cherry thinned. To do this, remove a one to two meter swath of raspberry and use the brush to mulch. Cut any pin cherry in the immediate area to allow just enough sunlight to reach the planting site without encouraging pin cherry regrowth.

In the uncut sections of the stand plant white pine, eastern hemlock, more yellow birch, beaked hazelnut and witch hazel. There are some very nice size trees in the stand that could potentially be used as wood products.



Stand #13 (2.86 ha): This stand is located in the centre of the property and gently slopes to the southwest. The stand is a 20 to 25 year old clear cut that regenerated as a mix of balsam fir, red maple and gray birch. Stump sprouts forms a big bulk of this regeneration. In the corners of the stand, balsam fir grows thick and relatively unchallenged by other tree species. The section in the northeast corner of the stand is comprised almost only of mature balsam fir.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: clear cut

Dominant and codominant trees:

#1: balsam fir 30% of stand age: 20-25 Diameter: 11cm Ht: 10.5m

#2: red maple 25% of stand age: 20-25 Diameter: 10.3cm Ht: 11m

#3: gray birch 25% of stand age: 20-25 Diameter: 7.1cm Ht: 10.9m

#4: white birch 15% of stand age: 20-25 Diameter: 7cm Ht: 10.8m

Tree source: stump sprout: 50% seed: 50% plantation: 0%

Maturity class: immature

Canopy description: tall and open with side light except in the balsam fir sections where it is tall closed and dark.

Stocking: overstocked

Tree quality: medium

Regeneration <5m: low #1: balsam fir Ht: 0.3m #2: red maple Ht: 0.1m

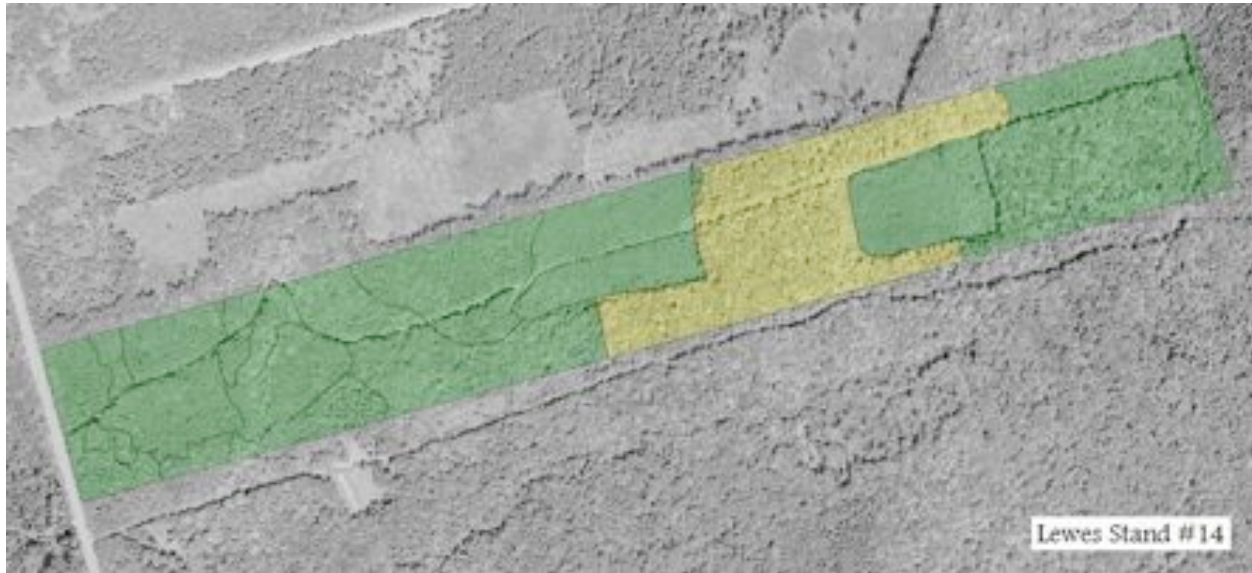
Other plant species: trembling aspen, white spruce, sugar maple, yellow birch, pin cherry, elderberry, skunk currant, wild strawberry, hawkweed, raspberry, sarsaparilla, starflower, wood fern, bracken fern, Indian pipe,

Total % ground cover: 5% moss 0% shrub % flower 5% tree

Coarse woody debris: low # **Snag trees:** non **Quality of snags:** non

Wildlife: Black-capped chickadee, red squirrel, skunk scent, wood frog, snowshoe hare scats

Treatment: Remove dense patches of balsam fir, creating planting sites. Release and prune all potential crop trees, reducing the number of sprouts per stump. Planting sites should be planted with sugar maple, white pine, red spruce, American beech, eastern hemlock, ironwood, alternate leaf dogwood, beaked hazelnut, and witch hazel. This site might be a good site for direct seeding.



Stand #14 (6.57 ha): This is the biggest and nicest stand on the property and is located in the middle end of the property where the topography is relatively flat and gently slopes north. The stand can be caricaturized as a tall open forest made up of white birch, red maple, and sugar maple with dance balsam fir undergrowth regeneration. The southwest area of the stand has small 10m tall cankered American beech that gets taller in the canopy in the north and east sections of the stand.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: white birch	40% of stand	age: 40-50	Diameter: 17.5cm	Ht: 20.3m
#2: red maple	25% of stand	age: 40-50	Diameter: 21.9cm	Ht: 17.9m
#3: sugar maple	20% of stand	age: 40-50	Diameter: 24.4cm	Ht: 19.1m

Tree source: stump sprout: 10% seed: 90% plantation: 0%

Maturity class: mature

Canopy description: tall open with patches and lots of side light

Stocking: fully stocked to understocked

Tree quality: high

Regeneration <5m: high #1: balsam fir Ht: 1m #2: red maple Ht: 0.1m

#3: sugar maple Ht: 0.1m #4: striped maple Ht: 0.1m

Other plant species: large toothed aspen, trembling aspen, American beech, with spruce, yellow birch, striped maple, sarsaparilla, starflower, wild lily-of-the-valley, prince pine, ground pine, running clubmoss, wood fern, bracken fern, old man's beard, Indian pipe,

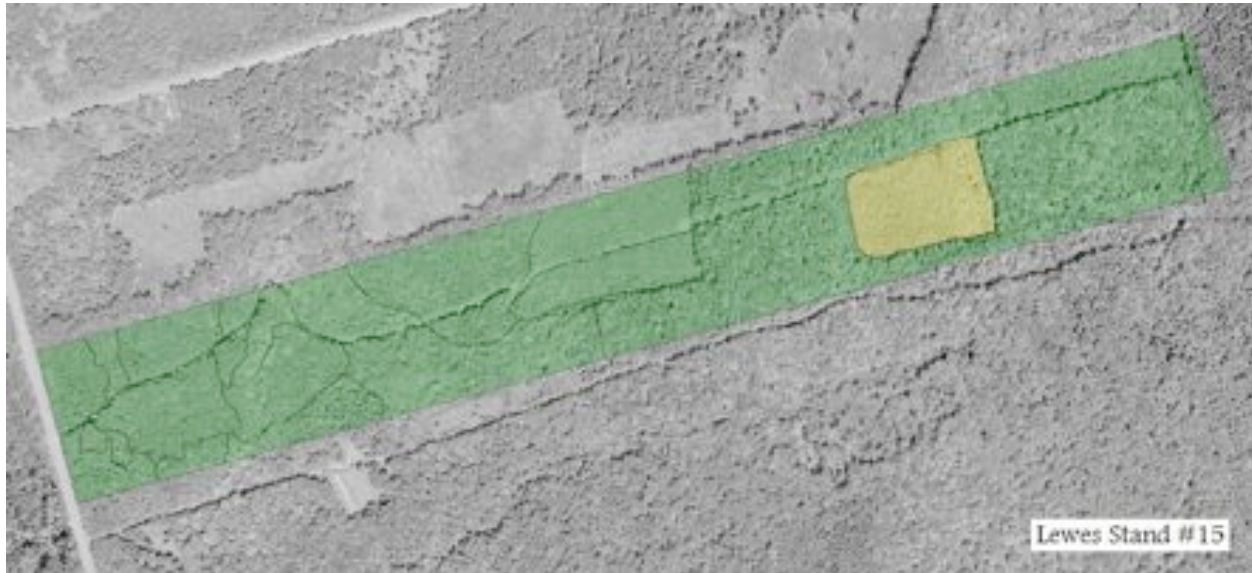
Total % ground cover: 10% moss 0% shrub 0% flower 30% tree

Coarse woody debris: high # **Snag trees:** medium **Quality of snags:** medium

Wildlife: A family of 3 hairy woodpeckers, probably one female and two youngsters.

Blue jay

Treatment: There are many canopy patches in the stand that can be used as opening sites but cutting and removing some of the under growing balsam fir regeneration to make planting room will be needed. Plant red spruce, white pine, red oak, white ask, more yellow birch, alternate leaf dogwood, beaked hazelnut, and witch hazel. There are some very nice trees in the stand that could potentially be harvested for wood products or fuel.



Stand #15 (2.07 ha): Located just east of the centre of the property this stand is predominantly flat with little to no slope. The stand is a 20 to 25 year old clear cut that has since grown up with red maple, sugar maple, gray birch and other deciduous trees that are most commonly from stump sprouts. The eastern section of the stand has substantial amounts of balsam fir that is not present through the rest of the stand.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: clear cut

Dominant and codominant trees:

#1: red maple	30% of stand	age: 20-25	Diameter: 8.3cm	Ht: 9.7m
#2: sugar maple	20% of stand	age: 20-25	Diameter: 7.3cm	Ht: 9.8m
#3: gray birch	20% of stand	age: 20-25	Diameter: 7.4cm	Ht: 11.1m
#4: white birch	15% of stand	age: 20-25	Diameter: 7cm	Ht: 10.2m

Tree source: stump sprout: 80% seed: 20% plantation: 0%

Maturity class: immature

Canopy description: tall and closed with some side light.

Stocking: overstocked

Tree quality: medium

Regeneration <5m: high #1: balsam fir Ht: 1m #2: sugar maple Ht: 0.1m

#3: red maple Ht: 0.1m

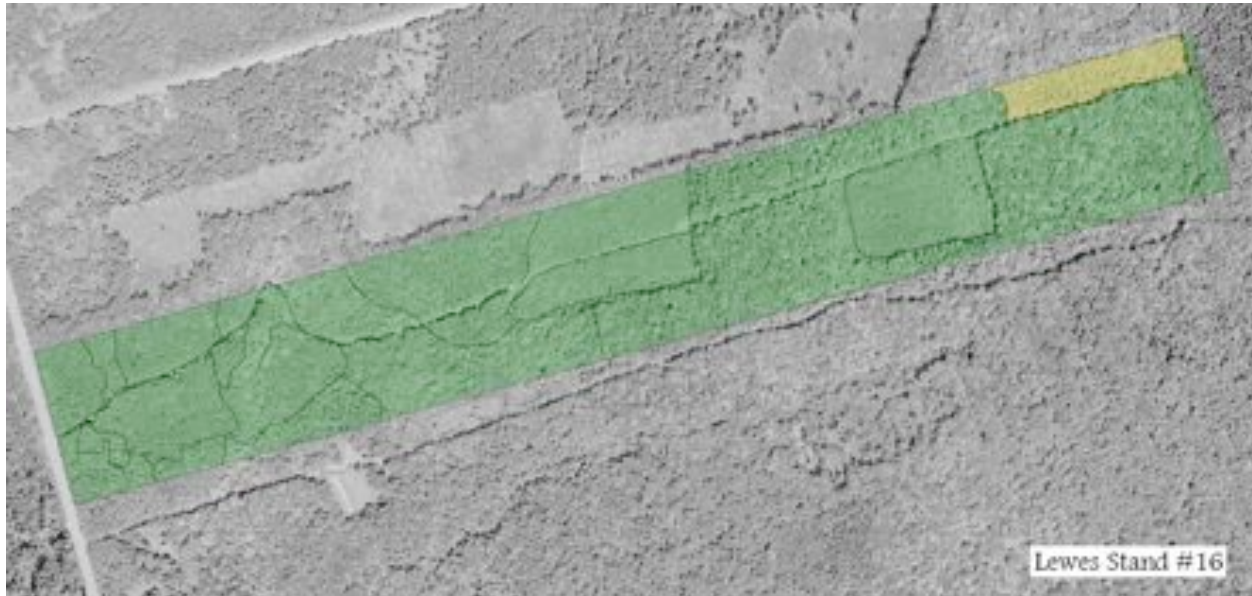
Other plant species: white pine, balsam fir, striped maple, mountain maple, prince's pine, starflower, blanchard's dewberry, running clubmoss, Indian pipe,

Total % ground cover: 0% moss 0% shrub 5% flower 15% tree

Coarse woody debris: low # **Snag trees:** no **Quality of snags:** no

Wildlife: two ruffed grouse

Treatment: Pruning and releasing any of the potential crop trees is strongly advised to promote good tree development and health in the stand, with a particular focus on reducing stump sprouts. In the eastern section of dense balsam firs, patch cuts could be made which would reduce the firs as well as create planting sites. Plantings should include white pine, red oak, white ash, eastern hemlock, yellow birch, ironwood, alternate leaf dogwood, beaked hazelnut, witch hazel, and some wild flowers.



Stand #16 (1.15 ha): The stand is located along the north eastern boundary of the property and has a slightly rolling topography. This 20 to 25 year old clear cut has since regrown in a dominated stump sprout red maple with a mix of balsam fir. Many other species are also present in the stand such as white birch, sugar maple and pin cherry. An interesting feature of this stand is a large amount of bunchberry the runs throughout the stand.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: red maple	33% of stand	age: 20-25	Diameter: 8.4cm	Ht: 11m
#2: balsam fir	25% of stand	age: 20-25	Diameter: 10.9cm	Ht: 10.1m
#3: white birch	15% of stand	age: 20-25	Diameter: 8.5cm	Ht: 10m
#4: sugar maple	7% of stand	age: 20-25	Diameter: 6.4cm	Ht: 9.7m
#5: pin cherry	5% of stand	age: 20-25	Diameter: 8.2cm	Ht: 11.5m

Tree source: stump sprout: 0% seed: 100% plantation: 0%

Maturity class: immature

Canopy description: short and closed with side light

Stocking: overstocked

Tree quality: medium

Regeneration <5m: high #1: red spruce Ht: 0.2m #2: balsam fir Ht: 0.5m

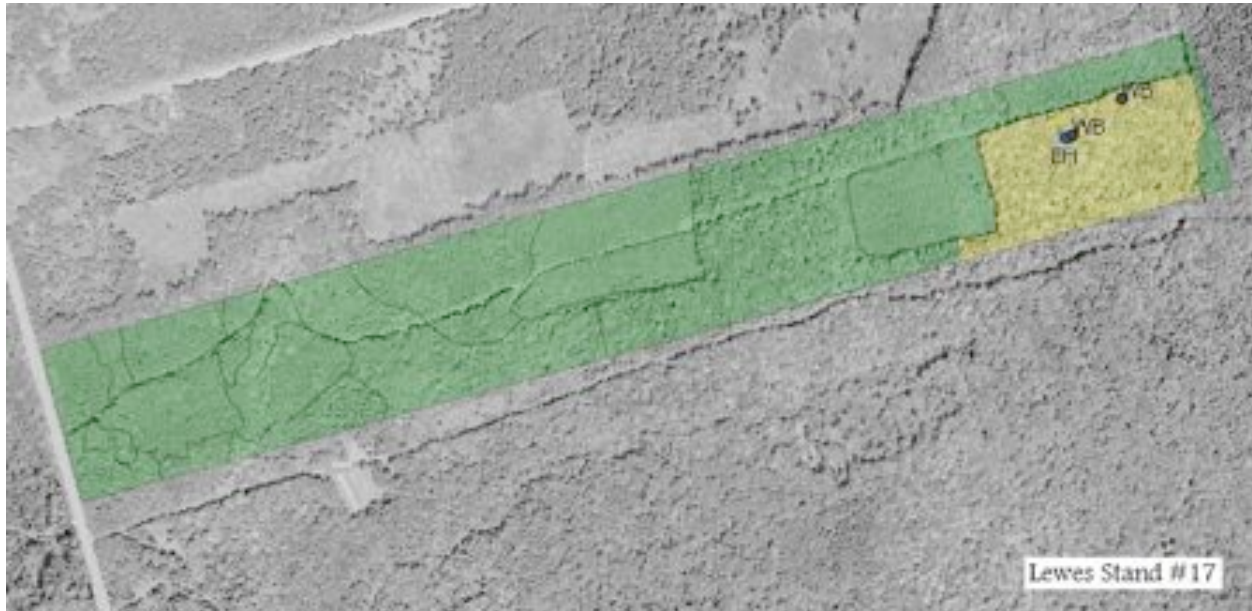
#3: sugar maple Ht: 0.2m

Other plant species: trembling aspen, white spruce, striped maple, large-tooth aspen, yellow birch, American beech, gray birch, wild raisin blueberry, bunchberry, sarsaparilla, starflower, wood fern, bracken fern, ground pine, blanchard's dewberry, running clubmoss, prince's pine, wild strawberry,

Total % ground cover: 30% moss 0% shrub 15% flower 20% tree

Coarse woody debris: low # **Snag trees:** non **Quality of snags:** non
Wildlife: black-capped chickadee

Treatment: Most of the red maple would benefit from pruning, particularly removing stump sprouts. Other potential crop trees should be pruned and released to promote high value and healthy tree growth. Areas of dense balsam firs could be removed creating patch cuts for plantings. Species such as white pine, red oak, white ash, eastern hemlock, yellow birch, ironwood, alternate leaf dogwood, beaked hazelnut, witch hazel, and some wild flowers should be planted in these sites.



Stand #17 (4.36 ha): The stand is located in the eastern section of the property little to no slope. The south western section of the stand is very open and could be planted without any cuttings, although some woody debris might need dispersing. As a general rule, the stand seems to be more open and have more light in the western area of the stand, while it gets thicker and darker towards the eastern end. The stand is predominantly composed of both sugar and red maple with white birch and balsam fir. Most trees have straight stems and look healthy. There are many large trees in this stand including two really large white birch one being 46.4cm in diameter and 20m tall and the other 57.6cm in diameter and 21.2m tall (see waypoints on map). There also was a 70 year old eastern hemlock, the only one that was seen in that section of the property (see waypoint on map).

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: sugar maple	30% of stand	age: 60	Diameter: 17.8cm	Ht: 15.2m
#2: white birch	25% of stand	age: 60	Diameter: 17.6cm	Ht: 16.7m
#3: red maple	20% of stand	age: 60	Diameter: 20.1cm	Ht: 16.7m
#4: balsam fir	20% of stand	age: 40	Diameter: 16.3cm	Ht: 13.5m
#5: American beech	5% of stand	age: 60	Diameter: 33cm	Ht: 14.7m

Tree source: stump sprout: 10% seed: 90% plantation: 0%

Maturity class: mature

Canopy description: tall and closed with side light

Stocking: fully stocked

Tree quality: high

Regeneration <5m: some #1: red maple Ht: 0.2m #2: balsam fir Ht: 0.2m

#3: striped maple Ht: 0.1m

Other plant species: white spruce, trembling aspen, wild raisin, Indian cucumber, clintonia, sarsaparilla, starflower, prince's pine, wood fern, bracken fern, old man's beard, ground pine, clubmoss, Indian pipe,

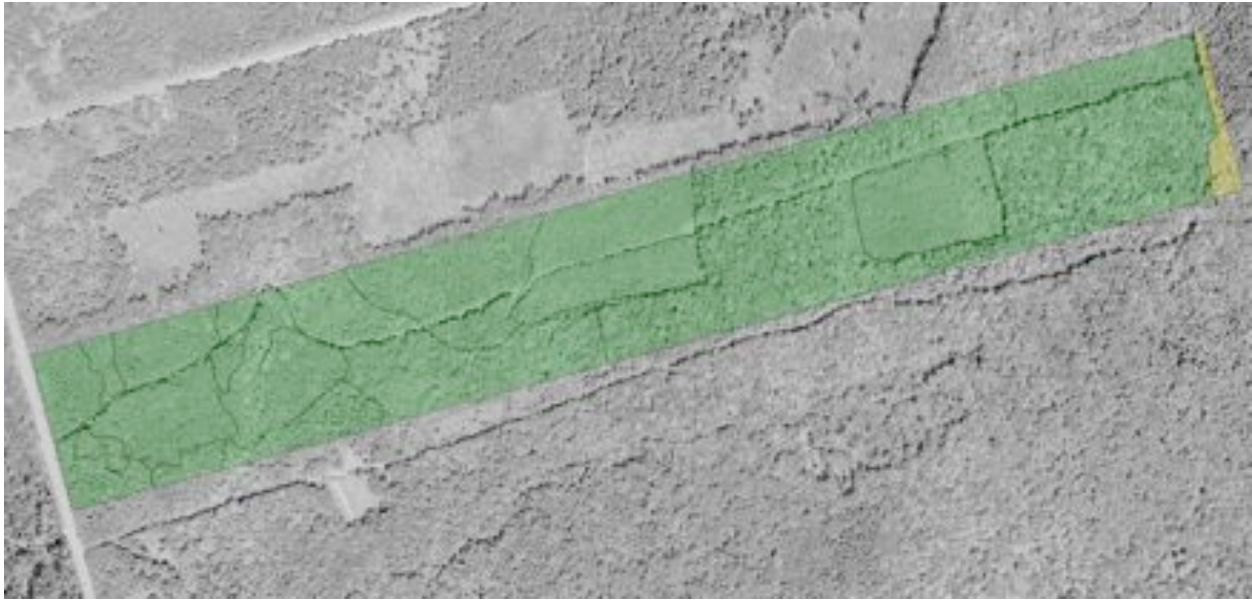
Total % ground cover: 0% moss 0% shrub 0% flower 10% tree 90% leaf liter

Coarse woody debris: low medium # **Snag trees:** low **Quality of snags:** medium

Wildlife:

Treatment: There are many good quality trees that can be cut and used for wood products especially in the eastern section of the stand. Removing some of these large trees will create openings that can then be used for planting sites.

The western section of the stand has ample space for plantings but has lots of coarse woody debris. Eastern hemlock, white pine, red spruce, yellow birch, ironwood, red oak, alternate leaf dogwood, hobblebush, beaked hazelnut, and witch hazel would all be excellent species for the plantings.



Stand #18 (1.02 ha): This stand is located in the south eastern corner of the property and has little to no slope. The stand has a tall but spacious feel to it with red maple and sugar maple being the dominant species and white birch and American beech as the codominant species. The stand also has large amount of balsam fir regeneration. The trees are tall and straight. Next to the stand along the east boundary of the property is a clear cut that extends into the next property. That clear cut also has lots of balsam fir regeneration.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: red maple	40% of stand	age: 50-60	Diameter: 22.5cm	Ht: 20.2m
#2: sugar maple	30% of stand	age: 50-60	Diameter: 21.9cm	Ht: 20m
#3: white birch	20% of stand	age: 50-60	Diameter: 20.9cm	Ht: 19.8m
#4: American beech	10% of stand	age: 50-60	Diameter: 26.7cm	Ht: 19.1m

Tree source: stump sprout: 10% seed: 90% plantation: 0%

Maturity class: mature

Canopy description: tall patchy with side light

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: medium #1: balsam fir Ht: 1m #2: red maple Ht: 0.2m #3: striped maple Ht: 0.1m #4: sugar maple Ht: 0.1m

Other plant species: yellow birch, bunchberry, wild lily-of-the-valley, prince pine, wood fern, lung lichen, old man's beard, ground pine, Indian pipe,

Total % ground cover: 0% moss 0% shrub 0% flower 30% tree

Coarse woody debris: medium # **Snag trees:** low **Quality of snags:** low

Wildlife:

Treatment: Create openings for plantings by removing areas of dense balsam fir. Plant red oak, white ash, yellow birch, eastern hemlock, ironwood, alternate leaf dogwood, beaked hazelnut, and witch hazel. Some of the trees may be worth looking at for wood product us.

Priorities:

1. Plant the clear cuts first as to not waste any time on growing potentials for those areas in a healthy and sensible way in Stands # 2 and 13.
2. Help or speed up the transition from balsam fir stand to a mix wood stand in areas of Stand # 2, 3, 4, 10, and 13.
3. Stump sprouting red maple and other potential crop trees should be pruned and released to promote high value and healthy tree growth in Stand# 14, 16, and 17.
4. Harvest some of the trees in Stand #1, 7, 8, 9, 11, 13, 15, 18, and 19 if appropriate.
5. Whenever possible transplant trees from old woods road and surrounding stands for plantings.
6. Plant more shade tolerant shrubs to increase diversity, increase food sources, provide habitat, and, in general, improve the health of the forest.

Additional comments: Direct seeding of red oak and witch hazel should be tested where possible as an inexpensive but effective way to propagate these high-value and rare species.