

Public Forest Land Operational Plan

#585976

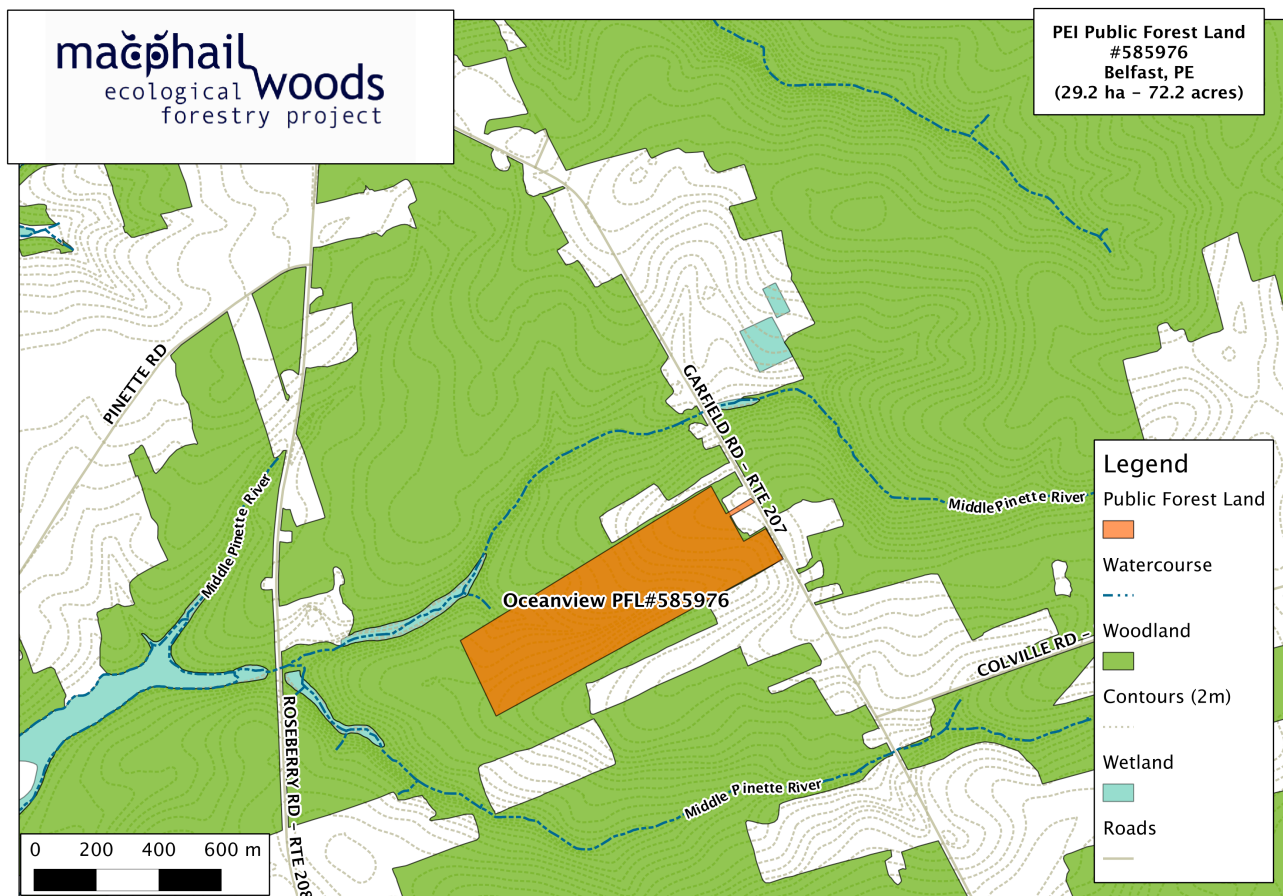
Oceanview, PEI
(29.2 ha – 72.2 acres)

Prepared by:
the Macphail Woods Ecological Forestry Project



PROPERTY DESCRIPTION

The property is located in Oceanview in Queens County beside two small private lots which leave only a third of the property's eastern side directly bordering the Garfield Road. This eastern half of the property was once farmed which was then abandoned and left to regenerate into a



predominantly white spruce forest. Most of that forest was then clear cut and replanted as pine and spruce plantations. The total plantation area represents 11ha or 37.7% of the property and the remaining spruce forest represents 2.8ha or 9.7% of the property. The remaining 15.4ha or 52.6% was left as forest for partial wood cuts and is definitely the most valuable section on this site. Throughout the property the land is well-drained and can certainly produce high-quality trees. There are many sizable, high-value trees in many of the stands, including eastern hemlock, red spruce, sugar maple, American beech, yellow birch, white birch, and trembling aspen. An old forest road runs almost the entire property length from east to west and is starting to overgrow beyond the plantations.

Special notes:

Many species of birds were seen and heard on the property with 2 ground nests found. Signs of red squirrel, snowshoe hare, and coyote were identified during the survey and a garter snake was seen on the forest road. This strongly indicates that this property supports good wildlife activity. Many wild flowers species are present on this property.

Much of the original forest has abundant amounts of ground hemlock growing in it. That ground hemlock could be in the future harvested responsibly for market use if worthwhile.

There are several vary large trembling aspen in stand #7 that could be used for wood products. No garbage piles were discovered on the property.

STAND TREATMENTS

Stand #1 (2.82 ha): This stand borders the Garfield Road on the southeast corner of the property as well as extends behind the two private properties. There is also a separate section of the stand inside Stand #3. Made up of the remnant spruce forest regeneration that grew up from the old field, Stand #1 is relatively flat with a slight slope to the south-west. In the west section of the



stand there is a patch cut with one small white pine growing among the balsam fir and white spruce regeneration.

Drainage: high

Watercourse: no

Ploughed: yes

Origin: old field

Dominant and codominant trees:

#1: white spruce	90% of stand	age: 70	Diameter: 31.9cm	Ht: 21m
#2: trembling aspen	7% of stand	age: 40+	Diameter: 21.4cm	Ht: 17m
#3: white birch	3% of stand	age: 30+	Diameter: 17.8cm	Ht: 17.5m

Tree source: stump sprout: 5% seed: 95% plantation: 0%

Maturity class: mature

Canopy description: tall, closed with some side light

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: medium #1: balsam fir Ht: 1m #2: red maple Ht: 0.5m #3: sugar maple Ht: 0.2m

Other plant species: red maple, white birch, red spruce, eastern hemlock, striped maple, American beech, pin cherry, downy alder, speckled alder, European mountain ash, willow (spp), blueberry, bayberry, clintonia, starflower, wild lily-of-the-valley, wild strawberry, narrow-leaf goldenrod, shinleaf, old man's beard, Indian pipe, grass (spp), sedge (spp),

Total % ground cover: 5% moss 20% shrub 10% flower 20% tree

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

Wildlife: red squirrel, hermit thrush, snowshoe hare scats, northern parula

Treatment: Fell some of the white spruce to create patch cuts. The majority of the patch cuts would be a good place for red spruce, white pine and eastern hemlock, with only the most open patches being reserved for plantings of red oak and white ash. Witch hazel and other shade tolerant shrubs would also add diversity to the stand.

Thinning out some of the balsam fir should be done before too much matures.

The west section of the stand has a comparatively open canopy which would allow for less shade tolerant species to be planted. The existing patch cut in that area should be thinned of balsam fir which would release the lone white pine and create space for planting other species such as eastern hemlock.

Stand #2 (4.68 ha): This stand is predominantly Norway spruce plantation with some competition from gray birch, pin cherry, red maple, and trembling aspen. The quality of these trees is inconsistent leading to pockets of both healthy and poor growth. The topography is flat and gently slopes to the south. In addition to the plantation, some red oak and white ash were planted at 15 to 20 m intervals along the forest road running east to west on the northern edge of the stand. This stand lacks snag trees.



There is a large white pine 37.2 diam. 20+m tall after the first bend in the forest road (see waypoint).

Drainage: high

Watercourse: no

Ploughed: yes

Origin: clear cut

Dominant and codominant trees:

#1: Norway spruce	30% of stand	age: 15	Diameter: 8.1cm	Ht: 6m
#2: gray birch	30% of stand	age: 15	Diameter: 4.5cm	Ht: 7m
#3: pin cherry	20% of stand	age: 15	Diameter: 2.9cm	Ht: 6m
#4: red maple	10% of stand	age: 15	Diameter: 4cm	Ht: 6m
#5: trembling aspen	10% of stand	age: 15	Diameter: 4cm	Ht: 7m

Tree source: stump sprout: 20% seed: 50% plantation: 30%

Maturity class: immature

Canopy description: short and closed

Stocking: overstocked

Tree quality: medium

Regeneration <5m: medium #1: pin cherry Ht: 0.3m #2: red maple Ht: 0.3m

Other plant species: balsam fir, large toothed aspen, serviceberry (spp), European mountain ash, red berried elder, wild rose, blueberry, raspberry, bayberry, wild strawberry, sarsaparilla, starflower, wild lily-of-the-valley, narrow-leaf goldenrod, fireweed, bracken fern, chanterelle

Total % ground cover: 10% moss 50% shrub 10% flower 30% tree

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

Wildlife: red squirrel, hairy woodpecker, blue jay, black-capped chickadee, common yellowthroat, American robin, and a garter snake was seen on the forest road

Treatment: Release potential crop trees. Create a series of patch cuts throughout the stand, focused around existing gaps and poor quality trees (multiple leaders, diseased or otherwise damaged). These patch cuts would be suitable for red oak, white ash, yellow birch, alternate leaf dogwood, beaked hazelnut, and witch hazel, all of which would greatly increase biodiversity in the stand. Existing open patches in the stand will need some brush piled to create accessible planting sites.



Stand #3 (3.25 ha): This stand is a thick plantation of white pine that runs along the northern face of the Norway spruce plantation. The topography is still flat from being farmed with little slope. The stand has open areas where wild flowers and raspberry flourish. A small number of planted red pine trees were discovered in one location in the middle of the stand. This stand has no snag trees.

Drainage: high **Watercourse:** no

Ploughed: yes

Origin: clear cut

Dominant and codominant trees:

#1: white pine 60% of stand age: 10 Diameter: 10.4cm Ht: 6m

#2: pin cherry 10% of stand age: 10 Diameter: 2.8cm Ht: 4.5m

#3: gray birch 20% of stand age: 10 Diameter: 3.4cm Ht: 5m

#4: white birch 10% of stand age: 10 Diameter: 3.9cm Ht: 5m

Tree source: stump sprout: 10% seed: 30% plantation: 60%

Maturity class: immature

Canopy description: short, closed, and patchy

Stocking: overstocked

Tree quality: medium

Regeneration <5m: medium #1: red maple Ht: 1m #2: pin cherry Ht: 0.2 #3: balsam fir Ht:

1m #4: white spruce Ht: 1m

Other plant species: red maple, trembling aspen, white spruce, large tooth aspen, blueberry, raspberry, bay berry, sarsaparilla, narrow-leaved hawk's-beard, starflower, fireweed, wild lily-of-the-valley, narrow-leaved goldenrod, common mullein, wild strawberry, grass (spp)

Total % ground cover: 10% moss 10% shrub 20% flower 50% tree

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

Wildlife: many large anthills, black-caped chickadee, yellowthroat, blue jay, fox or coyote scat, a ground nest with three eggs of white-throated sparrow was found as the female was flushed.

Treatment: Potential crop trees should be released and pruned with priority given in this order: yellow birch, white pine, white birch, sugar maple, and red maple. Remove poor quality white pine such as those which are diseased, crooked, or have multiple leaders. Creating patch cuts centered around those white pine removed will allow for plantings of red oak, white ash, eastern hemlock, yellow birch, sugar maple, alternate leafed dogwood, beaked hazelnut, witch hazel and hobblebush. Existing open patches in the stand will need some brush piled to create accessible planting sites.



Stand #4 (1.51 ha): This stand started as a mixed red spruce/white pine. The red spruce growth was stunted early on which led to the plantation being overtopped by natural regeneration: pin cherry, trembling aspen, balsam fir, sugar maple, striped maple and red maple . As a result, the red spruce make up absolutely no part of the canopy.

An American beech half way in the stand with a diameter of 33cm and a height of 14.5m was left uncut during the clear cutting (see waypoint).

The pin cherry are the dominant species on the western side of the stand, while the trembling aspen are more numerous on the eastern side. The stand has open patches where wild flowers and raspberry flourish.

Drainage: high

Watercourse: no

Ploughed: yes

Origin: clear cut

Dominant and codominant trees:

#1: trembling aspen 40% of stand age: 10 Diameter: 4cm Ht: 7m

#2: pin cherry 30% of stand age: 10 Diameter: 2.7cm Ht: 6m
#3: balsam fir 10% of stand age: 10 Diameter: 3cm Ht: 4m
#4: White birch 10% of stand age: 10 Diameter: 3.1cm Ht: 6m
#5: sugar maple, striped maple, red maple 10% of stand age: 10 Diameter: 3cm Ht: 4m

Tree source: stump sprout: 20% seed: 60% plantation: 20%

Maturity class: immature

Canopy description: tall, closed with sidelight

Stocking: overstocked

Tree quality: medium

Regeneration <5m: medium #1: balsam fir Ht: 1m #2: red maple Ht: 0.5m #3: yellow birch Ht: 0.1m #4: White spruce Ht: 0.1m #5: white birch Ht: 0.1 #6: striped maple Ht: 0.2 #7: pin cherry Ht: 0.1

Other plant species: serviceberry (spp), wild raisin, red berry elder, ground hemlock, raspberry, common cinquefoil, wild strawberry, clintonia, starflower, aster (spp), sarsaparilla, wild lily-of-the-valley, lion's paw, narrow leaf goldenrod, Canada goldenrod, pearly everlasting, hawkweed, wild lettuce, bristly sarsaparilla, wood fern, clubmoss, grass (spp),

Total % ground cover: 10% moss 0% shrub 30% flower 60% tree

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

Wildlife: two red squirrels, hairy woodpecker, blue jay, snowshoe hare, raven

Treatment: Prune and release white birch, sugar maple, red maple, and any other potential crop trees. Create patch cuts within areas of dense pin cherry or trembling aspen for plantings to improve stand diversity. Suitable species would include: red oak, white ash, eastern hemlock, alternate-leaved dogwood, beaked hazelnut, and witch hazel and hobblebush. Existing open patches in the stand will need some brush piled to create accessible planting sites.

Some one foot eastern hemlocks are growing on the forest road in Stand #5 and could be used for plantings.

Stand #5 (10.88 ha): Stand #5 is the largest stand on the property and is predominantly a mixed multi-age forest. There are many large trees in this stand including one very large sugar maple with a diameter 81cm and 25m tall. The topography is flat with a gentle southerly faced slope leading to a small valley where a seasonal stream flows in the spring. There are some patches of balsam fir located in the south-west corner and the northern section of the stand. Large amounts of ground hemlock are present in the north of the stand. There are three small open patches in this stand with a few multi-stemmed red maple and large amounts of



wood fern as ground cover. An exciting clump of rose twisted stack was found in the largest of the three.

Drainage: high

Watercourse: seasonal

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: red maple	40% of stand	age: 50	Diameter: 21.5cm	Ht: 22m
#2: eastern hemlock	15% of stand	age: 60	Diameter: 43.5cm	Ht: 18.2m
#3: sugar maple	10% of stand	age: 50	Diameter: 31cm	Ht: 20.1m
#4: yellow birch	10% of stand	age: 50	Diameter: 20.2cm	Ht: 20m
#6: white birch	10% of stand	age: 50	Diameter: 23.5cm	Ht: 19.5m

#7: white spruce 5% of stand age: 60 Diameter: 33.7cm Ht: 22.2 m

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: good #1: balsam fir Ht: 0.3m #2: striped maple Ht: 0.15m

#3: red maple Ht: 0.15m #4: sugar maple Ht: 0.1m #5: yellow birch Ht: 0.1m

#6: American beech Ht: 0.1m

Other plant species: American beech, white pine, trembling aspen, mountain maple, ground hemlock, European mountain ash, red berried elder, wild raisin, bunchberry, clintonia, sarsaparilla, starflower, wild lily-of-the-valley, common lady's slipper, painted trillium, wild cucumber, false solomon's seal, lion's paw, wild lettuce, goldthread, baneberry, twin flower, wood fern, sweet fern, oak fern, ground pine, ground cedar, running pine, lung lichen, old man beard, Indian pipe

There is also rose twisted stick, and bracken fern in some of the open patches

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

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

Wildlife: red squirrels, black-capped chickadee, hairy woodpecker, 2 mourning doves, a hermit thrush nest with three eggs was discovered when the female was flushed off the nest at the end of the forest road end.

Treatment: There is a large sugar maple that is beginning to show signs of disease that may be harvested if there is a market for craft wood. Other large trees may be removed for fuel or craft wood; as always following the standard of removing only a half cord of wood per acre. In addition to providing wood, these extractions will create patch cuts that can be used to plant sugar maple, eastern hemlock, red spruce, ironwood, and any shade tolerant shrubs.

If harvested responsibly and depending on marketability, the ground hemlock in this stand could provide income.

There are dense areas of balsam fir that could be cut to create patch cuts for plantings.

All three open patches can be treated as patch cuts. The larger of these patches, located near the end of Stand #8, should be planted with 10-15 white pine, 10 red oak (possibility for direct seeding), 5 white ash, and 20-25 sugar maples as well as alternate leaved dogwood, beaked hazelnut, and witch hazel. The sugar maple seedlings can be taken from Stand #7 as many are growing there.

The other two existing open patches, located near the northern boundary of Stand #5, can be planted with 5 white pine, 5 red oak, 2 white ash, 10 sugar maple, 3 eastern hemlock and 2 witch hazel.

Stand #6 (1.58 ha): This stand is located west of the plantations and east of Stand #5. It originates from a clear cut which has regenerated predominantly with trembling aspen and pin cherry with lesser amounts of red maple and grey birch. The topography is flat with a gentle south-western facing slope to Stand #7

Drainage: high **Watercourse:** no
Ploughed: no
Origin: clear cut
Dominant and codominant trees:



#1: trembling aspen	50% of stand	age: 10	Diameter: 2.5cm	Ht: 5m
#2: pin cherry	30% of stand	age: 10	Diameter: 3.5cm	Ht: 5.2m
#3: grey birch	10% of stand	age: 10	Diameter: 3cm	Ht: 5m
#4: red maple	10% of stand	age: 10	Diameter: 4cm	Ht: 4.5m

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

Maturity class: immature

Canopy description: small closed patchy

Stocking: overstocked

Tree quality: medium

Regeneration <5m: medium #1: gray birch Ht: 0.2m #2: white birch Ht: 0.2m #3: red maple Ht: 0.2m #4: white spruce Ht: 0.2m

Other plant species: sugar maple, white spruce, balsam fir, raspberry, bunchberry, narrow leaf goldenrod, grass (spp), wild strawberry, fireweed, wild lily-of-the-valley, red berried elder, pearly everlasting, bracken fern, sage (spp),

Total % ground cover: 10% moss 0% shrub 20% flower 30% tree

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

Wildlife: shrew, blue jay, wood ant hills, American golden finch, eastern wood pewee

Treatment: Prune and release any existing crop trees.

Make 10-15 ten meter diameter patch cuts to plant red oak, white ash, yellow birch, striped maple, eastern hemlock, alternate-leafed dogwood, beaked hazelnut, and witch hazel to create diversity, add seed sources, and introduce high value crop trees. Some one foot eastern hemlocks are growing on the forest road in stand #5 and could be used for these plantings.



Stand #7 (0.70 ha): This stand is predominantly very large trembling aspen. The topography resembles a small valley with steep side slopes reaching 15% to 18%. The valley gently runs from east to west into Stand #5.

Drainage: high **Watercourse:** the small valley is probably a seasonal stream in the spring due to runoff.

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: Trembling aspen	70% of stand	age: 45-55	Diameter: 34.5cm	Ht: 22m
#2: sugar maple	20% of stand	age: 45-55	Diameter: 18.5cm	Ht: 20m
#3: red maple	5% of stand	age: 45-55	Diameter: 30.5cm	Ht: 21.5m
#4: white spruce	5% of stand	age: 45-55	Diameter: 21.5cm	Ht: 21m

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

Maturity class: mature

Canopy description: tall and patchy with side light

Stocking: fully stocked

Tree quality: medium high

Regeneration <5m: medium #1: balsam fir Ht: 0.5m #2: red maple Ht: 0.1m #3: sugar maple Ht: 0.1m #4: striped maple Ht: 0.2m #5: trembling aspen Ht: 0.2m

Other plant species: eastern hemlock, blueberry, clintonia, sarsaparilla, starflower, wild lily-of-the-valley, painted trillium, false solomon's seal, common lady's slipper, purple violets, wood fern, bracken fern, lung lichen, old man's beard, Indian pipe, sedge (spp),

Total % Ground Cover: 0% moss 0% shrub 20% flower 40% tree

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

Wildlife: Blue jay, red tail hawk

Treatment: Create patch cuts through harvesting small areas of trembling aspen.

Most of these patch cuts as well as any other open sections can be planted with 10-15 red oak. As well as a mix of yellow birch, red spruce, alternate-leaved dogwood, beaked hazelnut and witch hazel as conditions permit.

Stand #8 (2.14 ha): This stand is located on the central southern property boundary. While predominantly populated with red maple, it also has 10 to 12m balsam fir growing through most of the stand. An even aged mix of species comprises the rest of the stand, lacking any significant amount of eastern hemlock. Snags trees are of low quantity.

The topography is flat with a gentle north-east facing slope toward Stand #7.

Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: red maple 50% of stand age: 45 Diameter: 21.7cm Ht: 19m

#2: white birch 10% of stand age: 45 Diameter: 22.8cm Ht: 19m



#3: yellow birch 10% of stand age: 45 Diameter: 20.4cm Ht: 20.4m

#4: American beech 5% of stand age: 50 Diameter: 35.4cm Ht: 22m

#5: balsam fir 5% of stand age: 30 Diameter: 11.9cm Ht: 12.5m

Tree source: stump sprout: 35% seed: 65% plantation: 0%

Maturity class: mature

Canopy description: tall and closed

Stocking: fully stocked

Tree quality: medium

Regeneration <5m: some #1: balsam fir Ht: 2m #2: red maple Ht: 0.05m #3: striped maple

Other plant species: eastern hemlock, red spruce, sugar maple, ground hemlock, wild raisin, clintonia, sarsaparilla, starflower, wild lily-of-the-valley, common lady's slipper, painted trillium, false solomon's seal, ground pine, wood fern, bracken fern, Indian pipe,

Total % ground cover: 5% moss 10% shrub 20% flower 30% tree

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

Wildlife: red squirrel, dark-eyed junco

Treatment: Harvest some red maple for fuel or craft wood. Create patch cuts by removing balsam fir where eastern hemlock and white pine can be planted to increase diversity and add valuable crop trees. Red spruce, alternate-leaved dogwood, beaked hazelnut, witch hazel and other rare shade tolerant species can be planted in patch cuts.

Stand #9 (0.66 ha): This stand is located along the southern property boundary east of stand #8. Many similarities exist between this stand and Stand #5, with this stand having a larger concentration of eastern hemlock and being slightly older on average. The eastern hemlocks are distributed in small clumps of five or six throughout the stand. In the stand is a large yellow birch 36 diameter.



Drainage: high

Watercourse: no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: eastern hemlock	30% of stand	age: 150	Diameter: 37.5cm	Ht: 16m
#2: red maple	30% of stand	age: 40	Diameter: 22.6cm	Ht: 19m
#3: yellow birch	20% of stand	age: 50	Diameter: 36.3cm	Ht: 18m
#4: American beech	10% of stand	age: 40	Diameter: 20cm	Ht: 18.5m
#5: balsam fir	5% of stand	age: 30	Diameter: 17.1cm	Ht: 15m

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

Maturity class: mature

Canopy description: tall, closed, and patchy

Stocking: fully stocked

Tree quality: medium

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

Other plant species: white birch, red spruce, sugar maple, clintonia, starflower, wild lily-of-the-valley, painted trillium, false solomon's seal, wild cucumber, wood fern, bracken fern, interrupted fern, ground pine, Indian pipe,

Total % ground cover: 5% moss 0% shrub 10% flower 20% tree

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

Wildlife: blue jay

Treatment: Create openings for plantings through harvesting lowest quality and least healthy trees for fuel wood. The existing open patch in the stand will need some brush piled to create an accessible planting site. In any openings plant white pine, red spruce, alternate-leaved dogwood, beaked hazelnut, and witch hazel. This would be a good stand to try direct seeding of witch hazel.

Stand #10 (0.1 ha): Located just inside of the northeast corner of Stand #5, this stand is almost completely comprised of large eastern hemlock with a few other tree species making up less than 10% of the stand. The stand lacks any shrubs and has a low quality and quantity of snag trees.



Drainage: high **Watercourse:** no

Ploughed: no

Origin: partial cut

Dominant and codominant trees:

#1: eastern hemlocks 90% of stand age: 150 Diameter: 41.8cm Ht: 20m

#2: white birch, yellow birch, American beech, white spruce 10% of stand age: 40

Diameter: 19cm Ht: 19m

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: low #1: red spruce Ht: 0.1m #2: balsam fir Ht: 0.2m #3: red maple Ht: 0.1m

Other plant species: starflower, wild lily-of-the-valley, wood fern, Indian pipe,

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

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

Wildlife:

Treatment: Plant hobblebush and witch hazel to add shrubs to develop rare seed sources and for wildlife enhancement.

No treatment needs to be done to the trees.

Priorities:

1. Keep old woods road navigable and free of any tree regeneration.
2. Harvest some of the large trembling aspen in Stand #7.
3. Whenever possible transplant trees from old woods road and stands for patch cut plantings.
4. Plant more shade tolerant shrubs to increase diversity, increase food sources, provide habitat, and, in general, improve the health of the forest.
5. Prune and release young potential crop trees in Stands #2, #3, #4 and #6.

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.