Managed Forest Tax Incentive Program
Effective Date:

This plan applies to the 20 year period from January 1, 2024 to December 31, 2043, with activities described for the 10 year period from January 1, 2024 to December 31, 2034.

- A 10 year plan renewal must be approved and submitted by July 31, 2034.
- A 5 year progress report must be submitted by July 31st 2029.

1. Registered Property Owners

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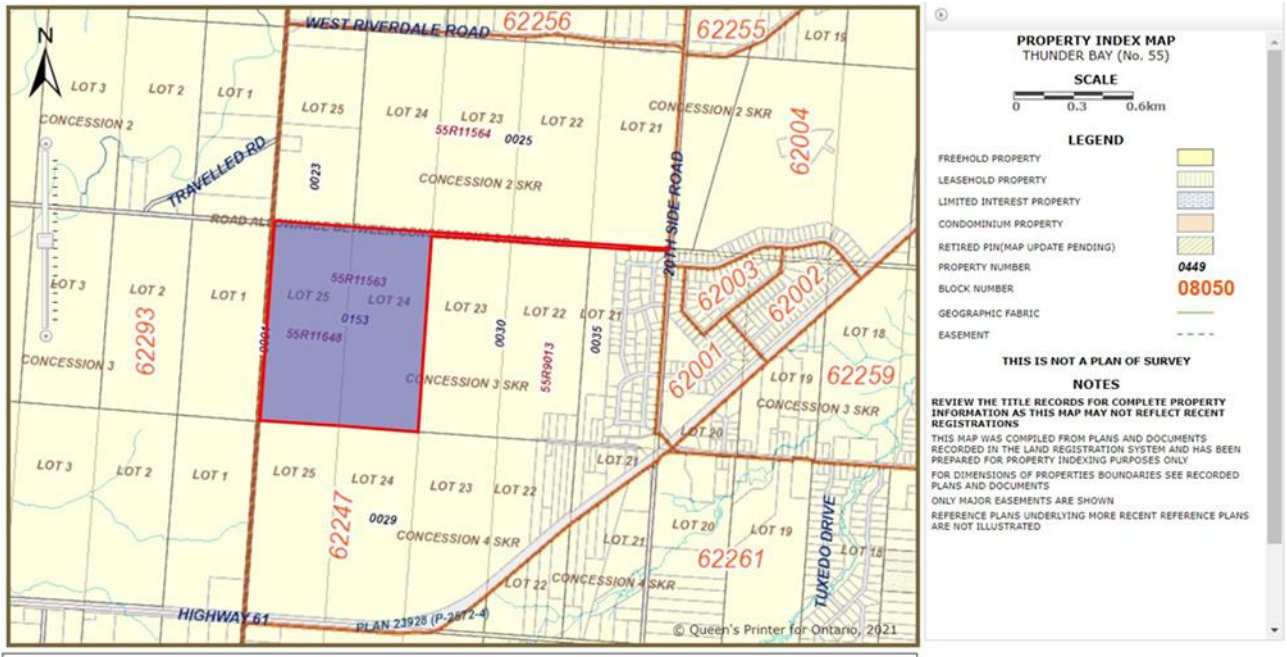
2.0 Property Location and Description:

The Thunder Bay Nordic Trails (TBNT) Kamview property is located inside the boundary of the City of Thunder Bay and approximately 10 km south of the Thunder Bay airport. Property includes the road allowance between CON I and CON II.

Figure 1. Property Index Map

PIN	Type	Address	Area	Map Status
62247-0025	Parcel	851 20TH SIDE RD	1622767m²	

UTM: Click on map to get coordinates



PIN	Type	Address	Area	Map Status
62247-0153	Parcel	851 20TH SIDE RD	850381m²	

UTM: Click on map to get coordinates

Description	Roll Number	Assessment Area (acres)	Non-MFTIP Area (ac)			MFTIP Area (ac)			
			8.5 ac			606.92 ac			
			Com*	CL!	Open#	Forest	Open Area supports trees	Open Area cannot support trees+	**Total All**
851 20th Side Rd CON 2 S/R Lot 22 23 PT 21 24 CON 3 S/R Lot 24 25 PT RD ALLOW RP 551R11648 PT 1 & 7 5511563 PT 1 55 R11564 PT2	5804 030 106 11600 0000	615.42	3.15*	0	5.35#	539.98	68.34	37.10+	615.42

3.0 Detailed Property Description (Table 1)

***Commercial = Upper parking lot, chalet, septic field**
!Conservation Land
 # Open = Stadium area and lower parking lot
+ Beaver Ponds

4.0 Property History

4.1 Past Activities

The property was purchased by Thunder Bay Nordic Trails in March 2002 from the Ontario Provincial Government. The property had always been under provincial ownership until this sale. Thunder Bay Nordic Trails had been managing the property for the purpose of public recreational cross country skiing under a contract agreement with the Ministry of Natural Resources from 1984 to 2002. The land had seen some small forestry harvesting operations over time for poplar firewood to heat buildings at the nearby Provincial Correctional Facility

4.2 Geology, Geomorphology, Soils

The property is wholly located within the limits of the City of Thunder Bay. Despite the relatively small size of the property, its geological history is quite varied and interesting. Generally the bedrock geology of the area is characterized by meta-sedimentary rocks including shales, sandstones and greywacke.

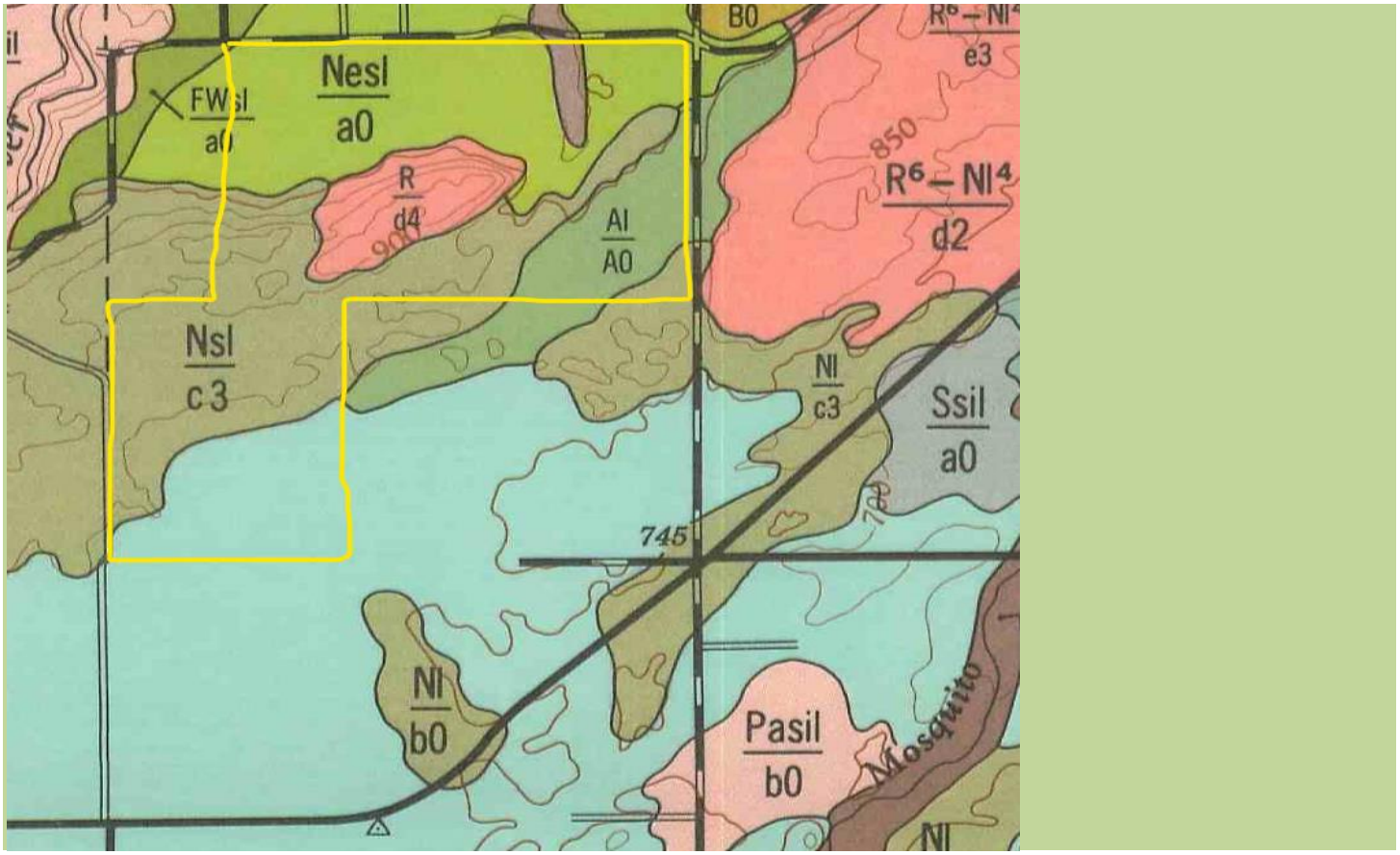
The west central portion of the property features a large escarpment-like feature that is suspected to be geologically similar to the Nor'Wester Mountain Range which characterizes much of the area south of Thunder Bay. Sedimentary shale and greywacke are overlain by more resistant materials (possibly a sill of diabase). The escarpment is surrounded by an accumulation of broken sedimentary talus which actually extends considerably beyond the visible apron of broken stone and supplements the mineral soils extending 100 meters or more from the base.

The area north of the chalet to the area of the “stadium” and west to the foot of the escarpment, is characterized by deep to moderately deep morainal (till) soils with coarse to fine loamy textures.

Elsewhere on the property (away from the highlands) the soils are essentially deep fine sands (part of the lower end of the valley train of the Kaministiquia River). These deep sandy soils vary considerably in moisture regime based on relatively small variations in elevation. Lower, wetter elevations are often overlain by peaty phase or deep organic soil deposits.

There is a deep ravine running south to north in the eastern portion of the property which begins in a drainage area off the property to the south. Drainage eventually flows north into the Kaministiquia River.

Figure 2. Kamview Surface Soils Map: (Source: Government of Canada/Agriculture)



Legend

Map Colour	Map Symbol	Soil Name	Texture	Subgroup	Materials	Drainage
	Al a0	Arthur	Fine sandy loam	Gleyed Eutric Brunisol	Noncalcareous very fine sand 10-20cm	Imperfect
	Nsl c3	Nolalu	Loam, silt loam Sand loam	Orthic Eutric Brunisol	Noncalcareous find sandy loam stony glacial till	Good
	R	Rock		Non soil	Less than 10cm soil over bedrock	None
	Osil b0	Oskandoga	Clay, silty clay loam, silt	Gleyed Gray Luvisol	Clacareous reddish clay loam, clay or silty clay varved, no stones, 0% slope	Imperfect
	Nesl a0	Neebing	Gravelly sand loam, sand loam	Gleyed Gray Brunisol	Noncalcareous sand and gravel fluvial outwash	Imperfect

5.0 Landowner Objectives

Six objectives are listed from the most important to least important. The ranking is applicable to what the owner's priorities are over the next 20 year period.

Table 2. Management Objective Importance (less → most)

Recreation	☐	☐	☐	☐	☒
Forest Diversity	☐	☐	☐	☒	☐
Investment	☐	☐	☒	☐	☐
Environmental Protection	☐	☐	☒	☐	☐
Wildlife Habitat	☐	☐	☒	☐	☐
Forest Products	☒	☐	☐	☐	☐
Education	☐	☒	☐	☐	☐

5.1 Objective Details & Strategies

Recreation: TBNT has on average 1500 full time members and approximately 10,000 day users who cross country ski and snowshoe in the winter period annually. The value of the property, trails, vistas and ponds is appreciated by the members of TBNT and the general public who are allowed to use the property during the cross country skiing off-season at no charge. Trails are regularly maintained during the off season and during the winter ski season by a sophisticated and expensive snow groomer. During the off-season people make use of the trail system for walking, hiking, bird watching, dog walking etc. The first two main objectives in the Letters Patent of the Corporation are to:

i. Promote the activity of cross country skiing through the provision of high quality recreational skiing opportunities to area residents and tourists.
ii. To ensure that well developed and maintained cross country ski trails are available for area recreationists.

The high levels of recreational use of this property do not appear to be immediately compatible with forest harvesting and renewal operations and in fact standard operating procedures (mechanized harvest in large areas) would be distinctly incompatible with the area's principle use. Making use of smaller cut blocks (still with mechanized harvesting) spread out over the stands with balsam fir working group will lessen the impact on the recreational value.

Forest Diversity: The value and appreciation of the property comes from its close proximity to the City of Thunder Bay and its unique topography and forest cover. Currently Balsam Fir composes a high percentage of the forest composition which is extremely susceptible to spruce budworm. The last budworm outbreak in the area was in the early 1980's and because of its cyclical nature is expected to reoccur in the very near future. The Forest Insect and Disease Survey Unit has seen an increase in male budworm moths captured in their pheromone traps from 2019-2022 in Northwestern Ontario. Harvesting with mechanical equipment to remove some of the Balsam and replacing it with a mixture of hardwood and conifer (less susceptible to the budworm and more sustainable in general) is planned. Planting lumber/pulp species such as spruce and pine will occur but these are not intended specifically for lumber or pulp production. Access may also provide challenges to harvesting and extraction due to low wet areas on the trail system. The Kamview location is very close to the Resolute Forest Products mills thus facilitating relatively small harvest events. Harvesting will occur in summer/fall seasons when the ski trails are the driest and less prone to damage from heavy equipment.

Nature appreciation: Kamview's members and the general public who make use of the property in the off season do appreciate the trails and the access they provide to "nature". The property does provide opportunities for wildlife viewing, "forest bathing" and other aspects of nature appreciation.

Investment: The property is valuable as a cross country ski facility with mature and immature forest cover, open meadows and stunning vistas. Future value will be maximized with harvesting Balsam Fir and replacing it with a mix of

other species less susceptible to the spruce budworm, more resilient to other potential pests and capable of enhancing bird and wildlife habitat.

Wildlife habitat: The property hosts a range of animals including lynx, snowshoe hare, pileated woodpecker, grouse, bats, fox, coyotes, wolves, whitetail deer and bears. As noted above, a diversification of tree species will enhance the area for all kinds of wildlife.

Environmental protection: The property supports upland and lowland forest habitat. The Board of Directors at Kamview is interested in maintaining healthy forest cover which will provide benefits to the environment. At this time, the property hosts a successful carbon sequestration planting that also provides an aesthetic break from adjoining cleared property (e.g. the Thunder Bay Correctional Centre).

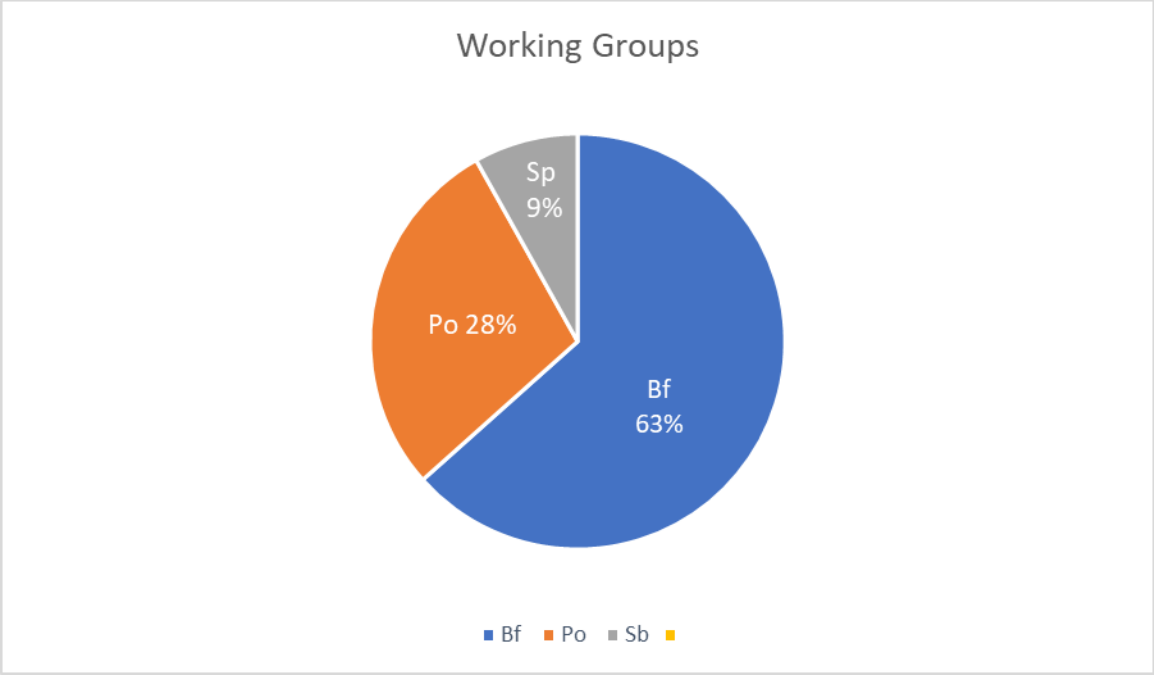
Education: Kamviews' forest is considered an outdoor classroom and is used by various primary, secondary and post secondary schools for outdoor education. The Forest Technology course at Confederation College makes use of the forest for teaching silviculture and forest inventory techniques.

6.0 Forest Description:

The Kamview ski area property lies in the transitional forest zone between the Great Lakes St. Lawrence forest type which is strongly represented within 100 km south of the US border and the boreal forest which characterizes most of Northwestern Ontario and is the dominant forest condition north of the city of Thunder Bay. Most of the forest is second growth having naturally regenerated following harvesting/land clearing. (According to a local historian, poplar was sporadically harvested as fuelwood to heat buildings at the nearby Provincial Correctional Facility on highway 61). Located on the ecotone (transition zone between two forest types), the area provides an excellent opportunity to establish a range of species, some of which might be better able to flourish under a changing climate. . Aerial photography from 1969 indicates most of the forest was dominated by poplar working group.

There are 3 dominant working groups identified on the forest.

Figure 3 Working Groups



6.1 Spruce Budworm Susceptibility:

The development of this plan was initiated to deal with the eventuality of insect damage due to spruce budworm infestation.

The dominant working group on the property is the Balsam Fir working group. Buds and needles of the balsam fir are the preferred food for spruce budworm, the second most important food source being white spruce with black spruce being relatively resistant to budworm damage. Balsam Fir flushes (bud break) earlier in the spring than the spruces and it retains fewer years of needles, both factors which make it highly susceptible to severe damage and or mortality. Balsam Fir trees are a significant component of almost every working group on the property, not just the Balsam Fir working group. For example, areas dominated by black ash contains 34% balsam fir, white birch-37%, poplar-24% and black spruce-10%.

At the time of writing this plan, the OMNRF is actively spraying crown forests in Northeast and Southern Ontario to protect forested areas against the budworm. In Northwestern Ontario, the Forest Insect and Disease Survey Unit reports an increase in male budworm moths captured in 20 pheromone traps spread throughout the region 2019-2022 (100+ male moths per trap in samples closest to Kamview Nordic Centre in 2021).

The age class of the current forest, the abundance of balsam fir and the cyclic nature of the population of the spruce budworm are cause for concern regarding the health of the forest and stability of the forest cover on the property. A major infestation of spruce budworm has the potential to kill dense young stand of balsam fir. The resulting dead standing thickets of balsam fir would be visually unappealing, significantly poorer for some wildlife populations, a serious problem for trail (ski and snowshoe) maintenance and a significant forest fire threat for at least 15 years until there was significant understory green-up and collapse of the overstory. New growth would be again dominated by balsam fir.

6.2 Working Groups

As previously noted, the Balsam Fir working group is the dominant working group on the property and represents 63% of the manageable forest land. This working group is broadly distributed across the property especially in the central core area.

The Poplar working group ranks second in total area at 31% of the manageable forest land. It is the dominant forest type in the SW corner of the property. This working group is generally found on areas which were likely previously arable lands and are composed of deep sandy glacio-fluvial soils.

White Birch dominates a small area located on and below the north slope of the escarpment. It is not a separate forest stand but constitutes approximately 6% of the manageable forest.

The Black Spruce forest is subdivided into two working groups based on the management characteristics of each. Black spruce on organic soil is 8% of the manageable forest land and it is exclusively in the black spruce stand which is circumscribed by the “Tamarack” ski trail. The Black Spruce on the mineral soil is 1% of the manageable forest land and is located mostly in the same area surrounding the black spruce stand on organic soils. This working group is not on organic soil however there are likely peaty phase (shallow organic areas) incorporated within it as well as a lot of moist mineral soil.

The older black ash forest forms small pockets throughout the entire area (but especially in KV 02 and KV 05) and is generally in poor condition. Black ash is often part of a super canopy overtopping either balsam fir or an understory of willow and other brush species. It comprises approximately 9% of the overall forest.

Table 3. Stand Classification

Forest Unit	Classification	Open Area supports trees (ac)	Open Area Cannot support Tress (ac)	Forest Management Strategy 1st 20 yr term (ac)	Forest Management Strategy 2nd 20 yr term (ac)
KV01	Non MFTIP		3.15		
Kv02	MFTIP			102.55	
KV03	Non MFTIP		0.35		
KV04	Non MFTIP		5.0		
KV05	MFTIP			51.66	
KV06	MFTIP	8.2			
KV07	MFTIP			16.72	
KV08	MFTIP			18.92	
KV09	MFTIP				31.28
KV10	MFTIP		11.96		
KV11	MFTIP			35.48	
KV12	MFTIP			8.48	
KV13	MFTIP			3.76	
Kv14	MFTIP		1.3		
KV15	MFTIP			43.14	
KV16	MFTIP			39.48	
KV17	MFTIP			22.26	
KV18	MFTIP			8.82	
KV19	MFTIP			18.33	
KV20	MFTIP		15.34		
KV21	MFTIP				109.10
KV22	MFTIP	60.14			
Total (ac)		68.34	37.1	369.60	140.38
Total All					615.42

Figure 4. Forest Compartment Map

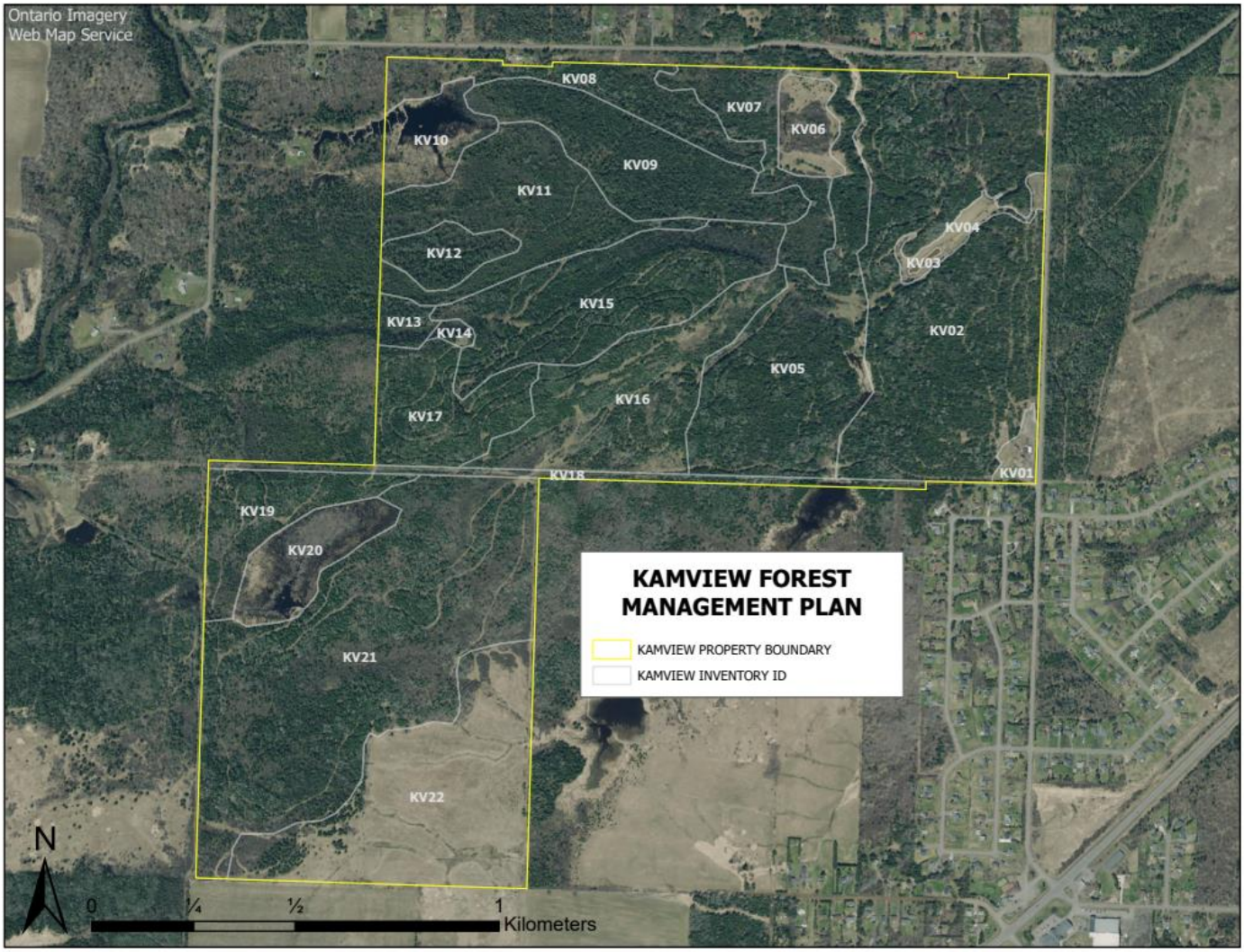


Figure 5. Poly Type

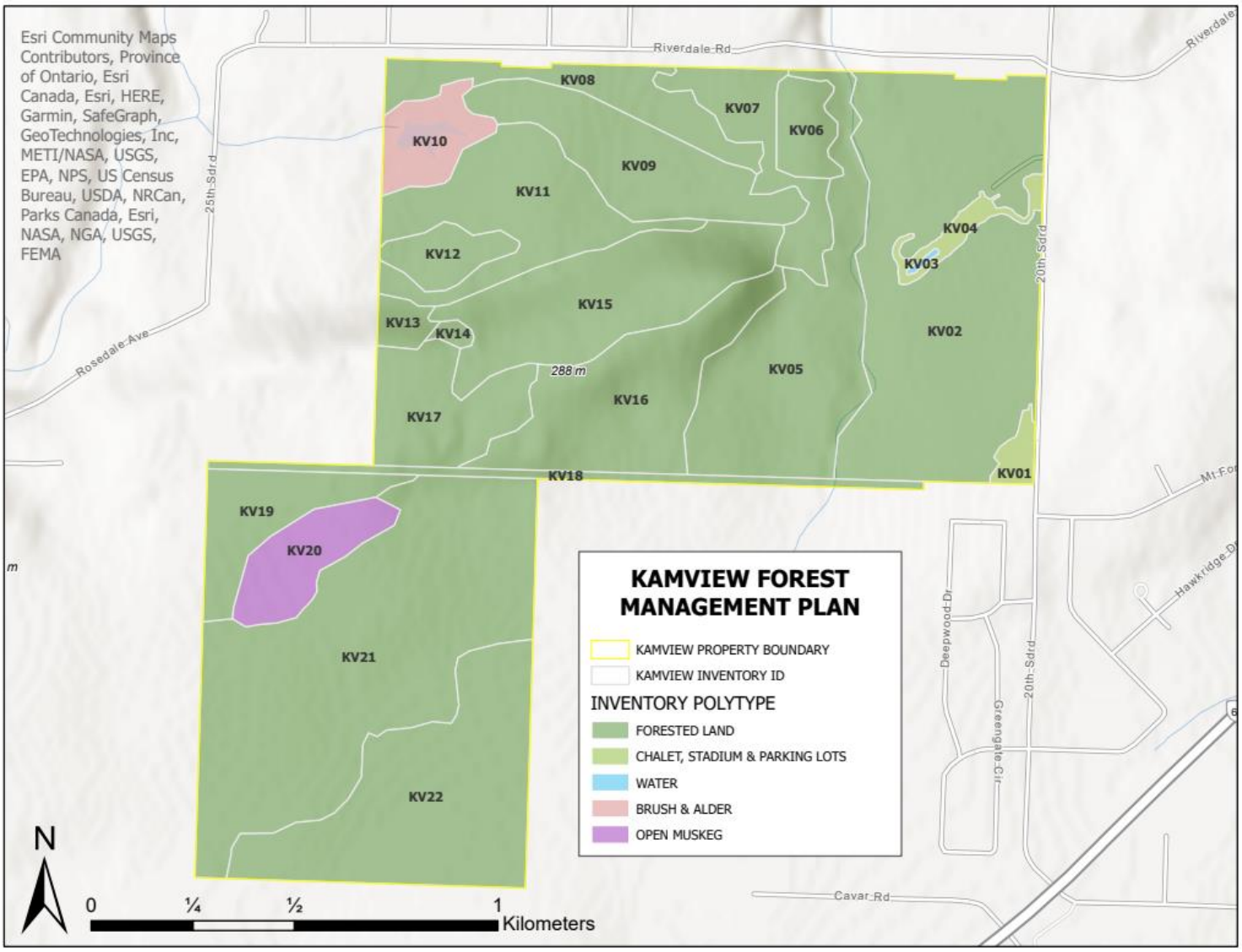


Table 4. Forest Compartment Descriptions

Stand #	Species Composition	Polytype	WG	Age	Ht (m)	Stkg	Site Class	Basal Area (m2/ha)	Area (ac)
KV01	Chalet, Septic, Parking	UCL							3.15
KV02	Bf8 Po1 Bw1	Forest	Bf					25.5	102.55
KV03	Irrigation Pond	Water							.35
KV04	Stadium, Parking Lot	Meadow							5.0
KV05	Bf7 Po1 Bw1 Sw1	Forest	Bf					31.2	51.66
KV06		Alder/Meadow							8.2
KV07	Bf6 Ab1 Po1 Bw1 Sb1	Forest	Bf	50	18	65		23.4	16.72
KV08	Bf7 Bw1 Pj1 Po1	Forest	Bf	45	18	65		24.4	18.92
KV09	Sb8 La2	Forest	Sb	75	22	65		37	31.28
KV10	Beaver Pond	Open Wetland							11.96
KV11	Bf6 Ab2 Bw2	Forest	Bf	55	20	65		38	35.48
KV12	Sb3 La3 Ab1 Bf1 Sw1	Forest	Bf	75	22	65		31	8.48
KV13	Bf6 Po3 Bw1	Forest	Bf	55	20	65		25.3	3.76
KV14	North Lookout	Rock							1.3
Kv15	Bf7 Sw2 Bw 1	Forest	Bf			65		25.2	43.14
KV16	Po4 Bf 3 Bw1 Pj1 Ab1	Forest	Po	70	22	65	2	26.3	39.48
KV17	Bf6 Po4	Forest	Bf					34.8	22.26
KV18	Bf6 Po4 (Road Allowance)	Forest	Bf	30	15				8.82
KV19	Bf6 Po4	Forest	Bf	50	18	80	2	31.6	18.33
KV20	Beaver Pond	Open Wetland							15.34
KV21	Po5 Ab3 Bf1 Sp1	Forest	Po	70	22	65		27.5	109.10
KV22		Meadow							60.14
Total All									**615.42 Acres**

6.3 Prescription:

Forest Management Strategy 1 (first 20 yrs):

Long Term - 20 yrs: Most of the Balsam Fir dominated mixed wood stands are in a mid-successional stage. (41-50yrs) The older age classes (eg. 51 to 60+ years) are beginning to die and break apart. The 41-50 year old age class dominates the productive forest, but even in the Poplar working group, Balsam Fir comprises a significant understory.

Avoiding the negative impact of a severe spruce budworm infestation by reducing the susceptibility of the growing stock is the principle objective of this plan. Aesthetic damage and the risk of forest fire though severe in the short term (5-10 yrs), would sooner or later disappear, maintenance issues related to collapsing forest would eventually ease (but could cost Kamview upwards of $10,000 per year in contracting a mechanical harvester). The most significant impact of permitting the forest to decline and re-establish itself through budworm decline rather than through fire or forest harvesting is to perpetuate and complete the transition to a low value, and short lived forest rife with forest insect and disease issues. The forest would naturally regenerate to Balsam Fir.

The principle objective of this management strategy is to reduce the susceptibility of the forest to damage from a spruce budworm infestation and damage across the entire property. Harvesting the Balsam Fir and planting with species less susceptible to spruce budworm the year after harvest will reduce the likelihood of further infestations.

Short Term -10 yrs: Management activities recommended during this period are to engage in forest harvesting (with commercial logging contractor) and renewal operations to reduce budworm susceptibility and to convert as much of the forest as possible to mixedwoods. Species to be considered for planting will include Black Spruce, White Spruce, White Pine, Jack Pine, Tamarack, Cedar, Red Oak, Bur Oak, American Elm, Sugar and Red Maple, and Yellow Birch/White Birch.

Rather than engaging the entire operation in a single season of harvesting, 3 separate harvesting operations at years 1, 7 and 13 with removal of approximately one third of the total per session.

Hand planting of 1-2 year old seedlings will follow in years 2, 8 and 14. Some chemical tending will occur where warranted and some stock will have to be physically protected from the white tailed deer.

These plans will have to remain fluid and will depend on severity of budworm infestation, marketability of the biomass, weather and trail conditions.

Important Considerations for Harvesting:

- No amount of damage to ski-trails is acceptable
- Damage to non-target vegetation and residual trees must be minimized
- Harvesting must be designed so as to minimize the visual impact from the trails; some short term aesthetic impact is inevitable however minimizing negative impacts must be considered a high priority
- Forest renewal of harvested area must be prompt and effective and must contribute to a condition of reduced budworm susceptibility
- Forest operations must be conducted in a spirit of concern for the impact on neighbours from a noise, road safety, road protection and public relations perspective
- Operations must take place during the non-ski season; other recreational activities on the property including *ad hoc* use of the trails by walkers must be considered and the must be coordinated so as to limit interference and maximize public safety

- No pollution or contamination of the soil, surface or ground water is permissible. Industrial littering is not permissible.
- Notification to Kamviews' membership will take place before harvesting begins through a) one public meeting over Zoom, b) harvesting plans posted on the Kamview website.

Forest Management Strategy 2: (post 20 yr period)

Two forest stands on Kamview's property are not threatened by the spruce budworm and can be left alone for this current plan period. Stand KV09 inside the "*Tamarack*" trail is almost entirely Black Spruce growing on organic soil and is in the 71-80 year old age class. This stand should remain healthy for another 20 years.

The other forest stand that is not threatened by the spruce budworm is dominated by Trembling Aspen and is currently in the 61-70 year old age class. Stand KV21 is located in the southwest corner of the property growing on deep sandy and lacustrine soils.

Wetlands - Beaver ponds (KV10, 20)
Area that cannot support trees.

There are 2 distinct Beaver ponds on the property at this point in time. The total area of these wetlands is under the 25% limit for area that cannot support trees. Current beaver activity appears to be non existent as the areas have been drained for several years without any new activity. It is typical for Beaver populations to fluctuate with food availability, predator populations, and trapping activity. It is possible to maintain current water levels with management of beavers through trapping if they return. If the beavers return this will be discussed with a local trapper to explore the effect of removing some of the beavers from the area.

Areas adjacent to the ponds host several wetland species of trees and shrubs, including willow, dogwood, alder, balsam poplar, black ash, and black spruce. There are no prescriptive instructions for management of these areas. If Beavers have abandoned the area and dams have been removed, the ponds have dried up and the wet area is now populated with wetland species now growing on their fringes.

Open Areas – Support Trees (KV22, 06)

A large open area in the south west corner of the property (KV 22) has both deep sandy and lacustrine soils (clay). The area is in the "*Meadows"* ski trail and offers views of the "Nor-Wester" mountains. The intention at this time is to leave this area alone to maintain the view of the Nor Westers. There are sections along the edges where alder have started to encroach that may be suitable to planting with species that are adapted to wetter soils, such as red maple and American elm.

A smaller open area (KV06) on the northern boundary of the property has young natural regeneration of Pj on deep sandy soils. The centre of this stand is a natural drainage currently with speckled alder and some young scattered naturally regenerated black and white spruce,

8. Table 5. Ten year Activity Summary

Compartment	Objective	Activity	Quantity (ac/kms)	Year Scheduled	Comments
Entire Area	Maintain ski and snowshoe trails	Brushing, clearing, bridge/culvert maintenance	32kms/13kms	Every year	Ski trails will be kept open by trimming back branches and I removing downed+danger trees
Productive Forest Area (Strategy 1 stands)	Reduce spruce budworm susceptibility	Mechanical Harvesting, Planting, Tending, monitor for insect and disease	Throughout compartment	3 Harvests 6 year interval	Dependent on multiple factors (weather/access, marketability)
Productive Forest Stands (Strategy 2 stands)	Hold for future considerations	Monitor for insect and disease	Throughout compartments	annually	Monitor for weather, insect, or disease disturbance

Tree Species Abbreviations			
Trembling Aspen	Pt	Balsam Fir	Bf
Balsam Poplar	Pb	Black spruce	Bs
Large-tooth Aspen	Plt	White spruce	Sw
White Birch	Bw	White pine	Pw
Yellow Birch	By	Red pine	Pr
Sugar Maple	Mh	Jack pine	Pj
Red Oak	Or		
Bur Oak	Ob		
		Tamarack	
Red Maple	Mr	(Larch)	La
Black Ash	Ab		
Silver Maple	Ms	Manitoba Maple	Mm

9. Table 6. Report of Activities

Compartment	Objective	Activity	Quantity	Year Completed	Comments