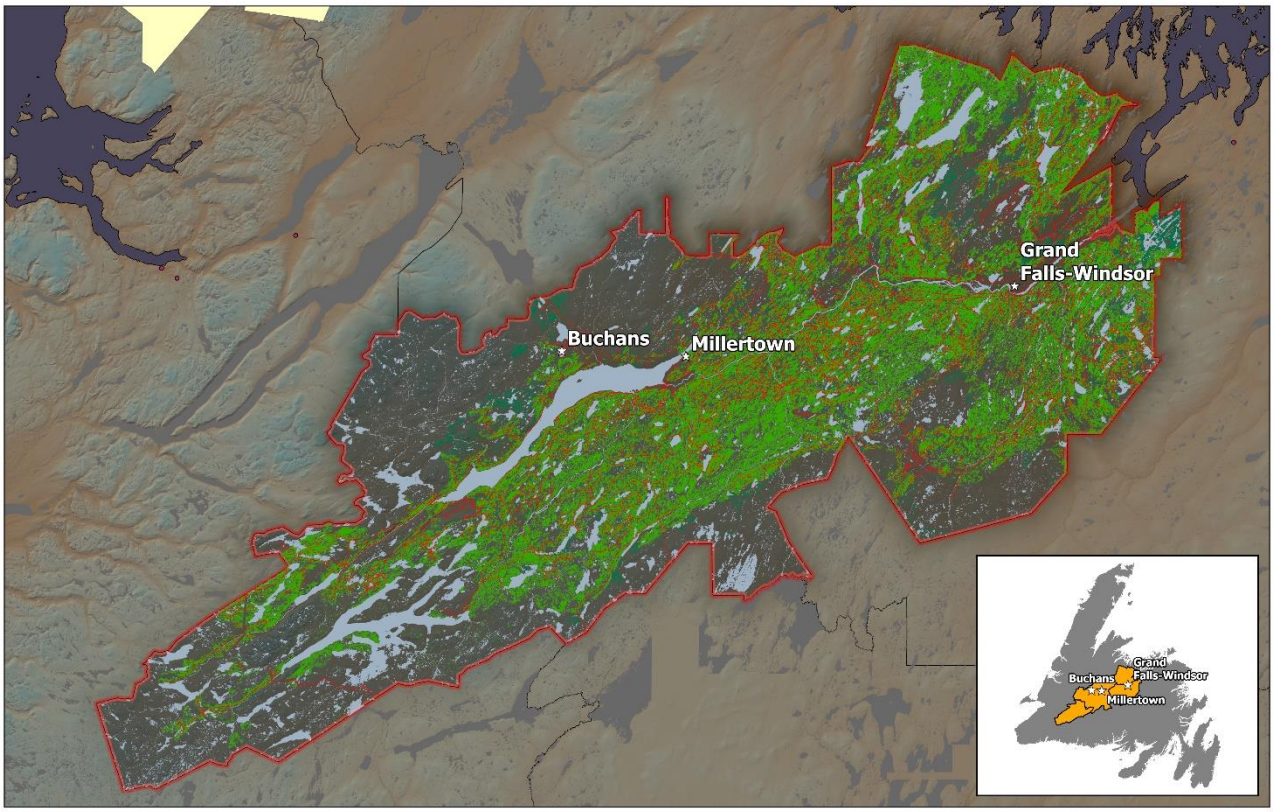
ZONE FIVE

FOREST ECOSYSTEM MANAGEMENT PLAN

2026 – 2030



Department of Fisheries, Forestry, and Agriculture
Forestry & Wildlife Branch

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INTRODUCTION

This new five-year plan is scheduled for the period January 1, 2026, to December 31, 2030, and represents proposed forestry activity upon crown timber lands within Forest Management Districts 10, 11, 12 and 13. The management of this land is consistent with strategies and philosophies implemented by the Department of Fisheries, Forestry and Agriculture on all crown land managed districts within the province. This five-year operating plan incorporates established provincial planning requirements, environmental protection guidelines, and standard operating procedures developed under a stringent Environmental Management System (EMS) registered under the ISO 14001:2015 standard. The five-year plan incorporates values, forest characterization, ecosystem descriptions, and includes a section on forest carbon. Forest Management Districts 10, 11, 12 and 13 are adjacent and share common ecoregion characteristics and collectively form Planning Zone Five. Within a planning zone, there is a requirement for each tenure to develop a five-year operating plan. These plans must be submitted to the Forestry and Wildlife Branch and the Department of Environment for an environmental assessment review. Forest Management Districts 11, 12 and 13 are comprised entirely of crown land, while FMD 10 has both Crown and Corner Brook Pulp and Paper (CBPPL) tenure. As a result, there will be two (2) five-year plan submissions for this zone. Throughout this five-year plan, references will be made to Districts 10, 11, 12 and 13 individually but when combined they will collectively be referred to as Planning Zone Five or the zone.

This document will attempt to fully integrate the presentation of information and discussions for crown land in the zone. Discussion and information will be presented separately for each district where warranted based on unique and distinct differences in scope and content. The more descriptive sections of this plan will be generic in nature and give information for the entire zone as well as some broad comparative statistics. Finally, this document will attempt to build on the positive results of previous Sustainable Forestry Management (SFM) five-year plan documents. Information will be updated as required, or new sections will be added as any new information is available, following the adaptive management strategies of SFM.

SECTION 1 DESCRIPTION OF THE LAND BASE

1.1 General

1.1.1 Location

Planning Zone Five encompasses Forest Management Districts 10, 11, 12 and 13 (Figure 1). It is in central Newfoundland & Labrador and extends from Victoria Lake in the west to the Bay D 'Espoir highway in the east and from Island Pond in the south to North and South Twin Lakes in the north. Major towns located within the zone are Bishop's Falls, Grand Falls-Windsor, Badger, Millertown and Buchans. Districts 10 and 11 are administered from Bishop's Falls, District 12 from Springdale, and District 13 from St. Georges.

1.1.2 History

The natural resources of the zone have played a major role in the well-being of the residents. Since the earliest settlement, forest and fish resources have been the mainstay of the economy. Initially, the coastal areas, near District 10 and 11, were used as a source of fuelwood and construction materials for houses, schooners, other boat constriction and other fishery related items (stages, lobster pots, slipways, etc.).

One of the earliest commercial uses of the forest in central Newfoundland was to supply materials for the construction of the railway in the late 1800's. This combined with the granting of the Reid Lots opened a large portion of previously inaccessible area to commercial activity. It resulted in an increase in the number and size of sawmills and perhaps most importantly the occurrence of large forest fires caused by the railway. (Wilton, Evans 1974):

> **"Coincident with the building of the railway and for several decades thereafter the region was swept by a number of conflagrations until**

there was scarcely any land that had not been burned on at least one occasion. With improved forest protection and the destruction of combustible materials near the railroad line most of the area was given an opportunity to recuperate. The result today is extensive stands of high quality black spruce in pulpwood size-classes." (Wilton, Evans 1974).

Paper production started in 1909 with the opening of a mill at Grand Falls – Windsor by the Anglo-Newfoundland Development (AND) Company. In the first half of the 1900's exports of material for pulpwood and mine pit-props were also common. Once the paper mill was firmly established, domestic cutting in the zone was limited to cutovers, hardwoods, and burnt timber. Commercial sawmill activity was also limited. Historically White Pine was harvested by the Paper Company for use in bridges and for dunnage for paper shipments from Botwood. In the early 1960's, the AND Company merged with the Price Brothers and Company Limited to form a new company called Price Pulp and Paper Limited. On December 4, 2008, Abitibi-Bowater inc. announced the mill closure and on December 16, 2008, the majority of the Abitibi-Bowater land holdings were repatriated to the Crown and have been subsequently managed under Crown responsibility.

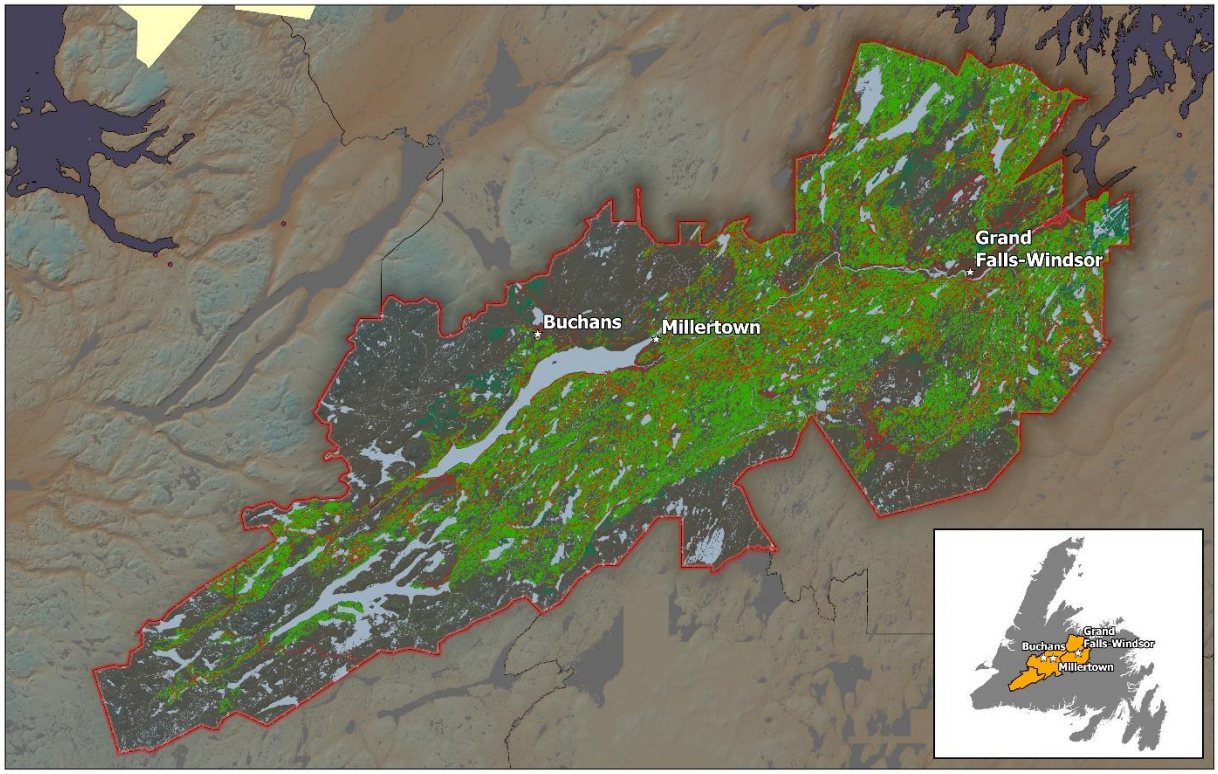

Figure 1: Location of Planning Zone 5

1.1.3 Ownership

Forest Management Districts 11, 12 and 13 are comprised entirely of crown land and managed under Crown authority. In January 2020, an agreement was signed between the former Fisheries, Forestry, and Agriculture (FFA) Department Corner Brook Pulp and Paper (CBPPL), which has resulted in both Crown and CBPPL tenure within Forest Management District 10.

1.2 Physical

1.2.1 Topography and Hydrology

The central portion of the zone comprises most of the area and is gently undulating with slopes seldom exceeding 10 percent. In contrast, the terrain is very rough and hilly in the northern portion

of District 10. The Gaff Topsails and Buchans Plateau occur north of Beothuk Lake in District 12 and consists of highland areas and windswept barrens. The southern and southwestern portion of the zone consists of rolling hills that grow steeper as one moves farther south. Elevation ranges from 0 at the coast to 610 m on the Buchans Plateau. Most of the zone is forested and interspersed with non-commercial forest, barren, bog, wet bog, and domed bogs. The most productive forest occurs on the more undulating terrain. The areas with the highest productivity occur in the river valleys. forest productivity decreases beyond 400 metres culminating in rock and soil barrens at the highest elevations.

The more prominent highland areas in the zone include Hodges Hills in the northeast, Buchans Plateau and Gaff Topsails in north central and the eastern extent of the Annieopsquotch range in the southwest. The zone is dominated by three major river basins: the Exploits, Victoria and Lloyds River systems. These rivers originate in the interior areas and drain large watersheds. Beothuk Lake is of extreme importance as a reservoir to allow flow control on the Exploits River for the generation of hydroelectricity.

1.2.2 Geology

In most of the zone, the underlying bedrock is composed of sedimentary and metamorphic rocks consisting of shale, schist, and sandstone dating from the Paleozoic era, with later intrusions of granite and diorite. The area has been heavily glaciated and stony till with a sandy loam-to-loam texture covers the bedrock in most locations. In the northern section near Mark's Lake, Frozen Ocean Lake and Lewis Lake treeless granite outcrops occur on steep terrain. There are several steep isolated rock hills or monadnocks located at Hodges Hills, Hungry Hill and Harpoon Hill which rise sharply above the surrounding terrain.

Glacial activity has played a prominent role in shaping landscape features. Most of the central area is covered with bedrock derived glacial till with lesser areas of outwash terraces and moraine deposits. There is a local network of outwash terraces composed of well-sorted sands and gravel, along a narrow band of an earlier drainage channel of Stoney Brook. Eskers and kame terraces,

composed of coarse-grained materials that have limited moisture holding capacity, are common. There are also some local moraine deposits below 150 meters.

In the Buchans Plateau area north of Beothuk Lake there are three major types of bedrock: (1) medium to coarse grained granite to the north, (2) volcanic rock immediately north of Beothuk Lake from Buchans Junction to the Shanawdithit lowlands, and (3) red sandstone, conglomerate and shale in the Shanawdithit lowlands. The Buchans area is covered with a thick deposit of glacial till which are generally drumlin shaped in the direction of ice movement. Most of the area is covered by upland barrens which consist of extensive areas of bog-soil-rock complexes above 244 meters elevation. These uplands can be divided based mainly on elevation; the upper consisting of bog and exposed rock with thin deposits of glacial till and the lower composed of a bog-barren complex with a minor component of exposed rock.

In the southwest portion of the zone, the northerly extension of the Annieopsquotch range consists mainly of treeless granite outcrops. There is an area between this mountainous region and Beothuk Lake, which is underlain by softer, less erosion-resistant sandstone, shale, and conglomerate. Surface deposits in this location consist of medium textured glacial till, lacustrine and glacial-fluvial materials. Some material for the description of geologic features was taken from Batterson, M. J, 1991, 1999a, and 1999b.

1.2.3 Soils

For most of the zone soil profiles developed in the till are chiefly orthic and humo-feric podzols on the well-drained upland sites, and Gleysolic peats on the low-lying sites. The bogs are dominated by organic soil. The better-drained, more permeable soils, which offer better machine mobility and make better road construction material, are usually associated with poorer tree growth. The heavier, finer textured soils, which have greater water retention capabilities and poor vehicle mobility making them poor road building material, are usually associated with the best tree growth. These heavier soils form an almost continuous east-west strip along the river basins. There are some minor areas of more permeable soil within this area; however, they do not make up a significant portion.

There is little soil profile development in the Buchans Plateau which limits forest productivity. An escarpment along the northern shore of Beothuk Lake has surface deposits of glacial till with glacial-fluvial materials at the mouth of major brooks and streams. Forest growth is good along these sheltered slopes, although some areas are limited due to wet conditions. Soils are ferro-humic podzols which are dark soils with high organic content that usually occur on humid sites.

1.2.4 Climate

The eastern portion of the zone experiences warm summer temperatures and its location east of the Long-Range Mountains makes it one of the driest on the island. This area experiences the least wind and fog due to effects of the cold northeast winds off the Labrador Current. The area has high summer temperatures, low summer precipitation and prolonged dry periods which makes it very susceptible to fire.

The climate for the central and western portion of the zone is more moderate with lower summer temperatures and higher precipitation than in the east. It still has dry, warm summers relative to the rest of the island making fire occurrence more common.

The climate for the Buchans Plateau area is notable for its short growing season and permanent snow cover throughout the winter. Heavy drifting in exposed areas is common. Apart from a more moderate summer, the climate is like the extreme southern boundaries of the zone.

1.3 Ecosystems

1.3.1 Forest Ecosystems

An ecosystem is a community of interacting and interdependent plants, animals and microorganisms, together with the physical environment within which they exist (adapted from Perry, 1994). It is important to remember that within an ecosystem the interactions between the biotic and abiotic components are at least as important as the components themselves. Another critical characteristic of ecosystems is their overlapping boundaries. While each is definable in time and space, and distinguishable from adjacent ecosystems, each is intimately integrated with other local ecosystems. Additionally, each local ecosystem is nested within increasingly larger ecosystems. The scale at which an ecosystem is viewed is contingent on the species or abiotic characteristics under consideration. While planet earth represents the ultimate global ecosystem, complex ecosystems also exist under fallen logs and rocks.

A forest ecosystem, as the term implies, is an ecosystem dominated by tree cover. At the coarsest level, the forests of Planning Zone Five, like all forests on the island, form part of the boreal forest ecosystem. The boreal forest is a green belt which spans much of the northern hemisphere. It stretches from the Atlantic shores of Scandinavia through Russia, across Alaska, through the mid latitudes of Canada until it reaches the Atlantic Ocean again in Newfoundland and Labrador. One of the distinguishing characteristics of the boreal forest is the phenomena of periodic, catastrophic stand replacement natural disturbances such as fire and insect outbreaks which typically give rise to uniform, even aged forests dominated by a few tree species.

The tree species which characterize the Canadian boreal forest include black spruce, white spruce, balsam fir, eastern larch, trembling aspen, white birch and jack pine. All of these, apart from jack pine, commonly occur on the Island. However, by far the dominant species are black spruce and balsam fir; together they represent more than 90 percent of the growing stock on the island. Spruce is most abundant in North Central Newfoundland where a climate characterized by relatively dry, hot summers has historically favored this fire-adapted species. In Western and Northern Newfoundland,

the climate is somewhat moister, and fires are far fewer in this region resulting in the ascendance of balsam fir, a species which is poorly adapted to fire.

1.3.2 Ecoregions and Subregions

Damman 1979 defined ecoregions as areas where comparable vegetation and soil can be found on sites occupying similar topographic positions on the same parent material, provided that these sites have experienced a similar history of disturbance. Thus, an ecoregion cannot be defined in isolation from the physical landscape, but vegetation topo sequence, vegetation structure, floristic composition, and floristic distributions can provide the primary criteria. According to Damman, nine ecoregions are represented in Newfoundland. Each of these is further divided into subregions (also known as ecodistricts). All the Newfoundland ecoregions and subregions contain many of the same ecosystem variables. It is the dominance and variance of these variables (e.g., vegetation and climate) that determine their classification.

Figure 2 depicts Planning Zone Five relative to Damman's ecoregion classification system. The Central Newfoundland Forest Ecoregion encompasses most of the area in the zone and occupies the most productive sites. The Maritime Barrens and Long-Range Barrens Ecoregions occur in the north-central, southwestern peripheries and are less important in terms of forest productivity.

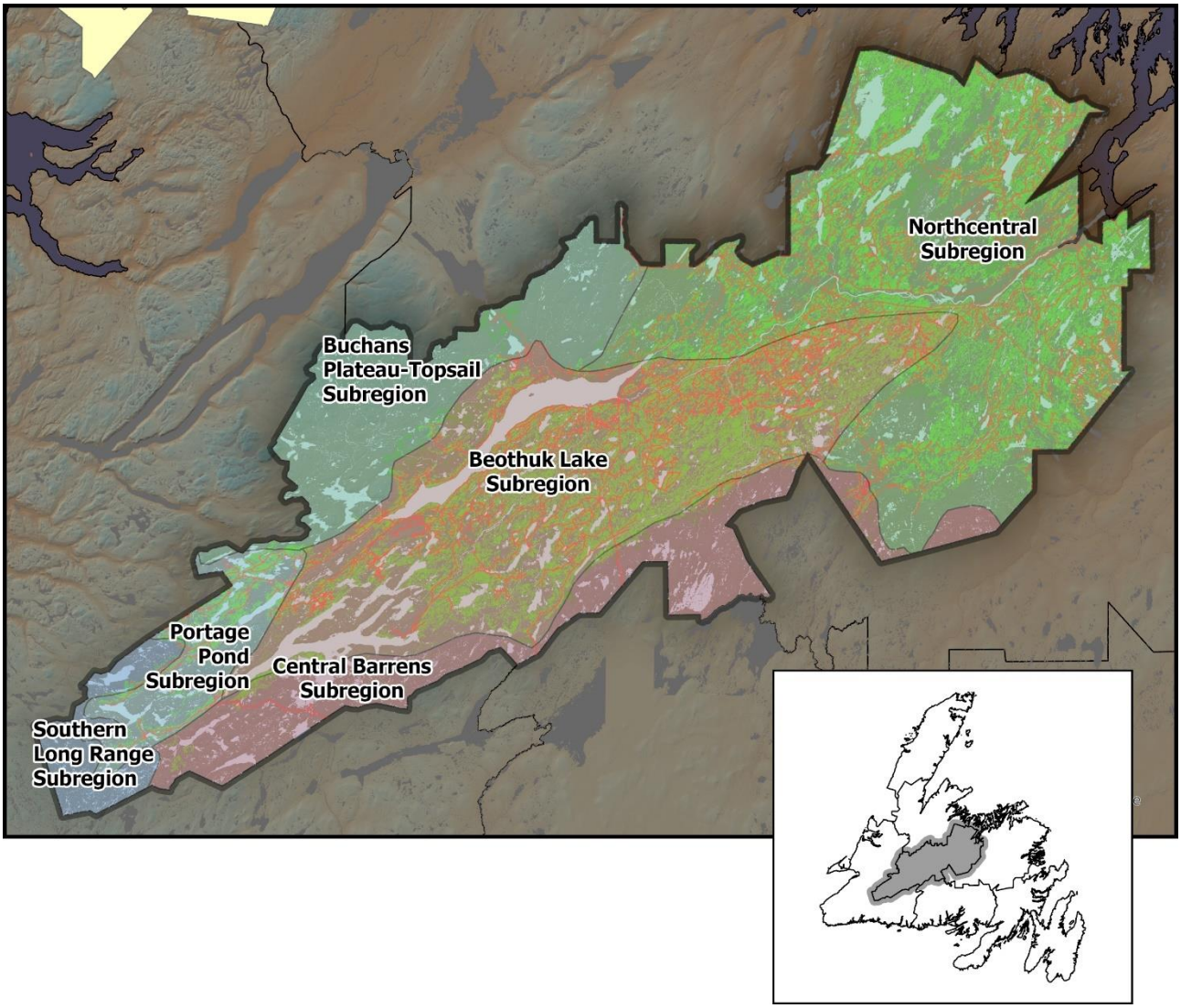

Figure 2: Ecoregions and Subregions of Planning Zone 5

Table 1 below depicts the percentage of the ecoregions and subregions that are represented in the zone.

Table 1: Percentage of Ecoregions and Subregions in Planning Zone 5

		Total Area within Province (ha)	Percentage of Total Area within Zone 5 Forest Management Districts				
			10	*11*	*12*	*13*	*Total*
Long Range Barrens							
	Buchans Plateau Topsail Subregion	369,811	0	0	35.7	3.7	39.4
	Southern Long Range Subregion	599,815	0	0	0	6.1	6.1
Central Newfoundland Forest							
	Portage Pond Subregion	149,320	0	0	0	43.8	43.8
	Northcentral Subregion	2,388,904	8.4	8.6	2.8	0	19.9
	Beothuk Lake Subregion	393,992	0	18.0	58.6	23.4	100.0
Maritime Barrens							
	Central Barrens Subregion	1,524,653	0	1.3	3.7	4.5	9.5

1.3.2.1 Central Newfoundland Forest Ecoregion

This ecoregion is in the north-central part of the island with a small outlet near Bay d 'Espoir. The topography is gently rolling to hilly with most elevations between 150 and 450 meters. It has the most continental climate in insular Newfoundland with the warmest summers and coldest winters. It has the least wind and fog of any ecoregion and a growing season of 140-160 days and average precipitation of 900-1300mm.

This ecoregion is heavily forested and is the most distinctly boreal part of the island. Balsam fir, black spruce, and to a lesser extent white birch are the dominant tree species. There is an extensive fire history thus fire origin stands of black spruce and white birch cover extensive areas in the northern and eastern portions. Trembling aspen forms local stands after fire but is restricted to the central and northern portions.

Hylocomium-balsam fir is the zonal forest type and is dominant in areas not disturbed by fire. *Kalmia*-black spruce and *Pleurosium*-balsam fir forests are also common. The *Kalmia*-black spruce-lichen forests, which occur on outwash sands and gravels, are unique to this ecoregion. Red pine also occurs but is restricted to extremely dry sites. This ecoregion comprises 74 percent of the zone in the Portage Pond, North Central, and Beothuk Lake subregions.

1.3.2.1.1 North Central Subregion

The North Central Subregion has the highest maximum temperatures, lowest rainfall, and highest forest fire frequency on the island. The subregion extends from Clarenville to Deer Lake with a mostly rolling topography of less than 200 meters. The history of fire is evident by the pure black spruce forest with white birch and aspen stands that dominate the subregion.

1.3.2.1.2 Beothuk Lake Subregion

The entire Beothuk Lake Subregion is in Planning Zone Five. The landscape is characterized by dense forests, bogs, and rolling hills. It is distinguished from the rest of the Central Newfoundland Ecoregion by having the coolest summers, highest precipitation, and shortest growing season. Despite this fact, there is still a high incidence of wildfire relative to other subregions of the province.

1.3.2.1.3 Portage Pond Subregion

This subregion includes the Annieopsquotch Mountains with elevations up to 677 meters. It has rugged topography and is heavily forested, primarily with balsam fir.

1.3.2.2 Long Range Barrens Ecoregion

This ecoregion comprises the highlands extending from the southwest coast to the northern part of the Northern Peninsula. It consists of three distinct units, the Southern Long Range, the Buchan's Plateau-Topsails, and the Northern Long-Range subregions. The subregions are separated by areas of continuous forest with the former two occurring in the zone. Fire is of little importance and has played no role in the formation of these barrens. There are large areas of exposed bedrock in this ecoregion which are acidic in nature.

Cool summers and cold winters are typical of this ecoregion. The mean daily temperatures are relatively low therefore the vegetative season is short. Snowfall can exceed five meters, and drifting is extreme throughout the winter. Snow cover is permanent throughout the winter and persists through to late spring. Western and southwestern facing slopes are severely exposed due to the prevailing winds from this direction.

This ecoregion contains mainly barren vegetation with shallow ribbed fens and tuckamore dominating the landscape. Kalmia angustifolia (Sheep laurel) heath is the predominant dwarf shrub vegetation with Empetrum (Pink crowberry) dominated heath covering exposed areas that are subject to active erosion. Arctic alpine vegetation (*Diapensia* and *Loiseleuria*) is common on all highlands and exposed sites. In areas with persistent snow cover, snowbank species such as moss heather, mountain sorrel, and dwarf bilberries are common.

Extensive areas of tuckamore, mostly black spruce less than one meter high, occur on slopes and in valleys, but are absent from hill summits. Speckled alder is completely absent being replaced by sweet gale along brooks. Mountain alder is common on wet and dry sites but does not form alder swamp. Shallow peatlands, patterned fens, and slope bogs cover extensive areas.

1.3.2.2.1 Buchans Plateau - Topsail Subregion

Buchan's Plateau-Topsails Subregion lies between Grand Lake and Beothuk Lake, and its southern edge extends into Districts 12 and 13. Most of the subregion is barren. Dwarf shrub heaths, shallow patterned peatlands, and areas with low krummholz dominate the landscape.

1.3.2.2.2 Southern Long-Range Subregion

The Southern Long-Range Subregion is located on the western portion of District 13 and covers the upper reaches of the river valleys and the higher terrain. In these river valleys, more of the southern plant species are present, particularly yellow birch. Speckled alder thickets occur on alluvial soils.

1.3.2.3 Maritime Barrens Ecoregion

This ecoregion extends from the east coast of Newfoundland to the west coast through to the south-central portion of the island. It is characterized by relatively mild winters with intermittent snow cover and the coldest summers with frequent fog and strong winds. The dominant landscape pattern consists of usually stunted, almost pure stands of balsam fir, broken by extensive open heathland. Good forest growth is localized on long slopes of a few protected valleys. The heaths are dominated by *Kalmia angustifolia* on protected slopes where snow accumulates and by cushions of *Empetrum nigrum* (Black Crowberry*)*, or *Empetrum eamesii* (Pink Crowberry*)* on windswept ridges.

1.3.2.3.1 Central Barrens Subregion

This subregion includes the barrens between the forests of Central Newfoundland and the foggy zone along the south coast. Summers are warmer, fog is less frequent, and snow cover is more persistent than in other subregions. Forest patches are common throughout the barren, but Arctic-alpine species are poorly represented. Speckled alder is present but does not form alder swamps and bogs are slightly raised or domed. This subregion occurs on the southern extremes of Districts 11, 12, and 13.

1.4 Ecosystem Dynamics

1.4.1 Ecosystem Condition and Productivity

Landscape patterns determine the variety, integrity, and interconnectedness of habitats within a region. These landscape patterns are a direct result of the relationship between physical landforms and soils, disturbance history, and relationships among various species that make up the ecosystem communities. These factors, while listed separately for clarity, are unavoidably interrelated. Landscape patterns play a pivotal role in determining the current conditions and health of forest ecosystems. These variables are evaluated in terms of productivity, stability, and resilience.

Another important role in determining the condition of a forest is change. Forests are an ever-evolving entity, resisting stagnation, and constantly moving through their cycles of life, death, and renewal. The process of change over time is the essence of nature itself. It has been nature's underlying storyline since time began and will continue to be until time ends.

The main forces of change in our natural forest ecosystems are disturbance and succession. A definition of disturbance would indicate that it initiates a change in a community structure which often ends up in the replacement of one set of species by another. However, replacement is not always the result (e.g., a species like black spruce is aided in germination by disturbances like forest fires).

Forest disturbances range from the fall of a single tree to the destruction of thousands of hectares by wildfires. While disturbances may be very destructive, they can often rejuvenate ecosystems and diversify landscapes.

Succession involves changes in both community composition and in the ecosystem structure and process. Succession is the orderly change whereby the dominant species is replaced by another species, then another etc. until a new dominant species establishes a relatively stable community.
The following sections will discuss each of these concepts in more detail as they relate to the ecosystems of Planning Zone Five. For the most part, this section will be descriptive and explanatory in nature.

1.4.1.1 Productivity

Productivity is the accrual of matter and energy in biomass. In simple terms, primary productivity is the sum of biomass produced through photosynthesis. Secondary productivity occurs when this "primary" biomass is ingested by another organism and is added to that organism's biomass. Since secondary productivity is directly dependent on primary productivity, it is this primary productivity component that drives the system.

The level of primary production is dependent on the ability to produce biomass. This in turn is dependent on landscape features, aspect, slope, soil, climate etc. In general terms, the more

productive a forest a site is (measured by the site's capability to grow trees), the higher the level of primary productivity. For example, a forest stand would have a higher primary productivity than a bog and a forest site described as Good, in the provincial inventory system, would have a higher potential than a forest site described as Poor.

In practice, it is nearly impossible to measure the amount of biomass produced in an ecosystem, or the energy consumed in the process. One method to measure biomass in a forest dominated ecosystem is tracking mean annual increment (MAI) of the trees. MAI is the volume of wood fiber measured in volume per hectare per year (m^3 / ha / year), by tree species by ecoregion. MAI can be readily measured over time and manipulated through silvicultural treatments or affected by poor harvesting practices that increase soil compaction. An example of a measure of secondary forest productivity is the number of moose per unit area. One must also recognize the forests' inherent biological limits, however, when attempting to measure or manipulate site productivity.

Overall, the landscape in Planning Zone Five has approximately 37 percent productive forest. Also, the relative proportion of site types is 15% good, 68% medium and 18% poor with a MAI of 2.6, 1.7, and 0.8 m^3 / ha / year respectively. The distribution of productive sites across the landscape and range of productivity within these sites is largely dependent on landscape patterns, climate, and soils.

The more productive areas occur in the lowlands and gently rolling uplands of the zone with the most productive being in the river valleys. These areas have deeper soils and less exposed bedrock. The landscape patterns are more consistent, and the growing season is longer. In the Buchans Plateau section of District 12 and the south central and southwest portion of District 12 and 13, the soil is shallower with bedrock at or near the surface. The terrain is much rougher, and the growing season is shorter.

1.4.1.2 Resilience

Ecosystem resilience reflects the ability of the ecosystem to absorb change and disturbance while maintaining the same productive capacity and the same relationships among populations. Healthy forest ecosystems maintain their resilience and adapt to periodic disturbances. The renewal of boreal forest ecosystems often depends on these disturbances. Resilience is characterized by the forest’s

ability to stabilize vital soil processes and maintain succession whereby the system is returned to a community composition, and the productivity level is consistent with the ecosystems physical constraints following a disturbance. To a large degree, a forest ecosystem's resilience is controlled by properties such as climate, parent soil, topography, and flora.

The potential for populations to recover from low levels following disturbance by having adequate regeneration capacity and a balanced distribution of forest types and age classes provides a reliable measure of resilience at the landscape level. Indicators include the percentage and extent of area by forest type and age class, and the percentage of disturbed areas that are successfully regenerated. Resilience is determined by measuring and monitoring these parameters. Forest activities must be carefully planned to not upset the natural balance and lower an ecosystem's resilience.

1.4.1.3 Stability

Boreal forest ecosystems are constantly changing. Boreal forests are going through an unending process of disturbance, growth, senescence, and decay. Except for disturbance, that may occur in a few hours due to wildfire, or a few months or years due to insect infestation, or harvesting, this continuous change is not readily discernable. The process is non-the-less occurring. Therefore, stability of a forest ecosystem does not refer to one fixed process point without variation. Ecosystem stability is more accurately defined as the maintenance of ecosystem changes within certain boundaries and the functional continuation of important potentials and processes such as energy capture.

There are three levels of stability: species stability, structural stability, and process stability. Species stability is the maintenance of viable populations or meta-populations of individual species. Structural stability is the stability of various aspects of ecosystem structure such as food web organization or species numbers. Process stability is the stability of processes such as primary productivity and nutrient cycling. To put stability in perspective, it must ensure that the system does not cross some threshold from which recovery to a former state is either impossible, (extinction) or occurs only after long time periods or with outside inputs (e.g. loss of topsoil).

Some indicators of stability which can be monitored are the area of forest converted to non-forest use, the area, percentage and representation of forest types in protected areas, the percentage and extent of area by forest type and age class and change in distribution and abundance of various fauna. These indicators can be measured and monitored to ensure stability is maintained and to evaluate the impact, if any, of forest activities on ecosystem stability.

1.4.1.4 Disturbance Regimes and Successional Patterns

There are three main driving forces that cause disturbance in the boreal forest. Forest harvesting can be considered a major disturbance in the zone, occurring on a regular and consistent basis. Fire and insect damage are the other two major disturbances and occur on a more irregular or cyclic basis. Except for a major windstorm, wind throw usually occurs after a stand is weakened by some other agent like insects. For this reason, successional patterns after insect damage and wind throw will be discussed together. The following is a brief synopsis of successional patterns after each major disturbance type by forest type and site type.

1.4.1.4.1 Harvesting

Regeneration patterns in the black spruce forest type after harvesting is mainly back to black spruce, the component of which increases as site productivity increases. Regeneration failure in this forest type has the potential to be high, where non sufficiently restocking (NSR) rates increase from a low of near 10 percent on good sites to a high of approximately 50 percent on poor sites. NSR sites are candidates for planting with, Black, White or Norway spruce.

In the balsam fir types, regeneration success back to balsam fir is much higher averaging 65 percent. Regeneration rates to balsam fir are consistent on all site types. Regeneration failure is low at 10 percent.

Regeneration patterns in the mixed forest types are generally to balsam fir or to mixed species dominated by balsam fir. There is also a component of white spruce regeneration after harvest on these mixed forest types. There is a higher component of white birch regeneration after harvesting in types that had a higher percentage of hardwood before harvest. Also, the better the site class, the

more hardwood regeneration. Regeneration failure on the mixed forest types is variable across site types and ecoregions depending on local conditions but averages 15 percent and is higher as the site gets poorer

Regeneration after harvest on the hardwood types is variable. Sites regenerate back to hardwood or to balsam fir in varying proportions. Mixed wood regeneration is also common. Usually, the better the site, the more likely the site will regenerate hardwood.

1.4.1.4.2 Fire

On the black spruce stand type regeneration is usually back to black spruce with a minor component of balsam fir. More fir regenerates after forest fires on the better sites. Regeneration failure on black spruce stands is low on the better sites averaging 10 percent but increases to 45 percent as the sites get poorer. Regeneration patterns after fire on the balsam fir types occur in the same pattern as in black spruce. On mixed wood stand-types regeneration is variable. The softwood hardwood sites regenerate fir and mixed wood while the hardwood softwood sites tend to have a higher component of black spruce and trembling aspen. The component of hardwood in the regeneration increases as the sites get better. Regeneration failure on the mixed wood forest-types averages 10 percent and decreases as the component of hardwood in the original stand increases. Regeneration on the hardwood types is generally mixed with equal components of black spruce, balsam fir, white birch and trembling aspen. The hardwood component can be dominated by aspen if aspen was present in the original stand.

1.4.1.4.3 Insect

Balsam fir is highly susceptible to insect attack from the hemlock looper and spruce budworm whereas black spruce and hardwood is hardly impacted by these insects. For this reason, stands with a high component of balsam fir are more susceptible to insect attack and subsequent wind throw.

Mature balsam fir types usually regenerate to balsam fir with a component of black spruce and mixed wood on the poorer sites. Disturbance by insects in young balsam fir stands can cause succession to white spruce. In black spruce stands regeneration is usually consistently back to black spruce

across site types with a lesser component of balsam fir that increases as the sites improve. Regeneration patterns in mixed wood types usually depend on the type of mixture. If black spruce is a component, then it will persist and form part of the new stand. Otherwise, balsam fir and balsam fir hardwood mixtures regenerate after insect attack. Black spruce is also a component in stands with higher hardwood content. Regeneration patterns in the hardwood types are variable and can regenerate with equal components of black spruce, balsam fir, white birch and trembling aspen. Regeneration failure occurs approximately 10 percent of the time but can be significantly higher if pure stands of immature balsam fir are killed.

1.4.2 Biodiversity

Biodiversity is a term used to describe the variety of life on earth. A basic definition of biodiversity includes the variety of animals, plants and microorganisms that exist on our planet, the genetic variety within these species, and the variety of ecosystems they inhabit.

While the boreal forest may not have the extent of biodiversity that some of the equatorial regions possess, Canada does have just over 70 000 species of plants, animals, and microorganisms in its boreal and other forest regions. While the boreal forest has less diversity of large plants than many other forest regions, it has greater biological diversity in some microorganisms. For example, the boreal forest has fewer tree species than the tropical rainforest but potentially up to 500 times as many mycorrhizal fungi. Despite the large number of organisms contained within the boreal forest, only a small number are plants and vertebrates. The larger portion remains largely unrecorded and unstudied. As a result, we need to manage with caution so that species are not inadvertently extirpated.

Biodiversity provides such essential services for humans as: climate control, oxygen production, purification of freshwater supplies, carbon dioxide removal from the atmosphere, soil generation, and nutrient cycling. The three components of biodiversity are species diversity, genetic diversity, and ecosystem diversity.

1.4.2.1 Species Diversity

Species diversity describes the overall range of species in each area or ecosystem. Species are groups of animals, plants, and microorganisms capable of producing fertile offspring. Species extinction is the most dramatic and recognizable form of reduced biodiversity, habitat loss the most drastic in terms of far-reaching effect. The prevention of species extinction is a key factor in the conservation of biodiversity. Changes in species' population levels indicate the potential for serious changes in ecosystem integrity.

1.4.2.2 Genetic Diversity

Genetic diversity describes the range of possible genetic characteristics found within and among different species. Hair and eye color, weight, and height are examples of genetic diversity found in humans. Genetic diversity within species is the foundation of all biodiversity. Assessing genetic diversity does not mean tracking every gene in the zone's forest. Responsible planning should design and implement measures which maintain or enhance viable populations of all forest vegetation species, and which use the genetic diversity of commercially important species to the maximum benefit. The genetic diversity of commercially important species can also be managed to increase economic benefit from some portions of the landscape while allowing other portions to provide greater social and ecological values. Genetic diversity is the basis by which populations (flora and fauna) can adapt to changing environmental conditions.

1.4.2.3 Ecosystem Diversity

Ecosystem diversity describes the range of natural systems found throughout a region, a country, a continent, or the planet. Forest, wetland, and grasslands are examples of ecosystems in Canada. A complex and intricate mix of plants, animals, microorganisms and the soil, water, and air they occupy create virtually limitless ecosystems around the world.

A forest interspersed with barrens, marshes, lakes and ponds provides diversity across the landscape. Each ecoregion in the province should have representative areas protected which display the diversity where such exists. These areas can serve as a benchmark from which to measure and guide management decisions. These representative areas protect the integrity of the ecoregion and

are vital for guiding management actions. As benchmark areas, they will illustrate the multi-species mosaic that planning actions must maintain.

1.5 Forest Characterization

1.5.1 Land Classification

Table 2 displays the land classification (1.3 million hectares) of Zone 5 broken down by the forest management district. There are four basic categories that currently represent how the land area is classified for ecosystem-based forest management: productive forest, non-productive forest, non-forest, and fresh water.

The classification effort includes further professional interpretation by the forest service on the non-forest areas where wetlands are also categorized, and nonproductive forest is classified by height class.

These non-forest classifications provide information for purposes other than traditional forestry use. This inventory effort is used for purposes such as connectivity for pine martin habitat and other species such as caribou.

Table 2: Land Classification by District and Area for Planning Zone 5

Land Class	Total				Total
	10	11	12	13	
Rock Barren	223	686	7523	8954	17386
Soil Barren	4516	3429	39632	34278	81855
Bogs/Treed Bogs	16357	39866	70860	37129	164212
Cleared Land	448	317	529	301	1595
Agriculture Land	1269	53	16	0	1338
Residential	2616	430	333	56	3435
Right of Ways	729	1060	768	216	2773
Miscellaneous	19	213	629	232	1093
Total non-forested	**26177**	**46054**	**120290**	**81166**	**273687**
Waterbodies	22589	24040	53108	50955	150692
Wet Bog	4485	9642	38651	12677	65455
Total Wetland & Lakes	**27074**	**33682**	**91759**	**63632**	**216147**
Non-Productive Softwood	34345	62701	91609	58666	247321
Non-Productive Hardwood	2654	3957	5584	615	12810
Total Non-Productive	**36999**	**66658**	**97193**	**59281**	**260131**
Disturbed	1028	9206	2437	526	13197
Age Class 1	10563	12735	19047	10145	52490
Age Class 2	26972	33438	18755	15857	95022
Age Class 3	16466	35969	20818	12222	85475
Age Class 4	8040	20466	21685	4075	54266
Age Class 5	7585	10901	32297	3889	54672
Age Class 6	15889	11337	23815	8441	59482
Age Class 7	5290	5957	10909	15286	37442
Total Productive	**91833**	**140009**	**149763**	**70441**	**452046**

Figures 3, 4, 5, and 6 display the relative percentages of each major land class category found within each district.

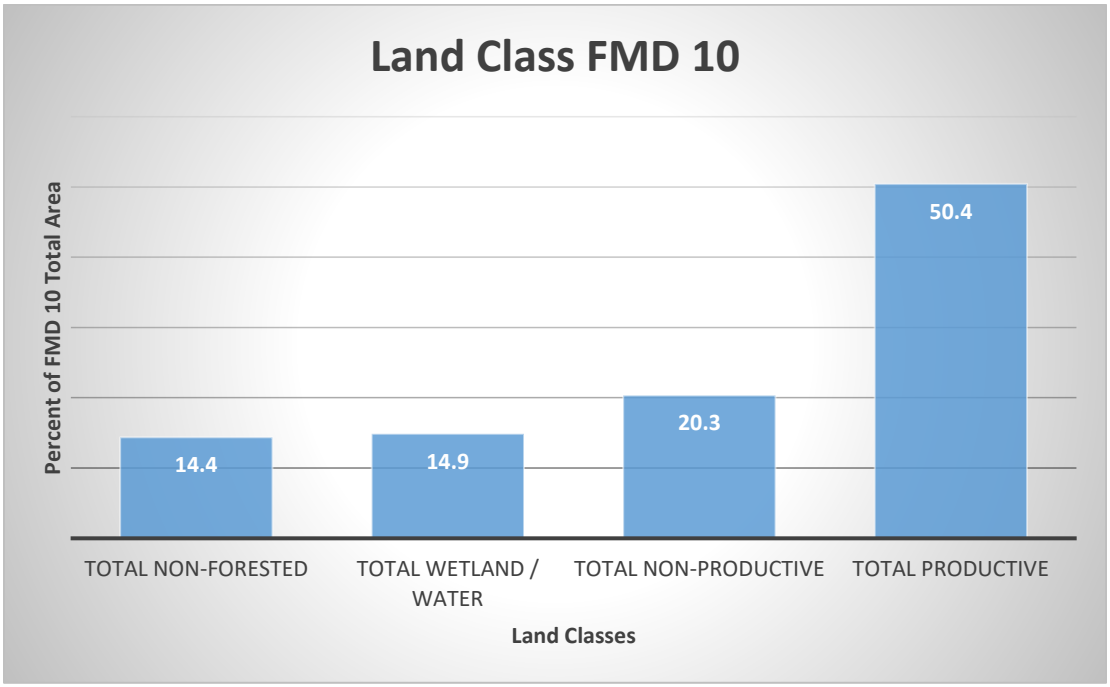

Figure 3: Land Class Breakdown for District 10

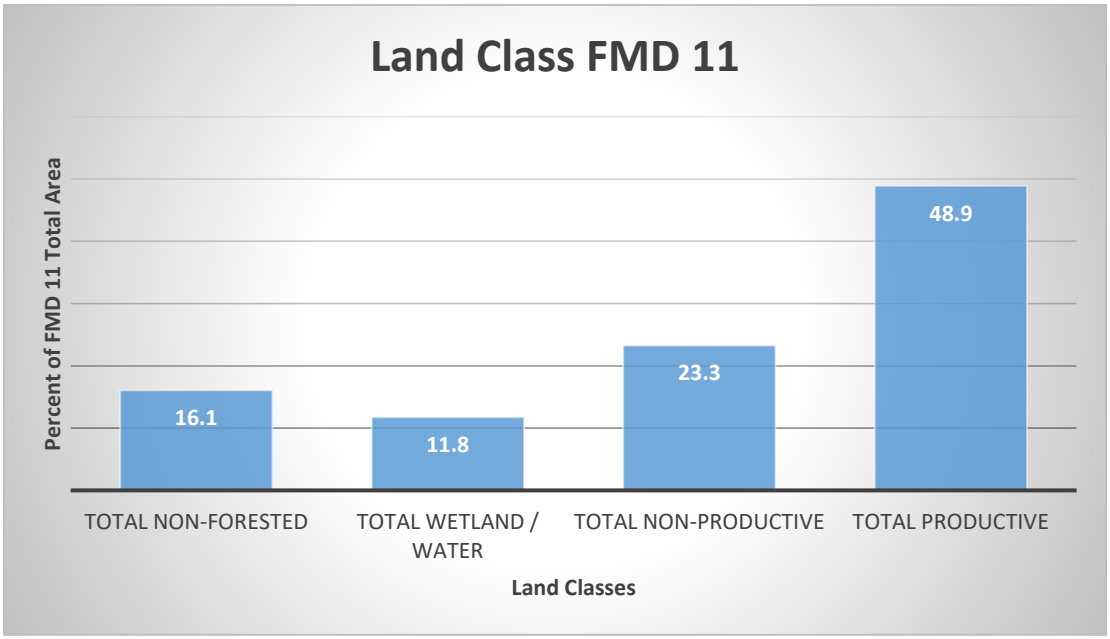

Figure 4: Land Class Breakdown for District 11

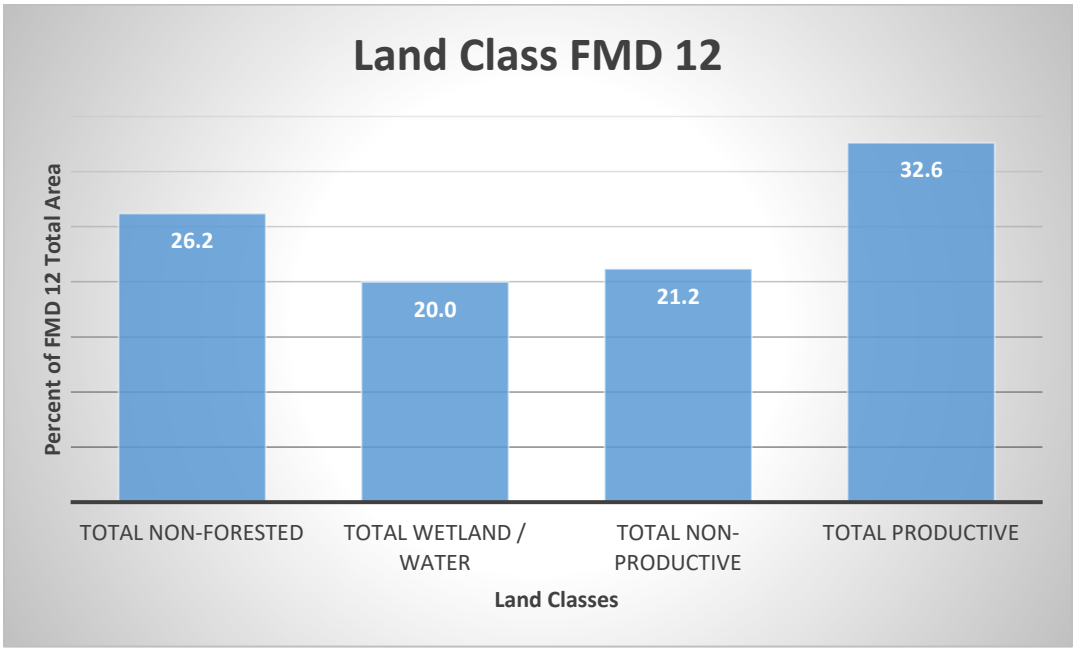

Figure 5: Land Class Breakdown for District 12

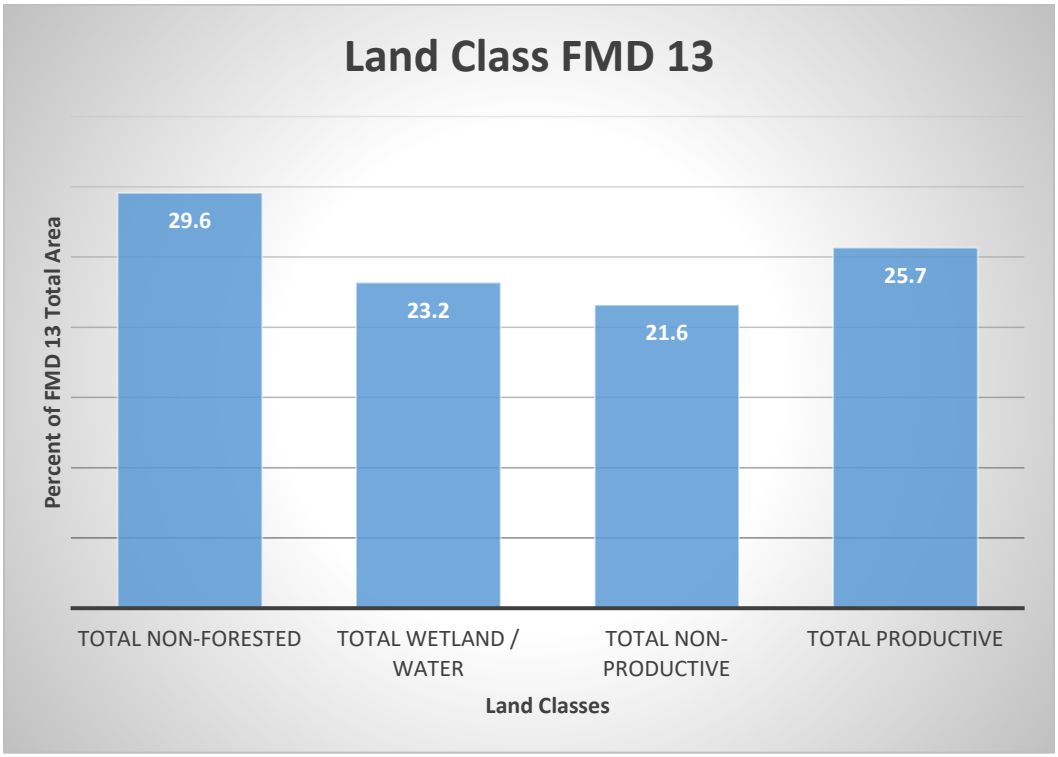

Figure 6: Land Class Breakdown for District 13

1.5.2 Age Class

Individual tree ages within any given stand have the potential to be the same after fire or planting. However, in most cases the ages vary. Foresters describe forest stand age in terms of age classes which encompass 20 years. The age classes present in the zone are described as regenerating (age class 1, 0-20 years), immature (age class 2, 21-40 years), semi-mature (age class 3, 41-60 years), mature (age class 4, 61-80 years), and over mature (age class 5, 81-100 years), (age class 6, 100-120 years), (age class 7, 120+ years). Figures 7, 8, 9, and 10 show the age class distribution in each district. In general terms, a continuous timber supply is limited by the lower age class. This means a more balanced age class distribution within a district would yield a greater opportunity for an even flow sustained yield of timber. The age class structure for Districts 10 is typical of the rest of the island with an abundance of area in the young and old age classes and a dip in the intermediate age classes. District 11 is skewed toward the younger age classes while in District 12 and a lesser extent Districts 13, the age class structure is more balanced. Strategies to rectify any age class imbalances or impacts on wood supply are employed during the timber supply analysis.

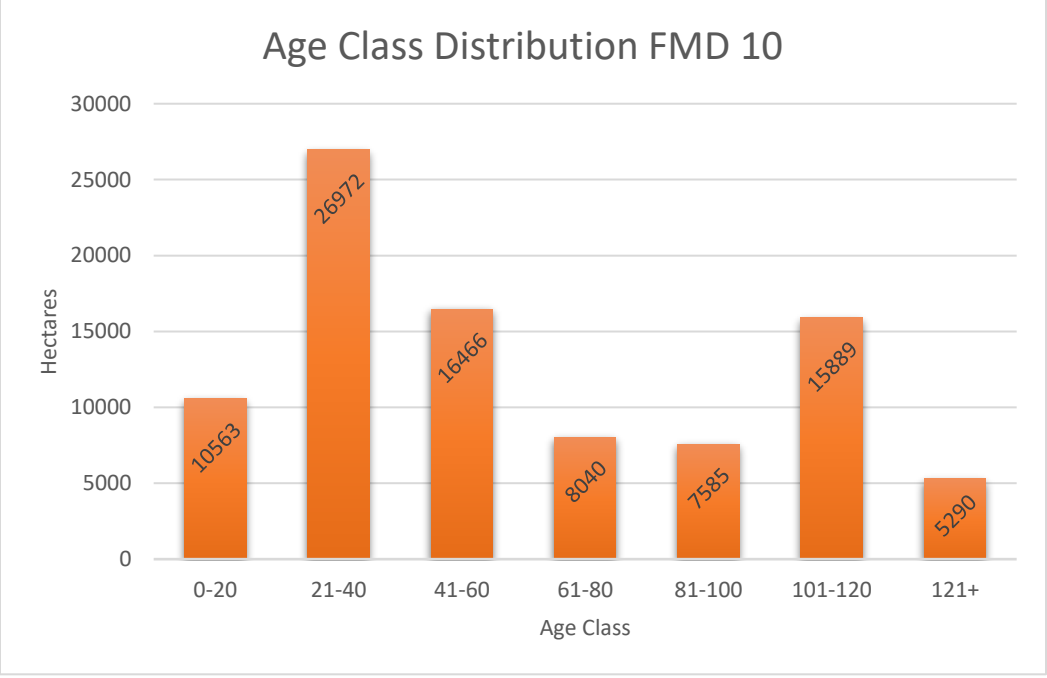

Figure 7: Age Class Distribution for District 10

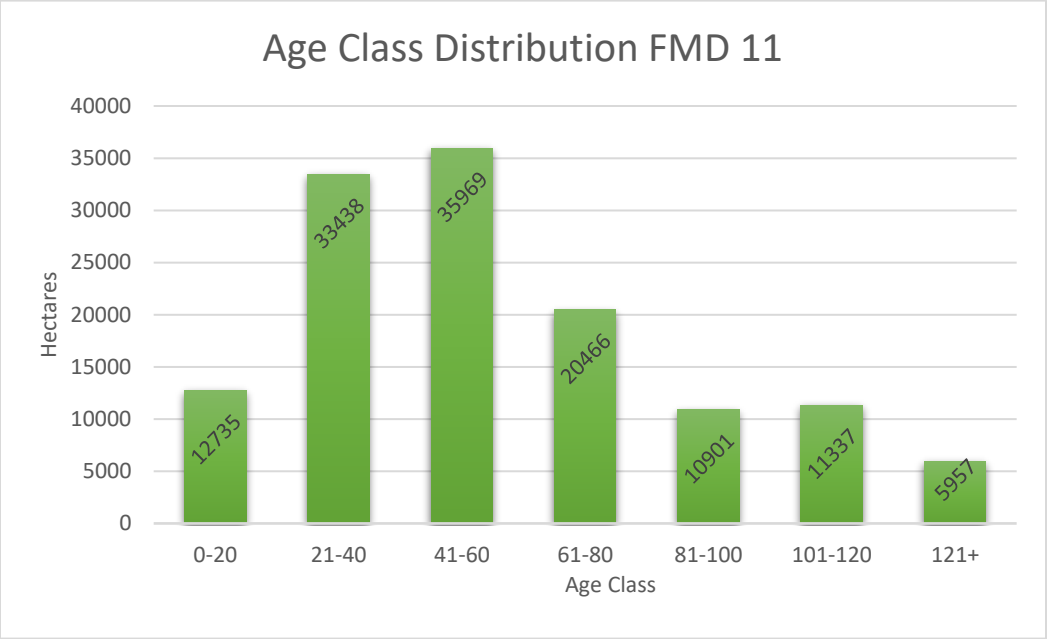

Figure 8: Age Class Distribution for District 11

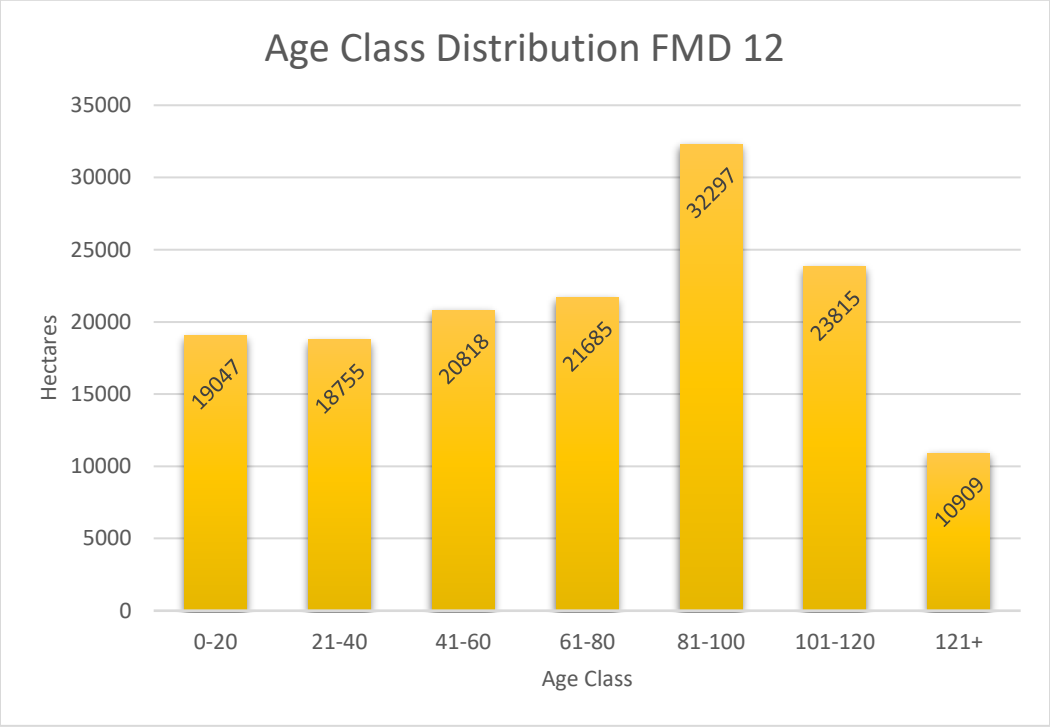

Figure 9: Age Class Distribution for District 12

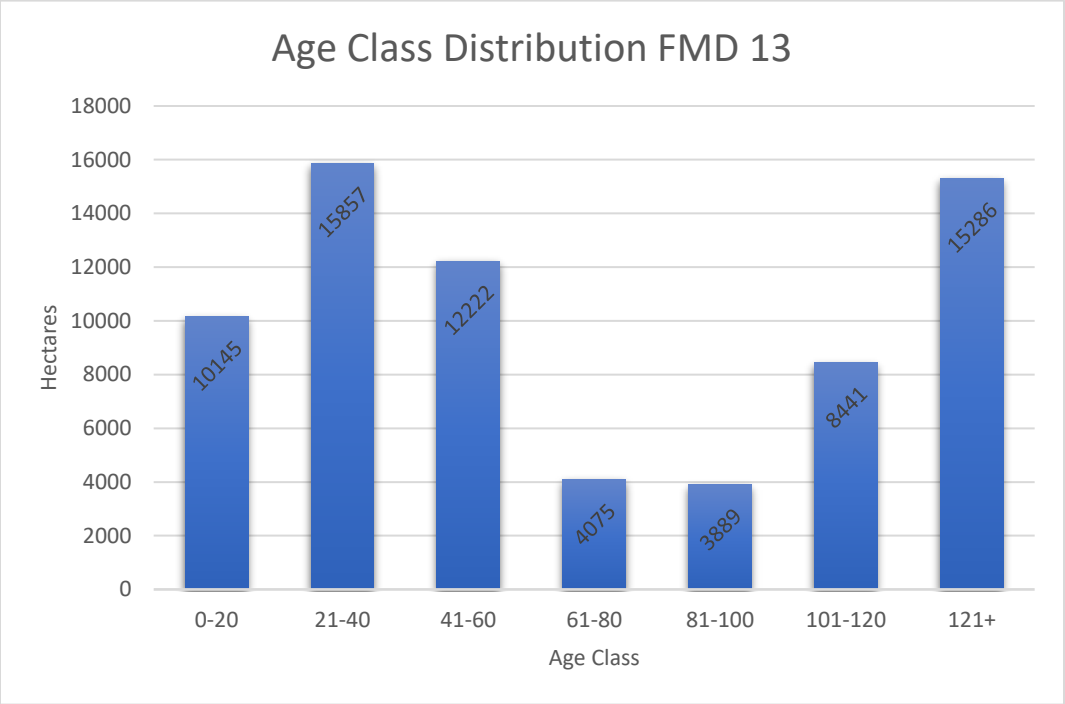

Figure 10: Age Class Distribution for District 13

1.5.3 Site Class

The productive forest in the zone is further sub-divided along a gradient of productivity ranging from poor to good site class. The site class is determined through air photo interpretation supplemented with field checks and is based primarily on the sites ability to produce timber. Site capability is determined on several factors including soil fertility, moisture regime and geographic (slope) position. In the zone, medium site types are most abundant accounting for approximately two-thirds of the productive area. The distribution of area by site class for each district is shown in Figures 11, 12, 13 and 14. On average, good sites can produce 2.6 m^3/ha/yr, medium sites 1.7 m^3/ha/yr, and poor sites 0.8 m^3/ha/yr.

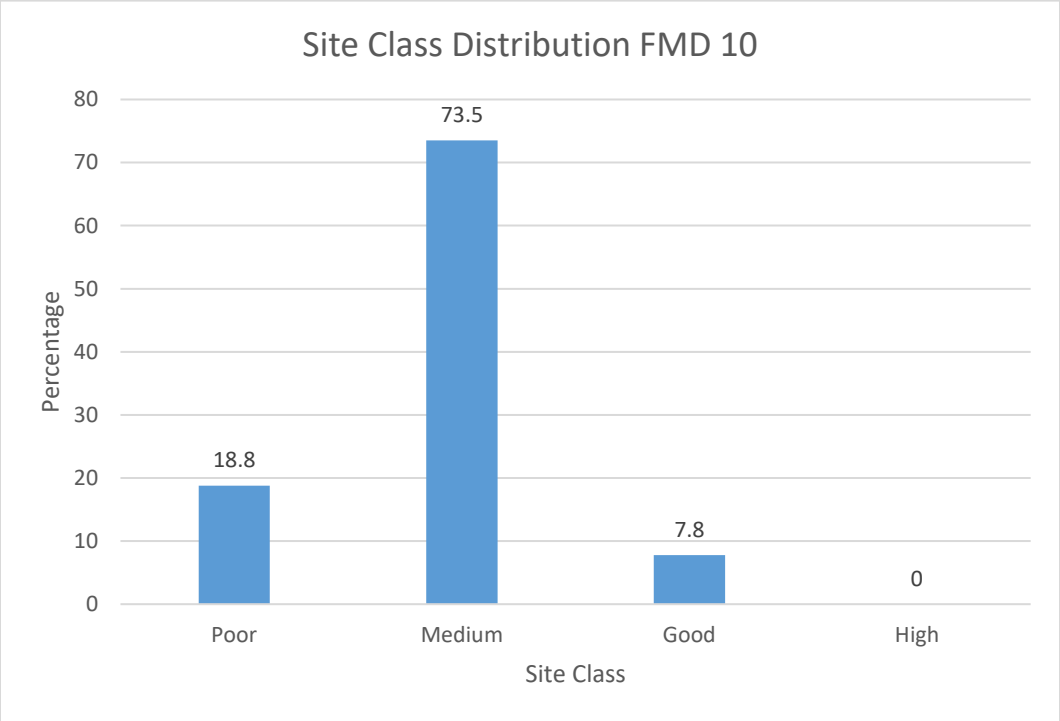

Figure 11: Site Cass Breakdown for District 10

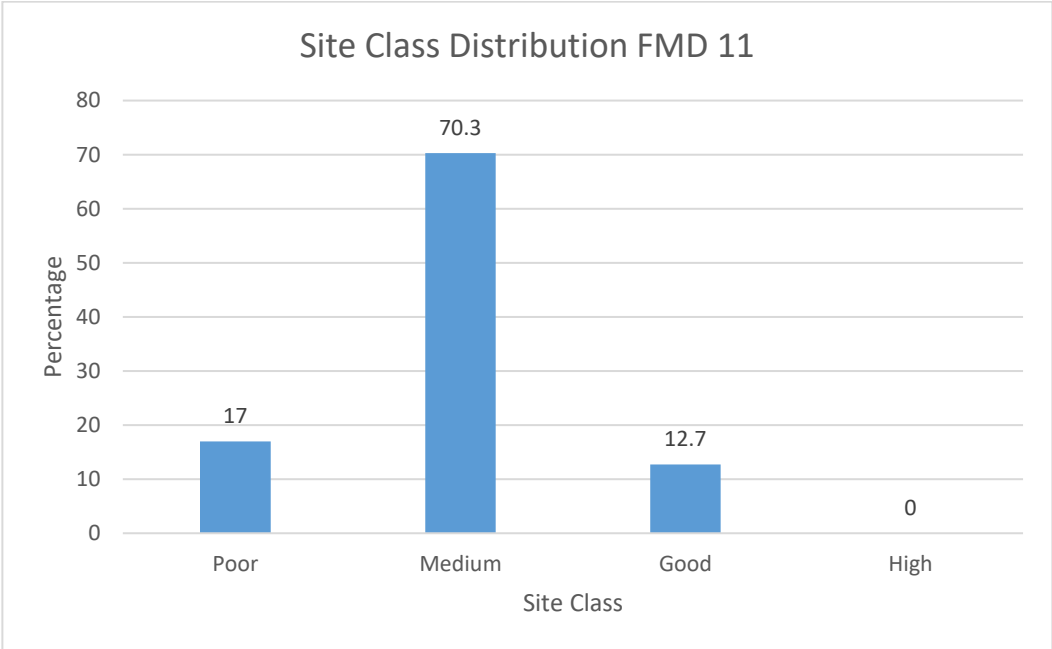

Figure 12: Site Class Breakdown for District 11

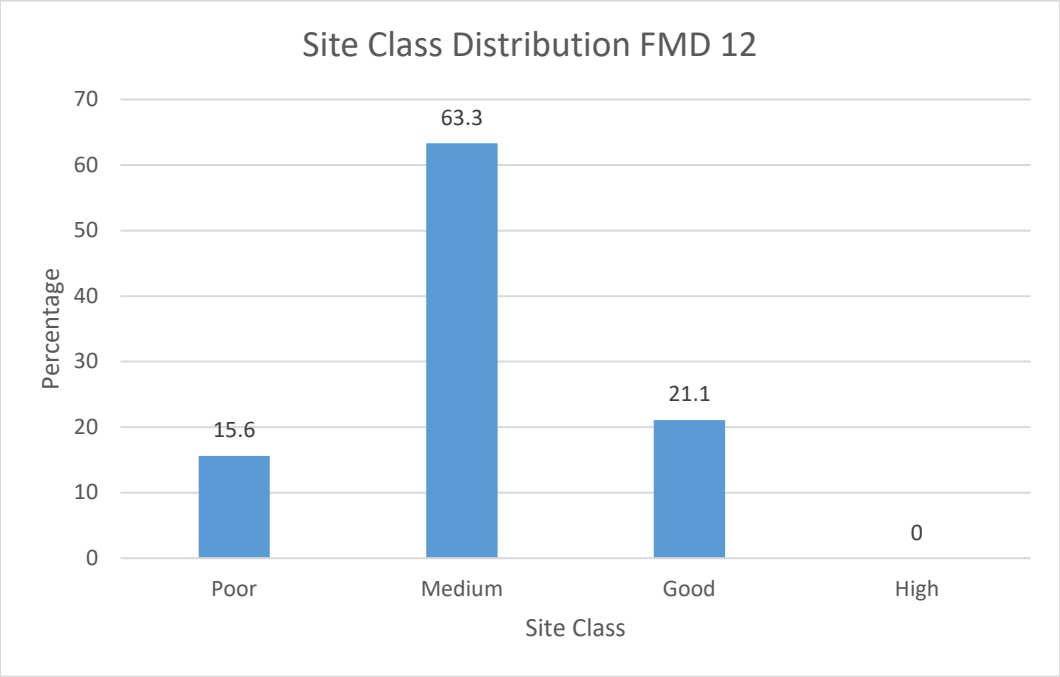

Figure 13: Site Class Breakdown for District 12

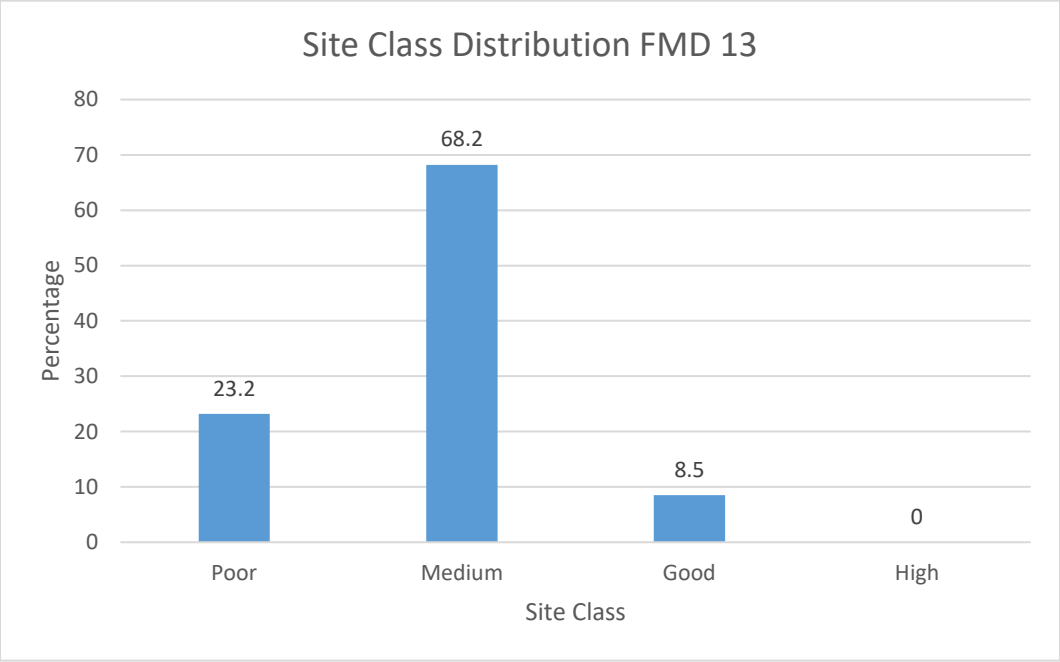

Figure 14: Site Class Breakdown for District 13

1.5.4 Species and Working Group

A Working group is a term used to describe the dominant tree species present in a forest stand. This species may occupy 100 percent of crown closure of a stand or may be present in association with other species. The working group designation describes the stand in general terms based on the prevalent species as opposed to species composition which specifically describes the relative proportion of each individual tree species that make up a stand.

In the zone, the softwood working groups dominate accounting for over 75 percent of the productive forest. Apart from District 13, black spruce is the most prolific working group in the zone followed by balsam fir (Figures 15, 16, 17, and 18). The black spruce working group can occur as pure stands or in association with balsam fir, white spruce, white birch, trembling aspen or larch in varying species compositions. Balsam fir can occur in pure stands or in association with one or more of the species listed above.

The softwood hardwood working group occurs as varying mixtures of fir, spruce, and birch. Within the hardwood softwood working group, white birch and white spruce working groups occupy a small portion of the productive forest in each district.

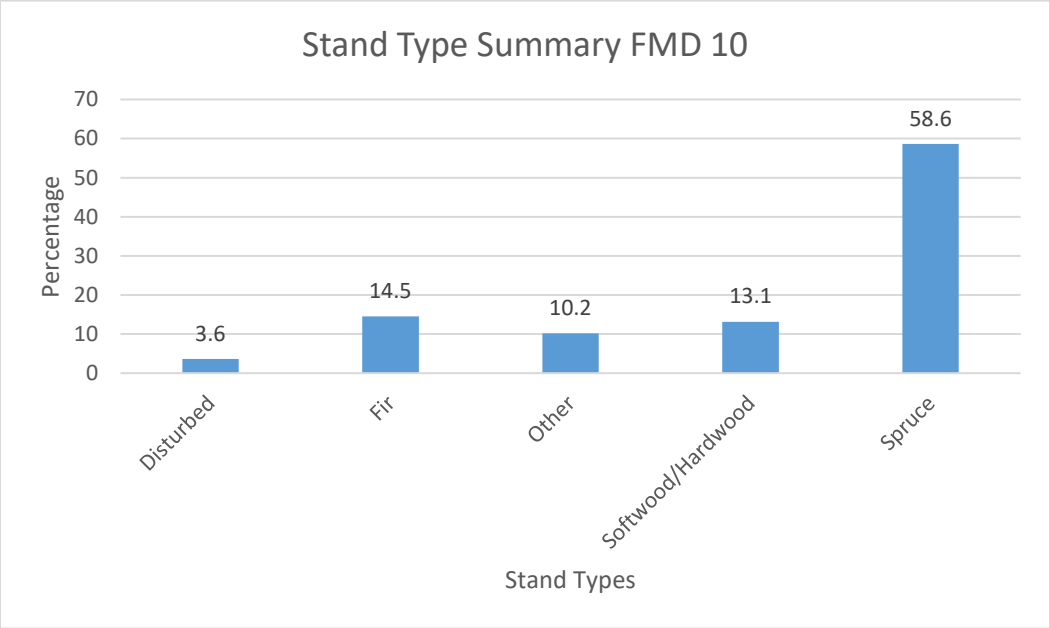

Figure 15: Working Group Breakdown for District 10

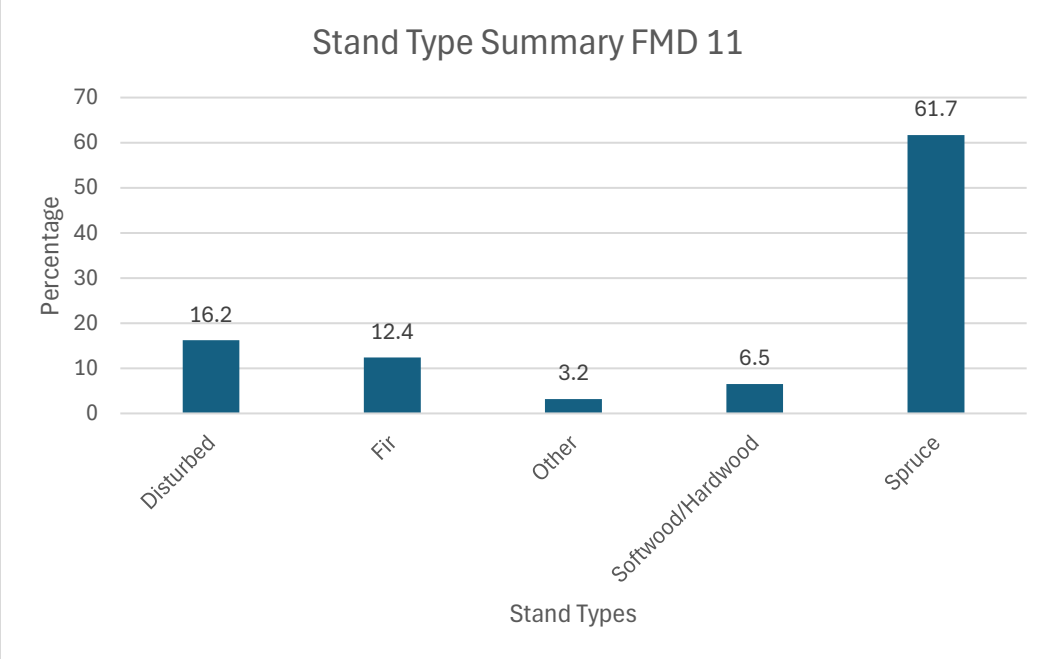

Figure 16: Working Group Breakdown for District 11

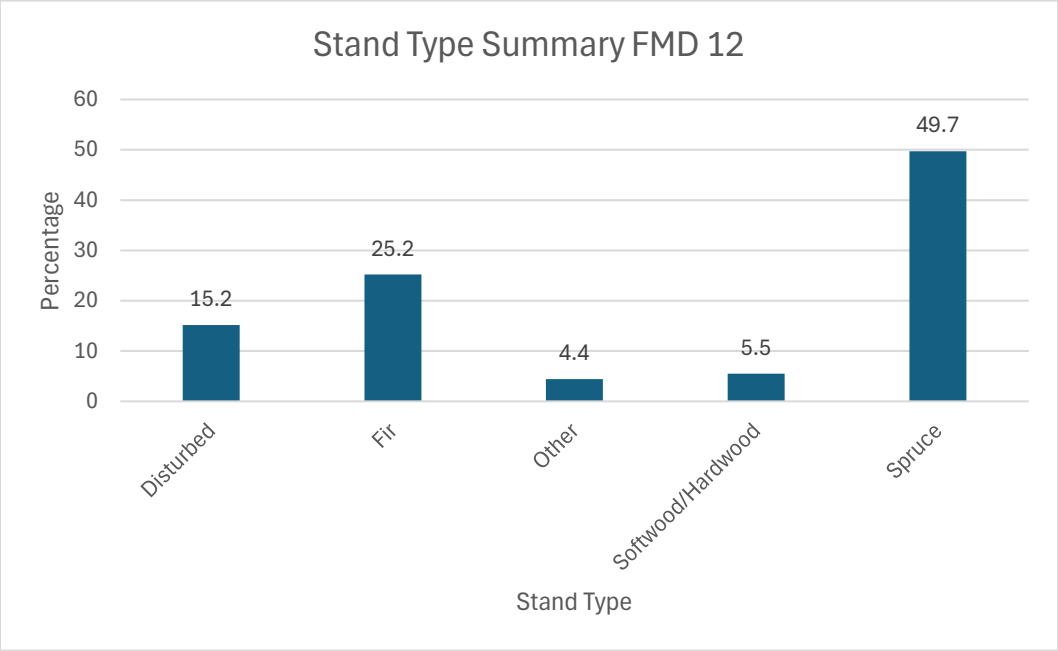

Figure 17: Working Group Breakdown for District 12

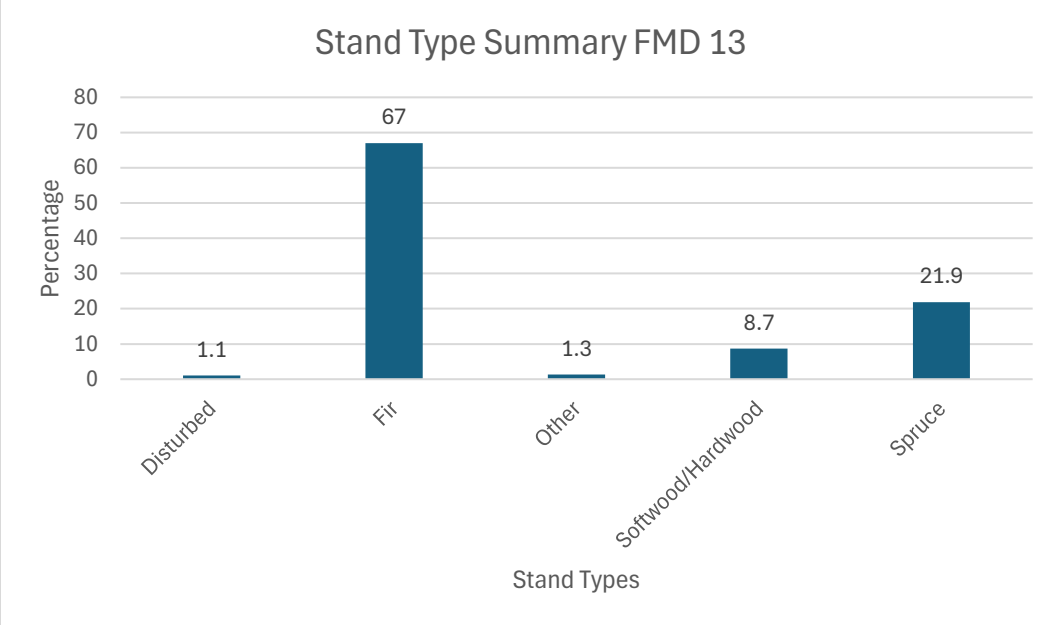

Figure 18: Working Group Breakdown for District 13

1.5.5 Forest Disturbances

Forest harvesting, fire, insects, and windthrow (blowdown) are considered forest disturbance types within the zone.

High summer temperatures combined with low summer precipitation and prolonged dry spells make the zone susceptible to fire. There has been a cyclical fire history in Districts 10, 11, and the central portion of 12. There was major fire activity in 1986 which resulted in a significant loss of timber in these areas. In recent years, loss has been minimal due to weather conditions, fire prevention activities and enhanced fire suppression capability. However, a major fire can occur in any year depending on weather conditions.

Hemlock Looper and Spruce Budworm are the main forest insects which have affected forests in the western portion of the zone, mainly in Forest Management District 13. There was a major infestation in the mid-late 1980's that resulted in significant mortality and subsequent blowdown. Fortunately, at that time, the opportunity for harvesting insect damaged timber was available and a large portion of insect damaged timber was salvaged. In addition, the Balsam Woolly Adelgid also impacts growth of balsam fir forests in Forest Management Districts 10 and 11.

To aid in the control of the Hemlock Looper infestation, a chemical spray program was implemented in 1969. Aerial application of insecticides has been regularly used as a management tool to control insect pests of balsam fir. However, in recent years, the use of chemical insecticide has been eliminated in favor of a biological insecticide called Bacillus Thuringians (bT) which is a naturally occurring biological control agent. Despite control tactics, hemlock looper and the spruce budworm continue to pose a significant threat to the balsam fir forests in the western portion of the zone, and new infestations are likely to develop over the next 20 year

SECTION 2 PAST ACTIVITIES

2.1 District 10

2.1.1 Harvesting

2.1.1.1 Commercial

Table 3 summarizes the commercial harvest in District 10 for 2021 - 2025. Commercial and domestic harvests were below the AAC for the period.

Table 3: 2021-2025 Commercial Harvest District 10

District 10 Crown		Core				Operational (available)				Non-AAC Wood	
		AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
SWD	2021	13500	10017	3483		2000	465	0	0	465	0
	2022	13500	10770	2730		2000	452	0	0	452	0
	2023	13500	9666	3834		2000	456	0	0	489	0
	2024	13500	10811	2689		2000	445	0	0	850	0
	2025	13500	10811	2689		2000	445	0	0	850	0
	Sub-Total	67500	52075	15425		10000	2263	0	0	3106	0
		Core				Operational (Available)				Non-AAC Wood	
HWD	Crown	AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
	2021	1800	229	1571		60	0	0	0	2368	0
	2022	1800	104	1696		60	0	0	0	1787	0
	2023	1800	99	1701		60	0	0	0	1876	0
	2024	1800	137	1663		60	0	0	0	1824	0
	2025	1800	137	1663		60	0	0	0	1824	0
	Sub-Total	9000	706	8294		300	0	0	0	9679	0
District Total		76500	52781	23719			2263	0	0	12785	0

* *Note: Domestic drain is included in the FMD 10 harvest numbers*

2.1.1.2 Domestic

Domestic harvest in FMD District 10 by Crown for 2021 to 2025 is included in the total harvest numbers in the commercial table.

2.1.2 Silviculture

Table 4 summarizes the completed silviculture treatments for the past planning period (2016 - 2020).

Table 4: 2021-2025 Silviculture Treatments District 10

Treatment Type	Area (ha)
	Treated
Pre-Commercial Thinning	0
Site Preparation (raking)	71
Planting	44
Commercial Thinning	0
Prescribed Burning	0

2.1.3 Road Construction

Table 5 summarizes forest access road construction in District 10 for the period 2021 - 2025.

Table 5: 2021-2025 Road Construction District 10

Construction Type	Constructed (km)
New Construction	12
Re-Construction	8
Total	20
Bridges	0

2.1.4 Natural Disturbance

2.1.4.1 Fire

District 10 has relatively long winters and abundant precipitation. There were no significant fires during the last planning period. The is a significant fire history, with large fires near Grand Falls-Windsor in the 1980's and near Badger Lakes in the 1990's.

2.1.4.2 Insect

There was no defoliation and treatment for either the hemlock looper or balsam woolly adelgid in the last 5 years.

2.2 District 11

2.2.1 Harvesting

2.2.1.1 Commercial

Table 6 summarizes the commercial harvest in District 11 for 2021- 2025. Commercial and domestic harvests were below the AAC for the period.

Table 6: 2021-2025 Commercial Harvest District 11

District 11 Crown		Core				Operational (available)				Non-AAC Wood	
		AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
SWD	2021	134000	24628	109372		14800	180	0	0	180	0
	2022	134000	88400	45600		14800	187	0	0	187	0
	2023	134000	107273	26727		14800	185	0	0	1223	0
	2024	134000	91991	42009		14800	153	0	0	1266	0
	2025	134000	91991	42009		14800	153	0	0	1266	0
	Sub-Total	670000	404283	265717			858	0	0	4122	0
		Core				Operational (Available)				Non-AAC Wood	
HWD	Crown	AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
	2021	2400	1871	529		150	0	0	0	4795	0
	2022	2400	2101	299		150	0	0	0	4411	0
	2023	2400	2076	324		150	0	0	0	5246	0
	2024	2400	1148	1252		150	0	0	0	6270	0
	2025	2400	1148	1252		150	0	0	0	6270	0
	Sub-Total	12000	8344	3656			0	0	0	26992	0
District Total		682000	412627	269373			858	0	0	31114	0

* *Note: Domestic drain is included in the FMD 11 harvest numbers*

2.1.2.2 Domestic

Domestic harvest in FMD District 11 by Crown for 2021 to 2025 is included in the total harvest numbers in the commercial table

2.2.2 Silviculture

Table 7 summarizes the completed silviculture treatments for the past planning period 2021 - 2025.

Table 7: 2021-2025 Silviculture Treatments District 11

Treatment Type	Area (ha)
	Treated
Pre-Commercial Thinning	0
Site Preparation (raking)	953
Planting	2111
Commercial Thinning	0
Prescribed Burning	0

2.2.3 Road Construction

Table 8 summarizes forest access road construction in District 11 for the period 2021 - 2025.

Table 8: 2021-2025 Road Construction District 11

Construction Type	Constructed (km)
New Construction	65
Re-Construction	41
Total	106
Bridges	6

2.2.4 Natural Disturbance

2.2.4.1 Fire

District 11 has relatively long winters and abundant precipitation. The fire history shows significant fires in the early 1970's south of Grand Falls, the early 1980's near Miguel's Lake, that resulted in the loss of a five-year wood allocation for the Miguel Lake Abitibi logging camp, and others. During the last planning period, there were three in 2022, totaling 9893.89 ha.

2.2.4.2. Insect

There was no defoliation and treatment for either the hemlock looper or balsam woolly adelgid in the last 5 years.

2.3 District 12

2.3.1 Harvesting

2.3.1.1 Commercial

Table 9 summarizes the commercial harvest in District 12 for 2021-2025. Commercial and domestic harvests were below the AAC for the period.

Table 9: 2021-2025 Commercial Harvest District 12

District Crown		Core				Operational (available)				Non-AAC Wood	
		AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
SWD	2021	138500	199045	-60545	0	138500	105	0	0	87	0
	2022	138500	132471	6029	0	138500	94	0	0	94	0
	2023	138500	102231	36269	0	138500	100	0	0	82	0
	2024	138500	103039	35461	0	138500	81	0	0	81	0
	2025	138500	103039	35461	0	138500	81	0	0	81	0
	Sub-Total	692500	639825	52675	0		461	0	0	425	0
		Core				Operational (Available)				Non-AAC Wood	
HWD	Crown	AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
	2021	3300	6700	-3400	0	0	0	0	0	1461	0
	2022	3300	4179	-879	0	0	0	0	0	6246	0
	2023	3300	1679	1621	0	0	0	0	0	3180	0
	2024	3300	1933	1367	0	0	0	0	0	1333	0
	2025	3300	1933	1367	0	0	0	0	0	1333	0
	Sub-Total	16500	16424	76	0		0	0	0	13553	0
District Total		709000	656249	52751	0	0	461	0	0	13978	0

* *Note: a) Domestic drain is included in the FMD 12 harvest numbers*

2.3.2.2 Domestic

Domestic harvest in FMD District 12 by Crown for 2021 to 2025 is included in the total harvest numbers in the commercial table.

2.3.2 Silviculture

Table 10 summarizes the completed silviculture treatments for the past planning period 2021-2025.

Table 10: 2021-2025 Silviculture Treatments District 12

Treatment Type	Area (ha)
	Treated
Pre-Commercial Thinning	0
Site Preparation (raking)	436
Planting	4034
Commercial Thinning	0
Prescribed Burning	0

2.3.3 Road Construction

Table 11 summarizes forest access road construction in District 12 for the period 2021-2025.

Table 11: 2021-2025 Road Construction District 12

Construction Type	Constructed (km)
New Construction	66
Re-Construction	10
Total	76
Bridges	3

2.3.4 Natural Disturbance

2.3.4.1 Fire

District 12 has relatively long winters and abundant precipitation. Over the past planning period there were three fires to note. In 2021 there was a total of 85.03 ha burnt. Also, in 2023 there was a total of 6.47 ha burnt.

2.3.4.2. Insect

There was no defoliation and treatment for either the hemlock looper or balsam woolly adelgid in the last 5 years.

2.4 District 13

2.4.1 Harvesting

2.4.1.1 Commercial

Table 12 summarizes the commercial harvest in District 13 for 2021-2025. Commercial and domestic harvests were below the AAC for the period.

Table 12: 2021-2025 Commercial Harvest District 13

District		Core				Operational (available)				Non-AAC Wood	
Crown		AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
SWD	2021	18,942	207	18,735	207	287	0	0	0	0	0
	2022	18,942	1002	17,940	1002	287	0	0	0	0	0
	2023	18,942	7	18,935	7	287	0	0	0	0	0
	2024	18,942	13.5	18,928.5	13.5	287	0	0	0	0	0
	2025	18,942	0	0	0	287	0	0	0	0	0
	Sub-Total	94,710	1216	0	1216	1,435	0	0	0	0	0
		Core				Operational (Available)				Non-AAC Wood	
	Crown	AAC	Commercial	Deviation	Total	AAC	Commercial	Deviation	Total	Operational	Regulatory
HWD	2021	882	525	357	525	0	0	0	0	0	0
	2022	882	0	0	0	0	0	0	0	0	0
	2023	882	0	0	0	0	0	0	0	0	0
	2024	882	0	0	0	0	0	0	0	0	0
	2025	882	0	0	0	0	0	0	0	0	0
	Sub-Total	4,410	0	0	525	0	0	0	0	0	0
District Total		99,120	525	97679	1441	0	0	0	0	0	0

2.4.2.2 Domestic

Table 13 summarizes the domestic harvest in District 13 for 2021-2025. Commercial and domestic harvests were below the AAC for the period

Table 13: 2021-2025 Domestic Harvest District 13

District 13 Crown		Core				Operational (Available)				Non-AAC Wood	
		AAC	Domestic	Deviation	Total	AAC	Domestic	Deviation	Total	Operational	Regulatory
SWD	2021	28300	1,848		1,848	500	0				
	2022	28300	1,848		1,848	500	0				
	2023	28300	1,826		1,826	500	0				
	2024	28300	2,335		2,335	500	0				
	2025	28300	2,400		2,400	500	0				
	Sub-Total	0	7,922		7,922	0	0				
		Core				Operational (Available)				Non-AAC Wood	
	Crown	AAC	Domestic	Deviation	Total	AAC	Domestic	Deviation	Total	Operational	Regulatory
HWD	2021	0	0			0	0				
	2022	0	0			0	0				
	2023	0	0			0	0				
	2024	0	0			0	0				
	2025	0	0			0	0				
	Sub-Total	0	0			0	0				
District Total											

Note:

i. DOMESTIC AREAS WERE NOT RUN AS A SEPARATE WOODSUPPLY CLASS FOR FMD 13. It draws on CORE CROWN AAC above.

ii. 2025 is an estimated volume forecasting the same as the previous year.

2.4.2 Silviculture

There were no completed silviculture treatments in District 13 from 2021 to 2025

2.4.3 Road Construction

There was no road construction in Forest Management District 13 from 2021 to 2025.

2.4.4 Natural Disturbance

2.4.4.1 Fire

District 13 has had a very infrequent fire history due to its relatively long winters and abundant precipitation. There was one fire in 2022, which burnt a total of 11.92 ha.

2.4.4.2. Insect

There was no defoliation and treatment for either the hemlock looper or balsam woolly adelgid in the last 5 years.

SECTION 3 TIMBER SUPPLY ANALYSIS

3.1 Introduction

The province conducts a review of timber supply every five years to reflect any changes in forest land base, growth rates, and management strategies. This schedule is consistent with the Forestry Act, with oversight by forest management districts, and mandates a wood supply analysis to be completed every five years. The result of this analysis is the establishment of annual allowable cuts (AAC's) for each forest management district. These AAC's are defined as the maximum annual rate at which timber can be harvested at a sustainable level into the future (applicable for a period of 160 years). Annual allowable cuts must be calculated on a district basis, and the cumulative sum would provide the total island's annual allowable harvest level.

With improvements in computer modeling and GIS data management, a new wood supply was developed for the districts in Zone 5 for the period 2026-2030 in 2025. This updated analysis aligns the timber supply analysis to the new Five-year planning period.

More information on the Timber Supply Analysis Program can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

3.2 Guiding Principles and Policy Direction

The key underlying principles guiding the provincial wood supply analysis are:

(i) The AAC must be sustainable.

(ii) The level of uncertainty (risk) associated with the AAC must be minimized by using empirical information wherever possible.

(iii) There must be conformity between information and assumptions used in the analysis and actions and decisions taken on the ground.

(iv) the analysis must be consistent with other forest values and objectives; and

(v) The timber supply calculation must consider economic factors, not solely the physical supply of timber.

In addition to the establishment of sustainable timber harvest levels, the legislation also requires that forest harvesting not exceed the total five-year plan established AAC's.

It is still unavoidable that the AAC's will change in each succeeding five-year period. There is a downward trend as competing development occurs. The loss of productive forest land has a 1:1 effect on the AAC, improvements in silviculture methods and tree improvement can offset some of the effects of land base loss.

3.3 Factors Affecting Timber Supply

The forests of insular Newfoundland are variable in terms of age distribution. Typically, there are significant amounts of mature/over-mature forest and regenerating forest and limited intermediate aged forests. This imbalance is not unusual in a boreal forest where large areas experience natural cyclic disturbances. Wind and Harvesting are disturbances that occur in overmature and mature sites. Insect infestation commonly occurs on overmature sites; however, it can spread into mature stands. Fire commonly occurs on overmature sites as well, however when conditions are dry, it can extend into all age classes.

This imbalanced age class structure of intermediate age forest within insular Newfoundland is one of the most important factors influencing AAC's and is therefore the basis for many of the department's forest management strategies. Essentially, the department utilizes a matrix of management techniques designed to minimize the imbalance in age structure. These techniques range from an aggressive forest protection program (insect control and fire suppression), forest harvesting programs that attempt to exclusively target harvesting the oldest stands first, and pre-commercial thinning of the regenerating forest so that it becomes merchantable and ready for harvest at an earlier age.

Another important aspect of the province's forest that poses a challenge to forest managers is the natural fragmentation of the forest resources. The province's landscape is carved by wetlands, ponds, bogs, rivers, streams, and rock outcrops resulting in relatively small pockets of timber scattered across the landscape. These conditions are very challenging when determining the economic availability of timber supply.

The most important factor affecting present and future AAC's is the land base. The land base available for forest activity is constantly being reduced due to other land use requirements. There is an approximate correlation between AAC and land base in that a one percent loss of land base represents a one percent drop in AAC. Therefore, it is very important that we continue to determine methods to minimize the loss of productive land base and expand efforts to grow more volume on the existing land base.

Reduction of the forest land base is unavoidable. There will be loss for agriculture, urban areas, other development needs, loss of land base for the protection of riparian areas (buffers), and for other values.

Professional foresters are trained in forest management systems that must be considered in the management of protection areas. Non-management is not good resource management. The establishment of fixed width buffers and unmanaged areas reduces the land base and without professional oversite may also increase risk. Overmature forest areas created in buffers are subject to increased windthrow and fuel loads, resulting in increased wildland fires, fire intensity, and release of stored carbon.

3.4 Timber Supply Analysis

The timber supply analysis is structured to determine sustainable timber availability, while respecting social, economic, and environmental objectives. Timber supply, in this context, refers to the rate at which timber is made available for harvesting on a sustainable basis. This analysis results in an Annual Allowable Cut (AAC) estimate.

The determination of supply (represented as AAC's) involves the use of computer models to forecast the sustainability of possible AAC levels. These models require three basic inputs as described below:

(1) Description of the current state of the forest (forest characterization and availability),
(2) Growth rates associated with the current forest, and
(3) Management strategies applied to the forest.

These basic inputs require careful and detailed consideration of a broad range of both timber and non-timber values. The following topics in this chapter are considered when determining sustainable timber supply.

3.4.1 Forest Characterization

To realize the current description of the forest resource (referred to as forest stock), the province has invested significant resources into creating and maintaining a Provincial Forest Inventory. The forest inventory program is designed to ensure the estimate of forest stock is current and accurate, while other regular programs employed by the department also evaluates:

1. Natural and man-made disturbances (fire, insects and harvesting)
2. Enhancement activities (tree planting and pre-commercial thinning)
3. In addition, the actual stands within the forest inventory are updated to reflect any yield changes

The Provincial Forest Inventory also holds a vast wealth of information related to the provincial forested and non-forested land base, including wetlands, streams, lakes, and noncommercial vegetation. Such information aid in the management of other landscape values such as wildlife habitat assessment, carbon sequestration and overall forest health.

3.4.2 Land Availability

Through regular timber supply analysis, the Forest Inventory is updated and classified at the stand level based on harvest potential. This classification system consists of six broad land classes that are manually defined by foresters based upon the ground knowledge of the forest management districts.

i. Core - available for harvest under normal operating conditions.
ii. Operational – adverse conditions for forest harvesting, making that land base more expensive and less available under current economic conditions. However, an AAC is still calculated in the event of improved economic conditions, making the area more feasible for commercial operations.

iii. Domestic – Landbase set aside from commercial operations for harvest by domestic wood harvesters as a source of firewood and logs.
iv. XLB (excluded landbase) – unavailable for forest harvesting. No AAC is calculated on this land base, which incorporates a broad range of timber and non-timber values.
v. SNCF – Areas of noncommercial softwood or hardwood scrub that isn't economical for harvest. These areas don't contribute to AAC calculations.
vi. WBLB (water buffer landbase)– Areas excluded from harvest within the 30m water buffers

3.4.2.1 Non-Timber Related

Implementation of non-timber values within the productive forest has a direct impact on provincial AAC's. As the amount of productive forested land base available for timber management declines, so will the AAC.

The entire commercial capable forest land base in Zone 5 consists of 37% of the total area in the zone. The forest land base is constantly being reduced due to competing land use requirements for agriculture and other urban and industrial uses. Most land use changes occur on the forest land base.

The low (37%) productive forest land base is also dispersed and naturally fragmented. The spatial location of harvestable forest area is comprised of small groups of merchantable size timber separated by younger timber, lakes, and wetlands.

Foresters need to manage as much of the available productive forest land base as possible to be economically viable.

3.4.2.1.1 No-Cut Buffer Zones

The Department has implemented guidelines requiring all water bodies (on 1:50,000 topographic maps) be given a minimum 30-meter unharvested buffer, measured from the shoreline, or from each stream bank. In addition to the streams found on 1:50, 000 scale topographic maps, all streams found in the field are evaluated based upon the Environmental Protection Guidelines and may also receive a 30-meter unharvested buffer.

District Ecosystem Managers, in consultation with interested stakeholders, may increase buffer zone widths to protect special values such as salmon spawning areas, cabin development areas, aesthetic areas, wildlife habitat, outfitting camps, etc.

There are no options for management of these zones that allow for any harvesting levels. The establishment of buffer zones is critical for water protection, however results in a further loss of 6% of the productive forest land base resulting in a forest land base that 31% of the zone.

3.4.2.1.2 Pine Marten and Caribou Habitat

Wildlife Habitat specialists are working in consultation with industry to ensure future adequate habitat remains available for wildlife species such as pine marten and caribou. Analysis of the land base continues with examining the quantity and quality of habitat, as well as the required connectivity. Wildlife specialists also examine how this arrangement of habitat would change over time. Forest management strategies take into consideration the results and recommendations of the Wildlife Habitat Specialists.

3.4.2.1.3 Protected Areas

All established and proposed protected areas approved within the Natural Areas Systems Plan (NASP) are removed from potential harvest considerations and the AAC calculations.

3.4.2.2 Timber Related

The potential AAC within a Forest Management District is also further impacted by considering other potential losses of land base or timber as indicated below:

4.4.2.2.1 Insect/Fire/Disease Losses

The department reduces AAC's to account for anticipated future losses resulting from insects, disease and fire using historical information.

3.4.2.2.2 Logging Losses

Surveys of recent harvested areas are conducted each summer throughout the province to determine the quantity and quality of fiber remaining. The estimate of remaining fibre is the logging loss. The percentage estimate from these surveys is used to reduce the AAC.

3.4.2.2.3 Operational Constraints

Areas that are inaccessible (surrounded by bogs or hills), timber on steep slopes, and selected low volume stands are removed from the Core AAC calculation. Also, significant adjustments are applied to the provincial forest inventory for stands deemed operable in the timber analysis but left unharvested within operating areas. The reasons for this are linked to the character of Newfoundland's forests, low volume, steep slopes, rough terrain, and excessively wet ground conditions, etc.

All these timber and non-timber related issues are applied directly in the AAC calculation to ensure harvest levels do not exceed the sustainable level. With the introduction of new values and the broader application of current values, negative pressure on future AAC's will continue to increase.

3.4.3 Growth Forecasting

A key requirement for forecasting future wood supply is an understanding of how forest stands grow and develop over time. That is, as a forest stand develops, how much merchantable (i.e. harvestable) volume does it carry at any given point? These yield forecasts (referred to as yield curves) are required for each type of forest stand (called a stratum) comprising the forest. In Newfoundland, there are dozens of distinct forest stratum for which separate yield curves are required. These are defined by the tree species in question (e.g., balsam fir, black spruce), the site quality (e.g., good, medium, poor), the geographic region (e.g., the Northern Peninsula, Western Newfoundland), and other factors likely to affect yield.

Yield curves are a key element in wood supply analysis. In fact, the validity, or "usefulness", of the wood supply analysis is determined by the truth, or "correctness", of the yield forecasts. While there is no way of predicting with one hundred percent certainty how stands will grow in the future, care must be taken to ensure that the yield projections are realistic and reasonable. Respecting the sensitivity and importance of these forecasts, the department has directed a large portion of its resources and time into developing accurate yield curves. A growth model was used to project stand development under natural and managed (i.e., silviculturally enhanced) conditions. Tree and stand development data generated from the department's forest inventory program

permanent sample plots and temporary sample plots were used to make stand growth predictions. These projections were then evaluated against empirical data from recent temporary point sample data measured throughout the island. If the projections varied from the real-life evidence, the curves were adjusted to make them more accurate where supporting data was available.

In this analysis, yield curves were developed on an ecoregion basis. Also, special yield curve sets were developed for defined geographic areas with demonstrated uniqueness. These included areas where chronic insect activity is ongoing and areas that have unique growth characteristics.

3.4.4 Management Strategies

With the current state of the forest described and the yield forecasts developed, the next step was to design a management strategy for each sector of the forest. The key objective was to maximize long term AAC while at the same time considering other forest values. This involved developing strategies that minimize fiber losses and enhance forest sustainability.

3.4.4.1 Harvest Flow Constraints

An even-flow harvest constraint strategy is utilized in wood supply analysis. This strategy produces the maximum even flow harvest but results in less than optimum economic use of the forest resource. Conversely, if this strategy was not applied, harvest levels are permitted to fluctuate, which may result in increased commercial potential of the forest at specific intervals. However, applying the even-flow constraint provides stability within the forest industry.

3.4.4.2 Spatial Analysis

The provincial wood supply analysis implements a technique of computer-generated block generation followed by manual harvest block scheduling. The blocking software (Stanley) uses rules such as adjacency and minimum block size to create initial harvest block areas.

All the operational restrictions within a forest management district cannot be input into the Stanley optimizer. Professional forest managers utilize training, experience, and local knowledge to modify the Stanley output. District staff can identify specific ground conditions that restrict commercial harvesting, which are then incorporated into a spatial harvest schedule. The proposed harvest schedule is then vetted back through the modeling software to ensure sustainable and non-timber objectives are met. In most cases, this process must go through several cycles before

an acceptable harvest schedule can be implemented. The spatial arrangement of areas for timber harvesting is especially challenging in this province because of the natural fragmentation of our forests. This model provided forest planners with the ability to mimic realistic timber harvest schedules based on current practices and to identify other forest stands that are not as accessible for harvesting, without incurring higher costs to access these blocks. The process allows the plan to be realistic and the harvest levels to be economically attainable.

Spatial harvest scheduling has several major benefits. First, it fosters the long-term sustainability of our AAC's by mimicking current harvest practices and accounting for actual on the ground conditions that delay or restrict the harvesting of stands. Historically, even with the use of computers, spatial restrictions were largely unaccounted for. Spatial schedules have made our AAC's genuinely sustainable. Secondly, the mapped harvest schedules build credibility into the forest management process.

Having the ability to visualize the timber that will be harvested in the future helps reassure the resource is being used in a responsible manner. Next, harvest scheduling helps integrate the management of other forest resource values into timber management planning. Specific forest values can be directly related to forest areas, which can be mapped, and potential issues can be addressed. Finally, the harvest schedule maps developed for the wood supply analysis can be a starting point for a 5-year operational planning process. Worthy to note is that harvest scheduling is completed for Core land base only. Operable AAC, for the most part, is considered opportunistic if economic conditions become favorable.

3.4.4.3 Planning Horizons

Given the province's commitment to long term sustainability of our forest resource, timber supplies are projected 160 years (equivalent to two forest rotations) into the future to ensure actions and strategies applied today will result in a sustainable forest in the future. Long term planning is fundamental in timber supply forecasting.

3.4.4.4 Operable Growing Stock Buffer

The province imposed an operable growing stock constraint in the analysis to ensure the sustainability of calculated timber supplies. This constraint imposes a condition that in any period

there must be a minimum operable growing stock of two times the harvest level on the landscape. The requirement for a growing stock buffer is based on several factors including:

- Some of the non-timber objectives are not explicitly accounted for in the planning process and therefore will require a growing stock buffer to achieve them.
- The ability to completely incorporate the optimum harvest schedule due to operational restrictions on commercial harvesting.
- Lowers the overall risk associated with the sustainability of the timber supply.

3.4.4.5 Old Forest Targets

Within the wood supply analysis, the department considers a target for old forests, where at least 15 percent of forests at any given time must be older than 80 years. This is a minimum target; actual results are usually higher. This initiative was designed to provide a coarse filter approach to maintaining representative forest structure. It ensures the presence of certain amounts of old forest across the landscape into the future and can be tracked across a district.

3.4.4.6 Operability Limits

Operability limits are the timeframe in which forest harvesting activity can be undertaken within specific forest stands. Stand growth development (merchantable timber volume) and individual piece size of trees are factors which determine a stands readiness for commercial harvest activity. To meet management objectives and maximize the total volume of wood harvested, the model schedules harvests inside the operability limit window defined as the period between the minimum harvest age and the maximum harvest age. Stands younger than the minimum harvest age have small trees that are uneconomical to harvest yet and stands older than the maximum harvest age have began to break apart and have lost enough volume that they too are no longer economical to harvest. Operability limits vary for different species types, growing on different site qualities and when growing at different tree densities.

The operability limits for stands within Zone 5 are defined below:

Zone 5	Treatment	Stand Type/Species	Site	Density	Min Age	Max Age
Zone 5	Natural Stands	Balsam Fir	Good, Medium	D1, D2, D3	60	120
		Balsam Fir	Poor	D1, D2, D3	70	100
		Black Spruce	Good, Medium	D1, D2	60	150
		Black Spruce	Good	D3	60	140
		Black Spruce	Medium	D3	60	120
		Black Spruce	Poor	D1	70	150
		Black Spruce	Poor	D2, D3	70	140
		Softwood/Hardwood	Good, Medium	D1, D2	60	120
		Softwood/Hardwood	Good, Medium	D3	60	100
		Softwood/Hardwood	Poor	D1, D2	70	100
		Softwood/Hardwood	Poor	D3	70	100
		Hardwood/Softwood	Good, Medium	D1, D2, D3	60	120
		Hardwood/Softwood	Poor	D1, D2, D3	70	120
		White Spruce	Good, Medium	D, D2	60	150
		White Spruce	Good, Medium	D3	60	140
		White Spruce	Poor	D1	70	150
		White Spruce	Poor	D2, D3	70	130
		White Birch	Good, Medium, Poor	D1, D2, D3	60	120
		Trembling Aspen	Good, Medium, Poor	D1, D2, D3	60	120
	Managed Stands	All Plantations	Good	N/A	40	150
		All Plantations	Medium	N/A	50	150
		All Plantations	Poor	N/A	60	110
		Balsam Fir PCT	Good	N/A	40	130
		Balsam Fir PCT	Medium	N/A	50	130
		Balsam Fir PCT	Poor	N/A	60	110
		Black Spruce PCT	Good	N/A	40	150
		Black Spruce PCT	Medium	N/A	50	150
		Black Spruce PCT	Poor	N/A	60	110
		Softwood/Hardwood PCT	Good	N/A	40	150
		Softwood/Hardwood PCT	Medium	N/A	50	150
		Softwood/Hardwood PCT	Poor	N/A	60	110

Figure 19: Operability Limits

3.4.4.7 Silviculture

Silviculture is one of the main forest management tools available to forest managers when analyzing the many different future forests that are generated using the wood supply modelling software. The silvicultural action used in the current wood supply analysis included planting of any areas that do not regenerate naturally with either black or white spruce.

Levels used in the Woodstock Model are Shown in Figure 20 below.

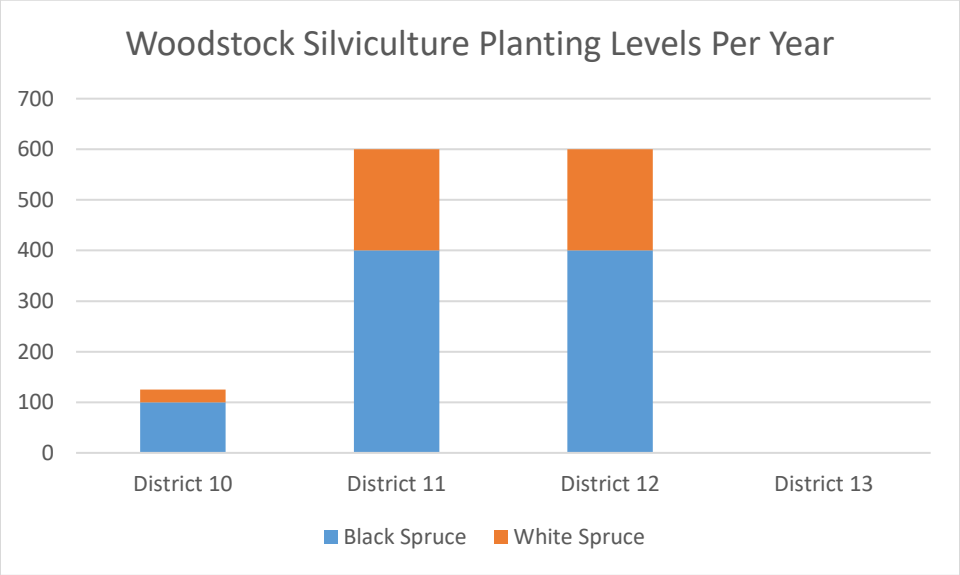

FIGURE 20: LEVELS OF SILVICULTURE INPUT INTO WOODSTOCK

3.5 Inventory Adjustments

The current wood supply model does not incorporate stochastic events that result in tree mortality. Natural disturbances such as wildland fire, blowdown, insects, and disease are considered in addition to timber utilization of both harvested and non-harvested stands. This loss estimate is the inventory adjustment. This adjustment accounts for the difference between the actual harvest volume versus the predicted gross merchantable volume (GMV) in relation to sustainable AAC's.

3.5.1 Fire

An estimate of productive area loss because of fire was based on an analysis of the historical fire statistics maintained by the department of forestry.

3.5.2 Insects

An aerial mortality survey was completed in areas with historically high insect infestations. This information along with a GIS analysis of areas salvaged enabled the department to determine the area of productive forest lost to insect mortality each year.

3.5.3 Timber Utilization

Information for this adjustment was derived from a series of intensive on-the-ground surveys which measured the amount of wood remaining on cutovers following harvesting. This wood was comprised of solid merchantable wood (logging losses) and wood with inherent cull (butt/heart rot). Surveys were conducted province wide and, on all tenures, where the information is analyzed by harvesting system and season.

3.5.4 Stand Remnants

Following harvesting operations, small fragments of stands often are left for a variety of reasons (operational constraints, low volume stands, terrain conditions). Leaving stand remnants often result in lower volumes achieved than predicted by computer models. Surveys were conducted across the province and the results analyzed to determine the amount of productive area attributed to remnants.

The inventory adjustment used for Forest Management Districts 10 was 15%, Districts 11 and 12 was 10% and District 13 was 18%.

3.6 Results

AAC for Forest Management Districts 10 - 13 for the period 2026-2030 is shown in Table 14.

Table 14: Annual Allowable Cut Zone 5 2026-2030 by District

	Annual Allowable Cut Volume (m^3)					
	Core Softwood	Operationally Constrained Softwood	Domestic Softwood	Core Hardwood	Operationally Constrained Hardwood	Domestic Hardwood
DISTRICT 10	22,000	4,900	0	2,500	400	0
DISTRICT 11	137,000	11,500	0	3,800	160	0
DISTRICT 12	137,500	13,000	0	2,900	9	0
DISTRICT 13	17,500	400	3,900	200	4	70

SECTION 4 CARBON ANALYSIS

4.1 Carbon in Our Forests

Forests remove carbon from the atmosphere in the form of carbon dioxide (CO_2). Through photosynthesis, the carbon is extracted from the CO_2 to form glucose and other organic compounds which fuel the tree's biological processes and form structural biomolecules that constitute the tree's biomass. The process of removing CO_2 from the atmosphere and transforming it into a usable form is called carbon sequestration, while the incorporation and retention of the sequestered carbon within the trees' biomass is called carbon storage. The carbon remains stored in the trees until the tree dies and decays, is naturally disturbed, or the wood is harvested. The post-disturbance landscape carbon dynamics differ depending on the type of disturbance.

The main driver of forest carbon dynamics is the age class structure of the forest, resulting from the forest's disturbance history. Both carbon sequestration and storage are low in young forests as their photosynthetic capacity is limited from their smaller leaf area and lack of biomass accumulated at this point. Middle-aged stands excel at carbon sequestration as this stage of succession undergoes rapid growth rates and biomass accumulation, requiring higher photosynthetic rates than at any other stage in development. By this stage, carbon storage has improved from the accumulation of biomass but is still progressing. Mature forests are necessary for carbon storage since they have the largest accumulated biomass that locks in the carbon they have sequestered throughout their lifetime. However, mature forests experience reduced growth rates and stand break-up through senescence, so carbon sequestration is limited to maintenance of existing biomass rather than producing new tissue. For these reasons, a balanced age class structure is optimal for maximizing the long-term carbon potential of a forest.

4.1.1 Modelling Carbon

A tree's biomass is closely related to its volume, which is a function of its height and DBH, with variability due to differences in wood densities across species. To convert the gross merchantable volumes from our wood supply models into stand-level carbon estimates, we integrated species-specific allometric biomass expansion factors (Boudewyn et al., 2007) into the model. It is an accepted assumption in the forest carbon field that carbon comprises half of a tree's dry biomass and applying this assumption allowed us to track carbon storage over the entire planning horizon. Stands without an assigned merchantable volume (i.e., commercial stands less than or equal to 10 years old or non-commercial forest stands) use area-base coefficients (Boudewyn et al., 2007) instead of the previously described volume-based expansion factors.

4.1.2 Carbon Management Scenarios

The distinction between managed and unmanaged landbase is crucial in explaining carbon dynamics. The managed landbase, which includes the core, operational, and domestic areas, allows for harvesting and silviculture interventions to actively shape the forest in alignment with the goals and values of the forest management plan. The excluded landbase, water buffers, and non-commercial forest defines the unmanaged forest, and this landbase does not differ between forest management scenarios for a given forest management district (FMD). Forest growth within unmanaged areas follows a natural forest succession regime since unmanaged forest area isn't created or destroyed in the model, and no harvest or silviculture intervention can be scheduled in those areas. Non-commercial forest stands are assigned an age of 120-years old and are not represented in the age class distribution graphs, but the carbon storage from these areas is included in the "unmanaged forest" trendline in the aboveground carbon graphs for each district.

To evaluate the impacts of various forest management strategies on carbon storage, four distinct scenarios were assessed using the carbon model. The first scenario (S1) is a management option in which no harvesting or silviculture intervention can occur. This scenario demonstrates the natural range of variation of carbon stocks in the managed forest when forest succession is undisturbed. However, this scenario also introduces the most risk to the forest for wildfires and insect outbreaks through fuel loading. The second scenario (S2) is the maximized carbon storage scenario which demonstrates the highest attainable carbon storage on the landscape within the

bounds of all wood supply constraints. Planting levels, harvest deferrals, and all other constraints on harvesting are present, but with an objective to maximize the amount of carbon that exists on the landscape. The optimization model uses harvesting and silviculture to manipulate the age class structure as close as it can to a balanced age class structure, maximizing the carbon storage on the landbase. The third management scenario (S3) is an unconstrained scenario, meaning there are no limitations on harvesting or silviculture for the entire 160-year planning horizon. This scenario demonstrates the absolute maximum carbon storage potential of the landscape but is not operationally realistic. The fourth scenario (S4) represents the harvest scenario used to generate harvest schedules that assisted District Managers in developing their five-year commercial operating areas (COA). This final scenario is important for analyzing the effects of the proposed harvesting regime on the district's carbon stocks and how the carbon dynamics compare to the three reference scenarios.

4.1.3 Carbon Analysis – District 10

In it's current state, FMD 10 stores a total of 5.01 Megatons (Mt) of carbon in aboveground biomass (i.e., stem wood, bark, branches, and foliage), with 3.93 Mt in the managed forest (78,305ha) and 1.08 Mt in unmanaged forest (49,717ha). With a slightly left-skewed age class distribution, the natural range of variation (S1) initially increases carbon before declining. The maximized carbon scenario (S2) stabilizes forest carbon stocks within the natural range of variation through adequate planting and restricted harvesting, allowing carbon stocks to gradually increase over time. The unconstrained run (S3) exceeds the natural range of variation through major harvesting and subsequent planting and thinning action approximately mid-way through the planning horizon. The harvest scenario (S4) follows a similar trend as S2 given the same constraints apply to both options, only differing in their objective function; maximize harvest and maximize carbon storage, respectively. The age class structure of the unmanaged forest is considerably balanced, resulting in a relatively stable carbon stock throughout the planning horizon.

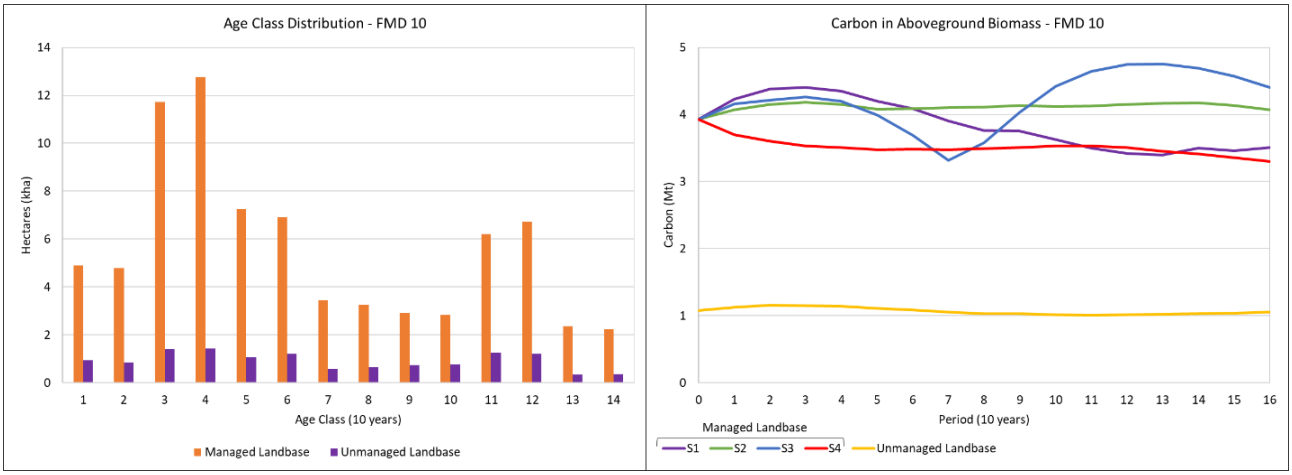

FIGURE 21: AGE CLASS DISTRIBUTION OF DISTRICT 10 AND CARBON IN ABOVEGROUND BIOMASS

4.1.4 Carbon Analysis – District 11

The managed forest (109,361 ha) contains 5.61 Mt and the unmanaged forest (86,812 ha) stores 1.81 Mt of the total 7.42 Mt of carbon currently stored in FMD 11. The existing left-skewed age class distribution causes a significant natural carbon stock fluctuation in S1, initially increasing carbon before declining. The max carbon scenario (S2) stabilizes carbon stocks near the peak natural carbon value through adequate silviculture early in the planning horizon and restricted harvesting throughout, preventing carbon stocks from receding to the natural lows found in the later portion of the planning horizon in S1. Similar to FMD 10, the unconstrained run (S3) exceeds the natural range of variation through extensive harvesting and subsequent silviculture interventions approximately mid-way through the planning horizon. The harvest scenario (S4) diverges and runs parallel to the max carbon scenario, highlighting the difference in optimization goals between the two scenarios. In the harvest scenario, any harvesting or silviculture efforts contribute to maximizing harvest levels while satisfying all constraints. In contrast, these actions work to maximize biomass and thus, carbon storage, on the landscape in the max carbon scenario (S2). The age class structure of the unmanaged forested landbase is roughly balanced age class structure, producing minimal variations in carbon throughout the planning horizon.

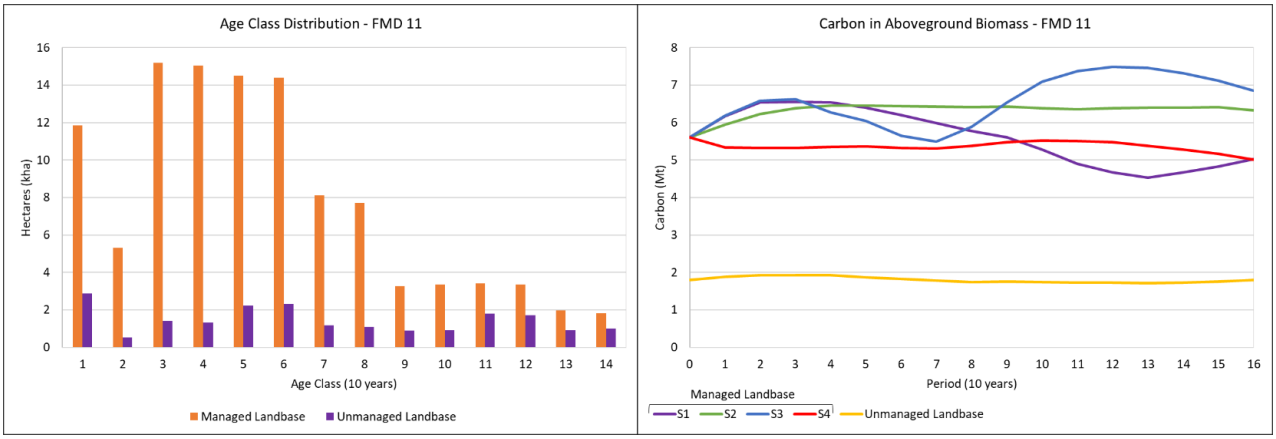

FIGURE 22: AGE CLASS DISTRIBUTION OF DISTRICT 11 AND CARBON IN ABOVEGROUND BIOMASS

4.1.5 Carbon Analysis – District 12

There is currently 8.29 Mt of carbon stored in FMD 12. The managed forest (113,717 ha) stores 5.61 Mt of this carbon, while the unmanaged forest (125,536 ha) stores 2.68 Mt. Although there is more unmanaged forest than managed, 96,878 ha of the unmanaged forest is low yielding non-commercial forest that lacks the ability to store as much carbon as the productive stands found in the managed landscape. The natural range of variation (S1) initially increases carbon stocks as the dominant younger stands mature, following a cyclic pattern as stands mature, die, and regenerate throughout the planning horizon. The max carbon scenario (S2) surpasses the peak of the natural range of variation by achieving a more balanced age class structure early in the planning horizon. This dynamic allows carbon stocks to benefit from silvicultural interventions over an extended period, resulting in higher long-term carbon storage compared to previous FMDs. The unconstrained run outperforms the natural range of variation in the later portions of the planning horizon, not deviating much from the natural range until 40-50 years out when the benefits of PCT and planting are realized. The harvest scenario (S4) diverges and runs parallel to the max carbon scenario, as discussed for FMD 10 and 11. The unmanaged forest has a more right-shifted age class structure, causing a gradual decline and subsequent increase as biomass cycles naturally through succession.

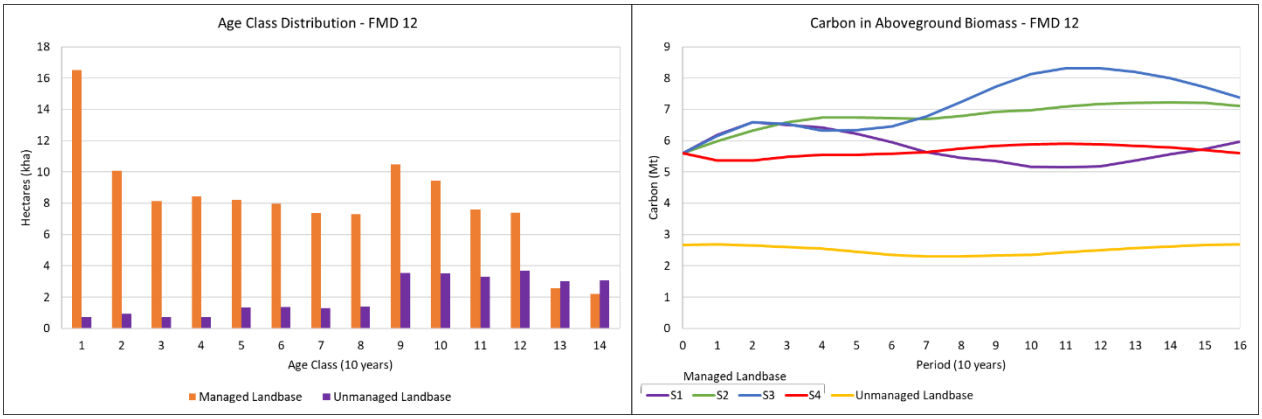

FIGURE 23: AGE CLASS DISTRIBUTION OF DISTRICT 12 AND CARBON IN ABOVEGROUND BIOMASS

4.1.6 Carbon Analysis – District 13

FMD 13 currently stores 4.06 Mt of carbon; 1.63 Mt in the 34,766 ha of managed forest and 2.43 in the 94,493 ha of unmanaged forest. FMD 13 has an abundance of water bodies and regulatory alienations to satisfy wildlife values (i.e., pine marten and caribou), leading to a proportionally high amount of forest in the excluded and water buffer landbase (35,215 ha) with the remaining 59,278 ha of unmanaged forest area attributed to non-commercial forest. As a result, the amount of carbon stored in the unmanaged landbase exceeds that of the managed landbase under any scenario, juxtaposed to the other districts in Zone 5. Both the managed and unmanaged forest demonstrate a bimodal-shaped age class distribution, so the natural range of variation (S1) initially increases carbon and then enters a gradual decline in carbon stocks as natural mortality is distributed through the planning horizon. The max carbon scenario (S2) is able to manipulate the bi-modal nature of the age class structure in the natural range into a stable trendline near the median natural carbon value using restricted harvesting levels. Minimal differences exist between the max carbon scenario and the harvesting scenario (S4) since neither planting nor PCT actions were included in the wood supply model, as per the District Manager's direction. Consequently, harvesting is the only tool available for either maximizing carbon or harvesting levels. The unconstrained run (S3) initially struggles to match the natural range of variation as it works to balance the age class structure. However, this process establishes a foundation for higher carbon stock levels in the latter half of the planning horizon.

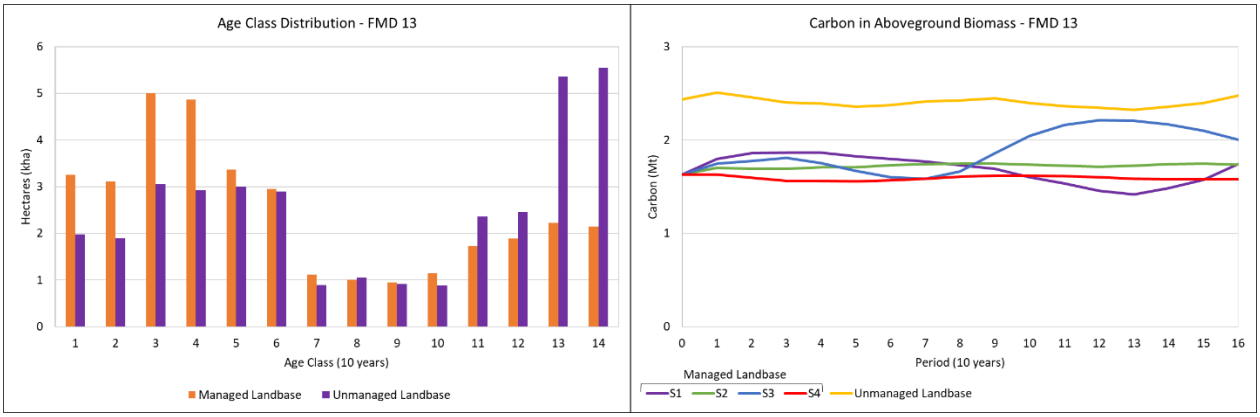

FIGURE 24: AGE CLASS DISTRIBUTION OF DISTRICT 13 AND CARBON IN ABOVEGROUND BIOMASS

SECTION 5 VALUES

5.0 Guiding Principles of Sustainability

Environmental, Economic, Political, Social, and Cultural are considered the five guiding principles of sustainability.

Environmental sustainability evaluates current and future ecosystem health. It ensures the needs of the present are obtained without compromising the ability of future generations' needs. Ecosystem health is determined by such factors as ecosystem integrity, biodiversity, productive capacity, and resiliency. The five-year operating plan strives to ensure these factors are maintained.

Economic sustainability requires forest resources to be managed efficiently and equitably among stakeholders. Economic development remains high priority for many of the residents within the province. However, economic development should only proceed with the incorporation of the other principles of sustainability.

Political sustainability refers to goals and management objectives being applicable, administrable, and practical. With the aid of public input and support, these goals and objectives must maintain these qualities into the future.

Social sustainability means fairness and equity to all interested stakeholders. The forest management strategy should not jeopardize the basic requirements of the public. As a result, public involvement/awareness, participation and decision-making are considered necessary for the development of proper forest management plans.

Cultural sustainability is attained by applying Newfoundland and Labrador's culture to the planning process. A forest management strategy cannot be successful without allowances within the strategy for traditional access and use of the land. For generations, the public of Newfoundland and Labrador has had free range in our pristine wilderness, a fact that cannot be ignored when

planning for the zone. All are key interlocking components, and each must be maintained if sustainable development is to be properly achieved.

5.1 Value Structure

The forest ecosystems of the zone provide a wide range of values to different individuals and groups, which include:

(a) Consumptive values such as timber products, hunting, trapping, sport fishing, and berry picking.

(b) Non-Consumptive values such as skiing, snowmobiling, hiking, and bird watching.

(c) Intrinsic and intangible values such as a feeling of wilderness and peace which some people describe as spiritual. Although difficult to spatially describe or quantitatively measure, spiritual values are considered to be a product or an accumulation of all values.

Other values such as water quality, parks, and protected areas provide the protection of forest ecosystems, which can enhance the above-identified values. Many of the values in the zone are identified by many years of forest management planning and engagement with interested stakeholders.

The following represents a framework for characterizing values in a clear and consistent manner. This approach consists of three components:

1. Characterization

- Description: Why the value is important, types of activities, intensity, spatial extent, employment, etc.
- Data in support: Statistical references.

2. Critical Elements

- Forest Features: Elements at risk from harvesting or enhanced by harvesting (viewscapes, adjacency to water, mountains, habitat, wilderness ambiance, road access, etc.)

3. Guiding Principles

   A guiding principle can be defined as a fixed or predetermined policy or mode of action. These ‘modes of action’ would be implemented in the five-year plan in the form of:

- Policies that should be in place to protect or enhance the resource value.
- Methods for negotiation or inclusion of other interested stakeholders in resolving potential conflicts.
- Special management provisions/strategies such as riparian buffer zone consideration, temporal operating periods, modified harvesting, or best management practices,
- Models and/or forecasting strategies to determine economic contribution, biodiversity impact, or community sustainability

Individual values are discussed both at the strategic and operational level. Strategic level information (characterization, critical elements, and guiding principles) is the focus of discussion in this section. They help to provide a mechanism for resolving potential conflicts that might arise throughout or after the five-year planning process. Where possible, the physical location of the value on the landscape (operational level) is identified to aid in the discussion of each value.

In many instances, the Environmental Protection Guidelines (EPG’s) developed by the department help form the guiding principles for a value. Quite often the spatial extent or location of all values is not known (e.g., raptor nests). Specific guidelines are still listed to provide a direction or course of action when and if these values are encountered.

5.1.1 Biotic Values

5.1.1.1 Big Game

5.1.1.1.1 Moose

Characterization:

Moose are not native to the island. A pair was introduced to Gander Bay in 1878, and two pairs were introduced to Howley in 1904 (Northcott, 1980). Today, moose are distributed throughout the island and the population is estimated to be about 125,000 - 140,000.

Currently, moose are managed on an area/quota system in the province. The island is divided into management areas, and license quotas are set annually for each area. Moose quotas are established for moose management objectives for each area. Generally, if an area has too high a moose population, managers will increase quotas to bring down the population to prevent damage to the habitat. However, if the habitat is in good condition, and the area could support more animals, future quotas may be increased. All or portions of moose management areas 11-13 and 15-22 are located within the zone.

Critical Elements:

Forest harvesting is not expected to have a negative impact on moose populations in this zone because moose prefer the early seral stages of a forest and generally do well in areas after harvesting.

5.1.1.1.2 Caribou

Characterization:

Caribou is the only native ungulate species on the island (Northcott, 1980). Prior to the railway's completion in 1897, there was a healthy population on the island. However, by 1930 the population had declined to about 2,000 animals (Murphy and Minty 1993). Between 1980 and 2000 the number of caribou has increased considerably on the island with a population estimated at 70,000+ animals. In the past few years, populations have declined, with this Forest Management Planning Zone being no exception. All or portions of caribou management areas 61, 62, 63, 66, 67 and 68 are in the zone.

Critical Elements:

Caribou populations have been and continue to be studied. Information has been developed to restrict forest harvesting around calving zones during the calving season. It has also been

hypothesized that forest road construction may have negative impact resulting from improved access into remote areas, which increases the probability of roadkill and poaching.

5.1.1.1.3 Black Bear

Characterization:

The black bear is native to the island and is found in forested areas (Northcott, 1980). Currently, the number of black bears occurring on the island is not known but is crudely estimated at about 6 - 10,000 animals. All or portions of black bear management areas 11-13 and 15-22 are located within the zone.

Critical Elements:

- Den sites for winter hibernation.
- Forest cover

Guiding Principles:

Big Game Management Strategy (moose, caribou and black bear)

The management of big game species within the province is the responsibility of the Wildlife Division and is accomplished through a Big Game Management Plan, which is annually prepared. Wildlife Division staff consider all relevant data such as recent census work, information provided on license returns, and jawbone or skull data to decide on types and numbers of licenses of each species in each management area.

Moose

Mature stands of timber serve as moose shelter or moose yards. Proposed forestry activity will be reviewed by the staff at the Wildlife Division, and recommendations will be incorporated into this five-year plan.

Caribou

In areas where caribou utilize lichens, a minimum amount of forest which supports these lichens will be maintained. Proposed forestry activity will be reviewed by the staff at the Wildlife Division, and recommendations will be incorporated into this five-year plan.

Black Bear

A 50-metre treed buffer must be maintained around known bear den sites (winter) or those encountered during harvesting. Proposed forestry activity will be reviewed by the staff at the Wildlife Division, and recommendations will be incorporated into this five-year plan.

5.1.1.2 Furbearers

Characterization:

Management of small game species within the province is the responsibility of the Wildlife Division. There are a variety of furbearers occurring within this Forest Management Zone. However, the more prominent ones include lynx, red fox, beaver, otter, muskrat, short-tailed weasel, red squirrel, mink, coyote, and pine marten. Of these, red squirrels, mink and coyote are not native.

Critical Elements:

- Water quality maintenance.
- Riparian buffer zones along aquatic areas.
- Maintaining a mosaic of forest age and development classes
- Snags and coarse woody debris (denning, nesting sites, etc.)

Guiding Principles:

Fur Bearer Management Strategy:

It is the responsibility of the Wildlife Division to develop and implement a furbearer management strategy. Like the big game management plan, a fur bearer management plan reviews the status of each fur bearer species and addresses the season dates and lengths, and if necessary, closure of areas (or no open season). Proposed forestry activity will be reviewed by the staff at the Wildlife Division and recommendations are incorporated into this five-year plan

Environmental Protection Guidelines:

To protect beaver habitat, all hardwoods within 30 meters of a waterbody occupied by beaver are to be left standing during harvesting operations.

5.1.1.3 Species of Interest

5.1.1.3.1 American Marten

Characterization:

Before 1900, American Marten ranged over most of the forested areas of the island. However, in 1934 numbers had declined significantly and marten were only found in limited regions. (Bergerud, 1969). In 1986, the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) assessed the Newfoundland population of the American Marten, and the species was listed as threatened. Revisions in 1996 and 2000 resulted in a downlisting to endangered status, due to further declines. Habitat loss, trapping and incidental snaring are possible reasons for the marten population decline.

Through the work of the Marten Recovery Team, the status of marten was downlisted from endangered to threatened in 2007 because new population estimates were stable, and distribution of marten was increasing. In 2024 populations were estimated at 2,500 – 2,800 mature animals and the status has been downlisted from threatened to vulnerable.

Critical Elements:

- Sufficient habitat to support a viable population of marten.
- Areas of known marten populations remain closed to trapping
- Only allow use of legal snare wire types

Guiding Principles:

As a result of the Recovery Team research, a suitability model for identification of marten habitat has been developed. The marten habitat suitability model has been a useful tool in identifying potential marten habitat and evaluating potential impacts of forest harvesting. Critical marten habitat has been identified, and continued development and refinement of this model will provide a more reliable means of evaluating impacts of harvesting on future marten habitat requirements.

Under Brian Hearn's work with the Canadian Forest Service, previous proposed harvest schedules within various forest management districts have been analyzed and indicate suitable habitat remained after harvest.

Forest habitat is integral to the long-term recovery of this species, and sustainable forest management will help to keep a stable habitat for Pine Martin to thrive.

The results are encouraging, in 2023 Martin were downlisted from threatened too vulnerable.

5.1.1.3.2 Rare Plants

Characterization:

Approximately 300 plant species, or about a quarter of all plant species on the island of Newfoundland, are considered rare and are found in 20 or fewer locations. Rare plants are often found in habitat types that are rare or at least restricted. While the limestone barrens of the Great Northern Peninsula are the best-known rare plant habitat, other habitats with high rare plant diversity exist in Central Newfoundland and other areas of the island.

Most of the rare plant species throughout Newfoundland are inhabitants of open habitats, such as river gravels, salt marshes, wetlands, aquatic habitats, and barrens. These are all areas where commercial forestry operations are not implemented. In Forest Management Districts 10, 11, 12 and 13 the greatest concentration of rare plants can be found in the flood plain of the Exploits River between Badger and Bishops Falls. The rare species occupy a variety of mostly open habitats, including gravelly and rocky shorelines and aquatic habitats in backwaters and ponds adjacent to the river. There are only two other areas where two or more rare plant species occur in proximity, at Lloyds River, approximately 7 km upstream of its mouth (District 13), and at “the Quarry” on the former rail bed (border Districts 12 and 16). Many areas of central Newfoundland appear to be devoid of rare plants, but it is likely that they have never been visited by botanists.

There are several rare plants that prefer or tolerate partial shading found in forests. In Districts 10-13, some of these plants occur scattered throughout the forested area, and they often occur alone, rather than in groups of several rare species. Unlike in Western Newfoundland, where rare forest species are more likely to be found in moist sites with nutrient rich or calcium influenced soils, most of the rare forest plants of Districts 10-13 are found in mesic or dry forests, often on sandy or rocky terrain. Some of these species are commonly associated with open forests, burned over areas or forest gaps and clearings, but can also occur in more closed forests under consideration for harvesting. Rare forest plant species in Districts 10-13 include:

- Teaberry, checkerberry - *Gaultheria procumbens* (dry, coniferous forest)
- Prince's pine, pipsissewa - *Chimaphila umbellata* (woods, dry or mesic, often with feathermoss understory)
- Red pine - *Pinus resinosa* (sandy soil)
- Carex foenea (dry to mesic forest, often in clearings)
- Carex adusta (sandy burned over and open areas)
- Dryopteris fragrans (cliffs, talus slopes, rocky woods)

Critical Elements:

- Quarrying and road construction
- Logging and extraction using heavy equipment.
- Mechanical site preparation
- All-terrain vehicle traffic

Guiding Principles:

- To ensure that rare and endangered plant species present in the zone do not become extinct resulting from forest management operations.
- To identify and protect rare plant habitat.
- To educate department personnel and the public on the locations and importance of rare plants
- Encourage domestic harvesting in the winter.
- Identify and update all rare plant sites on GIS forestry data base.
- Ensure that areas containing rare plants are marked and posted.
- Work with the Wildlife Division to develop mitigative measures in areas where rare plants occur.

5.1.1.3.3 Waterfowl

Characterization:

In District 10, two wetland sites located at Little Rushy Pond and Corduroy Brook within the Town of Grand-Falls Windsor Municipal Planning Area have been identified as significant wetland sites. In 1998, the Town signed a Stewardship Agreement with the provincial government to protect and conserve these areas.

Within Districts 12, the Wildlife Division has also designated another sensitive area at Victoria Steadies on the Victoria River.

Critical Elements:

- Maintenance of habitat
- Disturbance of waterfowl during the brood rearing, breeding, and staging period

Guiding Principles:

- A 50-metre treed buffer will be established around designated sensitive waterfowl areas. As well, no forestry activities are recommended during the brood rearing, breeding, and staging period
- A minimum 30-metre, treed buffer must be maintained from the high-water mark in other waterfowl breeding, molting, and staging areas.

5.1.1.3.4 Other Species

Other species are currently listed as endangered, including Black Ash. The Forestry and Wildlife Division has a representative on the recovery team for this species. Any recommendations on modified forestry activities, if any, for this species will be developed with input from all members and implemented accordingly.

5.1.1.4 Water Resources

Characterization:

The protection of water resources is an important topic both nationally and provincially. While much of the current focus is directed towards drinking water, it is also recognized that an equal importance must be attached to waters which have other beneficial uses. Human impacts both locally and globally have the potential to impair water for future uses. In Planning Zone Five, most communities have water supplies; ten of these supplies are protected under the province's Protected Water Supply Program. Recreational uses of water within this zone are used for activities such as fishing, boating and as a water supply source for numerous cabin owners. Human activity on the land has the potential to alter water quality and water quantity. Commercial forest harvesting is one of the predominant activities occurring throughout the zone. Hydroelectric

development has also occurred in the zone which has resulted in several river diversions. Mining operations within the zone in the form of mineral exploration, mining operations and small quarrying operations associated with road construction. Some exploration activity for hydrocarbons, dimension stone and base metals has occurred sporadically throughout the region.

Critical Elements:

Forest management activities such as road construction and maintenance, timber harvesting, and silviculture have the potential to alter the quality of water draining from watersheds. Impacts could include stream hydrology, sediment loadings, and stream characteristics. Careless storage and handling of fuels by industrial and recreational users, stream diversions, and agricultural operations are other examples.

Guiding Principles:

There are numerous protective measures listed in the Environmental Protection Guidelines under the broad categories of road construction, stream crossings, road abandonment, fuel oil handling and storage, support services and structures, harvesting, silviculture, and protected water supply areas.

5.1.2 Human Values

5.1.2.1 Timber Resource

Characterization:

One of the major resource values of the forest ecosystem is the harvesting of timber to provide forest products. Historical market value of forest products harvested and employment levels in this Zone is unknown at this time due to the closure of AbitibiBowater Mill in GFW in 2009. Re-development of the forest industry in this zone since that time has resulted in the 2 larger integrated sawmills having a more pronounced presence. As a result, there is potential to provide continued significant contribution to the local and provincial economy.

Historically, timber has been harvested since the first inhabitants settled in the Zone. Initial uses were mainly domestic in nature to supply timber to build houses, fishing sheds and equipment and for heating and cooking. With the increase in population, more commercial uses have arisen to supply lumber and pulp and paper products. Commercial logging contractors are allocated

most of the annual allowable cut level in the Zone. Commercial harvesting and sawmilling activity provide many jobs in harvesting, sawmilling, trucking, pulp and paper manufacturing and related spin off industries for residents.

Domestic harvesting provides fuelwood to heat many homes and sawlog material for residential house construction in the Zone. Domestic harvesting is conducted in specific domestic cutting areas via a crown domestic cutting permit that is required and issued within each forest management district. Unless otherwise specified; domestic cutting is limited to these designated cutting areas. A domestic permit specifies the volume and species that can be harvested, timber utilization standards, and other relevant conditions. While some domestic cutting areas are designated for hardwood only, most areas will allow the harvest of all hardwood and softwood species. Domestic harvesting is managed under sustainable forest management and has a sustainable AAC. Therefore, domestic harvesting is carbon neutral.

Silviculture treatments are important to the forest resource of the zone as it ensures that a vigorous and healthy forest is maintained. Forest renewal activities facilitate renewal of productive land base by manual planting areas that are not sufficiently restocked. Forest improvement activities help improve and enhance the growing stock which can reduce harvest cost, enhance forest product options, and increase sustainable timber supply. There will be a significant investment in silviculture in the zone each year creating seasonal employment.

Timely access to timber is critical to planning any forestry operations. Primary, secondary, and tertiary roads form an integral part of operating areas for commercial harvesting. Upon completion, these roads are often used for silviculture and recreational purposes. Each year, a significant amount of money will be spent to construct forest access roads in the Zone.

Protection of the forest from various disturbances is a major characteristic of resource management, which includes integrated pest management and forest fire prevention/suppression techniques. Other resource values are protected through modification of activities and enforcement.

Critical Elements:

The objective is to ensure the AAC is calculated using the latest information while considering other resource values and conducting environmentally sound operations. This is achieved by:

- Maintenance or enhancement of productive land base.
- Planting of non-regenerating areas.
- Minimizing loss of land base to other users.
- Minimize losses to fire, insect and disease.
- Timely access road construction.
- Enhancement of younger age classes through thinning to correct age class imbalance.

Guiding Principles:

- Enforcement of forestry act, regulations, guidelines and policies.
- Minimize loss of productive land base through spatial and temporal compromises and continuous dialogue with other resource users.
- Education (staff, public, operators).
- Aggressively conduct silviculture, access road, and protection activities.
- Implement best management practices. The EPGs outline courses of action and mitigative measures for forest activities. These most recent EPGs are outlined in their entirety on the Provincial Government Website:
  Microsoft Word - Environmental Protection Guidelines 2025.docx
- Some highlighted subject areas are listed below.
  - Garbage disposal
  - Fuel storage
  - Mineral soil exposure
  - Buffer requirements
  - Road and bridge construction
  - Silviculture and harvesting activities

5.1.2.2 Agriculture

Characterization:

Most of the commercial agricultural activity is in the Agriculture Development Area at Wooddale in forest management district 10. Additionally, hundreds of subsistence farming plots are scattered throughout the Zone. The vegetables grown on these plots are used to supplement food requirements during the winter months. There are also several pastures and areas designated for hay production. The wild berry industry (bakeapple, partridgeberry, strawberry,

blueberry, and raspberry) plays a significant role in the economic picture for the zone. While there is no actual record of domestic production, thousands of kilograms of berries are harvested annually. These berries are sold locally and to travelling tourists.

Critical Elements:

Surveys indicate that approximately five percent of the soil in the province is suitable for agriculture. It is not possible to identify and plan all sites for future agriculture use and often there is a conflict with other land uses, particularly forestry because these sites are of high growing capability. Although a suitable land base is the first critical element necessary for a successful agriculture operation, markets and the interest of individuals are also prime factors in the development and location of future farms. In the spirit of managing the ecosystem for multiple benefits, provisions have been given for the agriculture industry to expand.

Both the Forestry and Agrifoods departments have identified Agricultural Areas of Interest (AOI's) across the province, representing approximately 155,600 hectares. The area in AOI's has been removed from wood supply calculations and is available for agricultural development. In addition, Agricultural Development is still considered for areas falling outside established AOI's.

Guiding Principles:

Land base falling inside AOI's are available for agricultural production. However, the Land base falling outside AOI's and designated for forest management that is determined high potential for agriculture will also be considered. Consequently, the Forestry Branch will collaborate with the Agrifoods Branch when such opportunities exist.

- The following will provide guidance for the development of agriculture within the zone:
- Home gardening leases should be confined to areas already developed for this activity.
- New agriculture leases are approved by the Agrifoods Branch of the Department of Fisheries, Forestry and Agriculture.
- The Forestry Act has been amended to allow clearing of land to occur without a commercial cutting permit if applicant is utilizing the fibre for their own private use.
- Where possible, existing commercial forest operators should be encouraged to work with farmers to clear new land for development.

5.1.2.3 Mining

Characterization:

There is a significant mining presence in the area and a large gold mine is moving to production also at Valentine Lake. In addition, throughout the zone, there are also several active aggregate and quarry leases, which due to their small size are considered to have minimal negative impact upon the forest ecosystem. Exploration activities continue to form a large portion of the activities in the zone.

Critical Elements:

To minimize the impact of mining and mineral exploration upon the forest ecosystem while providing a source of energy and aggregate material.

Guiding Principles:

- Mines Division to work with Forestry Branch to ensure that quarries and open-pit mines are rehabilitated. The organic overburden should be stockpiled and stored in a manner so that it can be used to rehabilitate the site.
- Maps of mineral potential, mineral claims and aggregate and quarry areas must be kept up to date.
- Forestry Branch will minimize or avoid silviculture activity in proposed mines or quarries. Mineral exploration that proposes to explore or develop within a silviculturally treated area must be undertaken with minimal disturbance and provide compensation as required.
- Make every attempt to extract timber harvested as part of exploration and development. If timber cannot be feasibly extracted using conventional means, then timber shall be piled so that it may be extracted during winter months by snowmobiles.
- Mineral exploration and/or development on mineral licenses within the zone will not be impeded and will follow government policy. Specific proposed forest management activities are identified in annual operating plans for each upcoming calendar year.
- For the purpose of road construction, quarry permits are required only for aggregate material taken outside of the road right-of-way.

- Non-compliance with exploration permits identified by the Forestry Branch will be passed to the Mines Division.

5.1.2.4 Historic Resources

Characterization:

The provincial archeology office (PAO) is the agency responsible for the management and protection of archaeological sites and artifacts in Newfoundland and Labrador. This program is carried out under the Historic Resources Act which ensures that developments with potential to have adverse impacts on historic resources are investigated as and monitored by a qualified archaeologist through archaeological impact assessments.

Archaeological sites are non-renewable resources and play a vital role in understanding our heritage. Most often, archaeological sites are small, so it is important to protect these sites and professionally record as much information as possible to fully understand their history. To do this properly, the site must not be disturbed. Over the years, Archaeological surveys have been undertaken in several areas within the zone. However, there is potential that many areas remain to be surveyed. To date, there are many archaeological sites recorded within the zone and are protected under the Historic Resources Act. Most notably is evidence of the Beothuk along the Exploits River. There is potential for other historic resources to be found in the Zone.

Critical Elements:

Activities which disturb soil layers and/or provide unintended public access to an archaeological site can have a negative impact on that historic resource. Without applying best management practices, forestry activities such as construction of access roads and bridges, harvesting, mechanical site preparation and regeneration have the potential to destroy historic resources.

While forestry activities can have adverse impacts on historic resources, beneficial effects can be realized. Where impact assessments are carried out and new sites are found, it adds to our understanding of Newfoundland and Labrador’s heritage. When archaeological sites are discovered through impact assessments, these resources are protected from damage or destruction and preserved.

Guiding Principles:

Any project involving land use has the potential to adversely impact historic resources. Therefore, it is important for the provincial archaeology office is involved at the planning stage to ensure effective mitigative measures are developed early in the process to protect historic resources. Buffer Zones will be implemented to protect known archaeological sites and potential unknown sites. If deemed necessary, archaeological assessments may be required to fully assess the site. In addition, buffer zones are required along all rivers and ponds, as well as along the coastline, where there is potential for archaeological resources to be found. Occasionally there are accidental discoveries made of historical resources. If this does happen, activities should cease in this area and contact be made immediately with the provincial archaeologists.

5.1.2.5 Newfoundland T'Railway

Characterization:

The T'Railway is a linear park approximately 850 km in length, where a large section is located within the zone. It is comprised of the former CNR right of way, which varies from 25 to 100 feet on each side of the center line. It provides an all-season, multi-use recreation corridor and is developed and managed with the Parks and Natural Areas Division in conjunction with the T'Railway Council. The *Provincial Parks Ac*t provides the legislative framework for the administration and management of the T'Railway and is protected for the present and future enjoyment of the public. The T'Railway constitutes the province's contribution to the Trans Canada Trail System and is used primarily by snowmobile and all-terrain vehicles. Industrial or traditional uses such as commercial and domestic harvesting, quarry and mining access, and cabin access are also granted with a special permit.

Critical Element

- Protection of the historical landscape integrity of the T'Railway corridor.
- Preservation of the scenic quality along the corridor.
- Pontrol of land usage adjacent to the T'Railway.

Guiding Principles:

- Co-ordination of activities with various other agencies responsible for land management outside the T'Railway corridor to ensure that the integrity of the park is maintained

- Build partnerships with other stakeholders and user groups such as communities, industry and recreational organizations for the long-term maintenance and development of the T'Railway
- Establishment of a 100-meter buffer along the right-of-way corridor to preserve the natural value of the T'Railway. Also, consider viewscapes in forestry management plans.
- Where access is required, any landings or turnaround areas shall be 100 meters or more along the resource roads from the T'Railway.
- Where feasible and possible, Forestry Activity utilizing the T'Railway will avoid peak snowmobile and ATV seasons.

5.1.2.6 Parks and Protected Areas

Characterization:

The mission statement of the provincial Natural Areas Program is to protect, in an unimpaired condition, large wilderness areas, representative examples of all the province's ecoregions including their natural processes and features, and rare natural phenomena, to preserve the diversity and distinctiveness of the province's rich natural heritage and to support an ecologically sustainable future for the benefit of present and future generations.

There are several different types of conservation areas in the province contributing to the provincial system of protected areas, as recognized by the International Union for the Conservation of Nature. Wilderness Reserves and Ecological Reserves are established via the *Wilderness and Ecological Reserves Act*. Wilderness Reserves are generally large (>1000 km2) and are designed to protect complete ecological systems. Ecological Reserves may be established to protect representative samples of each of the province's natural regions (ecoregions) with a mid-sized reserve (50-1000 km2), or to protect exceptional natural features, occurring in an area <10 km2, such as rare species or areas of unusual biological richness. Provincial Parks, established under the *Provincial Parks Act*, do play a conservation role, but are primarily established as sites for outdoor recreation and nature-based education. Wildlife Reserves may be established under the *Wildlife Act* for the protection of specific species or habitats. Public or Crown Reserves may be established for conservation reasons under the *Lands Act*. National Parks such as Terra Nova, Gros Morne, and Tongaat Mountains are established under the federal *National Parks Act*. The benefits of protected areas are to preserve

biodiversity, provide areas for scientific research, opportunities for environmental education, provide standards against which the effects of development can be measured, and provide natural venues for enjoyment of nature.

Critical Elements:

- Preservation of biodiversity.
- Maintenance of protected area integrity.
- Maintain natural processes and features.
- Can be utilized as “control blocks” measured against similar areas where forest management activities have occurred.

Guiding Principles:

- The type of activities encouraged or permitted within various protected areas in the province depends entirely on the type of protected area and the rational for its establishment
- Generally, all non-consumptive activities are permitted; educational activities and scientific research within protected areas generally require a permit and are encouraged
- In most protected areas, new development is prohibited such as mining activity, hydroelectric projects, forestry activity, agriculture activity, roads/trails, cabins and new structures.
- A 500 m no roads buffer is to be maintained around all existing and proposed protected areas to reduce access and minimize damage from motorized vehicles
- Where forestry operations are scheduled within one kilometer of provisional and ecological reserves, wilderness reserves or provincial parks, modified operations may be necessary, and any amendments to the forest plan may be required.

5.1.2.7 Outfitting

Characterization:

Since the early 1900’s, the outfitting industry has been an integral component of the tourism industry in Central Newfoundland. This region has been a popular hunting and fishing destination because of the pristine environment and abundance of fish and wildlife species. There are many

outfitters operating within the boundaries of this forest management zone, which provides seasonal employment for many local individuals.

A significant number of traditional hunting and fishing facilities have diversified into the non-consumptive areas of the tourism industry. Such activities include snowmobiling, dog sledding, kayaking, canoeing, nature viewing, hiking, and wildlife photography. The ability to diversify has positively impacted the viability of outfitting operations and as a result, increasing numbers of operators are considering these opportunities. Pristine wilderness settings are necessary for many of these types of diversification.

Critical Elements:
Some outfitting camps are considered remote, and construction of forest access roads too close to a camp could have negative impacts on this remote appeal. Increasing accessibility through increased access roads has the potential for increased hunting and fishing pressures within each area. Increased pressure on the wildlife resource within a given area could potentially lead to decreased success rates of outfitter guests. With improved road access, there is also a potential for increased cottage development, which can also impact both remoteness and wildlife availability.

Without proper application of best management practices, forest harvesting can negatively impact wildlife travel corridors, bear denning areas, and caribou feeding and calving areas. Removal of large areas of forest can simulate the same effect of reducing wildlife habitat, particularly in winter staging areas.

While clients of hunting and fishing outfitters are primarily interested in the actual hunting or fishing experiences, they also show great respect and admiration for pristine conditions and a healthy-looking landscape. The landscape view experienced by clients plays a large role in leaving a lasting impression of the province. The viewscape experience may also have a direct impact on repeat client bookings and recommending the destination to others. Viewscapes become even more important as outfitters begin diversification into non-consumptive tourism activities. Prior to implementation of an Environmental Management System (EMS) on forestry operations, some poor past practices have resulted in increased levels of garbage (skidder tires, abandoned buses, used oil containers, etc.). This can be frustrating for outfitters who concentrate on not leaving permanent marks on the landscape. In addition, possible erosion caused by hillside logging and

heavy equipment use is also a concern - particularly due to its potential effects on water quality for fish habitat.

Guiding Principles:
Through consultations with outfitters located within the zone, it may be deemed necessary to develop a managed forest area around the established main outfitting lodge.

- Where possible, construct new access roads away from the existing main outfitting camp.
- Consideration should be given to decommissioning roads and bridges (where possible) after harvesting is completed. This will eliminate damage to the hunting area by reducing the possibilities of increased hunting pressure. When roads are in use actively for harvesting purposes, access to hunters could be restricted or limited.
- Where possible, conduct harvest activity in the winter and construct winter roads that are less passable in summer/fall and will help to reduce vehicular traffic.
- In consultation with the outfitter, forest harvesting can be restricted around hunting and fishing camps during their season of operation.
- forest operations shall be undertaken in compliance with existing regulations
- In consultation with the outfitter, efforts should be made to ensure that the integrity of the view from the outfitter main lodge is maintained when conducting forest operations.
- Forest operations shall ensure all garbage is removed from the harvest area.

5.1.2.8 Recreation

Characterization: non-timber recreational values such as hiking, skiing, canoeing/kayaking, ATV/UTV and snowmobiling constitute an important role within this Zone. Central Newfoundland has outstanding scenery, varying topography and opportunities for viewing wildlife and flora in a natural setting. Regardless of if you are canoeing/kayaking on the many rivers, walking the various hiking trails, utilizing forest access roads, or using groomed snowmobile trails, this zone provides excellent opportunities for sport hunting/fishing and adventure tourism activity.

Critical Elements:
Wilderness

Some adventure tourism activities are captivated by the existence of wilderness areas. If best management techniques are not applied, forest harvesting may result in the alteration of this feeling of pristine wilderness, which could have some short-term adverse effects.

Accessibility

Construction and maintenance of Forest Access roads has both positive and negative effects. On a positive side, it provides the ability to increase vehicular and ATV/UTV traffic, allowing for more opportunities for this activity. However, on a negative side, it also has the potential to decrease the value of the experience for those individuals seeking a “remote” type setting.

Viewscapes

Either walking on a trail, snowmobiling on a groomed trail or canoeing down a river, the visual experience of the surrounding land base plays an important role in the overall pleasure of the activity. Over the past number of years, viewscapes have become an integral part of forest management planning.

Guiding Principles:

Wilderness

Forest operations will avoid established ecological reserve areas and will make every attempt to consult with local stakeholders in areas of high concentrations of recreational activities. In such areas, stakeholder meetings could prevent conflicts through temporal scheduling.

Limiting Accessibility

Where possible on sensitive areas, forest harvesting will be scheduled during winter months and take advantage of winter road construction techniques. Winter roads usually restrict vehicular traffic and decommission naturally. In addition, decommissioning of regular forest access roads near sensitive areas is a possible option when forest operations are completed.

Viewscape

Where possible within areas where high concentrations of recreational activities occur, negative impacts to viewscapes may be managed using landscape design techniques. This could mean

that forest harvesting operations employ treed buffers, tree retention methods or implement reforestation activity immediately to return the site to a forested condition.

Previous viewscape analysis using computer modelling were completed in areas along the Exploits River and the Trans-Canada Highway to block the view of Forest Harvesting.

This initiative has proven to be difficult due to the requirement for specific observer points that are the only vantage points the analysis is valid for. The resulting areas left unmanaged can also pose issues as the viewable forest left is always changing and may require intervention in the future due to fire, wind, or insects. This delayed intervention period may be uneconomical due to the condition of the forest at that time.

It is important to remember that forests are dynamic, and a harvest is simply a reset, closely imitating natural disturbance and the green up will occur over a short time horizon.

5.1.2.9 Tourism

Characterization:

The tourism industry in Newfoundland and Labrador has experienced significant growth over the years, which is largely based on our natural and cultural resources. Newfoundland and Labrador have the resources to compete nationally and internationally with tourist destinations. As such, protection of these resources is vital for continued growth and prosperity. Tourism is becoming a great economic driver for provincial revenue. Some of the many excellent tourist destinations in the Zone include the Salmonid Interpretation Centre, Corduroy Brook walking trail, and Recreational Parks (Catamaran, Mary March and Beothuk).

Critical Elements:

- Viewscape
- Accessibility
- Wilderness ambiance
- Remoteness

Guiding Principles:

As indicated in the Recreation Values section, the Forestry Branch will collaborate with other stakeholders in this five-year planning period, to implement strategies for minimizing the visual impact of harvesting operations near sensitive areas. This could mean that forest harvesting

operations employ treed buffers, tree retention methods or implement reforestation activity immediately to return the site to a forested condition. Also, temporal changes in harvest scheduling could minimize noise levels during busy seasons near adventure tourism locations.

SECTION 6 MITIGATIONS

6.1 General

Best Management Practices adopted from previous planning processes to be incorporated into this plan

- A 30 m buffer will be maintained on both sides of rivers, ponds or brooks, that are shown on 1:50,000 topographic maps. Brooks that are found within proposed cut blocks that are not identified on 1:50,000 topographic maps will be evaluated as per the Environmental Protection Guidelines.
- There will be no cutting buffer within 100 meters of the Newfoundland T'Railway.
- There will be no cutting buffer within 100 meters of a cabin development area and 30 meters of an approved cabin.
- Scheduled salmon rivers will be evaluated on a site-by-site basis, and buffers will vary in width from 30 -100 meters.
- No forestry activity is to occur within 800 meters of a bald eagle or osprey nest during the nesting season (March 15 to July 31) and 200 meters during the remainder of the year.
- Within protected water supplies, there will be no cutting within 150 meters of the intake pond or stream and no cutting within 75 meters of the main river channel. There will be no cutting within 50 meters of all ponds and streams flowing into the intake pond or stream.
- 100 meter no cutting buffer on Victoria River.
- 100 meter no cutting buffer on Buchans Highway.
- 100 meter no cutting buffer on Burgeo Highway.

SECTION 7 PUBLIC CONSULTATION

7.1 Planning Framework

Forest Resource managers in Canada are striving for a society that successfully integrates economic, environmental and social considerations into all resource-related decision making. Since the early 1990's, there has been a country-wide shift from single resource management to a more comprehensive approach to forest ecosystem management. Sustainable Forest Management (SFM) must be balanced considering social, economic, and environmental issues. In the context of SFM, this shift has resulted in a move from the traditional narrow focus of timber management to incorporate non-timber values into the management planning framework. Another term that has become closely associated with SFM is "sustainable development" or in this case "sustainable forests", which not only considers the social, cultural, economic, and environmental benefits of the present, but those of future generations as well. Involvement of Interested Stakeholders into the five-year planning process is recognized by the Forestry Services Branch as a key component to achieving sustainable development.

The Forestry Services Branch, adaptive management planning process, has three objectives:

1. Establish a productive planning framework to include all interested stakeholders. An effective planning framework must have information and defined spatial issues.
2. Learn more about forest ecosystems while they are actively managed (adaptive management). Adaptive management incorporates strategies which help us learn about the forest ecosystem and to deal with uncertainties.
3. Establish an ecosystem approach to forest management which integrates the scientific knowledge of ecological relations and limits of growth with social values. This will help to attain the goal of sustaining natural ecosystem integrity and health over the long term.

Adaptive management makes decisions based on input from interested stakeholders and establishes a continuous learning program. The adaptive approach allows us to communicate, share information, and learn about forests being managed. This sharing of information, both old

and new, provides the flexibility necessary to adjust to changes and to set new goals. Such interaction is an absolute necessity for a subject as complex as an ecosystem.

More information on the Forest Management Planning Process can be found on Governments Forestry website using the following addresses
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

7.2 Stakeholder Involvement

Beginning in the mid 1990's, the Forestry Services Branch embarked upon a rigorous public consultation process for Five-Year Plans. This process involved a series of meetings spanning several months at an established venue, where interested stakeholders could discuss a range of forest management issues at an operational level.

The Forestry Services Branch released the first 10-year Provincial Sustainable Forest Management Strategy (PSFMS) in 2003 and the second Strategy document in 2014. The third Strategy Document is under final review for expected release prior to this plan's effective date. Amendments to the Forestry Act in 2005 added a requirement for a Sustainable Forest Management Strategy every ten years, and added the word Sustainable to plans. Consultation was required for Sustainable Forest Management Plans and the Sustainable Forest Management Strategy.

Considering the many five-year plans successfully implemented within the province since the mid 1990's through public consultation processes and the PSFMS developed through public consultations, the Forestry Services Branch strives to improve its methods to garner advice from the public while also mitigating land-use conflicts. To this effect, as new five-year plans are being developed and implemented provincially, relevant issues raised from previous planning processes are considered the foundation of the new plans.

Known stakeholders identified from previous planning processes, and an internal provincial department review were contacted directly through email. The Information regarding the proposed

forest management plan and google earth files of proposed Commercial and Domestic areas and Roads were provided to:

1) Town Councils
2) Outfitters
3) Indigenous Leaders
4) MHA's

As a testament to the success of the process since the result of this direct communication with known stakeholders' minimal correspondence was received regarding the proposed forestry activity from the directed emails.

The list of stakeholder contacts, the comments received, and departmental responses are in the Appendix.

SECTION 8 MANAGEMENT OBJECTIVES AND STRATEGIES

8.1 Harvesting

The boreal forest is characterized by natural stand replacement following a natural disturbance, which results in the formation of relatively even aged stands. A forest management technique called the Clearcut Silvicultural system is utilized for harvesting economic effectiveness. Fortunately, the clearcut system also closely emulates this natural disturbance pattern. The size, shape, arrangement, and juxtaposition of harvest areas vary across the landscape depending on localized topography and terrain conditions.

8.1.1 Commercial

The older unalienated timber considered in the worst condition is targeted as a high harvest priority, followed by stands that have been damaged by insects and disease. In managed stands, this priority changes to allow for a faster rotation on sites that have been silviculturally treated.

Specific commercial strategies include*:*

- Design irregular cut blocks that follow contours and natural boundaries.
- Vary buffer widths to protect other values (i.e. larger buffers on salmon rivers).
- Utilize winter harvest on wet and sensitive sites.
- Maintain current size and distribution of clear cuts.
- Where possible, maintain unharvested strips between harvest blocks as wildlife utilization corridors.
- Use landscape design techniques to mitigate viewscapes.
- Minimize timber utilization loss (< 6 m^3/ha).

8.1.2 Domestic

The harvest of domestic fuelwood and sawlogs occurs from designated areas, recent commercial harvest areas and sporadically throughout the zone with the removal of blowdown trees. Utilization of cutover residue, dead timber, and non-productive forest areas do not form part of

the wood supply analysis. Generally, domestic cutting areas are established near communities. However, within areas of the zone not covered by any operating areas, domestic permits may be issued to remote cabin owners for firewood as requested. The number of permits and volume associated with these permits will be extremely low and insignificant.

Specific domestic strategies include:

- Target low volume stands having poor commercial opportunities.
- Encourage use of poor-quality hardwoods and non-commercial softwood (birch, aspen larch). In areas where there are future softwood commercial operations, domestic harvesting is limited to non-commercial hardwoods.
- Target dead burnt and insect damaged stands that are beyond commercial salvage.
- Target alienation class 3 lands that have low commercial opportunity.
- In areas of high domestic demand, limit volume allocation in designated cutting areas and encourage alternate sources (cutovers, landings, noncommercial forest, etc.).

8.2 Silviculture

As a rule, approximately 80% of the Boreal Forest regenerates naturally following a disturbance. Forest renewal management programs are applied by forest managers to the remaining 20% that do not successfully regenerate naturally. Forest renewal silvicultural treatments are designed to help facilitate a new forest after disturbances caused by harvesting, insects, wind or fire. These prescriptions can involve either Site Preparation (scarification), Planting, or Pre-Commercial Thinning.

8.2.1 Site Preparation

When a site does not regenerate at all, a full planting program is required. In some cases, the site may need to be manually prepared to aid in the establishment and growth of the planted seedlings (generally black or white spruce and to a lesser extent, Norway spruce). Site preparation techniques can include:

- Mechanical site preparation (scarification) involves using heavy equipment (skidder) equipped with special attachments to reduce the thickness of the duff layer, and remove or disturb any kalmia that is present, which would restrict seedling growth.
- Prescribed burning is used to sanitize some sites where adelgid is present. This treatment reduces the slash loading and duff thickness to prepare the site for planting and kills any balsam fir which could potentially perpetuate the adelgid problem.
- Treatment to prepare sites that have been overgrown with hardwoods and other herbaceous species has been done with herbicides to reduce this competition, making the site more accessible and suitable for planting. Release herbicide treatment reduces competition for a few years to allow planted seedlings to get established. In other instances, herbicides are used to control Kalmia either before or after planting. Herbicides, while used sparingly, are sometimes a necessary tool to help establish a new forest, particularly on the better sites.

8.2.2 Planting

A full planting technique is required when no regeneration occurs to ensure regeneration of selected tree species is at acceptable levels. Gap planting is normally achieved with spruce seedlings, coupled with the natural regeneration already present on site to increase seedling density to acceptable levels.

On adelgid sites partially regenerated to balsam fir, planting is done through the existing regeneration to obtain a sufficient stocking level of an adelgid resistance species. However, where adelgid has been a problem, balsam fir regeneration is sometimes ignored, and the site is planted with spruce seedlings.

Where possible, seedlings used in the silviculture program are grown with seed from local sources. Seed orchards have been established at Pynns Brook and Wooddale to produce seed from plus trees collected throughout the province. Plus-trees are normally selected because they have superior growth and physiological characteristics. It is hoped that once the orchard is in full production, most of the planting stock will be grown from this source. The goal is to plant seedlings that have superior growth characteristics and thus increasing yield and maintaining genetic diversity.

Exotic species have been planted in trials at some locations in the Zone. However, it is not anticipated to form any substantive proportion of planting programs in the foreseeable future.

8.2.3 Thinning

To enhance development, silviculture thinning programs are designed to treat established forest stands. Pre-Commercial Thinning (PCT) involves the removal of stems in overstocked balsam fir stands at a young age of 10 -15 years. In areas which have high moose browsing potential, the age is increased to 20 – 25 years, so that crop trees are tall enough to be out of reach of moose. PCT reduces density levels which facilitates maximizing volume increment and operability (piece size). Trees removed are not of merchantable size and remain on site, returning the nutrients back into the soil. In the zone, balsam fir is removed to favor any spruce trees present within the stand. This prescription results in a mixed softwood stand (depending on the original density of spruce) which is more diverse and less susceptible to insect infestation. Also, any hardwood species that are not in direct competition with spruce or fir are left to increase the biodiversity of the stand.

Commercial and Diameter Limit thinning occurs at the intermediate age of 25 - 35 years and is undertaken in older balsam fir stands (either natural or previously thinned). It is designed to capture any mortality that would normally occur in the stand through self-thinning. The trees removed from commercial thinning operations are extracted and utilized. The remaining trees are left to grow, free from competition, and harvested when they mature. As with PCT, spruce and hardwoods are left where possible to increase the stand diversity.

Thinning programs aim to shorten the rotation period of a stand and produce large diameter stems. This program should increase the percentage of merchantable volume considered suitable for sawlogs. Commercial thinning has not been completed in the Zone and diameter limit thinning has been done sparingly. In recent years the precommercial thinning program has dropped significantly. This trend is expected to continue.
More information on the Silviculture Program can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

Specific silviculture strategies include:

- Ensure regeneration of areas disturbed by harvest, insect, wind and fire to prevent loss of productive land base.
- Use thinning techniques in young stands to promote enhanced stand development, reduce rotation age, and increase the percentage of sawlogs.
- Leave hardwoods, where possible, in pre-commercially thinned areas to increase diversity.
- Where possible, promote a species mix, particularly with spruce and hardwoods to reduce susceptibility to insect attack and increase biological diversity.
- Where possible, use seedlings grown from local seed sources to protect genetic diversity.
- Ensure levels of planting and thinning used in the wood supply analysis are achieved.
- Work towards pre harvest planning to identify areas with potential silviculture problems so that optimal prescriptions can be promptly employed.

8.3 Access Roads

Forestry roads are required to gain access to scheduled commercial harvest areas. Access roads also provide opportunities for other recreational and commercial values such as hunting, fishing, skiing, berry picking, hiking, outfitting, cabin development and mineral exploration.

The minimal amount of access road is constructed to effectively and efficiently conduct commercial harvest operations. Access roads are constructed to specifications minimizing right-of-way and running surface width. Forwarding distances are maximized to curtail the overall amount of road construction. In sensitive and wet areas, winter harvesting and road construction are encouraged. Following these principles helps to ensure the minimum number of roads will be constructed, reducing the loss of productive forest land base and minimizing environmental disturbance. Road and bridge maintenance and/or decommissioning are considered depending on cost, and mitigation of conflicting uses for a particular road.

More information on the Roads Program can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

Specific roads strategies include:

- Construct winter roads in sensitive and wet areas.
- Minimize the amount of road built by maximizing forwarding distances.
- Use minimum road standards to safely and effectively match the logging chance.
- Consider road decommissioning on roads near remote outfitting lodges and other areas of concern when requested and where feasibly possible.
- Determine impacts and explore alternatives (cost sharing) in areas when road and bridge decommissioning impacts other stakeholders.
- Explore all avenues to secure funding for road construction and encourage operators to build their own roads in exchange for royalty reductions.

8.4 Forest Protection

8.4.1 Insects and Disease

As indicated in previous sections, insects have been considered a major natural disturbance within the Zone. Balsam fir is susceptible to most of the major insects including spruce budworm, hemlock looper, and balsam woolly adelgid. In the past, severe mortality has occurred in District 13 resulting in massive salvage efforts. In recent years, hemlock looper and spruce budworm counts have been low. However, populations of these insects are closely monitored, and treatment is employed where warranted. The adelgid problem is worsening in District 10 and 11. Alternative silviculture prescriptions (centered on minimizing fir regeneration in susceptible areas) are being employed to minimize the impact of this insect. In the event of a major insect infestation, salvage efforts may change harvest priorities. However, deviations from harvest schedules will be closely monitored to ensure that the validity of the AAC is not compromised.

Monitoring and protection programs for insects and disease are coordinated by the forest protection division in Corner Brook. Local district staff provide assistance in detection, monitoring, and protection surveys against insects and disease. More information on the Forest Insect Control Program can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

Specific insect and disease strategies include:

- Silvicultural techniques at the stand level to alter species mix and increase stand vigor to make stands less susceptible to insect attack.
- Where possible, harvest scheduling techniques to alter species mix across the landscape minimize potential for severe insect infestation.
- In conjunction with provincial and federal initiatives, use pertinent and approved insecticides.

8.4.2 Fire

There has been a cyclic fire history in the Zone. A fire in an unusually dry year can have devastating effects on the forest and can exacerbate an established wood supply. The risk of a serious forest fire can be minimized by maintaining a highly trained, efficient and effective fire control program and by minimizing the risk in forest stands through maintenance of forest health and vigor. Within the zone, there have been major forest fires in recent years and a significant fire history in the past.

The Department of Fisheries, Forestry, and Agriculture is committed to the protection of the resource and continues to invest in a fire suppression program to ensure any future losses are minimized. There are fire crews and equipment stationed at local forestry depots within the zone during the forest fire season, whose direct responsibility is forest fire protection. In addition, support, equipment and manpower at both the regional and provincial level is available should the need arise. Four CL415 air tankers are stationed strategically at Gander or Deer Lake, and helicopters in Gander are available for initial attack. More information on the Forest Fire Program can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

Specific fire strategies include:

- Maintain fire control capabilities.
- Silvicultural treatments and protection from insects to increase health and vigor of stands.
- Promote species mixes in stands to minimize risk.
- Hardwood establishment near communities.

8.4.3 Windthrow

Wind throw usually occurs in older stands that have been predisposed by some other disturbance such as insects and disease. To minimize the effects of Windthrow (blowdown), stands will be managed to promote forest health and vigor mainly through silvicultural treatments and protection from insects.

Specific windthrow strategies include*:*

- Management plans target over-mature and mature stands for harvest.
- Maintain forest in healthy vigorous condition through silvicultural treatments and protection from insects.
- Avoid thinning in areas with high wind damage potential (hilltops on high elevations etc.).

8.5 Environmental Protection & Climate Change

8.5.1 General Environment

The Department of Fisheries, Forestry, and Agriculture have developed an Environmental Management System (EMS) that is registered with the International Standards Organization (ISO). As part of this process, an EMS Policy was developed, and proper operating procedures were developed for various forest management activities. Initial registration was on December 17, 2015, and through regular monitoring and audits (internal and external), the EMS remains registered. Under the EMS, the department has developed stringent operating procedures for fuel handling, working around waterbodies, and overall pollution prevention. In addition, inspection programs are implemented are implemented to evaluate forest operations and rectify any deviations from established protocols. More information on the EMS can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

To ensure forestry activity is conducted to minimize any potential negative impacts to the environment, operating procedures and best management practices called Environmental Protection Guidelines (EPG's) have been developed and implemented across the province. Highlights of measures to avoid these impacts include no activity buffer zones, modification of harvesting design and equipment, avoidance of sensitive site during critical periods, consultation

with other regulatory agencies, and monitoring. More information on EPG's can be found on Governments Forestry website using the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

Through implementation of the EMS and the EPG's, the department strives to be responsible stewards of the land base. Also, the programs illustrated in this document relating to forest protection from Insects and Fires, help to maintain a forested land base. As indicated in previous sections, harvested sites are evaluated for regeneration potential, and proper reforestation techniques are implemented to facilitate tree growth. Maintaining and achieving a stocked forest at the earliest timeframe helps provide for carbon storage.

8.5.2 Surveys

Utilization surveys will be conducted on both commercial and domestic cutovers to ensure loss of merchantable timber is minimized. Results of these surveys will be used to evaluate the expected volume in an operating area compared to those actually attained. The results of this survey will help refine inventory deductions in future wood supply analysis.

Reconnaissance and intensive regeneration surveys will be conducted on commercial cutovers in this upcoming five-year period, as well as those created in the past five years to determine the requirement for silvicultural activity. Reconnaissance surveys will be completed on regenerating stands to determine the suitability for pre-commercial thinning.

8.6 Information and Education

Information and education are key elements to providing active and effective participation in the planning process at all levels. Through interaction with various user groups and the public, a better understanding of one's values and positions is gained. The more we know about other values and their location, the better the ability to mitigate any potential negative impacts. Districts within the zone will continue to educate the public and engage in meaningful consultations with interested stakeholders where applicable. Annual National Forest Week activities provide a great opportunity for interested individuals to gain a greater understanding of the Provinces Forest.
Sources of information can include:

- Government website

- Field trips
- School visits
- General day to day contact

SECTION 9 PROPOSED ACTIVITIES

9.1 Overview

This section will outline all forest activities that will occur on crown land in the zone from 2026-2030, including: proposed commercial and domestic harvesting, silviculture, access road construction, and activities proposed within protected water supply areas.

To present a more comprehensive overview of proposed activities, an overview map of each district is presented in Appendix 1. These maps show all proposed operating areas with each operating area name so that operations can be viewed from a district landscape perspective. Summary sheets of each of these operating areas are presented in Appendix 2. The summary sheets give a brief description of each of the operating areas identified on the overview maps, the type of activities that will occur, and any issues raised and mitigative measures employed.
Digital copies of the Zone 5 plan can be found on the forestry website at the following address:
Fisheries, Forestry and Agriculture - Government of Newfoundland and Labrador

9.1.1 Allocation of Timber Supply

Table 15 below indicates the scheduled proposed forest harvest for the upcoming five-year period 2026-2030.
The total volume identified may be over the final AAC for each forest management district, but when scheduling activity, the maximum sustainable harvest over the five-year period will not be exceeded.

Table 15: Proposed Forest Harvest in Zone 5 from 2026-2030

	PROPOSED HARVEST TOTAL VOLUME m^3				
HARVEST TYPE	**Core Softwood**	**Operationally Constrained Softwood**	**Core Hardwood**	**Operationally Constrained Hardwood**	**TOTAL**
COMMERCIAL	2,223,489	29,397	48,000	51	2,300,938
DOMESTIC	109,471	0	46,766	0	156,237
TOTAL	2,332,960	29,397	94,766	51	2,457,175

9.1.1.1 Commercial

The timber scheduled for commercial harvest in the zone is overmature with some small pockets of mature dispersed throughout. Silviculture treated areas that are operable are also included for harvest. This proposed harvest approximates the harvest schedule that was used to determine the AAC. The allocated operating area and associated harvest volumes represent as much as two times the actual proposed harvest, for operational efficiencies.

The purpose of including more area than will be harvested is to allow for operational flexibility without having to constantly amend the plan. The AAC is constrained by the Woodstock model, so there must be a minimum operable volume of two times the AAC on the landscape. With some spatial limitations, this wood is equally available for harvest.

Commercial operations occur manually or mechanically using equipment such as chainsaws, feller bunchers, short wood harvesters, skidders and forwarders and are conducted year-round. The more sensitive sites are usually harvested in winter, and most operations are integrated utilizing sawlogs, pulpwood, and fuelwood.

Proposed commercial harvesting is summarized in tables 16 to 19 below.

Table 16: FMD 10 Proposed Commercial Harvesting from 2026 to 2030

Operating Area FMD 10				Proposed Commercial Harvest Volume (m3)					
				SOFTWOOD			HARDWOOD		
Name	OA	Tenure	Productive Area (ha)	Core	Operationally Constrained	Total	Core HW	Operationally Constrained HW	Total
Powderhorn North	CC10001	Crown	262	27,168	58	27,226	1,584	0	1,584
Powderhorn South	CC10002	Crown	72	5,574	160	5,734	1,365	0	1,365
Catamaran Brook	CC10003	Crown	89	7,394	160	7,554	1,264	0	1,264
Badger	CC10004	Crown	69	5,784	55	5,839	245	0	245
Badger Chute	CC10005	Crown	29	3,561	0	3,561	0	0	0
Cassandra	CC10006	Crown	319	35,011	0	35,011	1,289	0	1,289
Dog Brook	CC10007	Crown	34	2,153	0	2,153	543	0	543
Northern Arm	CC10008	Crown	11	1,716	0	1,716	0	0	0
Musquash	CC10009	Crown	69	7,584	0	7,584	0	0	0
Gull Lake	CC10010	Crown	53	5,220	0	5,220	0	0	0
New Bay Pond	CC10011	Crown	132	15,702	525	16,227	0	0	0
Frozen Ocean	CC10012	Crown	42	4,218	0	4,218	0	0	0
West Arm Brook	CC10013	Crown	16	1,130	31	1,162	0	0	0
Indian Pond	CC10014	Crown	140	11,104	576	11,680	790	0	790
New Bay River	CC10015	Crown	199	12,814	0	12,814	2,876	0	2,876
Trout Lake	CC10016	Crown	79	1,515	0	1,515	3,059	0	3,059
Seabright's	CC10017	Crown	698	66,215	701	66,916	0	0	0
Newfoundland Pond	CC10018	Crown	265	32,575	671	33,245	0	0	0
		TOTAL:	**2578**	**246,441**	**2,935**	**249,376**	**13,016**	**0**	**13,016**

Table 17: FMD 11 Proposed Commercial Harvesting from 2026 to 2030

Operating Area FMD 11				Proposed Commercial Harvest Volume (m3)					
				SOFTWOOD			HARDWOOD		
Name	OA	Tenure	Productive Area (ha)	Core	Operationally Constrained	Total	Core HW	Operationally Constrained HW	Total
Rattling Brook	CC11001	Crown	124	10,223	654	10,876	0	0	0
Rattling Lake	CC11002	Crown	123	9,453	757	10,210	28	33	61
Caroline Lake	CC11003	Crown	77	7,713	313	8,026	0	0	0
Otter Pond	CC11004	Crown	82	8,359	270	8,629	0	0	0
West Jumper	CC11005	Crown	23	1,021	0	1,021	507	0	507
Whealans	CC11006	Crown	2	87	0	87	40	0	40
Tote Hill	CC11007	Crown	62	5,706	0	5,706	0	0	0
Tote Lake South	CC11008	Crown	189	18,991	0	18,991	0	0	0
Haynes Lake	CC11009	Crown	545	52,282	229	52,510	0	0	0
Miguels Lake	CC11010	Crown	0	0	0	0	0	0	0
Great Rattling West	CC11011	Crown	319	34,641	95	34,737	0	0	0
Three Brooks	CC11012	Crown	184	17,773	0	17,773	0	0	0
Little Rattling	CC11013	Crown	371	35,602	0	35,602	995	0	995
Twin Ponds	CC11014	Crown	108	8,621	0	8,621	0	0	0
Paradise Lake South	CC11015	Crown	112	10,666	0	10,666	0	0	0
Christmas Pond	CC11016	Crown	288	27,470	0	27,470	0	0	0
Miguel Mountain	CC11017	Crown	661	60,158	331	60,489	91	0	91
Lemotte's	CC11018	Crown	45	2,917	0	2,917	0	0	0
Lemotte's West	CC11019	Crown	33	2,426	0	2,426	0	0	0
Frenchman's Brook	CC11020	Crown	66	6,456	0	6,456	0	0	0
Tom Joe Brook	CC11021	Crown	10	448	0	448	385	0	385
West Lake	CC11022	Crown	138	12,988	0	12,988	2,228	0	2,228
West Lake South	CC11023	Crown	437	42,567	0	42,567	0	0	0
Leonards Lake	CC11024	Crown	510	54,842	736	55,578	13,538	0	13,538
Caledonia Brook	CC11025	Crown	1,226	115,622	315	115,936	355	0	355
Coronation Lake	CC11026	Crown	576	52,396	20	52,415	711	0	711
Sandy Brook	CC11027	Crown	1,174	121,548	105	121,652	0	0	0
Patchy Valley	CC11028	Crown	449	44,139	668	44,808	0	0	0
Sandy Lake North	CC11029	Crown	254	25,191	384	25,576	0	0	0
Sandy Lake South	CC11030	Crown	138	7,173	731	7,904	0	0	0

Cripple Back	CC11031	Crown	384	42,603	1,425	44,028	179	0	179
Long Tail	CC11032	Crown	207	19,775	749	20,525	2,324	0	2,324
Shoulder Blade	CC11033	Crown	245	30,868	103	30,972	0	0	0
Noel Paul Brook	CC11034	Crown	268	34,283	0	34,283	0	0	0
Noel Paul East	CC11035	Crown	188	19,456	1,186	20,642	0	0	0
Pamehoc Lake	CC11036	Crown	306	44,877	593	45,469	171	0	171
Salvage	CC11037	Crown	37	3,660	0	3,660	0	0	0
		TOTAL:	**9,961**	**993,001**	**9,664**	**1,002,665**	**21,551**	**33**	**21,584**

Table 18: FMD 12 Proposed Commercial Harvesting from 2026 to 2030

Operating Area FMD 12				Proposed Commercial Harvest Volume (m3)					
				SOFTWOOD			HARDWOOD		
Name	OA	Tenure	Productive Area (ha)	Core	Operationally Constrained sW	Total	Core HW	Operationally Constrained hW	Total
Millertown Jct.	**CC12001**	Crown	961	79,722	1,335	81,057	0	0	0
Buchans Highway	**CC12002**	Crown	280	20,062	2,006	22,068	1,004	0	1,004
Valley Brook	**CC12003**	Crown	96	8,313	384	8,697	0	0	0
Duck Pond East	**CC12004**	Crown	617	60,114	1,759	61,873	0	0	0
Michael's Brook	**CC12005**	Crown	136	8,624	229	8,853	0	0	0
Selby's Pond	**CC12006**	Crown	134	14,426	0	14,426	0	0	0
Duck Pond West	**CC12007**	Crown	150	13,513	0	13,513	270	0	270
Gills Valley East	**CC12008**	Crown	1,283	132,812	89	132,901	0	0	0
Haven Steady	**CC12009**	Crown	113	16,253	0	16,253	0	0	0
Victoria River West	**CC12010**	Crown	624	51,127	0	51,127	4,328	0	4,328
Denny's Pond North	**CC12011**	Crown	344	31,553	0	31,553	423	0	423
Lost Pond	**CC12012**	Crown	198	16,812	153	16,965	0	0	0
Rogerson's Lake	**CC12013**	Crown	809	61,561	3,046	64,608	0	0	0
Lake Douglas	**CC12014**	Crown	778	69,165	2,471	71,636	0	0	0
Quinn Lake	**CC12015**	Crown	424	30,222	0	30,222	1,061	0	1,061
Roebuck's	**CC12016**	Crown	350	23,093	169	23,262	465	0	465
Sutherland's	**CC12017**	Crown	1,170	76,041	1,214	77,254	120	0	120
Victoria River East	**CC12018**	Crown	338	16,503	801	17,304	648	0	648
Denny's Pond	**CC12019**	Crown	393	30,182	217	30,399	4,743	0	4,743
Noel Paul West	**CC12020**	Crown	451	47,392	738	48,130	0	0	0
Beothuk Lake	**CC12021**	Crown	212	17,590	321	17,911	0	18	18
Bobby's Pond	**CC12022**	Crown	300	24,380	622	25,003	0	0	0
Island Pond	**CC12023**	Crown	60	4,145	205	4,350	0	0	0
Tally Pond	**CC12024**	Crown	35	2,112	0	2,112	0	0	0
Millertown Jct. West	**CC12025**	Crown	61	4,955	134	5,090	38	0	38
		TOTAL:	**10,318**	**860,671**	**15,894**	**876,565**	**13,100**	**18**	**13,118**

Table 19: FMD 13 Proposed Commercial Harvesting from 2026 to 2030

Operating Area FMD 13				Proposed Commercial Harvest Volume (m3)					
				SOFTWOOD			HARDWOOD		
Name	OA	Tenure	Productive Area (ha)	Core	Operationally Constrained	Total	Core HW	Operationally Constrained	Total
Hospital Pond	CC13001	Crown	587	36,077	904	36,981	0	0	0
Southwest Lake	CC13004	Crown	947	68,447	0	68,447	333	0	333
Victoria Lake West	CC13005	Crown	126	18,852	0	18,852	0	0	0
		TOTAL:	1,660	123,376	904	124,280	333	0	333

9.1.1.2 Domestic

Harvesting will occur in designated domestic cutting areas and is generally conducted on a small patch cut system. However, within areas of the zone not covered by any operating areas, domestic permits may be issued to remote cabin owners for firewood as requested. The number of domestic permits and volume associated with these permits will be extremely low and insignificant. All domestic cutting is done under a permit which has conditions attached that outline the species, volume, location and utilization standards to be employed. Most cutting occurs in fall and winter with extraction by snowmobile or ATV. Domestic permit allocation is 23 m^3.

Proposed domestic harvesting is summarized in tables 20 to 23 below.

Table 20: FMD 10 Proposed Domestic Harvesting from 2026 to 2030

Proposed Domestic Harvest FMD 10				Estimated 5 Year Volume (m3)	
OA Name	OA #	Area (ha)	Number of Permits	Softwood	Hardwood
Peter's Pond - Peterview Ridge	CC10501	2842	115	0	1725
Northern Arm Lake - Wooddale	CC10502	6781	300	4050	450
Powderhorn Lake	CC10504	7788	480	6480	720
Frozen Ocean	CC10505	4118	100	0	1500
New Bay Lake East - Rowsell's Lake	CC10506	6175	120	0	1800
Bishop's Falls	CC10507	6,744	1390	18765	2085
Nanny Bag Lake - Four Mile Lake	CC10509	6113	50	0	750
Grand Falls-Windsor - Leech Brook	CC10510	10,079	970	13095	1,455
	TOTAL:	50639	3,525	42390	10485

Table 21: FMD 11 Proposed Domestic Harvesting from 2026 to 2030

Proposed Domestic Harvest FMD 11				Estimated 5 Year Volume (m3)	
OA Name	OA #	Area (ha)	Number of Permits	Softwood	Hardwood
West Lake - Sandy Brook	CC11501	4771	330	0	4950
Lemotte's Lake - Stoney Brook	CC11502	4959	485	6550	730
Jumper's Brook East - Rattling Brook	CC11503	5940	115	0	1725
Miguel Lake South	CC11504	6272	30	0	405
Beaton's Lake	CC11505	7958	10	0	150
Amy's Lake	CC11506	5331	35	475	55
Pamehoc Lake	CC11507	4015	65	0	975
Middle Brook Exploits River	CC11508	6095	50	0	750
Five Mile Lake	CC11509	3942	40	0	600
Cripple Back Lake	CC11510	2681	75	0	1125
Crystal Lake	CC11511	5341	60	0	900
Paradise Lake	CC11512	4838	85	0	1275
Martin Lake - Haynes Lake	CC11513	9118	305	0	4575
South Side Road	CC11514	7775	515	6955	775
Jumper's Brook West - Camp 6	CC11515	7021	235	0	3525
Tote Brook - Burnt Lake	CC11516	4561	95	0	1425
Sepepet - Sandy Lake	CC11517	10516	55	0	825
Snoopy	CC11518	11478	35	475	55
Crystal Lake South	CC11519	3025	10	135	15
Sunday Pond	CC11520	1602	10	135	15
	TOTAL:	117239	2625	14725	24850

Table 22: FMD 12 Proposed Domestic Harvesting from 2026 to 2030

Proposed Domestic Harvest FMD 12				Estimated 5 Year Volume (m3)	
OA Name	OA #	Area (ha)	Number of Permits	Softwood	Hardwood
Badger Burn	CC12501	4510	70	945	105
Buchans	CC12502	4154	245	3310	370
Millertown	CC12503	5373	135	1825	205
Buchans Junction	CC12504	785	55	745	85
Joe Glodes	CC12505	8201	75	1015	115
Badger Track	CC12506	1525	40	540	60
Burnt Pond – Quinn Lake	CC12507	11526	15	0	225
Warford's Ridge	CC12508	16720	50	0	750
Noel Paul	CC12509	4494	10	0	150
Harpoon	CC12510	4324	20	0	300
Hungry Hill	CC12511	4638	85	0	1275
Tally Pond	CC12512	5153	15	0	225
Lake Ambrose	CC12513	5870	40	0	600
Snowshoe	CC12514	7660	10	0	150
Rogerson Lake	CC12515	12902	10	0	150
Costigan	CC12516	9826	15	0	225
Harbor Round	CC12517	8599	25	0	375
Sutherlands	CC12518	11815	10	0	150
Skidder Brook	CC12519	15741	30	0	450
Star Lake	CC12520	16127	10	0	150
Buchans Highway North	CC12521	7156	105	0	1575
	TOTAL:	167099	1070	48,196	11,431

Table 23: FMD 13 Proposed Domestic Harvesting from 2026 to 2030

Proposed Domestic Harvest FMD 13				Estimated 5 Year Volume (m3)	
OA Name	OA #	Area (ha)	Number of Permits	Softwood	Hardwood
Peter Strides	CC13501	1443	57	1250	0
Portage Lake	CC13502	218	23	500	0
Beothuk Lake	CC13503	6132	2	50	0
Victoria Lake Road	CC13504	8438	93	2050	0
Tower Road	CC13505	483	14	310	0
	Total:	16714	189	4160	0

9.1.1.3 Hardwoods

This domestic harvest of birch and other hardwoods occurs as a mixture within softwood stands and is utilized as fuelwood. The commercial hardwood harvest is for sawlogs and fuelwood and occurs in some hardwood and hardwood/softwood stands, but mostly hardwood is an incidental harvest from softwood stands.

9.1.2 Silviculture

Balsam fir is highly susceptible to insect and disease attack and contains less desirable fibre quality than spruce for papermaking and lumber production. Since spruce is the more desirable species at this time, more aggressive approaches to maintaining and enhancing spruce content on sites will be employed in the next five years.

Each district in the zone has unique silviculture challenges:

- FMD's 10, 11 & 12 have sites transitioning to alders or kalmia post-harvest; and limited pre-commercial thinning opportunity.
- FMD 13 challenges also include alder, and higher fir regeneration than spruce, making the forest more susceptible to insect outbreaks, and logistical concerns due to remoteness when applying silviculture treatments.

All districts share a common challenge of having to contend with associated balsam woolly adelgid issues. The range and severity of this insect is increasing within the province, and it continues to target balsam fir trees by severely reducing both growth rates and productivity of certain sites to the point where commercial viability is questionable. The silviculture program will help mitigate the impacts of this insect on sites dominated by balsam fir. Potential silvicultural treatment areas need to undergo reconnaissance and / or intensive surveys to determine the regeneration level and severity of adelgid attack. Such surveys will be conducted during this five-year period but until they are completed, specific locations and treatment amounts cannot be identified. However, silviculture prescriptions have been developed for implementation on specific site conditions. Areas that are scheduled for commercial harvest or have been harvested are identified on the operating area maps and are candidates for planting or gap planting to black, white or Norway spruce. These areas will undergo reconnaissance and or intensive regeneration surveys to determine the need for planting and the presence of adelgid.

Site preparation using either mechanical methods or prescribed burning will be employed on suitable sites that have impediments to planting. On black spruce cutovers where kalmia is present, mechanical site preparation (row scarification) or prescribed burning will be used to disturb the kalmia and create suitable microsites to plant black spruce. In fir areas, burning is a preferred treatment to sanitize the site of any existing adelgid infested trees for preparation for black or white spruce planting. If natural balsam fir stocking is sufficiently present, this species will be left to develop naturally.

There have been problems in some parts of District 11 and 12 and 13 with sites transitioning to alders after harvest. Since there is a known regeneration problem on these sites, planting with white spruce immediately after harvest is employed to allow the seedlings to “get the jump” on the alders.

9.1.3 Primary Access Roads and Bridges

There are 448 km of new forest access roads scheduled to be constructed within the zone for the next five years to access timber for commercial purposes. All roads will be built to the specifications of the Class C, C-2 standards, and all pertinent EPG’s will be followed. In addition, secondary, operational and winter access roads and upgrading of existing roads will be required

and will be submitted in the annual operating plan prior to the year that they are planned to be built. Also, referrals will be sent to all relevant agencies (including DFO and Water Resources Division) before any construction is initiated.

Table 24: FMD 10 Proposed Road Construction from 2026 to 2030

Area Name	OA #	Construction (Length km)	Reconstruction (Length Km)	Water Crossings	
				Culverts	Bridges
Powderhorn North	CC10001	8.90	0	1	1
Powderhorn South	CC10002	0	2.10	0	0
Catamaran Brook	CC10003	11.50	0	0	0
Badger	CC10004	3.50	0	0	0
Badger Chute	CC10005	0	0	0	0
Cassandra	CC10006	10.50	2.00	0	0
Dog Brook	CC10007	0	3.50	2	0
Northern Arm	CC10008	1.40	0	0	0
Musquash	CC10009	7.50	1.50	1	1
Gull Lake	CC10010	0	2.00	0	0
New Bay Pond	CC10011	0	6.75	2	0
Frozen Ocean	CC10012	0	9.50	3	0
West Arm Brook	CC10013	0	4.70	1	3
Indian Pond	CC10014	1.70	11.50	0	1
New Bay River	CC10015	6.50	11.60	1	1
Trout Lake	CC10016	4.50	0	0	0
Seabright's	CC10017	12.00	4.70	10	1
Newfoundland Pond	CC10018	0	14.00	1	0
	Total:	68.00	73.85	22	8

Table 25: FMD 11 Proposed Road Construction from 2026 to 2030

Area Name	OA #	Construction (Length km)	Reconstruction (Length Km)	Water Crossings	
				Culvers	Bridges
Rattling Brook	CC11001	1.67	3.73	0	0
Rattling Lake	CC11002	3.46	3.12	0	0
Caroline Lake	CC11003	0.71	2.79	0	0
Otter Pond	CC11004	0	15.25	1	0
West Jumper	CC11005	0	5.68	0	0
Whelan's	CC11006	0.75	1.56	0	0
Tote Hill	CC11007	1.76	0	0	0
Tote Lake South	CC11008	0	0	0	0
Haynes Lake	CC11009	8.23	3.96	0	1
Miguels Lake	CC11010	0	0	0	0
Great Rattling West	CC11011	7.38	0	0	1
Three Brooks	CC11012	8.10	0	2	2
Little Rattling	CC11013	4.50	0	2	2
Twin Ponds	CC11014	8.74	0	0	1
Paradise Lake South	CC11015	0	1.85	0	0
Christmas Pond	CC11016	9.57	0	5	0
Miguel Mountain	CC11017	19.60	1.45	4	1
Lemotte's	CC11018	1.35	3.19	0	0
Lemotte's West	CC11019	0.61	5.25	0	0
Frenchman's Brook	CC11020	0	3.94	0	0
Tom Joe Brook	CC11021	0	0	0	0
West Lake	CC11022	5.46	1.85	1	2
West Lake South	CC11023	17.85	1.55	1	3
Leonards Lake	CC11024	11.55	17.80	1	3
Caledonia Brook	CC11025	13.40	0	1	5
Coronation Lake	CC11026	18.75	4.60	3	1
Sandy Brook	CC11027	25.65	9.90	5	4
Patchy Valley	CC11028	1.78	8.91	1	1
Sandy Lake North	CC11029	0.54	0	2	0
Sandy Lake South	CC11030	3.77	1.52	1	1
Cripple Back	CC11031	15.00	4.20	0	3
Long Tail	CC11032	1.00	13.20	2	1
Shoulder Blade	CC11033	8.80	6.30	0	0
Noel Paul Brook	CC11034	7.00	0	0	0

Noel Paul East	CC11035	5.15	6.10	2	0
Pamehoc Lake	CC11036	1.90	23.50	1	1
Salvage	CC11037	0	4.90	1	0
	Total:	214.03	156.11	36	32

Table 26: FMD 12 Proposed Road Construction from 2026 to 2030

Area Name	OA #	Construction (Length km)	Reconstruction (Length Km)	Water Crossings	
				Culvers	Bridges
Millertown Jct.	CC12001	7.75	11.5	0	0
Buchans Highway	CC12002	2.9	13.0	2	3
Valley Brook	CC12003	3.7	9.7	1	0
Duck Pond East	CC12004	23.25	2.8	3	3
Michael's Brook	CC12005	3.7	10.2	1	1
Selby's Pond	CC12006	1.7	0	0	0
Duck Pond West	CC12007	0	2.8	0	0
Gills Valley East	CC12008	46.8	14.7	11	5
Haven Steady	CC12009	6.1	0	0	0
Victoria River West	CC12010	16.9	0	1	1
Denny's Pond North	CC12011	2.25	0	1	1
Lost Pond	CC12012	0	0	0	0
Rogerson's Lake	CC12013	2.05	36.7	4	0
Lake Douglas	CC12014	11.4	0	2	1
Quinn Lake	CC12015	0	0	0	0
Roebuck's	CC12016	1.5	5.6	1	0
Sutherland's	CC12017	9.0	29.5	5	0
Victoria River East	CC12018	5.0	11.2	4	1
Denny's Pond	CC12019	3.6	4.2	0	0
Noel Paul West	CC12020	9.8	0	5	3
Beothuk Lake	CC12021	1.1	2.6	0	0
Bobby's Pond	CC12022	2.9	0	0	0
Island Pond	CC12023	1.4	1.0	0	0
Tally Pond	CC12024	1.1	6.1	0	0
Millertown Jct. West	CC12025	2.6	5.5	0	1
	Total:	166.5	167.1	40	19

Table 27: FMD 13 Proposed Road Construction from 2026 to 2030

Area Name	OA #	Construction (Length km)	Reconstruction (Length Km)	Water Crossings	
				Culvers	Bridges
Hospital Pond	CC 13001	17.28 Km	0	85	1
Victoria Lake West	CC13005	0	0	0	1
Southwest Lake	CC13004	7.52 km	0	35	0
	Total:	24.80	0	120	2

(FMD 13 estimated their number of culverts based on the length of the proposed road)

9.1.4 Activities in Protected Water Supply Areas

Larger buffers are established inside PWSA, and the pertinent EPG's will be attached to any commercial or domestic permits issued for these areas. There will be continuous monitoring inside these areas and buffers will be flagged to ensure compliance with the guidelines. All activity within a PPWSA must be approved by the Department of Environment. Within the zone, there are two commercial activities proposed within PPWSA's one in District 10 and one in District 12 at Buchans.

SECTION 10 PLAN ADMINISTRATION

10.1 Monitoring

Monitoring of planned activities is critical to ensure objectives and operations are carried out in a manner consistent with various guidelines and provincial and federal legislation.

Forest harvesting activity is regulated using a permitting system. Monitoring occurs at the operational level and planning level. EMS monitoring inspections are done by the district Conservation Officers (CO) staff for road construction, road maintenance, silviculture operations, and on harvesting operations for mapping completion of scheduled harvest stands.

Resource Enforcement Officers (RED) conduct commercial and domestic harvest EMS inspections.

10.2 Amendments

Forestry and Logging is a Designated Undertaking under the Environmental Assessment (EA) Regulations, 2003, Section 30. Changes to an approved Operating Plan may occasionally result from operational challenges or unforeseen circumstances. These changes are submitted as amendments that are listed in Section 30(4) and must be approved by the Forest Ecosystem Management Division prior to implementation.

The Forest Service categorizes the EA Section 30(4) regulations into two amendments classes:

1) Internally within the Department of Fisheries, Forestry, and Agriculture, approval is required by the Forest Ecosystem Management Division. Internal amendments are activities listed in the EA Regulations that do not require EA registration:
    a. Within one kilometer of an operating area described in the five-year operating plan, an additional area for timber harvesting that is, in total, not more than 50 hectares in each year of the plan

b. Within a forest management district, an additional area for silviculture treatment of not more that 20 percent of the total operating area described in the five-year operating plan over the five-year term of the plan

c. Within an operating area described in the five-year operating plan, not more than one kilometer, in total, of new primary forest access road in addition to existing and proposed primary forest access road in each year of the plan

d. Adjacent to an operating area described in the five-year operating plan, not more than half a kilometer, in total, of new primary forest access road in each year of that plan.

2) External Amendments, any required revisions which do not fall within the above internal requirements must be submitted for Environmental Assessment (EA) in the form of an amendment to the five-year operating plan.

Literature Cited

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Appendix 1 - Zone Five Maps

FIGURE 25: DISTRICT 10 COMMERCIAL AREA MAP

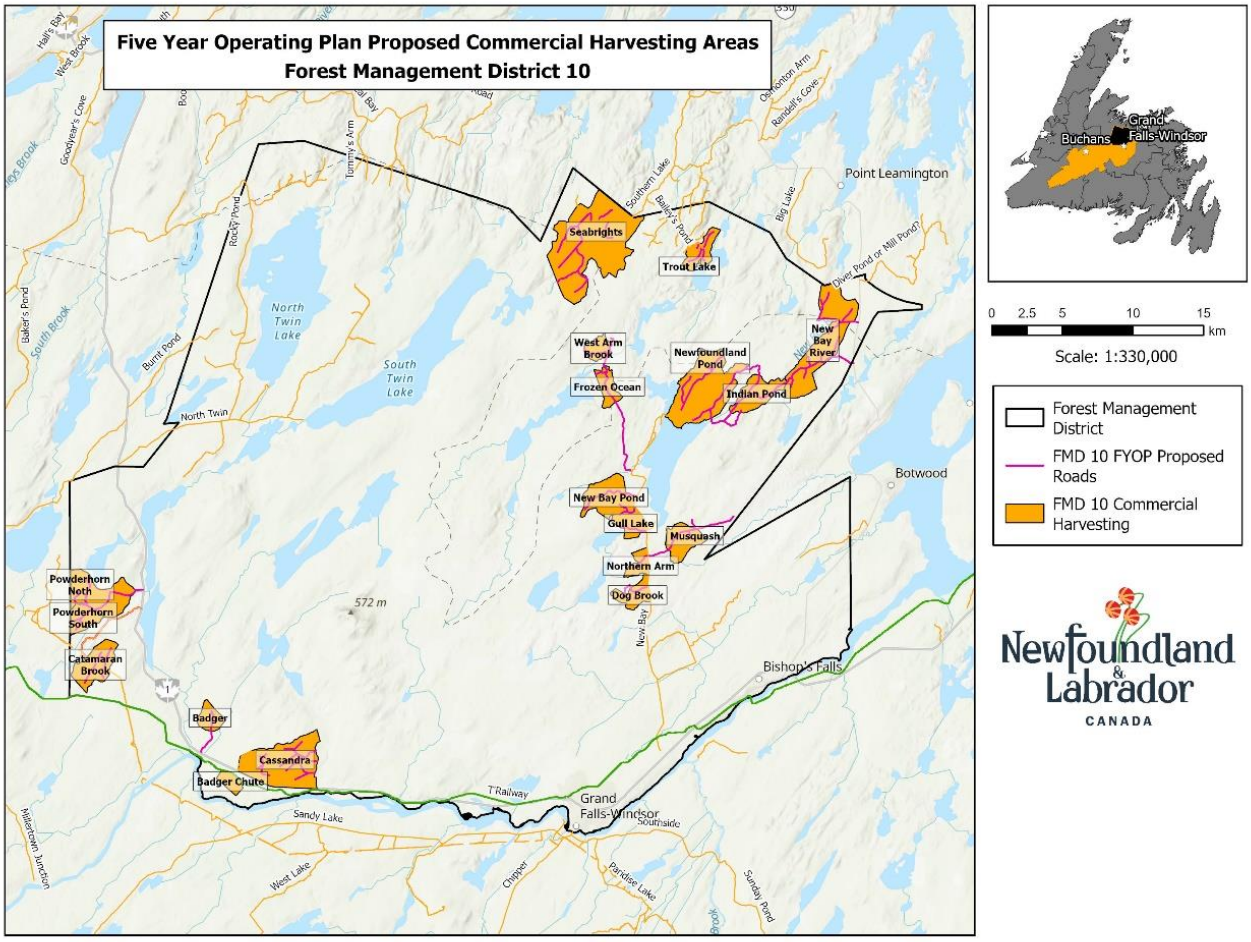


FIGURE 26: DISTRICT 10 DOMESTIC AREA MAP

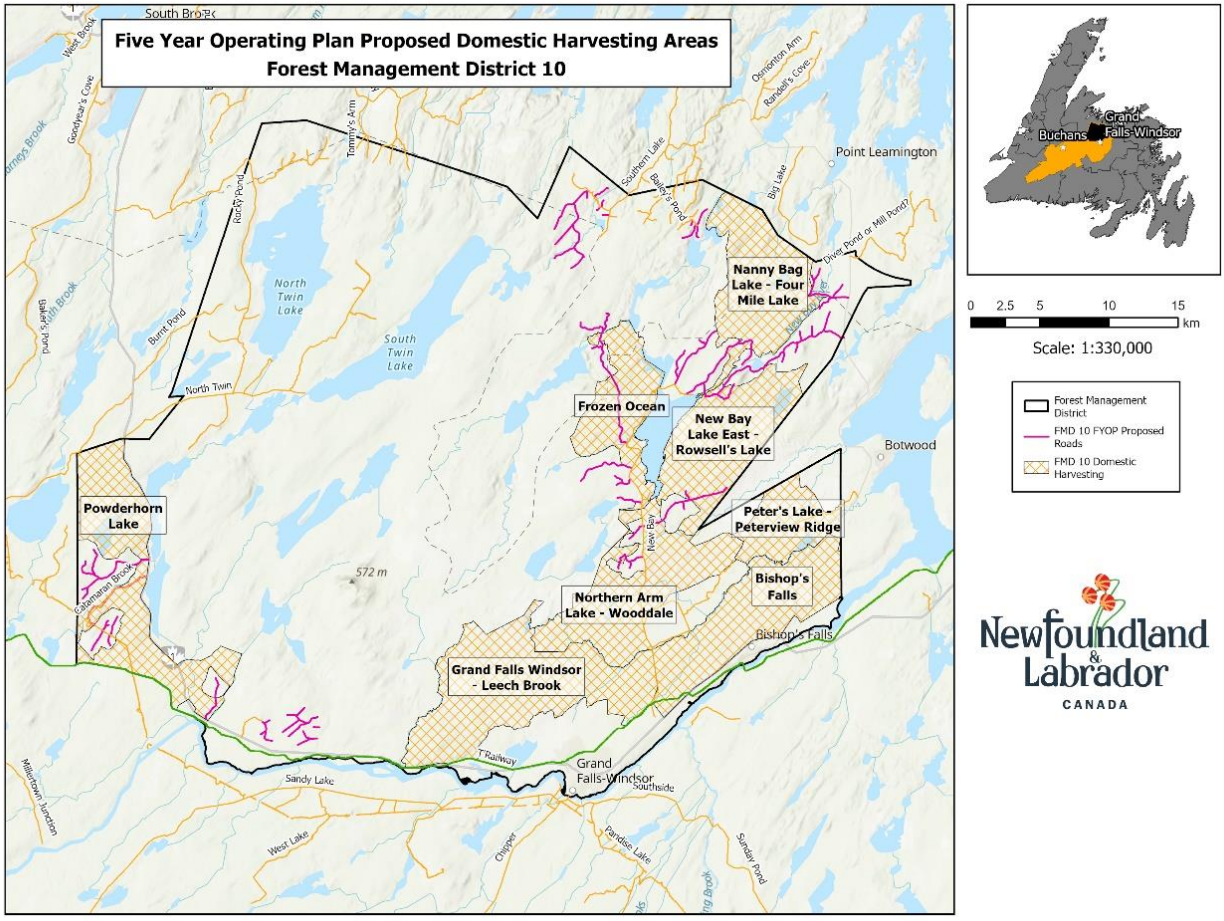


FIGURE 27: DISTRICT 11 COMMERCIAL AREA MAP

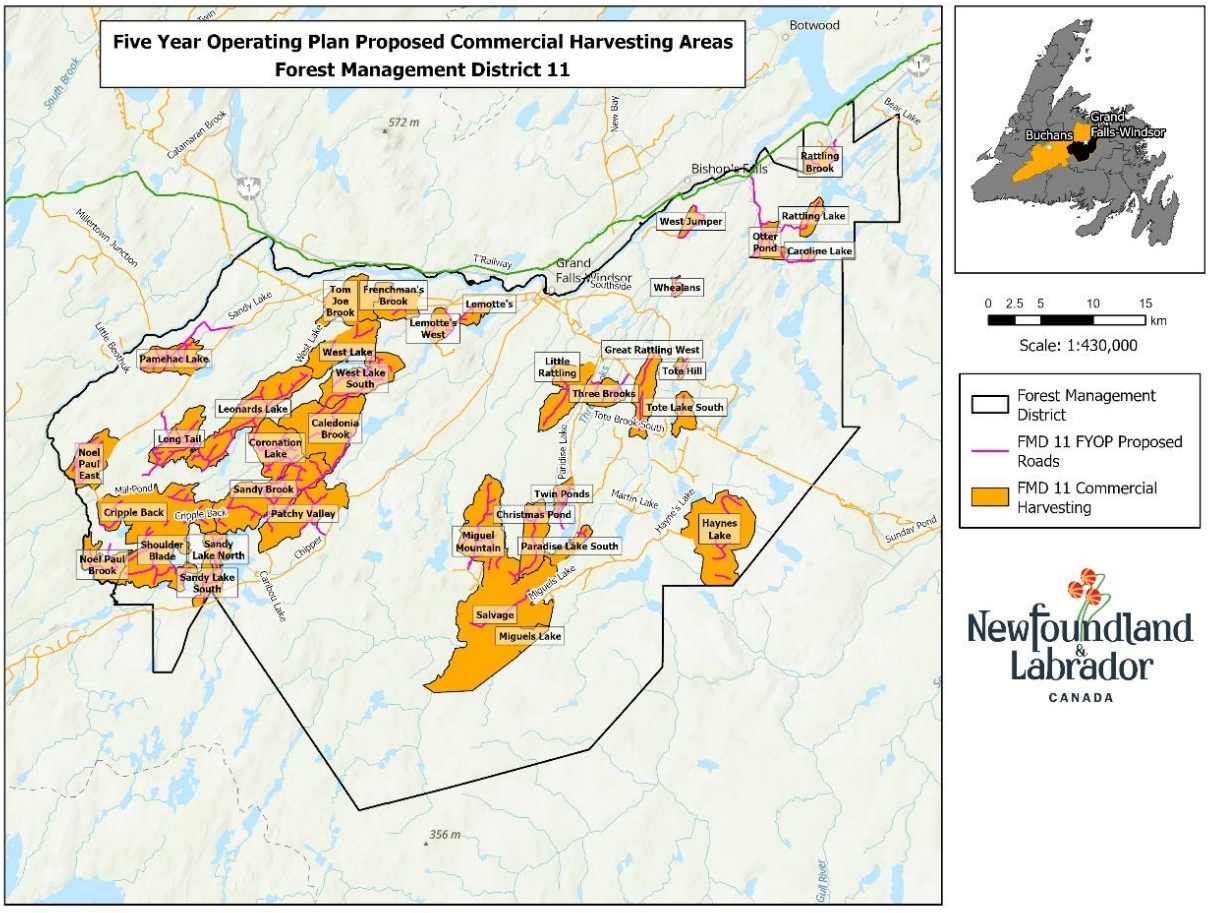


FIGURE 28: DISTRICT 11 DOMESTIC AREA MAP

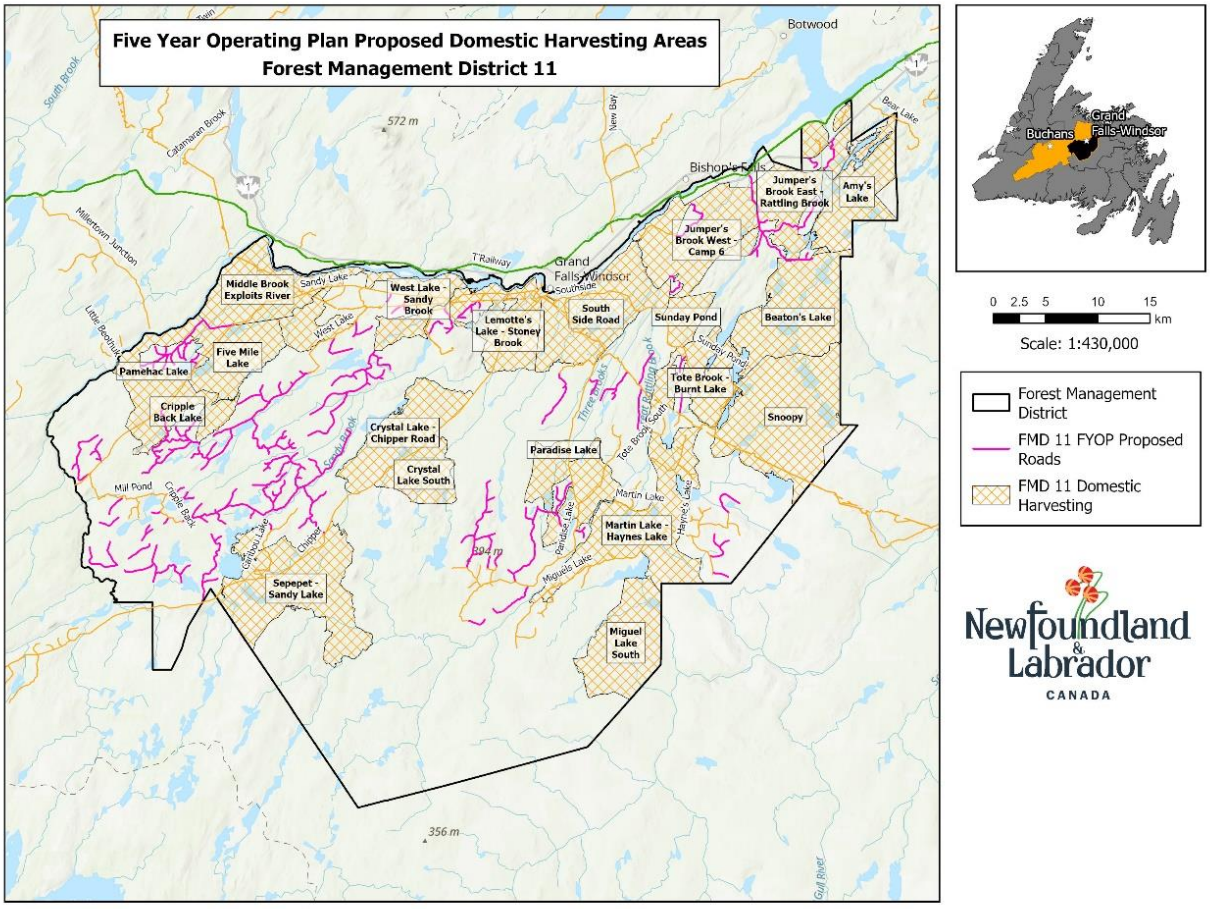


FIGURE 29: DISTRICT 12 COMMERCIAL AREA MAP

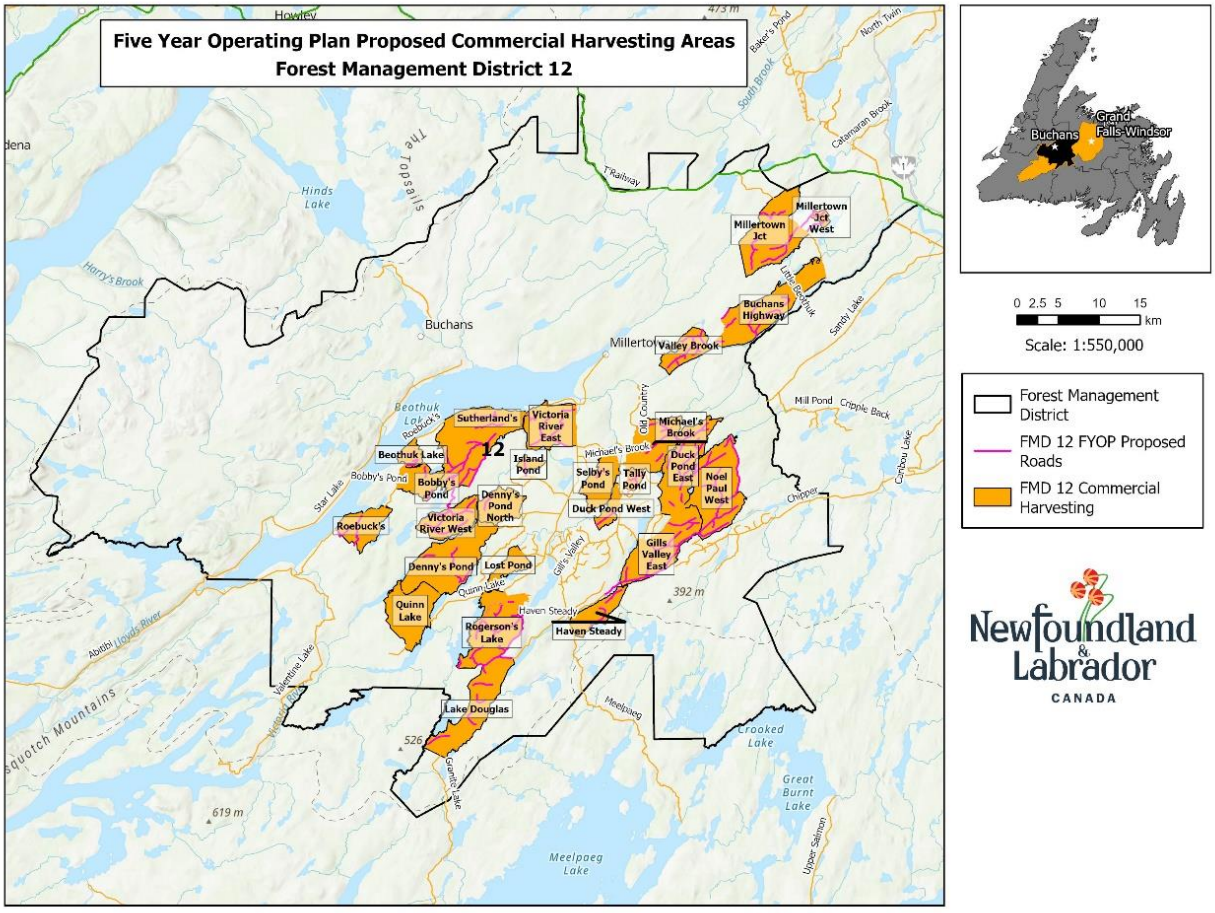


FIGURE 30: DISTRICT 12 DOMESTIC AREA MAP

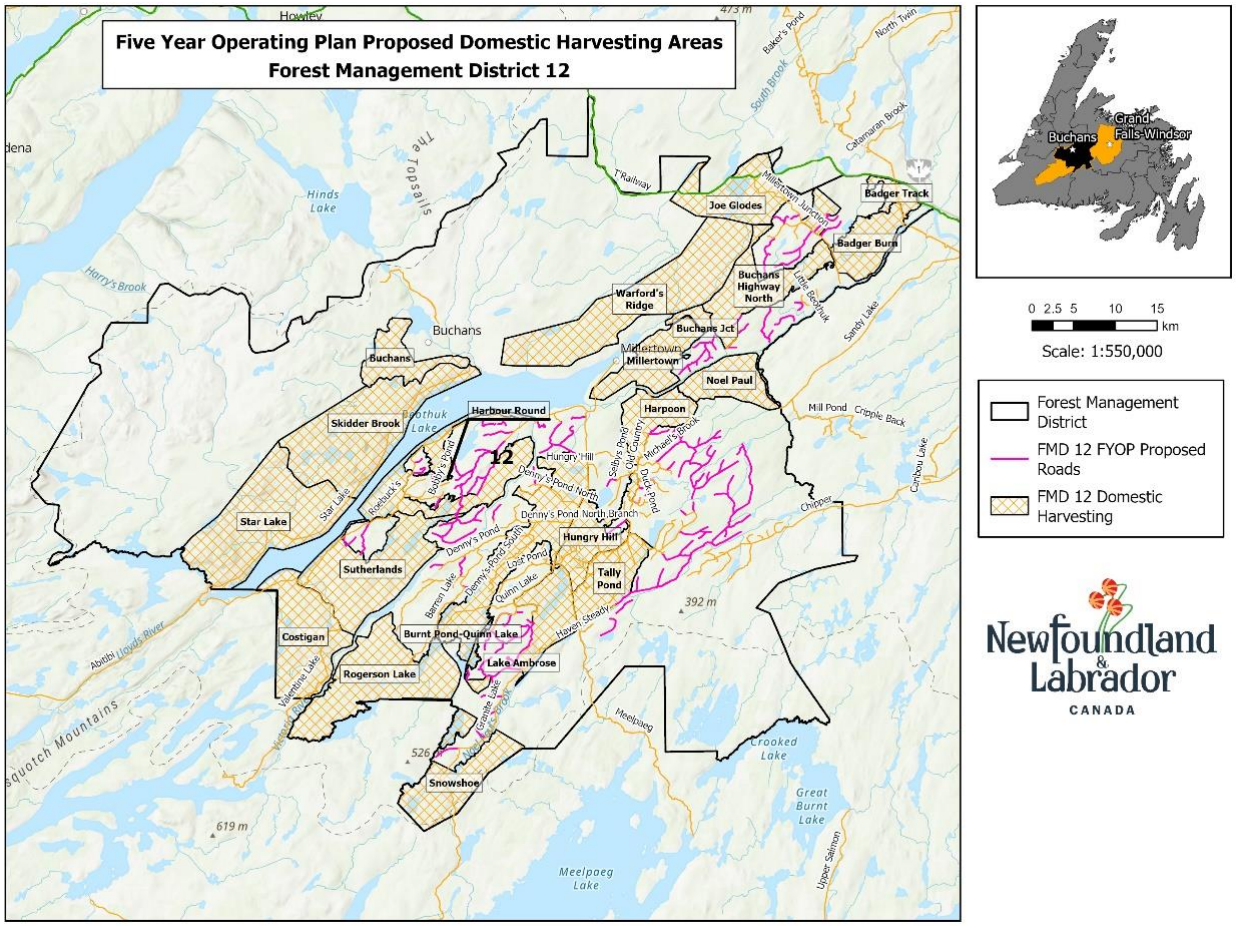


FIGURE 31: DISTRICT 13 COMMERCIAL AREA MAP

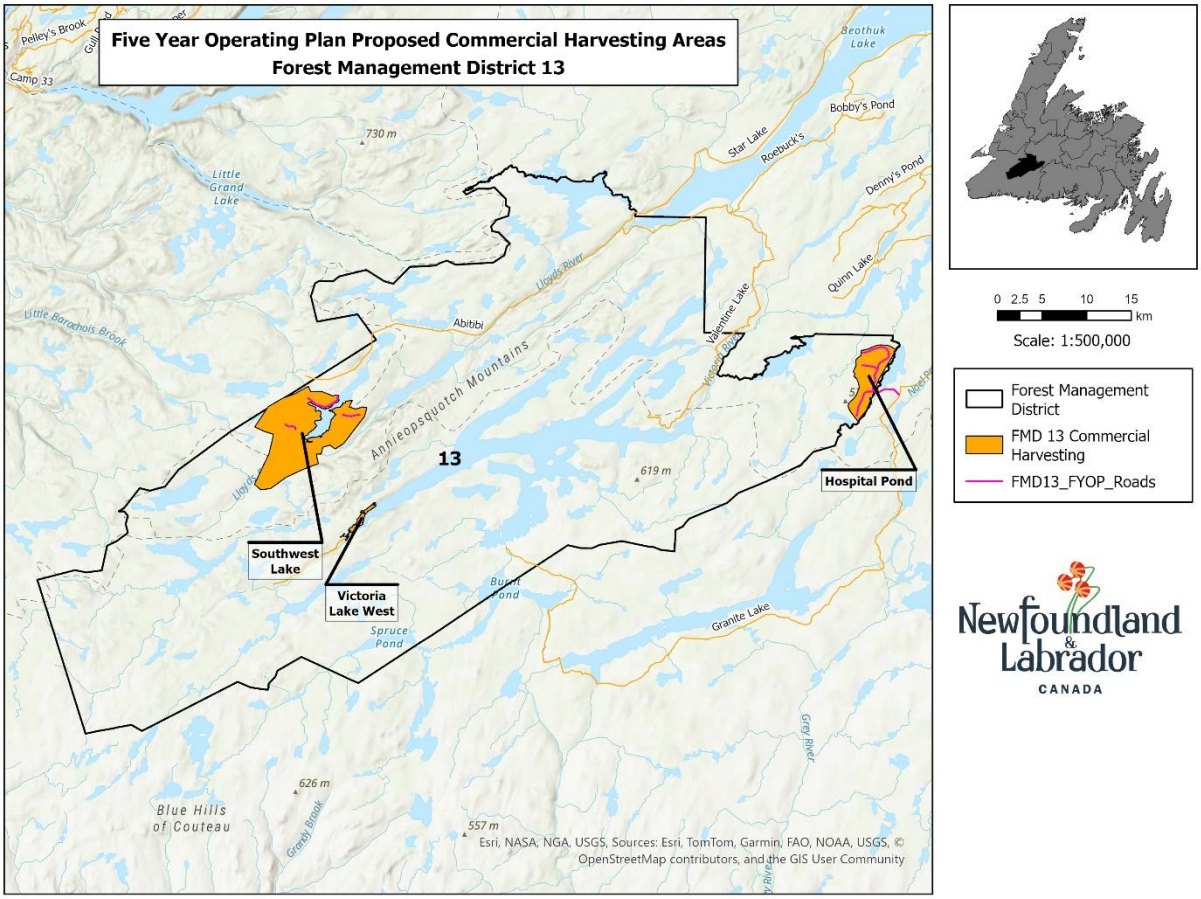
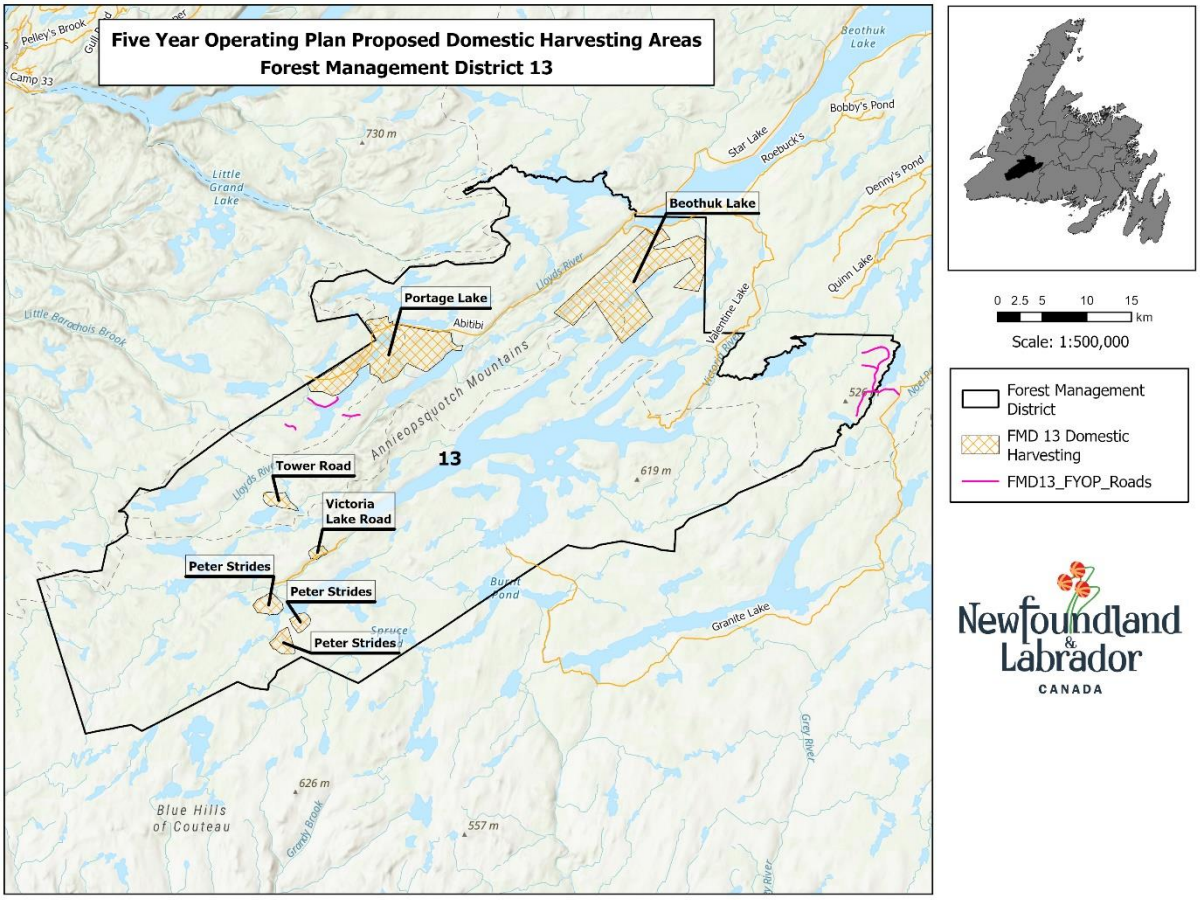


FIGURE 32: DISTRICT 13 DOMESTIC AREA MAP



Appendix 2A – Zone 5 Operating Area Summaries District 10

Operating Area Name: Powderhorn North	Operating Area: CC10001
NFS Inventory Map #: 6223, 6214, 6224	NTS Map #: 12H/1

Description of Area: This area of crown land is located on the Western boundary of forest management district (FMD) 10. It can be accessed from the TCH (Route 1) North of Badger via Rocky Brook forest access roads. There is also approxmiately 250 ha component of Pre Commercial Thinning's in this area, treated in 2000 and 2008. The terrain varies from rugged to rolling.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Commercial hardwood fuel-wood operations will be a significant portion of this block. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 31962
Inventory Hardwood Volume: 1863
Proposed Softwood Volume: 27168
Proposed Hardwood Volume: 1584
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 8900m
New Bridge - 1 New Culvert- 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Powderhorn South	Operating Area: CC10002
NFS Inventory Map #: 6223, 6214, 6224, 6213	NTS Map #: 12H/1

Description of Area: This area of crown land is located on the Western boundary of forest management district (FMD) 10. It can be accessed from the TCH (Route 1) North of Badger via Rocky Brook forest access roads. The terrain varies from rugged to rolling.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Commercial hardwood fuel-wood operations will be a significant portion of this block. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 6557
Inventory Hardwood Volume: 1606
Proposed Softwood Volume: 5574
Proposed Hardwood Volume: 1365
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 2100m
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps

Operating Area Name: Catamaran Brook	Operating Area: CC10003
NFS Inventory Map #: 6214, 6213	NTS Map #: 12H/1

Description of Area: This area of crown land is located on the Western boundary of forest management district (FMD) 10. It can be accessed from the TCH (Route 1) North of Badger via Catamaran forest access roads. The terrain varies from rugged to rolling.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Commercial hardwood fuel-wood operations will be a significant portion of this block. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 8699
Inventory Hardwood Volume: 1487
Proposed Softwood Volume: 7394
Proposed Hardwood Volume: 1264
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 1.15 Km
Bridge Replacement - 2 Existing Bridge 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Badger	Operating Area: CC10004
NFS Inventory Map #: 7444, 6214, 7541	NTS Map #: 12H/1, 12A/16, 02D/13

Description of Area: This area of Crown land is located north east of the Town of Badger in FMD 10. A series of bogs forms the boundary to the west and Juntion Brook to the east. . This commercial block varies from moderate to rolling terrain. The area is located in the North Central Subregion of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 6804
Inventory Hardwood Volume: 289
Proposed Softwood Volume: 5784
Proposed Hardwood Volume: 245
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 3.5 Km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Badger Chute	Operating Area: CC10005
NFS Inventory Map #: 7444, 7541	NTS Map #: 12A/16, 02D/13

Description of Area: This area of crown land is located south-east of Badger and is accessible from the TCH (Route 1). It is located on the north side of the Exploit's River which forms the boundary between forest management districts (FMD) 10 and 11. This area includes a portion of Pre Commercial Thinning's (PCT) treated in 1977. This commercial block varies from moderate to rolling terrain. The area is located in the North Central Subregion of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting may occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 4190
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 3561
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Cassandra	Operating Area: CC10006
NFS Inventory Map #: 7541	NTS Map #: 02D/13

Description of Area: This area of crown land is located south-east of Badger and is accessible from the TCH (Route 1). It is located on the north side of the Exploit's River which forms the boundary between forest management districts (FMD) 10 and 11. The terrain varies from flat to rolling.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting may occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 41190
Inventory Hardwood Volume: 1517
Proposed Softwood Volume: 35011
Proposed Hardwood Volume: 1289
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 10.5 K Reconstruction – 2.0 Km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Dog Brook	Operating Area: CC10007
NFS Inventory Map #: 6323, 6324	NTS Map #: 02E/4

Description of Area: This area of crown land is located east of Grand Falls - Windsor and is accessible from the TCH (Route 1) via New Bay Road. It is located on the north side of the Exploit's River which forms the boundary between forest management districts (FMD) 10 and 11.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 2533
Inventory Hardwood Volume: 639
Proposed Softwood Volume: 2153
Proposed Hardwood Volume: 543
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction – 3.5 Km
New Bridge - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Northern Arm	Operating Area: CC10008
NFS Inventory Map #: 6324	NTS Map #: 02E/4

Description of Area: This area of crown land is located east of Grand Falls - Windsor and is accessible from the TCH (Route 1) via New Bay Road. It is located on the north side of the Exploit's River which forms the boundary between forest management districts (FMD) 10 and 11.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 2019
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 1716
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 1.4 Km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Musquash	Operating Area: CC10009
NFS Inventory Map #: 6324	NTS Map #: 02E/4

Description of Area: This area of crown land is located on the Eastern boundary of forest management district (FMD) 10. The east side of the proposed cutting area is bounded by the FMD 8 and 10 boundary. It is access via the New Bay Lake forest access road and Musquash road network. Commercial hardwood fuel-wood operations will be a significant portion of this block.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 8923
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 7584
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:

Reconstruction – 7.5 Km New Construction – 1.5 Km

New Culvert -1 New Bridge - 1

Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Gull Lake	Operating Area: CC10010
NFS Inventory Map #: 6324, 6334	NTS Map #: 02E/4

Description of Area: This area of crown land is located on the Eastern boundary of forest management district (FMD) 10. The east side of the proposed cutting area is bounded by the FMD 8 and 10 boundary. It is access via the New Bay Lake forest access road and Charles Lake road network.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 6141
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 5220
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction – 2.0 Km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: New Bay Pond	Operating Area: CC10011
NFS Inventory Map #: 6323, 6333, 6334	NTS Map #: 02E/4

Description of Area: This area of crown land is located near the Eastern boundary of forest management district (FMD) 10. It is access via the New Bay Lake forest access road

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Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 18473
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 15702
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 6.75 Km
New Culvert - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Frozen Ocean	Operating Area: CC10012
NFS Inventory Map #: 6344, 6343	NTS Map #: 02E/4

Description of Area: This area of crown land is located along the North-East boundary of forest management district (FMD) 10 with access through the New Bay Forest Access Road. The operating area is located in the North-Central Sub region of the Central Newfoundland Forest Ecoregion.

Harvesting Activities:

Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 4963
Inventory Hardwood Volume:
Proposed Softwood Volume: 4218
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:

Reconstruction – 9.5 Km

New Culvert - 5 New Bridge - 2

Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: West Arm Brook	Operating Area: CC10013
NFS Inventory Map #: 6343, 6344	NTS Map #: 02E/4

Description of Area: This area of crown land is located along the North-East boundary of forest management district (FMD) 10 with access through the New Bay Forest Access Road. The operating area is located in the North-Central Sub region of the Central Newfoundland Forest Ecoregion.

Harvesting Activities:

Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 1330
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 1130
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:

Reconstruction – 4.7 Km

New Bridge - 3 New Culvert - 1

Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Indian Pond	Operating Area: CC10014
NFS Inventory Map #: 6344, 6441	NTS Map #: 02E/3, 02E/4

Description of Area: This area of crown land is located along the North-East boundary of forest management district (FMD) 10 with access off route 350 Via Glen Peyton's Forest Access Road. The operating area is located in the North-Central Sub region of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders.. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 13064
Inventory Hardwood Volume: 930
Proposed Softwood Volume: 11104
Proposed Hardwood Volume: 790
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:

New Construction – 1.7 Km Reconstruction – 11.5 Km

New Bridge - 1 Existing Bridge - 2 New Culvert 1

Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: New Bay River	Operating Area: CC10015
NFS Inventory Map #: 6441, 5411	NTS Map #: 02E/6, 02E/3

Description of Area: This area of crown land is located along the North-East boundary of forest management district (FMD) 10 with access off route 350. The operating area is located in the North-Central Sub region of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 15076
Inventory Hardwood Volume: 3384
Proposed Softwood Volume: 12814
Proposed Hardwood Volume: 2876
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 6.5 Km Reconstruction – 11.6 Km
Existing Bridge - 1 New Culvert 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Trout Lake	Operating Area: CC10016
NFS Inventory Map #: 5314	NTS Map #: 02E/5

Description of Area: This area of crown land is located on the northern boundary of forest management district (FMD) 10 and bounded by FMD 8. It is accessible off route 350 between Point Leamington and Glovers Harbour via Southern Lake Forest Access road. The terrain varies from rugged to rolling hills to steep valleys.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 1782
Inventory Hardwood Volume: 3599
Proposed Softwood Volume: 1515
Proposed Hardwood Volume: 3059
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 4.5 Km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Seabrights	Operating Area: CC10017
NFS Inventory Map #: 5323, 5313, 5324, 5314	NTS Map #: 02E/5

Description of Area: This area of crown land is located on the northern boundary of forest management district (FMD) 10 and bounded by FMD 8. It is accessible off route 350 between Point Leamington and Glovers Harbour via Southern Lake Forest Access road. The terrain varies from rugged to rolling hills to steep valleys.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 77900
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 66215
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction – 12.0 Km Reconstruction – 4.7 Km
New Bridge - 2 New Culvert - 10
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Newfoundland Pond	Operating Area: CC10018
NFS Inventory Map #: 6344, 6441, 6334	NTS Map #: 02E/3, 02E/4

Description of Area: This area of crown land is located on the northern eastern portion of forest management district (FMD) 10. It is accessible off route 350 between Northern Arm and Point Leamington via Glen Peyton's Access Road.. This area also can be accessed by using the New Bay Access Road.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. A small amount of domestic harvesting could occur once commercial harvesting is completed. This would likely occur in the winter using chainsaws with extraction by snowmobile or ATV.

Inventory Softwood Volume: 38323
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 32575
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction – 14.0 Km
Existing Culvert - 2 New Culvert - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Hardwood and Softwood Domestic Cutting Areas District 10	**Operating Area: CC10502, CC10504, CC10507,CC10510**
NFS Inventory Map #: 10-2, 10-4, 10-7, 10-10,	**NTS Map #: 12A/16, 2E/4 2E/3, 12H/1, 2D/13**

Description of Area: These listed parcels of crown land are located throughout forest management district (FMD) 10. The areas are located in close proximity to the communities and cabin areas throughout the Zone in order to accommodate the fuelwood/sawlog requirements of the general public. The terrain within the areas that still have mature timber are generally rugged and hilly. These areas are located in the North-Central subregion of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Commercial harvesting operations have occurred in these areas in recent years and have removed the majority of the commercially viable timber. The remaining timber is primarily located in areas that are difficult to access, the terrain is rugged and/or consist of non-commercial species. Harvesting of hardwoods and softwoods will be permitted in these areas for domestic use with the expectation of any treated stands. Domestic wood harvesting is usually carried out during winter months utilizing chainsaws with the timber being extracted using over snow vehicles. There is some harvesting during non-winter months using ATV's to extract the timber.

Inventory Softwood Volume:
Inventory Hardwood Volume:
Proposed Softwood Volume: 42390
Proposed Hardwood Volume: 4710
Difference from Inventory to Proposed Volume:
Rationale for Difference:

Silviculture Activities: Generally, natural regeneration, following domestic wood harvesting is successful in producing a viable future forest. Harvest areas are periodically monitored to ensure regeneration is satisfactory.

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations:

Operating Area Name: Hardwood Domestic Cutting Areas District 10	**Operating Area: CC10501, CC10505, CC10506, CC10509,**
NFS Inventory Map #: 10-1, 10-5, 10-6, 10-9	**NTS Map #: 02E/3, 02E/4 ,02E/5, 02E/6**

Description of Area: These listed parcels of crown land are located throughout forest management district (FMD) 10. The areas are generally isolated and established throughout the Zone in order to accommodate the fuelwood requirements of remote cabin owners and cabins within cottage development areas. The terrain is generally rolling and located within the North-Central subregion of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Many of these areas still contain a significant amount of commercially viable timber. Domestic harvesting will target hardwoods and non-commercial species including larch and dead/blowdown timber. Domestic wood harvesting is usually carried out during winter months utilizing chainsaws with the timber being extracted using over snow vehicles. There is some harvesting during non-winter months using ATV's to extract the timber.

Inventory Softwood Volume:
Inventory Hardwood Volume:
Proposed Softwood Volume:
Proposed Hardwood Volume: 5775
Difference from Inventory to Proposed Volume:
Rationale for Difference:

Silviculture Activities:

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations:

Appendix 2B – Zone 5 Operating Area Summaries District 11

Operating Area Name: Rattling Brook	**Operating Area:** CC11001
NFS Inventory Map #: 6412	**NTS Map #:** 02E/3

Description of Area: This area of crown land is located near the north east boundary of forest management district (FMD) 11. The operating area is bound by the TCH to the North and FMD 11 boundary the west. It is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling. The operating area can be accessed by the Rattling Lake forest access road.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 11359
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 10223
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 1.7 km Reconstruction - 3.7 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Rattling Lake	**Operating Area:** CC11002
NFS Inventory Map #: 7642, 6412	**NTS Map #:** 02D/14, 02E3

Description of Area: This area of crown land is located on the north east boundary of forest management district (FMD) 11. It is accessed from the TCH highway (Route 1) via the Jumpers Brook forest access road. This operating area is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 10504
Inventory Hardwood Volume: 31
Proposed Softwood Volume: 9453
Proposed Hardwood Volume: 28
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 3.5 km Reconstruction - 3.1 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Caroline Lake	**Operating Area:** CC11003
NFS Inventory Map #: 7642	**NTS Map #:** 02D/14

Description of Area: This area of crown land is located on the north east boundary of forest management district (FMD) 11. This area of crown land is located on the north east boundary of forest management district (FMD) 11. It is accessed from the TCH highway (Route 1) via the Jumpers Brook . This operating area is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 8570
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 7713
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 0.7 km Reconstruction - 2.8 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Otter Pond	**Operating Area:** CC11004
NFS Inventory Map #: 7641, 7642	**NTS Map #:** 02D/14

Description of Area: This area of crown land is located on the north east boundary of forest management district (FMD) 11. This area of crown land is located on the north east boundary of forest management district (FMD) 11. It is accessed from the TCH highway (Route 1) via the Jumpers Brook and contains apprximately 150 ha of pre-commercially thinnned area. This operating area is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 9288
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 8359
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 15.3 km
Culvert Replacement - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: West Jumper	**Operating Area:** CC11005
NFS Inventory Map #: 7641	**NTS Map #:** 02D/14

Description of Area: This area of crown land is locatedeast side of the east of the Exploits River near the north boundary of forest management district (FMD) 11 and is accessed from the Bay d' Espoir highway (Route 360). The operating area is bounded by Route 360 on the west. It is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally flat to rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 1135
Inventory Hardwood Volume: 563
Proposed Softwood Volume: 1021
Proposed Hardwood Volume: 507
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 5.7 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Whealans	**Operating Area:** CC11006
NFS Inventory Map #: 7641, 7544, 7534, 7631	**NTS Map #:** 02D13

Description of Area: This area of crown land is locatedeast side of the east of the Exploits River near the north boundary of forest management district (FMD) 11 and is accessed from the Bay d' Espoir highway (Route 360). The operating area is bounded by Route 360 on the west. It is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally flat to rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 96
Inventory Hardwood Volume: 44
Proposed Softwood Volume: 87
Proposed Hardwood Volume: 40
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 0.8 km Reconstruction - 1.6 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Tote Hill	**Operating Area:** CC11007
NFS Inventory Map #: 7524, 7621	**NTS Map #:** 02D/14, 02D13

Description of Area: This area of crown land is located south of Grand Falls-Windsor near the south east end of forest management district (FMD) 11 and is accessed from the Bay d' Espoir highway (Route 360). It is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally flat to rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 6340
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 5706
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 1.8 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Tote Lake South	**Operating Area:** CC11008
NFS Inventory Map #: 7524, 7621, 7514, 7611	**NTS Map #:** 02D/14, 02D13

Description of Area: This area of crown land is located south of Grand Falls-Windsor near the south east end of forest management district (FMD) 11 and is accessed from the Bay d' Espoir highway (Route 360). The operating area is bounded by Haynes Lake in the South. Within the upcoming five year operating plan, commercial fuelwood operators will salvage timber that was not feasible to harvest by earlier operations. It is within the North Central Subregion of the Central Newfoundland Ecoregion and the terrain is generally flat to rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 21101
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 18991
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Haynes Lake	**Operating Area:** CC11009
NFS Inventory Map #: 7611, 8841, 8831	**NTS Map #:** 02D/14, 02D11

Description of Area: This area of crown land is located south of Grand Falls-Windsor near the south east end of forest management district (FMD) 11 and is accessed from the Bay d' Espoir highway (Route 360). The operating area is bounded by Haynes Lake in the North, and by the FMD 11 boundary in the south. Approximately 700 hectares of this operating area has been silviculurally treated (planted) between 2019-2024.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Within the upcoming five year operating plan, commercial fuelwood operators will salvage timber that was not feasible to harvest by earlier operations. Additio

Inventory Softwood Volume: 58091
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 52282
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 8.2 km Reconstruction - 4.0 km
New Bridge - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Miguels Lake	**Operating Area:** CC11010
NFS Inventory Map #: 8733, 8723	**NTS Map #:** 02D/12

Description of Area: This area of crown land is located near the Southern boundary of forest management district (FMD) 11. It is accessed from the Bay d'Espoir highway (Route 360) via the Miguel Lake forest access road and bound to the north east by Great Rattling Brook. The terrain is generally rolling with strings of bog and stands dominated by Black Spruce and Balsam Fir.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. The majority of commercial activity will conclude by the end of the 2026- 2030 five year plan, leaving opportunities for a small amount of domestic harvesting

Inventory Softwood Volume: 0
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 0
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Great Rattling West	**Operating Area:** CC11011
NFS Inventory Map #: 7524, 7514, 7534	**NTS Map #:** 02D/13

Description of Area: These areas of crown land are located south of Grand Falls-Windsor within forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access road and bound to the east by great rattling brook . It split in the middle with an existing transmission line which has an access route following it.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will b

Inventory Softwood Volume: 38490
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 34641
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 7.4 km
New Bridge - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Three Brooks	**Operating Area:** CC11012
NFS Inventory Map #: 7524	**NTS Map #:** 02D/13

Description of Area: These areas of crown land are located south of Grand Falls-Windsor within forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access road and bound to the west by little rattling brook. The area consists primarily of Black spruce stands separated by strings of bog

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Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will b

Inventory Softwood Volume: 19748
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 17773
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 8.1 km
New Bridge - 2 New Culvert 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Little Rattling	**Operating Area:** CC11013
NFS Inventory Map #: 7524, 7523, 7513	**NTS Map #:** 02D/13

Description of Area: These areas of crown land are located south of Grand Falls-Windsor within forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access road and bound to the west by little rattling brook. The area consists primarily of Black spruce stands separated by strings of bog

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Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvestin

Inventory Softwood Volume: 39558
Inventory Hardwood Volume: 1105
Proposed Softwood Volume: 35602
Proposed Hardwood Volume: 995
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 4.5 km
New Bridge - 2 New Culvert 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Twin Ponds	**Operating Area:** CC11014
NFS Inventory Map #: 8743, 7513	**NTS Map #:** 02D/13, 02D12

Description of Area: This area of crown land is located south of Grand Falls-Windsor within forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access road. The operating area is boardered on the south east by great rattling brook and Paradise lake to the north.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvestin

Inventory Softwood Volume: 9579
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 8621
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 8.7 km
New Bridge 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Paradise Lake South	**Operating Area:** CC11015
NFS Inventory Map #: 8744, 8743	**NTS Map #:** 02D/12

Description of Area: This area of crown land is located south of Grand Falls-Windsor within forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access road. The operating area is boarded on the south east by great rattling brook and Paradise lake to the north.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Within the upcoming five year operating plan, commercial fuelwood operators will salvage timber that was not feasible to harvest by earlier operations. Subsequ

Inventory Softwood Volume: 11851
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 10666
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 1.8 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Christmas Pond	**Operating Area:** CC11016
NFS Inventory Map #: 8733, 8743	**NTS Map #:** 02D/12

Description of Area: This area of crown land is located in the south western portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access roads. The area is bound to the east by long string of bogs , to the west by an existing power line by Sandy road, andto the south by the operating area 11037 - Salvage.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 30523
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 27470
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 9.6 km
New Culvert - 5
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Miguel Mountain	**Operating Area:** CC11017
NFS Inventory Map #: 8743, 7512, 7513, 8742, 8732	**NTS Map #:** 02D/13, 02D/13

Description of Area: This area of crown land is located near the southern end of forest management district (FMD) 11 and is bounded to the south by Central Fire Complex bounday from 2022. It is accessed from the town of Grand Falls-Windsor via the Paradise Lake forest access roads amd is a part of the Northcentral subregion.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 66842
Inventory Hardwood Volume: 101
Proposed Softwood Volume: 60158
Proposed Hardwood Volume: 91
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 19.6 km Reconstruction 1.5 km
Existing Culvert - 1 New Culvert - 3 New Bridge - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Lemotte's	**Operating Area:** CC11018

NFS Inventory Map #: 7532, 7533	**NTS Map #:** 02D/13

Description of Area: This area of crown land is located in the north central portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy forest access roads. The area is bound to the north by the new Nalcor pole line and to the west by Lemottes Lake. The terrain is generally rolling too flat.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvestin

Inventory Softwood Volume: 3242
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 2917
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 1.3 km Reconstruction - 3.2 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Lemotte's West	**Operating Area:** CC11019
NFS Inventory Map #: 7532	**NTS Map #:** 02D/13

Description of Area: This area of crown land is located in the north central portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy forest access roads. The area is bound to the north by the new Nalcor pole line and to the west by Lemottes Lake. The terrain is generally rolling too flat. Block contains 108 ha of PCT from late 1980's. Is operating area is within the North Central subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling too flat.

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvestin

Inventory Softwood Volume: 2696
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 2426
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 0.6 km Reconstruction - 5.3 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Frenchman's Brook	**Operating Area:** CC11020
NFS Inventory Map #: 7532, 7531	**NTS Map #:** 02D/13

Description of Area: This area of crown land is located in the north portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy forest access roads. The area is bound to the east by Sandy Brook, to the north by Sandy road, and is split through the middle by an existing pole line.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will be

Inventory Softwood Volume: 7173
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 6456
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 3.9 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Tom Joe Brook	**Operating Area:** CC11021	
NFS Inventory Map #: 7541, 7531	**NTS Map #:** 02D/13	

Description of Area: This area of crown land is located in the central portion of forest management district (FMD). It is accessed from the town of Grand Falls-Windsor via the Sandy access roads. The area is adjacent to Tom Joe Brook on the west and bordered by Sandy road to the north. This operating area contains a large amount cutover (865 ha) that was harvested between 2023-2024.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will be

Inventory Softwood Volume: 498
Inventory Hardwood Volume: 428
Proposed Softwood Volume: 448
Proposed Hardwood Volume: 385
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: West Lake	**Operating Area:** CC11022
NFS Inventory Map #: 7531, 7521	**NTS Map #:** 02D/13

Description of Area: This area of crown land is located in the central portion of forest management district (FMD). It is accessed from the town of Grand Falls-Windsor via the Sandy and Lynx's Pond forest access roads. The area is bound to the southeast by Leonard's Brook and adjacent to West Lake in the east. The terrain is generally rolling with large White Birch and Mixed wood stands with 90 ha of cutover.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will be

Inventory Softwood Volume: 14431
Inventory Hardwood Volume: 2476
Proposed Softwood Volume: 12988
Proposed Hardwood Volume: 2228
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 5.5 km Reconstruction - 1.9 km
New Culvert - 1 New Bridge 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: West Lake South	**Operating Area:** CC11023
NFS Inventory Map #: 7531, 7522, 7521	**NTS Map #:** 02D/13

Description of Area: This area of crown land is located in the north central portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy and Frenchman's forest access roads. The area is bound to the south by Sandy Brook and to the West by West Lake and is a part of the Beothuk Subregion of Central Newfoundland Forest Ecoregion.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will b

Inventory Softwood Volume: 47296
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 42567
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 17.9 km Reconstruction - 1.6 km
New Culvert - 2 New Bridge - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Leonards Lake	**Operating Area:** CC11024
NFS Inventory Map #: 7424, 7521, 7413, 7514	**NTS Map #:** 02D/13, 12A/16

Description of Area: This area of crown land is located in the central portion of forest management district (FMD). It is accessed from the town of Grand Falls-Windsor via the Sandy and Lynx's Pond forest access roads. The area is bound to the southeast by Leonard's Brook and adjacent to West Lake in the east. The terrain is generally rolling with large White Birch and Mixed wood stands.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Commercial hardwood fuel-wood operations will be a significant portion of this block. Subsequent to commercial harvest, Domestic Cutting permit holders will be

Inventory Softwood Volume: 60936
Inventory Hardwood Volume: 15042
Proposed Softwood Volume: 54842
Proposed Hardwood Volume: 13538
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 11.6 km Reconstruction - 17.8 km
New Bridges - 3 New Culvert - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Caledonia Brook	**Operating Area:** CC11025
NFS Inventory Map #: 7424, 7521, 7414, 7511	**NTS Map #:** 02D/13

Description of Area: This area of crown land is located in the north portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy forest access roads. The area is bound to the east by Sandy Brook, and to the north by Coronation Brook. It consists mainly of cut period 1 stand.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 128468
Inventory Hardwood Volume: 395
Proposed Softwood Volume: 115622
Proposed Hardwood Volume: 355
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 13.4 km
New Bridge - 5 New Culvert - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Coronation Lake	**Operating Area:** CC11026
NFS Inventory Map #: 7424, 7414, 7511	**NTS Map #:** 12A/16, 02D/13

Description of Area: This area of crown land is located in the North West portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy and Lynx's Pond forest access roads.This operating area is within the Beothuk subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling too hilly. Stands are comprised mainly of black spruce and balsam fir with 76 ha of mid 1980's PCT

Harvesting Activities: Commercial activity will include pulpwood, sawlog and fuelwood harvesting using chainsaws and mechanical harvesters with extraction by forwarder. Some tree length timber on steep slopes may be harvested using skidders. A small amount of domestic harvestin

Inventory Softwood Volume: 58217
Inventory Hardwood Volume: 790
Proposed Softwood Volume: 52396
Proposed Hardwood Volume: 711
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 18.8 km Reconstruction - 4.6 km
New Culvert - 4
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Sandy Brook	**Operating Area:** CC11027
NFS Inventory Map #: 8644, 8741, 7414, 7511	**NTS Map #:** 12A/9, 12A/16, 02D/13, 02D12

Description of Area: This area of crown land is located in the Central West portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy and Lynx's Pond forest access roads. The area is bound to the south by Sandy Brook. Stands in the area comprise mainly of Black Spruce and Balsam Fir separated by strings of bog.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 135053
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 121548
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 25.7 km Reconstruction - 10.0 km
New Bridge - 3 New Culvert - 5
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Patchy Valley	**Operating Area:** CC11028
NFS Inventory Map #: 8644, 8741, 7511	**NTS Map #:** 12A/16, 02D/13, 02D/12

Description of Area: This area of crown land is located in the North West portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Chipper forest access roads. The area is bound to the North by Sandy Brook. Stands in the area comprise mainly of Black Spruce and Balsam Fir separated by strings of bog

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Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Within the upcoming five year operating plan, commercial fuelwood operators will salvage timber that was not feasible to harvest by earlier operations Subseque

Inventory Softwood Volume: 49044
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 44139
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 1.8 km Reconstruction - 9.0 km
New Bridge - 1 New Culvert - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Sandy Lake North	**Operating Area:** CC11029
NFS Inventory Map #: 8644, 8634	**NTS Map #:** 12A/9

Description of Area: This area of crown land is located in the south West portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy Lake forest access roads.These operating areas are within the Beothuk Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Within the upcoming five year operating plan, commercial fuelwood operators will salvage timber that was not feasible to harvest by earlier operations Subseque

Inventory Softwood Volume: 27990
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 25191
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 0.5 km
New Culvert - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Sandy Lake South	**Operating Area:** CC11030
NFS Inventory Map #: 8644, 8633, 8634	**NTS Map #:** 12A/9

Description of Area: This area of crown land is located in the south West portion of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Chipper forest access roads. It is bounded to the north by a book and bog network, south by FMD 11 boundary, west by Ramber Lake, East by Sandy Lake.These operating areas are within the Beothuk Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 7970
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 7173
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 3.8 km Reconstruction - 1.5 km
New Culvert - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Cripple Back	**Operating Area:** CC11031
NFS Inventory Map #: 8644, 8643, 7413, 7414, 8642	**NTS Map #:** 12A/9, 12A/16

Description of Area: This area of crown land is located adjacent to Noel Paul Brook on the western boundary of forest management district (FMD) 11. It is accessed from the town of Grand Falls-Windsor via the Sandy Lake forest access road. Between 2021-2025 945.5 ha of the Crippleback Operating area was harvested. Block also contains of a large amount of age class 3 timber that has to be assessed for harvesting potential.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. The majority of commercial activity will conclude by the end of the 2026- 2030 five year plan, leaving opportunities for a small amount of domestic harvesting

Inventory Softwood Volume: 47337
Inventory Hardwood Volume: 199
Proposed Softwood Volume: 42603
Proposed Hardwood Volume: 179
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 15.0 km Reconstruction - 4.0 km
New Bridge - 3
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Long Tail	**Operating Area:** CC11032
NFS Inventory Map #: 7423, 7424, 7413, 7414	**NTS Map #:** 12A/16

Description of Area: This area of crown land is located on the south western boundary of forest management district (FMD) 11 and bound to the south by Long Tail Pond and stream network. It is accessed from the town of Grand Falls-Windsor via the Sandy Lake and Black Duck forest access roads.Stands are comprised mainly of black spruce and balsam fir with 480 ha of mid 1980's and early 2000's PCT

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 21972
Inventory Hardwood Volume: 2582
Proposed Softwood Volume: 19775
Proposed Hardwood Volume: 2324
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 1.0 km Reconstruction - 13.2 km
New Bridge - 1 New Culvert - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Shoulder Blade	**Operating Area:** CC11033
NFS Inventory Map #: 8644, 8643, 8633, 8634	**NTS Map #:** 12A/9

Description of Area: This area of crown land is located on the south western boundary of forest management district (FMD) 11 and bound to the North by Caribou Lake forest access. It is accessed from the town of Grand Falls-Windsor via the Sandy Lake and Caribou Lake forest access roads. Block also contains of a large amount of age class 3 timber that has to be assessed for harvesting potential. These operating areas are within the Beothuk Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 34298
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 30868
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 8.8 km Reconstruction - 6.3 km
Exisiting Bridge - 1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Noel Paul Brook	**Operating Area:** CC11034
NFS Inventory Map #: 8643, 8642, 8632, 8633	**NTS Map #:** 12A/9

Description of Area: This area of crown land is located on the south western boundary of forest management district (FMD) 11 and bound to the weat & south by Noel Paul Brook. It is accessed from the town of Grand Falls-Windsor via the Sandy Lake and Caribou Lake forest access roads . These operating areas are within the Beothuk Subregion of the Central Newfoundland Ecoregion and the terrain is generally rolling.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 38092
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 34283
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 7.0 km
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Noel Paul East	**Operating Area:** CC11035
NFS Inventory Map #: 7413, 7412	**NTS Map #:** 12A/16

Description of Area: This area of crown land are located in the western boundary of forest management district (FMD) 11. It is bound to the west by Noel Paul River and accessed from the town of Grand Falls-Windsor via the Sandy Lake forest access road. Block contains a large amount of age class 3 timber that has to be assessed for harvesting potential.

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 21618
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 19456
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction -5.2 km Reconstruction - 6.1 km
Existing Culvert - 1 New Culvert - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Pamehac Lake	**Operating Area:** CC11036
NFS Inventory Map #: 7433, 7434, 7423, 7424	**NTS Map #:** 12A/16

Description of Area: This area of crown land is located on the west boundary of forest management district (FMD) 11. It is access via the Sandy Lake forest access . .Stands are comprised mainly of black spruce and balsam fir with 575 ha of LATE 1980's and early 1990's PCT

Harvesting Activities: Timber will be harvested commercially using mechanical harvesters and removed using forwarders. Subsequent to commercial harvest, Domestic Cutting permit holders will be allowed to remove residual timber from cutovers for personal use.

Inventory Softwood Volume: 49863
Inventory Hardwood Volume: 190
Proposed Softwood Volume: 44877
Proposed Hardwood Volume: 171
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
New Construction - 1.9 km Reconstruction - 23.5 km
New Bridge - 2 New Culvert - 2
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Salvage	**Operating Area:** CC11037
NFS Inventory Map #: 8743, 8733, 8722, 8732, 8723	**NTS Map #:** 02D12

Description of Area: This area of Crown land are located in the southern portion of forest management district (FMD) 11. It is accessed from the Bay d'Espoir highway (Route 360) via the Miguel Lake forest access road and bound to the north east by Great Rattling Brook. The terrain is generally rolling with strings of bog and stands dominated by Black Spruce and Balsam Fir. Majority of this area was burnt in 2022.

Harvesting Activities: Commercial harvesting operations have occurred in these areas in recent years and have removed the majority of the commercially viable timber. The remaining timber is primarily located in areas that are difficult to access, the terrain is rugged and/or co

Inventory Softwood Volume: 4066
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 3660
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:
Reconstruction - 4.9 km
New Culvert -1
Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Hardwood Domestic Cutting Areas District 11	**Operating Area:** CC11501, CC11503, CC11505,CC11507,CC11508,CC11509,CC11510, CC11511,CC11512,CC11513,CC11515, CC11516, CC11517
NFS Inventory Map #: 11-1, 11-3, 11-5, 11-7, 11-8, 11-9, 11-10, 11-11, 11-12, 11-13, 11-15, 11-16, 11-17	**NTS Map #:** 12A/9, 12A/16, 2D/13, 2D/14, 2D/12, 2D/11, 2E/3

Description of Area: These listed parcels of crown land are located throughout forest management district (FMD) 11. The areas are generally isolated and established throughout the Zone in order to accommodate the fuelwood requirements of remote cabin owners and cabins within cottage development areas. The terrain is generally rolling and located within the North-Central subregion and Beothuk Lake Subregio of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Many of these areas still contain a significant amount of commercially viable timber. Domestic harvesting will target hardwoods and non-commercial species including larch and dead/blowdown timber. Domestic wood harvesting is usually carried out during win

Inventory Softwood Volume:
Inventory Hardwood Volume:
Proposed Softwood Volume:
Proposed Hardwood Volume:
Difference from Inventory to Proposed Volume:
Rationale for Difference:

Silviculture Activities: Reconnaissance surveys will be carried out on existing and new cutovers and regenerating stands to determine the need for planting and/or thinning. Suitable cutovers that are not satisfactorily regenerated will be candidates for site preparation and planting and/or gap planting and suitable regenerating stands will be candidates for thinning. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, recent cuts and immature stands.

Primary Forest Access Road Construction:

Bridge Decommission - 1

Non-Timber Considerations and Mitigations: A 30 m buffer will be maintained on both sides of any rivers, brook, ponds or other water bodies that are shown on 1:50,000 Topographic maps.

Operating Area Name: Hardwood and Softwood Domestic Cutting Areas District 11	**Operating Area:** CC11502, CC11504, CC11506, CC11514, CC11518, CC11519, CC11520
NFS Inventory Map #: 11-2, 11-4, 11-6, 11-14, 11-18, 11-19, 11-20	**NTS Map #:** 12A/9, 12A/16, 2D/13, 2D/14, 2D/12, 2D/11, 2E/3

Description of Area: These listed parcels of crown land are located throughout forest management district (FMD) 11. The areas are located in close proximity to the communities and cabin areas throughout the Zone in order to accommodate the fuelwood/sawlog requirements of the general public. The terrain within the areas that still have mature timber are generally rugged and hilly. These areas are located in the North-Central subregion and Beothuk Lake Subregion of the Central Newfoundland Forest Ecoregion.

Harvesting Activities: Commercial harvesting operations have occurred in these areas in recent years and have removed the majority of the commercially viable timber. The remaining timber is primarily located in areas that are difficult to access, the terrain is rugged and/or co

Inventory Softwood Volume:
Inventory Hardwood Volume:
Proposed Softwood Volume:
Proposed Hardwood Volume:
Difference from Inventory to Proposed Volume:
Rationale for Difference:

Silviculture Activities:

Primary Forest Access Road Construction:
Non-Timber Considerations and Mitigations:

Appendix 2C – Zone 5 Operating Area Summaries District 12

Operating Area Name: Millertown Jct	**Operating Area:** CC12001
NFS Inventory Map #:	**NTS Map #:** 12A/16

Description of Area: Millertown JCT operating area is located approximately 15 km north west of Badger and is accessed using Millertown Jct Road. The operating area is predominantly forested with black spruce with a minor component of balsam fir, white birch, eastern larch and white pine. The operating area is characterized by continuous forest with marshland interspersed throughout. Area also includes approximately 390 hectares of PCT from 1989-1991

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 88580
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 79722
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
7.75km New Construction. 11.5 km Reconstruction
6 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width.

Operating Area Name: Buchans Highway	**Operating Area:** CC12002
NFS Inventory Map #:	**NTS Map #:** 12A/16

Description of Area: Buchans Highway operating area is located approximately 15 km southwest of the community of Badger and is accessed via existing forest access roads off of Route 370. The operating area is predominantly forested with black spruce with a minor component of balsam fir, white birch, eastern larch. The operating area is characterized mostly by forested land with marshland interspersed throughout. Area also includes approximately 794 ha of PCT from the late 1980's to early 2000's

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Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 22292
Inventory Hardwood Volume: 1116
Proposed Softwood Volume: 20062
Proposed Hardwood Volume: 1004
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
2.9 km New Construction. 13 km Reconstruction
7 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Valley Brook	**Operating Area:** CC12003
NFS Inventory Map #:	**NTS Map #:** 12A/16

Description of Area: Valley Brook operating area is located approximately 30 km Southwest of the community of Badger. The area is accessed via an existing forest access road off of route 370. The operating area is predominantly forested with black spruce and balsam fir with a minor component of white birch and eastern larch. The operating area is characterized mostly by forest land with marshland occupying the northwest side of the block. Area also includes approximately 109 ha of PCT from 1989-2001

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 9236
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 8313
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
3.7 km New Construction. 9.7 km Reconstruction
3 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Exploits River will have a no harvest buffer of 100 meters, Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Duck Pond East	**Operating Area:** CC12004
NFS Inventory Map #:	**NTS Map #:** 12A/9

Description of Area: Duck Pond East operating area is located approximately 13 km southeast of the community of Millertown. The operating area is accessed via the existing Duck Pond forest access road. The forest is comprised primarily of black spruce and smaller amounts of balsam fir stands. The operating area is Northeast of the former Duck Pond Mine.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 66793
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 60114
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
23.25 km New Construction. 2.8 km Reconstruction
6 Culverts. 2 Bridges
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width.

Operating Area Name: Michael's Brook	**Operating Area:** CC12005
NFS Inventory Map #:	**NTS Map #:** 12A/9-12A/10

Description of Area: Michael's Brook operating area is located approximately 10 km southeast of the community of Millertown. The operating area is accessed via the Duck Pond forest access road. The forest is comprised of black spruce and balsam fir with a component of white birch and eastern larch. The operating area is characterized mostly by continuous forest with marshland interspersed throughout.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 9582
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 8624
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
3.7 km New Construction. 10.2 km Reconstruction
4 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Selby's Pond	**Operating Area:** CC12006
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Selby's Pond operating area is located approximately 12 km south of the community of Millertown. This area is comprised of both young and mature timber with black spruce, balsam fir as well as mixed stands.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 16029
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 14426
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
1.7 km New Construction. 0 km Reconstruction
0 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. A 50 meter buffer no harvest buffer will be maintained on Harpoon Brook and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Duck Pond West	**Operating Area:** CC12007
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Duck Pond West operating area is located approximately 16 km southeast of the community of Millertown. The forest is comprised primarily of black spruce and smaller amounts of balsam fir stands. This operating area is west of the former Duck Pond mine and is bounded on the west by Harpoon Brook and to the east by Gill's Valley Road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 15014
Inventory Hardwood Volume: 300
Proposed Softwood Volume: 13513
Proposed Hardwood Volume: 270
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
0 km New Construction. 2.8 km Reconstruction
1 Culvert
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Harpoon Brook will maintain a 50 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Gills Valley East	**Operating Area:** CC12008
NFS Inventory Map #:	**NTS Map #:** 12A/9-12A/10

Description of Area: Gills Valley East operating area is located approximately 22 km southeast of the community of Millertown. This operating area is accessed via Gills Valley forest access road or vis the Fish Hatchery forest access road. The forest is comprised primarily of black spruce and balsam fir stands with a minor component of white birch. This operating area is southeast of the former Duck Pond mine site.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 147569
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 132812
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
46.8 km New Construction. 14.7 km Reconstruction
36 Culverts. 5 Bridges
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Noel Paul River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Haven Steady	**Operating Area:** CC12009
NFS Inventory Map #:	**NTS Map #:** 12A/7-12A/10

Description of Area: Haven Steady operating area is located approximately thirty km south of the community of Millertown. The area is bounded on the north by Noel Paul Brook and to the east by Meelpaeg Lake access road. The operating area is comprised of mature black spruce and fir stands along with mixed hardwood stands

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Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 18058
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 16253
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
6.1 km New Construction. 0 km Reconstruction
2 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Noel Paul River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Victoria River West	**Operating Area:** CC12010
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Victoria River West operating area is located approximately 25 km southwest of the community of Millertown. This operating area is comprised of black spruce, balsam fir. The area contains a large amount of pure white birch stands along with mixed hardwood softwood stands. This area is bounded on the east by Victoria River.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 56807
Inventory Hardwood Volume: 4809
Proposed Softwood Volume: 51127
Proposed Hardwood Volume: 4328
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
16.9 km New Construction. 0 km Reconstruction
4 Culverts, 2 Bridges
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Victoria River and the brook the flows out of Bobby's Pond will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Denny's Pond North	**Operating Area:** CC12011
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Denny's Pond North operating area is approximately 20 km southwest of the community of Millertown. It is accessed from the Granite Lake access road. The area is bounded on the west by Victoria River and Denny's Pond to the south. The area contain large mixed wood stands and pure withier birch stands

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Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 35059
Inventory Hardwood Volume: 470
Proposed Softwood Volume: 31553
Proposed Hardwood Volume: 423
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
2.25 km New Construction. 0 km Reconstruction
1 Culvert
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, ponds or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Victoria River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Lost Pond	**Operating Area:** CC12012
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Lost Pond operating area is located approximately 27 kms southwest of the community of Millertown. The operating area is accessed using the Granite Lake forest access road in the Lake Ambrose area. The operating area is predominantly forested with black spruce and balsam fir stands.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 18680
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 16812
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
0 km New Construction. 0 km Reconstruction
0 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Rogerson's Lake	**Operating Area:** CC12013
NFS Inventory Map #:	**NTS Map #:** 12A/7-12A/10

Description of Area: Rogerson's Lake operating area is located approximately 32 km southwest of the community of Millertown. This area is accessed via the Granite Lake forest access road and the Quinn Lake forest access road. This area is composed of balsam fir and black spruce stands, with marshland interspersed throughout the operating area. This operating area is bounded on the west by Rogerson's Lake.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 68402
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 61561
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
2.05 km New Construction. 36.7 km Reconstruction
13 Culverts. 3 Bridges
Non-Timber Considerations and Mitigations: 50 meter buffer to be placed around known archaeological site within area. 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Lake Douglas	**Operating Area:** CC12014
NFS Inventory Map #:	**NTS Map #:** 12A/7

Description of Area: Lake Douglas operating area is located approximately 39 km southwest of the community of Millertown. The area is comprised mostly of balsam fir stands with a component of black spruce stands within the operating area. The area is comprised mostly of forest with marshland and older cutovers mixed throughout the operating area. Lake Douglas operating area is accessed via the Granite Lake forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 76850
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 69165
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
11.4 km New Construction. 0 km Reconstruction
3 Culverts. 2 Bridges
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Quinn Lake	**Operating Area:** CC12015
NFS Inventory Map #:	**NTS Map #:** 12A/7-12A/10

Description of Area: Quinn Lake operating area is located approximately 36 km southwest of the community of Millertown. The area is composed of mostly black spruce, balsam fir and a component of white birch stands. Cutovers exist on the eastern and western side of the block but the central area of the block remains largely unharvested. The area is comprised of cutovers, forest and marshland. Quinn Lake operating area is accessed via the Quinn Lake forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 33580
Inventory Hardwood Volume: 1179
Proposed Softwood Volume: 30222
Proposed Hardwood Volume: 1061
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
0 km New Construction. 0 km Reconstruction
0 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Victoria River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Roebuck's	**Operating Area:** CC12016
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Roebuck's operating area is located approximately 34 km southwest of the community of Millertown. The operating area is bounded on the west by Beothuk Lake and on the east by Harbour Round Pond. The area is composed of black spruce and balsam fir stands with some 1992 Pre-commercial thinning's in the western side of the block. This area is accessed via the Roebuck's forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 25659
Inventory Hardwood Volume: 517
Proposed Softwood Volume: 23093
Proposed Hardwood Volume: 465
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
1.5 km New Construction. 5.6 km Reconstruction
1 Bridge
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Beothuk Lake will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Sutherland's	**Operating Area:** CC12017
NFS Inventory Map #:	**NTS Map #:** 12A/10-12A-15

Description of Area: Sutherland's operating area is located approximately 15 km southwest of the community of Millertown. The area is predominantly forested with black spruce stands with a component of white birch and other hardwoods. The area is bounded on the north by Beothuk Lake and on the east by Victoria River. This area is accessed via the Roebuck's forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 84490
Inventory Hardwood Volume: 133
Proposed Softwood Volume: 76041
Proposed Hardwood Volume: 120
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
9.0 km New Construction. 29.5 km Reconstruction
13 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Beothuk Lake and Victoria River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Victoria River East	**Operating Area:** CC12018
NFS Inventory Map #:	**NTS Map #:** 12A/10-12A-15

Description of Area: Victoria River East operating area is located approximately 15 kms southwest of the community of Millertown and is bounded on the east by Duck Pond forest access road and on the west by Victoria River. The operating area is predominantly forested with white birch and black spruce with a minor component of trembling aspen and balsam fir. This area can be accessed via the Duck Pond forest access road or the Roebuck's forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 18336
Inventory Hardwood Volume: 720
Proposed Softwood Volume: 16503
Proposed Hardwood Volume: 648
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
5.0 km New Construction. 11.2km Reconstruction
8 Culverts. 1 Bridge
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Beothuk Lake and Victoria River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Denny's Pond	**Operating Area:** CC12019
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Denny's Pond operating area is located approximately 27 kms southwest of the community of Millertown. The area contains large cutovers from previous management plans, remaining stands within the operating area are black spruce, balsam fir, some mixed wood stands and pure white birch stands. This area is accessed via the Denny's Pond forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 33535
Inventory Hardwood Volume: 5270
Proposed Softwood Volume: 30182
Proposed Hardwood Volume: 4743
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
3.6 km New Construction. 4.2 km Reconstruction
3 Culverts. 1 Bridge
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Victoria River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Noel Paul West	**Operating Area:** CC12020
NFS Inventory Map #:	**NTS Map #:** 12A/9

Description of Area: Noel Paul West operating area is located approximately 17 km southeast of the community of Millertown and 6 km west of the former Duck Pond mine. The area is composed of mature forest with large bogs throughout the operating area, black spruce and balsam fir are the dominant stands within this operating area. The area is bounded on the south by Noel Paul River and can be accessed via the Gills Valley forest access road or the Old Country forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 52658
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 47392
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
9.8 km New Construction. 0 km Reconstruction
4 Culverts. 1 Bridge
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Noel Paul River will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Beothuk Lake	**Operating Area:** CC12021
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Beothuk Lake operating area is located 26 km southwest of the community of Millertown. The area is composed of mostly forested area with marshland interspersed throughout. Black spruce is the dominant forest type in this area with a minor component of balsam fir and white birch. There is also some Pre-commercial thinning's in the area that were treated in the early 2000's. This area can be accessed via the Roebuck's forest access road

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Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 19545
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 17590
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
1.1 km New Construction. 2.6 km Reconstruction
0 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Beothuk Lake will maintain a 100 meter no harvest buffer and appropriate buffers to be put on approved cabin locations.

Operating Area Name: Bobby's Pond	**Operating Area:** CC12022
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Bobby's Pond operating area is located approximately 27 kms south west of the community of Millertown. The area contains large cutovers from previous management plans with remaining stands of spruce with a minor component of balsam fir and white birch. This area can be accessed via the Roebuck's forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 27089
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 24380
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
2.9 km New Construction. 0 km Reconstruction
1 Culvert
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Island Pond	**Operating Area:** CC12023
NFS Inventory Map #:	**NTS Map #:** 12A/10

Description of Area: Island Pond operating area is located approximately 17 kms southwest of the community of Millertown and is bounded on the west by Victoria River. The area contains large clear cuts from the previous forest management plan with remaining stands of spruce, some mixed wood stands and pure white birch stands.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 4605
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 4145
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
1.4 km New Construction. 1.0 km Reconstruction
0 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Victoria River will maintain a 100 meter no harvest buffer. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Tally Pond	**Operating Area:** CC12024
NFS Inventory Map #:	**NTS Map #:** 12A/9-12A/10

Description of Area: This operating area is located approximately 15 km southeast of the community of Millertown. The area contains large clearcuts from previous management plans. The remaining area is composed of black spruce and balsam fir stands. This area is north of the former duck pond mine and can be accessed via the Duck Pond forest access road.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 2346
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 2112
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
1.1 km New Construction. 6.1 km Reconstruction
0 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Millertown Jct West	**Operating Area:** CC12025
NFS Inventory Map #:	**NTS Map #:** 12A/16

Description of Area: Millertown Jct West operating area is located approximately 11 km west of the community of Badger and is accessed via the Millertown Jct forest access road. The area is composed of black spruce and balsam fir stands with marshland interspersed throughout the operating area.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders. Subsequent to commercial harvest , domestic cutting permit holders will be allowed to remove residual timber from cutovers for personal use

Inventory Softwood Volume: 5506
Inventory Hardwood Volume: 42
Proposed Softwood Volume: 4955
Proposed Hardwood Volume: 38
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory / blocking adjustment from wood supply calculations and operational criteria of age class 3 and greater with minimal 60 m3/ha and greater

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Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
2.6 km New Construction. 5.5 km Reconstruction
2 Culverts
Non-Timber Considerations and Mitigations: 30 meter buffer will be maintained on both sides of any river, brook, pond or other waterbodies that are shown on 1:50,000 topographic map or any waterbody that is greater than 2 meters in width. Appropriate buffers to be put on approved cabin locations.

Appendix 2D – Zone 5 Operating Area Summaries District 13

Operating Area Name: Hospital Pond	**Operating Area:** CC13001
NFS Inventory Map #:	**NTS Map #:** 12 A/7

Description of Area: This area is located along the eastern boundary of District 13. The terrain in the area is generally undulating and consistent with the terrain south of Beothuk Lake and east of Buchans. The area is located with the BeothukSub-region of the Central NL Forest Eco-region.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders.

Inventory Softwood Volume: 43997
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 36077
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory loss adjustment of 18%

Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed. Suitable cutovers that are not satisfactorily regenerated will be candidate for site preparation and planting or gap planting. Suitable stands will be candidates for thinning. All potential silviculture areas are identified on the operating area maps as proposed harvest areas, and immature stands.

Primary Forest Access Road Construction:
17.28 km
85 culverts 1 Bridge
Non-Timber Considerations and Mitigations: A minimum 30 meter buffer will be mainintained on streams and water bodies as indicated on the operating map. Environmental protection guidelines as well as regulations governing commercial forest activities will be followed.

Operating Area Name: Southwest Lake	**Operating Area:** CC13004
NFS Inventory Map #:	**NTS Map #:** 12 A/5

Description of Area: This area is located 1.3 km south of where Routh 480 turns direction South off the Abitibi Road at the 90 degee turn. Route 480 runs directly through the area. Southwest Lake is on the eastern side of Rout 480. The area falls within 2 ecoregions: the Portage Pond Subregion of the Contral NL Forest and the Southern Long Range Subregion of the Long Range Barrens

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Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders.

Inventory Softwood Volume: 83472
Inventory Hardwood Volume: 406
Proposed Softwood Volume: 8091
Proposed Hardwood Volume: 333
Difference from Inventory to Proposed Volume:
Rationale for Difference: Anticipated demand is low in this area.

Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
7.52 Km
1 bridge
Non-Timber Considerations and Mitigations: A minimum 30 meter buffer will be maintained on streams and waterbodies as indicated on the operating map. Environmental protection guidelines as well as regulations governing commercial forest activities will be followed.

Operating Area Name: Victoria Lake West	**Operating Area:** CC13005
NFS Inventory Map #:	**NTS Map #:** 12 A/4

Description of Area: This area is located on the western end of Victoria Lake. The area falls within 2 ecoregions: the Portage Pond Subregion and the Beothuk Subregion of the Central NL Forest Eco-region. A portion of the block is adjacent to Victoria Lake and the the other along Victoria River.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders.

Inventory Softwood Volume: 22990
Inventory Hardwood Volume: 0
Proposed Softwood Volume: 18852
Proposed Hardwood Volume:
Difference from Inventory to Proposed Volume:
Rationale for Difference: Inventory loss adjustment of 18%

Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:
35 culverts
Non-Timber Considerations and Mitigations: A minimum 100 meter buffer will be maintained on Victoria Lake. A minimum 30 meter buffer will be maintained on streams and water bodies as indciated on the operating map. Environmental protection guidelines as well as regulations governing commercial forest activities will be followed.

Operating Area Name: Domestic	**Operating Area:** CC130501, CC13502, CC13503, CC13504, CC13505
NFS Inventory Map #:	**NTS Map #:**

Description of Area: This area is located on the western end of Victoria Lake. The area falls within 2 ecoregions: the Portage Pond Subregion and the Beothuk Subregion of the Central NL Forest Eco-region. A portion of the block is adjacent to Victoria Lake and the the other along Victoria River.

Harvesting Activities: Commercial activity will include timber being manually or mechanical harvested and removed using forwarders.

Inventory Softwood Volume:
Inventory Hardwood Volume:
Proposed Softwood Volume: 4160
Proposed Hardwood Volume:
Difference from Inventory to Proposed Volume:
Rationale for Difference:

Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

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Primary Forest Access Road Construction:

Non-Timber Considerations and Mitigations: A minimum 100 meter buffer will be maintained on Victoria Lake. A minimum 30 meter buffer will be maintained on streams and water bodies as indciated on the operating map. Environmental protection guidelines as well as regulations governing commercial forest

Appendix 3 - Stakeholders Consulted

Zone 5 2026-2030 Ecosystem Plan – Known Stakeholders Outfitting

1. **Hideaway Lodge, CC10012, CC10018, CC10011**
   Phone: +1 (709) 486 3220 (Off-season)
   Email: info@thehideawaylodge.com

2. **Ocean Side Country Lodge, CC10016**
   Phone: +1 (709) 483 2002
   Email: hazen.chippett@nf.sympatico.ca

3. **Big River Lodge, CC11033**
   Phone: +1 (709) 263 6900 | Secondary: +1 (709) 990 9511
   Email: 2goutfitters@gmx.com

4. **Central Newfoundland Outfitters, CC11006**
   Phone: +1 (709) 486 2648
   Email: centralnfldoutfittersltd@gmail.com
   rrrobinson@nl.rogers.com

5. **Migule Mountain Outfitters, CC11036, CC11017, CC11015, CC11016**
   Phone: +1 (709) 486 4725
   Email: migulemountainoutfitters@gmail.com

6. **Mount Peyton Outfitters, CC11003, CC11004, CC11002**
   Phone: +1 (709) 486 5422 | Secondary: +1 (709) 486 5697 (Off-season)
   Email: donmtpo@gmail.com

7. **Pepper Mountain Lodge, CC11036**
   Phone: +1 (709) 293 4724
   Email: newfie_7158@hotmail.com

8. **Blackridge Outfitters Ltd., CC12008**
   Phone: +1 (709) 673 8620 | Secondary: +1 (709) 268 2137
   Email: blackridgeoutfitters@hotmail.com

9. **Kinden's Quinn Lake Outfitters Ltd., CC12015, CC12013, CC12019**
   Phone: +1 (709) 541 1086 | Secondary: +1 (709) 541 1340
   Email: kindensoutfitters@hotmail.com

10. **Snowshoe Lake Lodge, CC12014**
    Phone: +1 (709) 489 3017 | Secondary: +1 (709) 486 8050 | Toll-free: +1 (888) 968 4868
    Email: snowshoe@nf.sympatico.ca

11. **Victoria Outfitters & Lodge, CC12010, CC12019, CC12012, CC12011**
    Phone: +1 (709) 572 9146 (Off-season)
    Email: jackie@victoriaoutfitters.com

12. **North Twin Brook Camp**
info@a1hunts.com

13. **Sandy Lake Lodge Outfitting Limited**
gary.rowsell@yahoo.ca

14. **Island Safaris (Little Sandy Pond Lodge)**

cog@islandsafaris.com

15. **Red Indian Lake Outfitting and Tours Inc.**

info@redindianlake.com

16. **Sou'wester Outfitting**

dean.wheeler@nf.sympatico.ca

17. **Lake Douglas Hunting and Fishing Inc**.

info@lakedouglas.com

18. **Notch Mountain Outfitters Inc.**

randyparsons2004@hotmail.com

19. **P.A. Guillory Family LLC**

uomam@aol.com

20. **Plateau Outfitters Partnership**

Mikejwilson53@gmail.com

21. **Ray's Hunting and Fishing Lodge Ltd**

info@huntnewfoundlandmoose.com

22. **Snowshoe Lake Hunting and Fishing Inc.**

snowshoe@nf.sympatico.ca

23. **Adventure North Limited**

Cruickshank.chris@hotmail.com

24. **Caribou Cove Outfitters Ltd.**

peggy@fivestarroofing.ns.ca

25. **DADG MacDonald Outfitters Ltd.**

nlhunter18@live.ca

26. **Efford Enterprises Limited**

    info@effordshunting.nf.ca

27. **Spruce Pond Adventures Ltd.**

    info@sprucepondhunting.com

28. **Woodland Lodge Limited**

    artryan1959@hotmail.com

Tourism Stakeholders – Provided by TCAR

- **Newfoundland and Labrador Outfitters Association**

93 West St., Corner Brook, NL A2Y 2Y6
Email: info@nloa.ca | Phone: 709-639-5926
Contact: Cory Foster, Executive Director | Email: coryfoster@nloa.ca

- **Newfoundland and Labrador Snowmobile Federation**

7 Wellon Dr., Deer Lake, NL A8A 2G6
Phone: (709) 635-4395 Email: generalmanager@nlsf.org

- **Adventure Central Newfoundland**

Email: info@adventurecentral.ca | Phone: (709) 486 4345
Contact: Shannon Pinsent, Executive Director | Email: shannon@adventurecentral.ca

- **Riverfront Chalets**

Email: info@riverfrontchalets.ca | Phone: (709) 486 0892

- **Indian Point Beothuk Interpretation Site**

Phone: (709) 852 6216 | Secondary: (709) 486 4567 | Off-season: (709) 852 6216
Email: townofmillertown@nf.aibn.com

- **Catamaran Park**

Phone: +1 (709) 539 5115 | Secondary: (709) 673 7630
Email: tammylyoung@hotmail.com

- **Rafting Newfoundland/ONadventure Wilderness Tours**
  Phone: +1 (709) 700 8807
  Email: info@raftingnl.ca

- **Salmonid Interpretation Centre**

  Phone: +1 (709) 489 7350 | Secondary: +1 (709) 486 8651 | Off-season: +1 (709) 489 7350
  Email: executivedirector@erma.ca

- **Atlantic Salmon Federation**

  Phone: +1 (709) 632-1155
  Email: kthompson@asf.ca

- **Hospitality NL**

  Craig Foley, Executive Director

  Email: cfoley@hnl.ca

- **Legendary Coasts NL DMO**

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Email: Chris.sheppard@legendarycoasts.com

- **Adventure Central DMO**

Shannon Pinsent, Executive Director

Email: spinsent@adventurecentralnewfoundland.ca

- **Go Western DMO**

Krista Hoddinott, Executive Director (Sent to both emails)

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Communities

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Town of Millertown

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Town of Badger
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Mayor Grand Falls - Windsor
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Town of Bishops Falls
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Town of Peterview
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Town of Northern Arm
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Town of Norris Arm
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Torn of Point Leamington
ptleamington@nf.aibn.com

Local Service District Philips Head
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Indigenous Island Contacts
Qalipu First Nation – Alyssa Hunter
ahunter@qalipu.ca

Miawpukek First Nation - Angelina Francis
afrancis@mfngov.ca

Appendix 4 – Summary of External Stakeholder Comments and Forestry's Responses

1) Town of Peterview

   Issue:

   Requests a 100-meter Buffer for Domestic Harvesting from any Town roads

   Department response:

   The Town of Peterview is near the Zone, however, it is not within Zone 5 and there should not be any issue.

2) Newfoundland Snowmobile Federation

   Issue:

   Request Part of the trail network in FMD 10 south of Powderhorn Lake and New Bay Lake and FMD 11 at Jumpers Brook not be used during snowmobile season.

   Department response:

   The Department will work with Federation where possible to reduce impact on trails during winter (Jan – March) operations.

3) Victoria Lake Outfitting
   Issue:

   a) Identified five locations of bear hunting stands and requested a 100-meter buffer.
   b) Request more area for Martin due to a reduction in sightings on trial cameras in the last few years.
   c) Identified the Lodge site and requested removal of any operational areas for two kilometers from that site.
   d) Request that a 500-meter buffer be reinstated along the Victoria River from the current 100-meter buffer.
   e) New road construction behind the main lodge in CC12010 be closed once operations are complete, at least to the point at which the road crosses the bridge and enters the area.
   f) Operations 12010 and 12015 cease during late May to end of June and September to early November.

   Department response:

   The department will work with the outfitter to manage objectives for harvesting while minimizing, when possible, effects on the outfitting season.

Appendix 5 – Summary of Internal Stakeholder Comments and Forestry's Responses

Department / Agency	Contact Date	Response Date	Issue / Concern	Action / Comments from Forestry
Tourism	March 20, 2025	April 8, 2025	TCAR recommends that developments impacting scenic settings near touring corridors be managed to minimize negative visual effects. The Trans-Canada Highway is a strategically important touring route for the province's tourism industry. Cut blocks along the Trans-Canada Highway, Route 350, Route 360, Route 370, and Route 480 should be developed using landscape design techniques to ensure they are not visible to visitors. This includes:	Vantage points may be an issue- such analysis requires specific points for the viewer
			Applicable cut blocks include: CC10001, CC10004, CC11007, CC11008, CC10005, CC12002, CC12003, CC11006, CC11011, CC11001, CC10015, CC11021	
			Rivers and trails are key tourism assets, with operators relying on their pristine settings, remoteness, and ambiance to create and sell premium tour experiences. The Exploits River, known for some of Newfoundland's best Atlantic salmon fishing, and T'Railway Provincial Park, an 883-kilometer multi-use trail offering year-round recreation, are prime examples of these high-value assets within the FMD. To maintain their appeal and continue offering exceptional experiences, these natural resources require careful management, including buffers and	Enviornmental Protection Guidelines 2025
			Applicable cut blocks include: CC10006, CC12002, CC12003.	
			There are a number of known archaeological sites and potential sites located within these forestry activity areas. To ensure sites are protected the PAO requires 100m buffers on the following waterbodies:	
			Exploits River Victoria River (100 meters in 2021-25 Plan) Beothuk Lake Great Rattling Brook Noel Paul's Brook Lloyd's River	Forestry is analyzing all of these rivers - 30 m is standard - (Previous plan had 100 m on Victoria River) we are using now for (all?) of these major rivers - Status: We are checking volume impact for the 30- 100 meter proposed buffer change - Impact to Volume has been assssed (SW 330,298m^3 and HW 81,350 M^2) loss to buffer
			There is also a known archaeological site (DdBe-01) located at LAT_DD 48.517556, LONG_DD -56.752889 (NAD 1983), cut block CC12013. This site requires a 50m buffer where no ground-disturbing activities are permitted. The PAO is also requesting that all 5-year and 1-year plans be forwarded to our office for review prior to commencement of forestry activities.	Forestry is analyzing this location
Water Resources	March 20, 2025	April 8, 2025	Domestic and commercial harvesting within FMD 10-12 is located within the flood zone watershed of the Exploits River. Domestic harvesting within FMD 10-12 is located in the 1:20 Year Floodplain for the Exploits	Enviornmental Protection Guidelines 2025
			Any commercial or domestic harvesting within a floodplain must be completed with minimal land disturbance. Additionally, an erosion and sediment control plan must be submitted to our department for review and approval. After harvesting has been completed, the floodplain must be restored to a state that resembles natural conditions.	WR has identified areas at Rushey pond , Badger and GFW - This is for community flood management - Fotrestry Enviornmental Protection Guidelines 2025 and Forest operational planning should address this. A provencial DEM can be used to predect as well.
			Before harvesting operations can begin within a flood zone watershed, it is essential to identify erosion-prone areas. Once identified, preventative measures must then be implemented to control erosion and prevent sediment from being released into waterbodies.	Enviornmental Protection Guidelines 2025
			Any harvesting operation or access road construction within 15-metres of a stream, waterbody or wetland, will require a Section 48 permit under the Water Resources Act, 2002. The application forms and requirements for when a Section 48 permit is required can be found here https://www.gov.nl.ca/ecc/waterres/regulations/appforms/	Enviornmental Protection Guidelines 2025
			Any effluent or runoff leaving the site will be required to conform to the requirements of the Environmental Control Water and Sewage Regulations, 2003 http://assembly.nl.ca/Legislation/sr/regulations/rc030065.htm	Enviornmental Protection Guidelines 2025 (Sewer is not a Forestry impact generally)
			Permits would be required under Section 39 of the Water Resources Act for domestic harvesting within the Buchans Lake PPWSA (Town of Buchans) and the Little Pond PPWSA (Town of Point Leamington) Permits under Section 39 of the Water Resources Act may be required for the roads in the Indian Cove Pond PPWSA (Town of Point of Bay) and Little Pond PPWSA (Town of Point	Enviornmental Protection Guidelines 2025
			Some of the commercial and domestic harvesting areas indicated are adjacent to PPWSAs and may require further review to determine permitting requirements. This includes Little Pond PPWSA (Town of Point Leamington), Indian Cove Pond PPWSA (Town of Point of Bay), Northern Arm Lake PPWSA (Town of Grand Falls-Windsor), Indian Arm Brook (Town of Campbellton), Gander Lake PPWSA (Towns of Gander, Appleton and Glenwood), Mill Lake PPWSA (Town of Norris Arm), Lapland Pond PPWSA (LSD of Buchans Junction), Water Pond PPWSA (Town of Millertown), and Buchans Lake PPWSA (Town of Buchans).	Enviornmental Protection Guidelines 2025

Wildlife Division	March 20, 2025	May 9, 2025	Hi Bryan and Dave. Thanks for opportunity to review. I know that your plans are based on guidance we've previously provided re: general caribou habitat management. That said, there are a number of herds in this Zone (i.e., Hodges Hill, Topsails, and Mount Peyton herds) that are of conservation concern and are considered internally to be at risk moreso than herds in other parts of the Island. We've assessed the plan with that in mind, along with new information the Division acquired the past couple of winters from aerial caribou surveys and collar data. Please see feedback below. Let's sit down together to discuss how best to move forward to meet both our objectives? We generally have no concerns with proposed domestic harvest.	Highlight: New Information assessed from aerail and collars - May 9th - request descussion - meeting next week
			FMD10 – Hodges Hill herd Block CC10004 with new road (~ 3.5 km). We'd like to see road building stop at the Tier 2 range boundary (see star in screenshot below), and seasonal restrictions in place for harvesting and road building (no activity from April 15-July 15) as it is an identified calving kernel.	Highlight: Stop road at Teir 2 range bnd - Obtaining District plan roads for analysis
			Block CC10017 with new road (~ 11 km). Do you have a file of all available harvestable stands within this block that you can provide? We'd like to see no new linear features within Tier 1 (70 percentile). Is there a way we can keep the road outside of the Tier 1?	Highligt: List of stands & Request Road outside Teir 1 - - Obtaining District plan for analysis (done) - Obtaining Teir 2 range for this
			FMD11 - Mount Peyton and Pot Hill herds Some proposed commercial harvest and road is within calving kernel). Can we discuss possibility of removing overlapping potential harvestables in the 80 isopleth (an area slightly larger than the 66 calving kernels you've planned around)? We'd also like to see seasonal restrictions for any overlaps with calving kernels (up to the 80th) for CC11017 and CC11036. There's an important migration corridor for Topsails herd between FMD 11 and FMD 12 that we should discuss with you.	Highlight: Migration corridor and calving area
			FMD 12 Blocks CC12001 & CC12025. We'd like to see seasonal restrictions for any overlaps with calving kernels (up to the 80th), and discuss with you how to work around the migration corridor	Highlight: Seasonal restrictions on calving kernal
			FMD 13 Like to discuss with you how to work around the Buchans herd migration corridor (our last 4 years of collars have given us a better picture of the corridor in this area).	Highlight: Better picture of corridor now available
	June 13, 2025	June 16, 2025	For the movement corridor we're requesting a 5-yr deferral on harvest in the blocks listed below. The deferral will give us more time to collect more data and refine the boundaries and mitigations approach. CC11024 CC11026 CC11027 CC11028 CC11029	We have done an analysis of your request to remove the below 14 areas from the plan (highlighed in Red on map below). The complete removal of these proposed areas for new travel corridors, will see over 1.8 million meters removed from Operational Consideration for the current Forest Industry in Central. The AAC effect has not yet been calculated (as it takes a bit of time to conduct this analysis), but from the onset, it is highly unlikely Forestry operators would be able to continue at its current capacity (especially in fmd 11) if all these areas were completely removed. • FMD 11, there is a request for 11 operating areas to be completely removed, which equates to over 1.3 million cubic meters. • FMD 12, there is a request for 3 operating areas to be completely removed, which equates to over 562 thousand cubic meters However, it was my understanding from the meeting held on June 2, that Wildlife staff were going to assess these areas for specific stands required to support the New Travel Corridor, rather than simply removing the whole areas and having such a drastic negative impact on the forestry industry. Before we continue with the AAC model runs, would it be possible for Wildlife Division to have another review of these areas?
	July 11, 2025	July 11, 2025	CC11030 CC11031 CC11032 CC11033 CC11034 CC11035 CC12001 CC12002 CC12003	Based on further discussions internally, Wildlife Division is revising its preliminary feedback on the Zone 5 five year plan. With respect to the blocks previously identified as having potential concens Our feedback is as follows: Wildlife Division will be determining the presence of caribou in the general area over the next year to assess the potential use of the area as a migration corridor for Gaff Topsails caribou. Wildlife Division approves the above areas for harvesting; however, we do note that should data collected identify this area as an important migratory corridor for caribou, this approval may be revised, harvest blocks may be adjusted or temporal restrictions employed to provide mitigations and protect the migration corridor.

Natural Areas Division	March 20, 2025	April 14, 2025	Natural Areas has reviewed the proposed commercial and domestic harvest blocks for zone 5 and planned forest access road development.The expansion of forest harvesting in the Noel Paul's Brook study area (CC-12020 and associated roads) continues to remove the last option for a representative protected area in the Beothuk Lake subregion of the Central Newfoundland Forest ecoregion. That natural region currently has zero representation in our protected areas system. Therefore, the Department of Environment and Climate Change notes that it does not support, in principle, ongoing harvesting in the Noel Paul's Brook former study area. ECC recommends that the Department of Fisheries, Forestry and Agriculture consider all other options, and work with Policy, Planning and Natural Areas (ECC) to move forward with identifying boundaries for a potential protected area in this subregion that supports biodiversity conservation in general and sustainable forest management in particular	*Brad White :Folks while we would need the GIS file to conduct a complete review of the impact of removing the area in question. I think it is safe to say that there will be massive economic implications for our sawmill industries with this kind of landbase loss in FMD 12.*