Newfoundland and Labrador
Five Year Sustainable Forest Management Plan
Forest Management Zone 7
Districts 9 and 16

Effective Period - January 1, 2027, to December 31, 2031

Forestry and Wildlife Branch

Forest Ecosystem Management Division

Department of Forestry, Agriculture and Lands

Forest Management Zone 7

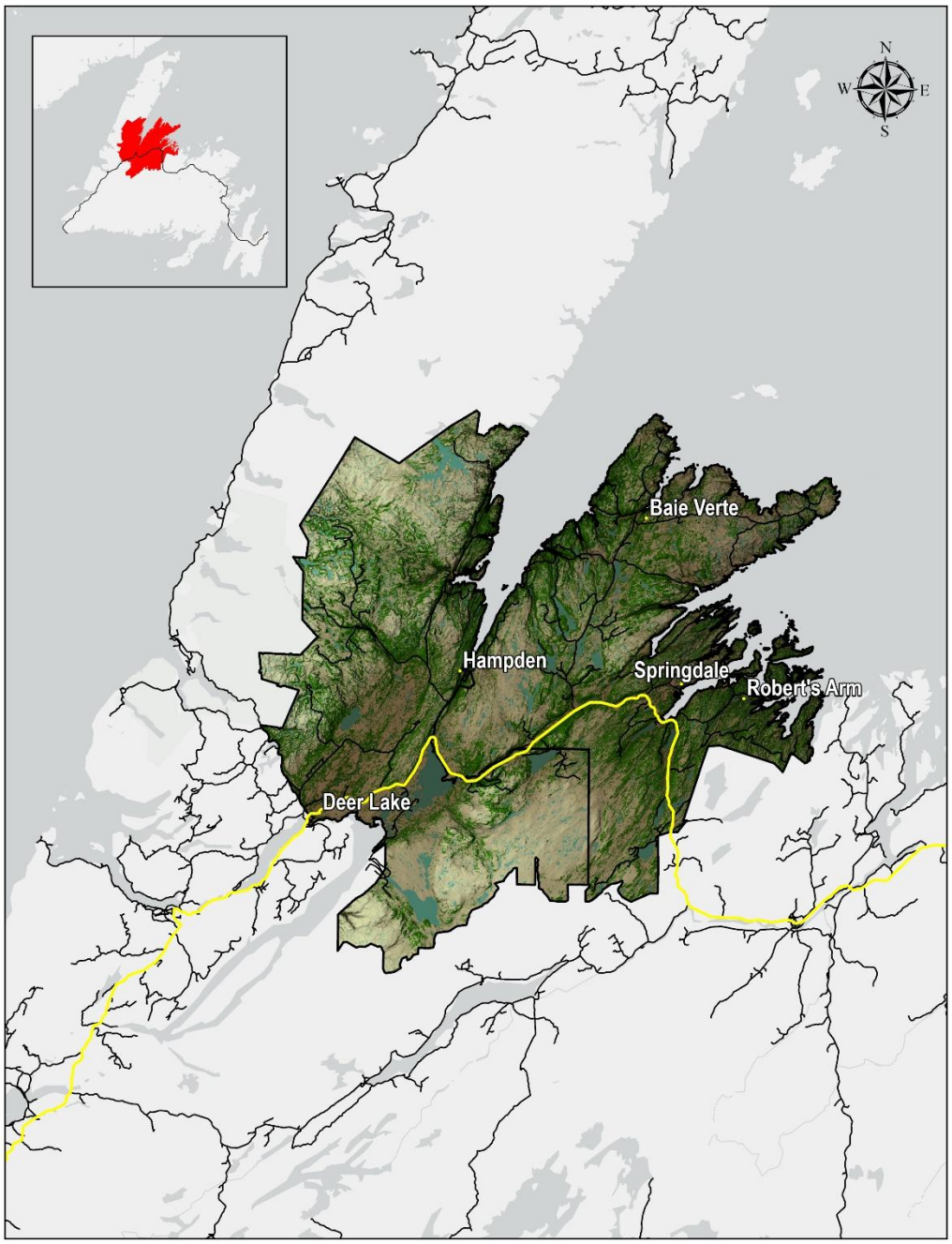

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

INTRODUCTION

This new five-year plan is scheduled for the period January 1, 2027, to December 31, 2031, and represents proposed forestry activity upon crown timber lands within Forest Management Districts 09 and 16. The management of this land is consistent with strategies and philosophies implemented by the Department of Forestry, Agriculture and Lands 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 09 and 16 are adjacent and share common ecoregion characteristics and collectively form Planning Zone 7. 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.

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 as 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.

In recent years, increasing evidence indicates the increase of a spruce budworm (Choristoneura fumiferana) population within Forest Management Districts 09 and 16. While impacts to date have been limited, in portions of FMD 09 current monitoring suggests that an outbreak has developed across FMD 16, with the potential to cause significant defoliation and subsequent tree mortality, particularly in mature balsam fir-dominated stands. As part of an adaptive forest management approach, consideration will be given to the salvage harvesting of affected areas

to recover economic value and reduce further loss. In addition, proactive planning will incorporate areas considered at high risk of future damage, with the objective of mitigating impacts through timely harvesting and stand management strategies. Ongoing monitoring and collaboration with provincial forest health programs will guide operational responses throughout the planning period.

SECTION 1 DESCRIPTION OF THE LAND BASE

1.1 General Location

Planning Zone Seven encompasses Forest Management Districts 9 and 16 (Figure 1). It extends from Deer Lake in the west to Cat Arm in the north and includes all of the Baie Verte Peninsula. Major towns located within the zone include Deer Lake, Hampden, Sops Arm, Springdale, and Baie Verte. District 16 is administered from Pasadena while District 9 is administered from Springdale with a satellite office in Baie Verte.

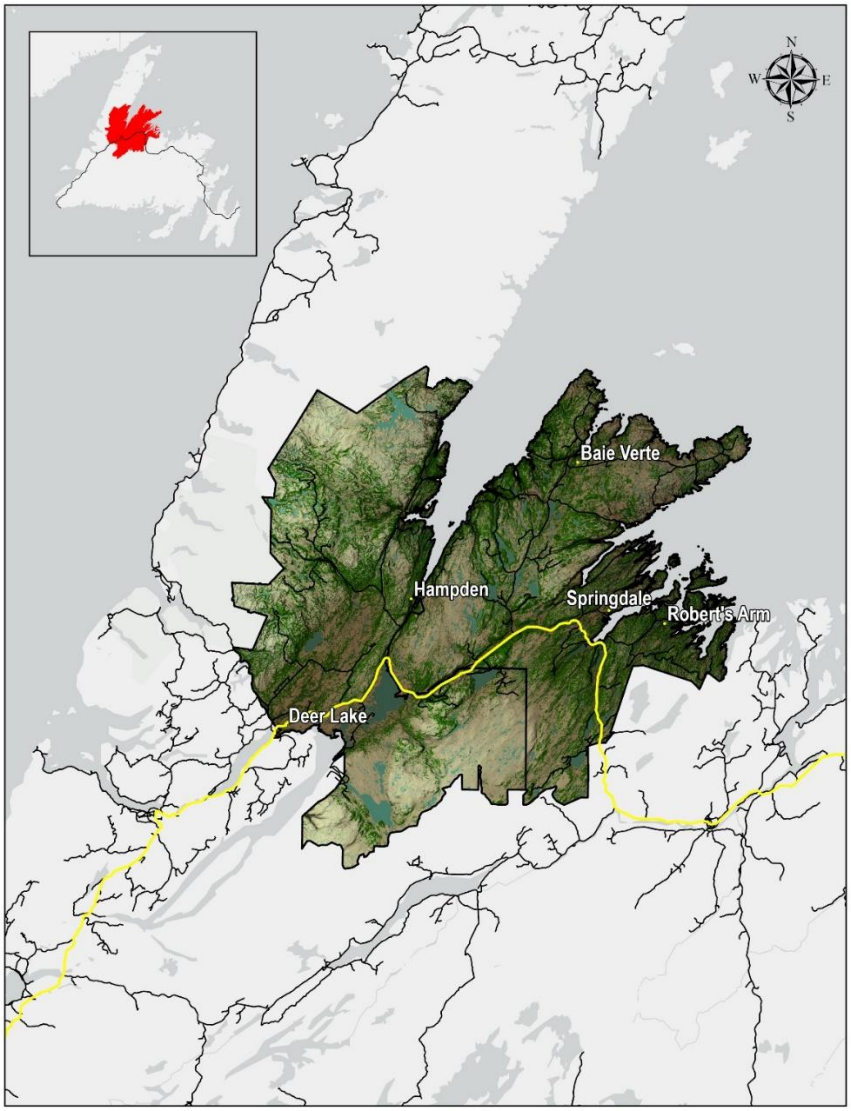

Figure 1: Location of Planning Zone 7

1.1.1 History

Since the earliest settlement, forest and fish resources were the mainstay of the economy within this zone. Initially, the forest was used as a source of fuelwood and construction materials for houses and fishery related items (stages, lobster pots, boats etc.). Local sawmills were developed to supply the demand for lumber and construction timber, with a small export market for pulpwood. In the interior of the zone, logging towns such as Howley and Deer Lake developed because of the pulp and paper mill in Corner Brook. Today pulpwood and pulp chips are shipped to the mill in Corner Brook. In addition, there is a major integrated sawmill in Hampden that produces lumber for both the local and export market and pulp chips which are sold to Corner Brook Pulp and Paper Limited (CBPPL).

1.1.2 Ownership

There are two major ownerships in the zone which include: Crown and Corner Brook Pulp Paper Limited. There are Fibre exchange agreements with CBPPL within both FMD's 09 & 16 to facilitate some Crown operations on CBPPL tenure.

1.2 Physical

1.2.1 Topography and Hydrology

The topography of the area is varied, ranging from coastal lowlands, broadly rolling uplands, undulating plateaus, and hilly, mountainous regions. Bogs with wooded ridges can be found throughout. The northern part of District 16 includes the southern extent of the Long-Range Mountains while in the southern portion the Topsails form several prominent hills that rise above undulating plateaus that extend over 460 meters above sea level. Between these two extents lies a large lowland region extending northeast from Deer Lake. The coastal areas of District 9 are hilly and mountainous with flat areas of bog containing woody ridges. These areas fall steeply into the lowland and coastal areas forming a rugged coastline. The central and southern portions of this district consist of broadly rolling uplands with low, parallel, northeasterly trending ridges. The area contains several large drainage basins which flow in a general easterly or northerly direction and empty into the Atlantic Ocean. The main exception is in the southwest

portion of District 16 which forms the upper Humber River watershed and empties into the Gulf of St. Lawrence. Other prominent rivers include the Main River, Indian River, South Brook and Taylors Brook. Major watersheds include the Humber, Main, South Brook and Indian River.

1.2.2 Geology

The area is underlain by areas of contrasting geology and varying mineral potential. The oldest rocks in the zone consist of metamorphic (gneisses) and are referred to as the Long-Range Complex or the Long-Range Inlier. The youngest rocks occupy the central part of the zone and extend southwards from White Bay through the area between Deer Lake and Grand Lake, which is known as the Deer Lake Basin.

1.2.3 Soils

Most of the soils in the zone have developed on morainal tills and range in thickness from thin veneers over bedrock to thick extensive deposits. Other soils have developed on glaciofluvial/fluvial deposits with greatest occurrence being in the Sandy Lake/ Grand Lake areas. The most common organic deposits are blanket bogs and sloping fens.

1.2.4 Climate

Resulting from differences in topography and the proximity to the sea, the climate of the zone is variable. January mean temperatures average about -14 degrees Celsius, while July mean temperatures range from over 15.5 in the valleys to less than 13 degrees Celsius in the mountains. The frost-free period averages 110 days at lower elevations and the growing season is more than 160 days in the Deer Lake area while less than 130 days in the mountainous regions of the zone. Annual precipitation ranges from 1020 to 1400 mm and is lowest in the Deer Lake valley. The forests in the zone are directly related to climatic influences. The Baie Verte Peninsula has mostly balsam fir forest because of the abundance of moisture. The southern part has mainly black spruce and hardwood due to drought and fires. The central part of the zone forms a transition area between these two extremes with a mixture of these two main species plus white birch and trembling aspen. (from Meades, 1990)

1.3 Ecological Characteristics

Planning Zone 7 is a forest ecosystem. A forest ecosystem, as the term implies, is an ecosystem dominated by tree cover. Like all forests in the province, Zone 7 is part of the Boreal forest ecosystem.

The tree species which characterize Zone 7 are typical of the Canadian boreal forest. Common boreal trees are black spruce, white spruce, balsam fir, eastern larch, trembling aspen, white birch, yellow birch, and jack pine. Jack pine is not native to the Island; all the other species commonly occur in the zone and in the province. The two dominant provincial species are black spruce and balsam fir; together they represent 90% percent of the provincial forest growing stock.

Black 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 dominance of balsam fir, a species which is poorly adapted to fire.

The growing stock in Zone 7 is approximately 64% bS and bF, with bF dominating the softwoods at 37%.

The breakdown of current forest inventory tree species is shown in table 1.

TABLE 1: FOREST INVENTORY SPECIES BREAKDOWN IN PLANNING ZONE 7

Species	Total Hectares	Percentage of Productive Forest Land Cover
bS	188,157	26.5%
bF	263,238	37.1%
wB+tA	2,182	0.3%
sH	53,841	7.6%
hS	11,857	1.7%
Disturbed	28,821	4.1%
Others	161,938	22.8%
Total	710,034	100.0%

1.3.1 Ecosystem Description

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 7 relative to Damman's ecoregion classification system. The North Central Subregion of the Central Newfoundland Forest encompasses the majority of District 9 and a large portion of District 16. The North Shore Forest Ecoregion covers the remainder of District 9 primarily in a narrow band along the north and east coasts of the Baie Verte Peninsula. The Western Newfoundland Forest, Northern Peninsula Forest and Long-Range Barrens Ecoregions cover the remainder of District 16.

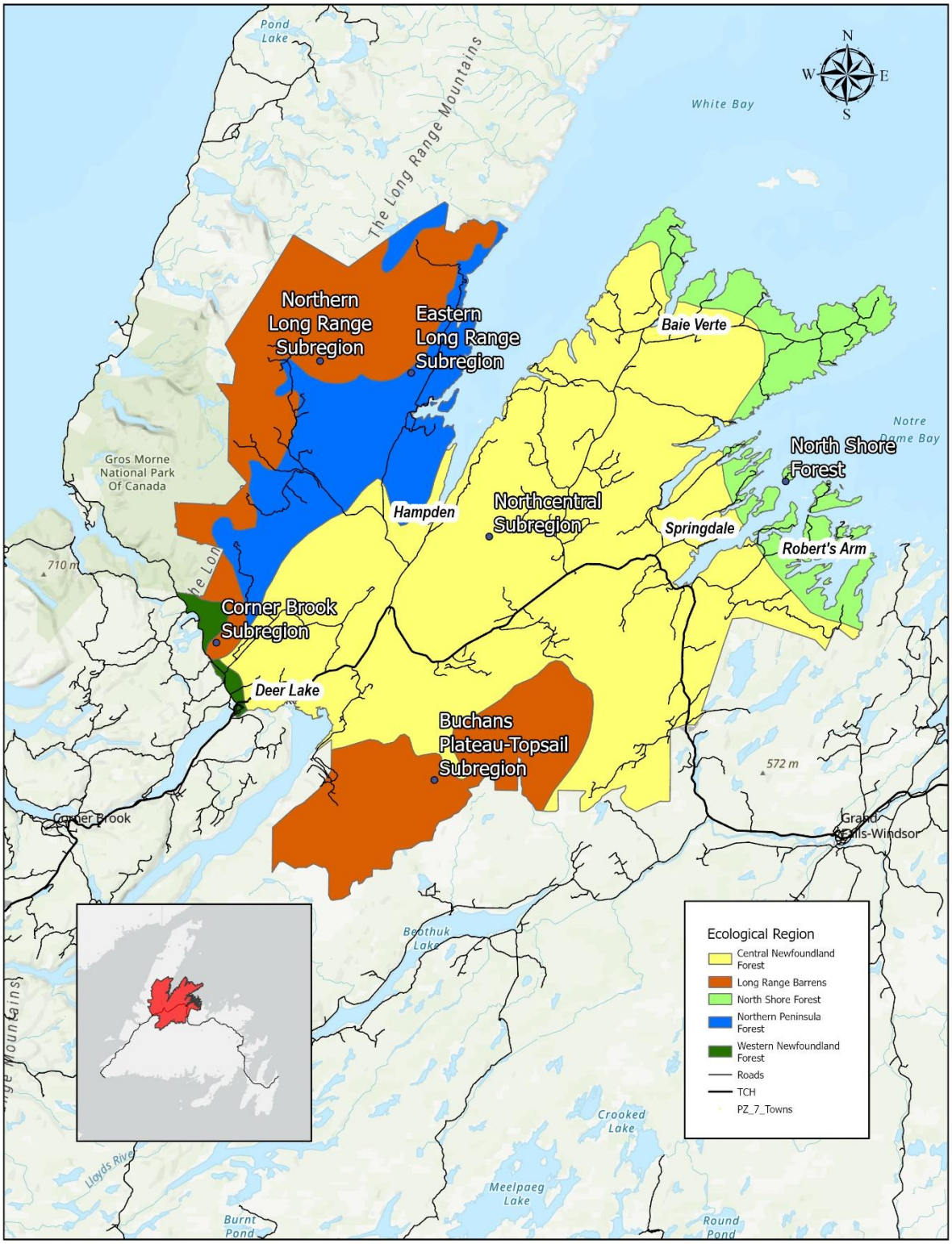

Figure 2: Ecoregions and Subregions of Planning Zone 7

1.3.1.1 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 portion. *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.

1.3.1.2 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.

1.3.1.3 Northern Peninsula Ecoregion

This ecoregion differs from most other forested parts of the Island by the shortness of the growing season, 110-150 days compared to 145-170 days for other areas. The frost-free period is comparable to most other areas and somewhat better than in central Newfoundland. Precipitation is lower, but, because of low summer temperatures and a shorter growing season, soil moisture supply is probably adequate at most times. The soil is comparable to those of western Newfoundland. Limestone underlies most of the region, with acidic rocks more common on the eastern side of the Great Northern Peninsula. Balsam fir is the dominant forest cover except at high elevations (300-400 m) on the eastern side of the peninsula where black spruce appears to be a natural component of the stands. There is very little fire history in this

ecoregion. White pine, red maple, yellow birch and trembling aspen are conspicuous by their absence. One of the most obvious changes is the replacement of speckled alder by green alder, satiny willow and balsam willow in swamps. Also, tall shrubs such as mountain-holly, wild raisin and rhodora are sparse or lacking in the scrub bog-border forests. Silviculturally, they are like western Newfoundland with hardwoods rather than ericaceous shrubs being the most common brush problem on understocked cutovers. Skunk currants, swampy red currant and red-osier dogwood appear to be a more common component of seral vegetation on cutovers. Raspberries are also very abundant in the early years of succession.

1.3.1.4 Eastern Long-Range Subregion

This subregion includes the productive but inaccessible forest on the eastern slopes of the Long-Range Mountains up to 450 m elevation. The forests tend to be somewhat open balsam fir-black spruce mixtures. The tree line decreases towards the northern end of the subregion.

1.3.1.5 Long Range Barrens Ecoregion

This ecoregion comprises the highlands which extend from the southwestern coast to the northern part of the Northern Peninsula. It consists of three distinct subregions, the Southern Long Range, the Buchan's Plateau-Topsails, and the Northern Long Range. They are separated by areas of continuous forest. Fire is of little importance and has played no role in the formation of these barrens. Cool summers and cold winters are typical of this ecoregion. It has a relatively short growing season due to the persistence of the heavy snow cover late into spring. This area is covered by mostly barren vegetation with shallow, ribbed fens and Krummholz, locally known as tuckamore, dominating the landscape. Sheep laurel heath is the predominant dwarf shrub vegetation and covers large areas. Arctic-alpine vegetation is common on all highlands and exposed sites. Snowbank species like moss heather, mountain sorrel and dwarf bilberry are common in areas with persistent snow cover. Forests dominated by balsam fir occur only in deep, sheltered valleys. Extensive areas of black spruce tuckamore occur on slopes and in valleys.

1.3.1.6 Buchan's Plateau-Topsails Subregion

A small part of the Buchan's Plateau-Topsails subregion occurs in District 16. The northern extensions of the Topsails and possibly White Bay Downs are also part of this subregion. Most of the ecoregion is barren. Dwarf shrub heaths, shallow patterned peatlands, and areas with low "Krummholz" or tuckamore dominate the landscape. Small patches of forest occur in some sheltered valleys.

1.3.1.7 North Long-Range Subregion

The northern portion of District 16 is encompassed by the southern extent of this subregion. The best developed snowbank vegetation occurs in this subregion. Mountain alder thickets are characteristic of alluvial soils in deep valleys. Many northern plant species occur in the forested valleys.

1.3.1.8. Western Newfoundland Ecoregion

This ecoregion just touches District16 and is characterized by a humid climate with a relatively longer frost-free period. It contains some of the most favorable sites for forest growth although there is considerable variation due to altitude and proximity to the coast. The Dryopteris-Hylocomium-balsam fir forest type is the zonal forest for this region. The zonal soils are nutrient rich humic podzols with a very dark podzolic B horizon due to humus enrichment. The absence of prolonged dry periods appears to have excluded fires from all but the coarsest textured soils. Consequently, balsam fir rather than black spruce is the dominant forest cover. Yellow birch is common and it displays its best growth in protected valleys below 200m elevation. This species also occurs in less vigorous forms in the Maritime Barrens and Avalon Forest Ecoregions, but it is absent at higher elevations and north of Deer Lake. Red maple is also most common and robust in this ecoregion. As a rule, overstocking is a more common silvicultural problem than understocking in western Newfoundland. Localized regeneration failures can occur in forests with a very dense fern and herb stratum such as the Rubus-balsam fir and the Dryopteris-balsam fir forest types. On these types, hardwoods, particularly mountain maple on seepage slopes, can form semi-stable thickets. These thickets may eventually develop into hardwood forest types. The development of ericaceous heath after logging or fire is only observed on very small areas of coarse textured till. This is in stark contrast to central Newfoundland where

succession of kalmia heath is a common occurrence. The Western Newfoundland Ecoregion is subdivided into six subregions.

1.3.1.9 Corner Brook Subregion

This subregion is characterized by hilly to undulating terrain from Bonne Bay to Stephenville and east to Grand Lake. The parent materials in this subregion are dominated by slates and limestone till. Areas with calcareous till are distinguished by the occurrence of light-colored marl deposits around ponds and in valleys. The parent material consists of shallow, stony silt loam underlain by limestone bedrock or calcareous basal till. The rugged topography is dominated by the taxus-balsam fir and Dryopteris-rhytidiadelphus-balsam fir forest types. The hilly, non-calcareous terrain in this subregion is dominated by shallow loamy soils over shale bedrock. However, the shallowness of the till does not adversely affect forest growth since nutrient rich seepage waters are held in the rooting zone by bedrock or a fragipan layer. The steep topography is dominated by the dryopteris-balsam fir forest and supports some of the most productive stands in Newfoundland.

1.3.1.10 North Shore Forest Ecoregion

This ecoregion includes the coastal zone along the north side of the Island extending from the Bonavista Peninsula to the tip of the Baie Verte Peninsula. This ecoregion is mainly forested, and black spruce stands are common. Increased wind exposure causes a decrease in the quality and height of the forest towards the coast therefore coastal headlands are dominated by barrens. Overall, vegetation is like the Central Newfoundland Ecoregion, however, white spruce is more abundant and aspen is less common. The topography is irregular along the coast with many bays and inlets extending inland and is rolling too hilly. Elevations in this ecoregion are highest on the Baie Verte Peninsula reaching 315 m. The climate is the driest on the Island with warm coastal summers and cold winters. High summer temperatures can cause moisture deficiencies. The growing season is approximately 150 days and precipitation ranges from 900-1200 mm.

Table 2: Percentage of Ecoregions and Subregions in Planning Zone 7

	Total Area Within Province (ha)	Total Area within Planning Zone 7 Forest Management Districts (ha)			Total area with Planning Zone 7 Forest Management Districts (%)		
Ecoregion and Subregion		**FMD 9**	**FMD 16**	**Total**	**FMD 9**	**FMD 16**	**Total**
Central Newfoundland Forest	**2,872,677**						
Northcentral Subregion	*2,310,743*	511,981	212,906	724,887	22.16%	9.21%	31.37%
Long Range Barrens	**1659190**						
Buchans Plateau-Topsail Subregion	*369,811*	1,933	138,941	140,874	0.52%	37.57%	38.09%
Northern Long Range Subregion	*689,563*	N/A	167,795	167,795	N/A	24.33%	24.33%
North Shore Forest	**550,662**						
North Shore Forest	*550,662*	97,482	N/A	97,482	17.70%	N/A	17.70%
Northern Peninsula Forest	**854,851**						
Eastern Long Range Subregion	*268,059*	N/A	148,653	148,653	N/A	55.46%	55.46%
Western Newfoundland Forest	**994,528**						
Corner Brook Subregion	*515,638*	N/A	9,825	9,825	N/A	1.91%	1.91%

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 amongst 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 fire).

Disturbances range from the fall of a single tree to the destruction of thousands of hectares by forest fires. 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.

1.4.1.1 Productivity

Productivity is the accrual of matter and energy in biomass. In simple terms, primary productivity is the sum of all biomasses produced through photosynthesis. Secondary productivity occurs when this “primary” biomass is ingested 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, soil, climate, etc. In general terms, the more productive (ability to grow trees) a site is, the higher level of primary productivity. For example, a forested stand would have a higher primary productivity than a bog, and a good site would have a higher potential than a poor site.

Overall, the landscape in Planning Zone 7 has approximately 52 percent productive forest. Also, the relative proportion of productive site types is 6% good, 68% medium and 25% poor with a mean annual increment (MAI) of 2.6, 1.6, and 0.8 m^3/ha/yr 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 of the zone occur in the lowlands. These areas have deeper soil and less exposed bedrock. The landscape patterns are more consistent, and the growing season is longer. In the northern part of District 16 and along the coast in District 9 the soil is shallower with bedrock at or near the surface. The terrain is much rougher, and the growing season is shorter (130 as opposed to 160 days).

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.

1.4.1.3 Stability

Nature is constantly changing and going through the unending processes of disturbance, growth, senescence, and decay. Therefore, the stability of a forest ecosystem does not refer to one fixed position 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 periods of time or with outside input (e.g. loss of topsoil).

Some indicators of stability which can be monitored are areas of forest converted to non-forest use, area, percentage and representation of forest types in protected areas, 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 four 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. Windthrow, Fire and Insect damage are the other three major disturbances and occur on a more irregular or cyclic basis. Apart from a major windstorm, windthrow usually occurs after a stand is weakened by some other agents like insects. For this reason, successional patterns after insect damage and windthrow 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 type after harvesting is generally back to the black spruce type with a minor component of balsam fir and some white birch on the better sites. There is a higher component of black spruce regeneration in the Central and Long-Range Barrens Ecoregions (CLRBE) than in the Western and Northern Ecoregions (WNE). There is substantial regeneration failure in this forest type with average not sufficiently restocked (NSR) rates at 25 percent in CLRBE and 45 percent in WNE. Another general trend is that the poorer the site quality the higher the NSR rate. These sites would be candidates for planting with black, white, or Norway spruce. An exception to this trend occurs when the pre harvest crown density is class 2 or denser. On these areas, black spruce layering is prevalent and is responsible for most of the stocking. In some instances where balsam fir does regenerate on black spruce sites it becomes very chlorotic at a young age and is highly susceptible to attack from the balsam woolly adelgid.

In the Balsam fir types, regeneration success back to Balsam fir is much higher averaging 75 percent in CLRBE and 85 percent in WNE. Regeneration rates to balsam fir are higher on the poor sites and fall off somewhat as site quality increases. There is also some regeneration to black spruce and softwood hardwood mixed wood types with the former being more prevalent in the CLRBE. Regeneration failure is relatively constant across all ecoregion types at 10 percent. Regeneration pattern in the mixed wood types is generally back to mixed wood that is dominated by balsam fir and white birch. In the CLRBE there is a larger component of black spruce regeneration after harvesting than in the WNE. There is a higher component of white birch regeneration after harvesting in types that had a higher percentage of hardwood before

harvest. As well, the better the site class, the more hardwood regeneration. Regeneration failure on the mixed wood types is highest in poor sites and lowest on better sites.

There are few pure hardwoods stands in the zone. Harvesting of these sites has only recently been occurring with the development of a value-added hardwood industry therefore regeneration patterns are unknown. Anecdotal evidence from domestic cutting in these types indicates that they will regenerate to mixed wood types dominated by balsam fir and white birch.

1.4.1.4.2 Fire

Black spruce is a fire adapted species; therefore, it is not surprising that spruce is the most prolific regeneration species after fire across all forest types, site types and ecoregions within the zone. Black spruce regenerates as pure stands or in combination with white birch. Balsam fir is conspicuously absent after fir because most advanced regeneration in the under story is killed by the fire. Black spruce regeneration is somewhat correlated with the amount present in the pre-fire stand. Generally, the higher the component of black spruce in the original stand, the higher the percentage of regeneration to black spruce. In mixed wood stands a higher component of white birch and sometimes trembling aspen is present after fire. Fire disturbance in pure hardwood stands can create conditions that will be favorable to site regeneration to trembling aspen in certain areas. Regeneration failure after fire is on average 20 percent across all forest types and is higher as sites get poorer.

1.4.1.4.3 Insect

Balsam fir is highly susceptible to insect attacks from the hemlock looper, Balsam Woolly Adelgid, Balsam fir sawfly, and spruce budworm whereby black spruce is less impacted unless there is heavy and repeated (successional year attacks) by these insects. For this reason, stands with a high component of balsam fir are more susceptible to insect attack and subsequent windthrown. Mature balsam fir types usually regenerate to balsam fir, or to balsam fir hardwood mixtures. Disturbance by insect defoliation in young balsam fir stands can cause succession to white spruce. Regeneration patterns in mixed wood 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.

Regeneration failure occurs approximately 20 percent of the time particularly 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 amount 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 such 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 is 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 a 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. Wetlands 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 3 displays the land-classification for Planning Zone 7. The total area in the zone is approximately 1,302,551 hectares, managed under both Crown and Corner Brook Pulp and Paper tenure. There are four basic categories that currently represent how the land is classified, productive, nonproductive, non-forest, and a combination of wetland and fresh water.

Table 3: Land Classification by District in Planning Zone 7

Land Class	FMD 9	FMD 16
Rock Barren	16,559	17,805
Soil Barren	13,035	43,926
Bogs/Treed Bogs	54,515	52,837
Cleared Land	1,839	794
Agriculture Land	604	3,513
Residential	3,237	2,079
Right of Ways	2,290	2,341
Miscellaneous	180	546
Total non-forested	**92,259**	**123,842**
Waterbodies	47,340	66,678
Wet Bog	7,337	43,026
Total Wetland & Lakes	**54,678**	**109,704**
Non-Productive Softwood	137,939	199,646
Non-Productive Hardwood	5,331	6,121
Total Non-Productive	**143,270**	**205,767**
Disturbed	18,067	26,462
NS	11,767	6,902
Age Class 1	31,284	32,355
Age Class 2	88,040	12,646
Age Class 3	47,167	25,932
Age Class 4	27,702	16,015
Age Class 5	31,727	19,436
Age Class 6	44,202	14,645
Age Class 7	27,154	87,579
Age Class 8		1
Age Class 9	3,624	325
Total Productive	**330,734**	**242,298**

Figures 3 and 4 show the relative land classes for the zone by district.

Figure 3: Land Class Breakdown for District 9

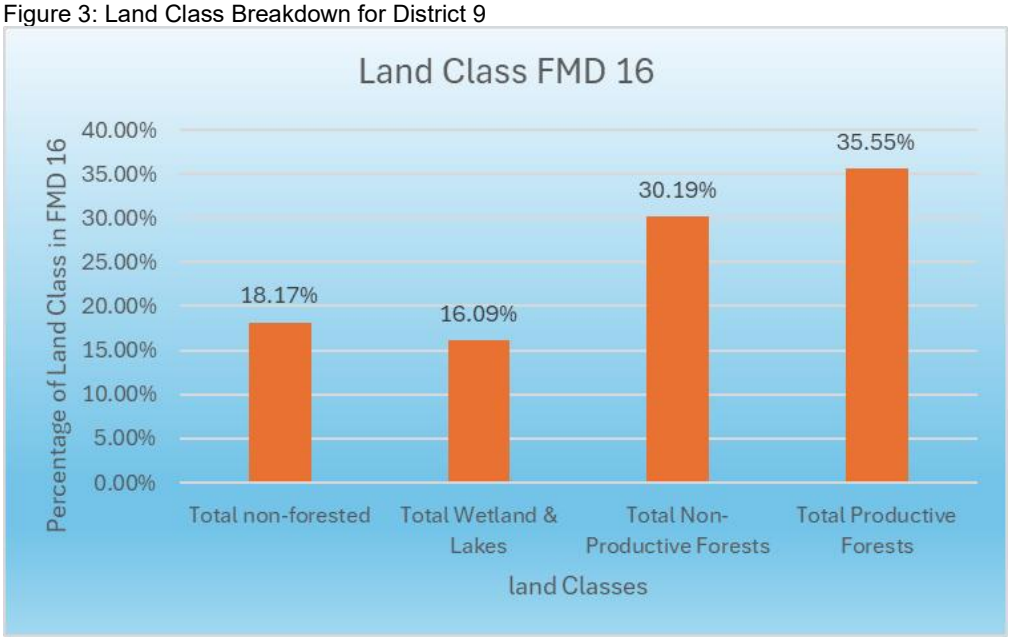

Figure 4: Land Class Breakdown for District 16

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 generally encompass 20 years. The age classes present in the zone are

described as recently disturbed and 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 classes (age class 5, 81-100 years), (age class 6, 101-120 years), (age class 7, 121 - 140), (age class 8, 141 – 160, (age class 9, over 161). The age class distribution in each district for the entire productive forest is shown in Figures 5 and 6. 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.

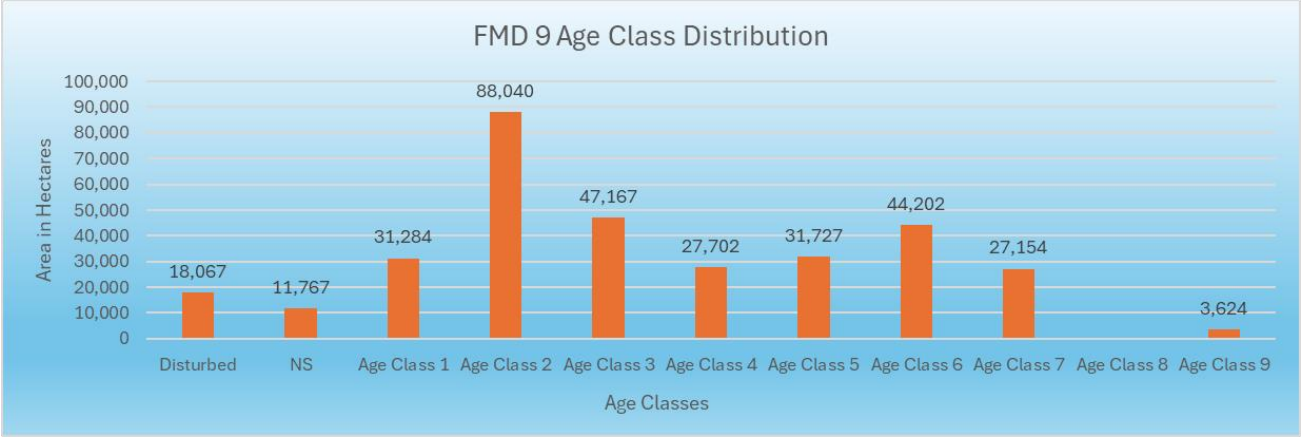

Figure 5: Age Class Distribution for District 9

Figure 6: Age Class Distribution for District 16

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. The distribution of area by site class for each district is shown in Figures 7 and 8. 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.

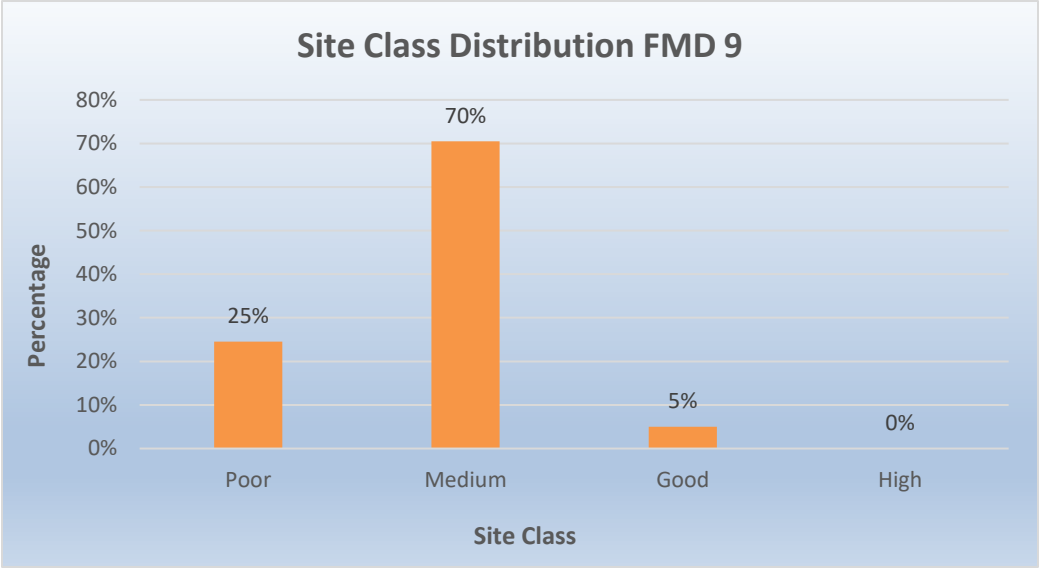

Figure 7: Site Cass Breakdown for District 9

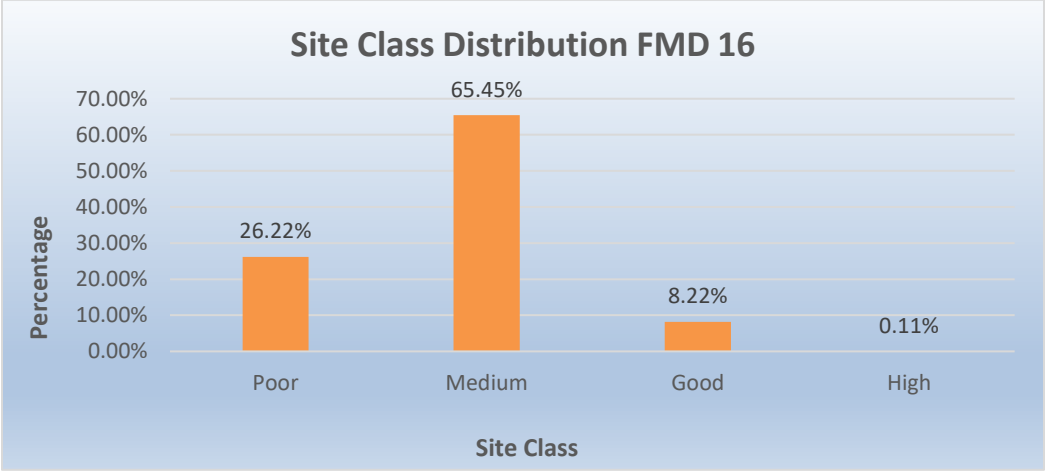

Figure 8: Site Class Breakdown for District 16

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 Zone 7, the softwood working groups dominate accounting for 63.6% of the productive forest. Balsam fir (bF) is the most prolific accounting for 37.1% percent of the working groups in Zone 7. Balsam fir can occur in pure stands or in association with one or more of black spruce, white spruce, white birch, trembling aspen, or larch in varying species compositions. The black spruce (bS) working group is the second most abundant accounting for 26.5% f the productive forest in Zone 7. As with balsam fir, black spruce can occur as pure stands or in association with other species listed above. Softwood hardwood working groups occupy 7.6% percent of the productive forest area in Zone 7 This working group occurs as varying mixtures of fir, spruce, birch and aspen.

The hardwood softwood (hS), white birch (wB), and trembling aspen (tA), working groups occupy 2% of the productive forest in zone 7.

Approximately 7.8% percent of the productive forest is classed as disturbed (DI). Disturbances include harvesting, which accounts for most of the total, insect damage, fire, wind throw, and flooding. The percentages are for all tenure in the Zone.

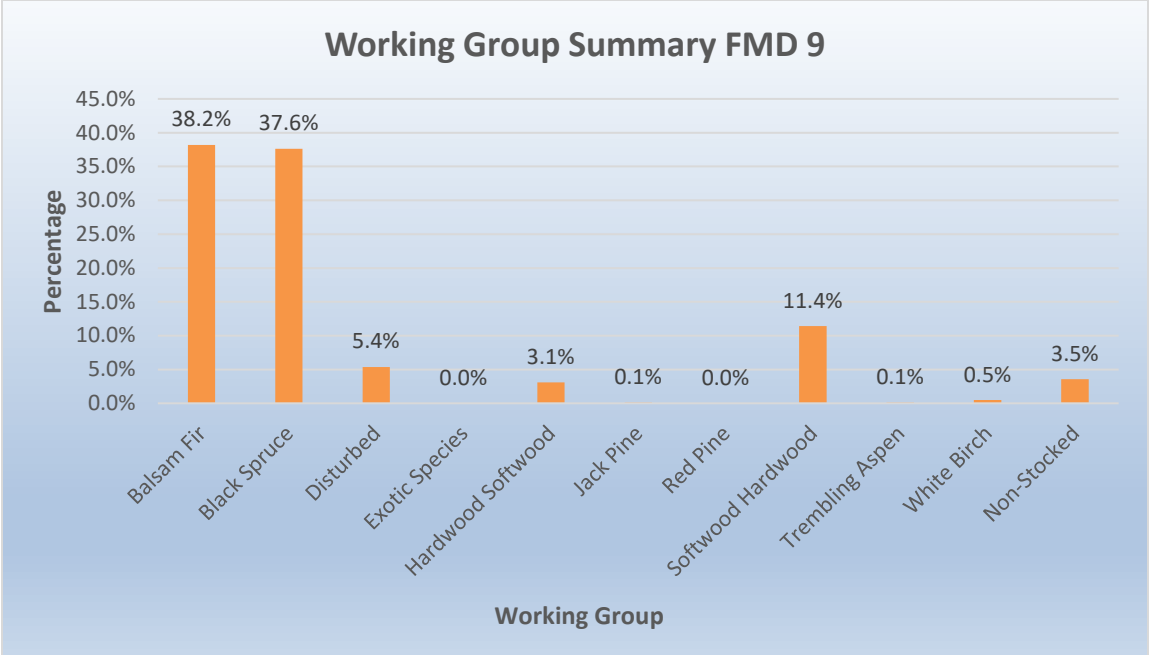

FIGURE 9: WORKING GROUP BREAKDOWN FOR DISTRICT 9

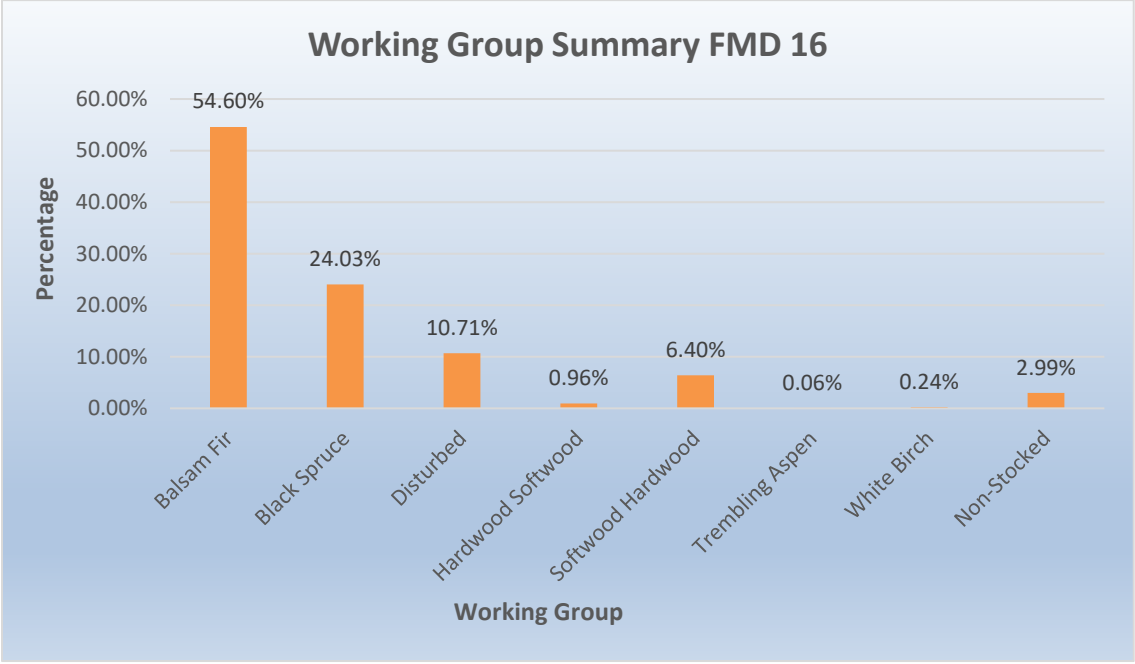

FIGURE 10: WORKING GROUP BREAKDOWN FOR DISTRICT 16

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 the Zone. However, in recent years, loss has been minimal due to weather conditions, fire prevention activities and enhanced fire suppression capability. That said, a major fire can occur in any year depending on weather conditions. The Canadian trend has been increasing fire frequency and severity. The 2025 forest fire season on the Island was severe.

The main forest insects which have affected forests in the zone are the hemlock looper (1949, 1961, 1962, 1969, 1986-88, 1995, 1996), the balsam woolly adelgid (1963, 1970-present) and the birch casebearer (1970-present).

The spruce budworm attack in the zone occurred in1956, and 1978-80 to 2020.The Spruce budworm was at low levels in the 1978-80 to 2020 period. This level has been increasing since 2020 and is anticipated to increase further in this upcoming planning period.

SECTION 2 PAST ACTIVITIES

2.1 Forest Management Zone 7

2.1.1 Harvesting

Zone 7 has commercial and domestic AAC.

2.1.1.1 Commercial – Crown Tenure

The crown district 9 commercial harvest for 2022-2026 is shown in table 4. The total softwood harvest for the 5-year period is anticipated to equal the maximum of 210,000 m^3.

Table 4: Crown 2022-2026 Commercial Harvest District 9

District 09 Crown		Core			Operational (Available)			Non-AAC Wood	
		AAC	Commercial	Deviation	AAC	Commercial	Deviation	Operational	Regulatory
SWD	2022	42,000	59,019	-17,019	6,000	0	3,000		
	2023	42,000	16,359	25,641	6,000	0	3,000		
	2024	42,000	60,329	-18,329	6,000	0	3,000		
	2025	42,000	38,909	3,091	6,000	0	3,000		
	2026	42,000	35,384	6,616	6,000	0	3,000		
	Sub-Total	210,000	210,000	0	30,000	0	15,000		
		Core			Operational (Available)			Non-AAC Wood	
		AAC	Commercial	Deviation	AAC	Commercial	Deviation	Operational	Regulatory
HWD	2022	1,300	2,000	-700	60				
	2023	1,300	354	946	60				
	2024	1,300	275	1,025	60				
	2025	1,300	2,711	-1,411	60				
	2026	1,300	1,160	140	60				
	Sub-Total	6,500	6,500	0	300				
District Total		216,500	216,500	0	30,300				

The crown district 16 commercial harvest for 2022-2026 is shown in table 5. The total harvest volume is below the full allowable for the 5-year period.

Table 5: Crown 2022-2026 Commercial Harvest District 16

District 16 Crown		Core			Operational (Available)			Non-AAC Wood	
		AAC	Commercial	Deviation	AAC	Commercial	Deviation	Operational	Regulatory
SWD	2022	14,596	23,630	-9,034	14,500				
	2023	14,596	13,685	911	14,500				
	2024	18,500	6,545	11,955	14,500				
	2025	18,500	7,277	11,223	14,500				
	2026	18,500	7,277	11,223	14,500				
	Sub-Total	84,692	58,414	26,278	72,500				
		Core			Operational (Available)			Non-AAC Wood	
		AAC	Commercial	Deviation	AAC	Commercial	Deviation	Operational	Regulatory
HWD	2022	70	0	70	0				
	2023	70	4	66	0				
	2024	70	0	70	0				
	2025	70	0	70	0				
	2026	70	0	70	0				
	Sub-Total	350	4	346	0				
District Total		85,042	58,418	26,624	72,500				

2.1.1.2 Domestic

The crown district 9 domestic harvest for 2022-2026 is shown in table 6.

Table 6: 2022-2026 Domestic Harvest District 9

District 09 Crown		Core			Operational (Available)			Non-AAC Wood	
		AAC	Domestic	Deviation	AAC	Domestic	Deviation	Operational	Regulatory
SWD	2022	19,500	13,898	5,602					
	2023	19,500	19,224	276					
	2024	19,500	17,214	2,286					
	2025	19,500	20,537	-1,037					
	2026	19,500	20,536	-1,036					
	Sub-Total	97,500	91,409	6,091					
		Core			Operational (Available)			Non-AAC Wood	
		AAC	Domestic	Deviation	AAC	Domestic	Deviation	Operational	Regulatory
HWD	2022	600	600	0					
	2023	600	2,136	-1,536					
	2024	600	1,913	-1,313					
	2025	600	456	144					
	2026	600	456	144					
	Sub-Total	3,000	5,561	-2,561					
District Total		100,500	96,970	3,530					

The crown district 16 domestic harvest for 2022-2026 is shown in table 7.

Table 7: 2022-2026 Domestic Harvest District 16

District 16 Crown		Core			Operational (Available)			Non-AAC Wood	
		AAC	Domestic	Deviation	AAC	Domestic	Deviation	Operational	Regulatory
SWD	2022	27,500	8,102	19,398					2,910
	2023	27,500	14,221	13,279					2,767
	2024	27,500	13,242	14,258					0
	2025	27,500	13,171	14,329					
	2026	27,500	13,171	14,329					
	Sub-Total	137,500	61,907	75,593					5,677
		Core			Operational (Available)			Non-AAC Wood	
		AAC	Domestic	Deviation	AAC	Domestic	Deviation	Operational	Regulatory
HWD	2022	0	665	-665					1,178
	2023	0	1,197	-1,197					1,055
	2024	0	0	0					0
	2025	0	10	-10					
	2026	0	10	-10					
	Sub-Total		1,882	-1,882					2,233
District Total			63,789	73,711					7,910

2.1.2 Silviculture

Tables 8 and 9 summarize the completed silviculture treatments in Districts 9 and 16 for the period 2022–2026. (Silviculture levels for 2026 were estimated from the 2025 levels.)

Table 8: 2022-2026 Silviculture Treatments District 9

Treatment Type	Area (ha)	
	Proposed	Treated
Pre-Commerical Thinning	0	0
Site Preparation (raking)	0	0
Planting	292.83	292.83
Commercial Thinning	0	0
Prescribed Burning	0	0

Table 9: 2022-2026 Silviculture Treatments District 16

Treatment Type	Area (ha)	
	Proposed	Treated
Pre-Commerical Thinning	0.0	23.4
Site Preparation (raking)		
Planting	156.0	78.0
Commercial Thinning		
Prescribed Burning		

2.1.3 Road Construction

Tables 10 and 11 summarize forest access road construction in the zone for the period 2022-2026

(Road construction levels for 2026 were estimated from the 2025 levels.)

Table 10: 2022-2026 Road Construction District 9

Construction Type	Proposed (km)	Constructed (km)
New Construction	17	17
Re-Construction	126.595	126.595
Total	143.595	143.595
Bridges	1	1

Table 11: 2022-2026 Road Construction District 16

Construction Type	Proposed (km)	Constructed (km)
New Construction	6.62	6.62
Re-Construction	238.5	238.5
Total		
Bridges		

2.1.4 Natural Disturbance

2.1.4.1 Fire

Table 12: 2022 – 2026 District 9 Wildfire Summary

Year	District	Number of Fires	Area Burnt (ha)
2022	9	11	16
2023	9	0	0
2024	9	3	0.2
2025	9	2	0.1
2026	9	*4*	*4.075*
Total		20	20.375

Note: 2026 estimate is the average of 2022-2025

Table 13: 2022 – 2026 District 16 Wildfire Summary

Year	District	Number of Fires	Area Burnt (ha)
2022	16	4	0.4
2023	16	1	1.1
2024	16	3	0.3
2025	16	3	0.3
2026	16	*2.75*	*0.525*
Total		13.75	2.625

Note: 2026 estimate is the average of 2022-2025

The total wildfire area for the first 4 years (2022-2025) of the previous 5-year plan period was available at the development of this plan. The frequency and total area of wildfire for 2025 was like the previous four years, however the eastern and central regions of the island had extreme fire events.

Given recent years in Canada, this increase and severity of wildfire may also indicate an increasing and alarming trend. The estimated wildfire frequency and area used for 2026 was the average for the 2022-2025 period. The 5-year plan period is a small window in the life of a forest and further discussion on wildfire frequency and area impacted is covered in Section 8 of this plan.

2.1.4.2 Insect

The province actively participated in Phase II and Phase III of the Early Intervention Strategy to prevent the spread of Eastern Spruce Budworm populations since 2017. In the early years, the of Phase II of EIS the province concentrated its efforts on increasing survey efforts and increasing plot distribution on the province West Coast of the Island of Newfoundland or what is commonly referred to as the leading edge of the 'outbreak'. Commencing in 2020 while coinciding with the beginning of the COVID-19 pandemic, the province began treating forested areas along the leading edge on the Great Northern Peninsula. While the province was successful in developing safe work practices to treat forested during the pandemic other areas in Atlantic Canada did not treat that year. During that summer, the province treated 32,063 hectares of forested land with an insecticide and at the same time witnessed the largest dispersal event from Atlantic Canada. Areas that had just received treatment received many immigrant moth populations from Atlantic Canada increasing local populations. Spruce Budworm female moths from Atlantic Canada laid half of their egg complement in Atlantic Canada and lifted off to infest new areas and weather patterns were ideal for long range transport female spruce budworm moths. Canadian Forestry Scientists tracked the dispersal of spruce female moths to the west coast of Newfoundland where the female spruce budworm moths laid the remaining half their egg compliment in Newfoundland and Labrador. From the period of 2020 to 2025 the province treated 593,056 hectares with one or more application of insecticide.

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 in 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 7 for the period 2027-2031 in 2026. This updated analysis aligns the timber supply analysis to the new Five-year planning period and is consistent with SFM strategies.

3.2 Guiding Principles and Policy Direction

1. The key underlying principles guiding the provincial wood supply analysis are:
2. The AAC must be sustainable.
3. The level of uncertainty associated with the AAC must be minimized by using empirical information wherever possible.
4. There must be conformity between information and assumptions used in the analysis and actions and decisions taken on the ground.
5. The analysis must be consistent with other forest values and objectives; and
6. 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 does not exceed the total five-year plan established by AAC's. It is government's policy to optimize forest industry opportunities from sustainable fiber supply.

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 Newfoundland and Labrador are variable in terms of age distribution. Typically, there are significant amounts of mature/over-mature forests and regenerating forests 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 and Labrador 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 uses 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 try 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 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 finding 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 is a one percent drop in AAC. Therefore, it is very important that we continue to find methods to minimize the loss of the productive land base and expand efforts to increase volume in 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.

The entire province of Newfoundland and Labrador lies within the Boreal Forest Ecosystem. Professional foresters are trained specialists in forest ecosystem management and are guided by the Canada Council of Forest Ministers (CCFM) SFM criteria and indicators. Foresters use adaptive management techniques to carry out the goal of SFM.

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 find 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 section 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 evaluate:

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

The Provincial Forest Inventory holds a vast wealth of information related to the provincial forested and non-forested land base, including wetlands, streams, lakes, and non-commercial vegetation. Such information aids 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:

1. Core - available for harvest under normal operating conditions.
2. 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.
3. Domestic – Land base set aside from commercial operations for harvest by domestic wood harvesters as a source of firewood and logs.
4. XLB (excluded land base) – unavailable for forest harvesting. No AAC is calculated on

this land base, which incorporates a broad range of timber and non-timber values.

5. SNCF – Areas of noncommercial softwood or hardwood scrub that aren't economical for harvest. These areas don't contribute to AAC calculations.
6. WBLB (water buffer land base) – Areas excluded from harvest within a standard 30m no harvest water buffer.

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 landbase available for timber management declines, so will the AAC.

Forested Land in Zone 7 consists of 70% of the total area in the Zone, however the entire commercial capable, or productive, forest land base in Zone 7 only consists of 42% of the total area in the zone. The productive forest landbase 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 productive forest land base.

The low (43%) 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) to 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 for Forestry Operations in Newfoundland and Labrador 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, it results in a further loss of productive forest land base in 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:

3.4.2.2.1 Insect/Fire/Disease Losses

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

3.4.2.2.2 Logging Losses

Surveys of harvested areas conducted throughout the province are used to determine the quantity and quality of fiber remaining after harvest. 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 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 stratums 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 empirical 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 include 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:

1. 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.
2. The ability to completely incorporate the optimum harvest schedule due to operational restrictions on commercial harvesting.
3. 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 forests across the landscape in 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 Woodstock 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 will have small trees that are uneconomical to harvest yet and stands older than the maximum harvest age may have begun 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 7 FMD 9 are defined below:

District	Treatment	Species	Site	Density	Min	Max
FMD 9	Natural	Balsam Fir	Good	D1,D2,D3	60	100
		Balsam Fir	Medium,Poor	D1,D2,D3	70	100
		Black Spruce	Good,Medium	D1,D2	70	150
		Black Spruce	Good	D3	70	140
		Black Spruce	Medium	D3	70	120
		Black Spruce	Poor	D1	70	150
		Black Spruce	Poor	D2,D3	70	140
		Softwood/Hardwood	Good,Medium	D1,D2	70	120
		Softwood/Hardwood	Good,Medium	D3	70	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	D1,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	All Plantations	Good	N/A	60	150
		All Plantations	Medium	N/A	70	150
		All Plantations	Poor	N/A	70	150
		Balsam Fir PCT	Good	N/A	50	70
		Balsam Fir PCT	Medium	N/A	60	80
		Balsam Fir PCT	Poor	N/A	70	90
		Black Spruce PCT	Good	N/A	60	90
		Black Spruce PCT	Medium	N/A	70	90
		Black Spruce PCT	Poor	N/A	70	90
		Softwood/Hardwood PCT	Good	N/A	60	80
		Softwood/Hardwood PCT	Medium	N/A	60	80
		Softwood/Hardwood PCT	Poor	N/A	60	80

Figure 11: Operability Limits Forest Management District 9

The operability limits for stands within Zone 7 FMD 16 are defined below:

District	Treatment	Species	Site	Density	Min	Max
FMD 16	Natural	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	D1,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	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 12: OPERABILITY LIMITS FOREST MANAGEMENT DISTRICT 16

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 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 14 below.

Table 14: Levels of Silviculture Input into Woodstock

ZONE		DISTRICT	Tenure	2026 Silviculture Levels ha/10yr		
				Black Spruce Plant	White Spruce _Plant	PCT
7		9	Crown	500	250	0
		16	Crown	800	400	0

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 called inventory adjustment. This adjustment accounts for the difference between the actual harvest volume measured versus the predicted gross merchantable volume (GMV) in relation to sustainable AAC's. The inventory adjustment used for zone 7 was 13% for district 9 and 18% for district 16.

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 and 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 were analyzed to determine the productive area attributed to remnants.

3.6 Results

The crown managed tenure, commercial and domestic AAC, for Forest Management Zone 7 for the period 2027-2031 is shown in Table 15.

Table 15: Crown Tenure Commercial and Domestic Annual Allowable Cut Zone 7 2027-2031

Zone 7	Annual Allowable Cut Volume (m^3)					
	Core Softwood	Operationally Constrained Softwood	Domestic Softwood	Core Hardwood	Operationally Constrained Hardwood	Domestic Hardwood
DISTRICT 9	42,000	10,500	23,000	1,700	60	680
DISTRICT 16	18,500	18,500	24,000	190	180	310

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, carbon is extracted from 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 accumulated biomass. Middle-aged stands excel at carbon sequestration as this stage of succession undergoes rapid growth 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 important 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 volume 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 widely accepted 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 for explaining carbon dynamics. The managed landbase, which includes the core, operational, and domestic areas, allows for harvesting and silvicultural 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, as unmanaged forest areas are neither created nor destroyed in the model, and no harvesting or silvicultural interventions can be scheduled in these areas. Non-commercial forest stands are assigned an age of 120-years old and are not represented in the age class distribution graphs; however, the carbon stored in 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.

4.2.1 Carbon Analysis – District 9

FMD 9 currently stores a total of 16.86 Megatons (Mt) of carbon in aboveground biomass (i.e., stem wood, bark, branches, and foliage), with 12.12 Mt in the managed forest (246,714 ha) and 4.74 Mt in unmanaged forest (199,231 ha). The age class distribution of the managed forest is slightly left-skewed, causing the carbon stock in S1 to initially increase before declining, following the natural cyclic range of variation for the forest (Figure 19). The maximized carbon scenario (S2) stabilizes forest carbon stocks within the upper range the forest's natural variation through adequate planting and restricted harvesting. The unconstrained run (S3) exceeds the natural range of variation through strategically timing major harvesting and subsequent silvicultural treatments of the dominant age classes (age class 3 and 4) to replace these stands before they enter the declining portion of their yield curves. 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. Harvesting within our management constraints keeps carbon stock levels within the lower portion of the forest's natural range of variation that is demonstrated by S1, while maximizing the AAC for the FMD. The age class structure of the unmanaged land base is slightly right skewed, leading to a modest decline in carbon stocks by the mid-planning horizon. This effect gradually reverses over time as natural forest succession occurs, since these stands are not subject to management interventions.

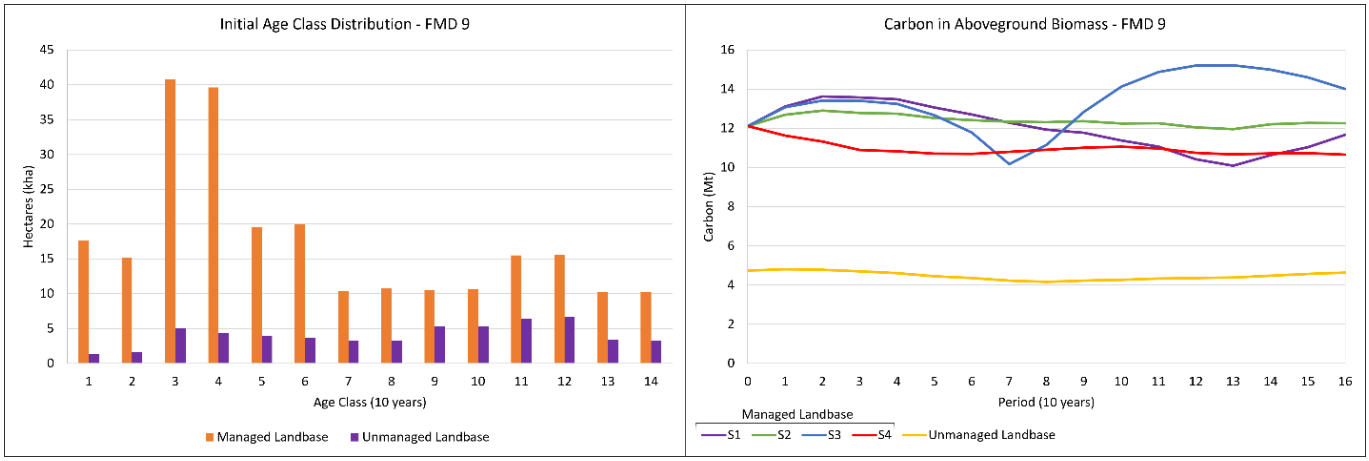

FIGURE 13: AGE CLASS DISTRIBUTION OF FMD 9 AND CARBON IN ABOVEGROUND BIOMASS

4.2.2 Carbon Transferred to Roundwood Products Under Scenario 4 – District 9

Industrial roundwood products (i.e., sawlogs, stud wood, pulpwood, and energy wood) continue to retain carbon in its biochemical structure after stands have been harvested. Sawlogs and studwood typically produce long-lived harvested wood products, such as lumber, that can retain carbon for decades. In contrast, pulpwood and energy wood produce products like paper, cardboard, or fuelwood, which release carbon back into the atmosphere, often within just a few years. The following graph (Figure 20) displays the relative proportion of carbon transferred to each raw material as a result of harvesting under S4, totaling approximately 474 kilotonnes (kt) of carbon in each period. Intuitively, the total carbon transferred into roundwood products follows the same even-flow harvest pattern applied in S4. However, the relative proportions of products vary between periods due to differences in the age distribution of the stands being harvested.

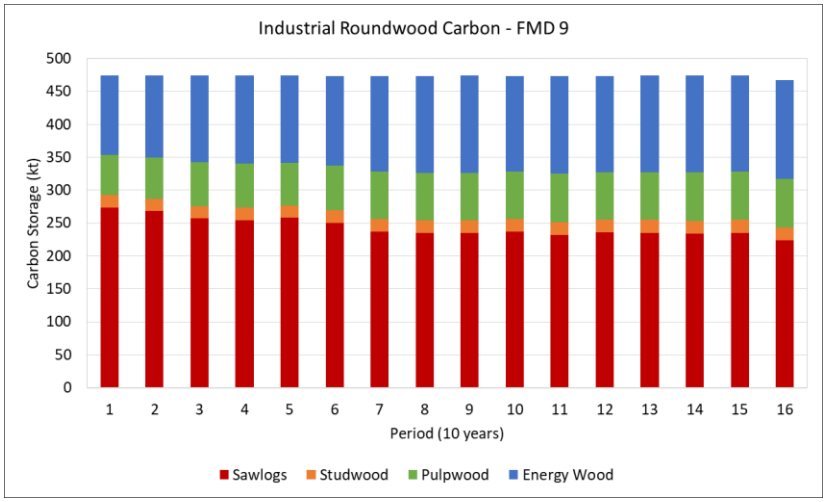

FIGURE 14: CARBON TRANSFERRED TO IND. ROUNDWOOD PRODUCTS PER PERIOD FROM SCENARIO 4 FOR D 9

4.3.1 Carbon Analysis – District 16

The managed forest (150,758 ha) contains 7.45 Mt and the unmanaged forest (267,357 ha) stores 5.90 Mt of the total 13.35 Mt of carbon currently stored in FMD 16. The existing age class distribution is highly unbalanced, leading to significant fluctuations in natural carbon stocks in S1, particularly during the first three periods as the two oldest age classes decline and regenerate (Figure 21). This is in contrast to FMD 9, where the natural range displays a cyclic pattern. With management limitations on harvesting, the max carbon scenario (S2) strategically delays and limits harvesting to allow the younger stands to grow and accumulate biomass for the purpose of carbon storage for the remainder of the planning horizon. The unconstrained run

(S3), not limited by management constraints, exceeds the natural range of variation by implementing optimal compensatory harvesting and subsequent silvicultural treatments during the mid-planning horizon, followed by a period of regrowth and biomass accumulation in treated stands. The harvest scenario (S4) depletes the carbon stocks below that of the natural range for the forest shown in S1. This results from additive mortality caused by the highest allowable even-flow harvest rate, combined with natural mortality in the oldest age classes early in the planning horizon. The initial age class distributions of the managed and unmanaged landbase display a very similar unbalanced structure. As a result, carbon stock trajectories for the managed forest in S1 and the unmanaged land base closely align in FMD 16, reflecting undisturbed forest succession in both areas. Despite covering a larger area, the unmanaged forest contains less carbon than the managed forest because a substantial portion of it (205,192 ha out of 267,357 ha) is scrub, a low-productivity forest type that stores relatively little carbon.

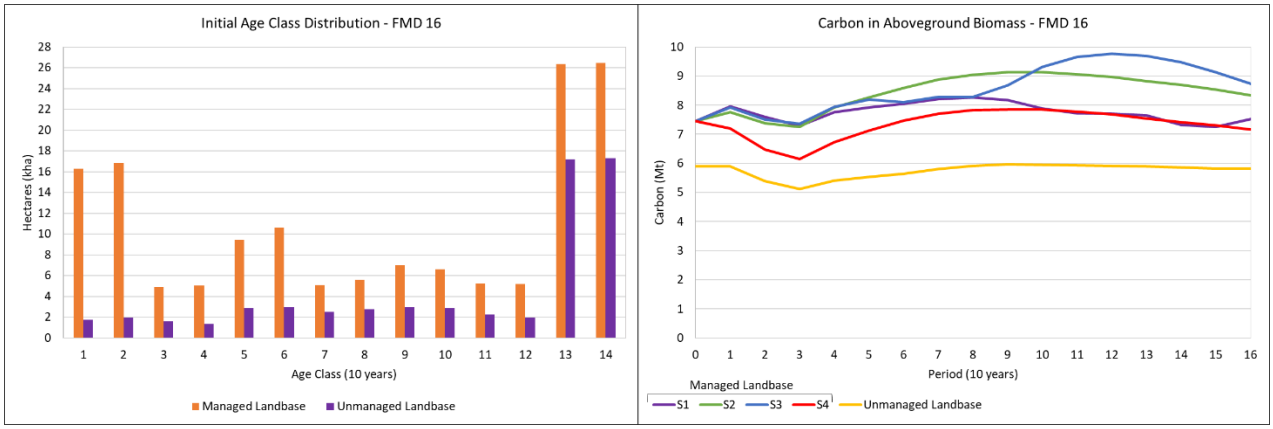

Figure 15: Age Class Distribution of FMD 16 and Carbon in Aboveground Biomass

4.3.2 Carbon Transferred to Roundwood Products Under Scenario 4 – District 16

Industrial roundwood products (i.e., sawlogs, stud wood, pulpwood, and energy wood) continue to retain carbon in its biochemical structure after stands have been harvested. The total carbon transferred into roundwood products generally follows the same even-flow harvest pattern applied in S4, while the relative proportions of products vary between periods due to differences in the age distribution of the stands being harvested (Figure 22). For FMD 16, approximately 295 kt of carbon is retained in industrial roundwood products in each period, except for Periods 4–6, when fewer sawlogs are harvested, resulting in reduced total carbon storage in roundwood products.

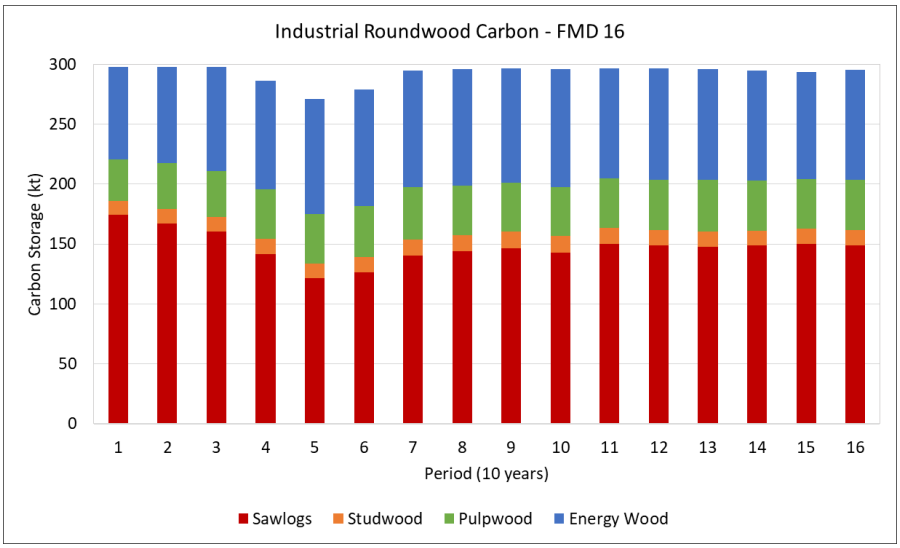

FIGURE 16: CARBON TRANSFERRED TO IND. ROUNDWOOD PRODUCTS PER PERIOD FROM SCENARIO 4 FOR D16

SECTION 5 VALUES

5.1 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 that 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 a 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 in the future.

Social sustainability means fairness and equality 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 have 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.

5.2 Value Structure

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

1. Consumptive values such as timber products, hunting, trapping, sport fishing, and berry picking.

2. Non-Consumptive values such as skiing, snowmobiling, hiking, and bird watching.

3. 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 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:

A. <u>Characterization</u>

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

B. Critical Elements

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

C. 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:

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

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.

5.2.1 Biotic Values

5.2.1.1 Big Game

Big game species in Planning Zone 7 consist of three species Moose, Caribou, and Black Bear.

5.2.1.1.1 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.

Approximately 100,000 residents actively participate in the annual moose license application process. If successful, it provides an opportunity to hunt, to take part in an outdoor fall activity, to be part of an important social event and to provide local food.

Non-resident harvest is conducted through outfitting establishments, employing guides, cooks, maintenance people, pilots, etc. Other businesses benefiting from the non-resident outfitting industry include local stores, accommodations and restaurants, outdoor stores, aviation companies, etc.

The moose is also important for non-consumptive activities. Intrinsic value is added to hiking, cycling, camping, paddling, sightseeing, etc., when there is a chance to view megafauna such as moose. The tourism industry relies on this intrinsic value to promote many of the activities offered.

Critical Elements:

Moose select different habitats at different times of the year and therefore require a mixed forest landscape year-round: a mixture of closed, mature stands for cover, shelter and winter moose yards; early-seral stages (due to disturbances such as insects, fires and logging) with a high amount of young regenerating areas for browsing; and aquatic foraging areas in the summer.

Forest Harvesting - recently harvested large scale areas can be low quality moose habitat as forage and cover are removed. 5+ year old cutovers tend to have enough regeneration to support a slow return of moose to the area. Regenerating cutovers provide excellent foraging opportunity until trees become too tall for moose to reach.

Forest roads – Access roads provide hunters access into areas previously free from vehicle traffic. Removal of access, in areas of new forest regeneration, may allow moose densities to increase beyond sustainable levels.

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.

Guiding Principals

Proposed forestry activity is reviewed by the staff by the Wildlife Division, and recommendations are incorporated into this five-year plan.

5.2.1.1.2 Caribou

Characterization:

Caribou in Canada occur in two primary ecotypes: Barren-ground caribou and Woodland caribou, often referred to as boreal caribou. The Woodland ecotype inhabits mosaics of barren, wetlands, and mature forests. The herds on the island of Newfoundland belong to the Woodland ecotype. Caribou are cyclic by nature mainly due to being density-dependent; meaning restricted by food and/or space, as well as regulated by predators such as wolves and, in recent periods, coyotes. Hunting levels are managed.

Caribou is the only native ungulate species on the island (Northcott, 1980). Numbers are anecdotal at best for the 1800’s (ranged from 40,000 to 200,000). Prior to the railway's completion in 1897, there was a healthy population on the island. By 1925 hunting was closed as the island population was down to a few thousand caribou and by 1930 the population had declined to about 2,000 animals (Murphy and Minty 1993).

From the 1960's through the 1990's the caribou population recovered, peaking at over 90,000 in the 1990's. In late 1990's caribou started another downward trend and in a 2014 assessment the population was just over 32,000 animals. The 2019 population estimates were 30,600 animals and the latest available data from 2021 was 27,115.

In the past few years, populations have declined, with this Forest Management Planning Zone being no exception. Caribo is currently open to hunting in Zone 7.

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.

Caribou display a highly mobile nature, and some herds occupy large home ranges. Caribou shows a high selection habitat for bogs and mature coniferous forests, as well as shrubs and water bodies. These habitats provide refuge from predation and support an abundance of forage.

Caribou avoid disturbed areas large cutovers, linear features, and fragmentation. Any habitat destruction will have direct impacts such as increased mortality. Reduced recruitment rates are likely to be with habitat loss and with any improved access for humans as well as predators.

Guiding Principles:

Caribou populations are monitored and assessed on a regular basis via:

- Annual fall classification surveys: provide regular updates to sex ratios and recruitment within each herd. This work feeds into herd level assessments and quota evaluation/development.
- Collar deployment: analysis of caribou movements, mortality rates and range occupation

This supports the development and assessment of Caribou Management Guidelines for forest management planning. New iterations of these guidelines may incorporate maximum targets for disturbance and linear features (e.g., forest roads) as well as no net losses within certain caribou core ranges. The guiding principles for forestry operations and road construction will apply to all crown

operations within the province. Wildlife Division will provide specific caribou herd guidance and recommendations.

5.2.1.1.3 Black Bear

Characterization:

The black bear is native to the island and is found in forested areas. Black bears are solitary creatures and do not truly hibernate but enter a state of lethargic sleep. A den is chosen in mid fall under tree stumps or logs which are lined with grass, twigs and leaves. If reproducing females gained enough body fat, they will give birth between January and February before emerging from the den with the cub(s) in April or May. Currently, the number of black bears occurring on the island has been estimated at approximately 6,000 - 10,000 animals.

The province is divided into Black Bear Management Areas (BMA), which correspond to MMAs (except for sub-areas). Currently, only one license (with a bag limit at two black bears) is required by hunters on the Island to hunt for black bears in both the spring and fall.

Critical Elements:

Heavily wooded areas with dense bush intercepted with smaller clearings or early successional seral stages represent suitable habitat for black bears.

Guiding Principles:

A 50-metre undisturbed buffer must be maintained around known bear den sites (winter) or those encountered during harvesting.

5.2.1.2 Furbearers

Characterization:

There are a variety of furbearers within the province: lynx, red fox, beaver, otter, muskrat, short-tailed weasel, red squirrel, mink, coyote, wolf (Labrador) and Newfoundland marten (currently listed as a Species

at Risk). Of these, mink and red squirrel are not native to the Island and coyotes are considered recent colonizers as they expanded their range naturally.

Furbearer populations fluctuate from year to year and are influenced by factors such as predator/prey relationships, food supply, and disease. Trapping pressure, driven due to fur market prices, can also influence population growth or decline.

Trapping furbearers for their fur, meat and other natural products has a long tradition in this Province. Today's trapping is a choice of lifestyle, most times deeply rooted in the family and local culture, providing food, clothing and money as well as an enduring connection and experience with nature. Approx. 2,500 people in the province trap and snare furbearers.

Management of furbearer species within the province is highly regulated and the responsibility of the Wildlife Division. There are 13 furbearer management zones throughout Newfoundland and Labrador. Within these zones, harvest activities for each species occur during optimum periods for fur quality, which is generally during the fall and winter period. However, furbearer seasons may vary for each different species.

Critical Elements:

Embedded in conservation of furbearers is the conservation of biodiversity and the ecological processes that support that biodiversity. Furbearers depend on other species, lynx on snowshoe hares, marten on mice and beaver on deciduous trees. Each species belongs to a diverse community that depends on specific habitat conditions. Habitats change from one forest's successional stage to another and are therefore inextricably linked to forest management. (Fur Institute of Canada, 2019).

Species respond differently to logging operations or Silviculture treatments (i.e. thinning, prescribed burns). Hare and grouse increase with logging, which is advantageous to lynx, coyote and fox. The wolf depends on caribou and moose, and beaver. Snags, coarse woody debris, and sufficient understory provide sites for shelter, denning, nesting, traveling, etc. Maintaining sufficient undisturbed riparian buffer zones along aquatic areas such as wetlands and waterbodies ensures water quality maintenance as well as shelter from upland disturbances
A mix of various forest conditions and successional stages that provide diversity of habitats supports a diversity of prey and thus a diversity of furbearers.

Guiding Principles:

The Wildlife Division manages the trapping of furbearers. The Hunting and Trapping Guide published annually on the provincial government website provides information on furbearer trapping / snaring and relevant information on furbearer zones.

5.2.1.3 Species of Interest

5.2.1.3.1 Endangered Species

Characterization:

At present there are 31 species listed under the Endangered Species Act Regulations as endangered, 20 listed as threatened and 24 listed as vulnerable. Several of the listed endangered species of plants and mammals do occur in the zone.

Critical Elements:

Quarrying, road construction, logging, all-terrain vehicle traffic, and wildland fire also pose a potential threat.

Guiding Principles:

Department personnel training and public awareness on the locations and importance of endangered species. Identify and update all applicable habitat sites on a GIS database, work with the Wildlife Division to develop mitigative measures.

5.2.1.3.1 American Martin

Characterization

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 an uplisting to “endangered” 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 upgraded from “endangered” to “threatened” in 2007 because new population estimates were stable and distribution of marten was increasing.

The American marten (island population) is currently (2026) listed as “vulnerable” under the provincial *Endangered Species Regulations*.

To identify factors affecting marten survival, stakeholders from the Canadian Forest Service, Wildlife Division, Corner Brook Pulp and Paper and the Forestry Branch became members of the Newfoundland Marten Recovery Team. The primary function of the Recovery Team was to prepare and periodically revise the recovery plan for American marten in Newfoundland and to provide advice on species recovery. The initiation of the live-trapping program revealed that Main River, Little Grand Lake and Red-Indian Lake are high-density marten areas on the island. Based on this information, it is important that marten habitat be protected in these areas. Furthermore, it is important that some remnant stands of old growth (80+) forests remain on harvested areas throughout the province and provision made to have connectivity (i.e., unbroken corridors of forest).
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Critical Elements:

- Older studies of habitat associations of American marten in Newfoundland have found that they are dependent on late succession, or overmature (>80-years-old) forests due to a depauperate prey base which restricts marten to older forests where prey are accessible. More recent research suggests that marten will use a wide variety of habitat types, including immature regenerating forests, pre-commercially thinned forests, areas disturbed by forest insects, and areas of mature and overmature forests sufficient habitat to support a viable population of marten;

- Overall experts agreed that forest management promotes marten populations when some remnant stands of over mature/ old-growth (80+) forests remain unharvested across the island and a provision made to have connectivity between these over mature or old growth stand with the habitats that are listed above in the first bullet (this does not include recently harvested areas).
- 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.

Guiding Principals

These guiding principles are put in place to further recovery of the Newfoundland Marten and allow for forest harvesting.

- **Sustainably manage and conserve core marten areas**:

  In the early 1990's-2000's there were three high-density marten areas on the island: Main River (southern Northern Peninsula), Little Grand Lake- Red-Indian Lake (Western) and Terra Nova (Eastern). Marten have and continue to expand their range from these core areas. Based on this information, it is important that marten habitat be managed with a focus on the sustainable use and conservation of these core areas and the management of forests to promote and continue range expansions beyond the three core areas.

- **Ensure habitat connectivity**:

  Forest planning ensure sufficient connectivity between habitat patches to allow continued dispersal and expansion of the species back to its historical range.

- **Protect denning female and kits**:

  Activities previously identified by the Newfoundland Marten Recovery Team, as having the potential to disrupt female marten and her kits during the critical denning period, where possible should be limited during the period April 1st to June 30th within the areas identified as marten critical habitat in the 2010 Provincial Recovery Plan. This includes any activity that results in the removal of trees, significant noise, or compression or disturbance to brush or soil. Wildlife Division must be consulted on activities proposed in critical habitat during this period.

The guiding principles for Habitat requirements during forestry operations will apply to all crown operations within the province.

5.2.1.3.2 Rare Plants

Characterization

The distribution of specific species as well as plant communities depends on regional and landscape-level factors, such as climate, geology, altitude and terrain as well as more local factors, such as the depth, moisture regime and fertility of the soil, microclimate and other biota, such as presence of herbivores, pathogens or pollinators. Information on the distribution of plant species in Newfoundland and Labrador is obtained from various surveys initiated by government, research institutions, individual naturalists, and local organizations, as well as those by consulting firms required through Environmental Assessment processes.

Four of the endangered plant species are not found anywhere in the world outside of the Gulf of St. Lawrence Region, and three of them, the Fernald's Braya, Long's Braya and Barrens willow, are only found on the Island of Newfoundland. There are many species of plants, lichen and fungi throughout the province that are not rare or endangered but still have an important social or economic value. Many of these species also play important roles in the functioning of the province's ecosystems. The vast majority of the rare plant species throughout Newfoundland are inhabitants of open habitats, such as river gravels, salt marshes, wetlands, aquatic habitats, alpine areas and coastal barrens, which are not targeted by commercial forest operations and in some cases receive special protection.

Critical Elements:

A small subset of the plant and lichen species of conservation concern, such as the Endangered Graceful Felt Lichen, depends on forests, and some of them are specialists requiring late-successional forests. Without proper protection measures, negative effects can occur from:

1. quarrying and road construction
2. logging and extraction using heavy equipment
3. mechanical site preparation
4. all-terrain vehicle traffic
5. prescribed burning
6. stand conversion to different tree species and/or earlier seral stages

Guiding Principles:

Work with the Wildlife Division to educate forestry personnel and develop mitigative measures in areas where rare plants occur and identify and update all rare plant sites on GIS forestry database. Encourage domestic harvesting in the winter. The guiding principles for protection during forestry operations will apply to all crown operations within the province.

5.2.1.3.3 Waterfowl

Characterization:

Maintaining waterfowl populations depends on effective conservation efforts throughout North America. Newfoundland and Labrador most productive waterfowl breeding and staging areas are either owned by or are under management control of major corporations, private or communities. To help manage waterfowl areas, stewardship agreements are signed at either the municipal, corporate, or private levels.

Critical Elements:

Habitat maintenance and breading disturbance of waterfowl during the brood rearing, breeding, and staging

Guiding Principles:

Habitat, a 30-metre riparian buffer is standard for forest operations, a 50-metre riparian buffer will be established around designated sensitive waterfowl areas. No forestry activities are recommended during the brood rearing, breeding, and staging periods.
The guiding principles for Habitat and Breeding during forestry operations will apply to all crown operations within the province.

5.2.1.3.4 Other Species

There are other species currently listed as endangered. Any recommendations on modified forestry activities, if any, for those species will be developed with input from all members and implemented accordingly. Following SFM adaptive management processes.

5.2.1.4 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 equal importance must be attached to water which has other beneficial uses. Human impacts both locally and globally have the potential to impair water for future uses. Recreational uses of water within this zone are used for activities such as fishing and 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. Mining operations within the zone in the form of mineral exploration, mining operations and small quarrying operations associated with road construction.

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 Department of Forestry's 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.

5.2.2 Human Values

5.2.2.1 Timber Resource

Characterization:

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 spinoff industries for local residents. Commercial uses have arisen for timber, which includes lumber, pulp and paper products, and value-added products.

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, 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.
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 landbase 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 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 activity. Upon completion, these roads are often used for silviculture and recreational purposes. A significant amount of money will be spent to construct forest access roads each year 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 stand age classes through thinning to correct age class imbalance.

Guiding Principles:

- Enforcement of the 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: http://www.gov.nl.ca/ffa/files/2025-Environmental-Protection-Guidelines.pdf
- Some highlighted subject areas are listed below.
    - Garbage disposal
    - Fuel storage
    - Mineral soil exposure
    - Buffer requirements
    - Road and bridge construction
    - Silviculture and harvesting activities

5.2.2.2 Agriculture

Characterization:

The agricultural industry provides both direct and indirect employment to residents of the province.

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 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:

Landbase 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 Forestry, Agriculture & Lands.
- The Forestry Act has been amended to allow clearing of land to occur without a commercial cutting permit if the 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.

5.2.2.3 Mining, Mineral Exploration, and Quarrying

Characterization:

Mineral exploration, mining, and quarrying are recognized as separate and distinct activities, each of which is approved and regulated under a separate piece of legislation.

Mineral exploration activities may consist of prospecting, geological mapping, grid line-cutting, geochemical surveys, ground-based and airborne geophysical surveys, the preparation and use of access trails, mechanized trenching, diamond drilling, and – in remote areas – the preparation and use of campsites.

Mineral exploration takes place province-wide and is a significant contributor to the provincial economy, particularly in rural areas.

There are many active quarries throughout the province which generate significant royalties and which provide the raw material for the development and maintenance of infrastructure such as highways, building lots, and concrete.

There are several active mines in the province at any given time and mining represents a major component of the provincial economy.

Critical Elements:

- Forest Ecosystem
    - Mining, quarrying, and mineral exploration activities can have potential negative impacts to Forest Ecosystems and future Wood supply calculations. Mining and quarrying represent permanent (but sequenced – not all at once) alterations to the landscape whereas mineral exploration activities at most involve temporary disturbance. Each activity is subject to rehabilitation requirements.

- Utilization of Timber Resource
    - When exploration activity occurs, merchantable trees may need to be harvested to gain access to work sites. Under the forestry act, all merchantable trees can only be removed with a cutting permit and that holders of a cutting permit must utilize all portions of the tree to a top diameter of 8cm (outside bark). Section 18 of cutting of timber regulations state that all timber cut shall be removed from the cutting area to a roadway while harvesting operations are in progress unless otherwise specified in the cutting permit.

Guiding Principles:

- Forest Ecosystem
    - Regulations and permitting conditions require that all mine sites, quarry sites, and mineral exploration sites be rehabilitated. While each activity is regulated separately, rehabilitation requirements for each include the requirement that the organic overburden (e.g., topsoil, ground vegetation) be stockpiled and stored in a manner so that it can be used to rehabilitate the site.

Rehabilitation requirements can be further specified in special terms and conditions and could include, if warranted, the requirement that the site be left in a condition conducive to forest regrowth.

- Utilization of Timber Resource
    - As part of exploration and development activities, individuals must attempt to extract timber harvested. 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 companies are permitted to use some harvested timber within access routes for the purposes of corduroy or brush-matting to prevent rutting and minimize ground disturbance on sensitive sites.
- Additional:
    - The Forestry Branch will consult with the Mining and Mineral Development Branch in determining appropriate silviculture buffer distances from the boundaries of sites covered by a quarry permit or quarry lease. In many cases, 100 meters is an appropriate buffer distance that will accommodate discrepancies in plotting. However, in other cases, there may be valuable aggregate resources present and expectations that the area will see proposals for new quarry developments in the foreseeable future, in which case a buffer zone should be specially planned in consultation with Mines. In other cases, where quarry development is expected to proceed slowly, silviculture buffer distances may be much reduced.
    - For mine sites (including all associated infrastructure), an appropriate silviculture buffer distance should be chosen in consultation with the site operator and the Mining and Mineral Development Branch.
    - Mineral exploration activity that proposes to explore or develop within a silviculturally treated area must be undertaken with minimal disturbance and under approval of Forestry Branch. A standard condition has been developed by the Mineral Development Branch and Forestry Services Branch to include as a condition in mineral exploration approvals document where silviculture treatments may be impacted.
    - Mineral exploration and/or development on mineral licenses 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.
    - Should future quarry or mineral resource developments or exploration programs (i.e., new quarry development, existing quarry expansion, new mine development, exploration for quarry materials, or mineral exploration) be considered by the Forestry Services Branch as having the potential to cause a significant impact on the forest resource and forest resource users, the

Forestry Services Branch will work closely with the Mining and Mineral Development Branch and the proponent to ensure that mutual impacts are minimized.

- For road construction, quarry permits or quarry leases are required only for aggregate material taken outside of the road right-of-way.
- Non-compliance with exploration permits identified by Forestry Branch will be passed to Mining and Mineral Development Branch.
- Many forest access roads and bridges are used by other land users, among them parties carrying out mineral exploration or quarrying. Where possible, the Forestry Services Branch will forward plans to decommission roads or bridges as a matter of course to ensure that all road/bridge rehabilitation and decommissioning plans are reviewed to consider whether mineral exploration, quarrying, or mining may be affected. Plans should be forwarded to MinesBranchReferrals@gov.nl.ca

- The guiding principles for Forest Ecosystem, Utilization of Timber Resource, and additional comments will apply to all crown operations within the province.

5.2.2.4 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.

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 in 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.

5.2.2.5 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 Canadian National Railway right of way, which may vary, however is generally 15 meters wide. It provides an all-season, multi-use recreation corridor and is developed and managed by 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.
- Control 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.

5.2.2.6 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 rationality 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.

5.2.2.7 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 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 on 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 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 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.

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, and with consideration to minimizing any additional construction, new access roads routs maty be kept 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 possibility 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.
- In keeping with sound SFM ecosystem values, including consultation with the outfitter stakeholders, efforts should be made to ensure that the integrity of the view from the outfitter main lodge is considered when conducting forest operations.
- Forest operations must ensure all garbage is removed from the harvest area.

5.2.2.8 Recreation / Tourism

Characterization:

Non-timber recreational values such as hiking, skiing, canoeing/kayaking, ATV/UTV and snowmobiling constitute an important role within this Zone. The Zone 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 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 have both positive and negative effects. On the positive side, it provides the ability to increase vehicles 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

Established ecological reserve areas are not available for harvesting or road construction. Forestry, through the five-year planning process and EA registration consults with local stakeholders. In areas with high concentrations of recreational activities the five-year planning process and EA registration will engage and inform sufficient stakeholders of forest management activities with the goal of reducing conflicts and provide mitigations when identified.

Limiting Accessibility

Where possible in sensitive areas, forest harvesting will be scheduled during winter months to take advantage of winter road construction techniques. Winter roads usually restrict vehicular traffic and decommission naturally. In addition, decommissioning 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 tree buffers, tree retention methods or implement reforestation activity immediately to return the site to a forested condition.

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 of the forest age – not the loss of the forest. Harvests closely imitate natural disturbance and the green up will occur over a short time horizon.

The management of forest ecosystems utilizes strict requirements that require the landbase to retain 15% of the forest in the mature age class.

5.2.2.9 Greater Gros Monen Ecosystem

5.2.2.10 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 holds 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.

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

SECTION 6 MITIGATIONS

6.1 General

SFM follows an adaptive management process. Mitigation is an integral part of adaptive management. As soon as information becomes available from previous activities mitigations are incorporated. These are generally incorporated into the Environmental Protection Guidelines yearly. The best management practices adopted from previous planning processes will be incorporated in this plan, several of these include:

- A 30 m buffer will be maintained on lakes and both sides of rivers 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 within 100 meters of the center of Newfoundland T'Railway.
- There will be no cutting buffer within 100 meters of a cabin development area and 30 meters from an approved cabin license.
- 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.
- All forest activities, including, Road construction, harvesting and Silviculture will follow the most current Environmental Protection Guidelines for Forest Operations in Newfoundland and Labrador.

SECTION 7 STAKEHOLDER CONSULTATION

7.1 General

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.

Following SFM Adaptive Management Processes, the Forest Service now utilizes a list of known stakeholders and sends an electronic package showing proposed operating areas Silviculture and Roads. The stakeholders may provide input into the plans prior to the plan submission to EA.

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.

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. 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.

The 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:

Town Councils
Outfitters
Indigenous Leaders
MHA's

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 disturbance, which results in the formation of relatively even aged stands. Harvesting systems, that are designed to emulate natural disturbance processes, can closely match the natural disturbance pattern.

The forest management harvesting and tending system, predominantly used in the boreal forest, is the Clearcut Silvicultural system. The clearcut harvest of this Silviculture system resembles natural disturbance patterns and provides harvesting economic effectiveness. The size, shape, arrangement, and juxtaposition of mature forest naturally vary across the Newfoundland boreal landscape topography and terrain conditions. Schedule stands for harvest in the Five -Year Plan therefore follow this natural fragmentation.

Following the SFM adaptive management strategy, Environmental Protection Guidelines (EPG's) have been implemented in Newfoundland and Labrador. Section 3 of the EP Guidelines directs that a minimum of 10 standing dead trees is to be left within each HA of clearcut. Additionally, District Ecosystem Managers may adjust the cut block size or shape in an annual operational plan when their professional opinion such a modification is advisable.

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 hardwood.
- 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.).

8.1.3 Hardwoods

The forest inventory has information on hardwoods and a hardwood AAC is part of the provincial wood supply. Forest management objectives to increase hardwood occurrence on the landscape are beginning. This is especially true of the urban interface where the department is encouraging the establishment of hardwoods as a fire mitigation strategy.

8.2 Silviculture

As a rule, approximately 80% of the Boreal Forest regenerates naturally following a disturbance. Depending on management objectives, forest renewal programs are applied by forest managers to the remaining 20% that do not successfully regenerate naturally.

Exceptions to applying silviculture on areas that may be regenerating naturally are based upon the species that is regenerating and the value of this species. Values are subjective and may be economic, social, or cultural as to the species being selected to form the future forest, or part of the future forest.

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 stand diversity
- Where possible, promote species mixes particularly with spruce and hardwood 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

8.2.1 Forest Renewal

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 site preparation (scarification) followed by planting, or direct planting.

Following all commercial harvest disturbances, an assessment by trained NL Forest department staff is carried out on the harvested areas. An assessment of the stocking level is entered into a silviculture database along with a recommendation on a silviculture prescription for that area. When a site does not regenerate at all, a full planting program is required.

8.2.1.1 Site Preparation

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 the competition for a few years to allow planted seedlings to be 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 better sites.

8.2.1.2 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.

Planting lets the forest manager control harvested sites to a specific major future crop species and get sites back to a fully function forest stand earlier than natural processes.

On adelgid sites partially regenerated to balsam fir, planting is done through the existing regeneration to obtain 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 seeds 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 increase yield and maintain 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 the planting program in the foreseeable future.

8.2.2 Forest Improvement

8.2.2.1 Thinning

To enhance development, silviculture thinning programs are designed to improve established forest stands. Pre-Commercial Thinning (PCT) involves partial removal of overstocked, generally 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 that are cut are not of merchantable size and remain on site, returning the nutrients back into the soil. The manual thinning procedure mimics the natural forest thinning process that will occur at a later period in the stand development. Thinning gets the trees to a larger piece size at an earlier age. The remaining trees are at a younger age when they take on the dimensional characteristics of an older forest.

In the zone, balsam fir is usually thinned to favor any spruce 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 would occur at the intermediate age 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 are harvested when they mature. As with PCT, spruce and hardwood are left where possible to increase 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 pre-commercial 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:

Forestry, Agriculture and Lands - Government of Newfoundland and Labrador

8.3 Access Roads

Forest 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 that minimize right-of-way and running surface width.

Modern low soil compaction and high payload forwarding equipment balance 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:
https://www.gov.nl.ca/ffa/

Specific roads strategies include:

- Construct winter roads in sensitive and wet areas.
- Design roads utilizing the maximum economical 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

- 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 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 aid in detection, monitoring, and protection of surveys against insects and disease.

Specific insect and disease strategies include:

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

More information on the Forest Insect Control Program can be found on Governments Forestry website using the following address:

https://www.gov.nl.ca/ffa/

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 the past. In the previous 5-year plan, developed in 2021, it was noted that “wildfire has not been a major issue in recent years”. Fires in 2025 were significant on the eastern and central island and warming trends imply this may increase fires in the zone.

Foresters use the term first coined in 1995 by UBC Biologist Daniel Pauley in a paper named **"Anecdotes and the shifting baseline syndrome of fisheries,"** published in the journal *Trends in Ecology and Evolution.* The term is Shifting Baseline Syndrome. The term is used in forestry to explain what is perceived as being normal over a human's experience may not be what is the longer-term norm for a forest ecosystem.

Shifting baseline may be very relevant to current memory as it relates to the fire history in insular NL. Anthropogenic extreme fire effects were recorded when settlers first arrived and expanded when the railway was first constructed. With global warming effects, conditions for extreme fire events may occur more often.

The Department of Forestry, Agriculture & Lands is committed to protecting 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. There are five air tankers available stationed as required, at Deer Lake, Gander, Goose Bay and Wabash and helicopters in Gander that are available for initial attacks. More information on the Forest Fire Program can be found on Governments Forestry website using the following address:
https://www.gov.nl.ca/ffa/

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:

- avoid thinning in areas with high wind damage potential (hilltops on high elevations etc.)
- maintain forest in healthy vigorous condition through silvicultural treatments and protection from insects
- design cut blocks to follow contours and natural boundaries to minimize risk of windthrow to residual forest

8.5 Environmental Protection

8.5.1 General Environment

The Department of Forestry, Agriculture and Lands has 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.

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.

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 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. The results of these surveys will be used to evaluate the expected volume in an operating area compared to those 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

8.6.1 General

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 General

This section will outline all forest activities that will occur on crown land in the zone from 2027 to 2031 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, a map overview of the zone 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.

9.1.1 Allocation of Timber Supply

9.1.1.1 Commercial

The timber scheduled for commercial harvest in the zone is overmature with some small pockets of mature dispersed throughout. 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. The purpose of including more volume than is proposed is to allow for operational flexibility and inventory deviations within operating areas without having to constantly amend the plan. These operations occur manually or mechanically using conventional harvesting equipment such as chainsaws, 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.

While the total volume identified may be over the final AAC for the management district, when scheduling activity, the maximum sustainable harvest over the five-year period will not be exceeded.

Proposed commercial harvesting is summarized in the tables below.

Table 16: Proposed Commercial Harvesting District 9

Operating Area FMD 09				Proposed Commercial Harvest Volume (m3)					
				SOFTWOOD			HARDWOOD		
Name	OA	Tenure	Productive Area (ha)	Core	Operationally Constrained	Total	Core HW	Operationally Constrained HW	Total
Springdale South AOI	CC09001	Crown	2012.1	550	0	550	80	0	80
Springdale North AOI	CC09002	Crown	1828.7	0	0	0	0	0	0
Sops Lake AOI	CC09003	Crown	208.0	0	0	0	0	0	0
West Pond	CC09004	Crown	2465.7	2,250	0	2,250	0	0	0
Saunders Pond	CC09005	Crown	3750.4	4,950	0	4,950	0	0	0
Airstrip	CC09006	Crown	322.2	4,635	0	4,635	270	0	270
Hamilton's Pond	CC09007	Crown	929.6	9,900	0	9,900	0	0	0
Halls Bay South	CC09008	Crown	2368.2	17,550	0	17,550	36	0	36
Wellmans Steady	CC09009	Crown	1694.5	11,385	0	11,385	612	0	612
Loon Pond	CC09010	Crown	1380.5	11,115	0	11,115	2,070	0	2,070
17 Mile Grade	CC09011	Crown	975.6	19,890	0	19,890	0	0	0
Oxford's Grade	CC09012	Crown	6819.3	67,500	0	67,500	788	0	788
Upper Burnt Berry	CC09013	Crown	2931.3	31,500	0	31,500	0	0	0
North Brook	CC09014	Crown	1891.2	31,770	0	31,770	232	0	232
Baie Verte Highway	CC09015	Crown	1638.8	31,500	0	31,500	0	0	0
Pittman's Pond	CC09016	Crown	1930.2	27,000	0	27,000	0	0	0
Bob's Head	CC09017	Crown	739.6	22,500	0	22,500	0	0	0
Line Pond	CC09018	Crown	1271.5	7,470	0	7,470	0	0	0
Middle Arm Ridge	CC09019	Crown	1018.2	3,915	0	3,915	0	0	0
Bear Pond	CC09020	Crown	1306.6	5,175	0	5,175	0	0	0
Gooseberry Waters	CC09021	Crown	404.1	3,195	0	3,195	0	0	0
Armchair Pond	CC09022	Crown	453.9	1,935	0	1,935	0	0	0
Goat Pond	CC09023	Crown	590.3	4,095	0	4,095	0	0	0
South West Pond	CC09024	Crown	608.2	900	0	900	0	0	0
Burlington	CC09025	Crown	131.6	1,620	0	1,620	0	0	0
Long Pond	CC09026	Crown	764.5	7,290	0	7,290	0	0	0
Skull Hill	CC09027	Crown	1178.7	8,190	0	8,190	0	0	0
Fish Hatchery	CC09028	Crown	3939.1	15,300	0	15,300	0	0	0
Hampden Highway	CC09029	Crown	1403.5	24,750	0	24,750	0	0	0
East Pond	CC09031	Crown	399.9	1,800	0	1,800	0	0	0
Penney's Mill	CC09032	Crown	164.6	2,115	0	2,115	0	0	0
Pilley's Island	CC09033	Crown	790.3	6,750	0	6,750	0	0	0
Gillard's Lake	CC09034	Crown	2096.3	31,500	0	31,500	0	0	0
Kippins Pond AOI	CK09030	Kruger	171.6	0	0	0	0	0	0
		TOTAL:	50578.8	419,995	0	419,995	4,088	0	4,088

TABLE 17: PROPOSED COMMERCIAL HARVESTING DISTRICT 16

Operating Area FMD 16				Proposed Commercial Harvest Volume (m3)					
				SOFTWOOD			HARDWOOD		
Name	OA	Tenure	Productive Area (ha)	Core	Operationally Constrained	Total	Core HW	Operationally Constrained HW	Total
Deadwater Brook	CC16013	Crown	1393.6	0	0	0	0	0	0
Little Goose	CC16015	Crown	727.0	40,751	0	40,751	1,648	0	1,648
Faulkner's Extension	CC16016	Crown	1586.2	61,365	0	61,365	5,443	0	5,443
Turners Ridge	CC16017	Crown	2728.7	56,328	0	56,328	8,316	0	8,316
Clam Pond	CC16018	Crown	1451.0	76,591	0	76,591	5,108	0	5,108
Saltwater Pond	CC16019	Crown	3111.1	192,145	0	192,145	16,628	0	16,628
Natlins Pond	CC16020	Crown	1572.0	21448.86	4393.14	25,842	2,034	2,034	2,450
Grassy Cove	CC16021	Crown	1683.1	57,058	0	57,058	6,549	0	6,549
Gold Cove	CC16022	Crown	70.8	1,653	0	1,653	1,563	0	1,563
Rocky Brook	CC16023	Crown	337.3	8,212	0	8,212	845	0	845
		TOTAL:	14660.7	515,552	0	519,945	48,134	0	48,550

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 permits and volume associated with these permits will be extremely low and insignificant. All domestic cutting is done under 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.

Domestic harvesting areas are summarized in the tables below.

TABLE 18: PROPOSED DOMESTIC HARVESTING DISTRICT 9

Proposed Domestic Harvest FMD 09				Estimated 5 Year Volume (m3)	
OA Name	OA #	Area (ha)	Number of Permits	Softwood	Hardwood
Cape John	CC09501	4436.96			
Harbour Round Pond	CC09502	3060.88			
Woodstock East	CC09503	5139.39			
Pacquet	CC09504	2316.35			
Nipper's Harbour Jct	CC09505	1541.99			
West Pond	CC09506	2237.73			
Baie Verte North	CC09507	7250.66			
Pine Pond	CC09508	5935.74			
Long Pond	CC09509	7477.97			
Middle Arm	CC09510	3961.07			
King's Point	CC09511	3443.76			
King's Point Road	CC09512	4238.15			
Harry's Harbour	CC09513	3761.94			
Little Bay	CC09514	7823.84			
Western Arm-Green Bay	CC09515	5972.73			
Springdale East	CC09516	12761.15			
Little Bay Islands	CC09517	6029.33			
Long Island	CC09518	6600.10			
Triton-Brighton	CC09519	5007.00			
Pilley's Island	CC09520	2896.99			
Sunday Cove Island	CC09521	4411.05			
Robert's Arm	CC09522	2200.09			
Woodford's Arm	CC09523	2653.47			
Boot Harbour	CC09524	1862.17			
Western Arm	CC09525	124.31			
Bear Cove	CC09526	442.16			
Westport	CC09527	767.21			
Purbeck's Cove	CC09528	111.79			
Crescent Lake South	CC09529	5235.14			
Hydro Road	CC09530	248.05			
Bramberry Bog	CC09531	541.44			
West Bottom North	CC09532	246.33			
Loon Pond	CC09533	302.23			
Warr's Road	CC09534	6399.36			
Shoal Pond	CC09535	13084.73			
Black Lake	CC09536	11729.05			
Sheppardville	CC09538	566.66			
Shoe Cove South	CC09540	2636.49			
Beaches	CC09541	2611.35			
Chouse Brook	CC09542	7591.82			
Westport Road North	CK09543	15697.21			
Wild Cove Pond	CK09544	20751.40			
Gull Pond	CK09545	16269.82			
Flatwater Pond	CK09546	14021.40			
Rambler	CK09547	23301.36			
Westport Road South	CK09548	24793.55			
Dawe's Pond	CK09549	13212.58			
Gull Lake	CK09550	10113.25			
Misery Hill	CK09551	22077.10			
Nutmeg	CK09552	5583.25			
Barney's	CK09553	4652.84			
Rocky Pond	CK09554	9319.80			
Gummy Brook	CK09555	9335.62			
Johnson's	CK09556	8426.23			
Seal Cove North	CK09557	21500.70			
Gossard Pond	CK09558	1505.95			
Beaver Pond	CK09559	6939.65			
Ming's Bight East	CK09560	4976.28			
Ming's Bight West	CK09561	6116.87			
Kippens Ridge	CK09562	7707.95			

TABLE 19: PROPOSED DOMESTIC HARVESTING DISTRICT 16

Proposed Domestic Harvest FMD 16				Estimated 5 Year Volume (m3)	
OA Name	OA #	Area (ha)	Number of Permits 2025	Softwood	Hardwood
Patrick's Pond	**CC16501**	**8162.0**	**1**	**86963**	**6880**
Howley	**CC16502**	**1596.8**	**34**	**66126**	**2883**
Goose Steadies	**CC16503**	**10366.1**	**49**	**90291**	**4710**
Crooked Feeder	**CC16504**	**5159.3**	**40**	**42427**	**2882**
Junction Brook	**CC16505**	**552.2**	**17**	**4077**	**438**
Reidville	**CC16506**	**3142.4**	**46**	**39134**	**2162**
Cormack ADA	**CC16507**	**13611.3**	**77**	**150208**	**12316**
White Hills	**CC16508**	**2655.7**	**83**	**106323**	**21238**
Hampden	**CC16509**	**1362.6**	**24**	**28365**	**4236**
White Bay South	**CC16510**	**5135.8**	**66**	**228416**	**25148**
White Bay North	**CC16511**	**13032.0**	**79**	**553645**	**50058**

9.1.1.3 Hardwoods

This domestic harvest of birch occurs as a mixture in softwood stands and is utilized as fuelwood. The commercial hardwood harvest is for sawlogs and fuelwood and occurs in some pure stands but mostly as residual in softwood and softwood/hardwood stands.

9.1.2 Silviculture

Potential silvicultural treatment areas need to undergo reconnaissance and / or intensive surveys to determine the regeneration level and severity of adelgid attacks. 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 operating area maps and are candidates for planting or gap planting to black or white spruce. These areas will undergo reconnaissance and 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 having 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 balsam fir areas, burning is a preferred treatment to sanitize the site of any existing adelgid infested trees.

Anticipated Silviculture levels over the 5-yr planning period are identified in Section 3. Specific locations within operating areas will be identified in the Annual Operating Plan.

Additional silviculture zones for district 16 that are not in commercial operating areas are shown in the table below, and an overview map is shown in the appendix.

TABLE 20: SILVICULTURE OPERATING AREAS DISTRICT 16

Silviculture Operating Areas FMD 16			
Name	OA	Tenure	Area (ha)
Deadwater Brook	**CC16013**	**Crown**	**86 Ha's Planting**

9.1.3 Primary Access Roads and Bridges

There are 219.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 Environmental Protection Guidelines (EPG's) for Forestry Operations in Newfoundland and Labrador 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 21: PROPOSED ROAD CONSTRUCTION DISTRICT 9

Area Name	OA #	Construction (Length km)	Reconstruction (Length Km)	Water Crossings	
				Culverts	Bridges
Springdale South AOI	CC09001	1.95	0	1	0
Springdale North AOI	CC09002	2.26	0.9	2	0
West Pond	CC09004	7.80	26	17	0
Saunders Pond	CC09005	6.58	34.64	28	0
Airstrip	CC09006	4.38	0	2	0
Hamilton's Pond	CC09007	8.87	0	2	0
Halls Bay South	CC09008	7.62	3.78	5	0
Wellmans Steady	CC09009	3.58	10.37	6	0
Loon Pond	CC09010	6.25	3.39	0	0
17 Mile Grade	CC09011	3.83	0	1	0
Oxford's Grade	CC09012	24.90	14.68	6	0
Upper Burnt Berry	CC09013	9.33	29.76	17	0
North Brook	CC09014	5.98	0	0	0
Baie Verte Highway	CC09015	4.90	11.63	4	0
Pittman's Pond	CC09016	0.41	12.47	4	0
Bob's Head	CC09017	2.43	0	1	0
Line Pond	CC09018	7.26	8.34	11	0
Middle Arm Ridge	CC09019	1.76	0	1	0
Bear Pond	CC09020	7.90	0	3	0
Gooseberry Waters	CC09021	2.33	2.4	2	1
Armchair Pond	CC09022	4.46	0	3	0
Goat Pond	CC09023	3.67	3.39	2	0
South West Pond	CC09024	2.21	0	0	0
Long Pond	CC09026	5.51	5.18	6	0
Skull Hill	CC09027	0.00	10.45	1	0
Fish Hatchery	CC09028	12.31	19.45	8	0
Pilley's Island	CC09033	7.73	0	4	0
Gillard's Lake	CC09034	10.32	18.26	4	0
Total		166.53	215.09	141	1

TABLE 22: PROPOSED ROAD CONSTRUCTION DISTRICT 16

Area Name	OA #	Construction (Length km)	Reconstruction (Length Km)	Water Crossings	
				Culverts	Bridges
Little Goose	CC16016	2.15		3	0
Faulkner's Extension	CC16017	7.00		2	0
Turners Ridge	CC16018	28.70		5	3
Clam Pond	CC16019	3.70		1	1
Saltwater Pond	CC16020	3.00		0	2
Natlins Pond	CC16020	8.40	8.7	1	2
Total		52.95	8.70	12.00	8.00

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 PPWSA must be approved by the Department of Environment.

SECTION 10 PLAN ADMINISTRATION

10.1 Monitoring

Monitoring planned activities is critical to ensure objectives and operations are carried out in a manner consistent with various guidelines and provincial and federal legislation. Monitoring occurs at the operational level and the planning level. Forest harvesting activity is regulated using a permitting system and all activities are inspected and monitored on the ground by conservation officers to ensure compliance with applicable legislation, cutting permit conditions, and Environmental Protection Guidelines. Permit holders and contractors are also subject to financial penalties if deviations occur.

10.2 Amendments

Changes to an approved Operating Plan may be required occasionally resulting from operational challenges or unforeseen circumstances. These changes are submitted as amendments and must be approved by the Forest Ecosystem Management Division prior to implementation.
There are two types of possible amendments:

2) Internally within the Department of Forestry, Agriculture & Lands, where approval is required by the Forest Ecosystem Management Division. Internal amendments are governed by the following conditions:

    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 than 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 roads in each year of that plan.

2) Externally, through the Department of Environment and Wildlife. Any required revisions which are not covered by the above internal requirements must be submitted for Environmental Assessment (EA) in the form of an amendment to the five-year operating plan

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Appendix 1A – Commercial Overview Maps District 9 and 16

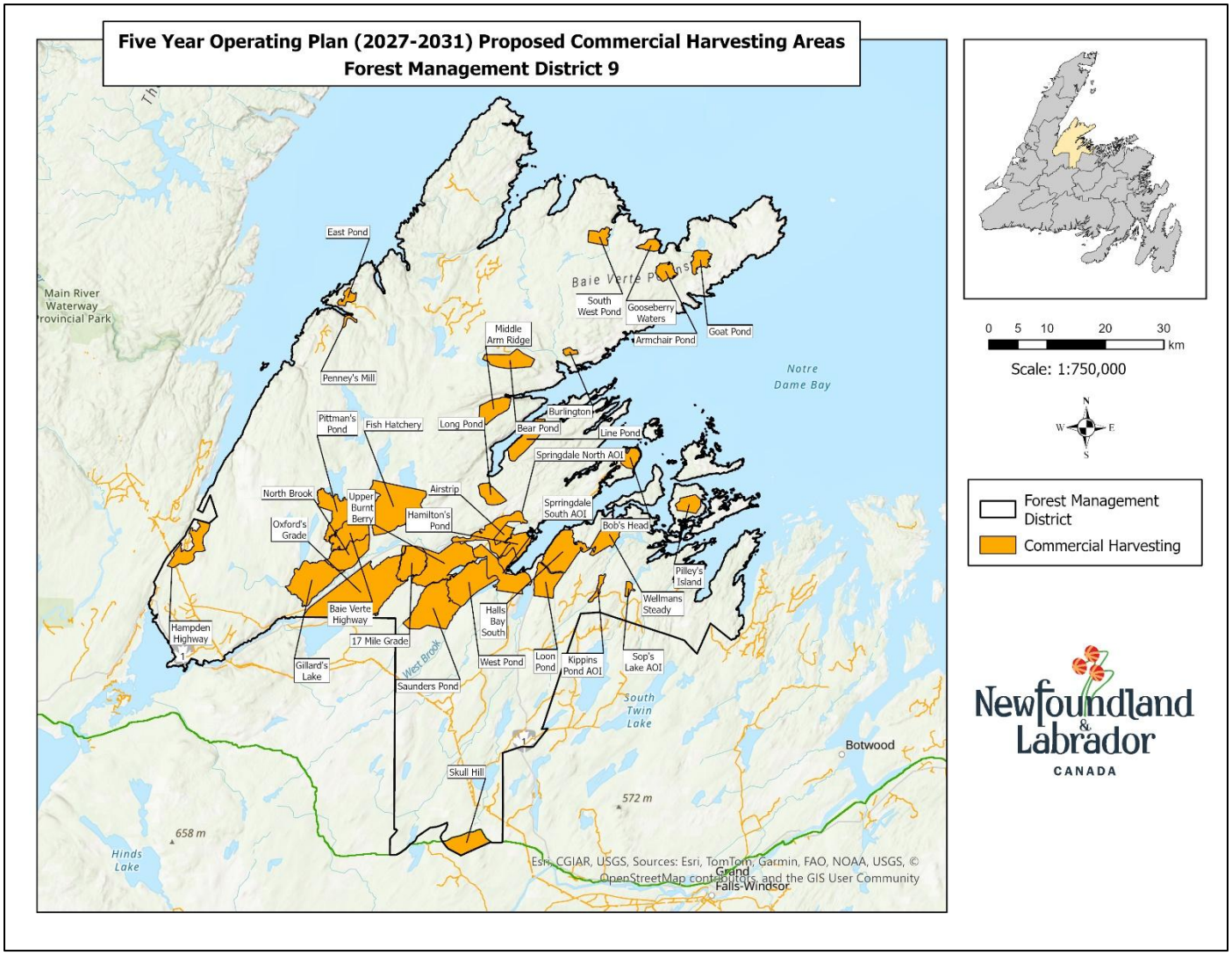

FIGURE 17: COMMERCIAL OVERVIEW MAP DISTRICT 9

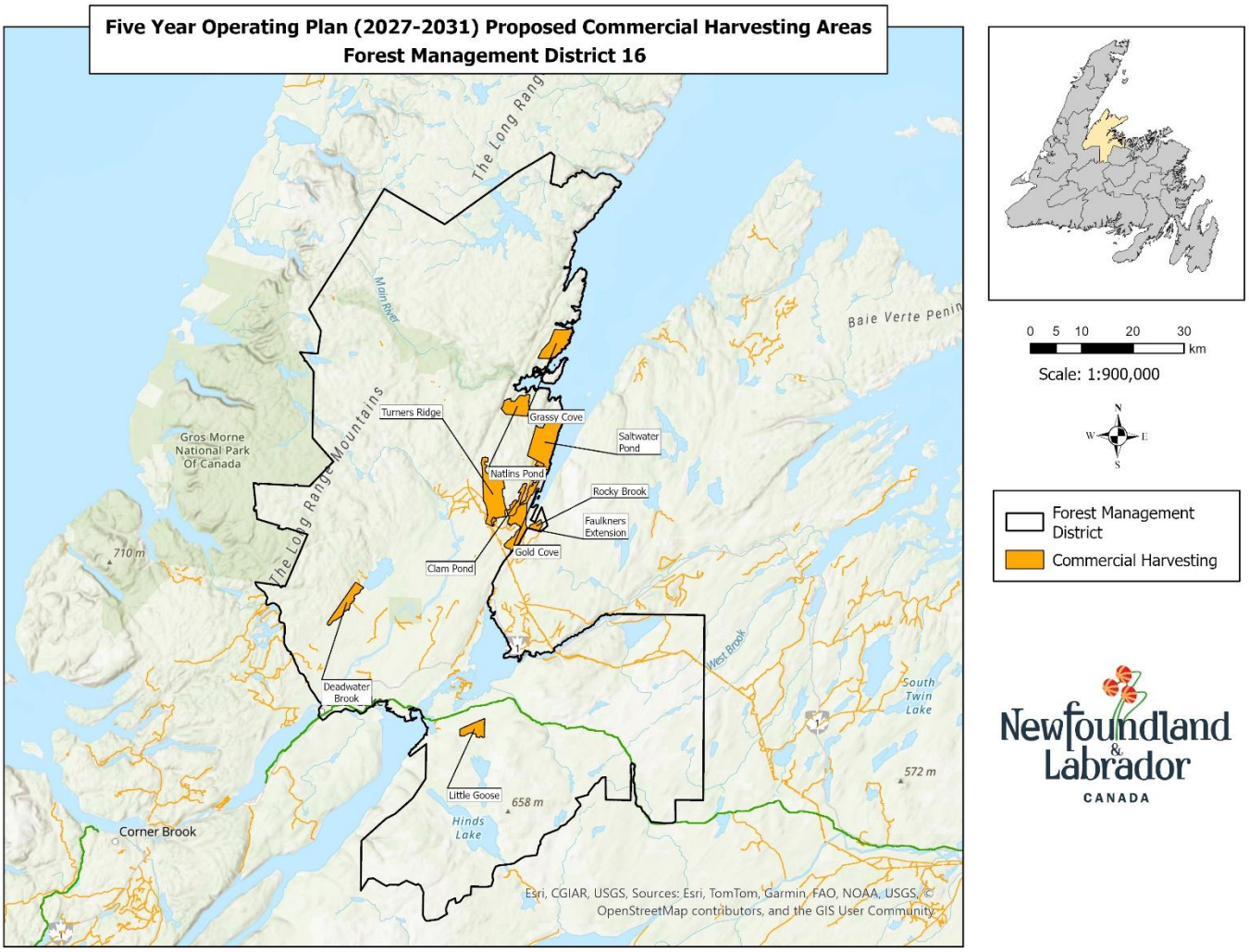

Figure 18: Commercial Overview Map District 16

Appendix 1B - Domestic Overview Map District 9 and 16

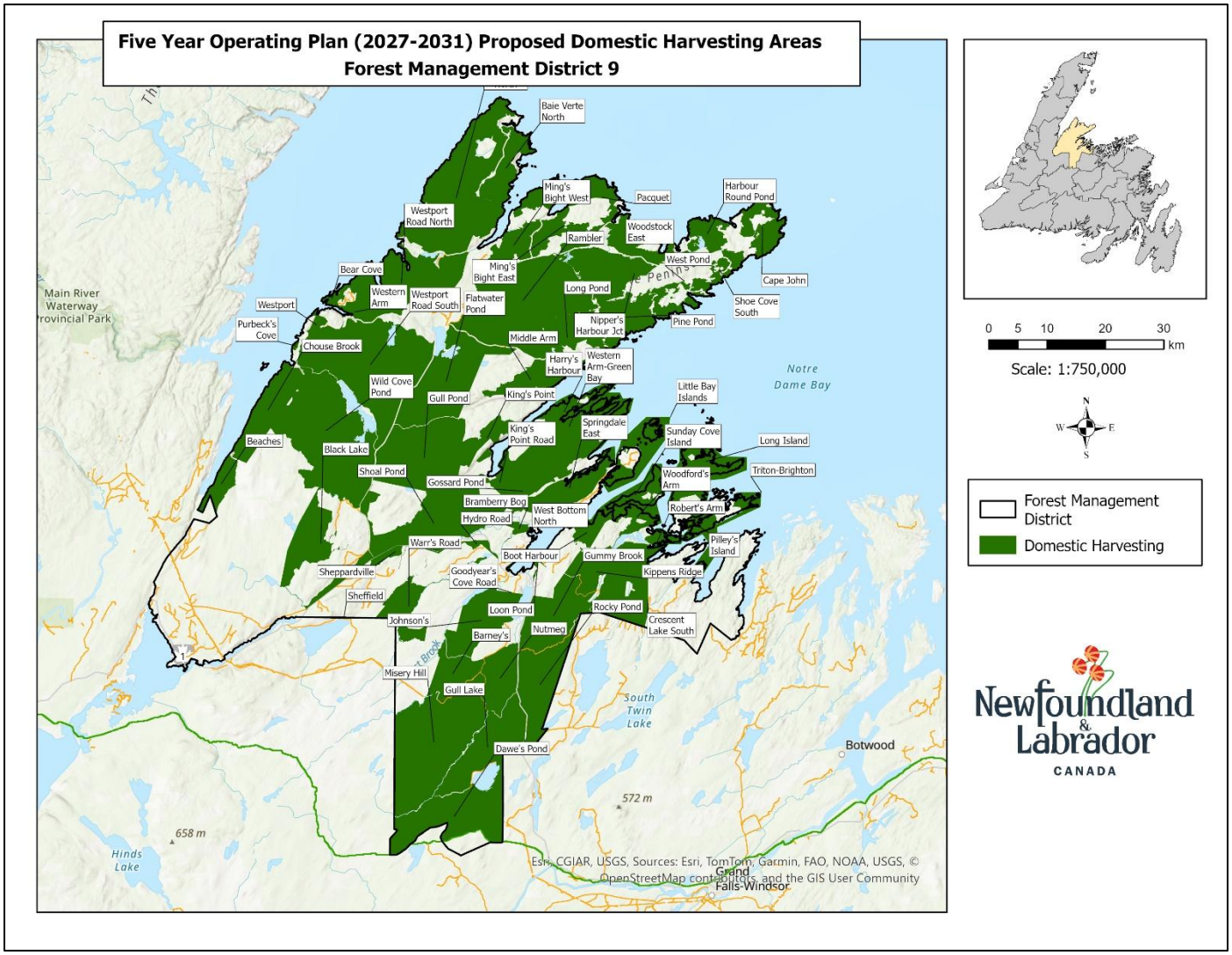

FIGURE 19: DOMESTIC OVERVIEW MAP DISTRICT 9

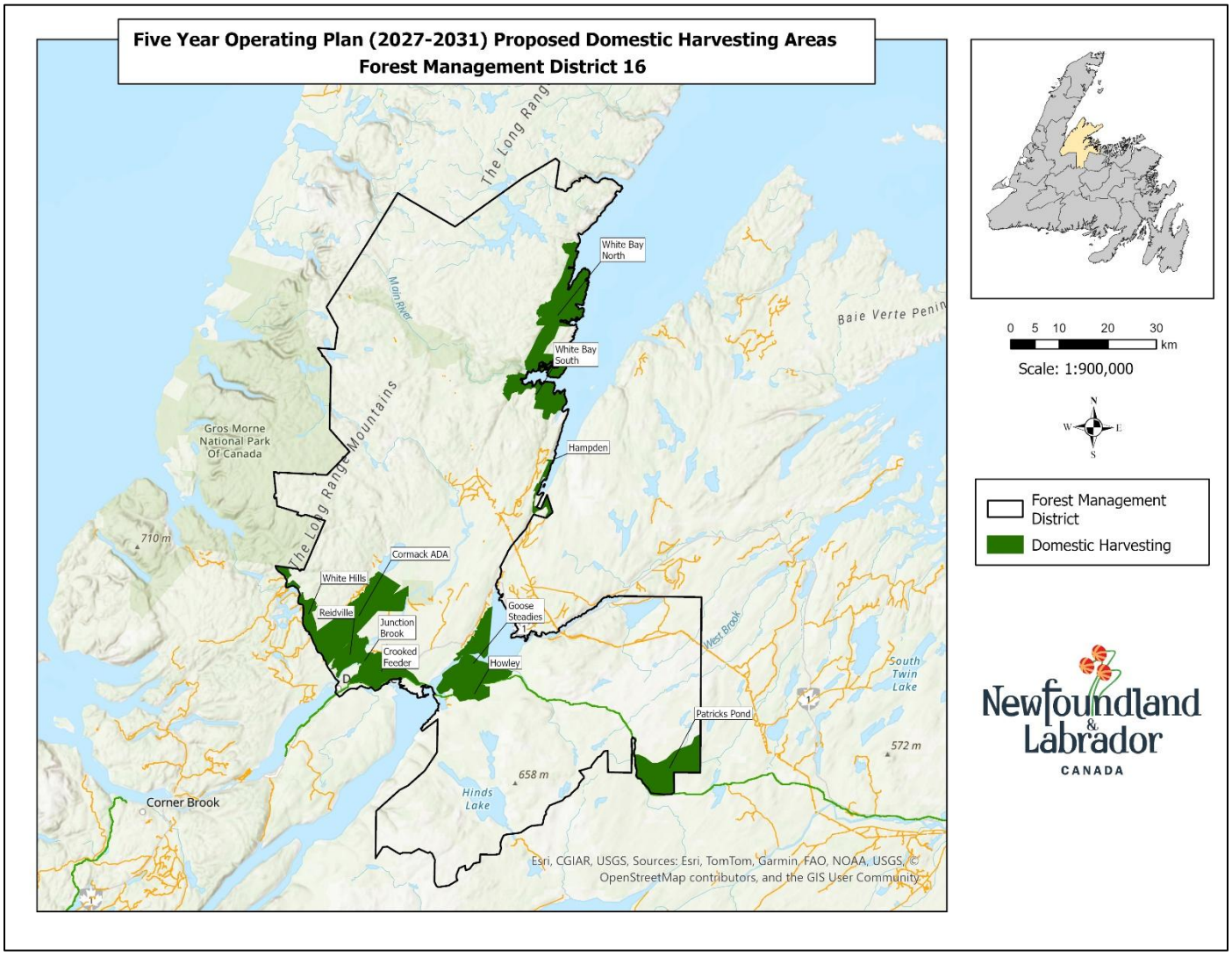

Figure 20: Domestic Overview Map District 16

Appendix 1C - Roads Overview Map District 9

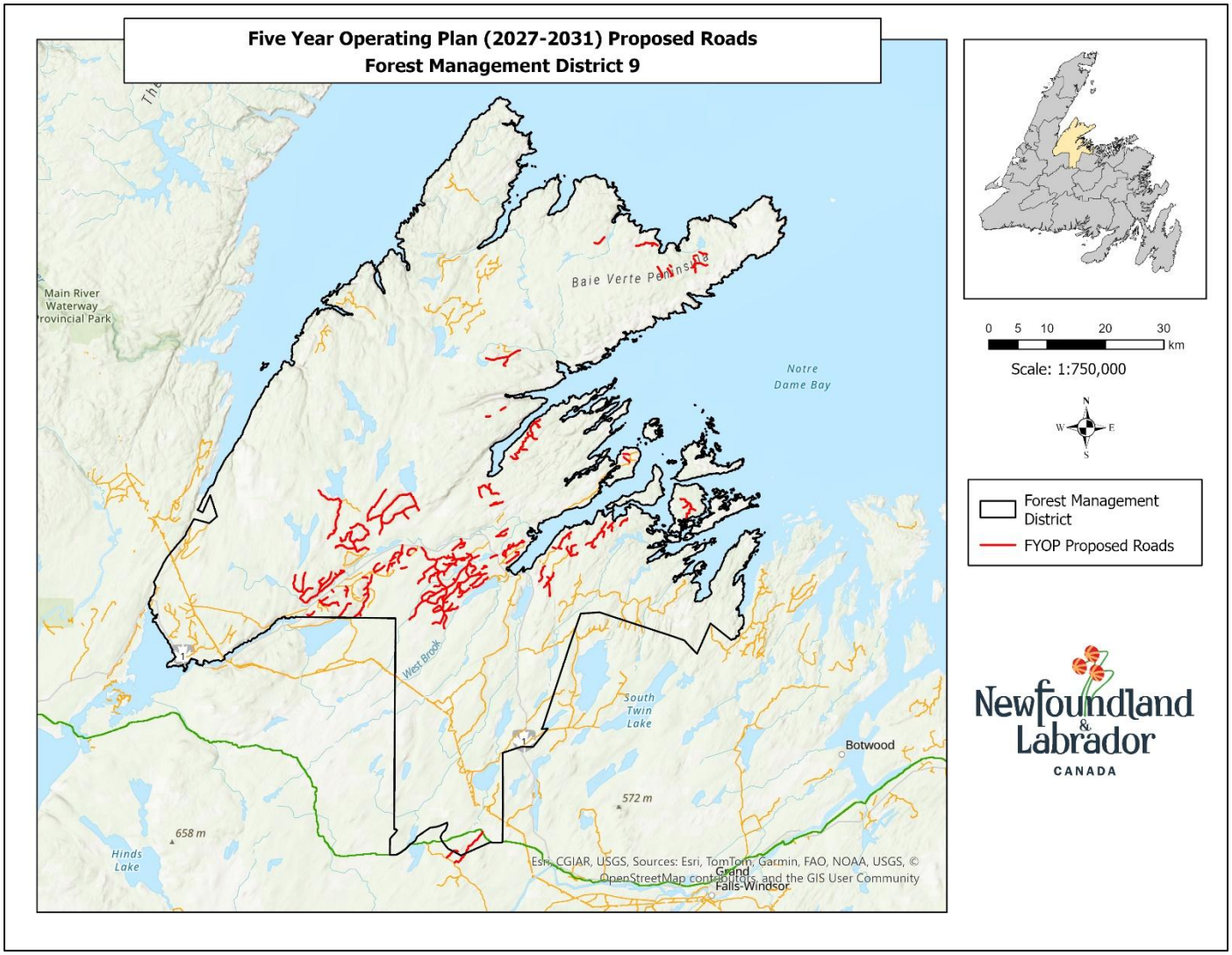

FIGURE 21: ROADS OVERVIEW MAP DISTRICT 9

Appendix 1D – Roads and Silviculture Overview Map District 16

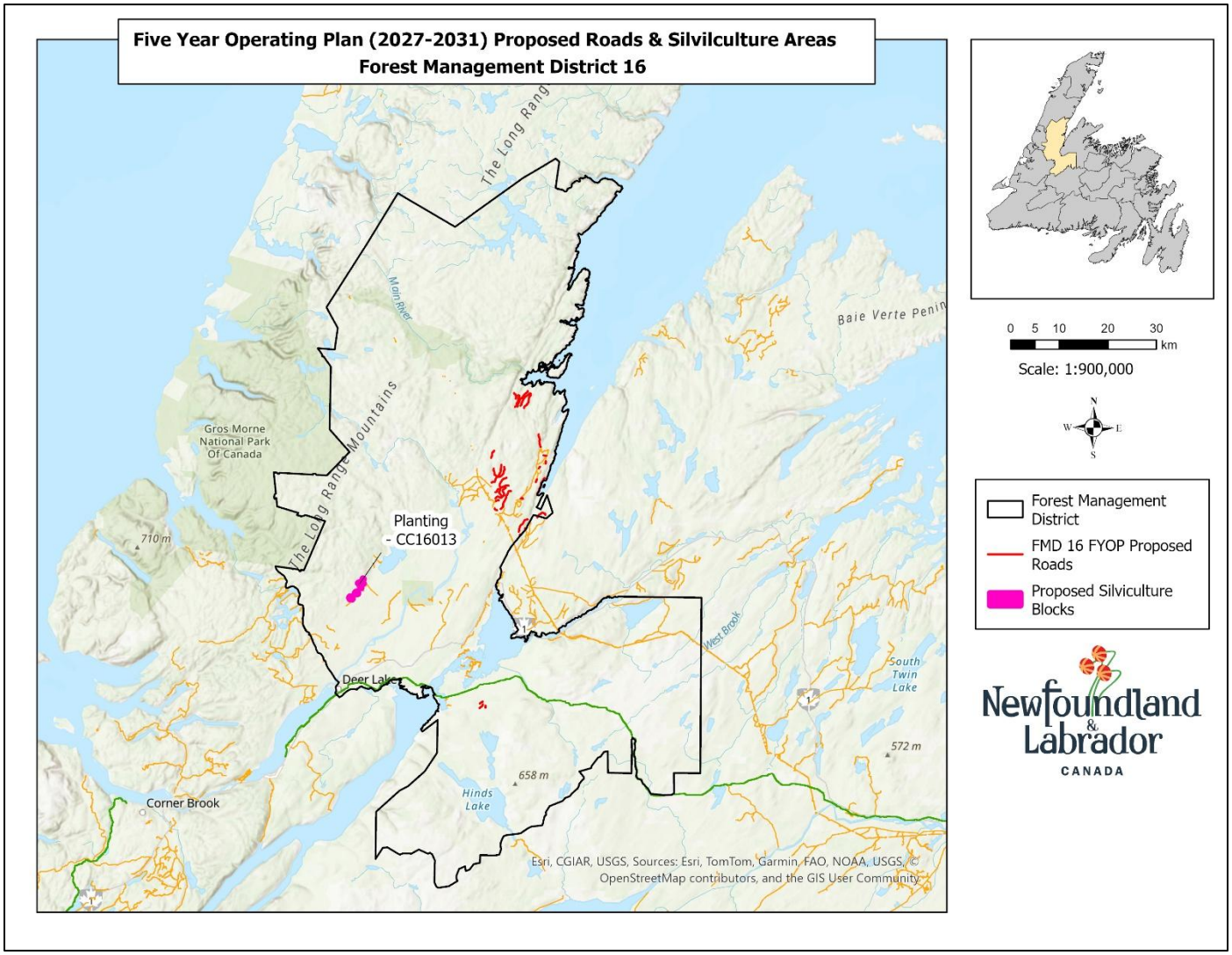

FIGURE 22: ROADS AND SILVICULTURE OVERVIEW DISTRICT 16

Appendix 2A – Commercial Operation Area Summaries District 09

Operating Area Name: Springdale South AOI	Operating Area: CC09001
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: Springdale South AOI operating area is located approximately 9 km south of the community of springdale and is east of Springdale junction and West of South Brook. The area is accessed via Three different forest access roads. The area is comprised of immature and matture balsam fir, black spruce, and white birch stands with a component of eastern larch and aspen. The area is predominately foresterd with many small and large ponds throughout the operating area. The topography ranges from flat to hilly. This area is apart of an approved AOI (Land For Agricultue Development). This operating area is located in the Central Newfoundland forest ecoregion.

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: 630

Inventory Hardwood Volume: 80

Proposed Softwood Volume: 550

Proposed Hardwood Volume: 80

Difference from Inventory to Proposed Volume: 13

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: 1.95km New Construction. 0km 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. This entire operating area is an approved AOI. Cabins and private land within operating area; 30 meter buffer will be maintained around approved cabin locations and private land will be excluded from approved harvested area.

Operating Area Name: Springdale North AOI	Operating Area: CC09002
NFS Inventory Map #:	NTS Map #: 12H/8-12H/9

Description of Area: Springdale North AOI operating area is located west of Hall's Bay & northwest along the Trans Canada highway along Indian River into the Springdale Area. This area is accessed off the Trans Canada highway, Route 390 & 391. Several access roads are available to access this area. The area is comprised of immature and matture balsam fir, black spruce, and white birch stands with a component of eastern larch and aspen. The area is predominately foresterd with many small and large ponds throughout the operating area. The topography ranges from flat to hilly. This area is apart of an approved AOI (Land For Agricultue Development). This operating area is located in the Central Newfoundland forest ecoregion.

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: 0

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 0

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

---

Primary Forest Access Road Construction: 2.26 km New Construction. 0.9 km Reconstruction

2 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. This entire operating area is an approved AOI. Cabins and private land within operating area; 30 meter buffers will be maintained around approved cabin locations and private land will be excluded from approved harvesting area

Operating Area Name: Sops Lake AOI	Operating Area: CC09003
NFS Inventory Map #:	NTS Map #: 2E/5

Description of Area: Sops Lake AOI operating area is located south-east of route 380 adjacent to Sop's Lake. Access to this operating area is via Kippens Ridge forest resource road from route 380 at a distance of approximately 15km. The area is comprised of immature and matture balsam fir and black spruce stands with a minor component of white birch, eastern larch and aspen. The area is predominately forested and the topography is flat to rolling. This operating area is located within the Central Newfoundland forest ecoregion.

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: 0

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 0

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

---

Primary Forest Access Road Construction: 0 km New Construction. 0 km Reconstruction

0

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. This entire operating area is an approved AOI. Cabins and private land within operating area; 30 meter buffer will be maintained around approved cabin locations and private land will be excluded from approved harvesting area. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile association to mitigiate any issues.

Operating Area Name: West Pond	Operating Area: CC09004
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: West Pond operating area is located between West Pond and Upper Burnt Berry Pond. The area is accessed via a forest access road leaving from the Trans Canada Highway near the southern end of Hall's Bay. The area is comprised of mature and immature balsam fir and black spruce stands with lesser amounts of white birch, eastern larch and a small component of white pine. The area is primarily forested with a small number of ponds throughout and the topography is rolling to hilly This operating area is located in the Central Newfoundland forest ecoregion.

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: 2500

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 2250

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

---

Primary Forest Access Road Construction: 7.8 km New Construction. 26.0 km Reconstruction

17 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues. Cabin areas around West Pond & Upper Burnt Berry; 30 meter buffer will be maintained on these cabin areas. 100 meter buffer on West Pond; The 100 meter buffer will be maintained along West Pond.

Operating Area Name: Saunders Pond	Operating Area: CC09005
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: Saunders Pond operating area is located approximately 1km west of West Pond. The area is accessed via a forest access road leaving from the Trans Canada Highway near the southern end of Hall's Bay. The area is comprised of balsam fir and black spruce stands with a smaller component of white birch, eastern larch, aspen and white pine. The area is primarily forested with a small number of ponds throughout and the topography is rolling to hilly This operating area is located in the Central Newfoundland forest ecoregion.

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: 5500

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 4950

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

---

Primary Forest Access Road Construction: 6.58 km New Construction. 34.64 km Reconstruction

28 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Airstrip	Operating Area: CC09006
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: Airstrip operating area is located approximatley 3km south of the community of Springdale. The area is accessed via a forest access road leaving from the Trans Canada Highway near the Springdale airstrip. The area is comprised of mature and immature black spruce stands with a component of white birch and aspen. The area is primarly forested. This operating area is located in the Central Newfoundland forest ecoregion.

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: 5150

Inventory Hardwood Volume: 300

Proposed Softwood Volume: 4635

Proposed Hardwood Volume: 270

Difference from Inventory to Proposed Volume: 13

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

---

Silviculture Activities: Reconnaissance surveys will be carried out on areas harvested and silviculture prescriptions will be determined once assessments have been completed

---

Primary Forest Access Road Construction: 4.38 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.

Operating Area Name: Hamilton's Pond	Operating Area: CC09007
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: Hamilton's Pond operating area is located approximately 5km south of the community of Springdale. The area is accessed via a forest access road leaving from the Trans Canada highway approximately 3km east of Springdale Junction. The area is comprised of immature and matture balsam fir and black spruce stands with a component of white birch and aspen. The area is primarily forested and the topography is flat to rolling to hilly. This operating area is located in the Central Newfoundland forest ecoregion.

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: 11000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 9900

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 8.87 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. Cabins & Private Land within operating area; 30 meter buffer will be maintained around approved cabin locations and private land will be excluded from approved harvesting area. 100 meter buffer on Halls Bay; 100 meter buffer will be maintained on Halls Bay.

Operating Area Name: Halls Bay South	Operating Area: CC09008
NFS Inventory Map #:	NTS Map #: 2E/5-12H/8

Description of Area: Halls Bay South operating area is located approximately 2 km north east of the community of South Brook. It is accessed via Halls Bay South Access road. The area is comprised of mature and immature balsam fir and black spruce stands with a component of white birch, red maple, eastern larch and aspen. The area is forested with small ponds scattered throughout with the terrain being hilly and rugged. This operating area is located in the Central Newfoundland forest ecoregion.

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: 19500

Inventory Hardwood Volume: 40

Proposed Softwood Volume: 17550

Proposed Hardwood Volume: 36

Difference from Inventory to Proposed Volume: 13

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: 7.62 km New Construction. 3.78 km Reconstruction

5 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. Green Bay Waste Management Dump in nearby vicinity. Put appropriate Buffers in place to mitigate any impacts on Dump. Appropriate buffers to be put on approved cabin locations.

Operating Area Name: Wellmans Steady	Operating Area: CC09009
NFS Inventory Map #:	NTS Map #: 2E/5-2E/12

Description of Area: Wellman's Steady opeating area is located approximately 6km southwest of Sunday Cove Island. It is accessed via Shoal Arm forsest access road. The area is comprised primarily of mature and immature balsam fir and black spruce stands with a component of white birch, red maple, eastern larch and aspen. The area is primarily forested with small ponds scattered throughout and the topography is hilly. This opeating area is located in the Central Newfoundland & North Shore Forest Ecoregions.

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: 12650

Inventory Hardwood Volume: 680

Proposed Softwood Volume: 11385

Proposed Hardwood Volume: 612

Difference from Inventory to Proposed Volume: 13

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: 3.58 km New Construction. 10.37 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. Cabins & Private Land within opeating area; 30 meter buffer will be maintained around approved cabin locations.

Operating Area Name: Loon Pond	Operating Area: CC09010
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: Loon Pond operating area is located approximately 1km East of the community of South Brook. It is accessed via Loon Pond forest access road. The area is comprised of mature and immature balsam fir and black spruce stands and a significant component of mature white birch stands and minor component of red maple, eastern larch and aspen. The area is primarily forested and the topography is hilly to rugged. This operating area is located within the Central Newfoundland forest ecoregion.

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: 12350

Inventory Hardwood Volume: 2300

Proposed Softwood Volume: 11115

Proposed Hardwood Volume: 2070

Difference from Inventory to Proposed Volume: 13

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: 6.25 km New Construction. 3.39 km Reconstruction

0

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. Cabin area within harvest area along Loon Pond. 30 meter buffer to be put on approved cabin locations.

Operating Area Name: 17 Mile Grade	Operating Area: CC09011
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: 17 Mile Grade operating area is located approximately 1km south east from the eastern end of Indian Pond. The area is accessed via 17 Mile Grade & Oxford's Grade forest access road that leaves from the Trans Canada Highway. The area is comprised of mature and immature balsam fir and black spruce stands with lesser amounts of aspen, eastern larch, and a small compnent of white pine. The area is primarily forested. This operating area is located in the Central Newfoundland forest ecoregion

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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: 22100

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 19890

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 3.83 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..NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Oxford's Grade	Operating Area: CC09012
NFS Inventory Map #:	NTS Map #: 12H/7-12H/8

Description of Area: Oxford's Grade operating area is approximately 6km west of Baie Verte Junction and North of the Trans Canada Highway. The area is accessed via four forest access roads leaving form the Trans Canada Highway. The area is comprised of mature and immature balsam fir, black spruce, and white birch stands with a small component of aspen, eastern larch and white pine. The area is primarily forested and the topgraphy is rolling to hilly. This area is located in the Central Newfoundland forest ecoregion.

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: 75000

Inventory Hardwood Volume: 875

Proposed Softwood Volume: 67500

Proposed Hardwood Volume: 787.5

Difference from Inventory to Proposed Volume: 13

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: 24.9 km New Construction. 14.68 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Upper Burnt Berry	Operating Area: CC09013
NFS Inventory Map #:	NTS Map #: 12H/8

Description of Area: Upper Burnt Berry operating area is located directly west of Burnt Berry Pond and is adjacent to Upper Burnt Berry Pond. The area is accessed via a forest access road leaving from the Trans Canada Highway near Springdale Junction. The area is comprised of mature and immature balsam fir and black spruce stands with lesser amounts of white birch, aspen, eastern larch and a small component of white pine. The area is primarly forested with a small number of ponds throughout and the topography is rolling to hilly. This operating area is located within the Central Newfoundland forest ecoregion.

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: 35000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 31500

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 9.33 km New Construction. 29.76 km Reconstruction

17 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues. Cabins within operating area, 30 meter buffer will be maintained around approved cabins

Operating Area Name: North Brook	Operating Area: CC09014
NFS Inventory Map #:	NTS Map #: 12H/7-12H/8

Description of Area: North Brook operating area is approximately 2km north west of Baie Verte Junction and north of the Trans Canada Highway. The area is accessed via an access road that is 1.5km north of the Baie Verte Junction. The area is comprised of mature and immature balsam fir, black spurce and white birch stands with lesser amounts of aspen, eastern larch and a small component of white pine. The area is has large areas of cutovers that were harvested between 2021 & 2024. There are still areas of forested land within the operating area. This operating area is located in the Central Newfoundland forest ecoregion.

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: 35300

Inventory Hardwood Volume: 258

Proposed Softwood Volume: 31770

Proposed Hardwood Volume: 232.19999999999999

Difference from Inventory to Proposed Volume: 13

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: 5.98 km New Construction. 0 km Reconstruction

0

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. 100 Meter Buffer will be maintained on Indian River. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues

Operating Area Name: Baie Verte Highway	Operating Area: CC09015
NFS Inventory Map #:	NTS Map #: 12H/7-12H/8-12H/9-12H-10

Description of Area: Baie Verte Highway operating area is located 4km north west of Baie Verte Junction. It is accessed via a forest access road that leave from Baie Verte highway. The area is comprised of immature and matture balsam fir and black spruce stands and a minor component of white birch and eastern larch. The area is primarily forested with many small ponds throughout operating area. The topography is generally hilly and the terrain is rugged. This operating area is located in the Central Newfoundland forest ecoregion.

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: 35000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 31500

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 4.9 km New Construction. 11.63 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Pittman's Pond	Operating Area: CC09016
NFS Inventory Map #:	NTS Map #: 12H/7-12H/9-12H/10

Description of Area: Pittmans Pond operating area is located directly south of Black Lake, the area is accessed via a forest access road leaving from the Baie Verte highway. The area is comprised of mature and immature balsam fir and black spruce stands with a component of white birch and eastern larch. The area is primarily forested with ponds, marshes and brooks throughout the area. Pittman's Pond operating area is located in the Central Newfoundland forest ecoregion.

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: 30000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 27000

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 0.41 km New Construction. 12.47 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. Licensed salmon river; 100 meter no cut buffer to be maintained on Black Brook. Cabins in the operating area; 30 meter buffer will be maintained around approved cabins

Operating Area Name: Bob's Head	Operating Area: CC09017
NFS Inventory Map #:	NTS Map #: 2E/12

Description of Area: Bob's Head operating area is located approximately 20km north of the community of Springdale. The area is accessed via Bob's Head forest access road leaving from the east end of Springdale. The area is comprised of mature black spruce and balsam fir stands with a component of white birch and aspen. The area is primarily forested and the topography is hilly to rugged. This operating area is located in the North Shore forest ecoregion.

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: 25000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 22500

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 2.43 km New Construction. 0 km Reconstruction

1 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. Private land adjacent to operating area boundary. Harvesting to occur within approved harvesting area only and private land to be excluded from harvesting.

Operating Area Name: Line Pond	Operating Area: CC09018
NFS Inventory Map #:	NTS Map #: 12H/9

Description of Area: Line Pond operating area is located approximately 4km northeast of the community of King's Point and is accessed via a forest access road leaving from the highway leading to Harry's Harbour. The area is comprised primarily of immature and mature balsam fir and black spruce stands with a minor component of white birch, red maple and aspen. The area is primarily forested with a few small ponds throughout and the topography is hilly. This operating area is located within the Central Newfoundland forest ecoregion.

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: 8300

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 7470

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 7.26km New Construction. 8.34km Reconstruction

11 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. Cabins in the operating area. 30 meter buffer will be maintained around approved cabin locations

Operating Area Name: Middle Arm Ridge	Operating Area: CC09019
NFS Inventory Map #:	NTS Map #: 12H/9

Description of Area: Middle Arm Ridge operating area is located southwest of the community of Middle Arm and is accessed via a forest access road leaving from the community of Middle Arm and an access road leaving from the Baie Verte highway. The area is comprised of mature and immature balsam fir stands with a component of white birch. The topography is hilly with marshes, ponds and barrens scattered throughout the area with the northern portion dropping steeply to Middle Arm Brook. This operating area is located in the Central Newfoundland forest ecoregion.

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: 4350

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 3915

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 1.76 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Bear Pond	Operating Area: CC09020
NFS Inventory Map #:	NTS Map #: 12H/9-12H/16

Description of Area: Bear Pond operating area is located approximately 6km west of the community of Burlington and is accessed via the Burlington highway. The area is comprised of mature and immatrue balsam fir and black spruce stands with a component of white birch. The topography is generally hilly and ground conditions are rugged. This operating area is located in the Central Newfoundland forest ecoregion.

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: 5750

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 5175

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 7.9 km New Construction. 0 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.

Operating Area Name: Gooseberry Waters	Operating Area: CC09021
NFS Inventory Map #:	NTS Map #: 2E/13

Description of Area: Gooseberry Waters operating area is located 3km west of the community of Harbour Round and 5km west of the community of Brent's Cove. This operating area can be accessed via a forest access road that leaves from La Scie Highway. The area is comprised of immature and mature balsam fir stands with a component of black spruce and white birch. The area is predominatley forested with many small ponds throughout. The topography of this area is generally hilly and the terrain is rugged. This operating area is located in the North Shore forest ecoregion.

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: 3550

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 3195

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 2.33 km New Construction. 2.4 km Reconstruction

2 Culverts. 1 Bridge

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: Armchair Pond	Operating Area: CC09022
NFS Inventory Map #:	NTS Map #: 2E/13

Description of Area: Armchair Pond operating area is located approximatley 4km north west of Snook's Arm and can be accessed via La Scie highway. The area is comprised of immature and mature balsam fir and black spruce stands. The operating area is predominatley forested with small ponds throughout. The topography is rolling to hilly and the terrain is very rugged. This operating area is located in the North Shore forest ecoregion.

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: 2150

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 1935

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 4.46 km New Construction. 0 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Goat Pond	Operating Area: CC09023
NFS Inventory Map #:	NTS Map #: 2E/13

Description of Area: Goat Pond opeating area is located approximately 4km north of the community of Snook's Arm and is accessed via Morey's forest access road off the highway to Snook's Arm. The area is comprised of mature balsam fir stands with a minor component of black spurce and white birch. The area is predominately forested with many ponds throughout and the topography is generally hilly. This operating area is located in the North Shore forest ecoregion.

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: 4550

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 4095

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 3.67 km New Construction. 3.39km 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: South West Pond	Operating Area: CC09024
NFS Inventory Map #:	NTS Map #: 2E/13

Description of Area: South West Pond operating area is located approximately 2km south west of the community of Woodstock and runs adjacent with the La Scie Highway and the highway to Woodstock runs through the operating area. The area can be accessed via La Scie highway or Woodstock highway. The area is comprised of mature & immature stands of balsam fir with a component of black spruce and white birch. The area is predominately forested with many small ponds throughout. The topography is rolling to hilly and the terrain is very rugged. This operating area is located in the transtition zone of the North Shore forest ecoregion and the Central Newfoundland forest ecoregion.

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: 1000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 900

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 2.21 km New Construction. 0 km Reconstruction

0

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. Cabins & private land within operating area; 30 meter buffer will be maintained around approved cabin locations & private land will be excluded from approved harvest area.

Operating Area Name: Burlington	Operating Area: CC09025
NFS Inventory Map #:	NTS Map #: 2E/13-12H/16

Description of Area: Burlington operating area is located approximately 2km northeast of the community of Burlington and is accessed via a forest access road leaving from Burlington. The area is comprised of mature balsam fir and black spruce with a component of white birch. The Topgraphy is generally hilly. Burlington operating area is located in the Central Newfoundland forest ecoregion

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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: 1800

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 1620

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

0

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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues. Burlington PWSA; Development permit will be obtained if harvesting to occur inside boundary

Operating Area Name: Long Pond	Operating Area: CC09026
NFS Inventory Map #:	NTS Map #: 12H/9

Description of Area: Long Pond operating area is located approximately 5km northwest of the community of Springdale and is adjacent to the highway to the community of King's Point. The ares is comprised of mature and immature balsam fir, black spruce and white birch. The area is primarily forested and the topgraphy is hilly. This operating area is located in the Central Newfoundland forest ecoregion.

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: 8100

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 7290

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 5.51 km New Construction. 5.18 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. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues. Cabins within operating area, 30 meter buffer will be maintained around approved cabins

Operating Area Name: Skull Hill	Operating Area: CC09027
NFS Inventory Map #:	NTS Map #: 12H/1-12A/16

Description of Area: Skull Hill operating area is located approximately 12km northwest of the community of Badger. The area jis accessed via Millertown Jct forest access road or the provincal Trailway. The area is comprised of mature black spruce and 1987 Pre-Commerical Thinnings. The area is primarily forested with intermittentent bog land. The topgraphy is generally rolling.

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: 9100

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 8190

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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. 10.45 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. Provincal Trailway: 100 meter buffer will be maintained on Provincal Trailway.

Operating Area Name: Fish Hatchery	Operating Area: CC09028
NFS Inventory Map #:	NTS Map #: 12H/8-12H/9

Description of Area: Fish Hatchery opeating area is located approximately 4 km north-north east of Baie Verte Junction. The area is accessed via a forest access road leaving from the Baie Verte highway. The area is comprised of mostly immature balsam fir and black spruce stands with a component of white birch and eastern larch, there are mature residual softwood stands scattered throughout. The are is primarily forested with many streams and small ponds throughout. The topography is generally hilly. This operating area is located in the Central Newfoundland forest ecoregion.

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: 17000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 15300

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 12.31 km New Construction. 19.45 km Reconstruction

8 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. Cabins within operating area; 30 meter buffer will be maintained around approved cabin locations. Licensed salmon river; 100 meter no cut buffer to be maintained on Black Brook.

Operating Area Name: Hampden Highway	Operating Area: CC09029
NFS Inventory Map #:	NTS Map #: 12H/7-12H/10

Description of Area: Hampden Highway operating area is located south of Hampden along route 421 and route 420 far as rushy pond. The area is comprised of mature & immature balsam fir and white spruce stands. The area is predominately forested with bogs and scrub throughout area. The topography is rolling to steep and this operating area is located in the Central Newfoundland forest ecoregion.

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: 27500

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 24750

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

0

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. Cabins within operating area; 30 meter buffer will be maintained around approved cabin locations.

Wildlife Division requires that harvesting activity occur outside the caribou calving period (April 15 to July 15). Road will also be decommisoned after harvest is finished

Operating Area Name: East Pond	Operating Area: CC09031
NFS Inventory Map #:	NTS Map #: 12H/15

Description of Area: East Pond operating area is located 3km east of the resettled community of Bear Cove, White bay and is accessed via a forest access road leaving from the Westport highway. The area is comprised of mature balsam fir and black spruce stands with a component of white birch and eastern larch. The area is primarily forested with ponds and brooks throughout the area and the topography is hilly and the ground conditons are rugged in places. This operating area is located in the Central Newfoundland forest ecoregion.

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: 2000

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 1800

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

0

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: Penney's Mill	Operating Area: CC09032
NFS Inventory Map #:	NTS Map #: 12H/15-12H/16

Description of Area: Penney's Mill operating area is located approximately 8km east of the community of Westport and is accessed via the Westport highway. The area is comprised of mature balsam fir and black spruce stands. The area is primarily forested and the topography is hilly and the terrain is rugged. This operating area is located in the Central Newfoundland forest ecoregion

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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: 2350

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 2115

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

0

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: Pilley's Island	Operating Area: CC09033
NFS Inventory Map #:	NTS Map #: 02E/12

Description of Area: Pilley's Island operating area is located approximately 1.5 km north of the community of Pilley's Island. The area is comprised of balsam fir and black spruce stands and a portion of the area is comprised of 1997-1998 Pre Commerical Thinnings. The area is primarily forested and the topography is generally flat to rolling

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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: 7500

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 6750

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 7.73 km New Construction. 0 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. Harvest Area falls within Pilley's Island Municipal Boundary. Town of Pilley's Island will be consulted before any harvesting is to take place.

Operating Area Name: Gillard's Lake	Operating Area: CC09034
NFS Inventory Map #:	NTS Map #: 12H/7

Description of Area: Gillard's Lake operating area is located approximately 6km west of Baie Verte Jct . The area is accessed via a forest access road located approximately 1.5 km North of Baie Verte Jct. The area is comprised of mature and immature balsam fir, black spurce and white birch stands with lesser amounts of aspen, eastern larch and a small component of white pine. This operating area is located in the Central Newfoundland forest ecoregion.

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: 35000

Inventory Hardwood Volume: 190

Proposed Softwood Volume: 31500

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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: 10.32 km New Construction. 18.26 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. 100 Meter Buffer will be maintained on Indian River. Main Tributatorys that flow into Indian River will also maintain a 100 meter buffer. NLSF Licensed Trail; 20 meter no harvest buffer to be maintained along trail. Consultation with local snowmobile assocation to mitigate any issues.

Operating Area Name: Kippins Pond AOI	Operating Area: CK09030
NFS Inventory Map #:	NTS Map #: 2E/5

Description of Area: Kippens Pond AOI operating area is located south-east of route 380 and adjacent to Kippins Pond. This operating area is accessed via Kippens Ridge resource road from route 380 at a distance of approximately 8 km. The area is comprised of immature and mature black spruce with a component of white birch. The area is primarily forested with Tommy's Arm river running through the middle of the operating area. The topgraphy is generally flat to rolling and this operating area is located in the Central Newfoundland forest ecoregion.

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: 0

Inventory Hardwood Volume: 0

Proposed Softwood Volume: 0

Proposed Hardwood Volume: 0

Difference from Inventory to Proposed Volume: 13

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

0

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. This entire operating area is an approved AOI. Cabins and private land within operating area; 30 meter buffer will be maintained around approved cabin locations and private land will be excluded from approved harvesting area.

Appendix 2B – Commercial Operation Area Summaries District 16

Operating Area Name: Deadwater Brook	Operating Area: CC16013
NFS Inventory Map #: 5032, 5021, 5022, 5023, 5012	NTS Map #: 12H/6

Description of Area: This area is located east of the Viking Trail (Route 430) and north of Deadwater Brook (Stream). The terrain is generally flat to rolling. The forest consists mainly of mature balsam fir with a spruce and white birch component and is fragmented with cultivated farm land, bogs and scrub. All of the lands to the south of Deadwater Brook are alienated for agriculture use which precludes any long term forest management with land being removed from the forest land base on a continuous basis. There will be no more harvesting in this area, all planned activities will focus on reforesting harvested areas and removing resource roads that are no longer required for operational forestry.

Harvesting Activities: No Planned Harvesting Activities

Inventory Softwood Volume: 51180
Inventory Hardwood Volume: 5662
Proposed Softwood Volume: 0
Proposed Hardwood Volume: 0
Difference from Inventory to Proposed Volume: 100.00
Rationale for Difference: All operational forest stands in this area have been harvested, remaining inventory falls inside no cut buffers, inassessible, or too smal to harvest commercially.

Silviculture Activities: 86 hectares of Planting in areas that were previously harvested. Planting activities along 4km of resource following its decommissioning.

Primary Forest Access Road Construction: Approximately 4km of Resource road on the Southern part of the block is to be decommssioned and fully restored
2 Bridges and all culverts are to be removed during road decommissioning
Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit.

Operating Area Name: Little Goose	Operating Area: CC16015
NFS Inventory Map #: 6034, 6131	NTS Map #: 12H/2, 12H/3

Description of Area: This Area is located East of the Town of Howley and west of Little Goose Pond. The Terrain consists of small rolling hills and flat areas. Bogs are spread throughout the area. Forested area consist of immature and mature Black Spruce stands with Larch and White Birch mixed stands

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Harvesting Activities: This area will be harvested commercially for sawlogs and puplwood using both mechanical and conventional means with wood hauled to road side by forwarders and occisonally skidders.

Inventory Softwood Volume: 40774
Inventory Hardwood Volume: 1659
Proposed Softwood Volume: 40751
Proposed Hardwood Volume: 1648
Difference from Inventory to Proposed Volume: 0.08
Rationale for Difference: All operational forest stands in this area have been harvested, remaining inventory falls inside no cut buffers, inassessible, or too smal to harvest commercially.

Silviculture Activities:

Primary Forest Access Road Construction: 2.15km of New Construction
3 Culverts will be required for stream crossings
Non-Timber Considerations and Mitigations: Goose Brook will maintain a 100m no cut buffer, all other waterbodies (Streams and ponds) are to maintain a 30m buffer.

Operating Area Name: Faulkner's Extension	Operating Area: CC16016
NFS Inventory Map #: 4111, 5141	NTS Map #: 12H/7, 12H/10

Description of Area: This area is located in White Bay west of Route 421 and the town of Hampden as well as east of Routhe 420. The terrain is steep especially along Route 421 and West Hampden River. Forest land in this area consists of Mature mixed Balsam fir, Black Spruce and White birch forest stands with some. Immature forest stands are present near the West hampden River and southern portion of the area.

Harvesting Activities: This area will be harvested commercially for sawlogs and puplwood using both mechanical and conventional means with wood hauled to road side by forwarders and occisonally skidders.

Inventory Softwood Volume: 112880
Inventory Hardwood Volume: 10658
Proposed Softwood Volume: 61365
Proposed Hardwood Volume: 5443
Difference from Inventory to Proposed Volume: 45.92
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater. 1 PPWSA have been removed

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failure since balsam fir is accepted as the most desired species for the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: 7.0km of New Construction
2 Culverts will be required for stream crossings
Non-Timber Considerations and Mitigations: No Cutting is to occur within the Elliot's Brook Public Water Supply, all other streams and ponds will maintain a 30m buffer.

Operating Area Name: Turners Ridge	Operating Area: CC16017
NFS Inventory Map #: 4024, 4034, 4111, 4121, 4131	NTS Map #: 12H/10, 12H/11

Description of Area: This area is located in White Bay bordering Highway 420 to the west of Route 420 Sop's Arm Road. This area is mainly undeveloped with very little road access currently esthablished. The terrain consists of steep and rolling hills throughout the entire area. Pre-Commercial thinnings have been esthablished near Gales Brook. The remaining forest sconsists of Mature and Over Mature Softwood and Hardwood species in both pure and mixed forest stands.

Harvesting Activities: This area will be harvested commercially for sawlogs and puplwood using both mechanical and conventional means with wood hauled to road side by forwarders and occisonally skidders.

Inventory Softwood Volume: 251712
Inventory Hardwood Volume: 21455
Proposed Softwood Volume: 56328
Proposed Hardwood Volume: 8316
Difference from Inventory to Proposed Volume: 76.34
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failure since balsam fir is accepted as the most desired species for the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: 28.7km of New Construction
3 Bridges and 5 culverts are required for Stream Crossings
Non-Timber Considerations and Mitigations: A 30m bno cut buffer will be maintained on all streams and waterbodies within the area boundary.

Operating Area Name: Clam Pond	Operating Area: CC16018
NFS Inventory Map #: 4111, 4121, 4122, 4131, 4132	NTS Map #: 12H/10

Description of Area: This area is located in White Bay South of Route 420 -Sops Arm Road. The terrain is rolling to steep and consists of soils ranging from shallow to moderately deep. The forest consists mainly of mature to over mature balsam fir with a spruce and white birch component and is fragmented with bogs and scrub.

Harvesting Activities: This area will be harvested commercially for sawlogs and pulpwood using mostly conventional means with the wood hauled to road side by forwarders and occasionally skidders.

Inventory Softwood Volume: 109517
Inventory Hardwood Volume: 6953
Proposed Softwood Volume: 76591
Proposed Hardwood Volume: 5108
Difference from Inventory to Proposed Volume: 29.85
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures since balsam fir (bF) is accepted as the most desired species for the site and past history indicate sufficient stocking to bF after harvesting. However, any cutovers with insufficient stocking or indications of moderate to severe balsam wooly aphid damage in the area will be site prepared using prescribe bum, then planted to black spruce or white spruce.

Primary Forest Access Road Construction: 3.7km of Construction
1 bridge and 1 culvert are required fror stream crossings
Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit.

Operating Area Name: Saltwater Pond	Operating Area: CC16019
NFS Inventory Map #: 4122, 4132, 4142	NTS Map #: 12H/10

Description of Area: This area is accessed in White Bay South by Route 420 - Sops Ann Road and is located to the north of Hampden. The terrain is rolling to steep and consists of soils ranging from shallow to moderately deep. The forest consists mainly of over mature balsam fir with a spruce and white birch component and is fragmented with bogs and scrub.

Harvesting Activities: This area will be harvested commercially for sawlogs and pulpwood using mostly conventional means with the wood hauled to road side by forwarders and occasionally skidders. The operations will occur mainly during the summer and fall. Trucking will be do

Inventory Softwood Volume: 209698
Inventory Hardwood Volume: 17193
Proposed Softwood Volume: 192145
Proposed Hardwood Volume: 16628
Difference from Inventory to Proposed Volume: 7.99
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: One of the issues to be addressed in this area is softwood regeneration failures. Balsam fir (bF) is accepted as the most desired species for the site and past history indicate sufficient stocking to bF after harvesting. However, any cutovers with insufficient stocking or indications of moderate to severe balsam wooly aphid damage the area will be site prepared using prescribed bum then planted.
Also, in areas of past operations where overstocking is a problem and aphid is not a limiting factor to yield, PCT will be prescribed to concentrate growth on crop trees.

Primary Forest Access Road Construction: 3.0km of Construction
2 Bridges required
Non-Timber Considerations and Mitigations: 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit. 100 meter no cut buffer along the coast line for possible Archeological sites.

Operating Area Name: Natlins Pond	Operating Area: CC16020
NFS Inventory Map #: 4141	NTS Map #: 12H/10

Description of Area: This area is located to the south of Pollards Point and east of Doucers Brook. The terrain consists of rolling hills with steep cliffs and slopes along the coast.Pre-Commercial Thinnings have been esthablished throughout the operating area especially along Pinksens Resource Road.

Harvesting Activities: This area will be harvested commercially for sawlogs and pulpwood using both mechanical and conventional means with wood hauled to road side by forwarders and occisonally skidders.

Inventory Softwood Volume: 67516
Inventory Hardwood Volume: 5877
Proposed Softwood Volume: 25842
Proposed Hardwood Volume: 2450
Difference from Inventory to Proposed Volume: 61.45
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failure since balsam fir is accepted as the most desired species for the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: 8.7km of road reconstruction and 8.4km of New Construction proposed
2 bridges and 1 culvert required
Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit. No cutting is to occur in the George Rick's Pond and Country Cove Pond public water supply areas

Operating Area Name: Grassy Cove	Operating Area: CC16021
NFS Inventory Map #: 3312, 3322	NTS Map #: 12H/15

Description of Area: This area is located north of Sop's Arm in White Bay. The terrain is rough on steep ground and consists mostly of shallow soils. The forest consists mainly of over mature balsam fir with a spruce and white birch component and is fragmented with bogs, barrens and scrub.

Harvesting Activities: This area will be harvested commercially for sawlogs and pulpwood using both mechanical and conventional means with wood hauled to road side by forwarders and occisonally skidders.

Inventory Softwood Volume: 78978
Inventory Hardwood Volume: 10419
Proposed Softwood Volume: 57058
Proposed Hardwood Volume: 6549
Difference from Inventory to Proposed Volume: 28.85
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3/ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failure since balsam fir is accepted as the most desired species for the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None
None
Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit. 100 meter no cut buffer along the coast line for posible Archeological sites.

Operating Area Name: Gold Cove	Operating Area: CC16022
NFS Inventory Map #: 4122	NTS Map #: 12H/10

Description of Area: This area is located in White Bay near Gold Cove, and north Hampden (Town). The terrain is steep especially along the coast of White Bay. The Forest stands in this area consist of mature softwood and hardwood species.

Harvesting Activities: This area will be harvested commercially in the winter for sawlogs and firewood using both mechanical and conventional means. Wood will be harvested and hauled roadside using snowmobiles.

Inventory Softwood Volume: 1653
Inventory Hardwood Volume: 1563
Proposed Softwood Volume: 1653
Proposed Hardwood Volume: 1563
Difference from Inventory to Proposed Volume: 0.00
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3/ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failure since balsam fir is accepted as the most desired species for the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None
None
Non-Timber Considerations and Mitigations: 100 meter no cut buffer along the coast line for posible Archeological sites.

Operating Area Name: Rocky Brook	Operating Area: CC16023
NFS Inventory Map #: 4111, 4112, 5142	NTS Map #: 12H/7, 12H/10

Description of Area: This area is located south of White Bay and Rocky Brook (Stream), and east of Hampden (Town).

Harvesting Activities: This area will be harvested commercially for sawlogs and pulpwood using both mechanical and conventional means with wood hauled to road side by forwarders and occisonally skidders.

Inventory Softwood Volume: 15800
Inventory Hardwood Volume: 5925
Proposed Softwood Volume: 8212
Proposed Hardwood Volume: 845
Difference from Inventory to Proposed Volume: 58.31
Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3/ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failure since balsam fir is accepted as the most desired species for the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None
None
Non-Timber Considerations and Mitigations: A 30m buffer will be maintained on all streams and waterbodies within the area boundary

Appendix 2C – Domestic Operation Area Summaries District 09

Operating Area Name: Hardwood and Softwood Domestic Cutting Areas District 09	**Operating Area #:** CC09501,CC09502,CC09503,CC09504, CC09505,CC09506,CC09507,CC09508, CC09509,CC09510,CC09511,CC09512, CC09513,CC09514,CC09515,CC09516, CC09517,CC09518,CC09519CC09520, CC09521,CC09522,CC09523,CC09524, CC09525,CC09526,CC09527,CC09528, CC09529,CC09530,CC09531,CC09532, CC09533,CC09534,CC09535,CC09536, CC09537,CC09538,CC09539,CC09540, CC09541,CC09542,
Domestic Cutting Area & Map #: 9-1,9-2,9-3, 9-4,9-5,9-6,-9-7,9-8,9-9,9-10,9-11,9-12,9-13,9-14,9-15,9-16,9-17,9-18,9-19,9-20,9-21,9-22,9-23,9-24,9-25,9-26,9-27,9-28,9-29,9-30,9-31,9-32,9-33,9-34,9-35,9-36,9-37,9-38,9-39,9-40,9-41,9-42	**NTS Map #**:12I/1,2L/4,2E/13,12H/16,12H/9, 12H/10,12H/7,12H/8,2E/5,2E/12, 12A/16,12H/1

Description of Area:

These listed parcels of crown land are located throughout forest management district (FMD) 09. The areas are established throughout the zone near the communities and cabin areas in order to accommodate the fuelwood requirements of home owners within communities and cabins within cottage development areas. The terrain is generally rolling to hilly and located within the North Shore Forest Ecoregion & Central Newfoundland Forest Ecoregion.

Harvesting Activities:

Domestic harvesting of softwood, hardwood and non-commercial species including larch and dead/blowdown timber will occur within these areas. Domestic harvesting will target mainly softwood species within these areas but will also include a significant volume of hardwood and non-commercial species such as larch. Domestic wood harvesting is usually carried out during winter months utilizing chainsaws with the timber being extracted using snow vehicles. There is some harvesting during non-winter months using ATV’s to extract the timber.

Proposed 5 year domestic softwood harvest: 98000 m3 Proposed 5 year domestic hardwood harvest: 10000 m3

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:

None

Non Timber Considerations and Mitigations:

PWSA- Development permits within approved PWSA will be obtained if domestic areas fall within protected water supply areas

NLSA Trails-20 meter no cut buffer will be maintained on all NLSA licensed trails.
Hiking Trails-20 meter no cut buffer will be maintained on approved hiking trails

Operating Area Name: Hardwood Domestic Cutting Areas District 09	**Operating Area #:** CK09543, CK09544, CK09545, CK09546,CK09547,CK09548 CK09549,CK09550,CK09551,CK09552,CK09553,CK09554,CK09555,CK09556,CK09557,CK09558,CK09559,CK09560,CK09561,CK09562
Domestic Cutting Area & Map #: CK9-43,CK9-44,CK9-45,CK9-46,CK9-47,CK9-48,CK9-49, CK9-50,CK9-51,CK9-52,CK9-53,CK9-54,CK9-55,CK9-56,CK9-57,CK9-58,CK9-59,CK9-60,CK9-61,CK9-62	**NTS Map #: #**:12I/1,2L/4,2E/13,12H/16,12H/9,12H/10,12H/8,2E/5,12H/1, 12H/15

Description of Area:

These listed parcels of CBPP Limits land are located throughout forest management district (FMD) 09. The areas are in close proximity to the communities and cabin areas throughout the zone in order to accommodate the fuelwood requirements of the general public. The terrain within the areas that still have mature timber are generally rolling to hilly. These Domestic operating areas are located within the North shore Forest Ecoregion & Central Newfoundland Forest Ecoregion.

Harvesting Activities:

Domestic harvesting will occur in these areas. Areas on CBPP Limits that are not a part of an approved exchange/transfer agreement will target hardwoods and non-commercial species including larch and dead/blowdown timber. There is a possibility that the domestic permits for these areas will be issued by CBPP so some softwood harvesting may occur if this happens. Domestic wood harvesting is usually carried out during winter months utilizing chainsaws with the timber being extracted using snowmobiles. There is some harvesting during non-winter months using ATV's to extract the timber.

Proposed 5 year domestic softwood harvest: 0m3
Proposed 5 year domestic hardwood harvest: 20000 m3
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:
None

Non Timber Considerations and Mitigations:

PWSA- Development permits within approved PWSA will be obtained if domestic areas fall within protected water supply areas
NLSA Trails-20 meter no cut buffer will be maintained on all NLSA licensed trails.
Hiking Trails-20 meter no cut buffer will be maintained on approved hiking trails.

Appendix 2D – Domestic Operation Area Summaries District 16

Operating Area Name: Patrick's Pond	Operating Area: CC16501
NFS Inventory Map #: 3114, 6124, 6211, 6221, 7344, 7441	NTS Map #: 12A/15, 12A/16, 12H/2, 12H/1

Description of Area: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter. The area itselfis bordered by the T'Railway to the west and southern boundaries of the area and Misery Hill located east of the area. The area is mainly wet and boggy with streams such as Mary March's Brook and King's Brook running through the middle of the area. The forest stands here are a mix of Mature and Overmature Black Spruce and Balsam Fir with some Larch along the streams and wetlands.,

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Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 87160

Inventory Hardwood Volume: 7178

Proposed Softwood Volume: 86963

Proposed Hardwood Volume: 6880

Difference from Inventory to Proposed Volume: 0.52

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures to black spruce as this is a spruce site. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: A 30m buffer from the water's edge will be esthablished on all streams and ponds within the area. King Brook is a Salmon river and will maintain a 100m buffer from the water's edge.

Operating Area Name: Howley	Operating Area: CC16502
NFS Inventory Map #: 6034, 6044	NTS Map #: 12H/3

Description of Area: This area is located east of Howley and is bordered by the T'Railway to the north. The terrain contains a mix of rolling hills and flat areas with forested land and wetlands spread throughout the area. Goose Brook runs from the south portion of the area and pass the northern boundary.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 66275

Inventory Hardwood Volume: 2891

Proposed Softwood Volume: 66126

Proposed Hardwood Volume: 2883

Difference from Inventory to Proposed Volume: 0.23

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures to black spruce as this is a spruce site. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 100 meter no cut buffer along the T'Railway. No Cut Zone designated between NL Hydro and the community of Howley. Domestic permit maps will include the following statement: "If using equipment other than ATV's/snowmobiles for wood extraction, you should contact the Parks and Natural Areas Division of the Dept. of Enviroment and Climate Change to see if a permit is required.

Operating Area Name: Goose Steadies	Operating Area: CC16503
NFS Inventory Map #: 5014, 5024, 5111, 5121, 6033, 6034, 6043, 6044	NTS Map #: 12H/2, 12H/3, 12H/6, 12H/7

Description of Area: This area is located north of Howley and is bordered by the T'Railway to the south. It is also North east of Grand Lake and west of Sandy Lake. The terrain is mainly flat and wet (Bogs) with forest stands ranging from immature to over mature Balsam fir and Black Spruce. Cabin cummunities such as: Lunch Point, Birchy Cove, Boot Brook and others falls within the area boundaries. Route 401 (Howley Highway) runs from north to south through this area.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 99439

Inventory Hardwood Volume: 5215

Proposed Softwood Volume: 90291

Proposed Hardwood Volume: 4710

Difference from Inventory to Proposed Volume: 9.22

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures to black spruce as this is a spruce site. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 100 meter no cut buffer along the T'Railway. Domestic permit maps will include the following statement: "If using equipment other than ATV's/snowmobiles for wood extraction, you should contact the Parks and Natural Areas Division of the Dept. of Enviroment and Climate Change to see if a permit is required.

Operating Area Name: Crooked Feeder	Operating Area: CC16504
NFS Inventory Map #: 5012, 6031, 6032, 6033, 6041, 6042, 6043	NTS Map #: 12H/3, 12H/6

Description of Area: This area is located to the south of the Humber River, east of the towns of Deer Lake and Reidville, and north of Humber Canal and Grand Lake. Junction Brook (Stream) flows through this area from Grand Lake and into the Upper Humber River. The terrain is mainly flat except around Junction Brook (Stream)

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 54182

Inventory Hardwood Volume: 3799

Proposed Softwood Volume: 42427

Proposed Hardwood Volume: 2882

Difference from Inventory to Proposed Volume: 21.86

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures to black spruce as this is a spruce site. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: Domestic permit maps will include the following statement: "If using equipment other than ATV's/snowmobiles for wood extraction, you should contact the Parks and Natural Areas Division of the Dept. of Enviroment and Climate Change to see if a permit is required. Junction Brook Bog Management unit is delineated as a no cut zone with a 50 meter no cut buffer around the management unit. 20 meter no cut buffer on the NLSF licenced trails. 100 meter no cut buffer is placed along the T'Railway. 200 meter no cut buffer is in place around CBPPL house which is located within this boundary.

Operating Area Name: Junction Brook	Operating Area: CC16505
NFS Inventory Map #: 6042	NTS Map #: 12H/3

Description of Area: This area is located to the south of the Humber River, North of the Trans-Canada Highway, and east of the town of Reidville. Forest harvesting is limited in this area and the northern side of Juction Brook (Stream) is occupied with wetland bogs and farmland while the south side of the stream is being develop

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Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 14188

Inventory Hardwood Volume: 1036

Proposed Softwood Volume: 4077

Proposed Hardwood Volume: 438

Difference from Inventory to Proposed Volume: 70.34

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures to black spruce as this is a spruce site. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 30 Meter buffer on all streams and pond within the boundaries of the domestic area.Endangered tree species are present along Junction Brook (Stream), no cutting of Red Pine, White Pine, or Black Ash.

Operating Area Name: Reidville	Operating Area: CC16506
NFS Inventory Map #: 5011, 5012, 6041, 6042	NTS Map #: 12H/3, 12H/6

Description of Area: This area is located east of the Viking Trail (Route 430), north of the Humber River and south of the municipality of Cormack. The area contains the municipality of Reidville within its boundary. The terrain is mainly flat with a some wetland bogs in the northern section of the area. The forest consists of mature and over-mature Black Spruce and Balsam Fir stands.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 58252

Inventory Hardwood Volume: 4866

Proposed Softwood Volume: 39134

Proposed Hardwood Volume: 2162

Difference from Inventory to Proposed Volume: 34.57

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failures to black spruce as this is a

spruce site. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: The Upper Humber is to maintain a 100m no cut buffers, all other waterbodies (Streams and ponds) are to maintain a 30m buffer.

Operating Area Name: Cormack ADA	Operating Area: CC16507
NFS Inventory Map #: 4914, 5011, 5012, 5021, 5022, 5023, 5032, 6041	NTS Map #: 12H/3, 12H/5, 12H/6

Description of Area: This area is located east of the Viking Trail (Route 430) north of the Humber River and west of Sir Richard Squires Provincial Park. The community of Cormack lies completely within its boundary. The terrain is flat but much of the area has been cleared for crop and pasture lands for local farms. The remaining forested area is a mix of mature and over-mature Black Spruce and Balsam Fir stands with some mixed larch stands near wet areas.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 248361

Inventory Hardwood Volume: 18012

Proposed Softwood Volume: 150208

Proposed Hardwood Volume: 12316

Difference from Inventory to Proposed Volume: 38.99

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: None proposed due to alienation of land base to agriculture

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Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit.

Operating Area Name: White Hills	Operating Area: CC16508
NFS Inventory Map #: 4914, 4924, 4934, 5011, 5021	NTS Map #: 12H/5, 12H/6

Description of Area: This area is located north of the Cormack Junction east of Viking Trail (Route 430), extending to the community of Wiltondale. The terrain consist of steep hills with wetlands and barrens dominating the landscape at higher elevations. Forest stands in this area consist of a mix of Mature and Over-mature White Birch and Balsam Fir stands and Mature and over-mature Balsam Fir and Black Spruce forest types.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 114482

Inventory Hardwood Volume: 22735

Proposed Softwood Volume: 106323

Proposed Hardwood Volume: 21238

Difference from Inventory to Proposed Volume: 7.04

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failuressince balsam fir is accepted as the most desired speciesfor the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 300 meter no cut buffer will be maintained along Route 430 to minimize any potential negative visual impacts on the landscape. 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit.

Operating Area Name: Hampden	Operating Area: CC16509
NFS Inventory Map #: 4111, 4112, 4122	NTS Map #: 12H/7, 12H/10

Description of Area: This area is located in the bottom of White Bay heading north from Hampden. The terrain is steep especially along the coast of White Bay. The Forest stands in this area consist of mature Balsam Fir & mature Balsam Fir/White Birch mixed stands.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 38510

Inventory Hardwood Volume: 6872

Proposed Softwood Volume: 28365

Proposed Hardwood Volume: 4236

Difference from Inventory to Proposed Volume: 28.16

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failuressince balsam fir is accepted as the most desired speciesfor the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit. 100 meter no cut buffer along the coast line for posible Archeological sites. No domestic cutting in PWSA a no cut zones are on domestic maps. a 200m no cut buffer is to be maintained on Elliot Brook.

Operating Area Name: White Bay South	Operating Area: CC16510
NFS Inventory Map #: 3311, 3312, 4141, 4142	NTS Map #: 12H/10, 12H/15

Description of Area: This area is located south of Pollard's Point. The terrain consists of rolling and steep hills with the top of hills consisting of barrens and wetlands and the valley's consisting of large ponds. Forest stands in this area mainly contain Mature and Over-Mature pure Balsam fir and Balsam fir/Black Spruce mix. White Birch is common mainly on steep elevation.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 256579

Inventory Hardwood Volume: 28294

Proposed Softwood Volume: 228416

Proposed Hardwood Volume: 25148

Difference from Inventory to Proposed Volume: 10.99

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater. 2 High Risk PPWSA's have been removed

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failuressince balsam fir is accepted as the most desired speciesfor the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit. 100 meter no cut buffer along the coast line for posible Archeological sites. No domestic cutting in PWSA no cut zones are on domestic maps.

Operating Area Name: White Bay North	Operating Area: CC16511
NFS Inventory Map #: 2812, 3311, 3312, 3321, 3322, 3323, 3331, 3332, 3333, 3342, 3343	NTS Map #: 12I/2, 12H/15

Description of Area: This area is located north of Sop's Arm and encompasses the municipality of Jackson's Arm. The terrain consists of step hills around Route 420, Jackson's Arm (Town) and the coast. Forested land varies in diversity from immature to over-mature Balsam fir, Black Spruce, and White burch pure and mixed stands.

Harvesting Activities: This area will be harvested by domestic cutters for sawlogs and fuelwood using chainsaws with the wood hauled to their homes by snowmobile. The cutting will occur mainly during the winter.

Inventory Softwood Volume: 602530

Inventory Hardwood Volume: 57852

Proposed Softwood Volume: 553645

Proposed Hardwood Volume: 50058

Difference from Inventory to Proposed Volume: 8.58

Rationale for Difference: Inventory / blocking adjustment from woodsupply calculations and operational criteria of age class 4 and greater with minimal 60 m^3 /ha and greater. 2 High Risk PPWSA's have been removed. 1 High Risk PPWSA's have been removed

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Silviculture Activities: The only issue to be addressed in this area is softwood regeneration failuressince balsam fir is accepted as the most desired speciesfor the site and past history indicate sufficient stocking to balsam fir after harvesting. However, any cutovers with insufficient stocking will be planted.

Primary Forest Access Road Construction: None

None

Non-Timber Considerations and Mitigations: 20 meter no cut buffer on the NLSF licenced trails. 20 meter no cut buffer around remote cottages will be instated as a condition of the cutting permit. 100 meter no cut buffer along the coast line for posible Archeological sites. No domestic cutting in one Little Tickle Pond PWSA no cut zones are on domestic maps. A certificate of approval from Water Resources Division will be obtained prior to any permits being issued inside the Unnamed Brook PWSA

Appendix 3 – Stakeholders Consulted

Municipalities listing

Baie Verte <townofbaieverte@hotmail.com>;
Coachman's Cove <townofcoachmanscove@outlook.com>;
Cormack <townofcormack@nf.aibn.com>;
Fleur de Lys <townoffleurdelys@gmail.com>;
Hampden <townofhampden@eastlink.ca>;
King's Point <kpcouncil@eastlink.ca>;
Middle Arm <townofmiddlearm@hotmail.com>;
Robert's Arm <townofrobertsarm@eastlink.ca>;
South Brook (Hall's Bay <townofsbrk@yahoo.ca>;
Springdale <info@townofspringdale.ca>;
Woodstock <townofwoodstock@eastlink.ca>;
Baie Verte <townofbaieverte@hotmail.com>;
Beachside <townofbeachside@gmail.com>;
Brighton <townofbrighton@hotmail.com>;
Burlington <mbartlett@townofburlington.ca>;
Deer Lake <deerlake@nf.aibn.com>;
Howley <howleynl@hotmail.com>;
Jackson's Arm <townofjackson@xplornet.ca>;
La Scie <townoflascie@eastlink.ca>;
Little Bay (Notre Dame Bay <townoflittlebay@gmail.com>;
Little Bay Islands <lbitowncouncil@eastlink.ca>;
Miles Cove <milescovetc@xplornet.com>;
Ming's Bight <townmingsbight@outlook.com>;
Pacquet <pacquet@eastlink.ca>;
Pilley's Island <pilleysisland@eastlink.ca>;
Port Anson <townofportanson@hotmail.com>;
Reidville <townofreidville@nf.aibn.com>;
Seal Cove (White Bay <sealcovewb@nf.aibn.com>;
Triton <townoftriton@eastlink.ca>;
Westport <westportnl@gmail.com>;
Nippers Harbour <towncouncilnh@hotmail.com>;

Lushes Bight-Beaumont-Beaumont North <beaumont@xplornet.ca>;
Brent's Cove <townofbrentscove@gmail.com>

Outfitters and Other

Newfoundland and Labrador Outfitters Association <info@nloa.ca>;
Newfoundland and Labrador Snowmobile Federation <info@nlsf.org>;
Adventure Central Newfoundland <shannon@adventurecentral.ca>;
Indian Falls Chalets <Info@indianfallschalets.com>;
Lake and Sand by Riverwood <Jen@riverwoodinn.ca>;
Newfoundland T'Railway Council <jwarren@trailway.ca>;
Riversea Lodging and Lounge <riverseamanagement@gmail.com>;
rob clarke motor sports <info@smlnl.ca>;
Arluk Outfitters Ltd. <bradledrew@arlukoutfitters.com>;
Big River Camps <info@bigrivercamp.com>;
Eagle Mountain Outfitters Limited <brad@emlodge.com>;
MarchandMillCo Outfitters Ltd. (Hinds Lake Lodge <marchandmillco@gmail.com>;
Newfoundland Adventures Ltd. (Chain Lakes Lodge <info@nladventures.com>;
Northern Lights Adventures Ltd. (Roger's River Camp <northernlightsadventures.ca@gmail.com>;
Parsons Pond Outfitters <rogerkeough@nf.sympatico.ca>;
Portland Creek Outfitters Limited <info@portlandcreekoutfitter.ca>;
Red Indian Lake Outfitting and Tours Inc. (Eclipse Lake Lodge <info@redindianlake.com>;
Roberts' Outfitting Ltd. <robertsoutfitting@email.com>;
Taylor's Brook Outfitting <ldgoobie@hotmail.com>;
Blackridge Outfitters Ltd. <Blackridgeoutfitters@hotmail.com>;
BuckLake Adventures <bucklakeadventures@hotmail.com>;
Island Safaris <cog@islandsafaris.com>;
Ray's Hunting and Fishing Lodge Ltd. <info@huntnewfoundlandmoose.com>;
A1 Hunts Twin Lakes Inc. <info@a1hunts.com>

Listing sent to Indigenous groups:

Qalipou First Nation – Corner Brook, NL

Miawpukek First Nation Conne River, NL

Contractors:

burtonscovelogging@live.ca;

info@springdaleforest.com;

Adam Anderson <adam@resourceinnovations.ca>

Listing sent to Internal Departments

1) Department of Forestry, Agriculture and Lands
   a. Wildlife Division
   b. Crown Lands Division
   c. Land Management Division

2) Department of Environment, Conservation and Climate Change
   a. Policy, Planning and Natural Areas Division
   b. Water Resources Management Division

3) Tourism Culture, Arts and Recreation
   a. Tourism Product Development Division

4) Department of Energy and Mines
   a. Mineral Lands Division

Appendix 4 - Summary of External Outreach

Town of Roberts Arm	Action / Comments from Forestry
Contact Date March 30, 2026 Response Date April 3, 2026	
Issue / Concern	
Good day, Sorry, but I cannot seem to open any of the attachments - are you able to tell me how I can view them? Thanks, Stephanie Fudge	Forestry District 09 Conservation Oficer provided guidance

Appendix 5 - Summary of Internal Outreach

Tourism Contact Date March 3, 2026 Response Date March 30, 2026 Issue / Concern	Action / Comments from Forestry
Touring Corridor/Viewscapes • TCAR recommends that development near key touring corridors be managed to minimize negative visual impacts on scenic landscapes. The Trans-Canada Highway (Route 1) is a strategically important touring route for the province. Several additional highways also play a significant role in connecting visitors to tourism operators, gateways, and emerging destinations. • Careful management of cut blocks along these corridors helps protect viewscapes and the natural environment that tourism operators rely on to market their products. Cut blocks adjacent to these routes should be designed and developed using landscape design techniques that reduce the visibility of harvesting for travellers. • These routes include Highways 380, 381, 382, 390, 391, 392, 410, 411, 413, 414, 416, 417, 420, and 421, as well as areas surrounding Springdale, South Brook, Sheppardville, and Pollards Point. • Applicable cut blocks (OA_NO) include: CC09001, CC09002, CC09007, CC09008, CC09009, CC09010, CC09011, CC09012, CC09013, CC09014, CC09015, CC09016, CC09018, CC09022, CC09023, CC09024, CC09026, CC09028, CC09029, CC09032, CC09033, CC09034, CC16016, CC16017, CC16018, CC16020, and CC16023.	Forest management harvesting activities are designed to mimic natural disturbance patterns Forestry activities are carried out on a small percentage of the landscape and natural regeneration occurs soon after, or reforestation is managed with silviculture treatments. While there may be specific special areas where viewscapes may be designed, it is not reasonable to carry viewscape design on large planning areas
Rivers and Trails • Rivers and trails are key tourism assets that support operators who rely on pristine settings, remoteness, and natural ambiance to deliver high quality visitor experiences. Maintaining these attributes requires careful forestry management, including appropriate buffers and landscape planning. Within the zone(s), several high value assets demonstrate this importance. • The T'Railway Provincial Park (CC16015, CC09027) is an 883 km multi-use trail that supports year-round recreation across the province. Sir Richard Squires Memorial Provincial Park is also located near proposed cutting operations and should be considered in planning (CC16013). • The Indian River and Indian River Trail (CC09002, CC09011, CC09012, CC09013) are known for some of Newfoundland's best Atlantic salmon angling opportunities. Goodyear's Cove Trails (CC09001)	Forestry will follow all Trail buffer requirements
Outfitting • Outfitting is an iconic and high-yield tourism product in Newfoundland and Labrador. Each year, outfitters attract high value hunting and angling visitors whose spending supports local communities, guides, transportation providers, and private operators. These experiences, combined with the natural environment of the Eastern Region, generate ongoing exposure through social media, photography, and other visitor generated content. • Areas identified in the proposed Zone 7 Forest Management Plan overlap with the operating areas of several outfitting businesses. TCAR has prepared a list of outfitters who must be consulted, with appropriate mitigation measures agreed upon as part of the Forest Management Plan. The Plan should ensure that harvesting activities do not negatively affect the region's big game carrying capacity that supports the outfitting sector. • The big game outfitting season runs from September 15 to December 31, and the spring black bear season runs from May 1 to July 15. o A1Hunts Twin Lakes Inc. Email: info@a1hunts.com | Phone: 709 668 1457 o Arluk Outfitters Ltd. For contact information, please email AlexanderWilliams@gov.nl.ca. o Big River Camps (2012) Inc. Email: info@bigrivercamp.com | Phone: 709 639 4542 o Bucklake Adventures Inc. For contact information, please email AlexanderWilliams@gov.nl.ca. o Island Aviation Ltd. For contact information, please email AlexanderWilliams@gov.nl.ca. 3 o Parson's Pond Outfitters Limited Email: rogerkeough@outlook.com | Phone: 709 243 7207 o Ray's Hunting and Fishing Lodge Ltd. Email: info@huntnewfoundlandmoose.com | Phone: 709 424 4742 o Taylor's Brook Outfitting Ltd. For contact information, please email AlexanderWilliams@gov.nl.ca.	Forest management activities in the NL Boreal forest use the clearcut silviculture harvesting system. These Forest management activities mimic the natural disturbance patterns of the boreal. While disturbance can have negative effects - forest managed disturbance is generally short term, and include successional silviculture applicaion. Managed forests contribute to a resilient and healthy forest ecosystem. Outfitters are contacted as part of the Public participation process and through EA registration.

Tourism Contact Date March 3, 2026 Response Date March 30, 2026 Issue / Concern	Action / Comments from Forestry
Tourism Stakeholders o TCAR recommends consultation with the following stakeholders to mitigate potential conflicts associated with forestry activities: o Adventure Central Newfoundland Email: shannon@adventurecentral.ca | Phone: 709 486 4345 o Bumblebee Bight Inn and Brewery Co. For contact information, please email AlexanderWilliams@gov.nl.ca. o Green Bay Snowmobile Association For contact information, please email AlexanderWilliams@gov.nl.ca. o Indian Falls Chalets Email: info@indianfallschalets.com | Phone: 709 486 8463 o Lake and Sand by Riverwood Email: jenn@riverwoodinn.ca | Phone: 709 673 5155 o Newfoundland and Labrador Outfitters Association Email: info@nloa.ca | Phone: 709 639 5926 o Newfoundland and Labrador Snowmobile Federation Email: info@nlsf.org | Phone: 709 635 4395 o Newfoundland T'Railway Council Email: jwarren@trailway.ca | Phone: 709 700 0218 o Riversea Lodging and Lounge Email: riverseamanagement@gmail.com | Phone: 709 215 3300 o Rob Clarke Motor Sports Email: info@smlnl.ca | Phone: 709 673 7056 o Tight Loops Tight Lines For contact information, please email AlexanderWilliams@gov.nl.ca. o Town of Springdale Email: park.springdale@gmail.com | Phone: 709 673 3808	
Recommendations - Mitigation measures should be implemented to preserve visitor experience and protect viewscapes along key touring corridors, rivers, and trails. Forest harvesting adjacent to main highways and other identified areas should be kept out of prominent view, and harvest blocks should be designed using landscape techniques that reduce visual impacts. - A viewscape assessment is required for commercial cut blocks along the Trans-Canada Highway due to its strategic importance as a provincial touring route. This assessment must be completed for the following cut blocks: CC09014, CC09011, CC09013, CC09002, CC09001, CC09007, CC09010, CC09012, and CC09034. o TCAR recommends that the Forests and Agrifoods Land continue direct consultation with Julia Penney, Manager of Tourism Product Development, to minimize the visibility of clear cuts from identified routes. - Forest harvesting and the development of new access roads can negatively affect tourism businesses. Forestry operations should coordinate closely with outfitters during the big game season from September 15 to December 31 and the spring bear season from May 1 to July 15, as well as with other relevant tourism stakeholders, to minimize potential impacts. - The proponent should prepare and submit a Tourism Stakeholder Consultation Plan. The Plan should outline all consultations and communications undertaken with tourism stakeholders, identify potential impacts from forestry operations, and describe how harvesting, road construction, and silviculture activities will be modified to reduce those impacts. Considerations should include wildlife populations, hunting success rates, wilderness settings, and increased access by residents. TCAR must review the Consultation Plan prior to the commencement of operations. - Commercial forest harvesting near Provincial Parks, including T'Railway Provincial Park and Sir Richard Squires Memorial Provincial Park, should be carried out in consultation with the Parks Division of TCAR to ensure cut blocks are not visible to park users and that activities occur outside park operating seasons. - It is recommended that the proponent engage with Julia Penney at JuliaPenney@gov.nl.ca or 709-729-0559 regarding	Forest management harvesting activities are designed to follow natural disturbance patterns Forestry activities are carried out on a small percentage of the landscape and natural regeneration occurs soon after, or reforestation is managed with silviculture treatments. While there may be specific special areas where viewscapes may be designed, it is not reasonable to carry viewscape design on large planning areas

Agriculture Contact Date March 3, 2026 Response Date March 31, 2026 Issue / Concern	Action / Comments from Forestry
The area of application overlaps several Agriculture properties, Agriculture Development Areas (ADA) and Agriculture Areas of Interest. In general, the Agriculture Lands Section does not have concern with the proposed activities at this time. - If activities should interfere with the agriculture properties and future production in this area, the Land Management Division will work with the proponent to mitigate any potential issues	Forestry will work with Agriculture on any issues

Natural Areas Contact Date March 3, 2026 Response Date March 27, 2026 Issue / Concern	Action / Comments from Forestry
Jeri passed along the files for the new operating plan, and I've included our comments below. From a Natural Areas perspective, we don't have any major concerns with the proposed five-year operating plan. None of the planned forestry activities overlap with existing or proposed reserves. There are a few areas where domestic harvest blocks are proposed close to protected area boundaries. In FMD 16, the White Bay North and White Bay South domestic harvest blocks border the Main River Canadian Heritage River boundary (as well as the Main River Waterway Provincial Park). In FMD 9, two domestic blocks (7_2027_2031_CK09553 and 7_2027_2031_CC09534) are less than 500 meters from the West Brook Ecological Reserve boundary. I assume Provincial Parks has already provided comments, but I did want to note that there is an additional domestic harvest block (Cormack ADA) in FMD 16 that borders Sir Richard Squires Memorial Provincial Park and domestic block 7_2027_2031_CK09546 in FMD 9 overlaps Flatwater Pond Provincial Park. We ask that the boundaries for both the Main River Canadian Heritage River and the West Brook Ecological Reserve be shown clearly on all maps provided to license holders to help avoid any unintended encroachment. Parks may also appreciate a similar strategy for their nearby boundaries.	Good morning Maria, I've attached the domestic maps the District issues to the public for Forest Management District 16 related to your comments below. Main River Canadian Heritage River displays as No Cut on the map. The Cormac ADA also displays the Sir Richard Squires Memorial Provincial Park as No Cut on the map. If you have any concerns you can follow up directly with me.

Crown Lands Contact Date March 3, 2026 Response Date March 31, 2026 Issue / Concern	Action / Comments from Forestry
The Crown Lands Administration Division advises that the proponent is to operate under the established legislation and regulations of the Lands Act. It is the proponent's responsibility to identify Crown lands required for their undertaking. The project area overlaps Crown lands issued titles. It is recommended that the proponent advise title holders of their proposed activities and the associated timelines. Approximate locations of these titles can be viewed on the Provincial Land Use Atlas viewer here: https://www.gov.nl.ca/landuseatlas/details/. All activities within the proposed boundary should take into consideration the titles that have been issued to ensure the proposed activities does not conflict with the approved/existing uses, as well as appropriate buffers around existing developments. Title holders must be permitted to develop their property for the intended use. There may be private land located within this area which may not be on record with the Crown Lands Office. If work is planned on private lands, permission is required from the land owners. Identify areas where cottage application can be accepted withing the five-year operating plan boundaries. Any activities that occur within the 15m Shoreline Reserve of any water body must strictly adhere to the regulations in Section 7 of the Lands Act. All constructed resource roads for this project are to remain open for public access. All roads constructed for the purposes within the operating plan, the Land Management Division requires consultations before any roads become decommissioned and/or removal of infrastructure (roads/culverts).	Forestry will not encroach on any Land identified on the Land Use Atlas that is not considered available Crown land. Forest access roads are designerd under several time period classes - some roads are for short periods and the removal of culverts and bridges are planned soon after harvest. Forest access roads are public roads and are available for public use, subject to reasonable safety and maintenance restrictions deamed necessary. Forestry requests that Lands inquire on specific forestry roads for other use cases. Any private land, identified in the LUA, will not be shown on Forestry Maps as available for harvest. Harvesting will not be carried out on any land, not in the LUA, that forestry becomes aware of that may be private. If forestry becomes aware of boundaries (not in the LUA), however, are marked on the ground as per section 28 (1) of the Lands Act, harvesting will not be permitted without approval from Lands. Forestry management activities do not generally impact any areas that would be within the 15 meter reservation. Foret access roads, constructed under an approved Forest Management plan and cross a reserve are not grants, leases, licenses, or Quitclaims and are are not considered subject to the Lands Act Section 7. Cottage applications should follow the current referral process to forestry for a forestry analysis of impacts.

Land Management Contact Date March 3, 2026 Response Date March 31, 2026 Issue / Concern	Action / Comments from Forestry
-The proposed forestry plan boundaries overlap with numerous Cottage Planning Area Freezes, Cottage Development Areas, Crown Reserves, Open Space Reserves and Infilling Limits. The proposed activities are not to encroach on existing titles and the proponent should keep the safety of cottage owners and other recreational users in mind during the proposed activities. -Approximate locations of these titles can be viewed on the Provincial Land Use Atlas on the website at www.gov.nl.ca/landuseatlas/details/.	Forestry will not encroach on any Land identified on the Land Use Atlas as a freeze area that is not Crown land. Harvesting will not be knowenly carried out on any land that has boundaries marked on the ground as per section 28 (1) of the Lands Act

Water Resources Contact Date March 4, 2026 Response Date April 24, 2026 Issue / Concern	Action / Comments from Forestry
Comments regarding permits under Section 48 of the Water Resources Act are below: 1.Roads: a.Roads passing through wetlands or within 15m of a body of water will require S48 approval. b.Culverts associated with waterbodies visible on 1:50k topo mapping will require S48 approval. 2.Any clearing of land associated with commercial or domestic harvesting within 15m of a body of water/wetland will require S48 approval. a.Any equipment crossing a body of water or wetland will require S48 approval. 3.Activities associated with "Silviculture Treatment" that take place within 15m of a body of water may require S48 approval.	
Section 39 Permits cannot be issued to the following Protected Public Water Supply Areas (PPWSAs) due to the sensitivity classification: •Jackson's Cove, Langdon's Cove, Silverdale – Nickey's Nose Cove Pond PPWSA •Rattling Brook – Mark's Pond Brook PPWSA •Beachside – Long Pond PPWSA •Robert's Arm – Young's Pond PPWSA •Port Anson - Anchor Pond PPWSA •Miles Cove – Paddock's Pond PPWSA •Pilley's Island – Loadabat's Pond PPWSA •Brighton – Hynes Cove Pond PPWSA •Lushes Bight/Beaumont – Milkboy's Pond PPWSA •Beaches – Grassy Pond Brook PPWSA •Brent's Cove – Paddy's Pond PPWSA •Fleur de Lys – First Pond PPWSA •Nipper's Harbour – Blackhead Pond Brook PPWSA •Pollard's Point – Country Cove Pond PPWSA •Pollard's Point – George Rick's Pond PPWSA •Sop's Arm – Little Tickle Pond PPWSA •Westport – Western brook Pond PPWSA •Woodstock – Mill Pond PPWSA Applications will be accepted and reviewed for other PPWSAs. Please note that a Section 39 permit is required before harvesting or road work activities begin.	Forestry will obtain all apliable permits from WR
•Please maintain 100m undisturbed buffer around unprotected public water supply wells: District 9 Domestic: Unprotected Public Water Supply Wells CommunitySource WellLONG_DDLAT_DDWS-G-NUM Harry's Harbour#1A Well-55.9221249.70011WS-G-0340 Harry's Harbour#1B Well-55.9221249.70011WS-G-0340 Harry's Harbour#1C Well-55.9221249.70011WS-G-0340 Harry's Harbour#1D Well-55.9221249.70011WS-G-0340 Harry's Harbour#2 Well-55.9269149.70067WS-G-0341 Harry's Harbour#3 Well-55.9376849.69589WS-G-0342 Jackson's Cove-Langdon's Cove-Silverdale#3 Well Langdon's Cove-55.9825449.69167WS-G-0377	
•A Section 61 permit is required for any work, activity or development Adjacent to or Within Protected Public Wellhead Water Supply Area. For the following areas: District 9 Domestic: Protected Public Water Supply Wells CommunitySA_NUMSource NameWS_NUMDESCRIPTIONPROTECTEDLong_DDLat_DD SheppardvilleSA-0667DrilledWS-G-0644Protected Groundwater Zone 1 - Varied zones of protection in which specific activities are prohibited.Protected-56.428449.45187 SheppardvilleSA-0667Drilled (Backup Well)WS-G-0644Protected Groundwater Zone 1 - Varied zones of protection in which specific activities are prohibited.Protected District 9 Commercial: Protected Public Water Supply Wells CommunitySource NameWS-G-NUMDescriptionSource TypePROTECTEDLONG_DDLAT_DD Springdale# 1 WellWS-G-0677Protected Groundwater Zone 1 - Varied zones of protection in which specific activities are prohibited.DrilledProtected-56.1063449.50658	
Listing of Wells and Locations	

Wildlife Contact Date March 3, 2026 Response July 17, 2026 Issue / Concern	Action / Comments from Forestry
Concerns regarding caribou habitat in proposed block # CC09029. Based on mitigative measures and identification of harvestable stands in the lower portion of block# CC0929, Wildlife Division requires that harvesting activity occur outside the caribou calving period (i.e., no activity between April 15 and Jul 15) and that roads be decommissioned post-harvest.	Block # CC09029 is an important commercial area for Burtons Cove Lumber and Logging. However, for the upcoming plan 5 year plan forestry will target the lower portion of this block. This area was approved in the last five year plan and the identified harvestable stands in the lower portion of the block represents about 2 years of upcoming woodsupply for Burtons Cove Logging. For this part of the planning, we will leave the mapping as is, but if BCLL's operations require any more volume within this block within the five year period, then further discussions will be required. Wildlife will also be able to review the AOP's to ensure you are aware of operations.
Proposed harvest blocks CC09002, CC09006 & CC09007 overlap with the Springdale Stewardship Agreement.	The Town of Springdale was provided with the proposed activities as part of the external consultation process where no concerns were elevated. However, any proposed activity within protected watersupply areas of municipal jurisdictions require proper permits, where the municipality is provided with another opportunity for review and discussion of proposed activity.

PAO Contact Date February 2, 2026 No Response Issue / Concern	Action / Comments from Forestry

Mines Contact Date February 2, 2026 No Response Issue / Concern	Action / Comments from Forestry