Kruger
Pulp and Paper

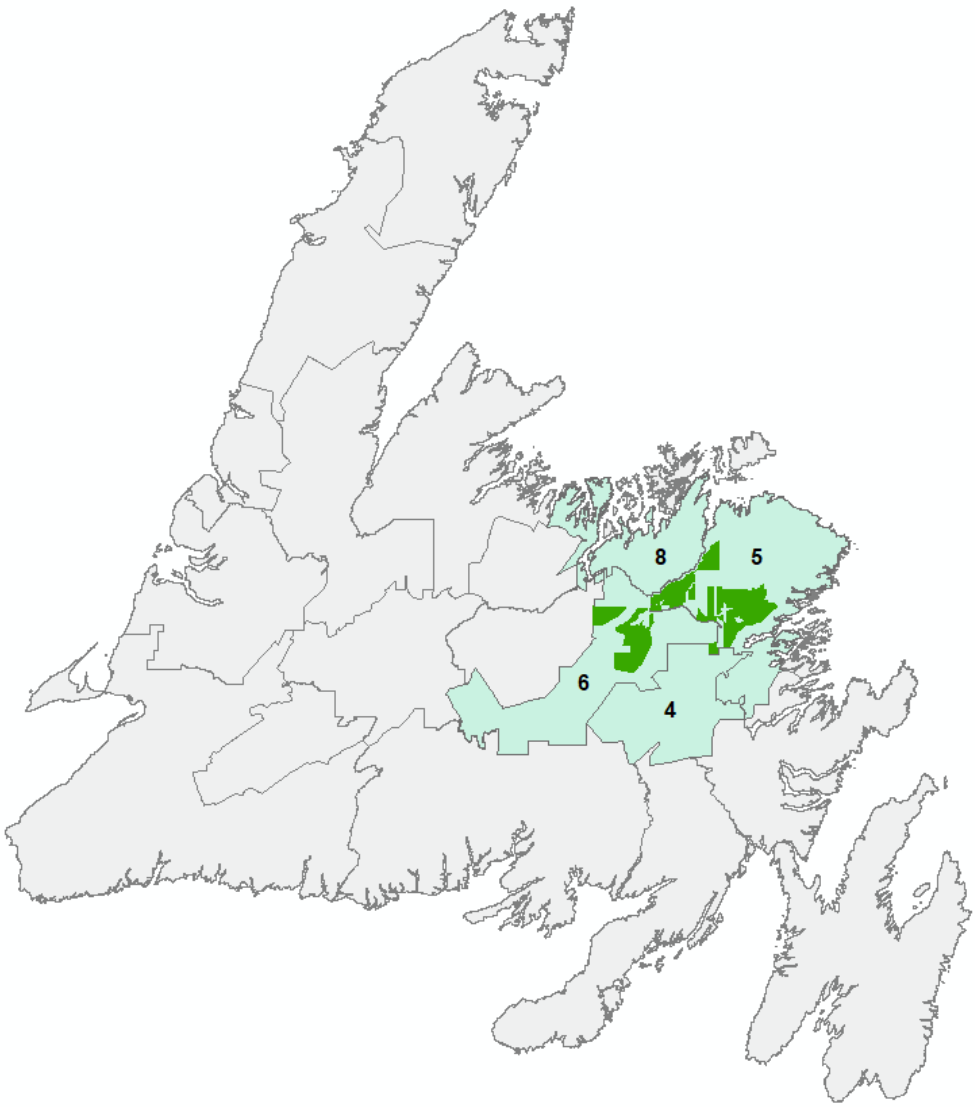
Corner Brook Pulp and Paper Limited

Five Year Operating Plan

Zone 3

Timber Limits within Forest Management Districts 5 & 6

January 1, 2027 – December 31, 2031



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Introduction

This five-year operating plan covers the period from January 1, 2027, to December 31, 2031, and outlines proposed forestry activities on Corner Brook Pulp and Paper Limited (CBPPL) timber limits within Forest Management Districts 5 and 6. Management of these lands will be carried out in accordance with the strategies and management philosophies applied across all CBPPL-managed districts throughout the province.

This five-year operating plan is compliant with established provincial planning requirements, Environmental Protection Guidelines (EPGs), and standard operating procedures developed under a stringent Environmental Management System (EMS) which is registered under the ISO 14001 Standard and the Sustainable Forestry Initiative ® SFI® 2022 Forest Management and Fibre Sourcing Standards.

Forest Management Districts 04, 05, 06, and 08 are adjacent, share common ecoregional characteristics, and together form Planning Zone Three. For the purposes of submission to the Forestry, Agriculture and Lands (FAL) department and Environmental Assessment, a single five-year operating plan is required for each landowner within the zone. Planning Zone Three includes both Crown land and private tenure; therefore, there will be one submission by the Crown and one by CBPPL. Throughout this five-year plan, the individual Districts (04, 05, 06, and 08) will be referred to separately where necessary, but collectively they will be referred to as Planning Zone Three or the Zone.

This document will attempt to fully integrate the presentation of information and discussions for CBPPL tenure in the zone. Discussion and information may be presented separately for each district where warranted based on unique and distinct differences in scope and content, with the focus being on Districts 5 and 6. 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.

This document builds on previous five-year plan submissions. Information has been updated and new sections have been added to address requirements identified in past plan conditions. Content from earlier plans has been retained where it remains relevant.

SECTION 1. DESCRIPTION OF THE LAND BASE

1.1 General

Planning Zone 3 encompasses Forest Management District's (FMDs) 4, 5, 6 and 8 (Figure 1). It extends from Seal Bay in the northwest, easterly along the coast to New-Wes-Valley in the northeast, then southerly to Terra Nova National Park in the east and then west along the northern edge of the Bay Du' Nord Wilderness Area to the general area of the Bay D'Espoir Highway near Great Gull Lake.

1.1.1 Location

FMD 4, known as the Terra Nova Management District, basically encompasses both the Terra Nova and Gambo River watersheds. Its boundaries follow tenure lines north of Mint Brook to the south shore of Gambo Pond, then extends south (including Terra Nova Lake) to the Bay Du Nord Wilderness Area, and continues as far west as Little Gander Pond. The western boundary generally follows a northeasterly direction passing just east of Dead Wolf Pond to a point near the headwaters of Mint Brook. The district also includes Kepenkeck Lake, Lake St. John and Deer Pond. FMD 4 has a total gross area of 302,241 hectares and a total harvestable land base area of approximately 53,534 hectares. CBPP currently does not have any timber limits in this district.

FMD 5, known as the Bonavista North Management District, is located on the north side of Bonavista Bay. Its boundaries include the Gander River to the west and Gander Lake, Gambo Pond, and Terra Nova Lake to the south. To the east, the district is marked by Bonavista Bay and Terra Nova National Park. To the north, it ends to the Atlantic Ocean. The district also includes Fogo Island. FMD 5 has a total gross area of 578,425 hectares and a total harvestable land base area of approximately 131,348 hectares. CBPP timber limits have 98,407 hectares of gross land base and 41,969 hectares of net operable.

FMD 6, commonly referred to as the Glenwood Management District includes that parcel of land extending generally south and southwest of Gander Lake and the Trans Canada Highway (TCH) to Great Gull Lake. The southern boundary extends from Great Gull Lake, west to Sitdown Pond and Great Burnt Lake. The western boundary extends through the headwaters of Great Rattling Brook northeast to the Bay D'Espoir Highway near Miguels Lake and then continues passing just south of Crowe Lake through to the TCH near Notre Dame Junction. FMD6 has a total gross area of 451,809 hectares and a total harvestable land base

area of approximately 119,304 hectares. CBPP timber limits have 51,152 hectares of gross land base and 27,723 hectares of net operable.

FMD 8, also referred to as the Exploits Bay Management District, is located on the northeast coast, covering the geographical area, which can generally be defined as that located north of the former Canadian National Railway line (49th latitude) between the Gander River in the east and Seal Bay in the west. The northern boundary extends into Notre Dame Bay to include Twillingate, New World Island, Change Islands and Exploits Island, along with many other smaller islands. Major communities within the district are primarily located along the coast with population centers around Gander Bay, Twillingate - New World Island, Birchy Bay, Lewisporte, Norris Arm, Botwood and Point Leamington. FMD 8 has a total gross area of 283,887 hectares, and a total harvestable land base area of approximately 109,493 hectares. CBPP currently does not have any timber limits in this district.

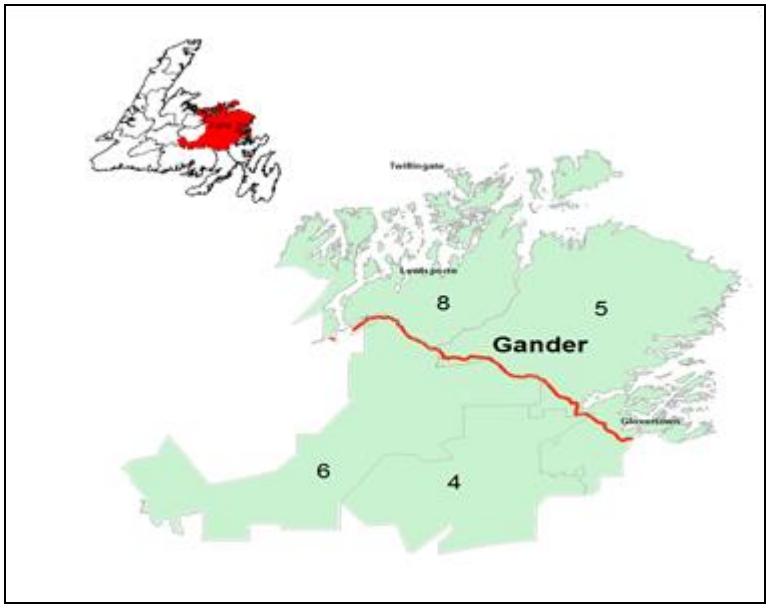

Figure 1 Planning Zone 3 Forest Management Districts 4, 5, 6 and 8.

1.1.2 History

The major communities within the planning zone, apart from Gander, were built around the fishery, the railway and lumbering. Approximately 62,200 people live in this zone, and most are located in communities of various sizes that follow the coastline. However, the largest single concentration is found inland at Gander, where the population is around 11,880 as per the 2021 census (Statistics Canada 2021). The districts in this zone have a history that is both rich and varied. In FMD 5, Gander's existence stems from the need of a stopover point for transatlantic flights in the mid 1930's. Its development took on major

importance during World War II because of the towns' strategic location, where, as many as 10,000 military personnel were stationed. Still, in spite of its contribution on the global and local scene, the Town of Gander was not established until 1951. This is a stark contrast to centers like Fogo Island, which began to settle around 1680 by French, Spanish, and Portuguese summer fishing stations.

The Wesleyville-Badgers Quay area is the birthplace of many great sealing captains. Greenspond, a small fishing community today, can trace its origins back to 1698. It was once a bustling community of 1,726 persons (1901) and was once known as the "Capital of the North" (Windsor, 1979). This community was very important to fishing industry by the late 1700s and by 1850 was heavily involved with the seal fishery. Gambo, whose heyday centered on the now defunct Newfoundland railway, is the birthplace of the last Father of Confederation, the late Premier Joseph R. Smallwood. Gambo was also the site of extensive lumbering activities in the 1800s. Another noteworthy railway and lumbering town in the region is Terra Nova. The Terra Nova River watershed, which essentially constitutes FMD 4, was extensively logged for pulpwood and lumber during the 1940s and 50s. Norwegian developers, who in 1920, started construction on a sulphite pulp mill at Glovertown, originally secured the timber limits associated with most of that district. Devaluation of the Norwegian Kroner disrupted the financing of the project and it was eventually abandoned (Munro, J.A., 1978). Subsequently, the Anglo-Newfoundland Development Company (the predecessor of Abitibi) obtained the rights to the Terra Nova limits in 1923 to support the expansion of the Grand Falls mill.

FMD 6 encompasses the watershed of both the Northwest and Southwest Gander Rivers and the area immediately adjacent to Glenwood has a similar history. While the Corner Brook mill was still under construction, the Reid Newfoundland Company was also trying to promote a newsprint mill on the Gander River (Munro, J.A., 1978). The Gander Valley Power and Paper Company Limited was formed by the Reid's and most of the area which constitutes FMD 6 was conferred along with water power rights by the government in 1924. The Hearst publishing organization in the United States was involved with the financing and had tentatively agreed to take the full output of the mill. This deal fell through and eventually the Reid's negotiated a deal which allowed the Bowater interests in England to acquire the Gander Valley and other properties for the Corner Brook mill in 1938, in what became known as the Gander Deal.

As with most areas of rural Newfoundland, historical settlement of communities in FMD 8 developed around the fishing and shipping industries. The community of Twillingate recorded settlers as early as 1700, making it one of the provinces' oldest seaports. During the early 1900s, Campbellton was an industrial town with a lumber mill, pulp mill and its own miniature railway. Over the past 30 years, commercial forestry

activities have increased to the point where they now account for a significant portion of employment in the area. Small-scale farming is carried out in the Comfort Cove, Laurenceton and Northern Arm areas. Lewisporte, the largest community in the district is a service town with a large wholesale distribution center. It is also a main port for the coastal service to Labrador. These four districts have strong ties to the development of the forest industry in Newfoundland. In more recent years, the infrastructure, especially the network of forest access roads originally used to support the logging industry, is cited as an important component of other industry developments such as hunting and fishing.

1.1.3 Forest Ownership

There are two major forest managers in the zone: Crown and Corner Brook Pulp and Paper Limited (CBPPL) (Figure 2). Crown land accounts for 90.75% of the timber ownership that comprises all of FMD 4 & 8, and portions within FMD's 5 & 6. Throughout the past number of years CBPPL has sold or exchanged some of its land base in FMD's 8 & 6 to Crown. As a result, within the whole zone CBPPL now only represents 9.25% ownership. These holdings are in the form of long-term licenses that are not up for renewal until 2037.

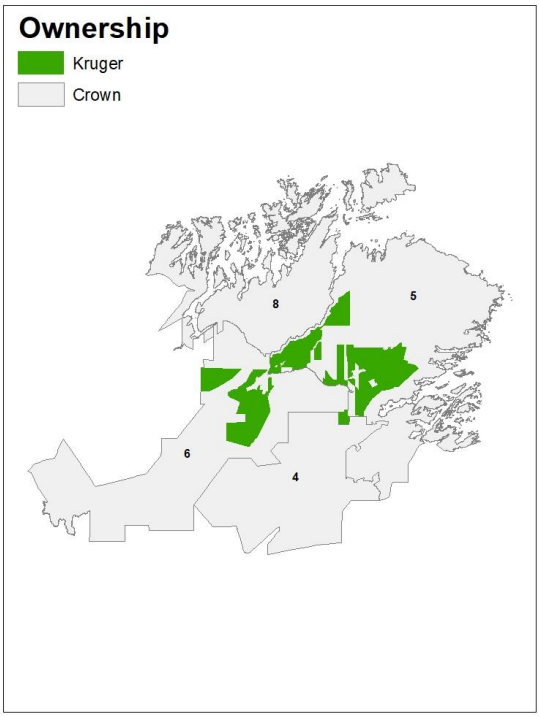

Figure 2 Zone 3 Timber Ownership

1.2 Physical Description

The planning zone is a large area (approx. 1.6 million ha) covering much of northeastern Newfoundland. Physical features vary a great deal over such a large landscape. The following descriptions apply generally to the districts in the planning area.

1.2.1 Topography and Hydrology

Planning Zone 3 contains a diversity of terrain types. The area has generally rolling topography dissected by several large valleys including Southwest Gander River, Northwest Gander River and Gander River valleys. These rolling hills are commonly between 100 and 200m above sea level (asl) and rarely extend above 300m (asl). Hillsides drop steeply into the major valleys. Broad lowland, below 100m elevation, is found between the Exploits River and Botwood, and north of Norris Arm. The area has an extensive coastline dominated by bedrock with scattered pocket beaches. Another exception is the area west of New-Wes-Valley that is generally low relief lowland (less than 100m asl) dominated by numerous lakes and wetland areas. The physiography is largely controlled by bedrock structure, shown by the numerous southwest northeast trending valleys, lakes and ridges. Hills are commonly orientated northeastward, reflecting bedrock lineation. The highest point in the management area is Mount Peyton (482m asl) near Glenwood in FMD 6.

This region contains Gander Lake, which is one of the largest lakes in the province. The lake is 47 km long, an average of 2.0 km wide, has a surface area of 11,200 ha (EDM et. al., 1996), and a surface elevation of 25m asl. A bathymetry survey of the lake was completed in 1995 during the development of a watershed management plan for the Gander Lake Watershed Monitoring Committee (EDM et.al., 1996). Soundings in the Fifteen Mile Brook area recorded depths of 274 m (249 m below present sea level) and depths of 250 m off Little Harbour, decreasing to 60m off Kings point and 27m at the extreme eastern end of the lake. The field survey confirmed the maximum lake depth at 290 metres.

In general, the drainage of the planning area is in a northerly direction and is characteristically poor with many large peat bogs throughout. The main rivers include Gander, Gambo, Campbellton, and Terra Nova. Other rivers (Indian Bay, Dog Bay and Ragged Harbour), while smaller in size, drain large watersheds. In the past, many of these rivers were important transportation routes for water-driven saw logs and pulpwood. This is evident by the remnants of several large dams as well as the occasional man-made channel.

1.2.2 Geology

The area was completely glaciated during the last glacial period (Late Wisconsinan). Surficial geology mapping has been completed on parts of the area at scales of 1:50 000 (Batterson, 1991, 1999a,b; Mackenzie, 1993; Munro, M., 1993) and 1:250 000 (Liverman and Taylor, 1993, 1994a,b). Mapping of ice flow indicators identify three major flows. Early ice flow was eastward from a source in the Long Range Mountains, and subsequently by north to northeastward flowing ice from the main Newfoundland ice center. This region shows abundant evidence of glacial activity and is dominated by areas of bedrock and till. Bedrock that comprises much of the coastal area and the higher ground is smoothed, commonly showing roche moutonée forms. Drumlins are found at the head of Lewisporte Harbour, and crag-and-tail hills are found south of Loon Bay. Areas adjacent to the coast show large area of bedrock exposure, particularly west of New-Wes-Valley and north of Gander. Much of the area is covered by glacial till, commonly as a veneer (less than 1.5 m thick) or as a blanket (thicker than 1.5 m). Rogen moraines, oriented perpendicular to flow, are generally rare, although some are found in the Island Pond/Dans Pond area and near Sunday Pond and Frozen Ocean Lake These were deposited by north to northeastward flowing ice, consistent with the regional ice flow direction.

The valleys of the lowlands were the main channels for melt waters created by retreating ice. In these valleys are found the glaciofluvial landforms of terraces eskers, kames and valley trains. Gander Lake was likely a conduit for local ice flow. Ice contact gravel and eskers at the eastern end of the lake show that ice flowed through this area and into the sea at Freshwater Bay. Eskers are also found in the Caribou Lake area south of Gander Lake the Mint Brook area near Gambo and the Terra Nova area. Areas of non-glacial sediment are generally confined to the valleys. The Great Rattling Brook, Southwest Gander River, Northwest Gander River and Gander River valleys all contain moderately to well sorted, stratified sand and gravel deposited in a glaciofluvial or fluvial environment. These systems were the routes of melt water during deglaciations. The Southwest and Northwest Gander River valleys are up to 6 km wide, with flat valley floors. They contain sand and gravel deposited by glaciofluvial outwash. The present channel into an alluvial plain up to 1 km wide has reworked some sediment. Melt water outflow from the Southwest Gander, Careless Brook valley and from the Northwest Gander River valley flowed northward through the outflow into the modern Gander River valley.

Evidence of higher water levels was found in the Gander Lake valley (Batterson and Vatcher, 1991). Beach sediments up to 39m above Gander Lake have been identified. It is possible that higher water levels were the result of marine incursion. Raised marine features on the coast have not been examined in detail, but

Munro and Catto (1993) reports Late Wisconsinan marine limits near Carmanville on the north coast at 43m asl. Marine limit at the coast at the eastern end of the lake has been reported at about 30 m asl (Jenness, 1960; Grant, 1980). Undated marine shells have also been reported from the Gander River valley, north of Gander Lake. Higher water levels drained through the modern Gander River valley. During the Holocene, organic deposits developed in the poorer drained areas, and colluvial deposits formed at the base of the steeper slopes. Both these processes continue today, although vegetated slopes have retarded the rate of colluviation.

FMD's 4, 5, 6 and 8 straddle three technostratigraphic zones of the Newfoundland Appalachians. These are, from east to west, the Avalon, Gander and Dunnage zones (Govt of NL, 1987). The Avalon Zone lies in FMD 5 east of a line drawn from Terra Nova Lake northward to the Dover area. This zone is characterized by thick successions of upper Precambrian volcanic, plutonic and sedimentary rocks that are overlain by fossiliferous mudstone, quartzite, limestone and shale of Cambrian age. These various rock types are well exposed in the areas around Bonavista Bay. Granitic and gabbroic rocks of late Precambrian age occur east of Traytown.

Granitic rocks of Devonian age occur in the Terra Nova Lake area. The Gander Zone lies in parts of all four districts. Its western boundary lies roughly along a line that extends from Great Gull Lake northeastward to the Ragged Harbour area. The western part of the Gander Zone consists of a thick sequence of quartz greywacke, quartzite, siltstone and shale. This grades eastward into metamorphic rocks consisting of schist, gneiss and migmatite. These rocks were intruded by massive and foliated biotite granites and by massive and foliated two-mica, garnet-bearing granites. The age of the sedimentary and metamorphic rocks is early Ordovician and older. The granitic rocks are as young as Devonian. The Dunnage Zone is situated in the western part of FMD 5 and covers most of FMD's 6 and 8. A thin sliver of Dunnage Zone rocks is located in FMD 4. Rocks within the Dunnage Zone are composed of Ordovician marine mafic volcanic, intrusive and sedimentary rocks that represent remnants of oceanic crust. These are overlain by oceanic basalts and subaerial felsic volcanic rocks. The volcanics are interlayered with and grade laterally into clastic sedimentary rocks. As is the case in the other zones, intrusive rocks of middle Paleozoic age intrude rocks of the Dunnage Zone and consist of granite, granodiorite, diorite and gabbro.

1.2.3 Soils

Portions of the districts have been surveyed with respect to soil profile but information is lacking in other areas, particularly near the coast. A soil survey was conducted in the Gander – Gambo area and the following information relates to that location. The remainder of the districts should not vary greatly with

regard to these soil types due to similar parent materials mentioned above (Wells and Heringa, 1972). The survey concluded that the soils developed from glacial till. These include mainly ground terrain deposits ranging from a few inches to over 20 feet thick and are composed largely of material derived from locally underlying rock. Podzolic soils are the main soils in the area with some orthic gleysols which are characterized by the lack of aeration and poor drainage.

There are some large areas of organic soils which may be broadly divided by the degree of decomposition and the vegetation apparent on the site. Sphagnum peat is the predominant type of organic deposit. Other types of organic soils found in the districts would be ericaceous peat and muck peat, both of which are less shallow in depth when compared to sphagnum peat. In relation to tree growth, the podzolic soils support the following species: black spruce – Picea mariana (Mill.) B.S.P.; balsam fir - Abies balsamea (L.) Mill.; white birch - Betula papyrifera (Marsh); and others of lesser abundance than the three mentioned. The orthic gleysols support mostly black spruce, the growth of which is somewhat retarded due to the lack of available nutrients. Little, if any, tree growth is supported by organic soils. The organic mucks support some vegetation depending on slope. Some shallow mucks occur on lower slopes under mixed forest and alder.

1.2.4 Climate

The climate of the four districts can be broken down into two main categories, in accordance with the two larger ecoregions of this area. The Central Newfoundland Ecoregion has the most continental climate on the island. The mean daily temperatures for July and February are $^{+}$15ºC to $^{+}$16ºC and $^{-}$4ºC to $^{-}$8ºC, respectively. The precipitation ranges from 900mm to 1300mm annually with 3.0m to 5.3m of snowfall. This ecoregion also has the least wind and fog for the island. Due to the warm summers and the highest rates of evapo-transpiration, the soil moisture in this area is considered one of the driest on the island. A result of this is the high frequency of fire in this ecoregion due to its summer dryness. The North Shore Ecoregion has the warmest summers of all the coastal regions on the island and the winters are cool. The mean July temperatures range from $^{+}$15ºC to $^{+}$16ºC, while the February mean temperatures range from $^{-}$5ºC to $^{-}$7ºC. The precipitation for this area is between 900mm and 1200mm with snowfall amounts ranging from 2.5m to 3.5m.

Due to its exposure, the high winds and high summer temperatures, the high evapo-transpiration rates cause the soil in this ecoregion to be the driest for the island. The cold Labrador Current flowing from the north, especially with its pack ice in the spring, also influences this region. This causes the growing season to be

delayed when the ice is heavy. For additional information about the climate of the four districts refer to Meades and Moores, (1994).

1.3 Ecosystems

1.3.1 Forest Ecosystems

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

A forest ecosystem, as the term implies, is an ecosystem dominated by tree cover. At the coarsest level, the forests of Planning Zone 3, like all forests on the island, form part of the boreal forest ecosystem. The boreal forest is a green belt, which spans much of the northern hemisphere. It stretches from the Atlantic shores of Scandinavia through Russia, across Alaska, through the mid latitudes of Canada until it reaches the Atlantic Ocean again in Newfoundland and Labrador.

One of the distinguishing characteristics of the boreal forest is the phenomenon of periodic, catastrophic stand replacement natural disturbances such as fire and insect outbreaks which typically give rise to uniform, even aged forests dominated by a few tree species. The tree species, which characterize the Canadian boreal forest, include black spruce, white spruce, balsam fir, eastern larch, trembling aspen, white and yellow birch and jack pine. All of these, apart from jack pine, commonly occur on the Island. However, by far the dominant species are black spruce and balsam fir; together they represent more than 90 percent of the growing stock on the island. Spruce is most abundant in north central Newfoundland where a climate characterized by relatively dry, hot summers has historically favored this fire-adapted species. In western Newfoundland the climate is somewhat moister, and fires are far fewer in this region resulting in the ascendance of balsam fir, a species that is poorly adapted to fire. Like the rest of the province, the forests of Planning Zone 3 (FMD's 4, 5, 6 and 8) are part of the larger boreal forest ecosystem. The moraine areas, which are extensive in Zone 3 support, closed stands of conifers, largely black and white spruce Picea mariana (Mill.) B.S.P. and Picea glauca (Moench Voss), balsam fir Abies balsamea (L.) Mill. and tamarack

Larix laricina (Du Roi) K. Koch. Broadleaf trees, such as white birch Betula papyrifera (Marsh.) occur in pure stands on richer soils, but it and trembling aspen Populus tremuloides (Michx.) are more prevalent in mixtures with the other conifers. Other needle-leaf trees, notably white pine Pinus strobus L. occur in spots scattered throughout the forest while Red pine Pinus resinosa (Alt.) is considered rare. Soils of the boreal forests in FMD's 4, 5, 6 & 8 are predominantly classed as podzols although brunisols are also present. Throughout the contrasting areas of exposed bedrock, moraine deposits and low-lying sphagnum bogs, this mosaic of soils and non-soils tends to be occupied by a range of plant communities dominated by lichens, shrubs and forbs. Climatic conditions of this region are heavily influenced by the proximity to cold Arctic air masses and the Labrador Current in the north and warm moist air and the Gulf Stream in the south. The interaction of these phenomena results in moderate annual precipitation, high evapotranspiration rates during warm summers and overall, the most continental climate on the island of Newfoundland, with the warmest summers, coldest winters and the least wind and fog.

The primary natural disturbance factors attributed to boreal forests are fire and insects. Forest fires were frequent and extensive in north-central Newfoundland and resulted in specific successional trends depending on site type. Often, the spruce component is increased following fire, whereas other disturbance types such as insects and cutting often results in an increase in the fir component. Repeated burning and cutting of dry, coarse-textured black spruce-feather moss site types can result in ericaceous species such as sheep laurel Kalmia angustifolia invading the site to produce heath-like conditions. Successional patterns on other forest cover types vary with site and type of disturbance. These are discussed in greater detail in subsequent sections of this report.

Forest development class, successional pattern and site type, influence the understory plant community throughout the district. The species composition and structure of these plants significantly impact on suitability of a site as wildlife habitat for various species. Some animals are very general in terms of habitat requirements and can occupy a wide range of site conditions yet have specific seasonal requirements that can determine habitat quality. For example, the moose requires wintering areas with suitable combinations of available cover and browse. It is widely accepted that a variety of forest age classes can provide increased habitat and sustainability for many wildlife species. On the other hand, some species require a specific age class or habitat condition to maintain healthy populations (e.g., Newfoundland marten (Martes Americana atrata)).

Aquatic ecosystems of the boreal forest are heavily dependent on forest cover for temperature regulation, nutrient cycling and stream flow regulation. Consequently, forest harvesting activities adjacent to riparian

areas are critical to sustainability of fish habitat and maintenance of fish migration routes. Suitability of various streams and ponds as waterfowl breeding, feeding and resting areas are also dependent on adjacent forest cover. Biological production in streams is based on a combination of internal and external nutrient and energy pathways. Streamside vegetation has a strong influence on both since they are so closely linked to surrounding terrestrial events. Small streams in forested areas receive much of their materials from the surrounding terrestrial ecosystem. Detritus in the form of needle and leaf litter, twigs and branches, forms the major energy base for consumer organisms. In highly shaded headwater streams, algae production is often low and yields only a small and seasonally variable contribution to the overall energy budget. As streams become larger further downstream, sufficient light penetrates the forest canopy, and consumer populations can take advantage of both particulate detritus and algae (Toews and Brownlee 1981). For these reasons, maintenance of suitable riparian zones for protection of aquatic ecosystems, as well as providing wildlife travel corridors is a primary consideration of any forest management strategy.

Major watersheds within the Zone include portions of the Gander River, Exploits River, Indian Arm Brook, Jumpers Brook, Ten Mile Lake, Big Lake, Campbellton River, Dog Bay River, Indian Bay River, Terra Nova River, Ragged Harbour River, Mint Brook and Traverse Brook. Many of these are associated with protected water supplies for communities within the districts. Small to medium sized lakes and ponds are common throughout the zone.

1.3.2 Ecoregions and Subregions

With the evolution of an ecosystem approach to forest resource management, it would be advantageous to have a standard framework to classify combinations like general climate and regional physiography, as well as the other components of an ecosystem, into distinguishable regions. Fortunately, such a framework exists, in a publication entitled Ecoregions and Sub regions of Insular Newfoundland (Damman, 1983).

Damman defined ecoregions as areas where a 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 toposequence, vegetation structure; floristic composition and floristic distributions can provide the primary criteria (Damman, 1979). According to Damman, Newfoundland consists of 9 ecoregions, which can be further divided into several sub regions. Labrador has ten ecoregions. Each of the Newfoundland and Labrador ecoregions and sub regions 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. FMD's 4, 5, 6 and 8 contain four of the ecoregions outlined by Damman (1983).

They are:

II - Central Newfoundland Ecoregion (which contains IIA - the North central Sub region);

III – North Shore Ecoregion;

VII - Eastern Hyper-Oceanic Barrens Ecoregion and

VI - Maritime Barrens Ecoregion (which contains VID - the Central Barrens Subregion) (see Figure 3).

Of these, IIA contains the largest portion in the district. The following descriptions are taken from Forest Site Classification Manual - A Field Guide to the Damman Forest Site Types of Newfoundland (Meades and Moores, 1994).

1.3.2.1 Central Newfoundland Ecoregion

The Central Newfoundland Ecoregion has the most continental climate in insular Newfoundland. It has the highest summer and lowest mean winter temperatures. Because of the warm summers and the high evapo-transpiration losses, soils in the northern section of this ecoregion have a soil moisture deficiency. The Hylocomium-Balsam fir forest type occupies the zonal soils of this area. These soils are generally lighter in color and have a lower organic matter content compared to other ecoregions.

Forest fires have had an important role in the natural history of this region. Many sites have been converted to black spruce, while white birch and trembling aspen occupy some of the richer sites.

The Central Newfoundland Ecoregion has four sub regions:

IIA - North central Sub region;

IIB - Red Indian Lake Sub region;

IIC - Portage Pond Sub region;

IID - Twillick Steady Sub region

Of these, only the North central Sub region is found in District 4, 5, 6 and 8 and contains, by far, the largest area of land relative to the other three ecoregions.

1.3.2.1.1 North Central Subregion

This sub region has the highest maximum temperatures, lowest rainfall and highest forest fire frequency than anywhere else in Newfoundland. The sub region extends from Clarenville to Deer Lake with a mostly

rolling topography of less than 200m (asl.). The history of fire is evident by the pure black spruce forest and trembling aspen stands that dominate the region.

1.3.2.2 North Shore Forest Ecoregion

The less prevalent North Shore Ecoregion is essentially a 20-25km wide coastal zone that extends from Bonavista Bay to the Baie Verte Peninsula. Here, a continuous forest of black spruce and balsam fir dominates except on the coastal headlands where barrens prevail. White spruce is more common here than in central Newfoundland. The quality of growth diminishes as you approach the coastline. There are no sub-regions in this ecoregion.

1.3.2.2.1 Eastern Hyper-Oceanic Barrens Forest Ecoregion

This ecoregion occurs on the extreme south coast of the Avalon and Burin peninsulas and on the northeast coast near Bay de Verde and Cape Freels. Here, the extreme oceanic climate limits the development of forests other than Balsam Fir krummholz. The heaths in this ecoregion are similar to oceanic parts of northern Scotland and southern Norway. This ecoregion constitutes very little of the land mass contained within the planning area being limited to the extreme northeastern coastline in FMD 5.

1.3.2.3 Maritime Barrens Ecoregion

This ecoregion extends from the east coast of Newfoundland to the west coast through the south central portion of the island. Relatively mild winters with intermittent snow cover and cool summers with frequent fog and strong winds characterize it. The dominant landscape pattern consists of usually stunted, almost pure stands of Balsam fir, broken by extensive open heath land. Good forest growth is localized on long slopes of a few protected valleys. The heaths are dominated by Kalmia angustifolia on protected slopes where snow accumulates and by cushions of Empetrum nigrum, or Empetrum eamesii on windswept ridges. The southern portions of FMD's 4 and 6 extend into the northeastern extent of this ecoregion.

Figure 3 and Table 1 show the ecoregions and subregions and the percentage area occupied in each of the zones districts.

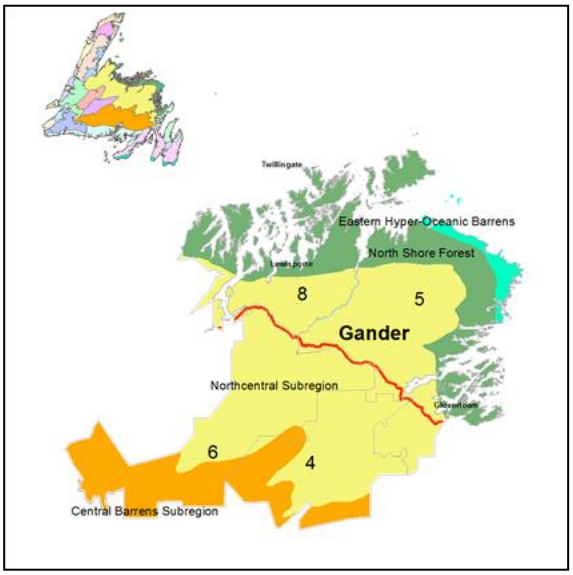

Figure 3 Ecoregions/subregions Occurring Throughout Zone 3.

Table 1 Ecoregions/Subregions within Zone 3

	Eco/ Subregion	District 4		District 5		District 6		District 8		Zone 3 (D4,5,6,8)
Zone 3 Eco/Subregions	Area (ha) in Province	Total % Area Occupied in District	Relative % of Subregion in District	Total % Area Occupied in District	Relative % of Subregion in District	Total % Area Occupied in District	Relative % of Subregion in District	Total % Area Occupied in District	Relative % of Subregion in District	Relative % of Subregions in Zone
North Shore Forest Ecoregion										
North Shore Forest Subregion	550,662			34%	35%			54%	27%	61%
Section Sub-total	*550,662*									
Eastern Hyper-Oceanic Barrens										
Eastern Hyper-Oceanic Barrens Subregion	160,335			5%	0.2					19%
Section Sub-total	*160,335*									
Maritime Barrens										
Central Barrens Subregion	1,524,392	33%	7%			38%	11%			18%
Section Sub-total	*1,524,392*									
Central Newfoundland Forest										
Northcentral Subregion	2,310,744	67%	9%	61%	15%	62%	12%	46%	5%	41%
Section Sub-total	*2,310,744*									
Grand Total	***4,546,133***									

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 variable 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.

The following sections will discuss each of these concepts in more detail as they relate to the ecosystems of Planning Zone 3. For the most part this section will be descriptive and explanatory in nature.

1.4.1.1 Productivity

Productivity is the accrual of matter and energy in biomass. In simple terms, primary productivity is the sum of all biomass 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 and the rate of growth) a site is, the higher level of primary productivity. For example, a forested stand would have a higher primary productivity than a bog, or a good site would have a higher potential than a poor site. 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 of the river valleys. The landscape patterns are more consistent, and the growing season is longer. In contrast, the northern parts of FMD's 5 and 8 along the coast have soils that are shallower with bedrock at or near the surface. The terrain in northern parts is much rougher, and the growing season is shorter than in the valley lowlands (130 as opposed to 160 days). In practice, it is nearly impossible to measure the amount of biomass produced in an ecosystem, or the energy consumed in the process. However, in the Provincial Sustainable Forest Management Strategy, criteria and indicators to monitor productivity have been identified. One method outlined is tracking the Mean Annual Increment (MAI) in m3/ha/yr of tree species by ecoregion. This can be readily measured over time and manipulated through silviculture treatments or affected by poor harvesting practices, which increase soil compaction. An example of secondary productivity is the number of moose per unit area. One must also recognize the forests' inherent biological limits, however, when attempting to measure or manipulate site productivity.

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. To a large degree, forest ecosystems' resilience is controlled by properties such as climate, parent soil, relief, and flora.

The potential for populations to recover from low levels following disturbance by having adequate regeneration capacity and a balanced distribution of forest types and age classes provides a reliable measure of resilience at the landscape level. Other measures include the percentage and extent of area by forest type and age class and the percentage of disturbed areas that are successfully regenerated. Measuring and monitoring these parameters determines resilience.

Forest activities must be carefully planned to not upset the natural balance and lower an ecosystem's resilience. An example is harvesting on the more fragile sites where steep slopes and shallow soil over bedrock increase the potential of site degradation beyond repair.

1.4.1.3 Stability

Nature is constantly changing and going through the unending processes of disturbance, growth, senescence, and decay. Therefore, 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 time periods or with outside inputs (loss of topsoil).

Some indicators of stability which can be monitored are: area 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 and 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. Commercial and domestic harvesting does account for disturbances in the zone and occurs on a managed, regular and consistent basis. Fire and insect damage are the major disturbances that occur but are more irregular or cyclic. Apart from a major atypical windstorm, wind throw usually occurs after some other agent like insects and/or disease weakens a stand. For this reason, successional patterns after insect damage and wind throw will be discussed together. The following is a brief synopsis of the typical successional patterns that occur in the zone after each major disturbance type.

1.4.1.4.1 Commercial and Domestic Harvesting

Regeneration patterns in the black spruce forest type after harvesting is mainly back to black spruce, the component of which increases as site productivity increases. Regeneration failure in this forest type has the potential to be high, where NSR (non-satisfactory regeneration) rates increase from a low of near 10% on good sites to a high of approximately 50% on poor sites. A key silvicultural concern following harvesting on black spruce forest types is encroachment by balsam fir. Balsam fir does not perform particularly well on these types. Therefore, ensuring these types revert to black spruce post-harvest, either naturally or through planting, is important.

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

Regeneration pattern in the mixed forest types is generally to balsam fir or to mixed species dominated by balsam fir. There is also a component of white spruce regeneration after harvest on these mixed forest types. There is a higher component of white birch regeneration after harvesting in types that had a higher percentage of hardwood before harvest. Also, the better the site class the more hardwood regeneration. Regeneration failure on the mixed forest types is variable across site types and ecoregions depending on local conditions but averages 15 % and is higher as the site gets poorer

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

1.4.1.4.2 Fire

Since black spruce is a semi serotinous species (requiring heat to open its seed cones), it is not surprising that it is the most prolific regeneration species after fire across all forest types, site types and ecoregions within the zone. It regenerates as pure stands or in combination with white birch. Balsam fir is conspicuously absent after fire 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 stands, 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.

Regeneration after fire in white birch dominated stands is typically to white birch, but can also include a black spruce component. Regeneration failure after fire is on average 20-25 percent across all forest types, typically being higher as sites get poorer and ground fire temperatures decrease. Generally, the poorer site types will revert to Kalmia dominated NSR and require planting to ensure adequate regeneration. When ground fire temperatures are lower, less of the humus layer is removed and regeneration failure increases due to lack of adequate seedbed.

1.4.1.4.3 Insect/Wind Throw

Balsam fir is highly susceptible to insect attack from the hemlock looper, balsam woolly adelgid, balsam fir sawfly, and spruce budworm, whereas black spruce is hardly impacted by these insects. For this reason, stands with a high component of balsam fir are more susceptible to insect attack and subsequently wind throw. Balsam fir are also generally more prone to windfall due to their very shallow rooting system. Mature balsam fir types usually regenerate to balsam fir or to balsam fir hardwood mixtures.

In recent history, however, many insect killed fir stands have reverted to NSR due to the high browse rate on fir regeneration by moose in the zone. Disturbance by insect kill in young balsam fir stands can also cause succession to white spruce. Regeneration patterns in mixed wood types usually depend on the type of mixture. If black spruce is a component, then it will persist and form part of the new stand. Otherwise, balsam fir and balsam fir/hardwood mixtures regenerate after insect attack. Regeneration failure of fir sites after insect attack is low and only occurs approximately 15 percent of the time. Regeneration failure mostly occurs on sites where the immature balsam fir regeneration is killed by either insect attack as well or over browsing by moose.

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.

Mishandling even small tracts of land could lead to extinction of several species, one of which may hold the key for the prevention or cure of some disease. While the boreal forest may not have the same extent of biodiversity that some of the equatorial regions possess, Canada does have many species of plants, animals, and microorganisms in its boreal and other forest regions.

Biodiversity provides such essential services as climate control, oxygen production, and purification of freshwater supplies, carbon dioxide removal from the atmosphere, soil generation, and nutrient cycling for humans. Without the species that provide these processes, humanity would be unable to survive.

The three components of biodiversity are species diversity, genetic diversity and ecosystem diversity. Each will be discussed in the following sections.

1.4.2.1 Species Diversity

Species diversity describes the overall range of species in a given area or ecosystem. Species are groups of animals, plants, and microorganisms capable of producing fertile offspring. An example would be that all breeds of domesticated dogs are of the same species, while dogs and cats are members of different species. Species extinction is the most dramatic and recognizable form of reduced biodiversity. 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 colour, 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 zones forests. Responsible planning should design and implement measures which maintain or enhance viable populations of 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 for diversity across the landscape. Each ecoregion in the province should have representative areas protected which displays 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

There are six broad categories that currently represent how the land within a forest management district is classified;

1) Regulatory alienations, 2) Non-harvestable inventory types, 3) Water features, 4) Operational alienations, 5) Non-Timber Values and 6) Productive forest. The sixth category represents the harvestable land base and is further subdivided into Core, Operational and Domestic.

Regulatory alienations are areas which have a legal restriction which prevents harvesting. Non-harvestable inventory types are areas such as bog or scrub forest. Water features are simply bodies of water (lakes, ponds, rivers. etc.). Operational alienations are areas which cannot be harvested due to a physical impediment (i.e. extreme steep slopes). Non-Timber Values represent areas in which harvesting is not permitted due to a use other than harvesting such as agriculture or aesthetics. In this case productive forest is any forested area that is not restricted from harvest and can produce at least 60 m3/ha of merchantable timber.

The total land base for Zone 3 (Table 2) is approximately 1.6 million hectares. Up until now the land base descriptions, ecosystem description, discussion on biodiversity and general forest characterization have been at the Zone level. From this point forward information presented will specifically to CBPPLs tenure in FMD's 5 and 6.

Represented below and in Figure 4 is the CBPPL portion of Districts 5 and 6 broken down into the 6 land base categories.

Regulatory alienations	15,776 ha
Non-harvestable inventory types	44,112 ha
Water features	10,852 ha
Operational alienations	8,808 ha
Non-Timber Values	320 ha
Productive forest	
Core	67,841 ha
Operational	1,847 ha
Domestic	4 ha

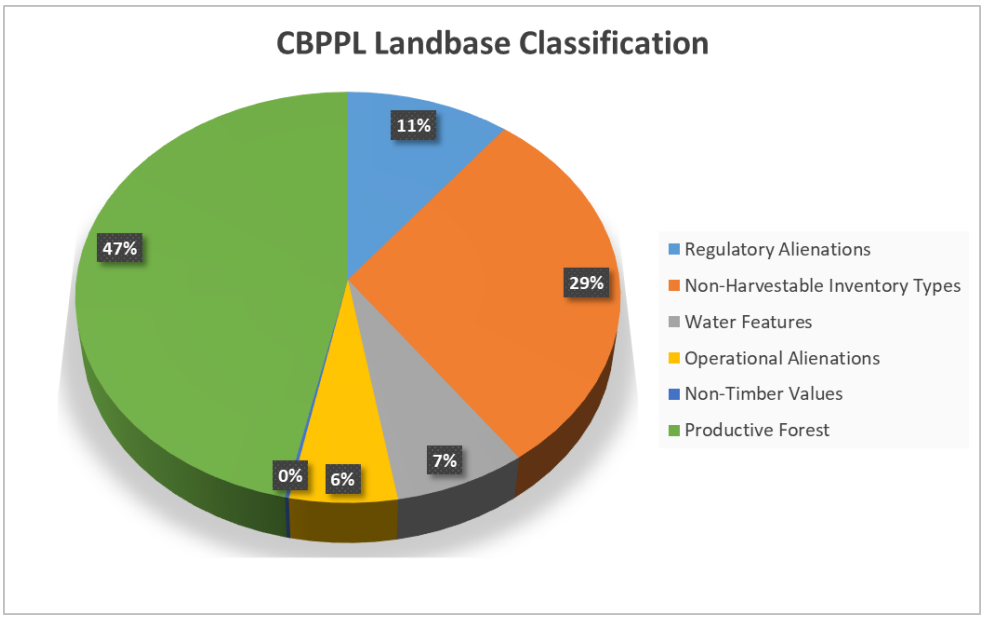

Figure 4 Land base Classification on CBPPL Tenure

Table 2 Zone 3 Land base Classification (CBPPL Limits in D5 and D6)

		Zone 3 2025 Landbase					
	Landbase Classification	Forested Area (ha)	Non Forested (ha)	Forested Area (ha)	Non Forested (ha)	Total Area (ha)	% Of Total
1	**Regulatory Alienations**	District 5		District 6			
1.a	***Parks***						
1.a.1	Federal	0	0	0	0	0	0.0%
1.a.2	Provincial	84	14	0	0	98	0.1%
1.a.3	Private	0	0	0	0	0	0.0%
1.a.4	Natural Areas System Plan	49	6	0	0	55	0.0%
1.b	***Reserves***						
1.b.1	Ecological	0	0	0	0	0	0.0%
1.b.2	Wilderness	0	0	0	0	0	0.0%
1.b.3	Others	0	0	0	0	0	0.0%
	Other						
1.c.1	Agricultural Areas	133	14	178	13	338	0.2%
1.d.1	Cottage Development Areas	500	87	1,157	59	1,803	1.2%
1.d.2	Crown Lands Other	522	276	454	27	1,279	0.9%
1.d.3	Private Land	1,092	94	45	3	1,234	0.8%
1.e.1	Wildlife Exclusions	0	0	0	0	0	0.0%
1.f.1	Permanent Sample Plots (PSP's)	44	3	36	1	84	0.1%
1.f.2	Regulation Buffers Water (30m)	4,789	1,354	3,447	1,249	10,839	7.2%
1.g.1	Protected Water Supply Areas	0	0	0	0	0	0.0%
1.h.1	Research Areas	44	1	0	0	45	0.0%
	Section Sub-total	*7,257*	*1,849*	*5,317*	*1,354*	*15,777*	*10.5%*
	Non-Harvestable						
2	**Inventory Types**						
2.a.1	Coniferous Scrub	16,265		7,084		23,349	15.6%
2.b.1	Deciduous Scrub	2,871		695		3,566	2.4%
2.c.1	Vegetated Non-forested		9,765		5,011	14,776	9.9%
2.d.1	Non Vegetated		1,668		497	2,165	1.4%
2.e.1	Cleared Land		155		29	184	0.1%
2.f.1	Residential Land		62		1	63	0.0%
2.g.1	Agricultural Land		9		0	9	0.0%
	Section Sub-total	*19,136*	*11,658*	*7,779*	*5,539*	*44,112*	*29.5%*
3	**Water Features**						
3.a	***Water Bodies***						
3.a.1	Lakes/Ponds		9,175		823	9,998	6.7%
3.a.2	Double Sided Rivers		146		708	854	0.6%
	Section Sub-total		*9,321*		*1,531*	*10,852*	*7.3%*
4	**Operational Alienations**						
4.a	***Roads***						
4.a.1	Right Of Way (Roads)		260		0	260	0.2%
4.a.2	Resource Roads (6m buffer)	392	9	174	10	586	0.4%
4.b	***Stand Level***						
4.b.1	NSV Stands	5,755		1,531		7,286	4.9%
4.b.2	Islands	0	0	0	0	0	0.0%
4.b.3	Steep Slopes	270	8	137	43	457	0.3%
4.b.4	Isolated Stands	6	0	0	0	6	0.0%
4.b.5	Other Stand-level Constraints	195	0	17	0	212	0.1%
4.b.6	Area Not Interpreted	0	0	0	0	0	0.0%
4.b.7	Area Not Assigned Net Label	0	0	0	0	0	0.0%
	Section Sub-total	*6,619*	*277*	*1,859*	*53*	*8,808*	*5.9%*
5	**Non-Timber Values**						
5.a.1	Plant Habitat	0	0	0	0	0	0.0%
5.b.1	Wildlife Habitat	18	26	0	0	44	0.0%
5.c.1	Tourism Values	76	0	0	0	76	0.1%
5.d.1	Administration	0	0	0	0	0	0.0%
5.e.1	Mines and Quaries	0	0	0	0	0	0.0%
5.f.1	Agriculture	0	0	0	0	0	0.0%
5.g.1	Parks and Reserves	0	0	0	0	0	0.0%
5.h.1	Protected Water Supplies	101	0	0	0	101	0.1%
5.i.1	Scenic Coastal Routes	0	0	0	0	0	0.0%
5.j.1	Visual Quality	98	0	0	0	98	0.1%
5.k.1	Wilderness Coridor	0	0	0	0	0	0.0%
5.l.1	Proposed Protected Area	0	0	0	0	0	0.0%
5.m.1	Protected Road Buffer	0	0	0	0	0	0.0%
	Section Sub-total	*294*	*26*	*0*	*0*	*320*	*0.2%*
6	**Domestic Landbase**						
6.a.1	Domestic Coniferous	2		0		2	0.0%
6.a.2	Domestic Coniferous/Deciduous	1		0		1	0.0%
6.a.3	Domestic Deciduous/Coniferous	0		0		0	0.0%
6.a.4	Domestic Deciduous	0		0		0	0.0%
6.a.5	Domestic Unclassified	0		0		1	0.0%
	Section Sub-total	*4*		*0*		*4*	*0.0%*
7	**Harvestable Landbase**						
7.a.1	Core Coniferous	27,485		22,233		49,718	33.2%
7.a.2	Core Coniferous/Deciduous	2,866		2,556		5,422	3.6%
7.a.3	Core Deciduous/Coniferous	2,280		1,052		3,332	2.2%
7.a.4	Core Deciduous	1,128		799		1,927	1.3%
7.a.5	Core Unclassified	6,622		820		7,442	5.0%
	Section Sub-total	40,381		27,460		67,841	45.4%
7.b.1	Operational Coniferous	1,378		207		1,585	1.1%
7.b.2	Operational Coniferous/Deciduous	143		56		199	0.1%
7.b.3	Operational Deciduous/Coniferous	49		0		49	0.0%
7.b.4	Operational Deciduous	4		0		4	0.0%
7.b.5	Operational Unclassified	10		0		10	0.0%
	Section Sub-total	1,584		263		1,847	1.2%
	Section Sub-total	*41,969*		*27,723*		*69,693*	*46.6%*
	Grand-total	*75,275*	*23,132*	*42,678*	*8,476*	*149,561*	*100.0%*

1.5.2 Age Class

Individual tree ages in a stand can all be the same after disturbance such as fire or harvesting; however, in most cases the ages vary. Forest managers describe stand ages in terms of age classes which generally encompass 20 year classes. The age classes present in the zone are described in Table 3 below.

Table 3 Age Class Description

Age Class	Age	Description	Age Class	Age	Description
1	0-20	Regenerating	5	81-100	Over mature
2	21-40	Immature	6	101-120	Over mature
3	41-60	Semi-mature	7	121-140	Over mature
4	61-80	Mature	8	141-160	Over mature

161 + (represents uneven-aged stands)

The age class distribution in Districts 5 & 6 for the productive forest on CBPPL tenure is shown in Figure 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 as well as habitat availability. A good analogy is the human population demographics of a community. A balanced demographic could be considered most healthy and resistant with a mix of youth, young workers, experienced workers and retirees and seniors. If the communities were all seniors or youth the community and succession would be out of balance and have issues.

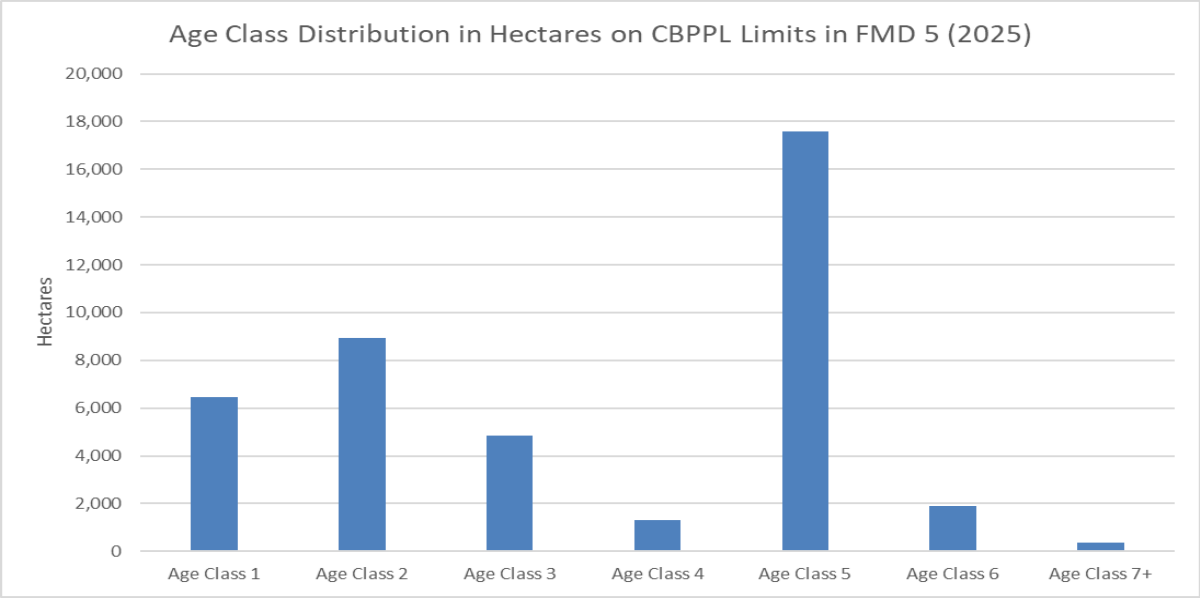

Figure 5 Age Class Distribution FMD 5 on CBPPL Tenure

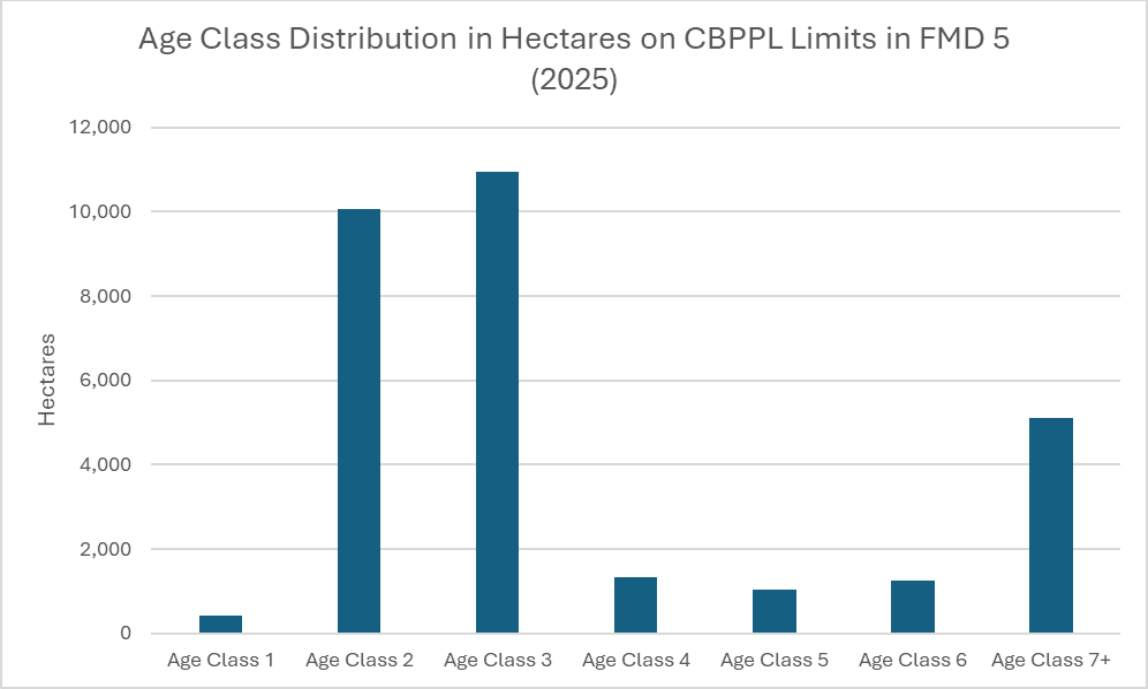

Figure 6 District 6 Age Class Distribution on CBPPL Tenure

The age class structure for Districts 5 & 6 does differ. In District 5 the composition is typical of the rest of the island with an abundance of area in the old age classes and a dip in the intermediate age classes. Harvesting in FMD 6 has been very minimal in the past ten years and its age class structure shows the highest values in age class 2-3, mainly an immature forest. Strategies to rectify any age class imbalances or impacts on wood supply are developed during the timber supply analysis.

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 by several factors including soil fertility, moisture regime and geographic (slope) position. The distribution of productive forest area by site class for Districts 5 and 6 is shown in Figure 7 and 8. On average, good sites can produce 2.6 m3/ha/yr, medium sites 1.7 m3/ha/yr, and poor sites 0.8 m3/ha/yr.

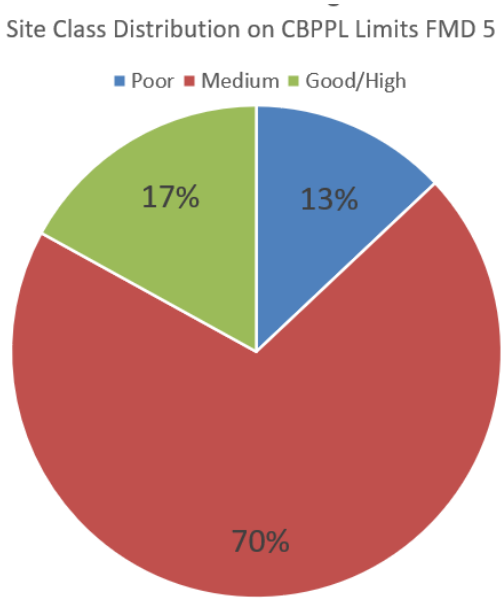

Figure 7 Site Class Distribution FMD 5

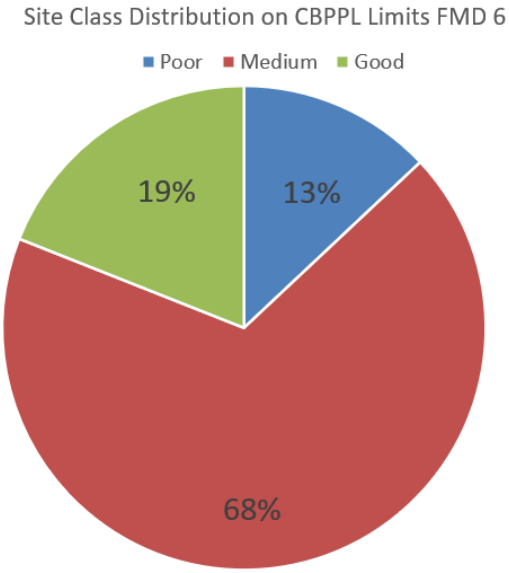

Figure 8 Site Class Distribution FMD 6

Both Districts 5 and 6 have very similar productivity distributions. The majority of the area is medium growth conditions with equal tails of poor and good areas on each end of the spectrum.

1.5.4 Species and Working Group

Working group describes 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 whereby species composition describes specifically, the relative proportion of each individual tree species that make up a stand.

For the purposes of timber supply there are five broad working groups within the Zone 3 CBPPL tenure. The softwood working groups dominate, accounting for approximately 76% of the forested land. The black spruce (bS) working group is by far the most prolific accounting for 39% of the working groups in FMD 5 and 47% in FMD 6. Black spruce can occur as pure stands or in association with other species listed below.

Balsam fir (bF) is the second most abundant on CBPPL tenure. 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.

Mixedwood stands (i.e. Softwood/Hardwood and Hardwood/Softwood) working groups occupy approximately 11% of the forested land. These working groups occur as varying mixtures of fir, spruce, birch and aspen. The pure hardwood working group (white birch (wB), trembling aspen (tA)) occupies less than 3% on CBPPL tenure in the zone.

The following provides a more detailed outline for some of the larger groups, with additional descriptions of the selected accompanying forest types, as described by Meades and Moores in the Forest Site Classification Manual, 1994.

A) Black Spruce - Picea marina (Mill.) B.S.P. Within this working group there are three main forest types that characteristically represent black spruce. These include: black spruce forest, black spruce fen, and kalmia-black spruce forest.

Black spruce forest includes a forest that has a thick humus layer with mainly black spruce as the dominant tree species. The sites within this forest type have a wide range of moisture from dry to wet and the fertility ranges from very poor to rich. Because there is such a wide range in both moisture and fertility, this forest type had to be broken down into six specific forest types. These include: sphagnum-black spruce, black

spruce feathermoss/ bedrock, black spruce-feathermoss/very dry, black spruce feathermoss/ dry, black spruce-feathermoss/bog, and black spruce-feathermoss/moist. This forest types produce merchantable timber. Most of these forest types are common throughout the four districts.

Black spruce-fen is characterized by an abundance of understory that is usually described as fertile but poorly drained. Due to this poor drainage the black spruce in this forest type are usually stunted. These forests are considered important wildlife and plant habitats because of the high fertility and usually grow in open settings. As a result of the open grown, stunted trees, this forest type is not usually merchantable from a commercial harvesting perspective. This forest type is divided into two forest types: carex-black spruce and osmunda - black spruce, both of which are not common in the four districts.

Kalmia-black spruce represents a black spruce forest that is associated with bogs. The trees are open grown with black spruce as the dominant tree, which is usually stunted with abundant shrubs and mosses growing throughout its understory. These sites are normally infertile but range from dry to very moist. This forest type, because of small variations, can be broken down into four forest types: nemopanthus-kalmia black spruce, sphagnum-kalmia-black spruce, kalmia-black spruce, and cladonia-kalmia-black spruce. These forest types are usually considered unmerchantable and are common throughout the districts. All three of these forest types are the result of regeneration in areas burned a number of times over the years. The natural succession following fire in Newfoundland's Boreal Forest is towards black spruce with limited amounts of certain pioneer species such as white birch and trembling aspen. Sites occupied by black spruce are usually away from river valleys and any flood plains in these valleys. Most black spruce occupy hillsides, ridges, and open barrens. Areas that are generally made up of rock outcrops contain black spruce as well.

B) Balsam Fir - Abies balsamea (L.) Mill. Another major forest type is the balsam fir forest. In some districts of the province this type is the dominant species, but in Zone 3 it is not. This species occupies sites that are usually fertile and moist but because these districts have a recurring history of fire, balsam fir cannot become established as they do not naturally occupy burned areas. Due to the complexities of the balsam fir forest type, it can be divided into several types. These are: equisetum-rubusbalsam fir, rubus-balsam fir, clintonia-balsam fir, taxus-balsam fir, dryopterishylocomium- balsam fir, dryopteris-balsam fir, dryopteris-rhytidiadelphusbalsam fir, dryopterislycopodium- balsam fir, hylocomium-balsam fir, gaultheria-balsam fir, pleurozium-balsam fir, carex-balsam fir, and sphagnum-balsam fir. They normally occupy river valleys and flood plains as pure stands or mixed with hardwoods, along with side slopes to these valleys.

This working group is not as prevalent as spruce in the four districts with many of the thirteen forest types not present.

Some are found in limited locations throughout the four districts, which include: rubus-balsam fir, dryopteris-lycopodium-balsam fir, hylocomium-balsam fir, pleurozium - balsam fir, carex-balsam fir, and sphagnum-balsam fir. All balsam fir forest types have balsam fir as the main tree species, with white birch usually abundant throughout. The rubus-balsam fir forest type is found in low to mid-sloped areas that are moist. This forest type has an abundant herb layer but is limited to certain types which differentiate it from the equisetum-rubus-balsam fir forest type, which has a more diverse herb layer. The dryopterislycopodium- balsam fir forest type has narrow moisture regime from moist to somewhat moist that is nutrient rich. This forest type has ground cover that is dominated by ferns and certain moss types and plants that are specific to this type. The hylocomium balsam fir forest type is also moist to somewhat moist but is dominated by a layer of moss instead of the ferns. The pleurozium-balsam fir forest type has balsam fir and black spruce as the main tree species with few white birch. The moss layer is made up mainly of pleurozium schreberi and is found on dry to well drained areas such as dry ridges and outwash deposits. The carex-balsam fir forest type has willow (salix) found in it. The sphagnum-balsam fir is dominated by sphagnum moss on the forest floor and is poorly drained.

C) White Birch - Betula papyifera Marsh. This working group represents the major hardwood component for the forests of the province, and FMDs 4, 5, 6 and 8. White birch is normally found on the fertile sites along streams and rivers, as well as flood plains. It can also be found on fire origin locations as it is a pioneer species that seeds into an area once the forest cover is removed by fire. Pure white birch stands are not that common in the province, especially in the four districts. There are several white birch forest types, all depending upon the understory growth and the associated soil type.

1.5.5 Forest Disturbances

Forest harvesting, fire, insects and windthrow (blowdown) are considered the major forest disturbance types within the zone. High summer temperatures combined with low summer precipitation and prolonged dry spells make the zone susceptible to fire. In recent years, loss has been minimal due to weather conditions, fire prevention activities and enhanced fire suppression capability. However, a major fire can occur in any year depending on weather conditions.

SECTION 2. PAST ACTIVITIES

2.1 Harvesting

2.1.1 Commercial Activity

Table 4 summarizes the commercial and domestic harvest (in metres cubed) in FMD5 and 6 for 2022 – 2025. Data for 2026 could not be included at the time of this plan submission.

Table 4 District 5 and 6 Harvest Summary

AAC Tracking

SOFTWOOD

FMD 5		CORE					OPERATIONAL			
		Harvested		Remaining			Harvested		Remaining	
	AAC	M3	%	M3	%	AAC	M3	%	M3	%
2022	41,000	11,195	27	29,805	73	2,000	0	0	2,000	100
2023	41,000	30,125	73	10,875	27	2,000	0	0	2,000	100
2024	41,000	22,242	54	18,758	46	2,000	0	0	2,000	100
2025	41,000	7,495	18	33,505	82	2,000	31	2	1,969	98
2026	41,000	0	0	41,000	100	2,000	0	0	2,000	100
Totals	205,000	71,057	35	133,943	65	10,000	31	0	9,969	100

HARDWOOD

FMD 5		CORE					OPERATIONAL					INCIDENTAL			
		Harvested		Remaining			Harvested		Remaining			Harvested		Remaining	
	AAC	M3	%	M3	%	AAC	M3	%	M3	%	AAC	M3	%	M3	%
2022	800	32	4	768	96	20	0	0	20	100	2,500	3,300	132	-800	-32
2023	800	27	3	773	97	20	0	0	20	100	2,500	2,050	82	450	18
2024	800	27	3	773	97	20	0	0	20	100	2,500	4,222	169	-1,722	-69
2025	800	0	0	800	100	20	0	0	20	100	2,500	1,845	74	655	26
2026	800	0	0	800	100	20	0	0	20	100	2,500	0	0	2,500	100
Totals	4,000	86	2	3,914	98	100	0	0	100	100	12,500	11,417	91	1,083	9

AAC Tracking

SOFTWOOD

FMD 6		CORE					OPERATIONAL			
		Harvested		Remaining			Harvested		Remaining	
	AAC	M3	%	M3	%	AAC	M3	%	M3	%
2022	33,500	0	0	33,500	100	100	0	0	100	100
2023	33,500	0	0	33,500	100	100	0	0	100	100
2024	33,500	0	0	33,500	100	100	0	0	100	100
2025	33,500	0	0	33,500	100	100	0	0	100	100
2026	33,500	0	0	33,500	100	100	0	0	100	100
Totals	167,500	0	0	167,500	100	500	0	0	500	100

HARDWOOD

FMD 6		CORE					OPERATIONAL					INCIDENTAL			
		Harvested		Remaining			Harvested		Remaining			Harvested		Remaining	
	AAC	M3	%	M3	%	AAC	M3	%	M3	%	AAC	M3	%	M3	%
2022	500	0	0	500	100	0	0	0	0	0	3,400	1,500	44	1,900	56
2023	500	0	0	500	100	0	0	0	0	0	3,400	925	27	2,475	73
2024	500	0	0	500	100	0	0	0	0	0	3,400	1,565	46	1,835	54
2025	500	0	0	500	100	0	0	0	0	0	3,400	1,170	34	2,230	66
2026	500	0	0	500	100	0	0	0	0	0	3,400	0	0	3,400	100
Totals	2,500	0	0	2,500	100	0	0	0	0	0	17,000	5,160	30	11,840	70

2.1.2 Domestic Activity

CBPPL does not manage its land base for domestic harvesting with segregated blocks. Incidental harvest is allowed on the land base through permitting. Domestic cutters can harvest hardwoods, downed and dead wood on this permit. The allowable cut per permit was 25m3 and in 2024 reduced to 15m3 to match Crown cut allowances. The incidental cut recorded is the maximum cut as per the permits issued during that year, as CBPPL does not collect past volumes cut. Estimation of cut can be found in Table 4 above.

2.2. Silviculture

The only silviculture activity from 2022-2025 has been planting. As no harvesting has taken place in District 6 over the past number of years there has been no planned planting in this district. Annual proposed planting in FMD5 was overachieved in FMD5.

Table 5 Summary of Silviculture Activity (2022-2026)

	FMD 5		FMD 6	
Treatment Type	**Area (ha)**		**Area (ha)**	
	Proposed	Treated	Proposed	Treated
Pre Commercial Thinning	0.00	0.00	0.00	0.00
Planting	815.00	919.78	0.00	0.00
Scarification	0.00	0.00	0.00	0.00

Note: 2026 data is not included as it was not available at the time of plan submission.

2.3 Forest Access

The primary road proposed in the last five-year plan was not constructed as primary but there was secondary and winter road construction over the past 5 years. The summary of this construction can be seen in Table 6.

Table 6 Road Construction Activity (2022-2026)

Roads		
District	Type	Constructed (km)
5	Primary	0.0
	Secondary	19.7
	Winter	8.6
6	Primary	0.0
	Secondary	0.0
	Winter	0.0
Total		28.3

Note: 2026 data is not included as it was not available at the time of plan submission.

2.4 Natural Disturbances

2.4.1 Fire

Districts 5 and 6 have had a very infrequent fire history due to its relatively long winters and abundant precipitation. There were no significant fires during the last planning period on CBPPL tenure. Historical data can be found on the gov.nl website.

2.4.2 Insects

There has been no significant defoliation and no treatment for either the hemlock looper or balsam wooly adelgid in the last 5 years. Currently there is a Spruce Budworm outbreak occurring in the province. There were no planned treatment areas in Zone 3 in the last five-year period.

SECTION 3. TIMBER SUPPLY ANALYSIS

The annual allowable cuts for Districts 5 and 6 will be in effect from January 1, 2027, to December 31, 2031.

3.1 Methodology

Using updated forest inventory, contemporary policies, legislation societal view, forest managers leverage the best data available and proven technology to calculate sustainable harvest levels for defined areas. The province reviews its 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 timber license owners, and mandates that a wood supply analysis 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 AACs are defined as the maximum annual rate at which timber can be harvested at a sustainable level into the future (applicable for a period of 180 years). Annual allowable cuts must be calculated on a district basis, however when "rolled up" provide us with the annual allowable harvest level for the timber limits.

3.2 Guiding Principles and Policy Direction

The key underlying principles that guide this analysis are:

(i) the AAC must be sustainable;
(ii) the level of uncertainty (risk) associated with the AAC must be minimized by using empirical information wherever possible;
(iii) there must be conformity between information and assumptions used in the analysis and actions and decisions taken on the ground;

(iv) the analysis must be consistent with other forest values and objectives; and
(v) the timber supply calculation must consider economic, environmental and social factors and not solely the physical supply of timber.

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

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

3.3 Factors Affecting Timber Supply

The forests of insular Newfoundland are variable in terms of age distribution. Typically, there are significant amounts of mature/over-mature forest and regenerating forest and limited intermediate age 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 sites and mature sites. Insect infestation commonly occurs on overmature sites; however, it can spread into mature stands. Fire commonly occurs in overmature sites; however, when conditions are dry, it can extend into all age classes.

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

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

Arguably the most important factor affecting present and future AACs is the available productive land base. However, this productive land base available for forest activity is constantly being evaluated by the

demands/requirements of other stakeholder values. Therefore, it is important that we manage relationships with other users to minimize loss to the forest land base, while considering these other values. Also, to mitigate losses to the productive land base, we must continue to explore ways for growing more volume on the existing land base.

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

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

3.4 Timber Supply Analysis

The timber supply analysis is structured to determine sustainable timber availability, while respecting social, economic, and environmental objectives. Timber supply, in this context, refers to the rate at which timber is made available for harvesting on a sustainable basis. The determination of supply (represented as AACs) involves the use of computer models to forecast the sustainability of possible AAC levels. These models require three basic inputs as described below:

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

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

3.4.1 Land Characterization

To get a current description of the forest resource (or stock), the province has invested significant resources into creating and maintaining a Provincial Forest Inventory. This program accounts for all natural and man-made disturbances such as fire, insects, harvesting, and any enhancement programs, including tree planting

and pre-commercial thinning. Also, each stand in the forest inventory is updated to reflect any yield changes that may have occurred since the previous inventory update.

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

3.4.2 Land Availability

The updated forest inventory was reviewed and classified at the stand level based on the availability of each stand for harvest. The classification system consists of two broad classes being available for the AAC calculation.

Core - available for harvest under normal conditions, and;
Operational - has restrictions on harvesting due to economic constraints.

The remaining productive forest has been removed for varying social/legislative reasons. The major removals are listed below.

3.4.2.1 Non-Timber Related

Consideration of non-timber values has a direct impact on Provincial AACs. It is obvious that as the amount of productive forest land available for timber management drops, so too will the AAC. With the current restrictions, the AAC land base (area where harvesting operations can occur on CBPPL tenure) is only 57% of the total productive forest land base in the zone. On average, in any year, less than .5% of the productive forest land base is influenced by harvesting operations.

3.4.2.1.1 No-Cut Buffer Zones

The province has guidelines that require all water bodies (visible on a 1:50,000 map sheet) be given a minimum 30-meter uncut buffer (from waters edge). In addition to these legislated water buffers, District Managers, in consultation with various stakeholders, have increased buffer zone widths beyond the minimum to protect special values such as salmon spawning areas, cottage development areas, aesthetic areas, wildlife habitat, outfitting camps, etc. Corner Brook Pulp and Paper are also registered to a forest management certification through SFI®. We have placed our own buffers and no-grub zones in certain areas that would be above and beyond the legal requirements.

3.4.2.1.2 Pine Marten and Caribou Habitat

Habitat specialists are working in consultation with industry to study both species and ensure adequate habitat will be available for pine marten and caribou into the future. This work examines the quantity and quality of habitat, as well as the connectivity of habitat. With respect to caribou, both the Forest Agriculture and Lands Branch, Corner Brook Pulp and Paper and the Wildlife Division work together on an annual basis. A caribou management strategy has been put in place which identifies core habitat and outlines the requirements for harvesting in restoration/conservation herd habitat.

3.4.2.1.3 Protected Areas

All established and proposed protected areas are removed from the harvestable landbase for AAC calculations.

3.4.2.2 Timber Related

The potential AAC within a Forest Management District is also further impacted by taking into account other potential losses of land base or timber as indicated below.

3.4.2.2.1 Insect/Fire/Disease Losses

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

3.4.2.2.2 Logging Losses

Surveys of recent harvested areas are conducted each summer throughout the province to determine the quantity and quality of fiber remaining. The estimates of loss from these surveys are 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 low volume stands are removed from the AAC calculation up front. Also, significant adjustments are applied to the Provincial Forest Inventory for stands deemed operable in the timber analysis but left unharvested within operating areas. The reasons for this are linked to the character of Newfoundland's forests; low volume, steep slopes,

rough terrain, and excessively wet ground conditions etc. Again, 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, the pressure on future AACs 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 through time. That is, as a forest stand develops, how much merchantable (i.e. harvestable) volume does it carry at any given point? These yield forecasts (referred to as yield curves) are required for each type of forest stand (called a stratum) comprising the forest. In Newfoundland, there are dozens of distinct forest stratum for which separate yield curves are required. These are defined by the tree species in question (e.g., balsam fir, black spruce), the site quality (e.g., good, medium, poor), the geographic region (e.g., the Northern Peninsula, Western Newfoundland) and other factors likely to affect yield.

Yield curves are a key element in a 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 actually 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 realistic yield curves. Two growth models were used, one for projecting stand development under natural conditions and the other for projecting growth under managed (i.e., silviculturally enhanced) conditions. Tree and stand development data generated from the department's forest inventory program were used to make stand growth predictions. These projections were then evaluated against empirical data from thousands of temporary plots established throughout the island. If the projections varied from real-life evidence, the curves were adjusted to make them more accurate where supporting data was available.

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

3.4.4 Modelling 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 minimized fiber losses and enhance forest sustainability.

CBPPL Woodlands key objectives and principles include:

- Supply Newfoundland's three major sawmills with spruce and fir sawable and on spec logs
- Utilize fresh sawmill residual chips
- Furnish the pulp mill with 25% black spruce content to meet customer specifications
- Avoid stream crossings whenever possible

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 harvest 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 AACs 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 narrowed the gap between modelling and real-world application with respect to sustainable AAC. 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 Corner Brook Pulp and Paper's commitment to long term sustainability of our forest resource, timber supplies were projected 180 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 and ecosystem management as well.

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. The 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. In other words, for every m3 of wood harvested another harvestable m^3 is left on the land base. The requirement for a growing stock buffer is based on several factors. First, some of our non-timber objectives are not explicitly accounted for in our planning process and therefore will require a growing stock buffer to achieve them. Second, we are unable to follow optimum harvest schedules explicitly due to operational restrictions on harvesting. Third, the Province is not willing to assume high risk with the sustainability of the timber supply. For these reasons a growing stock constraint of two times was used. This constraint was used in concert with harvest scheduling to help map out a reasonable harvest for the next 20 years.

3.4.4.5 Old Forest Targets

Consistent with our ecosystem policy, the Province introduced into the analysis an old forest target that at least 15% of forests are older than 80 years. While this is the minimum target, actual results are usually higher. This initiative was designed to provide a coarse filter approach to maintaining representative forest structure. It ensures the presence of certain amounts of old forest across the landscape in the future. With advances in modeling, this target can now be tracked across a district rather than a single ownership.

3.4.4.6 Operability Limits

Operability limits are the timeframe in which forest harvesting activity can be undertaken within specific forest stands. Stand growth development (merchantable timber volume) and individual piece size of trees are factors which determine a stands readiness for commercial harvest activity. To meet management objectives and maximize the total volume of wood harvested, the model schedules harvests inside the operability limit window defined as the period between the minimum harvest age and the maximum harvest age. Stands younger than the minimum harvest age have small trees that are uneconomical to harvest yet and stands older than the maximum harvest age have 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.

3.4.4.7 Silviculture

Silviculture is one of the main forest management tools available to forest managers when they are analyzing the many different future forests that are generated using the wood supply modelling software. The silvicultural actions used in the 2026 analysis included:

FMD 5

- 20 ha plant/year
- 50.6 ha pre-commercial thinning/year

FMD 6

- 4.2 ha plant/year
- 13.1 ha pre-commercial thinning/year

3.5 Inventory Adjustments

One of the limitations of the current wood supply model is its inability to account for volume depletions outside of what is reported for harvesting operations. The model produces a gross merchantable volume

(GMV) figure which needs to be adjusted to account for volume losses such as fire, insects/disease, timber utilization practices and the presence of stand remnants.

3.5.1 Natural Disturbances – Fire and Insects

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. With respect to insect damage, 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.

3.5.2 Timber Utilization

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

3.5.3 Stand Remnants

For this plan submission there was no inventory adjustment built into the wood supply run or otherwise in predicted harvest levels found on the coversheets in Appendix 9. Through data collection from past harvest areas the actual harvest levels have been higher than predicted volume from inventory. For this reason, CBPPL has discontinued the previous 9% reductions in AACs.

3.6 AAC Results

The results of the 2027-2031 timber supply analysis for Districts 5 and 6 are shown in Table 7 below.

Table 7 Provincial Annual Allowable Cut Levels 2027-2031

Provincial Annual Allowable Cut (AAC) 2027-2031										
			Softwood Volume			Hardwood Volume			Incidental Volume	
Land Tenure	Zone	District	Core	Operational Constrained	Sub-total	Core	Operational Constrained	Sub-total	Non-AAC	Sub-total
CBPPL	3	5	34500	2200	36700	2200	50	2250	4700	4700
		6	36500	240	36740	1600	0	1600	4800	4800
	Sub-total		71000	2440	73440	3800	50	3850	9500	9500

SECTION 4. CARBON ANALYSIS

4.1. Introduction

Forests play an important role in the global carbon cycle by taking carbon dioxide (CO_2) out of the atmosphere. During photosynthesis, trees convert CO_2 into glucose and a variety of other organic molecules that support growth, metabolism, and the formation of structural tissues. This process—where atmospheric CO_2 is captured and turned into biological material—is known as carbon sequestration. Once that carbon becomes part of the tree's trunk, branches, leaves, and roots, it is referred to as carbon storage.

The stored carbon remains in the tree's biomass until a disturbance occurs. It is released back to the environment when the tree dies and decomposes, suffers damage from natural events, or is harvested. The way carbon behaves after a disturbance depends on the type of event; for example, decay, fire, or wood utilization all return carbon to the atmosphere at different rates.

A forest's age class structure, which develops over time as a result of its disturbance history, is the primary factor influencing how much, and the rate of, carbon it can capture and store. Young stands generally sequester and store the least carbon because they have limited leaf area and relatively little biomass. As forests reach the middle stages of development, they experience rapid growth and accumulate biomass quickly, making them highly effective at sequestering carbon. By this stage, their carbon storage capacity is increasing significantly.

Mature forests, although essential for long term carbon storage due to their substantial biomass, do not sequester carbon as rapidly as younger stands. Growth slows, and natural processes such as senescence begin to break up the stand, meaning that much of the carbon uptake is directed toward maintaining existing tissues rather than creating new ones. Because different age classes contribute to carbon sequestration and storage in different ways, maintaining a diverse distribution of stand ages is the most effective strategy for supporting strong, long term carbon benefits across a forest landscape.

When trees are used for products such as lumber, carbon can be stored for 100 years or the life of the product.

4.2. Carbon Modelling and Forest Management Planning

A clear distinction between the managed and unmanaged portions of the forest land base is essential for understanding how carbon behaves across the landscape. The managed land base—which consists of the

core, operational, and domestic zones—is the portion where harvesting, silviculture, and other forestry practices can actively influence forest structure and age distribution to achieve the objectives outlined in the forest management plan. In contrast, the unmanaged land base includes watercourse buffers, ecologically protected areas, and non-commercial forest stands. These areas remain constant across all forest management scenarios within a given Forest Management District (FMD), since no harvesting or silvicultural activity can be scheduled there.

Within the unmanaged land base, forest development follows natural successional patterns because these areas are neither created nor eliminated in the modelling process. Non-productive stands are assigned an age of 120 years and are excluded from the age class distribution figures, although their contribution to aboveground carbon storage is still represented in the model's "unmanaged forest" trendline for each district.

To understand how different management strategies influence long term carbon storage, four modelling scenarios were evaluated:

Scenario 1 (S1): No Management Activity

This scenario assumes no harvesting or silviculture, allowing forests to progress entirely through natural succession. It provides a reference point for understanding the natural range of carbon variability across the managed land base. However, this scenario also reflects the highest potential for wildfire or insect outbreak because long periods without disturbance increase fuel loading. Meant to test the models forest dynamics in the absence of industry or domestic influence.

Scenario 2 (S2): Maximized Carbon Storage

In this scenario, harvesting and silviculture remain within all wood supply limitations, but the optimization goal is to maximize the amount of carbon retained on the landscape. Planting levels, harvest deferrals, and all other operational constraints remain in place. The model uses available management tools to adjust the age class structure toward an ideal balance, resulting in the highest achievable carbon storage under realistic policy and supply restrictions. This scenario is meant to see what is the upper potential limits that the forest is capable of producing.

Scenario 3 (S3): Fully Unconstrained Management

This scenario removes all limits on harvesting and silviculture for the entire 180 year modelling period. Because it eliminates every operational restriction, it depicts the absolute upper bound of carbon storage

potential achievable through management. Although it is useful for understanding theoretical limits, it is not practical for real world forest operations.

Scenario 4 (S4): Operational Harvest Scenario

This is the scenario used to produce harvest schedules that inform Managers in the development of five year operating areas. It represents the management approach that will actually guide forest operations. Comparing this scenario against S1, S2, and S3 allows managers to evaluate how the proposed harvest strategy affects overall carbon stocks and how its carbon trajectory differs from both the natural baseline and the theoretical upper limits of carbon storage.

CBPPL is using Scenario 4 because it is the only modelling option that reflects the real harvesting and silviculture activities planned for the district, rather than theoretical or idealized conditions. While the other scenarios help illustrate natural carbon dynamics (S1), maximum carbon storage under constrained management (S2), or the absolute upper limit of carbon accumulation under unrealistic conditions (S3), they do not represent what will actually occur on the landscape. Scenario 4 captures the operational harvest levels, spatial constraints, silviculture commitments, and wood flow requirements that District Managers rely on when developing their five-year Commercial Operating Areas. By using Scenario 4, CBPPL can evaluate how the proposed management regime affects aboveground carbon stocks, compare its carbon performance to the reference scenarios, and ensure that carbon outcomes are assessed within the context of feasible, sustainable, and policy compliant forest operations.

Accordingly, the carbon analysis for the districts within this planning zone will be completed by the Department of Forestry, Agriculture and Lands (FAL) using the modelling framework described above. The analysis will be conducted at the district level and will include the combined forest land base of both the Crown and Kruger management areas to provide a comprehensive assessment of aboveground carbon dynamics across the landscape. The carbon results presented are based on forest management model projections and represent the expected carbon outcomes associated with the selected management scenario over the planning horizon. These findings will be incorporated into the Crown's Five-Year Forest Management Plan submission, where they will be used to evaluate carbon storage trends, compare management alternatives, and support sustainable forest management decision-making within the districts.

SECTION 5. RESOURCE VALUES

5.1. Guiding Principles of Sustainability

There are five guiding principles of overall sustainability, which include environmental, economic, political, social, and cultural sustainability. Environmental sustainability looks directly at ecosystem health, both now and in the future. Ecosystem health is determined by such factors as ecosystem integrity, biodiversity, productive capacity, and resiliency. The five-year operating plan must ensure these factors are intact.

Economic sustainability demands that forest resources be managed and distributed efficiently and equitably among the stakeholders, within the capacity and limits of the forest ecosystem. Economic development has been given top priority by many of Newfoundland's people and their representative, the government. However, economic development does not proceed without the incorporation of the other factors into the decision-making process.

Political sustainability refers to goals and management objectives being applicable, administrable, and practical. These goals and objectives must maintain these qualities well into the future with the aid of public input and support. Social sustainability means fairness and equity to all stakeholders. Cultural sustainability is attained by incorporating both indigenous values and Newfoundland'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, many of Newfoundland's public 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 achieved.

5.1.1. CBPPL Sustainable Forest Management (SFM) Plan Introduction

The forest industry in Canada has evolved from the management of the timber resource to the management of the forest ecosystem. Previously, forest managers developed forest management plans in isolation, focusing on timber. As key external stakeholders began requesting the inclusion of other values, consultations with the public and other resource managers evolved simultaneously with the incorporation of non-timber values. This has become a cornerstone of sustainable forest management paradigm.

Corner Brook Pulp and Paper Limited (CBPPL) have joined in this shift to sustainable forest management by incorporating social, cultural, environmental, and economic values in the sustainable development of Newfoundland's forests. Forestry, Agriculture and Lands and CBPPL have incorporated stakeholder

consultations in the forest management planning process since the 1980s, developing a positive relationship among the government, CBPPL, and the community. Public and stakeholder involvement in the identification of values and the development of management plans benefit present as well as future generations.

The Sustainable Forest Management (SFM) Plan for the forested land on insular Newfoundland for which CBPPL has management responsibility is described as the Defined Forest Area (DFA). It was originally developed with the cooperation of the Public Advisory Committee (PAC), a group of dedicated individuals and organizations interested in sustainable development of the forests of the DFA. The planning process involves public consultation and follows the principles of sustainable forest management.

CBPPL's first SFM Plan was developed over 16 months and released in July 2004. In late 2008, the Canadian Standard Association released a draft revised standard (CSA® Z809-08), and the PAC began updating CBPPL's plan to conform to the new standard, incorporating lessons learned and continual improvement. In 2012, CBPPL was also certified to Forest Stewardship Council (FSC®) Boreal Standard. In 2018 and 2019 both standards (FSC and CSA respectively) were not maintained and instead replaced with CBPPL's newest forest management standards. In July of 2019, certification to two Sustainable Forestry Initiative® Standards (SFI®), Forest Management and Fibre Sourcing, was achieved. The PAC committee, although a requirement of the CSA standard only, was kept intact to continue to aid public consultation for future planning inputs and to meet standard and government requirements.

CBPPL wishes to illustrate to the public (the landowners) and to its customers that the DFA is being managed on a sustainable basis. To this end, CBPPL seeks to maintain certification to SFI and Canada's national sustainable forest management (SFM) Standard. Forest certification gives organizations a system for continually improving their forest management performance and engaging interested parties in a focused participation process. Rigorous and regular independent third-party audits are involved in certification to both standards.

CBPPL Woodlands' Environmental Management System (EMS) is the vehicle that ensures fulfillment of the SFI Standards requirements. CBPPL's EMS is a registrant to the ISO 14001 Standard, a standard that incorporates environmental aspects and continual improvement into all forest operations. EMS applies to all Woodlands operations controlled by the company including management planning, road construction and maintenance, harvesting operations, transportation of fibre, silviculture, and support services. The

documented procedures of EMS will provide the system to satisfy all requirements of the ISO 14001 and SFI Forest Management and Fibre Sourcing Standards.

Throughout the SFM Plan, references are made to Indicator Profiles. The profiles, located in the final section of the plan (which can be found on CBPPL's website www.cbpplwoodlands.com), contain the background information, management strategy, and implementation details for each of the indicators of sustainable forest management and adapted to satisfy indicators for the SFI standards.

The auditing process, conducted by an independent third party, determines whether the requirements are implemented at the DFA level.

5.2 Values Structure

The forest ecosystems of the zone provide a wide range of values to different individuals and groups. These include consumptive values such as timber products, hunting, trapping, sport fishing, and berry picking, and non-consumptive values like skiing, snowmobiling, hiking, and bird watching. Also, there are 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, these spiritual values are a product or an accumulation of all values.

Other values such as water quality, parks and protected areas etc. provide for the protection of the forest ecosystems which can enhance the other values listed above. Many of the values in the zone were identified by this or previous planning teams. Presentations of pertinent information on each value by knowledgeable individuals or groups provided stakeholders with relevant information to make informed decisions. Other values, while not specifically outlined by the planning team, are also identified, and discussed to provide a more complete description of the range of values found in the zone. The following represents a framework for characterizing values in a clear and consistent manner. This approach consists of three components:

(a) Description of Value

- Why the value is important, types of activities, intensity, spatial extent, employment, etc.

(b) Critical Elements

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

(c) Operational Prescription

The operational prescription is defined as "a fixed or predetermined policy or mode of action".

These ‘modes of action’ would be implemented in the five-year plan as:

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

The prescription may be specific to road building, harvesting, site remediation or silviculture. Where possible these specifics will be listed. Individual values were discussed both at the strategic and operational level. Strategic level information is the focus of discussion in this section. They provide a mechanism to resolve conflicts that might arise throughout or after the five-year planning process. Where possible, the physical location of the value on the landscape (operational level) was also identified during the discussion of values (Section 6). This helps facilitate the preparation of the five-year operating plan by identifying potential areas of conflicting use early in the process. In many instances, the Environmental Protection Guidelines (EPG’s, Appendix 1) can 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.

Each value has been grouped into one of six categories:

1. Indigenous Values
2. Cultural Heritage
3. Landuse and Recreational Value
4. Science and Research Values
5. Biological Values
6. Water Values

5.2.1. Indigenous Values

Characterization:

Indigenous values in Newfoundland and Labrador forests are rooted in a deep, long-standing relationship between people, land, and all living beings. For Indigenous Peoples such as the Mi’kmaq, Innu, and Inuit, forests are not simply resources but living systems that sustain cultural identity, spirituality, and community well-being. Traditional values emphasize respect, reciprocity, and stewardship—taking only what is needed, minimizing waste, and ensuring the forest remains healthy for future generations. Forests provide food,

medicine, materials, and travel routes, while also serving as places for teaching, storytelling, and passing on Traditional Knowledge. These values support a holistic approach to forest use and management, where ecological balance, cultural continuity, and intergenerational responsibility are inseparable.

Qalipu First Nation (QFN) houses a database of Traditional Land Use (TLU) within Trailmark that was historically collected and continually being collected through QFN led Traditional Use Studies (TUS). This is a confidential, internally managed collection of data that is utilized during consultation, environmental assessment and land stewardship purposes to inform decision making. It documents land and resource use across Ktaqmkuk (Newfoundland), highlighting the mi'kmaq traditions and areas of cultural significance within QFN territory and consists of multiple layers of areas and species of importance.

Below are some of the broader categories that are further refined within the dataset.

- Lodging areas – Built cabins, tilts, lean-tos, locations stayed overnight
- Hunting – Rabbit, moose, caribou, waterfowl
- Trapping
- Fishing
- Medicines/Edibles – harvesting wildberries and plant medicine

Critical Elements:

Forest harvesting can significantly affect Indigenous values in Newfoundland forests when it alters the balance between people, land, and living systems. Poorly planned harvesting can damage culturally important sites, reduce access to traditional foods and medicines, and alter wildlife habitat relied upon for hunting and trapping. It can also interfere with travel routes and gathering areas that are essential for teaching and passing on Traditional Knowledge. When harvesting prioritizes short-term economic gain over long-term stewardship, it conflicts with Indigenous principles of respect, reciprocity, and responsibility to future generations. However, when Indigenous voices are meaningfully included in planning and harvesting is done sustainably, forest management can better align with Indigenous values and support both cultural continuity and forest health.

Operational Prescription:

The inclusion of Indigenous values in forest harvesting plans helps ensure that forestry activities respect cultural relationships with the land while supporting long-term sustainability. This involves meaningful engagement with Indigenous communities in decision-making, incorporating Traditional Knowledge alongside scientific data, and recognizing culturally significant sites, species, and land uses. Harvesting plans that reflect Indigenous values often emphasize stewardship, balance, and intergenerational responsibility, leading to practices such as selective harvesting, protection of wildlife habitat, and preservation of traditional travel routes and gathering areas. By integrating these values, forest management can incorporate practices that further support ecological health, cultural continuity, and mutual respect between Indigenous communities and the forestry sector.

CBPPL will:

- Begin consultation as early as possible to focus on the entire district and not just the specific harvest sites
- Provide relevant information about the proposed harvesting activities such as maps, timelines, methods, and impacts
- Incorporate traditional knowledge where appropriate

- Identification through dialogue and mapping exercises, culturally important sites
- Use collaborative planning - Including timing, intensity, and techniques
- Continue to provide information on the plan on an annual basis
- Be respectful of the data that is shared and represent it in five-year plans as requested by First Nations

5.2.2. Cultural Heritage

5.2.2.1. Archaeological Sites

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 in size, so it is important to protect these sites and professionally record as much information possible to fully understand its history. To do this properly, the site must not be disturbed.

Critical Elements:

Major threats to historic resources are projects involving activities which disturb soil layers and/or provide unintended public access to the archaeological resources. Forestry activities such as construction of access roads and bridges, harvesting and mechanical site preparation have the potential to destroy historic resources.

While forestry activities can have adverse impacts on historic resources there are also beneficial effects. When 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 that the Provincial Archaeology Office (PAO) be involved at the planning stage to ensure that mitigative measures to protect historic resources are developed at the earliest possible time. The PAO will review all five-year operating plans and provide feedback.

In order that known archaeological sites and potential unknown sites are protected from forestry activities, buffer zones will be necessary in some areas whereas archaeological assessments may be required in others. Known archaeological sites must be avoided, and ground disturbing activities are not to occur within 50m of them.

Buffers may also be required along all rivers and ponds, as well as along the coastline where there is potential for archaeological resources to be found.

As per the Environmental Protection Guidelines:

When an archaeological site or artifact is found, the Historical Resources Act requires that all development temporarily cease in the area and the discovery be reported to the Provincial Archaeology Office at (709) 729-2462. The Provincial Archaeology Office will respond immediately and will have assessment requirements and mitigation measures in place within seven days as agreed to by the Provincial Archaeology Office and the operator. Forestry activity can then continue.

5.2.3. Landuse and Recreational Value

5.2.3.1. Timber Resource

Characterization:

One of the resource values is harvesting of timber to provide forest products. Historically, timber has been harvested since the first inhabitants settled in the zone. Initial uses were mainly domestic in nature to supply timber to build houses, fishing sheds, heating and cooking. With the increase in population, more commercial uses have arisen for timber, which includes lumber, pulp and paper products, and value-added products. Domestic harvesting still provides fuelwood to heat many homes and sawlog material for residential home construction.

Commercial activities provide many jobs in harvesting, sawmilling, trucking, pulp and paper manufacturing and related spin-off industries for residents.

Silviculture treatments are important to the forest resource because it ensures a vigorous and healthy forest is maintained. Forest renewal activities ensure productive land base is maintained by 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.

Protection of the forest from various disturbances is also a major characteristic of resource management. Because of the long fire history in the zone, protection through well maintained and/or upgraded initial attack equipment (i.e. water bombers, pumps, hose and trucks) and well-trained fire management staff is required. A large fire today in the older softwood forest would be devastating to industry. While insect kill has not been a major disturbance in recent years, protection is still critical since there is a significant area of thinned balsam fir stands, which is paramount to future AAC's. Protection of other resource values through modification of activities and enforcement is also important.

Spruce and Fir

Black spruce, white spruce and balsam fir are the main sawlog and pulpwood species within the province. Within this planning zone, black spruce accounts for more than 90% of the softwood harvest. Black spruce fiber is valued for its strength properties in lumber and pulp and paper products. Newfoundland black spruce has received the highest strength rating in North America for use in the production of wooden I-beams. Additionally, spruce and fir-dominated stands comprise more than 84% of the available forested habitat in the zone. These species are managed for maximum sustainable harvest levels though the harvesting and silviculture strategies referred to later in section 8. Protection and long-term sustainability of these species will be achieved through strict adherence to AACs and refinements to future woodsupply

analysis.

White Birch

Traditionally, white birch is a valued species for domestic fuelwood. White birch also benefits the cycling of nutrients, the structure of forest soils, and can help in the reduction of insect infestations and in the decrease in spread rates of forest fires (Perry, 1994). White birch dominated stands comprise approximately 15% of the forested land base in the planning zone. With efforts to manage this species on a sustainable basis, in 2002 the first AAC's were developed for white birch. One of the criteria of species sustainability is its ability to regenerate.

Critical Elements:

The overall 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 and maintenance
- enhancement of younger age classes through thinning to correct age class imbalance

Guiding Principles:

- enforcement of **Forestry Act**, regulations, guidelines and policies
- minimize loss of productive land base through spatial and temporal compromises and continuous dialogue with other resource users
- education (staff, public, operators)
- aggressively conduct silviculture, access road, and protection activities
- implement best management practices. The *EPG's* outline courses of action and mitigative measures for forest activities. These EPG's are outlined in their entirety in Appendix 1, with some highlighted subject areas listed below.
    - garbage disposal
    - fuel storage
    - mineral soil exposure
    - buffer requirements
    - road and bridge construction
    - silviculture and harvesting activities

5.2.3.2. Agriculture

Characterization:

Soil surveys show 100,000ha or 0.9% of the Island has mineral soils suitable for farming. There is a substantial agriculture industry in the zone, with considerable potential to expand and provide increased economic benefits. Also, abundant organic soils available on peat lands create opportunities for cranberry and commercial sod production.

Commercial agriculture is concentrated in Campbellton, Comfort Cove, Gambo, Northern Arm and Pleasantview. Agricultural products produced represent a significant portion of the total agriculture industry in the province. There are approximately ~70 commercial farms in Planning Zone 3 from the livestock

sector (poultry, beef, hogs, sheep and fur) and the Crops Sector (vegetables, small fruit, forages, Christmas trees and greenhouses production). Some land has been leased to commercial growers and operations are more research, certification, and demonstration-focused than historically. There is also a peat harvesting industry (HiPoint Industries Ltd.) near Bishop's Falls.

There are several commercial blueberry farms in the zone comprising a significant portion of the provincial industry. Blueberries originating from managed areas have the potential to draw a higher market value than wild berries. In the past few years, more than 40 hectares have been developed for intensive blueberry management.

The newest agricultural sector developing in the zone is cranberries. There have been a number of farms recently established in the zone.

Critical Elements:

It is difficult to identify and plan all sites for potential future agriculture use and often this will result in conflicts 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 will be available for the agriculture industry to expand.

Guiding Principles:

Lands designated for forest management can include areas with high potential for agriculture. 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 should include a business plan approved by Forestry, Agriculture and Lands.
- Wood harvested on agriculture leases shall be completed under a crown cutting permit.
- Where possible forest operations are encouraged to clear identified land within the Agriculture Areas of Interest which are not included in the woodsupply calculations.

5.2.3.3. Mining Exploration and Quarrying

Characterization:

Within Planning Zone 3, there is a diverse geological environment which hosts a wide variety of both metallic and industrial minerals including, but not restricted to; copper, nickel, lead, bitumen, granite, gneiss, marble, gold, asbestos, silver, iron, limestone molybdenum, uranium and thorium. There is also granite with dimension stone potential. Some of the geologic history of the zone features rock types and rock formations which indicate the processes and geologic ancestry of the parent material, from which some of the soils of the planning zone's ecoregions were derived. In this zone, there are 5,600 mineral exploration claims staked and registered. The majority of claims have been staked for their precious (e.g. gold, silver) and base (e.g. zinc, copper) metal and dimension stone (e.g. granite, gabbro) potential. In addition, some claims have been staked for their industrial mineral (e.g. silica, mica, talc) potential.

Exploration activities typically consist of prospecting, geological mapping, grid line-cutting, geochemical

surveys, ground and airborne geophysical surveys, mechanized trenching and diamond drilling. In addition, there are many active quarries in the zone which generate significant royalties. These figures are included to illustrate the significant contribution that mining has made to the local and provincial economy. There are also several active mines in the province and mining represents a major component in the provincial economy.

CBPPL supports mineral exploration and quarry activities and uses the Crown Lands Referral Policy (Appendix 2) to administer permits as requested. Woodlands staff have reviewed, and requires, that permitted activity follow the Environmental Guidelines for Mineral and Quarry Exploration as found in Appendix 3.

Critical Elements:

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

Mining: can have potential negative impacts to forest ecosystems and future wood supply calculations. Mining and quarrying represent permanent alterations to the landscape whereas mineral exploration activities at most involve temporary disturbance. It is also a requirement to rehabilitate after the mineral exploration is complete.

Timber Utilization: Mineral exploration where the cutting of trees is required:

a. Operators must attempt to extract the timber harvested. This can be delayed to winter months when access by snowmobile is possible.

b. It is permitted that the operator may use the harvested material as corduroy to lay down over sections of access trails constructed on wet or soft ground.

These activities may include: access trail construction, trenching, test pits, clearing drill pads and creating campsite or laydown areas.

Guiding Principles:

- Ensure that quarries and open-pit mines are rehabilitated. Ensure that the organic overburden is stockpiled and stored in a manner so that it can be used to rehabilitate the site. Rehabilitation requirements can change on a case-by-case basis and could include if warranted the requirement that sites return to a condition conductive to forest regrowth.
- Avoid planning silviculture activity in areas adjacent to mines or quarries. Annual correspondence of silviculture plans to the Mines Division to identify overlaps and mitigate if needed.
- Every attempt will be made to extract timber harvested as part of oil and mining exploration and development.
- Crown Lands Referral Policy Version 6 (Including Compensation Rate Schedule) can be found in Appendix 2. This outlines specific requirements for Mining Exploration and Development. Future updates to this policy are expected as CBPPL continues to work with Energy and Mines Department.
- Road decommission, bridge removal or upgrade work that may take place on CBPPL Tenure will be communicated to the Department of Energy and Mines to mitigate potential negative impacts.
- Permitted activity by CBPPL and IET are to follow the Environmental Guidelines for Mineral and Quarry Materials Exploration, as provided by the Energy and Mines Department.

5.2.3.4 Wind Energy

Characterization:

Newfoundland and Labrador has some of the best wind energy potential in Canada because of its location along the North Atlantic, extensive coastline, and frequent storm systems that produce strong and steady winds both on land and offshore. These natural conditions make the province highly suitable for large-scale wind power development. The combination of rugged terrain and exposed coastal regions results in high average wind speeds, supporting both existing small wind projects and the potential for much larger developments. In recent years, interest in wind energy—especially for use in hydrogen production—has increased significantly, with large areas of land and several major projects being considered to take advantage of this resource. While wind energy currently makes up a relatively small portion of the province's electricity generation compared to hydroelectric power, it is seen as an important opportunity for future growth, helping to diversify the renewable energy sector, stimulate the economy, and strengthen Newfoundland and Labrador's position in clean energy.

Critical Elements:

The development of wind energy projects in Newfoundland and Labrador has several critical elements that directly relate to the forest industry, especially because proposed wind sites are located on Crown forest land. Key elements include:

- Land Use and Forest Tenure: Wind farms often require large areas of land for turbines, access roads, and transmission corridors. Much of this land overlaps with forestry management units (FMUs) and licensed timber areas. This can lead to loss or reallocation of productive forest land. Conflicts with existing timber harvesting rights and planning schedules may occur.
- Timber Clearing and Fibre Loss: Construction of turbines, roads, and laydown areas requires clearing forest stands. This results in the direct loss of merchantable timber volume and the potential fragmentation of remaining forest stands. Depending on the project there could be opportunities for the forest sector to salvage and utilize cleared wood, offsetting some losses. These opportunities would be determined on a case-by-case basis.
- Access Infrastructure (Roads): Wind projects need extensive road networks, often in previously undeveloped forest areas. These roads can improve access for forestry operations (harvesting, silviculture, fire suppression) as well as reduce operational costs. However, they may also increase pressure on sensitive ecosystems and change long-term forest management dynamics
- Integrated Land-Use Planning: Coordination between energy developers and forestry planners is essential. Requirements may include alignment with forest management plans, and joint planning for land allocation, road use, and mitigation strategies.
- Policy and Regulatory Considerations: Both industries operate under provincial regulation, so Crown land allocation policies must balance timber vs. energy priorities
- Long-Term Land Use and Reclamation: Wind farms generally have long lifespans (20–40 years), affecting forest planning cycles. Some considerations include how land is managed during operation and the reclamation or reforestation requirements after decommissioning.

Guiding Principles:

- Ensure wind developments are incorporated into forest management planning early
- Engagement with companies at the planning level to avoid high-value timber stands, reducing the impact on the fibre supply impacts
- Develop agreements with Crown and/or windfarm companies to potentially harvest, merchandise

and fully utilize the cleared timber
- Design access roads for dual use between the project construction and forestry operations. Establish agreements on road standards, maintenance responsibilities and access rights through Memorandums of Understanding or other signed documents
- Where CBPPL tenure is impacted, opportunities are provided for land transfers or compensation due to land base loss
- Review of Crown land referrals in a timely manner with respect to windfarm projects in the province.

5.2.3.5 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 of the province's ecoregions including their natural processes and features, and rare natural phenomena, so as 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 Torngat 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 were forest management activities has occurred.

Guiding Principles:

The type of activities encouraged or permitted within various protected areas in the province depends

entirely on the type of protected area and the rational for its establishment. Generally, all non-consumptive activities are permitted; educational activities and scientific research within protected areas generally require a permit and are encouraged.

Protection

- in most protected areas, new development is prohibited such as mining activity, hydroelectric projects, forestry activity, agriculture activity, roads/trails, cabins and new structures.

Operational

- 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
- no roads are to be constructed within 500m of an established Provincial Park
- where forestry operations are scheduled within one kilometre 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.

5.2.3.6. Newfoundland T'Railway Provincial Park

Characterization:

The T'Railway is a linear park approximately 883 km in length, making it the longest linear park in Canada. Comprising the former Canadian National Railway right of way, which varies from 25 to 100 feet each side of the center line. It provides an all-season, multi-use recreation corridor and is developed and managed with 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 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 Elements:

- 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.
- Applicable permits will be obtained to construct intersecting road crossings as needed.
- Applicable permits will be obtained for use of vehicle and heavy equipment on the T'Railway.

5.2.3.7. Recreation

Characterization:

The Exploits and Bonavista Bay areas have outstanding scenery, interesting topography, and opportunities for viewing wildlife and flora in a natural setting. These elements represent a small list of reasons why the zone is used extensively for recreational purposes. Hunting, sport fishing, hiking, skiing, kayaking/canoeing and ATV/snowmobiling are major recreational activities in the area. There are also several safe anchorages for boat touring in Exploits Bay. Non-timber recreational values are expected to play an increasing role in forest management practices.

Critical Elements:

Wilderness

Backcountry recreational activities are dependent on the existence of natural pristine wilderness areas. The temporary removal or alteration of this pristine wilderness through forest harvesting practices may result in decreased recreational activities for a given period.

Accessibility

An increase in forest access roads may increase accessibility to remote areas. In turn, this may increase the amount of traffic in an area (both vehicle and pedestrian) and increase or decrease the value of the experience for many recreational activities. Most individuals involved in recreational activities are concerned about viewscapes. Many of the recreational activities occur because of particular viewscapes.

Guiding Principles:

To prevent negative ecological effects and provide positive experiences, access and levels of recreational activities can be monitored. Public surveys can be used to measure the experiences and the levels of recreation occurring in the zone.

Wilderness

If possible, forest operations should avoid wilderness areas where high concentrations of recreational activities occur. Where operations are necessary, stakeholder meetings could prevent conflicts through temporal scheduling.

Limiting Accessibility

Decommissioning forest access roads could be a possible option when forestry activities are completed. Where possible, harvesting should be conducted using winter forest access roads, which creates less traffic and better allows decommissioning. Where possible, the Crown Lands Division of the Department of Fisheries, Agriculture and Lands shall plan cottage development along newly developed forest access roads in conjunction with Forestry Services. This will allow for planned cottage development areas and potential Crown land reserves to help minimize potential land use conflicts.

Viewscapes

Aesthetic views using landscape design techniques will be utilized in areas where forest operations occur with high concentrations of recreational activities.

5.2.3.8. Tourism

Characterization:

The tourism industry in Newfoundland and Labrador is largely based on natural and cultural resources, where protection is important for the industry to survive and grow. The tourism industry in Newfoundland and Labrador has experienced significant growth since 1997 and contributes ~1.14 billion annually to the local economy.

There are many excellent tourist destinations in the zone. The Gander River (world class salmon river and protected area) and Terra Nova Rivers (candidate as a Canadian Heritage River), Terra Nova National Park, Bay Du' Nord Wilderness Area, the Beaches and Boyd's Cove archeological sites, iceberg and whale tours of Twillingate, are examples of the more prominent tourist attractions.
In previous five-year plans a Tourism Stakeholder Consultation Plan was required as a condition of plan release. All zones and districts have now had this condition of release and Stakeholder Plans exist for them. All plans have been approved.

CBPPL is committed to ensuring the interests of stakeholders are maintained on the Defined Forest Area (DFA). This is demonstrated in the pro-active method CBPPL takes when approaching stakeholders to discuss proposed forest management operations in the vicinity of their interests. This mainly occurs during the 5-year planning process. Cooperating with stakeholders on the DFA can help to ensure their interests are considered, mitigated or protected.

Forest Stakeholder Performance Indicator
As part of CBPPL's Sustainable Forest Management Plan various indicators are used to meet the requirements of forest certification objectives. One of these objectives from the SFI® Forest Management Certification is the Management of Visual Quality and Recreational Benefits. Specifically, from the certification documentation Indicator 5.4.1 states, "Evidence of open and respectful communications with forest dependent businesses, forest users and local communities to integrate non-timber resources into forest management planning. When significant disagreement occurs, efforts towards conflict resolution are documented."

Our target for this indicator is to aim for the satisfaction of 100% of stakeholders inside CBPPL's five-year operating plan for each Forest Management District, with whom CBPPL has an agreement. There are numerous stakeholders that have an agreement or Memorandum of Understanding with the company. We continue to engage and update our agreements annually.

Critical Elements:

- Viewscape
- Accessibility
- Wilderness ambiance
- Remoteness

Guiding Principles:

As indicated in the Recreation Values section, CBPPL will collaborate with other stakeholders in this five-year planning period, to implement strategies for minimizing the visual impact of harvesting operations near sensitive areas. This could mean that forest harvesting operations employ: treed buffers, tree retention methods or implement reforestation activity immediately to return the site to a forested condition. As well, temporal changes in harvest scheduling could minimize noise levels during busy seasons near adventure tourism locations.

5.2.3.9. Outfitting

Characterization:

The outfitting industry has been an integral component of the tourism industry in Central Newfoundland since the early 1900's. This region has always been a popular hunting and fishing destination because of the pristine environment and abundance of fish and wildlife species. There are many outfitters operating within the boundaries of the zone that operate and maintain main and/or line camps. These operations provide seasonal employment for many local individuals.

From an article published on January 14, 2022 on the Saltwire website titled "Outfitting industry keeping a close eye on gold mining plans in Central Newfoundland" it is cited; "In a normal year about 7,000 hunters and anglers book excursions with local outfitters, said Cory Foster, Executive Director with the Newfoundland and Labrador Outfitters Association (NLOA).The industry brings about $50 million to the province and employs approx. 1,300 people".

Over the past 10 years, a significant number of traditional hunting and fishing facilities have diversified into the non-consumptive areas of the tourism industry. Such activities include but are not limited to: snowmobiling, dog sledding, kayaking, canoeing, nature viewing, hiking, and wildlife photography. The ability to diversify has positively impacted the viability of outfitting operations and as such, increasing numbers of operators are considering these opportunities. Diversification can lengthen seasons of operation, increase and lengthen employment, and reduce dependency on a single sector of the tourism industry. Pristine wilderness settings are necessary for many of these types of diversification.

Critical Elements:

Remote outfitting camps are dependent on their remoteness. Though forest access roads originally opened access for outfitting camps, they can also inevitably impact the ability of a camp to maintain its remote status. Increasing accessibility through increased access roads can also lead to increased hunting and fishing pressures in a given area. This can in turn lead to decreased success rates of tourists. This is of particular concern since Newfoundland is often the hunting destination of choice due to success rates upwards of 80 percent. An increase in access roads also tends to lead to increased cottage development that in turn can have an impact on both remoteness and game availability.

While clients of big game and fishing outfitters are primarily interested in hunting or fishing experiences, they also show a 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. This view also has a direct impact on repeat client bookings and recommending the destination to others. Viewscapes become even more important once outfitters begin diversification into non-consumptive tourism activities. With these activities, there is no trophy to bring home and that which is taken away is that which has been experienced by the senses (i.e. sights, sounds, smells, etc.).

In some cases, past harvesting practices have resulted in increased levels of garbage (skidder tires, abandoned buses, heaps of oil containers, etc.). This can be frustrating for outfitters who concentrate on not leaving permanent marks on the landscape. Possible erosion caused by hillside logging and heavy equipment use is also a concern - particularly due to its possible effects on water quality for fish habitat.

Guiding Principles:

It is necessary that no harvest buffer zones be left around outfitting camps that are agreed to by all parties involved. Buffer zones can be difficult to negotiate due to varying ranges of activity from operator to operator. Some operators make use of areas that are 8 to 10 kilometers away from the main lodge.

- 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 should be restricted or limited.
- Where possible harvest in the winter. Winter roads are less passable in summer and fall and will help to reduce traffic. These roads will also be cheaper and easier to decommission.
- Construct new roads as far away from existing outfitting camps as possible. The benefits of this are obvious. Harvesting should be restricted around hunting and fishing camps during their season of operation. At these times, harvesting should occur as far away as possible from outfitters.
- Forest operations should be carried out in compliance with existing regulations.
- Efforts should be made to ensure that the integrity of the view from outfitter cabins is maintained when conducting forest operations.
- Forest operations should ensure that whatever is brought into an area is removed from the area once harvesting is complete.

5.2.3.10. Cabin Development Areas and Cabin License to Occupy Areas

Characterization:

In Newfoundland and Labrador, Cottage Development Areas (CDAs) are designated land-use areas intended primarily for seasonal recreational use rather than permanent residential or commercial development. These areas are typically planned and regulated by the provincial government to accommodate cottage development on Crown land while balancing environmental protection, public access, and traditional land uses such as forestry, wildlife habitat, and recreation. Land-use controls within CDAs often restrict lot sizes, building footprints, servicing options (such as limits on year-round water and sewer systems), and road standards to reduce environmental impact and prevent conversion to permanent subdivisions. By clearly designating CDAs, the province helps manage shoreline development, protect sensitive ecosystems, and minimize land-use conflicts, while still supporting recreational cabin ownership and rural tourism opportunities.

The construction of small cottages or cabins on public lands as a base for outdoor recreational activities such as hunting, fishing, or snowmobiling is a long-held tradition in Newfoundland and Labrador. The Provincial Government issues Licenses to Occupy (LTO) Crown land to individuals for recreational cottage development on public lands throughout the province, including the DFA. A License to Occupy does not grant, convey, or transfer any exclusive right, title, or interest in, or to, a defined cottage lot or land area. It merely gives the licensee permission to occupy Crown Land and construct a cabin. All applications for LTOs on the DFA are referred to CBPPL for review and comment. CBPPL works with Crown Lands staff to accommodate these cottages on the DFA in areas where there is no conflict with the Company's operations or forest management activities.

An agreement between Crown Lands Division and CBPPL has been reached whereby Crown Lands Division will refuse (in most cases) applications that conflict with CBPPL forest management activities and in other cases hold approvals until CBPPL has been compensated (compensation to CBPPL is determined according to CBPPL Crown Land referral policy).

Critical Elements:

When planning forestry activity near cabin development and cabin areas, several critical elements must be

carefully balanced to minimize land-use conflict and support sustainable multiple use. Shared forest access roads require coordinated management to ensure continued, safe use by both forestry operators and cabin owners, while avoiding unnecessary upgrades that could alter access patterns or encourage unplanned development. Appropriate buffer zones around cabins, shorelines, and travel corridors are essential to protect privacy, environmental values, and cabin enjoyment. Visual quality is a key consideration, as forest harvesting can significantly affect the recreational and scenic character that defines cabin areas; maintaining visual buffers and applying sensitive harvesting practices helps preserve this character. Public safety must be prioritized through safe operating distances, clear signage, traffic management, and timing of operations to reduce risk to cabin users. CBPPL will continue to manage in a way that does not compromise the continued availability of Licence to Occupy opportunities, ensuring that current and future access to Crown land for recreational cabin use remains viable and consistent with long-term land-use planning objectives.

Guiding Principles:

- Awareness of cabin development areas on five-year planning cycles through land base reviews with provincial Crown Lands department during Annual Operating Plan development.
- Commitment to allow forest resource road access unless safety becomes an issue or infrastructure removal is planned.
- Commitment to continue reviewing LTO applications as referred by Crown Lands Division.
- Maintenance of operating area signage on active harvest and road building sites to inform the public and promote safety
- Rehabilitation of harvest sites when completed. Ensuring no garbage or remnants from operation remain.
- Placement of buffers on cabins on case-by-case basis.

5.2.3.11. Domestic Cutting

Characterization:

Domestic firewood harvesting in Newfoundland is a long-standing rural tradition that continues to play an important role in home heating and self-sufficiency. The scale of such rivals that of industry. Residents commonly harvest firewood for personal use, often from designated Crown lands, under conditions set by the province to ensure sustainability and forest health. Harvesting typically focuses on standing dead trees, windfall, or low-value species, helping reduce waste while minimizing environmental impact. For many households, especially in rural and remote areas, domestic firewood remains an affordable and reliable heat source during long winters, while also maintaining a strong cultural connection to the land and responsible forest stewardship.

Critical Elements:

Access to CBPPL land base for Domestic cutting is permitted and managed by either the Crown (through Hardwood Management Agreement) or CBPPL. CBPPL has a large land base which is near many towns where domestic cutting is popular and sometimes necessary for home heating. The company does not manage its land base with domestic cutting blocks currently but understands the necessity to include access to volume for domestic purposes.

Benefits of Domestic Permits can include:

- Improved utilization of residual wood – slash, damaged stems, butt junks and blown down dead wood.
- Directing cutters towards cutovers may reduce the pressure on other mature stands.

- Supporting forest regeneration - though removal of slash and unmerchantable species.
- Reduced environmental impacts – existing road access and ground disturbance for access. Less new trail creation and soil disturbance.

Guiding Principles:

- Continue to provide access to CBPPL tenure for Domestic cutting through permitting process.
- Continue discussions regarding future Hardwood Management Agreements.
- Reporting of Domestic Permitting volumes by District through submission of Past Annual Report.

5.2.3.12. Canadian Boreal Forest Agreement Areas

Characterization:

The Canadian Boreal Forest Agreement (CBFA) was a conservation initiative between environmental organizations and forest companies that aimed to develop jointly supported conservation outcomes, including recommendations on protected areas, caribou conservation and forest practices.
In Newfoundland and Labrador, CBFA signatories are Corner Brook Pulp and Paper Limited and the Canadian Parks and Wilderness Society (CPAWS).

Other partnerships were established though the Newfoundland Regional Working Group (NRWG) which consisted of signatories and partners including Miawpukek First Nation, Qalipu First Nation, the Provincial Department of Forestry, the provincial department of Climate Change, Canadian Forest Service, Model Forest of Newfoundland and Labrador, and academics from Memorial University. The group undertook considerable research on protected areas, caribou conservation, forest practices and large intact landscapes.

Although considered inactive due to serious challenges by the mid-2010's, the CBFA areas on CBPPL tenure are still considered protected on a voluntary basis.

Critical Elements:

In Zone 3 there is one CBFA area in District 6 that is on CBPPL tenure. The Northwest and Southwest Gander area consists of 1,516ha of land located along approx. 58kms of river frontage and riparian habitat. The ecoregion being the Central Newfoundland Forest. The conservation significance of this area includes but is not limited to:

- Traditional use by Miawpukek First Nation and Qalipu First Nation
- Fluvial deltas
- Important Atlantic salmon rivers
- Extensive floodplain and wetland habitat
- High recreation values
- Contains Ducks Unlimited Canada project sites with a mix of upland and wetland/waterfowl habitat
- Pockets of old growth stands
- Red maple swamp floodplain habitat
- Caribou occurrences; and
- High potential for Black Ash occurrence

Historically there was another area on CBPPL tenure but it was transferred to the Crown. This site is in the southern region on FMD6. Both areas are found in Figure 9 below.

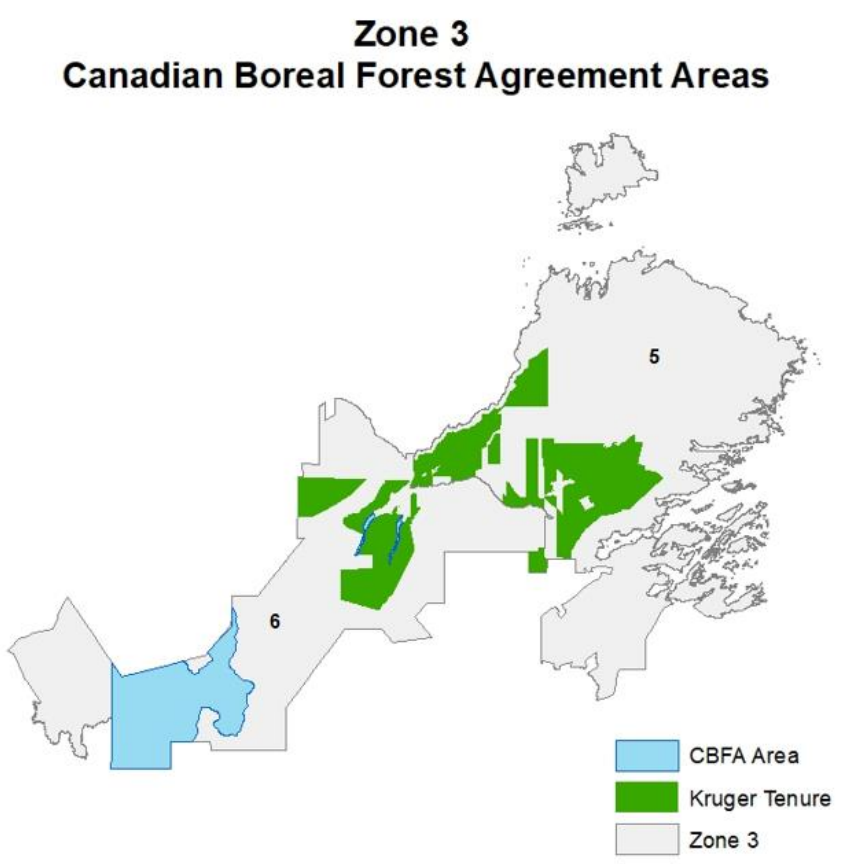

Figure 9 CBFA Areas in Zone 3

Guiding Principles:

CBPPL will maintain its voluntary agreement and protect this and all CBFA areas on its tenure.

5.2.3.13. CBPPL Special Places Program

Characterization:

CBPPL recognizes that the forest provides more than just a supply of fibre for our mill. Other ecological, historical, cultural, and sacred values exist and should be carefully managed. Through various partnerships, Woodlands staff as well as members of the public have developed a list of Special Places.

Each designated Special Places is considered significant for one or more of the following reasons:

- areas containing rare plants
- wetland areas
- areas of value to animal species (bird, fish, invertebrate, mammal)
- interesting or unique geological features
- areas of sacred, cultural or historical significance
- areas containing high quality, representative or unusual forest types
- areas with aesthetic appeal
- areas of education and public outreach

The list was reviewed with the goal of ensuring that controls are in place to manage them and preserve or

maintain the attributes that make the areas special. Adding sites to this list in no way indicates that CBPPL will never operate there; it means these areas will be highlighted in our database so that appropriate management measures are taken to ensure contractors are fully aware of their existence and importance when operating near them.

The Special Places program was implemented in 2007 and launched via the CBPPL website. Some of the Special Places listed on our website may currently not be included in the tenure but were at one time part of CBPPL's timber limits. Several of the Special Places already have various forms of management strategies or protections in place.

Critical Elements:

Identifying areas that have special ecological, cultural or recreational significance with the help of organizations, groups or individuals.

Currently in Zone 3 there are 4 Special Places.

- Airport Nordic and Ski Club
- Thomas Howe Demonstration Forest
- Freshwater Alexander Bays Watersheds
- Indian Bay Watershed

A full detailed writeup can be found on all identified Special Places on the CBPPL Website. www.cbpplwoodlands.com

Guiding Principles:

- Continue to identify and evaluate newly suggested sites
- Recording the location of each site and ensure that the information is in the Woodlands GIS database so it will appear when developing annual and five-year operating plans
- During pre-work meetings with contractors identify the significance of the special place(s) and include any requirements for the contractor to follow.

5.2.4. Science and Research Values

5.2.4.1. Tree Improvement Trials

Characterization:

Newfoundland and Labrador has had a formal tree improvement program since the early 1980s, led by the provincial forest service. The program is centred in Wooddale Research Facility. Early work involved province-wide plus-tree selection, where thousands of natural stands were surveyed to identify superior phenotypes ("plus trees") based on:

- Height and diameter growth
- Stem straightness and branching
- Apparent disease resistance
- Site adaptation

Nearly 1,000 plus trees were identified across the island portion of the province. Tree improvement trials in NL have focused almost entirely on native boreal conifers, namely:

- Black spruce (*Picea mariana*)

- White spruce (*Picea glauca*)
- Balsam fir (*Abies balsamea*)
- Limited work on jack pine (*Pinus banksiana*)

These species dominate Crown forest land and are the backbone of regeneration programs, particularly on pulp and timber lands.

Critical Elements:
Maintenance of research site integrity

Guiding Principles:
- Protect current Tree Improvement Trial sites as identified by GovNL Forestry Division.
- Keep database as current as possible by requesting annual updates
- Provide proper mapping during contractor pre-works that identify these sites

5.2.4.2. Study Areas

Characterization:
Natural Resources Canada (NRCan), through the Canadian Forest Service (CFS), conducts a range of research projects in Newfoundland and Labrador focused on understanding, managing, and sustaining boreal forest ecosystems. These projects commonly address forest health issues such as spruce budworm outbreaks, wildfire risk, and the impacts of climate change on forest growth and disturbance patterns. CFS researchers also collaborate with industry, provincial partners, universities, and Indigenous groups to improve forest inventory, carbon accounting, and biodiversity conservation, supporting both sustainable forest management and climate mitigation objectives. In Newfoundland specifically, research often emphasizes the province's unique boreal forest conditions, including soil productivity, regeneration after harvesting or natural disturbances, and the role of forests in supporting rural communities and forest-based industries.

CBPPL have been industry partners on multiple projects and continues to support these efforts whenever possible.

Critical Elements:
Access to research sites through existing forest access road networks
Maintenance of research site integrity

Guiding Principles:
CBPPL will continue to work with groups such as NRCan/CFS and to stay informed of research areas that may exist on its managed lands.
- Use of tools such as TreeSource to gain further information into project locations that may overlap with potential harvest areas. Resource contains site location, description and associated projects
- Appropriate mitigations will be made to protect research sites.

5.2.4.3. Hydrometric Stations

Characterization:
In Newfoundland and Labrador, hydrometric stations serve several critical and practical purposes related to water management, public safety, and resource development. They are part of a provincial–federal

monitoring network operated jointly by the Government of Newfoundland and Labrador and the Water Survey of Canada (Environment and Climate Change Canada) under a long-standing cost-shared agreement dating back to 1975. Currently there are 253 locations on the GovNL geohub and three are located within the CBPPL tenure in Zone 3.

Station ID	Station Name	Lat_DD	Long_DD
02YQ002	Gander River Outlet of Gander Lake	48.93333	-54.86667
NF02YQ0076	Pond 226 Brook	48.99158	-54.81706
NF02YQ0075	Hermans Pond Brook	49.00313	-54.82321

Measurements typically include water level and streamflow, which are recorded in near real time by satellite from remote locations across the province. The data that is collected becomes important information that is inputted into flood forecasting models as well as supporting water resource management and permitting.

Critical Elements:
Maintaining hydrometric station integrity and data collection quality.

Guiding Principles:

- Road construction or harvesting will not occur within the 30m protective buffer around hydrometric stations.

5.2.4.4. Permanent Sample and Temporary Sample Plots

Characterization: Beginning in 1975, the Department of Forestry introduced a new forest management inventory to support the development of Forest Management Plans. This program relied on extensive field measurement, including more than 500 Temporary Sample Plots (TSPs) and nearly 100 Stand Monitor Plots (SMPs) measured or remeasured annually. While TSPs provided forest land and timber volume estimates, SMPs were used to update inventory cover types between inventory cycles. By the mid-1980s, as the second TSP cycle neared completion, the emphasis shifted toward better understanding forest growth and yield. This led to the establishment of a Permanent Sample Plot (PSP) database, initially focused on regenerating and immature stands, a focus that continued until 1991. In 1992, the program expanded into a province-wide 1,000-plot PSP initiative designed specifically to meet long-term growth and yield information needs, later incorporating additional ecological and wildlife measurements to support broader data requirements.

Technological advancements have continued to improve the PSP program's efficiency and data quality. In 2007, the Newfoundland Forest Service transitioned from paper-based data collection to digital data loggers, significantly reducing data entry time and allowing errors to be identified in the field. A major modernization followed in 2024, when the PSP database was fully redesigned and migrated to the Oracle Forestry Enterprise geodatabase within the ArcGIS Enterprise environment. Data collection now uses iOS and Android devices through ArcGIS Field Maps, replacing earlier loggers.

Critical Elements:
Maintenance of the PSP sites on CBPPL tenure is important to allow for the continuance of the data collection. Updated data from the Provincial Forestry is necessary to ensure the integrity of the sites is

maintained and that contractors can be made aware of the location of these sites near harvesting areas.

Guiding Principles:

- PSP sites are mapped and field flagged with a 100m buffer.
- Planning department to continue to update their data with the most recent PSP locations on annual basis.
- If PSPs are no longer collecting data a plan amendment will be sent to Forestry requesting permission to harvest.
- TSP's currently do not require any protection.

5.2.5. Biological Values

5.2.5.1. Moose

Characterization:

Moose are not native to the island. They were introduced in 1878 (Gander Bay) and 1904 (Howley) and are now distributed throughout the island. Between 2012 and 2022, the overall population has been relatively stable with a 4% decline over 10 years. The 2022 population estimate was ~110,000 and in 2020 the population was estimated to be around 118,000 animals (Newfoundland and Labrador Moose Management Plan 2022-2026) Currently, moose are managed on an area/quota system in the province. The Island is divided into 46 Moose Management Areas (MMAs) and license quotas are set annually for each MMA. Quotas are set based upon the management objective for each area (i.e., whether it is desired that the population increase, decrease or stabilize). Generally, if an area has too high a moose population, managers will increase quotas to bring down the population to prevent damage to the habitat. However, if the habitat is in good condition and the area could support more animals, future quotas may be increased. All or portions of moose management areas 15-17, 20-25, 27,28 and 42 are located within the zone. From the Newfoundland and Labrador Moose Management Plan 2022-2026, the Wildlife Division is establishing a new Habitat Policy and Research Section which will focus on integrating habitat research with habitat management.

Critical Elements:

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

Guiding Principles:

The proposed forestry activity is reviewed by the staff at the Wildlife Division and recommendations are incorporated into the five-year plan.

5.2.5.2. Caribou

Characterization:

Caribou on the island of Newfoundland are part of the *Newfoundland woodland caribou population*, which has experienced substantial long-term declines since the mid-1990s, with several herds dropping by more than 60% from historical highs. Despite these declines, the island population is not currently listed as a Species at Risk under the federal *Species at Risk Act* (SARA); COSEWIC continues to assess it as *Not at Risk*, largely due to its still relatively large overall population size and cyclical, density-dependent dynamics. Recent estimates place the island population at approximately 27,000 animals, down from peak

levels in the 1990s, with low calf survival identified as the primary driver of decline rather than habitat loss or hunting pressure. Predation—particularly by black bears and coyotes—has been consistently identified as a major limiting factor for calf recruitment. Vehicle collisions on paved roads are also another cause of mortality.

Caribou hunting remains tightly regulated on the island and is permitted only in selected Caribou Management Areas through a limited-quota licence draw, with several herds and regions fully closed to hunting due to low numbers. Hunting levels are considered a minor contributor to population declines compared to natural mortality and predation, but harvest is carefully monitored and adjusted following aerial surveys and herd assessments. Conservation and recovery efforts are guided by the province's Caribou Strategy, which emphasizes long-term population monitoring, predator-prey research, adaptive harvest management, and habitat assessment to stabilize and rebuild herds where needed. While Labrador's boreal caribou are legally listed as *Threatened* and subject to formal recovery plans, the island population is managed proactively to prevent further decline and avoid future listing under federal or provincial species-at-risk legislation.

In 2020, spatial data for caribou was revised and updated to reflect enhanced core ranges for those herds where data exists. The revised caribou model is based on identifying individual home-ranges, which, pending the degrees of overlap, define the new caribou core ranges. Based on a range of criteria those caribou herds have been divided into Conservation herds and Restoration herds. The conservation target for Conservation herds is to maintain habitat at status quo, with an objective to improve overall habitat conditions; whereas the general conservation target for restoration herds include activities that will restore habitat, especially within calving cores and migration paths.

Harvesting and road building activities in caribou habitat has been excluded or limited depending on the status of the herd.

Critical Elements:

It is unclear how forestry activities in the immediate vicinity of calving areas during the calving period may have an impact on caribou populations. Recent studies and anecdotal information have indicated that harvesting restriction zone around caribou calving zones may be significantly larger than first thought. It has also been shown that as roads are constructed and access is improved into remote areas, there is generally an increase in the number of animals which are killed due to roadkill and poaching.

Guiding Principles:

The Wildlife Division of FAL will be consulted on timber harvesting within woodland caribou habitat during the preparation of each five-year operating plan.

- Harvest and road building activities will be planned outside of existing caribou core and calving areas
- Overlaps of existing infrastructure and harvesting operations will be discussed with the Wildlife division on an annual basis to determine if any temporal restrictions are required
- Use of winter roads or road decommissioning in sensitive areas
- Reporting of species at risk to wildlife division
- Educating harvesting operators on the status of the species and protection of habitat importance

5.2.5.3. Black Bear

Characterization:

The black bear is native to the island and is found in forested areas (Northcott, 1980). Currently, the number of black bears occurring on the island is not known but is crudely estimated to be about 6,000 - 10,000 animals (Government of NeIn the spring of 2025, the former black bear management areas on the island of NL were consolidated into newly established regional areas to enhance hunting opportunities and improve return information that supports management. Within the zone portions of bear management areas 203, 204, and 206 are found. Currently, only one license (with a bag limit at 2 bears) is required by hunters on the island to hunt bears in both spring and fall.

Critical Elements:

- Den sites for winter hibernation
- Forest cover

Guiding Principles:

A 50-metre, no harvesting activity buffer will be maintained around known bear winter denning sites or those encountered during harvesting. These den sites must be reported to the Wildlife Division.

5.2.5.4. Furbearers

Characterization:

Ten species of furbearers occur in the zone; lynx, red fox, beaver, otter, muskrat, short-tailed weasel, red squirrel, mink, coyote, and pine marten (will be discussed in more detail in next section). Of these, red squirrel, mink and coyote are not native. Approximately 16,000 people in the province trap and snare furbearers as a means of supplementing income.

Furbearer populations fluctuate from year to year and are influenced by factors such as predator/prey relationships, food supply and disease. Trapping pressure can also influence population growth or decline. (Government Newfoundland and Labrador, Furbearer Management in Newfoundland and Labrador).

Critical Elements:

- Forest cover for protection
- Water quality maintenance
- Riparian buffer zones along aquatic areas
- Snags and coarse woody debris (denning, nesting sites, etc.)

Guiding Principles:

Fur Bearer Management Strategy:

Recommendations concerning the management of furbearer species are developed annually by the Wildlife Division upon consultation with provincial trappers, Newfoundland and Labrador Trappers Association, public, and departmental staff. Like the small game management plan, the fur management plan, reviews the status of each fur bearer species annually and addresses the season dates and lengths, and if necessary, closure of areas (or no open season). Management of all fur-bearing species in the zone will continue to be managed through this process. Information regarding trapping is made available to the public through the Annual Hunting and Trapping Guide.

Environmental Protection Guidelines:

To protect beaver habitat, all hardwoods within 30 metres of an active beaver lodge are left standing.

5.2.5.5. Pine Marten

Characterization:

The Newfoundland pine marten (*Martes americana atrata*), also referred to as the Newfoundland marten, is a genetically distinct subspecies of the American marten found only on the island of Newfoundland.

Before 1900, marten ranged over most of the forested areas on the island. Unfortunately, due to a variety of reasons, the population levels dropped where this species was listed to the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Endangered. Habitat loss, predation, disease and accidental trapping and snaring are thought to be primary reasons for marten population decline in Newfoundland. Marten still naturally occurs in three main areas on the island including: Main River watershed, Little Grand Lake and Red-Indian/Beothuk Lake areas. Additionally, marten also now exist at Terra Nova National Park (TNNP) and surrounding landscape. As well, in the Bay Du' Nord Wilderness Area around Lake St. John's through a relocation effort by the Eastern Newfoundland Pine Marten Recovery Team. Representatives from TNNP, Forest Services Branch, Wildlife Division and CBPPL were represented as stakeholders of the recovery team. Current estimates place the population at approximately **2,500–2,800 mature individuals**, with both abundance and distribution having increased since the early 2000s. These gains are attributed to long-term legal protection, reduced harvest pressure, improved forest conditions, and focused recovery actions led by the Newfoundland Marten Recovery Team and partners. Once listed as Endangered, COSEWIC has now downgraded the marten listing to Vulnerable.

The Newfoundland pine marten is recovering but not fully secure—listed as "Vulnerable" provincially and Special Concern federally, with cautious optimism supported by science-based management and continued conservation efforts.

Critical Elements:

- Sufficient habitat to support a viable population of marten;
- Areas of known marten populations remain closed to snaring and trapping

Guiding Principles:

These guiding principles are put in place to further recover the species and allow for forest harvesting.

- Support continued monitoring of the species with wildlife division

5.2.5.6. Salmonids

Characterization:

The Atlantic salmon and the brook trout are native to the Island and are found in waterways surrounded by forested areas. There are 23 scheduled salmon rivers in Planning Zone 3 and population counts are conducted on four major rivers including the Exploits, Campbellton, Gander, and Terra Nova as well as on the Middle Brook system. Currently, there are two areas in Planning Zone 3 where estimates of brook trout populations are recorded. These include Indian Bay system and the Rodney Pond system.

Critical Elements:

- Water quality maintenance
- Riparian buffer zones along water systems

Guiding Principles:

Salmonid Management (Atlantic salmon and brook trout)

Management of Atlantic salmon and brook trout in the province is delivered by the Federal Department of Fisheries and Oceans (DFO). DFO annually sets bag limits, season dates and river closure dates based on extreme water temperature. In the past, The Gander River system had additional local management provided by the Gander River Management Association (GRMA). Additionally, some special brook trout waters (e.g. Indian Bay and Rodney Pond systems) are jointly managed by DFO, the Wildlife Division of the provincial Department of Tourism Culture and Recreation with input from the Indian Bay and Freshwater Alexander Bays Ecosystem Corporations (IBEC and FABEC). This process takes into consideration additional information provided by FABEC.

Environmental Protection Guidelines and other requirements

- A 30m no harvesting buffer zone shall be maintained around all water bodies that are identified on the latest 1:50,000 national topographic map.
- Streams greater than 2m in width that do not appear on the NTS maps require a 30m buffer
    - if they have a defined bottom,
    - banks that exceed 30cm in depth; and
    - meets or exceeds an average 2m in width measured at 40m intervals over a 200m distance along the stream

- Where the slope is greater than 30 per cent there shall be a no-harvest buffer of 30 metres plus 1.5 times per cent slope. All equipment or machinery is prohibited from entering waterbodies; thus, structures must be created to cross over such waterbodies for the protection of aquatic habitat. Every reasonable effort will be made to identify intermittent streams, and they will be subject to this buffer requirement.

-DFO recommends that a 100 metre no-cut buffer zone be left in designated sensitive spawning areas.

Furthermore, protection for these species is strengthened locally through partnerships with community-based watershed management groups such as FABEC. A one-kilometer-wide management zone is currently regulated along the Gander River for protection of salmon habitat. During past plan development and transferring to this plan, negotiated increased buffers on waterways within the Indian Bay, Middle Brook, Terra Nova and Gander River Systems with organizations such as: IBEC, FABEC, and GRAMA are still considered applicable.

5.2.5.7. Banded Killifish

Characterization:

The Newfoundland population of Banded Killifish was first listed as special concern in 1989 due to the limited area of occupancy, limitation on potential for range expansion, and potential threats from logging and other activities that could lead to habitat degradation (Chippett, 2003). In 2003 the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) recommended the status of special concern should be maintained. Banded killifish populations in Newfoundland are distributed over a wide range, but local populations are restricted to very confined regions within their respective watersheds. Populations appear to be locally abundant in representative areas that were sampled (i.e. Indian Bay watershed, Loch Leven and

Freshwater Pond). Although multiyear data is not available, population estimates from 1999 indicate that over 20,000 individuals exist in the Indian Bay watershed. Estimates are not available for other local populations (Chippett, 2003). Although no killifish have been officially reported in other areas of the planning zone, it is highly likely other areas may contain suitable habitat.

Critical Elements:

- water quality maintenance;
- riparian buffer zones

Guiding Principles:

- Guidelines for the protection of freshwater fish habitat are developed by DFO's Habitat Management Branch
- Designated protected public water supply areas (PPSWA's) also provide protection. Also, applying existing Environmental Protection Guidelines to these areas (i.e.. Increased buffers, 150 meters on intake ponds, 75 meters on main river stems, 50 meters on major tributaries and minimum 30-meter buffer regulated in the rest of the district). - Protection of this species is also strengthened through partnerships with the community-based watershed management groups. In the past, industry has negotiated increased buffers on waterways throughout the Indian Bay watershed area with IBEC and Middle Brook watershed with FABEC.
- DFO has indicated the level of protection provided by the PPWSA buffers and the additional buffers negotiated between IBEC and industry, along with the implementation of forestry best management practices will be adequate habitat protection for this species.

5.2.5.8. Red Crossbill

The red crossbill is currently listed as endangered. Any recommendations on modified forestry activities, if any, will be developed by the Wildlife Division and will be presented in comments in future 5YP's or annually in the Certificate of Managed Lands. CBPPL staff are currently members of the landbird recovery team which will be developing a recovery plan for this and other species at risk.

5.2.5.9. Raptors

Characterization:

Newfoundland is home to a diverse array of raptors (birds of prey) species that thrive in its coastal, forested, and open landscapes. Prominent among them is the Bald Eagle, which nests along shorelines and feeds largely on fish and seabirds, and the Osprey, a fish-eating raptor commonly seen hovering over lakes and bays. Peregrine Falcons nest on sea cliffs and are known for their incredible speed while hunting other birds in flight. Open bogs and barrens provide habitat for Northern Harriers, while Rough-legged Hawks and Snowy Owls are seasonal visitors that arrive from Arctic regions, especially during winter. Together, these raptors play an important ecological role in Newfoundland by helping regulate prey populations and serving as indicators of ecosystem health.

Raptors in Newfoundland and Labrador are protected through a combination of federal and provincial legislation, habitat conservation measures, and targeted management practices.

Critical Elements:

- forest cover for protection

- water quality maintenance
- riparian buffer zones along aquatic areas
- snags and coarse woody debris (prey habitat)
- buffer zones on nesting sites
- the locations of all known bald eagle and osprey nests will be identified on all cutting maps and harvesters will be informed of their locations

Guiding Principles

- The EPG's outline Beneficial Management Practices which would reduce the risk to raptors during nesting season:
    - No forestry activity is to occur within 800 metres of an active bald eagle nest or osprey nest during the nesting season (March 15 to July 31) and 200 metres during the remainder of the year. For other raptor species like hawks, falcons, and owls, no forestry activity is to occur within 160 metres of a known active nest during the nesting season. The location of any raptor nest site must be reported to the Wildlife Division. Travel on established access roads outside a 200m zone of an active nest is a permitted activity, including forwarding of harvested timber, with the requirement that if roads/ trails are in use for two weeks or longer between March and July, the nest must be monitored and a summary of breeding success and travelling activities with appropriate mapping be emailed to WD at the end of trail usage or end of July, whatever comes first.
- During site layout for road construction or harvest block layout supervisors are to observe and record possible nest sites for possible buffering requirements.

5.2.5.10. Waterfowl

Characterization:

Maintaining waterfowl populations depends on effective conservation efforts throughout North America. Newfoundland and Labradors' most productive waterfowl breeding and staging areas are either owned 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 of it
- Breeding – disturbance of waterfowl during the brood rearing, breeding, and staging period

Guiding Principles

- The EPG's outline Beneficial Management Practices which would reduce the risk to waterfowl:
    - A minimum 50 meter no cut buffer on significant wetlands / waterfowl areas as identified by the map in Appendix A of the EPG's (Appendix 1). The map illustrates the location of Sensitive Wetland Areas', where forest harvesting can occur inside the identified boundaries, with implementation of buffers and using operational guidance for determining the edge of a wetland in Appendix B of the EPG's.
    - A minimum 30 meter, no cut buffer and a 50 meter no-grubbing zone will be maintained from the high-water mark in Sensitive Wildlife Areas for waterfowl including breeding, molting and staging areas.

5.2.5.11. Migratory Birds

Characterization:

In Canada migratory birds, nests and eggs are protected under the Migratory Bird Convention Act (MBCA). Currently, the inadvertent harming, killing, disturbance or destruction of migratory birds, nests, and eggs often referred to as "incidental take", may be considered a violation under the MBCA and its regulations.

Bird nests occur in virtually every stand logged during the nesting season, which can run from mid-April through mid-August each year in Newfoundland and Labrador. This places forest operations in direct conflict with the MBCA during nesting season, with no opportunity to obtain a permit for authorization. Shutting down forest operations for this period would have huge economic and social implications.

Critical Elements:

- Habitat – Maintenance of it
- Breeding – disturbance of nests during the breeding season
- Knowledge of legal obligations
- Risk assessment and planning
- Prevention and mitigation

Guiding Principles:

All CBPPL staff, contractor owners, supervisors and equipment operators must complete Environmental Awareness Training. During training some of the environmental topics include:

- Maintenance of wildlife trees for biological diversity
- Residual retention – habitat connectivity, nesting areas
- Maintenance of buffer zones
- Review of species at risk in the province and the reporting of them to the Environmental Management Representative for CBPPL
- Protection of nests during silviculture treatments
- Fuel management – storage and emergency response plans

During site layout for road construction or harvesting identify nests as found and ribbon for seasonal protection.

5.2.5.12. Other Avian Species

Characterization:

Grouse and ptarmigan are important game birds in Newfoundland and are well adapted to the island's boreal forests, bogs, and barrens. The Ruffed Grouse is the most common species, inhabiting forest edges and mixed woodlands where it feeds on buds, leaves, and berries and is known for its distinctive wing-drumming display. Willow Ptarmigan and Rock Ptarmigan are found mainly in open tundra-like habitats, especially in western Newfoundland and higher elevations, where they rely on shrubs and hardy vegetation for food. Ptarmigan are especially notable for their seasonal plumage change, turning white in winter to blend into snowy landscapes, which helps them avoid predators. Together, grouse and ptarmigan play an important role in Newfoundland's ecosystems and rural traditions, contributing to both wildlife biodiversity and regulated subsistence and recreational hunting.

Critical Elements:

- forest cover for protection and food sources

- water quality maintenance
- regulated hunting to prevent population declines

Environmental Protection Guidelines

Protection of nests if discovered on operating areas or near roadside piles.

5.2.5.13. Red and White Pine

Characterization:

Provincially, the range of white pine is shrinking due to a variety of reasons including past harvesting practices and infection from blister rust. However, significant stands of white pine still exist in forest management districts of Planning Zone 6. Red pine is the rarest tree species in the province with a distribution of some 22+ small stands (<15,000 trees in total). There is low representation of red pine in this Planning Zone. However, since both species occur in Planning Zone 6, local protection is required to maintain local and provincial biodiversity.

Critical Elements:

- maintenance or enhancement of stands on the land base
- minimizing loss of trees/stands through public education
- minimize losses to fire, insect and disease
- enhancement of younger age classes through planting natural regeneration and pruning to ensure continuance of the species
- maintenance of native genetic stock

Guiding Principles:

- enforcement of forestry act, regulations, guidelines, and policies
- gene preservation gardens for these species and a clonal orchard for white pine have been developed by DNR at Wooddale Tree Nursery. At some point, the goal is to produce seed from these gardens/orchards to grow pine seedlings of native origin.
- some native red pine stands are protected under reserve status.
- EPG's state that there is not cutting permitted of Red Pine, FAL has adopted a no cutting policy of pine by nontraditional users and a phase out of cutting by traditional commercial users. Currently, no commercial operators harvest pine.
- protection of these species in planning zone is expected to be strengthened by public education and no-cut conditions on permits (both domestic and commercial).
- implementation of silviculture treatments designed to merge pine back into the landscape.
- DNR is collecting seed from red pine stands of native origin and the collection of white pine scions for the clonal orchard at Wooddale - DNR also implements stand level silviculture prescriptions such as pruning of immature white pine to reduce the infection rate of blister rust and cone production enhancement on red pine to ensure an adequate supply of native red pine seed.
- CBPPL staff are members of the Red Pine Recovery Team.

5.2.5.14. Black Ash

Characterization:

Black Ash is one of Newfoundland and Labrador's rarest native trees. It is also one of the most important species in Mi'kmaq culture. Its provincial range includes an approximately 10,390-km2 area of western

Newfoundland where the species grows in forested wetlands, floodplains, along stream and riverbanks, and occasionally on limestone talus slopes; it does not naturally occur in Labrador. Black Ash typically have a single dominant trunk, but a shorter, shrub-like growth form is possible following damage to the main stem (e.g., extensive herbivory). The species has compound leaves, corky bark, and uniquely cone-shaped terminal buds. The main threats to Black Ash in the province are land conversion, herbivory, and the potential introduction of Emerald Ash Borer.

Critical Elements:

- Maintenance of habitat through riparian buffers
- Support recovery initiatives as members of the Black Ash Recovery Team

Guiding Principles:

- CBPPL are members of the Black Ash Recovery Team
- Identify and protect Black Ash when found in the field
- Educate staff and contractors on identification of the species and the protection regulations
- Report locations of Black Ash to Wildlife Division GovNL

5.2.5.15. Yellow Birch

Characterization:

Yellow birch (*Betula alleghaniensis*) is a relatively uncommon but distinctive hardwood in Newfoundland, found primarily in the southern and southwestern parts of the island. Unlike the extensive yellow birch forests of mainland Canada, Newfoundland's populations are patchy and limited, making the species locally important for biodiversity and forest structure. Known for its yellow-bronze, curling bark and wintergreen scent in the twigs, yellow birch typically occurs in mixed stands with balsam fir and other hardwoods on moist, well-drained sites. Because of its slow growth, long lifespan, and limited distribution in the province, yellow birch is considered a high-value species and is generally managed carefully under sustainable forest management practices to ensure its persistence in Newfoundland forests.

Critical Elements:

- Protection of large trees and yellow birch leading stands with respect to regeneration and seed sources

Guiding Principles:

- As per CBPPL Environmental Management System protection of yellow birch includes:
  - Leaving yellow birch trees that are >50cm dbh (as seed trees)
  - In yellow birch leading stands leave 25 trees/ha >20cm dbh.
  - During pre-commercial thinning operations employees are to favour yellow birch over other hardwoods when thinning.

5.2.5.16 Rare Plants

Characterization:

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

Currently, 27 plants and 3 lichen species are listed under the Endangered Species Act.

Critical Elements:

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

Guiding Principles:

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

5.2.5.17. Boreal Felt Lichen

Characterization:

Boreal Felt Lichen (Erioderma pedicellatum) is an epiphytic, foliose lichen that occurs primarily on the trunks of balsam fir in cool, moist forest environments in Newfoundland. It is occasionally found on fir branches and on black spruce, and more rarely on other tree species such as red maple, trembling aspen, and white birch. When dry, the lichen appears grey-brown, becoming slate blue to greenish when wet. Both the upper and lower surfaces are covered with fine white hairs, giving the thallus a felt-like texture, and the margins are characteristically white and upturned. Small, distinctive apothecia on the surface are pinkish-orange when dry and darken to purplish tones when moist. Newfoundland supports some of the most significant remaining populations of Boreal Felt Lichen in the world: the Avalon Peninsula and the Bay d'Espoir region.

The species is currently listed as Special Concern under the federal COSEWIC, specifically as part of the boreal population of the species.

Critical Elements:

- Maintenance of existing populations of Boreal Felt Lichen as they are currently known.

Guiding Principles:

- Rare and at-risk lichens listed under the NL Endangered Species Act are known to occur throughout the forests of Newfoundland and Labrador. To minimize negative effects on rare and at-risk lichens, staff from Forestry, Agriculture and Lands - Wildlife Branch will work together to ensure lichen surveys are conducted where required and appropriate mitigations are implemented. Mitigations and monitoring will be dependent on forest region.
- Support through management plans and education of staff and contractors

5.2.6. Water Resources

5.2.6.1. Public Protected Water Supply Areas

Characterization:

Public protected water supplies in Newfoundland and Labrador are sources of drinking water—such as lakes, ponds, reservoirs, rivers, or groundwater—are formally designated and managed to provide safe potable water to communities. These water supplies are protected under provincial legislation, primarily the Water Resources Act and associated regulations, which allow the government to establish protected public water supply areas with controlled land use to prevent contamination. Activities such as forestry, agriculture, road construction, and development within these areas are regulated to reduce risks from pollution, erosion, or pathogens. Municipalities or local service districts are typically responsible for operating and maintaining the water systems, including treatment, monitoring, and distribution, while the provincial government provides oversight, water quality standards, and enforcement. Protecting these water supplies is especially important in Newfoundland and Labrador due to many communities relying on surface water sources, which can be more vulnerable to environmental and human impacts.

Critical Elements:

Forest management activities such as road construction, maintenance, timber harvesting, and silviculture may potentially alter the quality of water draining from watersheds. As well as other defining characteristics such as stream hydrology, sediment loadings, stream characteristics, and aquatic discharges from municipalities. Careless storage and handling of fuels by industrial and recreational users, stream diversions and agricultural operations are other examples.

Within Zone 3 there are overlaps between CBPPL tenure and PPWSAs, namely, Indian Bay Brook, Gander Lake, Northwest Pond and Barrys Brook. For this proposed 5YP operating areas, there are overlaps with 2; Indian Bay Brook (Home Pond K-05-07) and Gander Lake (Soulis Pond K-05-01, Little Harbour K-05-18, Deadman's Pond K-05-21, Dead Wolf North K-06-18 and Careless Cove K-06-03).

Guiding Principles:

The Environmental Protection Guidelines state:

- The following permits and approvals are required prior to the beginning of any forestry operations, whether commercial or domestic operations, and include road construction, silviculture activities, and harvesting within a Protected Public Water Supply Area:
    - Approval of the five-year operating plan by the Environmental Assessment Division,
    - Issuance of a permit under section 39(6) of the Water Resources Act which may include consultation with the community involved.
- As per permit requirements buffers must be placed on intakes, river channels, tributaries and other waterbodies in the PPWSA.
- Follow fuel storage requirements as per permit.
- Report water quality impairment problems immediately to Water Resources.

5.2.6.2. Drilled Wells

Characterization:

Drilled water wells are a common and important source of potable water for rural and semi-rural properties in Newfoundland, where many homes are located beyond the reach of municipal water systems. These wells are typically drilled into bedrock to access groundwater, which is generally of good quality due to the

province's hard rock geology but can contain naturally occurring minerals such as iron, manganese, or arsenic. Because soil covers are often thin and fractured bedrock is widespread, well depths can vary significantly depending on local conditions and water availability.

Critical Elements:

Protection from physical damage to wells
Fuel and oil spills
Updated well location files

Guiding Principles:

- Placement of buffers on operations maps and discussions with contractors during pre-work meetings.
- Field flagging in place prior to harvest in areas where wells are known
- Request to water resources on annual basis for updated protected well locations

5.2.6.3. Significant Wetland Areas (SWAs)

Characterization:

Newfoundland and Labrador contain extensive and ecologically significant wetland areas, including bogs, fens, marshes, and riparian wetlands, which are closely interwoven with the province's forested landscapes and therefore highly relevant to forest harvest operations. These wetlands play a critical role in water storage and regulation, maintaining water quality, supporting biodiversity, and providing habitat for species such as waterfowl, caribou, and amphibians. From a forest management perspective, wetlands are particularly sensitive to disturbance: soil compaction, rutting, altered drainage, and sedimentation can result from poorly planned harvesting or road construction. As a result, provincial forestry practices place strong emphasis on wetland identification, retention of buffer zones, seasonal timing of operations, and careful placement of crossings and skid trails to minimize impacts. Protecting significant wetland areas during forest harvest not only reduces environmental risk but also supports long-term forest productivity, watershed health, and compliance with provincial environmental protection standards.

Critical Elements:

When forest harvesting occurs near wetlands in Newfoundland and Labrador, several critical environmental and operational elements can be impacted if not properly managed:

- Water quality and hydrology: Wetlands regulate surface and groundwater flow, so disturbance can alter drainage patterns, increase sedimentation, and raise nutrient or contaminant levels in downstream waters, affecting fish habitat and drinking water sources.
- Soil integrity: Wetland soils are typically saturated and low in bearing strength. Harvesting equipment can cause rutting, compaction, and erosion, leading to long-term soil damage and changes in wetland function.
- Wildlife habitat: Wetlands support a wide range of species, including waterfowl, amphibians, moose, and woodland caribou. Harvesting nearby can fragment habitat, disrupt movement corridors, and affect breeding or calving areas.
- Riparian and buffer vegetation: Trees and shrubs adjacent to wetlands provide shading, bank stability, and nutrient filtering. Removal or damage to this vegetation can increase water temperatures and reduce ecological protection.
- Wetland connectivity: Roads, skid trails, and crossings can block or redirect natural water movement between wetlands, affecting their ability to recharge, drain, or function as part of a larger

watershed.
- Carbon storage and climate regulation: Peatlands and bogs store significant amounts of carbon. Disturbance can release stored carbon and reduce the wetland's long-term climate regulation role.

Because of these risks, forest harvest planning in Newfoundland emphasizes wetland mapping, buffers, timing restrictions, and low-impact practices to protect these critical elements while maintaining sustainable forest operations.

Guiding Principles:

- Land class mapping preparation including the locations of wetland areas and significant wetland areas.
- Use of buffers around wetland areas using the Environmental Protection Guidelines for Best Management Practices
    - A minimum 50 meter no cut buffer on significant wetlands / waterfowl areas as identified by the map in Appendix A of the EPG's (Appendix 1). The map illustrates the location of SWAs, where forest harvesting can occur inside the identified boundaries, with implementation of buffers and using the operational guidance for determining the edge of a wetland in Appendix B of the EPGs.
- Seasonal planning considerations in areas of low soil stability and thick organic layers

5.2.6.4. Flood Plains

Characterization:

The Glenwood and Appleton flood zone is one of the long-established, provincially designated flood risk areas in Newfoundland and Labrador. Flooding in both communities is primarily associated with the Gander River, which forms a wide floodplain through this part of central Newfoundland. The flood plain is relatively wide and flat and covers an area approx. 4,232 km2.

Critical Elements:

- Increased peak flows from faster runoff in cutover areas
- Impacts from road networks, ruts and drainage networks

Guiding Principles:

- Use of best management practices with respect to road construction
- Use of buffer and no-grub zones during road construction around riparian areas
- Culvert sizing which allows for peak flows and flood event possibilities
- Erosion control measures in place at all times
- Timing restrictions when needed during spring and fall harvests
- Emergency preparedness equipment in place at all times
- Development and implementation of Standard Operating Procedures for harvesting and road building activities
- Erosion and Sediment Control Plan submitted and approved. Established BMPs used in all FMDs.

5.2.6.5. Spawning and Nursery Habitats

Characterization:

Protection of salmonid spawning and nursery habitat in NL is delivered through a layered federal–

provincial framework, supported by stewardship programs and science-based best management practices (BMPs). The core objective across all instruments is to prevent harmful alteration, disruption, or destruction of fish habitat—especially gravel spawning beds, rearing pools, overwintering areas, and riparian zones.
The Fisheries Act is the primary legal mechanism protecting salmonid spawning and nursery habitat across NL. It prohibits:

- Harmful alteration, disruption, or destruction of fish habitat
- Unauthorized obstruction of fish passage
- Activities causing sedimentation, dewatering, or temperature alteration in salmon rivers

This applies to all life stages of salmonids, including eggs, alevins, parr, and juveniles occupying nursery habitat.

Authorization is required to do any work in or near water (e.g. installation of culverts, road crossings etc.). Provincially the Water Resources Act provides protection of water bodies and shorelines. It regulates activities that could adversely affect rivers, streams, brooks, wetlands, and lakes used by spawning fish. Permits are required for alterations to water bodies and end of year completion reports are sent to both the federal and provincial governing bodies.

Critical Elements:
Risk of sedimentation events which could affect spawning and nursery habitats through harvest and road building activities.

Guiding Principles:

- Minimize the number of crossings needed through strategic road layout
- Identification no cut buffers and no grub zones as per the EPG's
    - A minimum 30 no cut buffer and 50 meter no grubbing zone for sensitive fish habitat (e.g., salmonid spawning habitat) as identified in the five-year operating plan release conditions.
- Buffering on scheduled salmon rivers and tributaries
- Use of SOPs for permanent and temporary crossing installation and removals

SECTION 6. MITIGATIONS

Stakeholder	Contact	FMD	ISSUES / CONCERNS RAISED DURING 2026-2031 PLAN DEVELOPMENT on CBPPL Timber Limits (Government Depts. and on-on-one consultations with known stakeholders)	Mitigation
Qalipu First Nations	Ian Sullivan Brooke Carter	5/6	Inclusion of Traditional Land Use section in 5YP text developed and sent for review. Text updated and included in this and all 5YP's going forward. Draft boundaries emailed to Ian Sullivan and Brooke Carter. At this time there are no features identified that would be of special concern.	Continue to provide annual plans for review and potential feedback as new information is gathered by the Qalipu First Nations.
Newfoundland and Labrador Snowmobile Federation	Matthew Swain Bruce Yates Mark Lamswood	5/6	Copies of maps provided. Both overview for district and 5YP focused. No concerns raised. Location and timing of winter operations continue to be the focus between both groups.	Continue to have annual meetings to review the winter and spring plans for harvesting.
International Appalachian Trail	Paul Wylezol	5/6	Email sent to review maps online. No issues with harvesting in any of the areas outlined.	No mitigation needed but continue to keep the group informed of future plans.
Atlantic Salmon Federation	Kim Thompson	5/6	Email sent to review maps online. No response at time of plan submission.	
Newfoundland and Labrador Outfitters Association	Cory Foster	5/6	Email sent to review maps online. Cory Foster forwarded email to the entire membership.	Continue to engage with NLOA during plan development phases for feedback.
Indian Bay Ecosystem Development Corporation	Darren Sheppard Carl Howell	5	Home Pond is the only area of interest by this group. Ensuring the buffer zones around the bodies of water are maintained upon agreed distances. Timing of any harvesting (if known at this point), would extensions of wood roads be necessary, and as a member of the Kittiwake Snowmobile Association board, would it affect any movements between our area of trail and Gander's . They would also like to be notified, in advance, of any work that would be occurring within the area and would request visits on site (within safety protocols) where practical. Continue communications as further information is available.	Home Pond Block The Home Pond block is within the PWSA area. We currently hold a permit from Water Resources; however, this permit will expire at the end of the year. Before planning any harvesting or road construction, a new permit will be required. Buffers are extremely important in all operating areas, and especially within PPWSA areas. In accordance with our PWSA permit, buffers are field-ribboned, and all permit conditions are reviewed with the contractor on site. These permits may include requirements beyond standard environmental protection guidelines, and we ensure that appropriate buffer distances are maintained based on permit-specific conditions. Timing of Harvest I agree that timing is important. The last harvest in the Home Pond area occurred during the summer months, and it is anticipated that any future harvesting would also take place during that season. Snowmobile Trails

				With a summer harvest, conflicts with snowmobile trails would not be an issue. That said, we consult with the NLSF routinely meet with them each fall to discuss winter operating areas. This has long been standard practice for the company, and we have worked cooperatively to mitigate issues when necessary. Advance Notification We will ensure that you are included in any plans well in advance and site visits can certainly be arranged. As with any active logging site, visits would need to be coordinated in advance to ensure visitor safety.
Glenwood Ward Councilor, Qalipu First Nations	Francis Skeard	5/6	Interested in what is the planned access roads for the blocks (FMD 6 Careless Cove and Deadwolf North) . During Meeting with Francis Skeard and Justin Hodge the following concerns were raised - Domestic Cutting (process to access permit, and maps depicting where cuts can happen) - Canadian Boreal Forest Agreement (CBFA) Areas – Protection for North and Southwest Gander Rivers (especially the islands in them). - Protection for deep water pools along the river system - Submission map layout – readability	During the meeting the following was agreed - When secondary and winter road plans are developed for all blocks in D5 and 6, this information will be shared. Some planned roads have already been shared for Soulis Pond, Joe Batts, Butts Pond, and Home Pond. - Information on how to acquire domestic cutting permits was shared and the domestic maps will be updated to include protected areas (CBFA areas) - Digital copy of CBFA Agreement was sent and hard copy maps. - Continued discussion on data collected on deep water pools and potential data sharing agreement will be signed between the two parties. - Submission maps will include inset maps and place names.
River and Land Guardian, Qalipu First Nations	Justin Hodge	5/6	As above	
Miawpukek First Nation	Ross Hinks, Angelina Francis, Greg Jeddore	6	Email sent to review maps online. Meeting to discuss activities planned. Waiting for reply from Forestry Manager Angelina Francis.	
Newfoundland Hydro	Craig Parsons	5/6	Email sent to review maps online. No response as of plan submission	
Springdale Forest Resources	Dennis Young	5/6	Email sent to review maps online. No response as of plan submission	
Meyers Minerals	Jamie Meyer	5/6	Email sent to review maps online. No response as of plan submission	
Cottles Island Lumber	Laurie Philpott	5/6	Email sent to review maps online. No response as of plan submission	
Sextons Lumber	Kevin Sexton Neil Greening	5/6	Email sent to review maps online. No response as of plan submission	
College of the North Atlantic	Peter Yates Jason Baker	5/6	Email sent to review maps online. No response as of plan submission	
Northwest Forest Resources	Craig Reid Andrew Reardon	5/6	Email sent to review maps online. No response as of plan submission	

Majors Contracting Ltd.	Desmond Major Dean Major Jim Reid Shane Keeping Luke Worthman Markus Flynn	5/6	Email sent to review maps online. No response as of plan submission	
Nobles Resources Inc	Gene Noble Grant Noble Tina Thomas Marty Bowers	5/6	Email sent to review maps online. No response as of plan submission	
Ducks Unlimited Canada	Danica Jackson Park	5/6	Email sent to review maps online. No response as of plan submission	
Birds Canada	Catherine Dale Jenna McDermotts	5/6	Email sent to review maps online. No response as of plan submission	
Burtons Cove Logging and Lumber	Zeta Osmond Andrea Ropson	5/6	Email sent to review maps online. No response as of plan submission	
Canadian Wildlife Service	SydneyWorthman	5/6	Plan submitted for review through EA process	
Concerned Citizen former PAC Member	Wilfred Bartlett	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	Mike Brake	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	Overton Colbourne	5/6	Email sent to review maps online. No response as of plan submission	
MUN Grenfell Campus	Stephen Decker	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	Sean Dolter	5/6	Email sent to review maps online. No response as of plan submission	
Town of Deer Lake	Carl Goudie	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	Debbie Hearn	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former	Ralph Rice	5/6	Email sent to review maps online. No response as of plan submission	

PAC Member				
Concerned Citizen former PAC Member	Tim Moulton	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	George VanDusen	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	Cyril Pelley	5/6	Email sent to review maps online. No response as of plan submission	
Concerned Citizen former PAC Member	John Baird	5/6	Email sent to review maps online. No response as of plan submission	
Unifor Local 60N	Kerry Anstey	5/6	Email sent to review maps online. No response as of plan submission	
Rob Clarke Motor Sports	Rob Clarke	5/6	Email sent to review maps online. No response as of plan submission	
Forestry, Agriculture and Lands GovNL	Wes Morgan Paul Taylor Bryan Oke Dave Poole	5/6	Plan sent by mail to review	
District Ecosystem Manager FMD 5/6	Laurie Holloway	5/6	Plan sent by mail to review	
Concerned Citizen former PAC Member	Overton Colbourne	5/6	Email sent to review maps online. No response as of plan submission	
Nakiska on the River – Gander River Outfitter	John Allan	5/6	Replied that there was no impact of proposed plans on his outfitting business	No Mitigations required
Freshwater Alexander Bays Ecosystem Corporation	John Baird	5	Email sent to review maps online. No response as of plan submission	
Bear Cliff Lodge Gander River Outfitter	Robert Coates	5/6	Email sent to review maps online. No response as of plan submission	
Caribou Pond	Boyce Dove	5/6	Email sent to review maps online. No response as of plan submission	

Outfitting Ltd.				
Newfoundland Wilderness Outfitters Inc - Northwest Gander River Outfitter	Tom Sargent	5/6	Email sent to review maps online. No response as of plan submission	
Hinterland Outfitting Ltd. Southwest Gander River Outfitter	Craig Pomeroy	5/6	Email sent to review maps online. No response as of plan submission	
Northwest Gander River Outfitters	Matt Wettlaufer	5/6	Email sent to review maps online. No response as of plan submission	
Butts Pond Cabin Owners Association	Joe Penney	5	Email sent to review maps online. No response as of plan submission	
Town of Gander	General Email sent to Council and James Blackwood	5/6	Email sent to review maps online. No response as of plan submission	
Gander River Cabin Owner	Roger Scalpen	6	Phone conversation with Roger to discuss the upcoming plans. No concerns, just questions on why some areas were not resubmitted in this 5YP.	No mitigations required.
Gander River Cabin Owners Association	Steve Johnson	6	Email sent to review maps online. No response as of plan submission	
D5 Interested Citizen	Colin Taylor	5	Wondering about road construction in Soulis Pond area. No concerns just questions.	No mitigations required.
Town of Appleton	General Email sent to Council	5/6	Email sent to review maps online. No response as of plan submission	
Town of Glenwood	General Email sent to Council	5/6	Email sent to review maps online. No response as of plan submission	
Town of Gambo	Stephen Stockley	5/6	Email sent to review maps online. No response as of plan submission	
Nature Conservancy of Canada	Piers Evans	5/6	Email sent to review maps online. Shared data set of NCC purchased property.	Review of boundary lines continue as their appears to be a projection issue. Meetings between NCC, CBPPL and Crown Lands and/or FAL to take place in July.
Banting Lake Lodge		5/6	Email sent to review maps online. No response as of plan submission	
Gander River Outfitters		5/6	Email sent to review maps online. No response as of plan submission	

Beaver Lodge		5/6	Email sent to review maps online. No response as of plan submission	
White Cliff Lodge		5/6	Email sent to review maps online. No response as of plan submission	
River Run Outfitting and Tours		5/6	Email sent to review maps online. No response as of plan submission	
Sylt Lake Tent Camp		5/6	Email sent to review maps online. No response as of plan submission	
Mountain Top Cabin Ltd.		5/6	Email sent to review maps online. No response as of plan submission	
Woodman's Outfitters		5/6	Email sent to review maps online. No response as of plan submission	
Central Newfoundland Outfitters		5/6	Email sent to review maps online. No response as of plan submission	
Sitdown Pond Lodge		5/6	Email sent to review maps online. No response as of plan submission	
Sandy Lake Lodge Outfitting Limited		5/6	Email sent to review maps online. No response as of plan submission	

SECTION 7. PUBLIC CONSULTATION

A component of forest-management planning in this province is public engagement. Since the 1990s forest management plans have been developed with advice from public planning teams. This process was designed to garner advice from the public and was intended to improve forest management practices at the local scale while also mitigating land-use conflicts. Because the forest management planning process is the only regular interface for public input, the planning teams have become a catch-all for many provincial resource management issues. In many cases, issues raised extend beyond the district or zonal boundaries and may even be outside the scope of the planning team mandate. It is important to note that the forest management planning and consultation process has had a measure of success. Diligent work by district managers and planners has led to the submission and implementation of many plans over the past several decades.

The stakeholder involvement process into the development of new five-year operating plans has changed from historical processes. Over the years managers have seen a reduction in public participation in many zones. CBPPL has contacted several known stakeholders in Zone 3 during spring 2026 as the plan was being developed. This list of known stakeholders were sent instructions on how to provide feedback on the plan. A draft version of all maps for Zone 3 was posted to the Corner Brook Pulp and Paper Website in May 2026. On the website interested people can send questions/comments to CBPPL woodlands staff regarding the posted plans. Section 6 lists all mitigations from consultation.

During the approval process of the last 5YP for Zone 3, a Tourism Stakeholder Consultation Plan was requested. This plan included details around CBPPL's Stakeholder Performance Indicator in its Sustainable Forest Management Plan, the consultation process for the 5YP, our Annual Operating Plan outreach, general communications, special places program, and the public engagement list used during plan development. Since this plan we have continued to add to the consultation list as new groups reach out. For example the Butts Pond Cabin Owners Association has been in direct contact with staff regarding our harvest plans, winter activities and joint projects to help both the association and the company. A copy of the plan can be found in Appendix 4.

SECTION 8. MANAGEMENT OBJECTIVES AND STATEGIES

8.1 Harvesting

The forest in this zone is part of the boreal forest, which is characterized as being disturbance driven resulting in the formation of relatively even aged stands. The clear-cut silviculture system most closely emulates this natural disturbance pattern and therefore is the most preferred method employed for harvest. The size, shape, arrangement, and juxtaposition of clear-cut areas vary across the landscape depending on localized topography and terrain conditions. A modification of the clear-cut system takes place in domestic areas whereby the cuts are relatively small and disbursed resulting in the creation of a range of age and development classes. The clear-cut system is the only harvest system being considered in the zone at this time.

8.1.1 Commercial

Section 3 outlines in detail a general approach for the timber supply analysis and specific results and sensitivity analysis for the zone. The model used to calculate wood supply is a maximization model, outlining a specific course of action and timing of such actions to maximize timber production. The harvest schedule is an example, which indicates the specific forest stratums to be harvested, and an indication on the timing of such harvest. The districts must follow this schedule as closely as possible for the AAC to remain valid. In general, the oldest timber considered in worst condition and losing volume fastest is targeted as first harvest priority. Younger stands that have been damaged by insects and disease may also receive high priority. Once managed stands are eligible for harvest, this priority may change in some cases to allow for a faster rotation on good sites that are silviculturally treated.

Specific commercial strategies are as follows:

- design irregular cut blocks that follow contours and natural boundaries
- vary buffer widths to protect other values
- utilize winter harvest on wet and sensitive sites
- use landscape design techniques to mitigate viewscapes
- minimize timber utilization loss (< 6m3/ha)

8.1.2 Domestic

The harvest of domestic fuel wood from CBPPL limits in the zone is confined to cutover cleanup and the harvesting of non-commercial species. Incidental AAC levels for Zone 3 will be used to track this cut. Domestic permits are given for 15m3 and issued through the Forest Safety Association of Newfoundland and Labrador. Table 4 shows the estimated cut from 2022-2026. As the permitted volume cut was changed in 2024 from 25m3 to 15m3 it is expected that the harvest levels going forward will be closely comparable to the 2025 data collected. 2026 permit numbers are not available for this plan submission.

8.2 Silviculture

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

8.2.1 Site Preparation

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

1. 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.
2. 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.
3. 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 get established. In other instances, herbicides are used to control Kalmia either before or after planting. Herbicides, while used sparingly, are sometimes a necessary tool to help establishment of a new forest, particularly on better sites.

8.2.2 Planting

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

On adelgid sites partially regenerated to balsam fir, planting is done through the existing regeneration to obtain 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 Wooddale Tree Nursery to produce seed from plus trees collected throughout the province. Plus trees are normally selected because they have superior growth and physiological characteristics. The ultimate 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.

8.2.3 Thinning

To enhance development, silviculture thinning programs are designed to treat established forest stands. Pre-Commercial Thinning (PCT) usually involves partial removal of overstocked balsam fir stands at a young age 10 -15 years. In areas which have high moose browsing potential, the age is increased to 20 – 25 years, so that crop trees are tall enough to be out of reach of moose. PCT reduces density levels which facilitates maximizing volume increment and operability (piece size). Trees removed are not of merchantable size and remain on site, returning the nutrients back into the soil. In the zone, balsam fir is usually thinned to favour 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. As well, 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 in 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 mature. As with PCT, spruce and hardwoods are left where possible to increase the stand diversity.

Thinning programs aim to shorten the rotation period of a stand and produce large diameter stems. This program should increase the percentage of merchantable volume considered suitable for sawlogs. Commercial thinning has not been completed in the zone and diameter limit thinning has been done sparingly.

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 hardwoods to reduce susceptibility to insect attack and increase biological diversity
- where possible, use seedlings grown from local seed sources to protect genetic diversity
- ensure levels of planting and thinning used in the wood supply analysis are achieved
- work towards pre harvest planning to identify areas with potential silviculture problems so that optimal prescriptions can be promptly employed

8.3. Forest Access Roads

Timely access to harvesting areas is the key to successful implementation of harvest allocations. Roads also provide access for other recreational values such as snowmobiling, ATV riding, hunting, fishing, skiing, berry picking and hiking. However, it is recognized roads can also have a negative impact both from an environmental perspective (loss of productive land base) and other value perspective (access near remote outfitting lodges).

As a general principle from both an environmental and cost perspective, the minimal amount of road required to effectively harvest available timber will be built. Also, roads are constructed to standards (e.g. width of right-of-way and driving surface etc.) that are the minimum required to access the timber in a safe and effective manner. Forwarding distances are maximized to the economic limit to minimize the amount of roads constructed. These principles ensure the loss of productive land base and environmental disturbance

are minimized. In sensitive and wet areas, winter harvesting and road construction are encouraged, to minimize environmental disturbance.

In many instances, forest access roads "open up" new areas which are then subject to cabin development. Forest roads also provide access to remote areas where outfitting businesses operate. This generally leads to competition for hunting areas between local and "sport" hunters and may detract from the "remote" designation of the lodge. In such instances cabin development should be controlled to limit local access. As well, road decommissioning may also be considered, depending on cost and mitigation of conflicting uses for a particular road.

The nature of the current wood supply is that harvestable areas or stands are becoming smaller and more dispersed. Achievement of allocated harvest is contingent on accessing these areas and stands. Therefore, more road infrastructure is required to access this timber. Specific strategies include:

- Where possible, build winter roads to access sensitive and wet areas
- Minimize amount of road built by maximizing forwarding distances
- Use minimum road standard to safely and effectively match the logging chance
- Work with appropriate agencies (crown lands) to control cabin development
- Where possible, consider road decommissioning in areas of concern for other values (e.g., near remote outfitting lodges, PPWSA's, caribou habitat restoration)

8.4. Forest Protection

8.4.1. Insect and Disease

While having been a major natural disturbance factor within the zone, insects are now considered of lesser importance. Balsam fir is susceptible to most of the major insects and is in lower proportion throughout the zone than in the past. The budworm and looper damaged fir stands of the 1970's and 1980's that were salvage harvested have been replaced with planted less susceptible spruce species.

The major insect found throughout the zone today is the balsam woolly adelgid. It seems to be moving further inland, causing growth problems in young balsam fir stands. As outlined in the harvesting and timber supply analysis sections, wood supply forecast is based on following a rigid predetermined schedule and minimizing inventory deductions (of which insect damage is a portion). In the event of a major insect infestation, salvage efforts may change harvest priorities, resulting in the optimal harvest schedule not being followed. If insect damaged stands cannot be harvested in a timely manner, an additional harvest in the form of un-salvaged mortality may occur resulting in inventory deductions that are higher than anticipated.

In both circumstances, deviations from harvest schedules and inventory adjustment levels will be closely monitored to ensure that validity of AAC calculations are not compromised.

Specific strategies include:

- Use silvicultural techniques at the stand level to alter species mix and increase stand vigor; making stands less susceptible to insect attack (eg planting and cleaning).
- Where possible, use harvest-scheduling techniques to alter species mix across the landscape to avoid promotion for severe insect infestation
- Where possible, use species conversion techniques to convert adelgid susceptible balsam fir to other less susceptible species
- In conjunction with Provincial and Federal initiatives, use pertinent and approved biological and chemical insecticides such as BTK, Mimic, Neemix4.5 and NeabNPV (virus)
- In co-operation with Provincial insect and inventory divisions, monitor and measure adelgid infested stands to help refine yield curves to be used in the next timber supply analysis.

8.4.2. Fire

Historically, fire has been a major natural disturbance factor within this zone, resulting from relatively low precipitation and high summer temperatures, combined with frequent lighting storms. A fire in an unusually dry year can have devastating effects on the forest and can exacerbate an already tight wood supply situation. The zone can minimize the risk of a serious fire by maintaining a highly trained, efficient and effective fire control program and by minimizing the risk in forest stands through maintenance of health and vigor.

Specific strategies include:

- Ensure harvest schedule is followed targeting oldest/worst condition (and high fire risk) stands
- Maintain fire control capabilities and emergency response equipment as per Gov NL Fire Season Operating Permits and CBPPL Policies
- Where possible, promote species mixes (white birch) in stands to minimize risk

8.4.3. Wind Throw

Wind throw or blow down occurs in stands that are old and decrepit or in stands that have been predisposed by some other disturbance such as insects and disease. Blow down can also be increased in high-risk stands when unnatural edges are left on cutovers such as in the case buffers. To minimize the effects of blow down, stands will be managed to promote health and vigor mainly through silvicultural treatments and protection from insects.

Specific 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 wind throw to residual forest
- Investigate techniques to minimize the risk blow down in buffers (i.e., buffer management).
- Ensure harvest schedule is followed to target the oldest worst condition (and risk) timber first.
- Continue to sample overmature stands for signs of imminent breakup (e.g., wind throw and butt rot) and update harvest schedule on a 5-year basis accordingly to capture mortality

8.4.4. Information and Education

Information and education are important to provide for more active and effective participation in the forest management planning process. Through interaction with various user groups and the general public, we gain a better understanding of each other's values and positions. Information about a stakeholder's values and the location on the landscape provides a better ability to mitigate any potential negative impacts of harvesting activity on these values. For example, learning where a cabin is located can help planners when selecting areas for harvest and provide a contact to discuss impacts and mitigations. As a forest industry, other such vehicles for information and education, which will be actively pursued, include:

- Field trips (e.g. Crown and paper company woodlands tours, mill tours)
- School visits
- Open houses
- Commercial operator environmental training programs, Qualified Logging Professional Training
- Information meetings
- Training courses
- Seminars
- General day-to-day contact

SECTION 9. PROPOSED ACTIVITIES

9.1. Harvesting

This section will outline all forest activities that will occur on Corner Brook Pulp and Paper Limits in the zone from 2027-2031, including: proposed commercial and domestic harvesting, silviculture, and access road construction/bridge construction.

To present a more comprehensive overview of proposed activities on the entire district an overview map is presented in Appendix 9 This map shows all proposed operating areas so that operations can be viewed from a landscape perspective. Maps of individual operating areas and summary sheets are also presented in Appendix 9. The summary sheets give a brief description of each area, the type of activities that will occur and any issues raised and mitigative measures employed.

9.1.1. Commercial

The timber scheduled for commercial harvest in the district is overmature with some small pockets of mature dispersed throughout. This proposed harvest approximates the harvest schedule that was used to determine the AAC in Section 3. 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. Table 8 below summarizes the harvest in each area. A detailed description of each area can be found in coversheets in Appendix 9.

Table 8 Proposed Harvest 2027-2031

Proposed Harvest Total Volume m3							
FMD 5			SW CORE		SW OPERATIONAL		HW INCIDENTAL
		AAC	M3	AAC	M3	Non-AAC	M3
	AAC and Plan Allowance (10yrs)	34,500	345,000	2,200	22,000	4,700	47,000
	5YP Areas	Area ha	Volume M3	Area ha	Volume M3	Area ha	Volume M3
Commercial	K-05-01 Soulis Pond	403	36,331	-	-	-	-
	K-05-02 Joe Batts	65	4,722	-	-	-	-
	K-05-07 Home Pond	341	35,696	-	-	-	-
	K-05-16 Jonathans Pond	460	57,787	-	-	-	-
	K-05-17 Butts Pond	859	60,440	-	-	-	-
	K-05-18 Little Harbour	130	12,736	-	-	-	-
	K-05-20 Weir's Pond	208	20,806	-	-	-	-
	K-05-21 Deadman's Pond	128	14,475	-	-	-	-
	Totals	2,594	242,993	-	-	-	-
Incidental	Estimate 130 permits per Year * 15m3	-	-	-	-	-	19,500
	Totals	-	-	-	-	-	19,500

Proposed Harvest Total Volume m3							
FMD 6			SW CORE		SW OPERATIONAL		HW INCIDENTAL
		AAC	M3	AAC	M3	AAC	M3
	AAC and Plan Allowance (10yrs)	36,500	365,000	240	2,400	4,800	48,000
	5YP Areas	Area ha	Volume M3	Area ha	Volume M3	Area ha	Volume M3
Commercial	K-06-03 Careless Cove	136	10,965	-	-	-	-
	K-06-18 Deadwolf North	418	38,372	-	-	-	-
	Totals	554	49,337	-	-	-	-
Incidental	Estimate 80 permits per Year * 15m3	-	-	-	-	-	12,000
	Totals	-	-	-	-	-	12,000

9.1.2. Domestic

Domestic harvesting will occur within CBPPL limits and is generally conducted on a small patch cut system, or remnant cutting on past operations. The number of permits and volume associated with these permits is relatively low and insignificant. An incidental harvest level was provided for the Zone, and permits are planned to be below this target. All domestic cutting is done under permit which has conditions attached that outline the species (e.g., birch, larch and deadwood), volume, district boundaries and utilization standards to be employed. All domestic cutting permits are issued outside of forest fire season and the permit allocation is 15m3. No permits are issued inside of Provincial Protected Water Supply Areas and mapping is provided which depicts this in all CBPPL districts. Estimated permits issued per year are represented in Table 9.

9.1.3. Silviculture

The silviculture prescription scheduled for the next five years is planting/gap planting. Planting is designed to return a site to a minimum stocking level with the desired species, mainly spruce. There is full planting when there is complete natural regeneration failure and gap planting when a site has some desired regeneration but not enough to meet minimum stocking standards. Estimates for the next 5 years are found in Table 10 below.

Table 9 Proposed Silviculture Treatments 2027-2031

Treatment	FMD	Area (ha)
Planting	5	500
	6	120
Sub-Total		**620**
Grand-Total		**620**

9.2. Forest Access Roads & Bridges

As timber located closer to existing infrastructure has been harvested, it becomes necessary to access timber in more remote areas. These previously inaccessible stands have been included in the timber supply analysis and must be accessed to maintain long-term sustainability. No new capital road construction is proposed under this plan. However, the installation of a new bridge in District 5 (Soulis Pond) may be undertaken within the five-year planning period. All necessary permitting from Water Resources Division and the Department of Fisheries and Oceans will be obtained during the planning phase of the project.

9.3. Activities in Protected Public Water Supply Areas

For harvesting operations inside PPWSAs, wider buffers will be used and the pertinent EPG's will be attached to any permits issued for these areas. There will be continuous monitoring inside these areas and buffers will be flagged to ensure compliance with the guidelines. In addition, a Certificate of Approval under Section 10 of the Environment Act must be obtained before any domestic harvesting commences inside the PPWSA, and these areas are identified on maps provided to domestic cutters.
Table 10 shows the operating area overlaps in PPWSAs.

Table 10 Operating area overlaps with Public Protected Water Supply Areas (PPWSAs)

Operating Area	FMD	Area in PWSA	Operating Area	FMD	Area in PWSA
Soulis Pond	5	255	Careless Cove	6	3,320
Home Pond	5	2,655	Dead Wolf North	6	1,314
Little Harbour	5	369			
Deadmans Pond	5	923			
	Sub-total	4,202		Sub-total	4,634

SECTION 10. PLAN ADMINISTRATION

10.1 Monitoring

As part of CBPPL Environmental Management System (EMS) all CBPPL managed woodlands activities that have the potential to create significant environmental impacts will be measured and monitored. This is performed to ensure compliance to legal requirements, voluntary and non-voluntary agreements.

In addition, monitoring and measuring is performed to track performance, relevant operational controls, and conformance to the Company's environmental objectives and targets – including SFM Performance requirements, as well as to evaluate effectiveness. The core inspections that are completed are known as #1, 2 and 3 Inspections. Each will be described in this section.

<u>#1 Inspections – Month End Check-in – Active Operations</u>

All woodlands contractors are required to complete a #1 Inspection on their areas once per month. An example of this inspection is found in Appendix 5. Inspections can be completed on paper or within our electronic SiteDocs reporting system. It is meant to be a quick check on the most important Environmental and Safety aspects of the job. This form also contains other reportable information that the company requires monthly.

#2 Inspections – Active Operations

Throughout the calendar year it is a requirement of CBPPL that all contractors undergo a #2 inspection. This inspection covers all aspects of our Environmental Management and Safety expectations. The inspection forms can be found in Appendix 6.

Inspections during active operations allow the company to observe and correct in the moment. Superintendents (or designate) and required Woodlands Supervisors document deficiencies from #2 EMS Compliance Inspections in a Directive Book that is kept on the job site. The Superintendent (or designate) / Woodlands Supervisor and Contractor review each directive; a date is assigned for each deficiency to be corrected. The contractor signs and dates the book when the deficiency is corrected and forwards a copy to the Superintendent (or designate)/Supervisor.

Review of the inspections takes place annually and decisions are made to improve on results collected the previous year.

#3 Inspections – Site Released

The intent of a Harvest Area Completion Inspection is to ensure that all operating areas are left in a state that minimizes any potential for a negative impact on the environment. The Harvest Area/Road Completion Inspection is conducted on each operating area by an Operations Superintendent, Roads Supervisor, or designate. When a contractor finishes up in a particular area (or portion of an area) and moves to another area, there are basic conditions that must be met before moving.

A map of the area inspected must be attached to the Harvest Area Completion Inspection. The following items are checked during this inspection:

- Minor fuel/oil spills and stained soil cleaned up
- Ditches free of debris or obstructions
- No logging debris in waterbodies
- Temporary crossings removed
- Culverts free of debris or obstructions
- Treed buffer zones maintained
- No unnecessary trails or disturbance created by machines
- Trails cut off (or rehabilitated if necessary)
- Min. of 10 wildlife trees per ha. left on operating areas
- Merchantable trees left on cutover/roadside landings
- All merchantable timber cut in block
- All garbage removed from site
- Operations within approved operating areas

If problem areas are found the contractor must return to site and correct the issues if possible. The minimum acceptable score is 100% and any deficiency is considered a failing score.

10.1.1 Operational Level

Annually, Corner Brook Pulp and Paper Limited are issued a Certificate of Managed Land (CML). Attached to this Certificate are schedules that set out the conditions that must be followed to maintain managed land status. Appendix 1 contains the Environmental Protection Guidelines (EPGs) which are annually updated. Industry planning and operations must comply with schedule five or the land can be declared unmanaged, and fines levied. Government staff will monitor for compliance with EPGs and recommend managed or unmanaged status.

All planned activities are monitored to ensure all guidelines and regulations pertaining to environmental protection, harvesting, road construction, and silviculture are followed. Any infractions or deviations from the regulations or guidelines are dealt with as required under the Forestry Act.

10.1.2 Planning Level

The strategic planning section at forestry services monitors the implementation of this Five-Year Operating Plan for this zone. This is a crucial role, as many implementation commitments are stated in the plan. The primary function of the planning section is to monitor plan implementation for consistency with commitments in the plan through approval of the Annual Operating Plans derived from this plan and review of the past annual reports associated with each year's activities. The section will identify concerns with plan implementation, provide recommendations for plan changes and establish protocol for concerns reported to them. Additional meetings between CBPPL, Strategic Planning and/or relevant stakeholders may be required to review amendments or provide recommendations should changes be required because of a catastrophic event such as fire which may precipitate changes to the plan.

10.2. Amendments

Due to the dynamic nature of forest activities, amendments are often required because of changes in the forest, operational realities, imposition of addition requirements or guidelines, or some other unforeseen circumstance. These changes to the five-year operating plan must be submitted as amendments and approved before they are implemented. There are two types of possible amendments for this plan, one that can be approved internally by the Forestry Division Gov NL and one that must be submitted to the

Environmental Assessment Division for public review. Changes to this plan can be approved by the Forestry if they are:

- 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

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

- 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

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

Changes that are not covered by the above must be submitted to Environmental Assessment (EA) in the form of an amendment to the five-year operating plan. Prior to approval through EA, the amendment must be approved by the Ecosystem Management Division of the Forestry Division. Amendments will be reviewed by the monitoring committee if the District Manager deems that they represent a significant change to the plan.

SECTION 11. PAST 5YP COMMITMENTS

11.1 Women's Employment Plan

The Women's Employment Plan (WEP) was previously prepared as a conditional requirement by the Government of Newfoundland and Labrador's Women's Policy Office. The plan describes the gender-equity goals and initiatives that CBPP plans to implement by working collaboratively with our contractors and relevant community stakeholder organizations to help ensure a diverse and inclusive workforce during the various stages of the proposed project.

CBPPL is an equal opportunity employer in all sectors of our operations. We encourage and support the growth of women within our organization in many ways including identifying women for succession roles and providing equal opportunity in all job competitions. All roles that are posted externally are advertised

on the Kruger.com website or indeed.ca. For specialty positions we often will post on websites associated with professional organizations such as CPA, as well as alumni groups within the College of the North Atlantic and Memorial University.

Since 2021, CBPP has reported annually to the Women's Policy Office through its Sustainable Forest Management Plan using Indicator 11.2.2, the Women's Employment Plan. This plan is updated each year and has become an established method of reporting. The approved WEP can be found in Appendix 7.

11. Erosion and Sediment Control Plan

In 2026, as part of release conditions to the Zone 5 (District 10) 5YP, CBPP was required to submit an Erosion and Sediment Control Plan for approval to the Water Resources Management Division. The plan was to provide clear direction for preventing, controlling and monitoring erosion and sediment risks. In turn this would ensure the protection of streams, wetlands, fish habitat, and downstream water users.

Since the creation of that approved plan, it has been updated to Version 3 and is an all-encompassing plan across all CBPP's tenure. The full plan can be found in Appendix 8.

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Appendix 1 – Environmental Protection Guidelines
Appendix 2 - Crown Land Referral Policy Environmental Guidelines for Mineral Exploration and Quarries
Appendix 3 – Environmental Guidelines for Mineral Exploration and Quarries
Appendix 4 – Stakeholder Consultation Plan
Appendix 5 – No. 1 Inspection form example
Appendix 6 – No. 2 Inspection form example
Appendix 7 – Women's Employment Plan
Appendix 8 – Erosion and Sediment Control Plan
Appendix - 9 – Coversheets and Maps