The territory and its occupants

DOCUMENT IN SUPPORT OF THE DEVELOPMENT OF TACTICAL PLAN FOR INTEGRATED FOREST PLANS 2023-2028

Nord-du-Québec Region

Table of Contents

1. Indigenous Presence

For most Indigenous communities in Québec, the forest is a core element of their lifestyle. The Indigenous peoples use and frequent the forest to carry out their sustenance, domestic, ritual and social activities. Consideration of the concerns, values and needs of the Indigenous communities that live in the forest is an integral part of sustainable forest development.

1.1 INDIGENOUS COMMUNITIES

The Nord-du-Québec developed forest land is used by the Cree, Algonquin, and Atikamekw Nations, notably in the exercise of hunting, fishing, and trapping activities for food, ritual or social purposes. This land is particularly used by the Cree communities of Mistissini, Nemaska, Oujé-Bougoumou, Waskaganish, and Waswanipi, the Algonquin communities of Lac-Simon and Pikogan, and the Atikamekw community of Opitciwan. The table 1 and the map 1 indicates population data for these communities and the associated Management Units for consultation purposes.

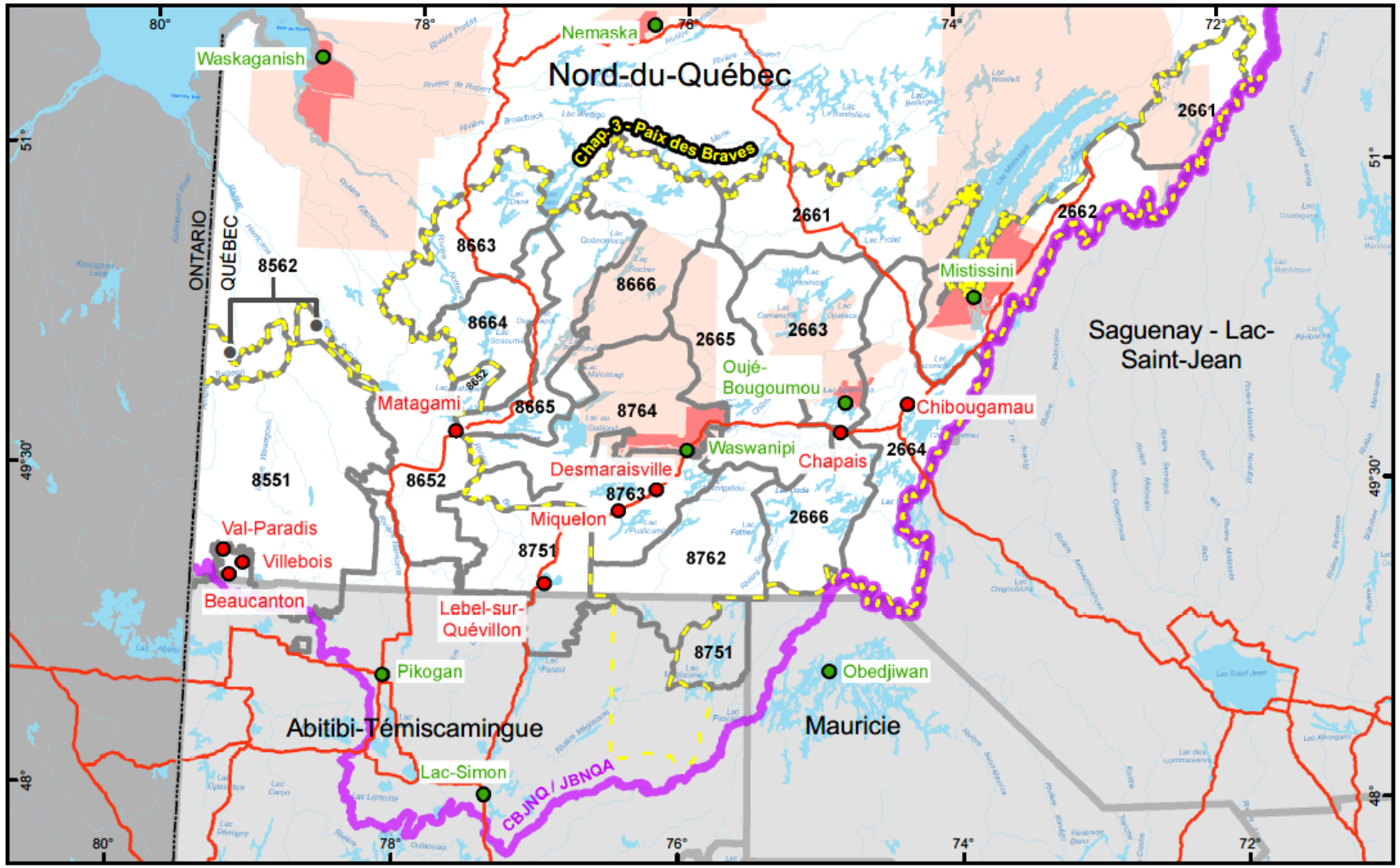
Table 1 : Aboriginal Populations of Nord-du-Québec

Nations	Communities	Resident	Non-resident	Total	Associated MU for consultation
Cree	Mistissini	3 938	177	4 115	026-61, 026-62, 026-63 & 026-64
	Nemaska	839	68	907	086-63
	Ouje-Bougoumou	846	113	959	026-63 & 026-64
	Waskaganish	2 612	478	3 090	085-62, 086-63 & 085-51*
	Waswanipi	2 073	448	2 521	026-65, 026-66, 086-64, 086-65, 087-62, 087-63, 087-64 & 084-62†
Algonquin	Lac-Simon	1 831	424	2 255	086-52 & 087-51
	Pikogan	617	463	1 080	085-51 & 086-52
Atikamekw	Opitciwan (Objedjiwan)	2 538	566	3 104	087-51

Source: Aboriginal Populations of Nord-du-Québec

* The Cree community of Waskaganish also uses part of MU 085-51 on which the Paix des braves' adapted forestry regime does not apply.
† This MU is located in the administration region of Abitibi-Témiscamingue but is part of the Paix des braves' adapted forestry regime[3] Excerpt from (consulted on February 1st, 2022): https://www.quebec.ca/en/government/quebec-at-a-glance/first-nations-and-inuit/profile-of-the-nations/crees

Map 1: Algonquin, Atikamekw and Cree communities related to the Nord-du-Québec Management Units



LOCALISATION

Localité / Locality
Communautés autochtones / Native community
Lim. Rég. Admin
Chap. 3 - Paix des Braves
CBJNQ / JBNQA
Route / Road
Terres de catégorie I / Cat. I Land
Terres de catégorie II / Cat. II Land

Projection cartographique

MTU[1] zone 18, NAD83

0 50 Km

1 : 2 700 000

Sources

Données	Organisme	Année
FCAN[2]	RNCan	2011
BDGEOM[3]	MRNF[4]	2022

Réalisation

Ministère des Ressources naturelles et des Forêts
Direction de la gestion des forêts du Nord-du-Québec

Notes :
1- Mercator transverse universelle
2- Fond de carte de l'Atlas national pour le Québec et l'Ontario
3- Ressources Naturelles Canada
4- Base de données géomatiques régionale
5- Ministère des Ressources naturelles et des Forêts

Ressources naturelles et Forêts Québec

1.1.1 OVERVIEW OF THE CREE NATION[1]

In Québec, the Cree population exceeds 20,000 and is spread out over nine villages along the shores of James Bay and Hudson Bay, as well as inland. Almost the entire population speaks Cree, while English is the second language of most.

In the 1970s, in response to the James Bay hydroelectric and development projects, the Crees set up a structured political organization, the Grand Council of the Crees (Eeyou Istchee). In 1975, the Crees, the Inuit and the Québec and Canadian governments signed the James Bay and Northern Québec Agreement (JBNQA). The JBNQA granted the Crees exclusive rights and interests in 5,544 km^2 of land and exclusive hunting, fishing and trapping rights on a surface area of 69,995 km^2. The JBNQA has transformed Cree communities since it brought about the creation of several institutions and administrative organizations such as the Cree Nation Government, and many businesses that have contributed to the population's economic vitality.

However, the implementation of the JBNQA highlighted some forest management issues, which the Gouvernement du Québec and the Cree Nation agreed to settle by signing the Agreement concerning a New Relationship between the Gouvernement du Québec and the Crees of Québec, or Paix des braves, in 2002. For the past 20 years, the Ministry implements this agreement which establishes an adapted forestry regime allowing, among other things, a greater consideration for the Cree traditional way of life.

1.1.1.1 Cree Nation of Mistissini[1]

The Cree community of Mistissini is located at the southwest corner of Lac Mistassini, the largest freshwater lake in Québec. Mistissini, a Cree word that means "big rock," was previously called Mistassini or Baie du Poste. This dynamic community grew in the 1800s largely due to a Hudson's Bay Company fur-trading post and today includes some 4,000 members speaking majorly Cree, as well as English, or French.

For generations, hunting, gathering, fishing, and trapping were mainstays of seasonal activity among the Crees and many of these activities continue today.

The community of Mistissini holds, through Eenatuk Corporation, a timber harvesting permit to supply a wood processing plant (PRAU). Mistissini is also in the heart of Quebec's largest wildlife reserve. In 2017, the Government of Québec put management of the Lacs-Albanel-Mistassini-et-Waconichi (AMW) wildlife reserve in the hands of the Nibiischii Corporation from Mistissini.

1.1.1.2 Oujé-Bougoumou Cree Nation[2]

Oujé-Bougoumou, which is Cree for "crossed by a river", is the newest Cree community of Eeyou Istchee. After seven relocations in 50 years, the group of Cree in the Chibougamau area have gained recognition by the government and was given land to construct a new permanent village which was built in 1992.

[1] Excerpt from (consulted on February 1st, 2022): https://www.quebec.ca/en/government/quebec-at-a-glance/first-nations-and-inuit/profile-of-the-nations/crees
[1] The information presented in this sub-section comes primarily from the websites of the Mistissini community (mistissini.com) and the Grand Council of Crees (https://www.cngov.ca/community-culture/communities/).
[2] The information presented in this sub-section comes primarily from the websites of the Oujé-Bougoumou community (https://www.ouje.ca/) and the Grand Council of Crees (https://www.cngov.ca/community-culture/communities/).

The community of Oujé-Bougoumou is located on the shores of Lake Opemisca and is accessible by a 25 km road linking to Quebec route 113 not far from Chapais. This young, dynamic community is home to many businesses, such as Staakun Enterprises Inc specializing in forestry, including tree planting and non-commercial silvicultural work.

The community of Oujé-Bougoumou also has an array of tourist offerings, including accommodations at Auberge Capississit Lodge, excursions to experience the Cree way of life with the organization Nuuhchimi wiinuu, and a museum, the Aanischaaukamikw Cree Cultural Institute (http://creeculturalinstitute.ca/). Moreover, the Assinica wildlife reserve, for which a management delegation is temporarily awarded to the Nibiischii Corporation by the Oujé-Bougoumou Cree Nation since 2017, is in close proximity to the community.

1.1.1.3 Cree First Nation of Waswanipi[1]

The Cree community of Waswanipi is situated at the confluence of the Opawica, Chibougamau, and Waswanipi Rivers. It can be accessed by car by Route 113, north of Senneterre. The Cree word “waswanipi” is usually translated as “reflection on the water,” and the name “Waswanipi” as “light on the water.” These expressions would come from a time when people used pine tar torches to find their way to the spawning grounds at the mouth of Waswanipi River and spear fish there.

The village was initially founded as a trading post by the Hudson’s Bay Company. In 1978, a new village was built 45 km upstream from the old location on Waswanipi River.

Cultural activities are organized every year, including Waswanipi Day commemorating the community’s founding and Chiiwetau (“going home”), an annual summer gathering at the community’s original home on the edge of Lac Waswanipi, often referred to as the “Old Post.” The gathering is followed by a big fishing tournament.

Forest management is an important issue in Waswanipi. The community holds, through Nabakatuk Forest Products Inc., a timber supply guarantee (Garantie d’approvisionnement – GA in French). Moreover, the Waswanipi Landholding Corporation (Corporation foncière Waswanipi) holds a permit to harvest timber to supply a wood processing plant (PRAU). A number of other Cree forestry-related enterprises have also been created, including Mishtuk Corporation, Dooden, Weshtau Inc., and Miiyunakutaw Inc.

1.1.1.4 Cree Nation of Nemaska[2]

Nemaska, which is Cree for “where the fish abound”, is a Cree community located on the shores of Lake Champion. However of small size with a population of 907 people (2019 statistics), the community is the seat of the Grand Council of the Crees (Eeyou Istchee) and the Cree Nation Government.

Nemaska is a modern village home to Cree families originally living at Lake Nemiscau (51°19'N 76°55'W). When the Hudson's Bay Company trading post closed there in 1970 and that the community

[1] The information presented in this sub-section comes primarily from the websites of the Waswanipi community https://www.waswanipi.com/en/ and the Grand Council of Crees (https://www.cngov.ca/community-culture/communities/).

[2] The information presented in this sub-section comes primarily from the websites of the Nemaska community (https://nemaska.com/), the Grand Council of Crees (https://www.cngov.ca/community-culture/communities/) and Quebec.ca (Aboriginal Populations of Nord-du-Québec).

was to be inundated because of hydroelectric projects, the residents were dispersed until the new village of Nemaska was built in 1980, over 60 km northeast from the former site. However, links to the previous settlement on Nemaska Lake are alive and strongly maintained. Every summer Nemaska holds a traditional gathering at Nemaska Lake during which community members catch, smoke and preserve numerous species of fish, especially sturgeon and whitefish.

The community is accessible by air through daily flights by Air Creebec and is linked to both the Billy-Diamond Highway, which leads into the Abitibi Temiscamingue region and the Route du Nord leading into Chibougamau. The community features two hotels and hosts the Grand Council of the Crees head offices.

1.1.1.5 Cree Nation of Waskaganish[1]

Located at the mouth of the Rupert River on the south-east shore of James Bay, the Cree community of Waskaganish is home to approximately 3 090 people (year-round residents). The community is accessible by the Billy-Diamond Highway and by plane.

Waskaganish represents one of the oldest fur trade settlements in Canada. Trapping remains an important contributor to the local economy as well as a source of Cree cultural and spiritual values. Many consider the community and its territory as one of North-America's premier destination for migratory birds. The region is also well known for its waterways and prime fishing spots.

Waskaganish is a dynamic community where its people look forward to a prosperous future firmly anchored in Cree values and traditions.

1.1.2 OVERVIEW OF THE ALGONQUIN NATION

The Algonquin Nation in Québec has just over 12,600 members and has 9 communities in Abitibi-Témiscamingue and Outaouais. Nearly 8,000 of its members live in 7 communities spread across Abitibi-Témiscamingue. The Algonquin language remains, to this day, alive and spoken by a number of persons. On the other hand, the forest and the practice of hunting, fishing and trapping activities are at the heart of the Algonquin way of life. Two of those communities have a presence in the developed territory of Nord-du-Québec.

The Algonquin communities' economic activity has changed significantly in recent decades. In addition to the activities mentioned above, today it is centered on logging, tourism, handicrafts, and government services. A number of communities are working to spur economic growth in the forest sector through silvicultural activities. Depending on their interests, they participate in tree planting, site preparation, or education of the forest stands. Some communities also want to take part in harvesting activities, either for tree felling or forest roadwork. These forest management activities create jobs for members of the Algonquin communities and serve as a source of income for the communities.

[1] The information presented in this sub-section comes primarily from the websites of the Waskaganish community (https://waskaganish.ca/), the Grand Council of Crees (https://www.cngov.ca/community-culture/communities/) and Quebec.ca (Aboriginal Populations of Nord-du-Québec).

On the other hand, over the past few years, certain communities have developed non-timber forest products (PFNL), either by commercialization of certain food products (mushrooms, berries, plants) or by various trials to reconcile forest cutting with PFNL production. Finally, several communities wish to develop a recreational tourism component. Some are already making offers to the public, whether for accommodations, circuits or various cultural immersion activities.

Algonquin communities in the region have a forestry department (or “Territory and Environment” department) with mandates that include gathering forestry concerns and information on traditional activities from community members. The Ministère des Ressources naturelles et des Forêts (MRNF) meets regularly with forestry or “Territory and Environment” departments of communities to discuss members’ concerns about forest management.

1.1.2.1 Anishnabe First Nation Community of Lac-Simon

The Anishnabe Nation of Lac-Simon includes 2,255 members and is located near the town of Val-d’Or (Louvicourt sector), via Route 117 on the western shore of Lac Simon.

The community formed the company Menitik Resources to create permanent forest jobs for its members. This company does site preparation, tree planting, brush cutting, and receives a recurring annual volume of silvicultural work. Moreover, since 2018, the community has held a permit to harvest timber to supply a wood processing plant (PRAU). This permit allows annual harvesting of a timber volume fixed by the Minister.

In addition, the community is interested in non-timber forest products (PFNL). Currently it is conducting various studies to develop ways to manage the forest that reconcile timber harvesting and PFNL harvesting.

The Lac-Simon community has created a forestry department to gather concerns related to forestry and information on traditional activities of community members. The Ministry meets regularly with the community's forestry department responsible officers to discuss members’ concerns pertaining to forest management.

1.1.2.2 Abitibiwinni First Nation Community (Pikogan)

The Abitibiwinni First Nation community is located three kilometers from the town of Amos, on the western shore of the Harricana River. It has a population of around 1,080 members identifying themselves as Abitibiwinnik, in reference to Lac Abitibi. The Abitibiwinnik (men) and the Abitibiwinnikwe (women) speak the Anicinabemowin language. Each family uses and frequents a territory north of the 49th parallel to engage in hunting, fishing and trapping activities for food, ritual or social purposes.

The community has put forward various projects to favour its socioeconomic development, particularly in relation to tourism (Bercé par l’Harricana, museum, hotel, outfitter), organizing events featuring Algonguin culture (e.g. pow-wow) and creation of forest jobs.

Since 2009, the Council of the First Nation of Abitibiwinni holds a silvicultural company active in the Abitibi-Témiscamingue region, Coopérative de solidarité de Pikogan. The community benefits from an annually recurring volume of silvicultural work that can ensure the Cooperative’s development. Over the

past few years, the Cooperative has purchased land preparation machinery, thus affirming its interest in developing this line. More specifically, the Cooperative performs land preparation and brush clearing work, allowing it to offer jobs to the community's members.

The "Territory and Environment" department is a growing team that includes a team of land guardians and works in collaboration with community members, the MRNF, and the forestry and mining industry. In addition, several knowledge projects are underway, in partnership with researchers from academic and government institutions, to facilitate dialogue between indigenous and scientific knowledge. Finally, the community is working to establish protected areas (including the establishment of Chicobi protected areas) and is very active in the protection of caribou and its habitat through various working groups.

1.1.3 OVERVIEW OF THE ATIKAMEKW NATION

The Atikamekw Nation includes near 8,200 people, about 80% of whom live in three communities: Manawan, in the Lanaudière region, and Wemotaci and Opitciwan in Mauricie. Atikamekw is their primary language; French is used as a second language.

The Atikamekw are working to preserve their culture, language, and way of life. With this in mind, they identified permanent elements that are fundamental to maintaining their way of life and likely to require forest harmonization measures.[1] These elements include camp sites, camps, waterways, portage and other trails, traplines, marks of Aboriginal occupation, and family territories.

The economy of the Atikamekw communities is primarily based on services, art, crafts, tourism, trapping, berry picking and forestry. Many of these activities, which occur over the six Atikamekw seasons, are in continuation with the Atikamekw lifestyle, including the blueberries, atocas or medicinal plants picking, the removal of bark for homemade baskets, hunting and trapping, smoking meat and fish, tanning skins, making snowshoes, coats, etc.[2]

Logging and other forest activities offer a way for the Atikamekw to diversify their economy and develop their communities. A number of Atikamekw businesses operate in this industry. The band councils of Manawan, Wemotaci, and Opitciwan have signed agreements with the Ministry for access to certain volumes of wood.

The Atikamekw have created a variety of organizations such as Atikamekw Aski Forest Services and Mamo Atoskewin, which bring together the territory's hunters, fishers, trappers, and gatherers. Atikamekw Sipi (Conseil de la Nation Atikamekw or CNA) offers the three communities services in a variety of areas: social services; engineering services; education, language, and culture; economic development; and document management. The CNA general assembly is composed of members elected from the three band councils of Manawan, Opitciwan, and Wemotaci. The CNA's mission is to act as the official representative of all Atikamekw members at the regional, national, and international levels and to promote their social, economic, and cultural rights and interests.

[1] *Milieu de vie Atikamekw*, document revised in 2012. Original version written by the Association Mamo Atoskewin Atikamekw (AMAA).
[2] LA NATION ATIKAMEKW DE MANAWAN, Portrait de cette époque, Saisons. https://www.manawan.org/ Consulted on October 30, 2016.

In addition, the Atikamekw Nation is engaged since 1980 into a global territory negotiation with the Government of Canada and the Government of Québec with the goal of signing an agreement settling their territorial claims.

1.1.3.1 Atikamekw community of Opitciwan[1]

Located on the shores of the Gouin Reservoir in Mauricie, the Atikamekw community of Opitciwan is accessible by a network of forest roads and lies 45 km from the border with the Abitibi-Témiscamingue region. Obedjiwan means “where rising rivers meet.” The community has about 2,900 members.

Members of this Atikamekw community visit the forests of Abitibi-Témiscamingue, in particular the Abitibi Reserve for beaver, to pursue hunting, fishing and trapping activities for food, ritual or social purposes.

The community has a lumber mill, the Société en commandite Scierie Opitciwan. Timber harvesting is a major economic activity and has great potential for jobs. The Conseil des Atikamekw d’Opitciwan has, through the sawmill, got a timber supply guarantee concluded with the Ministry for an annual volume of 137,650 m^3. In addition, the Conseil benefits from a forest management delegation agreement, which is in effect until 2023. The volume of timber allocated to this agreement is 43,651 m^3.

Otherwise, the Conseil des Atikamekw d’Opitciwan has entered into an agreement with the Ministry under the Aboriginal Participation Program in Sustainable Forest Management. The purpose of this agreement is to encourage their participation in forest planning. The community is consulted on management plans and is invited to collect and communicate members’ concerns regarding forest management.

The territory covered by Management Units 085-51 and 086-52 is part of the Abitibi Reserve for beaver while MU 087-51 overlaps the Amos and Obedjiwan divisions of the Abitibi Reserve for beaver.

Beaver reserves were created between 1932 and 1954 to allow beaver populations to rebuild. According to the provisions of the Regulation respecting beaver reserves (L.R.Q., chap. C-61.1, r.28), only “Indians and Eskimos” may hunt and trap fur-bearing animals in certain beaver reserves.

For additional information, see:

Amerindians and Inuit — Profile of Québec’s Indigenous Nations
First Nations and Inuit — Profile of the Nations
Location of Québec’s Indigenous Communities
Beaver reserves

1.2 SPECIAL AGREEMENTS

The Ministère des Ressources naturelles et des Forêts (MRNF), along with the Secrétariat aux affaires autochtones, has been involved in negotiating agreements with the Indigenous communities on

[1] Source : Secrétariat aux affaires autochtones (2011) Amérindiens et Inuits, Portrait des nations autochtones du Québec, 2e édition, p. 20-21. Available online here: https://cdn-contenu.quebec.ca/cdn-contenu/adm/min/conseil-executif/publications-adm/saa/administratives/brochures/document-11-nations-2e-edition.pdf?1605704959

subjects specific to the forests. These negotiations have resulted in many agreements applicable in whole or in part to the managed territory of Nord-du-Québec.

1.2.1 THE AGREEMENT CONCERNING A NEW RELATIONSHIP BETWEEN LE GOUVERNEMENT DU QUÉBEC AND THE CREES OF QUÉBEC (PAIX DES BRAVES)

Chapter 3 of the Agreement introduces an adapted forest regime that governs planning of forest management, participation, consultation and reviews of plans within the area covered by it. This adapted regime establishes specific rules and procedures applicable to the territory covered by the agreement, in an effort to better take into account the Crees' traditional way of life, better integrate sustainable development concerns, and involve Crees in forest planning and management processes.

The Adapted Forestry Regime includes provisions regarding harvest speed and the types of silvicultural treatments to be used in forestry planning. The regime is structured around two separate but important elements: the level of prior disturbance in traplines and the location of areas that are of particular interest to the Cree.

The Agreement has been amended six (6) times since it was signed in 2002, with the most recent making some fairly significant changes to the adapted forestry regime, introduced in 2002. These changes were essential in order to harmonize the Agreement with the *Sustainable Forest Development Act* and certain elements of the Agreement on Governance in the Eeyou Istchee James Bay Territory, in particular with regard to the collaborative forest resource management regime.

In this region, only the Management Units 085-51, 086-52, 087-51 are not concerned by the adapted forestry regime. Limits to the territory of application of chapter 3 of the Agreement are shown on Map 1.

1.2.2 THE AGREEMENT ON GOVERNANCE IN THE EEYOU ISTCHEE JAMES BAY TERRITORY BETWEEN THE CREES OF EEYOU ISTCHEE AND THE GOUVERNEMENT DU QUÉBEC

Inspired by the dynamic created by The Paix des braves agreement led to the signing of the Agreement on Governance in the Eeyou Istchee James Bay Territory by the Crees and the Gouvernement du Québec on July 24, 2012. This agreement stems from the desire to modernize the governance structures created by the JBNQA by introducing a new public management method for territories at the municipal and supramunicipal levels that allow for the participation of Crees and James Bay residents with a focus on shared interests. The purpose of the Agreement was to continue the area's development by granting the Crees additional responsibility over land and resources. Among other things, and subject to prior negotiations between the MRNF and the Cree Nation Government, the Agreement provided for the creation of a collaborative forest resource management regime on Category II lands in the area covered by Chapter 3 of the Paix des Braves.

The Agreement also provided for the creation of the Eeyou Istchee James Bay Regional Government (the Regional Government), which took office on January 1, 2014, and is composed of 22 people: 11 Cree representatives and 11 Jamesian representatives. One observer from the Québec Government

also attends all the meetings. The Regional Government replaced the Municipalité de Baie-James, other than for Category II lands. It also has the responsibility of the TLGIRTs for Category III lands as explained in the Participatory Management section of Template 1.

1.2.3 THE AGREEMENT TO RESOLVE THE BARIL-MOSES FORESTRY DISPUTE BETWEEN THE CREE NATION OF EEYOU ISTCHEE AND THE GOUVERNEMENT DU QUÉBEC

This Agreement, signed on July 13, 2015, had a number of aims, including harmonization of forest activities on the territories established by the Baril-Moses document, hunting fishing and trapping activities, and harmonization of the adapted forestry regime. Under the Agreement, Québec undertook to designate the Broadback River sector as a protected area and biodiversity reserve, and to introduce measures to promote the restoration of woodland caribou.

1.2.4 THE AGREEMENT TO LAY THE FOUNDATIONS FOR A NEW RELATIONSHIP BETWEEN THE ABITIBIWINNI FIRST NATION AND THE GOUVERNEMENT DU QUÉBEC

The Agreement reached on June 22, 2022, aims to lay the foundation for a new relationship between the parties, based on an attitude of openness, partnership and cooperation. It establishes a framework that will facilitate negotiations between the parties on a series of topics of common interest, including protected areas, forestry, consultation mechanisms and community economic development.

The Agreement includes the establishment of a strategic committee with a mandate to strengthen political, economic and social relations.

The Agreement also provides for the designation of the Chicobi area as a protected area covering 224.6 km². The objectives of this designation include improving the representativeness of the network of protected areas, increasing the preservation of four existing ecological reserves and ensuring connectivity between Parc national d'Aiguebelle, the proposed Esker-Mistaouac biodiversity reserve and the planned Haute Harricana aquatic reserve to the north.

1.3 THE GRANDE ALLIANCE

The milestones reached under the JBNQA and subsequent agreements marked a turning point in relations. On February 17, 2020, the Gouvernement du Québec, the Cree Nation Government and the Grand Council of the Crees (Eeyou Istchee) signed a Memorandum of Understanding on the Cree-Quebec Sustainable Infrastructure Development Program in the Eeyou Istchee Baie-James region. A "Grande Alliance" is established between Quebec and the Crees in order to promote and consolidate sustainable development and socioeconomic collaboration between the Cree and Quebec nations, in order to link, develop and protect the Eeyou Istchee Baie-James region. This Memorandum of Understanding, known as the Grand Alliance, aims among other things the identification of new protected areas conducive to the connectivity of the territory's wildlife habitats. The result of the first

work to this effect was announced in December 2020. See section 2.1.2 Protected land or sites to which special conditions apply of this module for details.

This collaborative agreement notably calls for the implementation of a strategic infrastructure plan. The plan includes three phases that could be completed over a 30-year period, thanks to new government investments. Moreover, the Memorandum of Understanding provides for the extension of the rail network to promote economic development, the sharing of infrastructures in the territory and the local labour force training in the common interest of communities and public and private enterprises.

1.4 PLAN NORD[1]

The aim of the Plan Nord is to promote the potential for mining, energy, tourism, and social and cultural development in Québec north of the 49th degree of latitude. By harmonizing the economic, social and environmental aspects of the Plan Nord, the Québec government intends to make it a responsible, sustainable and unifying project for Québec society.

The Plan Nord[2] is the opportunity to establish and specify the mechanisms allowing 50% of the northern territory to be dedicated to environmental protection, preservation of biodiversity and enhancement of various types of development. With the official designation of the 23 territorial reserves for protected area purposes (réserves de territoires aux fins d'aire protégée, or RTFAP) in the Eeyou Istchee James Bay territory, announced in December 2020, the proportion of protected areas in this territory increased from 12% to 23%. The territory of the Plan Nord is much larger than the managed territory of the Nord-du-Québec region.

The work resulting from the Plan Nord concerning protected areas are taken into consideration in the PAFITs of the Nord-du-Québec region when they are subject to administrative or legal protections as explained in section Protected land or sites to which special conditions apply.

The MRNF is involved in implementing agreements on topics specific to sustainable forest development and management.

1.5 ABORIGINAL PARTICIPATION PROGRAM IN SUSTAINABLE FOREST MANAGEMENT

The Aboriginal Participation Program in Sustainable Forest Management (PPA) has the purpose of supporting the participation and contribution

n of Aboriginal communities in the forest regime. The funding offered under this program thus allows maintenance of the participation of Aboriginal communities in the consultation processes relating to sustainable forest development and management and contribution to their socioeconomic development through projects related to sustainable forest management.

For additional information, please see:
Agreements, Demands and Negotiations
List of Agreements Reached, By Nation and by Community

[1] Source: https://www.quebec.ca/en/government/departments-and-agencies/societe-plan-nord/mission-and-mandate
[2] Source : https://cdn-contenu.quebec.ca/cdn-contenu/adm/org/spn/Publications/Plans_action/A-Plan_d_action_2020-2023_LOWRES.pdf?1633614319[3] Sources : Nord-du-Québec (région 10) - Régions administratives - Ministère des Affaires municipales et de l'Habitation (gouv.qc.ca)

2. Description of Public Land

The forests in the domain of the State, or public forests, are used extensively, not only by the forest industry and the Indigenous communities, but also for a wide range of other purposes including hunting, fishing, trapping, vacations and harvesting of non-timber forest products (NTFP). Forest users must coexist within the same area, and the MRNF must consider all their concerns. The following sections present the many different ways in which the region's public land is used.

2.1 LOCATION AND DESCRIPTION OF THE MANAGEMENT UNITS

Québec has 33 Management Units containing lands in the domain of the State, including the Management Units (MU). A Management Unit is an administrative subdivision of land in Québec that serves as the basis for the government's forest management activities. There are currently 59 Management Units, which encompass virtually all Québec's forests. It is important to note that a Management Unit may not be situated entirely within a single administrative unit, but may overlap into neighbouring administrative units. In this document, the term "region" is used, for the sake of simplicity, to refer to the Management Units in the same forestry region. An integrated tactical plan for forest development (tactical plan or PAFIT) is prepared for each Management Unit. Some of the topics in the plans are addressed at regional level while others that are more characteristic of the area under study are addressed at Management Unit level. See the Map of Management Units (maps 1 and 2).

The Nord-du-Québec region (Region 10) is located north of the 49th parallel, entirely within the Canadian Shield, and covers a little more than half of the total area of Québec. On the west, it extends along James Bay and Hudson Bay, up to the tip of the Ungava Peninsula. On the north, it is bounded by the Arctic Ocean, and on the east, by Labrador and the Côte-Nord region. Its southern limit borders on the Saguenay–Lac-Saint-Jean and Abitibi-Témiscamingue regions.[1].

The Direction de la gestion des forêts du Nord-du-Québec contains four MRNF local offices (known as unités de gestion, or UG), those of Chibougamau (102), Mont Plamondon (105), Harricana-Nord (106) and Quévillon (107).

The Chibougamau local office (UG 102) is responsible for Management Units 026-61, 026-62, 026-63, 026-64, 026-65 and 026-66, all of which are included in the territory of the Eeyou Istchee James Bay Regional Government in the Nord-du-Québec region.

MU 026-61 has a total surface area of 7,836 km² (783,600 ha). It is divided into two sections. One lies to the west of Lac Mistassini and includes Lac Frotet and Lac Troilus. The other lies to the east of Lac Mistassini and includes Lac Coursay and Lac Témiscamie.

[1] Sources : Nord-du-Québec (région 10) - Régions administratives - Ministère des Affaires municipales et de l'Habitation (gouv.qc.ca)

MU 026-62 has a total surface area of 5,486 km² (548,600 ha). It is located to the east of Lac Mistassini and the west of Baie Pénicouane. The most important lakes in this MU are Lac Waconichi and Lac Tournemine.

MU 026-63 has a total surface area of 4,972 km² (497,200 ha). It is located north of the town of Chapais. The most important lakes in this MU are Lac Assinica, Lac Opémisca, Lac Opataca, Lac Waposite, and Lac Comencho.

MU 026-64 has a total surface area of 6,413 km² (641,300 ha). It lies to the north and south of the town of Chibougamau and Lac Chibougamau. It is 100% public land. The most important lakes in this MU are Lac Lemieux, Lac Obatogamau, Lac Chevrillon, Lac Samuel-Bédard, and Lac Robert.

MU 026-65 has a total surface area of 4,857 km² (485,700 ha). It is crossed by Route 113 and is located to the west of the town of Chapais. The most important lakes in this MU are La Trève, Caupichigau, Monsan, Omo, Dikson, and Lac des Deux Orignaux.

MU 026-66 has a total surface area of 3,183 km² (318,300 ha). Its northern section is crossed by Route 113 and lies south of the town of Chapais. It is 100% public land. The most important lakes in this MU are Lac à l'Eau Jaune, Lac Doda, and Lac Hébert.

The Mont Plamondon local office (UG 105) is responsible for Management Units (MU) 085-51 and 085-62.

Management Unit (MU) 085-51 has a total surface area is 10,830 km² (1,052,800 ha) including protected areas (data from the combined territory and ecological forest map from the Chief Forester's Office, 2013–2018). This MU lies within the Abitibi-Ouest and Abitibi RCMs in the Abitibi-Témiscamingue region and within the Eeyou Istchee James Bay territory in Nord-du-Québec. It is located north of La Sarre. The most important bodies of water in this MU are Lac Turgeon, Lac Wawagosic, Lac Mistaouac, and Rivières Harricana, Wawagosic, and Turgeon.

Management Unit (MU) 085-62 has a total surface area is 1,835 km² (183,500 ha) including protected areas (data from the Chief Forester's Office combined map, 2013–2018). This MU lies within the Eeyou Istchee James Bay Regional Government territory in Nord-du-Québec. It is 100% public land. The most important waterways in this MU are Rivière Turgeon and Rivière Harricana. There are no roads suitable for motor vehicles crossing this MU, because only an ice bridge would allow access to most of it.

The Harricana-Nord local office (UG106) is responsible for Management Units (MU) 086-52, 086-63, 086-64, 086-65 and 086-66, which are included in the territory of the Eeyou Istchee James Bay Regional Government in the Nord-du-Québec region.

Management Unit (MU) 086-52 has a total surface area of 3,891 km² (389,100 ha). It includes the municipality of Matagami. The most important bodies of water in this MU are Lac Matagami and Rivière Allard. It is crossed by Route 109.

MU 086-63 has a total surface area of 3,895 km² (389,500 ha). It is located north of the town of Matagami. It is 100% public land. The most important bodies of water in this MU are Rivière Nottaway, Lac Evans, and Lac Dana. It is also crossed by Route de la Baie-James.

MU 086-64 has a total surface area of 2,903 km² (290,300 ha). It is located northeast of the town of Matagami. It is 100% public land. The most important bodies of water in this MU are Rivière Nottaway, Lac Soscumica, and Lac Matagami. It is also crossed by Route de la Baie-James.

MU 086-65 has a total surface area of 3,592 km² (359,200 ha). It is near the municipality of Matagami. The most important bodies of water in this MU are Lac Olga, Lac Poncheville and Lac Quénonisca. It is also crossed by Route de la Baie-James.

MU 086-66 has a total surface area of 5,075 km² (507,500 ha). It is near the municipality of Matagami. The most important bodies of water in this MU are Lac Théodat, Lac Rocher, and the Broadback River. It is crossed by forestry road R-1022.

The Quévillon local office (107) is responsible for Management Units (MU) 087-51, 087-62, 087-63 and 087-64.

Management Unit (MU) 087-51, part of which is located above the 49th parallel, in the Nord-du-Québec region, and another portion below it, in Abitibi-Témiscamingue. The total surface area of this MU is 5,407.58 km² (540,758 ha).

This MU is unique in that it is divided into two distinct parts. The larger part is located to the southeast of Matagami and the southwest of Waswanipi. The town of Lebel-sur-Quévillon and Lac Quévillon lie in the center of this part. Route 113 and forestry roads R-1000, R-1050, and R-1061 cross this portion of the MU. The second part of the MU, which is entirely below the 49th parallel, is located southeast of Lebel-sur-Quévillon, right below MU 087-62. This lower portion of the MU is crossed by forestry road RQ-863 and it includes Lac Mesplet, Lac Barry, and Lac Saint-Cyr. This land is entirely public.

Management Units 087-62, 087-63 and 087-64 all lie within the Eeyou Istchee James Bay territory in Nord-du-Québec, exception made from the Southern part of MU 087-62 located south of the 49th parallel of latitude, which is included inside Abitibi-Témiscamingue region.

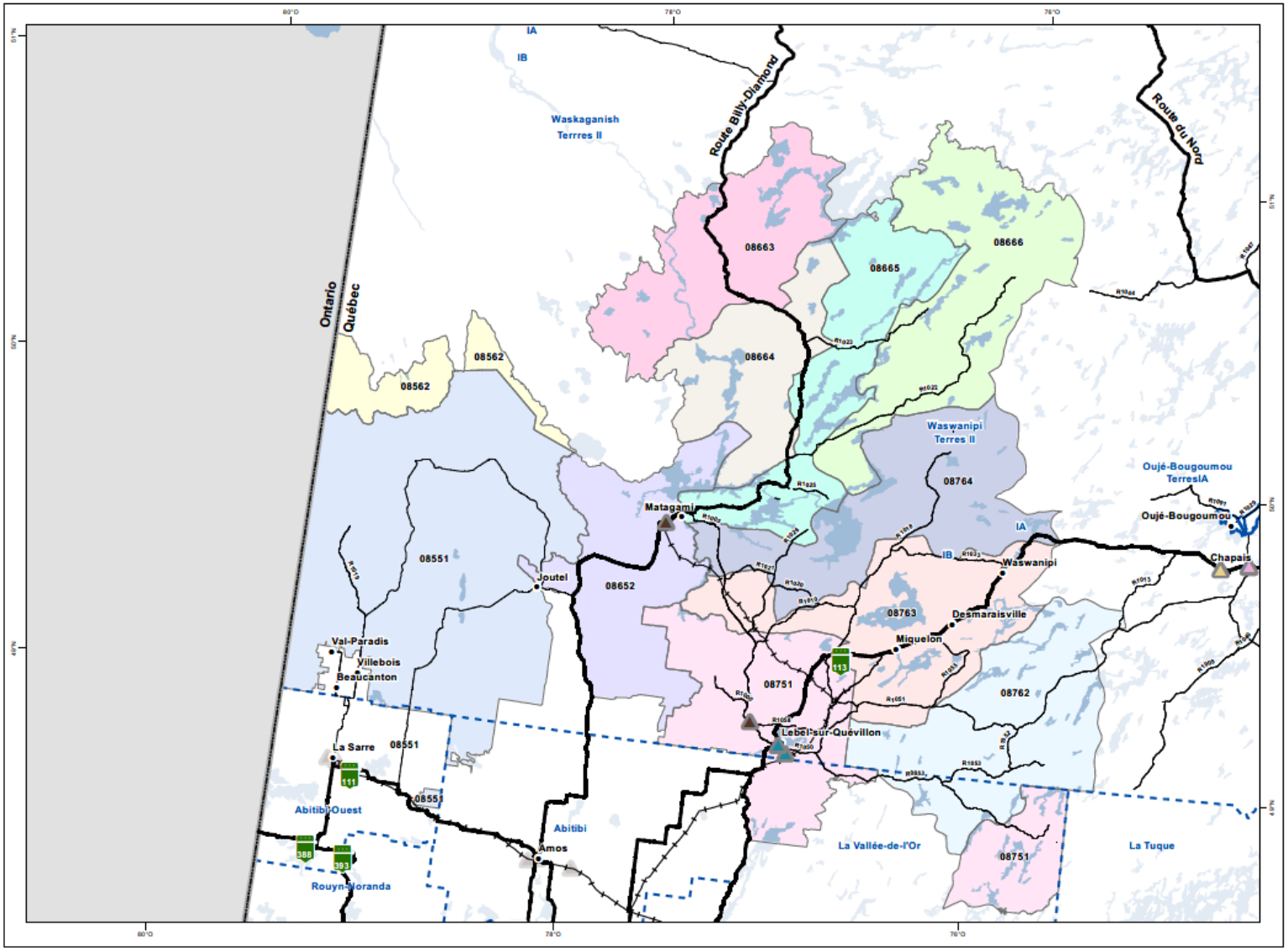
MU 087-62 has a total surface area of 4,676.22 km² (467,622 ha). It is located to the south of the Waswanipi community, east of the town of Lebel-sur-Quévillon, and southeast of the hamlets of Miquelon and Desmaraisville. Several sizeable lakes can be found in this territory, including Lac Nicobi, Lac Father, Lac Lichen, and Lac Germain in the north and Lac Wetetnagami, Lac Masères, and Lac aux Loutres in the south. This territory is crossed by forestry road R-0653. It is exclusively comprised of public lands.

MU 087-63 has a total surface area of 4,033.52 km² (403,352 ha). It encompasses the Waswanipi community in the northeast, the town of Matagami in the northeast, and the town of Lebel-sur-Quévillon in the southwest. Note that the hamlets of Miquelon and Desmaraisville are located in the middle of this MU. It is crossed by Route 113 and forestry route R-1051. Two major lakes can be found in this territory: Lac Waswanipi and Lac Pusticamica. The territory is exclusively comprised of public lands.

MU 087-64 has a total surface area of 4,791.76 km² (479,176 ha). Near this MU are the town of Matagami to the west and the Waswanipi community to the southeast. The MU is located north of Miquelon and Desmaraisville. It is crossed by forestry road R1018 in the east and forestry road R1005 in the west. Two large lakes are worth noting near the approximate center of the territory: Lac du Goéland and Lac Maicassagi. This territory includes category I lands (59,679 ha), category II lands (269,583 ha), and category III lands (145,854 ha).

See the Gouvernement du Québec's ecoforest data portal, Forêt Ouverte
Forêt Ouverte: Management Units

Map 2 Region 10 – West Management Units



Management units

08551 08562 08652 08663 08664 08665 08666 08751 08762 08763 08764

Wood-processing plants

Electricity
Chipboard
Pulp and paper / Thermal energy
Wood veneer and chipboard
Sawmill
Sawmill and wood pellets

Road network

Main road
Secondary road
Railroad track

Territorial organization

Municipality
Regional county municipality (RCM)
Category lands
Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique : NAD 83 compatible avec le système mondial WGS84

Projection cartographique : Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

Réalisation et diffusion

Ministère des Ressources naturelles et des Forêts

Note : Le présent document n'a aucune portée légale.
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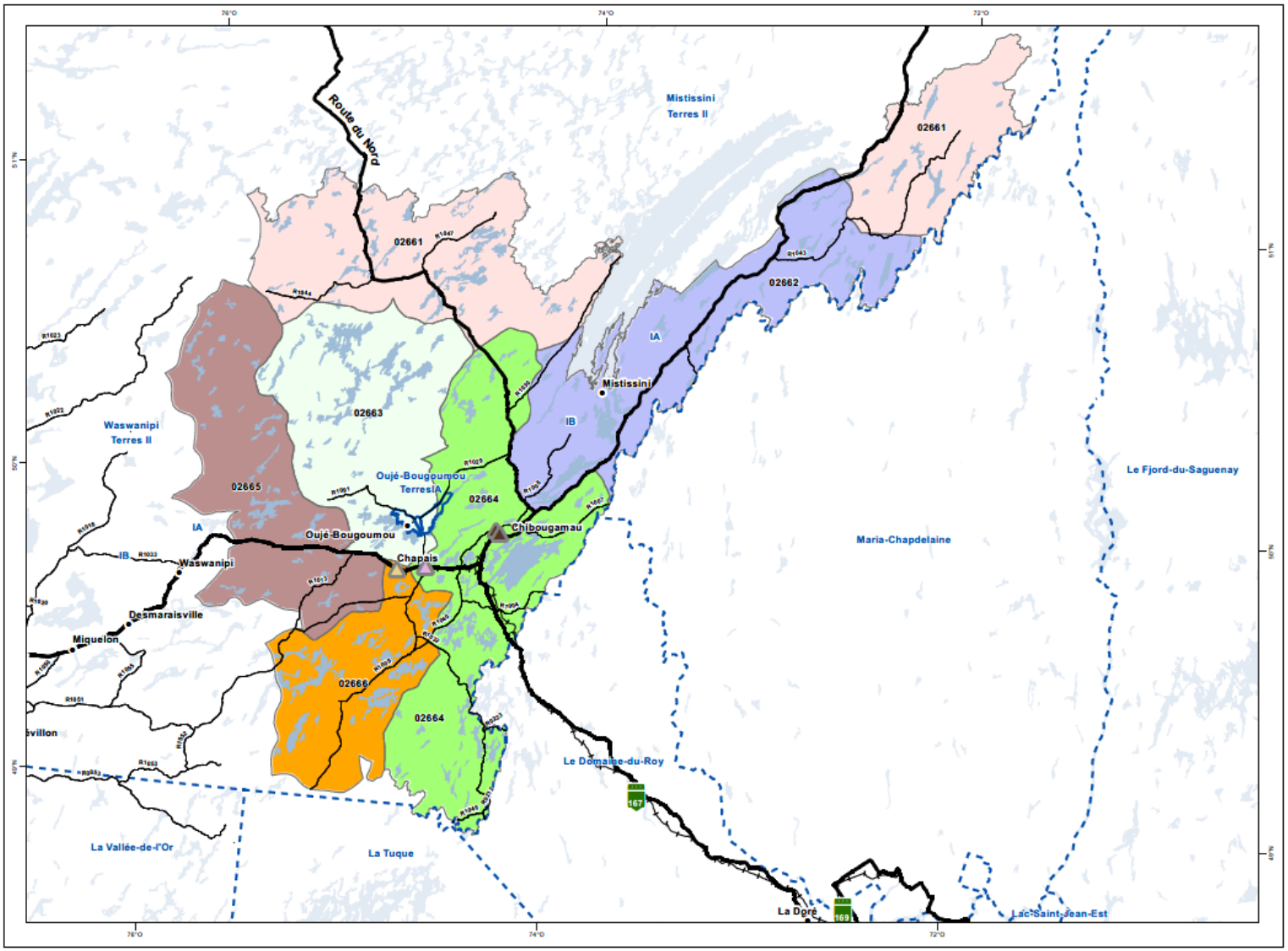
Map 3 Region 10 – East Management Units



Management units

02661 02664
02662 02665
02663 02666

Road network

Main road
Secondary road
Railroad track

Wood-processing plants

Electricity
Chipboard
Pulp and paper and thermal energy
Wood veneer and chipboard
Sawmill
Sawmill and wood pellets

Territorial organization

Municipality
Regional county municipality (RCM)
Category lands
Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique : NAD 83 compatible avec le système mondial WGS84

Projection cartographique : Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

Réalisation et diffusion

Ministère des Ressources naturelles et des Forêts

Note : Le présent document n'a aucune portée légale.
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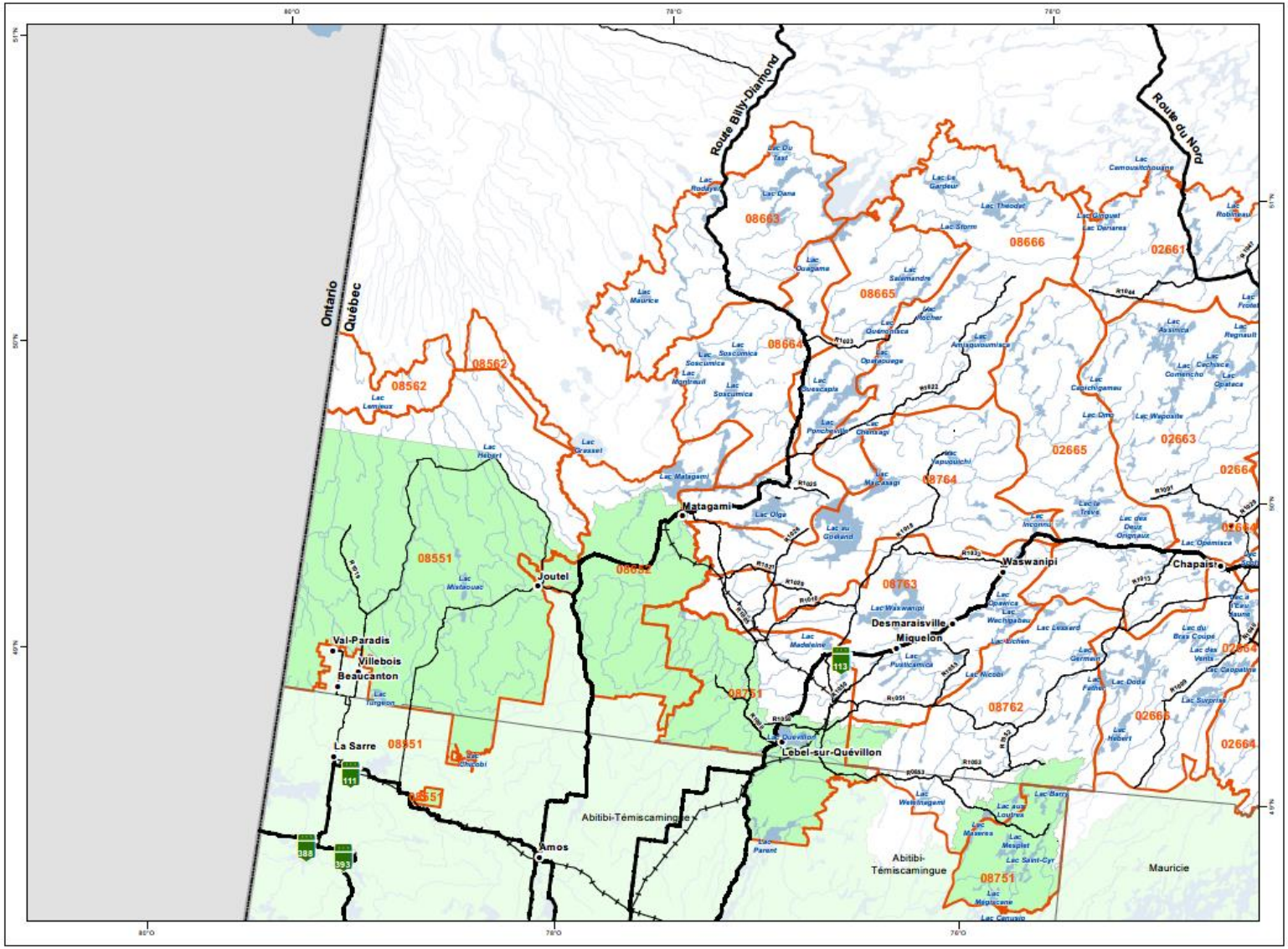
Map 4 Region 10 – West Hydrographic Network



River system
River
Lake

Watersheds
Abitibi-Jamésie

Management units
02661, 02662, 02663, 02664, 02665, 02666, 08551, 08562, 08652, 08663, 08664, 08665, 08666, 08751, 08762, 08763, 08764

Road network
Main road
Secondary road
Railroad track

Territorial organization
Municipality
Administrative area

Borders
Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique :	NAD 83 compatible avec le système mondial WGS84
Projection cartographique :	Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

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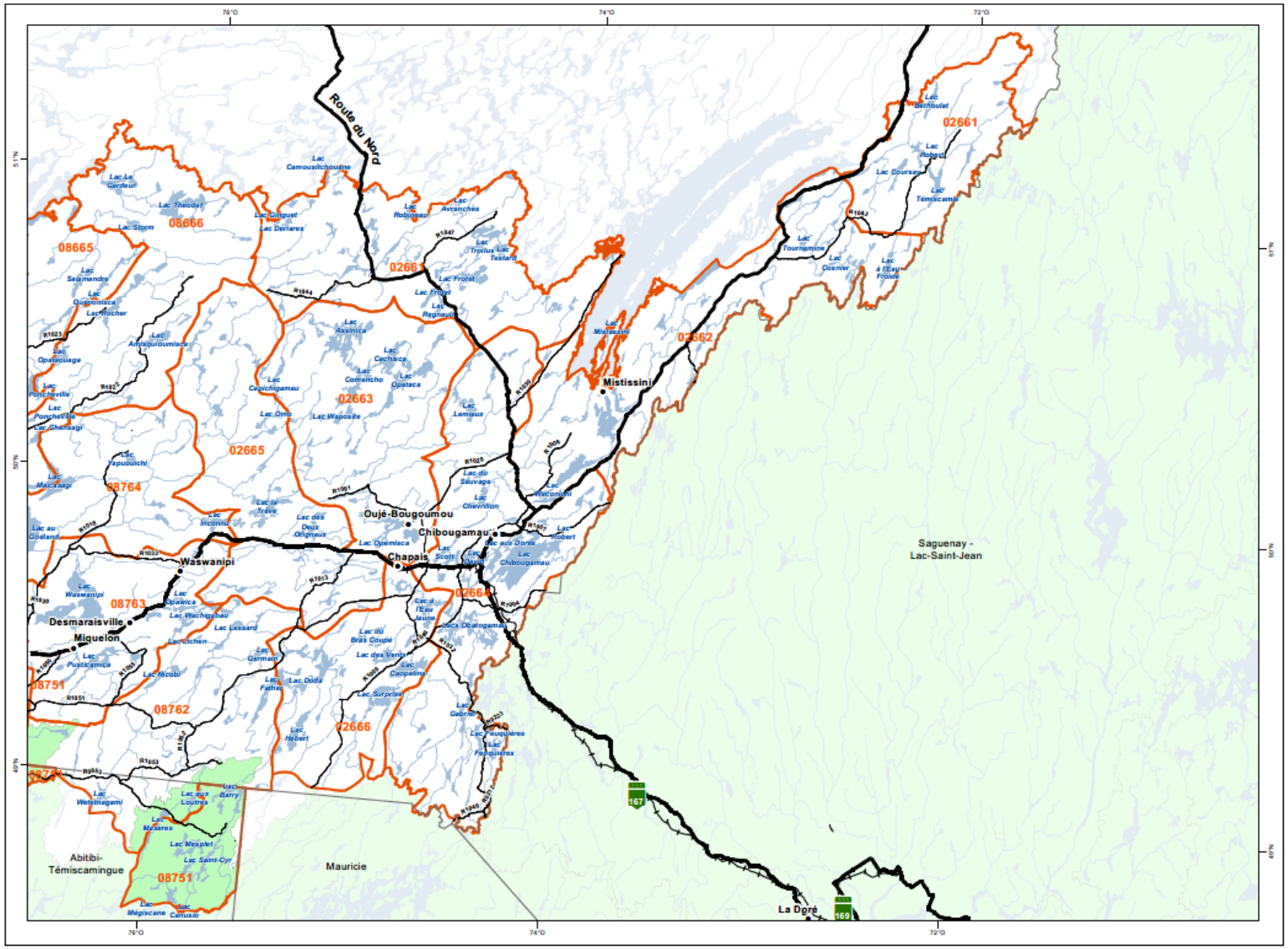
Québec

Map 5 Region 10 – East Hydrographic Network



River system
River
Lake

Watersheds
Abitibi-Jamésie

Management units
02661, 02662, 02663, 02664, 02665, 02666, 08551, 08562, 08652, 08663, 08664, 08665, 08666, 08751, 08762, 08763, 08764

Road network
Main road
Secondary road
Railroad track

Territorial organization
Municipality
Administrative area

Borders
Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique :	NAD 83 compatible avec le système mondial WGS84
Projection cartographique :	Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

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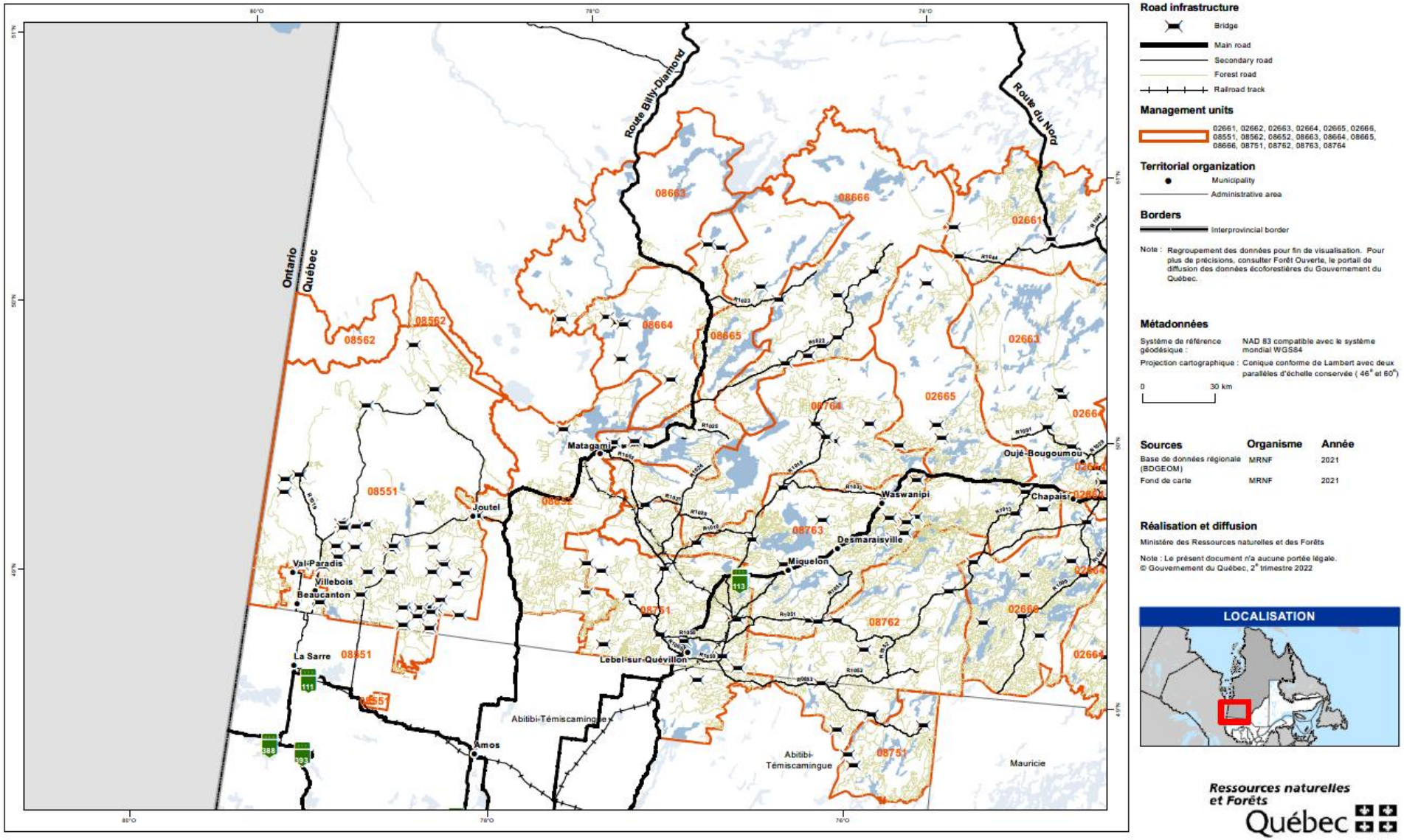
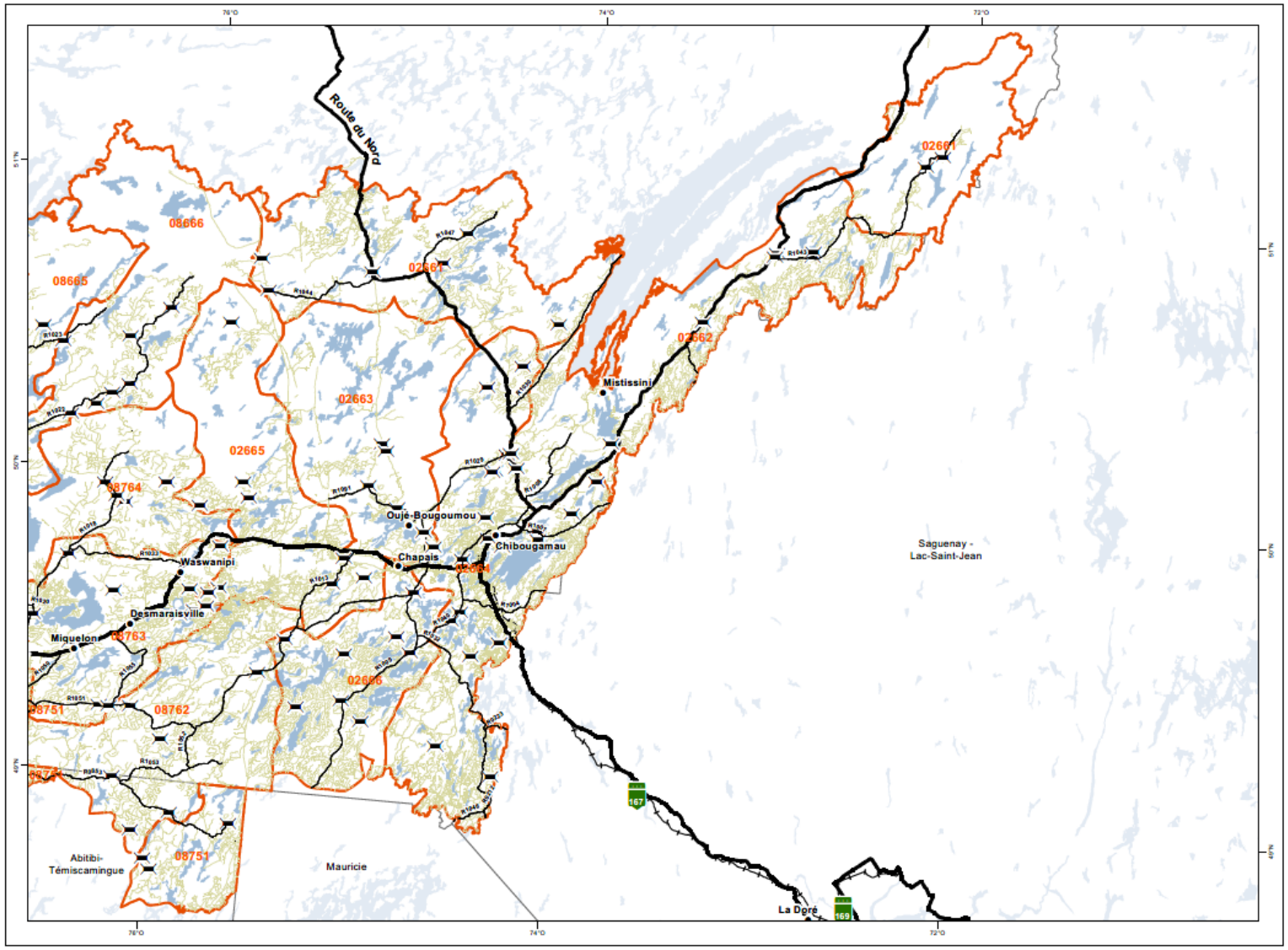
Ressources naturelles et Forêts Québec

Map 6 Region 10 – West Road Infrastructures



Map 7 Region 10 – East Road Infrastructures



2.1.1 AREA IN WHICH FOREST DEVELOPMENT ACTIVITIES ARE CARRIED OUT

The public forest consists in the area of forest under provincial jurisdiction, located south of the northern limit for timber allocations, which may be developed. It therefore excludes all federal and privately-owned land. The public forest, excluding any residual forests, is subdivided into Management Units in which particular territories or areas are distinguished according to their use for timber production. The subdivisions include:

- areas located outside the Management Units (e.g. residual forests among others)
- unproductive areas
- areas exempt from forest development (protected areas, provincial parks, steep slopes, etc.)
- areas intended for forest development (the remaining area in which forest development is permitted)

The Forest Land Subdivision system includes all the areas delimited within the public forest. According to the *Sustainable Forest Development Act* (SFDA), the public forest is composed of Management Units, residual forests, teaching and research forests, the Duchesnay forest station, experimental forests, exceptional forest ecosystems and biological refuges. In some types of area, rights may be granted with special conditions, while other areas may be exempt from forest development activities. The public forests must be mapped in order to plan and monitor forest development work. The table below provides an overview of the different management methods used in the public forest.

Given the large number of Management Units in the Nord-du-Québec region, four groups of MUs are distinguished to present four sub-figures (a, b, c and d). These groups are as follows (table 2):

Table 2 Group of Management Units

Groupe of Management Units	Management Unit		MU
	Unit Number	Unit Name	
Standard regime	105	Mont-Plamondon	85-51
	106	Harricana-Nord	086-52
	107	Quévillon	087-51
Adapted regime - UG Chibougamau local office	102	Chibougamau	026-61
			026-62
			026-63
			026-64
			026-65
			026-66
Adapted regime - UG Mont-Plamondon and UG Quévillon local offices	105	Mont-Plamondon	085-62
	107	Quévillon	087-62
			087-63
			087-64
Adapted regime - UG Harricana-Nord local office	106	Harricana-Nord	086-63
			086-64
			086-65
			086-66

The table 3 provides an overview of the different management modes in the entire territory.

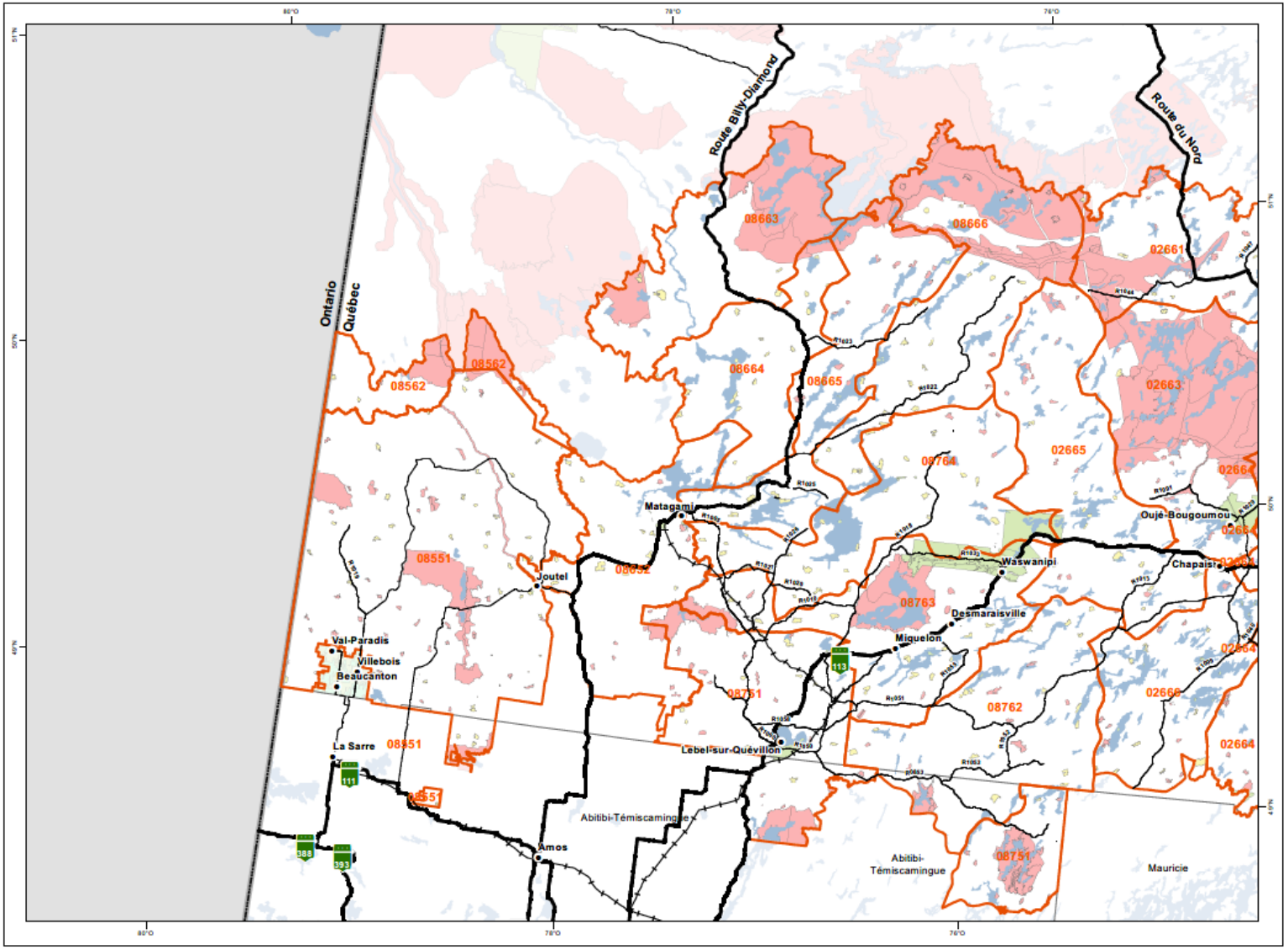
Table 3: Area of Management Units and Other Management Mode Categories

Management mode category	Area	
	(ha)	(%)
Management Unit*		
Standard regime		
085-51	955,231	1.1%
086-52	359,964	0.4%
087-51	446,305	0.5%
Adapted regime - UG Chibougamau local office		
026-61	574,068	0.7%
026-62	320,950	0.4%
026-63	183,261	0.2%
026-64	529,266	0.6%
026-65	460,062	0.5%
026-66	274,907	0.3%
Adapted regime - UG Mont-Plamondon and UG Quévillon local offices		
085-62	84,238	0.1%
087-62	436,311	0.5%
087-63	318,796	0.4%
087-64	374,682	0.4%
Adapted regime - UG Harricana-Nord local office		
086-63	227,009	0.3%
086-64	262,514	0.3%
086-65	285,504	0.3%
086-66	305,276	0.4%
	6,398,346	**7.4%**
Other categories**		
Residual forest territories	40,680,216	46.9%
Experimental forest	745	0.0%
Protected areas	18,424,407	21.3%
Important lakes and rivers	1,236,211	1.4%
Aboriginal territories	1,346,793	1.6%
Other public lands	18,559,085	21.4%
Private lands	25,069	0.0%
	80,272,525	**92.6%**
	86,670,871	**100.0%**

* Area included in the perimeter of the management units.
** Areas outside the perimeter of the management units.

See the Gouvernement du Québec's ecoforest data portal, Forêt Ouverte
Forêt Ouverte: Subdivisions territoriales forestières (STF)

Map 8 Region 10 – West Territorial Subdivision



Forest territorial subdivisions

- Protected area
- Experimentation forest
- Biological refuge (project)
- Residual forest area
- Other management modes

Management units

02661, 02662, 02663, 02664, 02665, 02666, 08551, 08562, 08652, 08663, 08664, 08665, 08666, 08751, 08762, 08763, 08764

Road network

- Main road
- Secondary road
- Railroad track

Territorial organization

- Municipality
- Administrative area

Borders

- Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique :	NAD 83 compatible avec le système mondial WGS84
Projection cartographique :	Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

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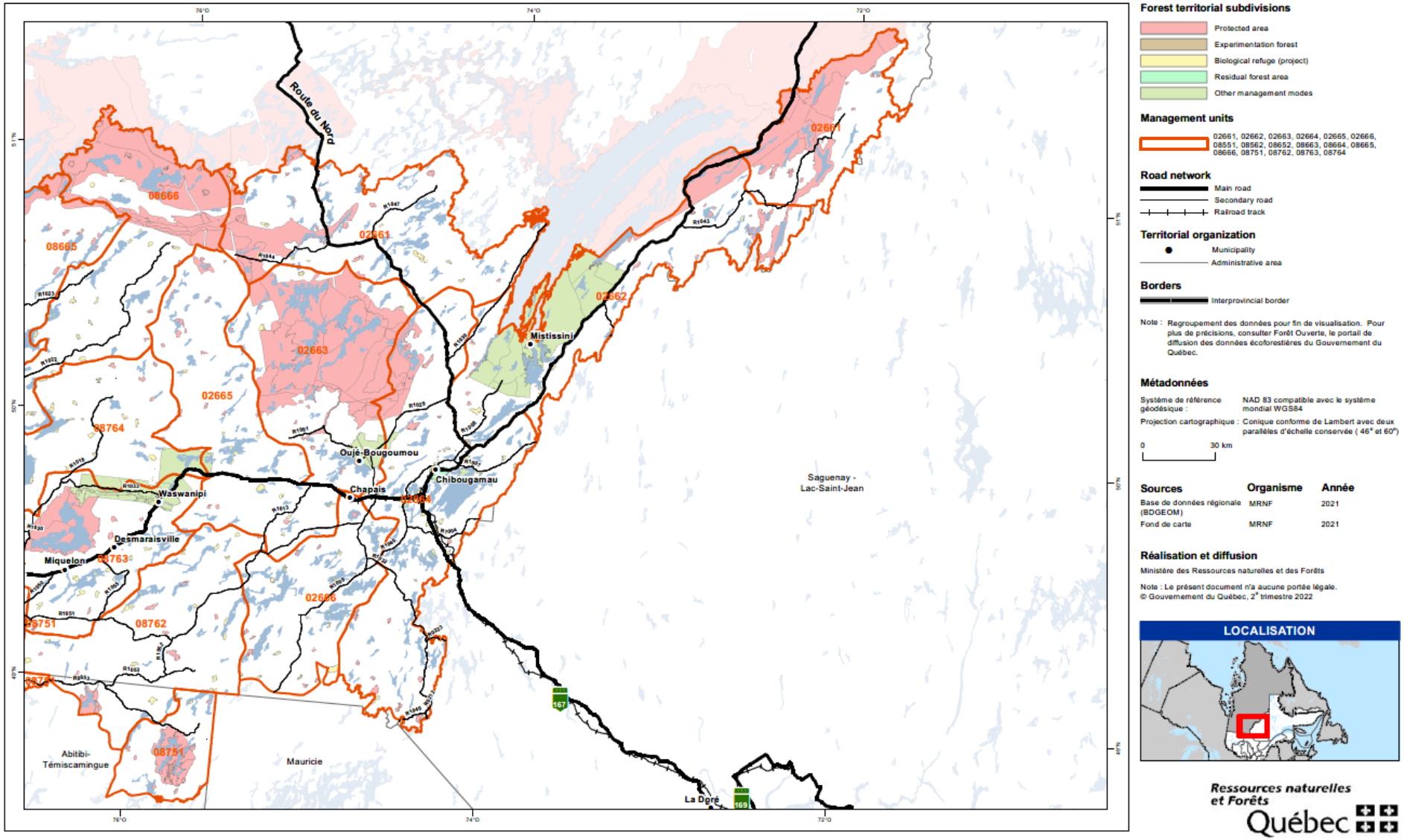
Map 9 Region 10 – East Territorial Subdivision



The productive forest included in these MUs represents 46,997 km^2, or 73.5%. The rest is composed, in order of importance, of land with a non-forest vocation, unproductive areas or water (land category table). For forest inventory purposes in Québec, a forest area is considered productive if it is capable of producing a minimum volume of 30 cubic metres/hectare (m^3/ha) in commercial species within a 120-year period

Table 4: Area Per Land Category of Each Management Unit

MU	Body of water		Land with a non-forest vocation		Unproductive forest land		Productive forest land		Total of all categories	
	(Km^2)	(%)	(Km^2)	(%)	(Km^2)	(%)	(Km^2)	(%)	(Km^2)	(%)
026-61	733	12.8%	33	0.6%	862	15.0%	4,113	71.6%	5,741	100.0%
026-62	306	9.5%	8	0.3%	481	15.0%	2,414	75.2%	3,210	100.0%
026-63	152	8.3%	18	1.0%	354	19.3%	1,308	71.4%	1,833	100.0%
026-64	451	8.5%	41	0.8%	801	15.1%	4,000	75.6%	5,293	100.0%
026-65	281	6.1%	33	0.7%	958	20.8%	3,328	72.3%	4,601	100.0%
026-66	216	7.9%	9	0.3%	431	15.7%	2,093	76.1%	2,749	100.0%
085-51	263	2.8%	27	0.3%	3,155	33.0%	6,108	63.9%	9,552	100.0%
085-62	43	5.1%	0	0,0%	405	48,0%	395	46,9%	843	100.0%
086-52	106	3.0%	11	0.3%	860	23.9%	2,623	72.9%	3,600	100.0%
086-63	105	4.6%	0	0.0%	845	37.2%	1,320	58.1%	2,270	100.0%
086-64	68	2.6%	1	0.0%	838	31.9%	1,718	65.4%	2,625	100.0%
086-65	63	2.2%	2	0.1%	503	17.6%	2,287	80.1%	2,855	100.0%
086-66	90	2.9%	5	0.2%	529	17.3%	2,430	79.6%	3,053	100.0%
087-51	247	5.5%	20	0.4%	525	11.8%	3,671	82.3%	4,463	100.0%
087-62	267	6.1%	21	0.5%	800	18.3%	3,275	75.1%	4,363	100.0%
087-63	107	3.4%	13	0.4%	339	10.6%	2,729	85.6%	3,188	100.0%
087-64	106	2.8%	5	0.1%	452	12.1%	3,185	85.0%	3,747	100.0%
	3,604	**5.6%**	**245**	**0.4%**	**13,138**	**20.5%**	**46,997**	**73.5%**	**63,983**	**100.0%**

The relative areas (%) per land category are calculated per line, meaning that they represent a proportion of the total area of each MU.

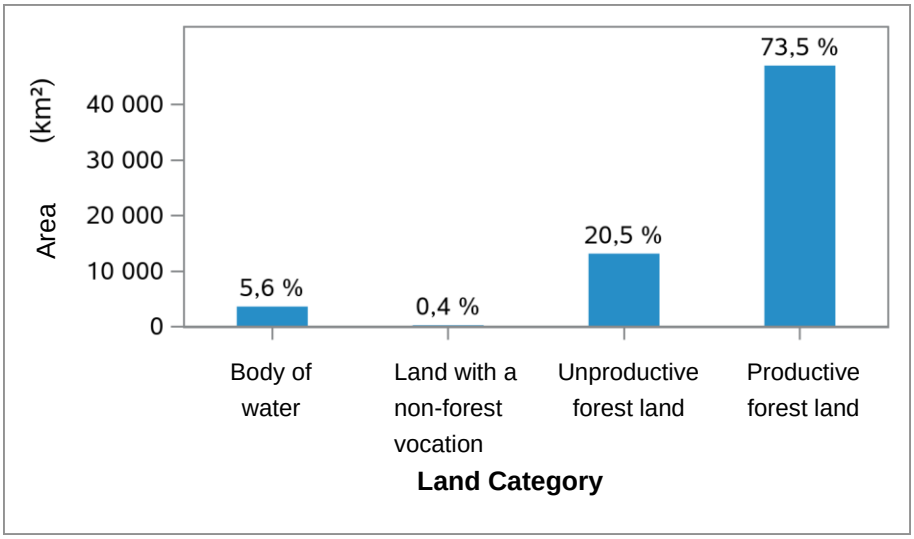


Figure 1: Area Per Land Category of All Management Units

2.1.2 PROTECTED LAND OR SITES TO WHICH SPECIAL CONDITIONS APPLY

Rather like a Gruyère cheese, the Management Units are peppered with exclusion zones or sites to which special conditions apply. The *Regulation respecting the sustainable development of forests in the domain of the State* (RSDF) contains a number of measures designed to:

- protect forest resources (water, wildlife, timber, soil)
- maintain or reconstitute the forest canopy
- make forest development more compatible with the other activities that take place in the forests
- contribute to sustainable forest development

Under the *Regulation respecting sustainable development of forests in the domain of the State***,** sites that are exempt from forest development and sites to which special conditions apply are used mainly to:

- protect recreational and tourism sites, including visually sensitive landscapes
- maintain the quality of wildlife habitats mapped pursuant to the *Regulation respecting wildlife habitats*
- protect cultural sites and public utility sites
- protect sites of importance to the Indigenous peoples
- protect soils and water
- protect fragile ecosystems (e.g. the Spruce-lichen forest).

The *Natural Heritage Conservation Act* stipulates that a Register of Protected Areas must be kept. A protected area is a portion of territory for which the State provides legal protection by exempting it from all forms of intervention and forest development. The Ministère de l'Environnement et de la Lutte contre les changements climatiques de la Faune et des Parcs (MELCCFP) circulates and updates the information contained in the Register. The MRNF is involved in developing Québec's network of protected areas in the forests by fostering targeted conservation of particular or outstanding elements of biological diversity. These forests may be classified as exceptional forest ecosystems or biological

refuges within the meaning of the *Sustainable Forest Development Act* or as wildlife preserves under the *Act respecting the conservation and development of wildlife*.

During the process of designating protected areas, zones that have not yet received legal protected status are withdrawn from the allowable cut and from the plan once they have gone through all the steps required for final delimitation and have been given administrative protection by the MELCCFP. In doing this, the MRNF protects the areas proposed by the MELCCFP and for which the government departments concerned have reached an agreement following an in-depth examination of all the issues.

Digital files showing all these sites are considered during planning and in the field. These sites, which are not covered by the applicable regulation (the RSFD), are protected or are subject to special conditions. For example:

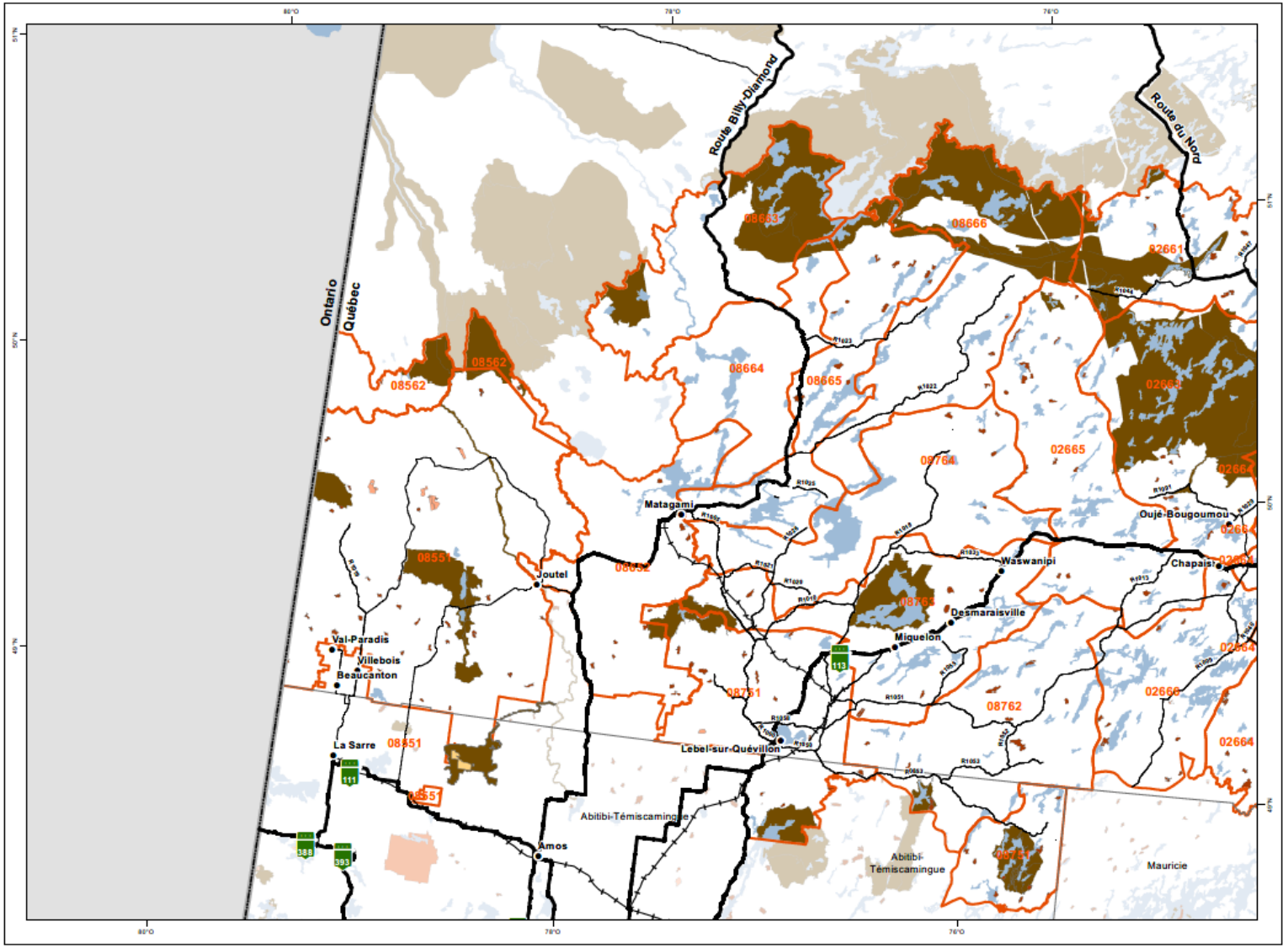
- Habitats of threatened or vulnerable plant and wildlife species (including habitats of species likely to be designated as threatened or vulnerable) are taken into account.
- Protected areas whose boundaries have been acknowledged by the Québec government are excluded from forest development.
- Exceptional forest ecosystems are excluded from forest development.
- Biological refuges in forests intended to preserve the biological diversity associated with mature and over-mature forests are also excluded from forest development activities.
- Special conditions apply to certain wildlife sites of interest.
- Areas of high conservation value for which specific terms have been agreed on.

In Paix des braves territory, a relocation exercise of certain biological refuges is currently in progress. Once it is completed, the management modes planned will be applied to these areas.

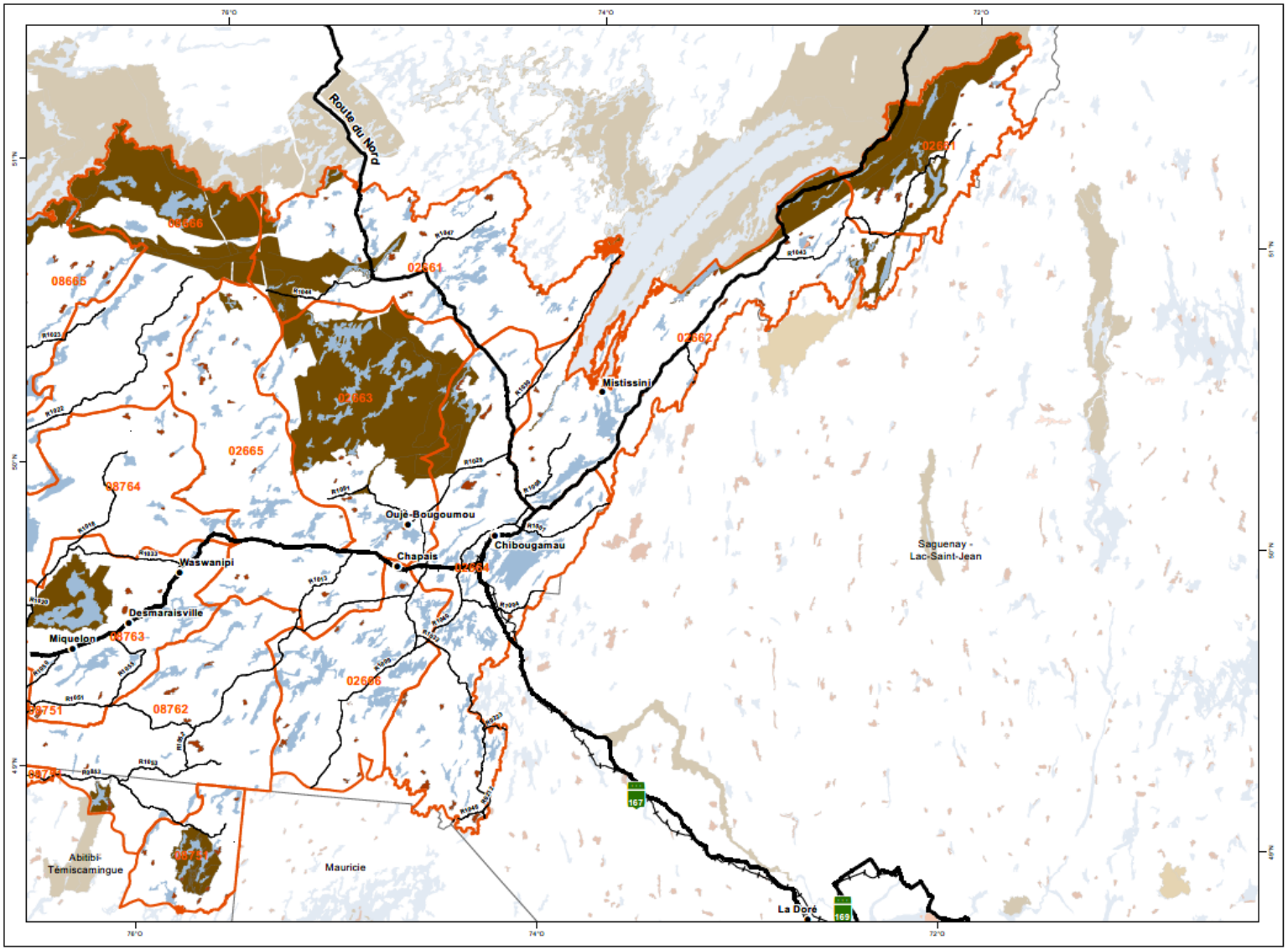
Please see the Gouvernement du Québec's ecoforest data portal,

Forêt Ouverte
Forêt Ouverte: Protected Areas
Forêt Ouverte: Wildlife Habitats

Map 10 Region 10 – West Protected Areas



Map 11 Region 10 – East Protected Areas



MFFP protected areas

- Designated outstanding forest ecosystem
- Quebec National Park
- Designated biological refuge

MELCC protected areas

- Biodiversity reserve
- Ecological reserve
- Planned protected areas or territory reserve for protected area purposes

Management units

02661, 02662, 02663, 02664, 02665, 02666, 08551, 08562, 08652, 08663, 08664, 08665, 08666, 08751, 08762, 08763, 08764

Road network

- Main road
- Secondary road
- Railroad track

Territorial organization

- Municipality
- Administrative area
- Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique : NAD 83 compatible avec le système mondial WGS84

Projection cartographique : Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

Réalisation et diffusion

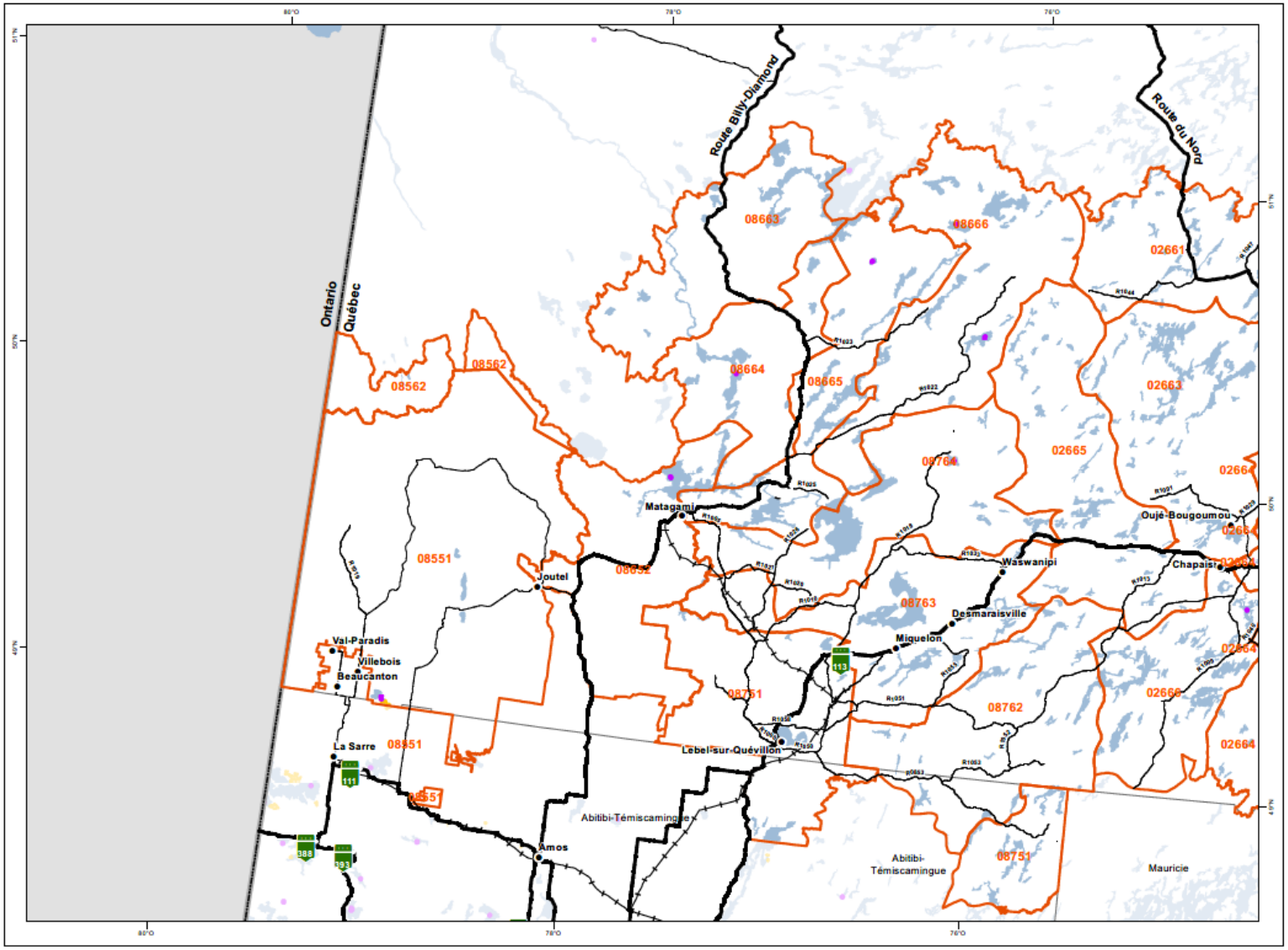
Ministère des Ressources naturelles et des Forêts

Note : Le présent document n'a aucune portée légale.

LOCALISATION

Ressources naturelles et Forêts Québec

Map 12 Region 10 – West Wildlife Habitats



Wildlife habitats

- Waterfowl concentration area
- Cliff, island or peninsula inhabited by a colony of birds
- Muskrat habitat
- Heron colony

Management units

02661, 02662, 02663, 02664, 02665, 02666, 08551, 08562, 08652, 08663, 08664, 08665, 08666, 08751, 08762, 08763, 08764

Road network

- Main road
- Secondary road
- Railroad track

Territorial organization

- Municipality
- Administrative area

Borders

- Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

Système de référence géodésique :	NAD 83 compatible avec le système mondial WGS84
Projection cartographique :	Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

Réalisation et diffusion

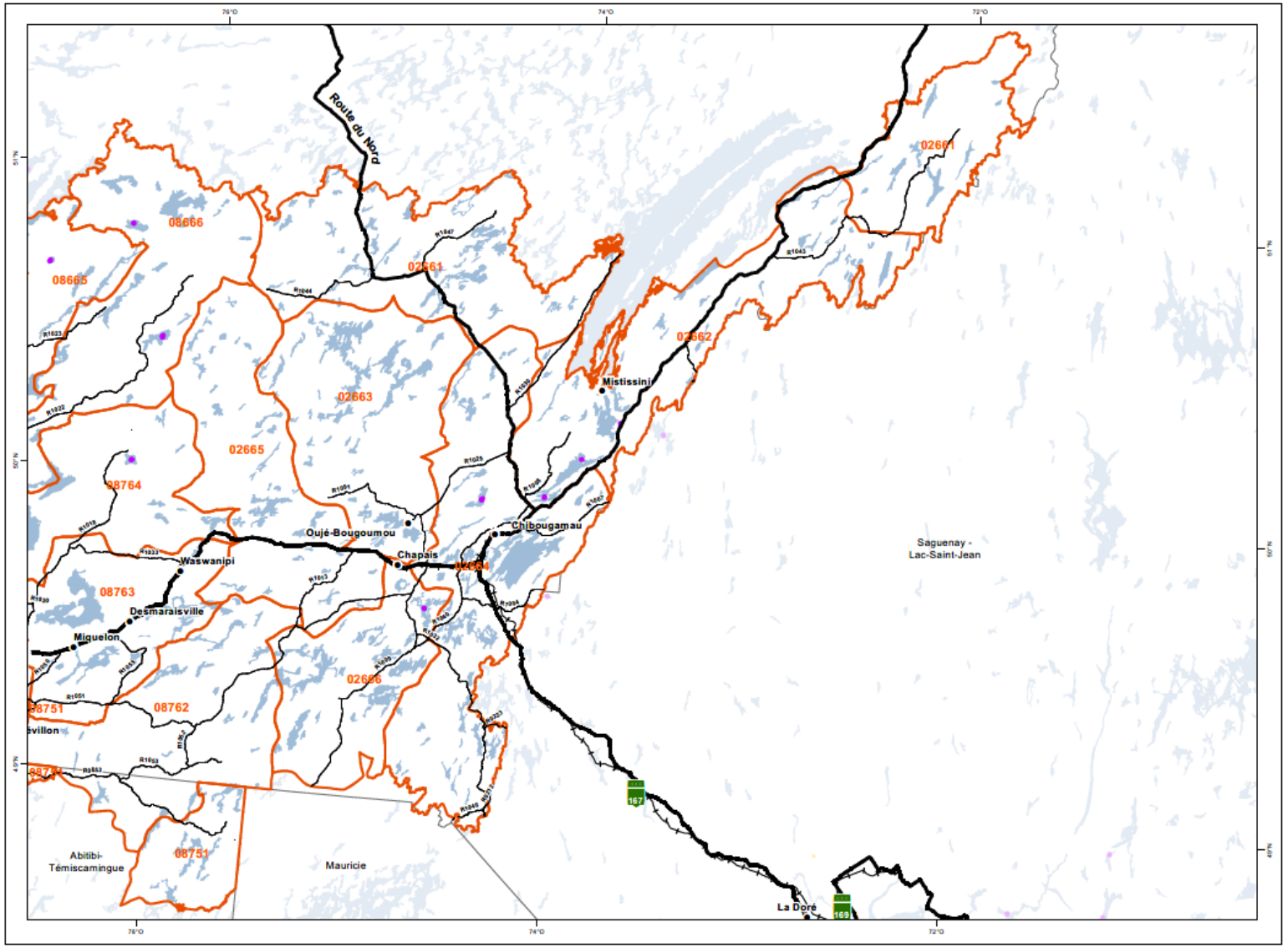
Ministère des Ressources naturelles et des Forêts

Note : Le présent document n'a aucune portée légale.

LOCALISATION

Ressources naturelles et Forêts
Québec

Map 13 Region 10 – East Wildlife Habitats



Wildlife habitats

- Waterfowl concentration area
- Cliff, island or peninsula inhabited by a colony of birds
- Muskrat habitat
- Heron colony

Management units

02661, 02662, 02663, 02664, 02665, 02666, 08551, 08562, 08652, 08663, 08664, 08665, 08666, 08751, 08762, 08763, 08764

Road network

- Main road
- Secondary road
- Railroad track

Territorial organization

- Municipality
- Administrative area

Borders

- Interprovincial border

Note : Regroupement des données pour fin de visualisation. Pour plus de précisions, consulter Forêt Ouverte, le portail de diffusion des données écoforestières du Gouvernement du Québec.

Métadonnées

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Projection cartographique :	Conique conforme de Lambert avec deux parallèles d'échelle conservée (46° et 60°)

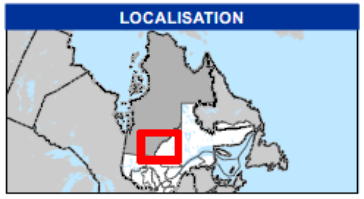
0 30 km

Sources	Organisme	Année
Base de données régionale (BDGEOM)	MRNF	2021
Fond de carte	MRNF	2021

Réalisation et diffusion

Ministère des Ressources naturelles et des Forêts

LOCALISATION



Ressources naturelles et Forêts
Québec

2.2 SPECIES DESIGNATED OR LIKELY TO BE DESIGNATED AS THREATENED OR VULNERABLE

The Act respecting threatened or vulnerable species (CQLR, chapter E-12.01; hereinafter ATVS) governs protection of threatened or vulnerable species or species likely to be designated threatened or vulnerable (TVLS) in Québec. It is under the joint responsibility of the Ministère de l'Environnement et de la Lutte contre les changements climatiques de la Faune et des Parcs (MELCCFP) and the Ministère des Ressources naturelles et des Forêts (MRNF). Under this Act, a species may be designated as threatened when its disappearance is apprehended, or vulnerable when its survival is precarious, even if its disappearance is not apprehended in the short or medium term. Added to this are the species likely to be designated threatened or vulnerable and that are included on a list published in the Gazette officielle du Québec. In Québec, the term "threatened or vulnerable" species also includes the species likely to be designated threatened or vulnerable.

Certain habitats of designated threatened or vulnerable are legally recognized by regulation. Plant habitats are identified in the Regulation respecting threatened or vulnerable plant species and their habitats (CQLR: E-12.01, r.3) while wildlife habitats are designated under the Regulation respecting wildlife habitats (CQLR: C-61.1, r.18). The Sustainable Forest Development Act (CQLR, chapter A-18.1; hereinafter SFDA) also allows the legal classification of exceptional forest ecosystems of the biological refuge type, specially created to protect one or more TVLS plant species.

Despite the available regulatory provisions, not all known TVLS sites are legally protected. Some of these TVLS species are associated with the forest environment and may be sensitive to forest management activities. To act in complementarity with the regulatory protection, the protection in the public forest of certain TVLS wildlife or plant species is provided through an administrative agreement. This agreement is a tool that was established in 1996 by the MRNF and the MELCCFP to favour the safeguarding of the TVLS species present on Québec forest land. The TVS Agreement, in particular, allowed the development of protective measures for targeted species. The mechanisms required for their implementation are governed by the instructions developed under Environmental Management Systems and Sustainable Forest Management (EMS-SFM ISO 14001).

The approach, which ensures adequate protection of TVLS species and their habitats, is described in the ministerial directions related to ecological issues. It has three stages, which involve:

1. Establishing the list of TVLS wildlife and plant species present in the territory of the MU in accordance with EMS-FMS ISO 14001:
2. Precisely map the TVLS sites where protective measures apply. These sites can be classified in three categories:
    a) habitats benefiting from legal protection;
    b) TVS Agreement protection sites;

c) data related to the observations reported by the sighting form process[1].

This mapping information is available to forest managers.

3. Apply the conditions of protection according to the category in the planning and performance of forest management activities:

   a. Habitats benefiting from legal protection:

      No forest management activity is permitted under the legislation and regulations applicable in a designated plant or wildlife TVS habitat and in an exceptional forest ecosystem.

   b. TVS Agreement protection sites:

      A protective measure applies according to a zoning principle. It is possible to find 1) an integral protected area where no forest management activity is authorized and 2) an area where special conditions apply (for example, dates to be respected, types of treatment authorized). Depending on the species, the protective measure will include one of these areas, or a combination of the two. All of the protective measures are available on the TVS Agreement website.

   c. Data related to the observations reported by the sighting form process.

      For sightings of species that benefit from protective measures developed under the TVS Agreement, the conditions provided must be applied on the observation sites. This regional information must be protected until its inclusion in the TVS Agreement protection sites. For TVLS sightings that do not benefit from a protective measure under the TVS Agreement, the type of protection and the conditions that will be applied will be established in the region.

To learn more, consult:

Cahier 7.1 Enjeux liés aux espèces menacées ou vulnérables
Special Protective Measures for Wildlife and Plant Life in the Public Forest

[1] Une fiche de signalement permet d'indiquer la présence de caractéristiques sociales ou environnementales non répertoriées, comme l'observation d'une EMVS, et peut être déposée en se référant à l'unité de gestion de la région visée.[2] Source: http://www.histoireforestiereat.com

Table 5 Wildlife and Plant Life TVLS Present in the Nord-du-Québec Territory

Common name	Latin name	Forest species	Provincial status (ATVS)	Federal status (SARA)	IUCN*	TVS Agreement protective measure (yes/no)	Legal habitat (yes/no)
Wildlife							
Mammals							
Least Weasel	*Mustela nivalis*	Yes	Likely	None	√	No	No
Rock Vole	*Microtus chrotorrhinus*	Yes	Likely	None	√	No	No
Southern Bog Lemming	*Synaptomys cooperi*	Yes	Likely	None	√	No	No
Wolverine	*Gulo gulo*	Yes	Threatened	Special Concern	√	No	No
Woodland Caribou, Forest Ecotype, Boreal Population	*Rangifer tarandus caribou*	Yes	Vulnerable	Threatened	√	No	No
Silver-haired Bat	*Lasionycteris noctivagans*	Yes	Likely	None	√	No	No
Hoary Bat	*Lasiurus cinereus*	Yes	Likely	None	√	No	No
Northern Myotis	*Myotis septentrionalis*	Yes	None	Endangered	√	No	No
Eastern Red Bat	*Lasiurus borealis*	Yes	Likely	None	√	No	No
Cougar	*Puma concolor*	Yes	Likely	None	√	No	No
Little Brown Myotis	*Myotis lucifugus*	Yes	None	Endangered	√	No	No
Birds							
Golden Eagle	*Aquila chrysaetos*	Yes	Vulnerable	None	√	Yes	No
Harlequin Duck, Eastern Population	*Histrionicus*	Yes	Vulnerable	Special Concern	√	No	No
Double-crested Cormorant	*Phalacrocorax auritus*	No	None	None	√	No	No
Trumpeter Swan	*Cygnus buccinator*	No	None	None	√	No	No
Eastern Whip-poor-will	*Caprimulgus vociferus*	Yes	Likely	Threatened	√	No	No
Common Nighthawk	*Chordeiles minor*	Yes	Likely	Threatened	√	Yes	No
Peregrine Falcon anatum/tandrius	*Falco peregrinus anatum/tandrius*	Yes	Vulnerable	Special Concern	√	Yes	No

Common name	Latin name	Forest species	Provincial status (ATVS)	Federal status (SARA)	IUCN*	TVS Agreement protective measure (yes/no)	Legal habitat (yes/no)
Barrow's Goldeneye, Eastern Population	*Bucephala islandica*	Yes	Vulnerable	Special Concern	√	Yes	No
Evening Grosbeak	*Coccothraustes vespertinus*	Yes	None	None	√	No	No
Short-eared Owl	*Asio flammeus*	No	Likely	Special Concern	√	No	No
Bank Swallow	*Riparia riparia*	Yes	None	Threatened	√	Yes	No
Barn Swallow	*Hirundo rustica*	No	None	Threatened	√	Yes	No
Olive-sided Flycatcher	*Contopus cooperi*	Yes	Likely	Threatened	√	No	No
Canada Warbler	*Cardellina canadensis*	Yes	Likely	Threatened	√	No	No
Bald Eagle	*Haliaeetus leucocephalus*	Yes	Vulnerable	None	√	Yes	No
Rusty Blackbird	*Euphagus carolinus*	Yes	Likely	Special Concern	√	No	No
Yellow Rail	*Coturnicops noveboracensis*	Yes	Threatened	Special Concern	√	No	No
Turkey Vulture	*Cathartes aura*	No	None	None	√	No	No
Reptiles							
Redbelly Snake	*Storeria occipitomaculata*	Yes	None	None	√	No	No
Blanding's Turtle	*Emydoidea blandingii*	Yes	Threatened	Endangered	√	No	No
Painted Turtle	*Chrysemys picta*	Yes	None	Special Concern	√	No	No
Common Snapping Turtle	*Chelydra serpentina*	No	None	Special Concern	√	No	No
Fish							
Lake Sturgeon, Southern Hudson Bay – James Bay populations	*Acipenser fulvescens*, Southern Hudson Bay – James Bay populations	Yes	Likely	None	√	No	No

Common name	Latin name	Forest species	Provincial status (ATVS)	Federal status (SARA)	IUCN*	TVS Agreement protective measure (yes/no)	Legal habitat (yes/no)
Plants							
Orange Agoseris	*Agoseris aurantiaca var. aurantiaca*	Yes	Likely	None	Ø	Yes	No
Fairy Slipper	*Calypso bulbosa var. americana*	Yes	Likely	None	√	Yes	No
Silverberry	*Elaeagnus commutata*	No	Likely	None	√	Yes	No
Striped Coral Root	*Corallorhiza striata var. striata*	Yes	Likely	None	Ø	Yes	No
Slenderleaf Sundew	*Drosera linearis*	No	Likely	None	√	Yes	No
Ojibway Waterwort	*Elatine ojibwayensis*	Yes	Likely	None	Ø	Yes	No
Robbins' Spikerush	*Eleocharis robbinsii*	No	Likely	None	Ø	Yes	No
Robinson's Hawkweed	*Hieracium robinsonii*	Yes	Likely	None	Ø	Yes	No
Golden Hedge-Hyssop	*Gratiola aurea*	No	Likely	None	√	Yes	No
Woolly Beachheather	*Hudsonia tomentosa*	Yes	Likely	None	Ø	Yes	No
Geyer's monkeyflower (syn. James' Monkey-flower)	*Erythranthe geyeri*	Yes	Threatened	None	Ø	Yes	No
Roundleaf Orchis (Syn. Small Round Leaved Orchis)	*Galearis rotundifolia*	Yes	Likely	None	Ø	Yes	No
Purple Meadow Rue	*Thalictrum dasycarpum*	No	Likely	None	Ø	Yes	No
Seneca Snakeroot	*Polygala senega*	Yes	Likely	None	Ø	Yes	No
Little Tree Willow	*Salix arbusculoides*	Yes	Likely	None	√	Yes	No
MacCatlla's Willow	*Salix maccalliana*	Yes	Likely	None	√	Yes	No
False Mountain Willow	*Salix pseudomonticola*	Yes	Likely	None	Ø	Yes	No
Clinton's Bullrush	*Trichophorum clintonii*	No	Likely	None	√	Yes	No
Hidden-fruit Bladderwort	*Utricularia geminiscapa*	Yes	Likely	None	√	Yes	No

*International Union for Conservation of Nature

2.2.1 WOODLAND CARIBOU AND GASPÉSIE MOUNTAIN CARIBOU

In Canada, there are currently four caribou subspecies, only one of which is in Québec: the Woodland Caribou. Within this subspecies, biologists classify caribou according to three ecotypes, mainly according to their behavioural particularities (e.g. the type of habitat they use and their diet): Migratory Caribou, Woodland Caribou and Mountain Caribou, which include the Gaspésie caribou population.

The Woodland Caribou has been designated as a “vulnerable” species under Québec’s Act respecting threatened or vulnerable species since 2005 and as a “threatened” species since 2003 under Canada’s Species at Risk Act.

The Gaspésie Mountain Caribou was designated as a “vulnerable” species in 2001 under Québec’s Act respecting threatened or vulnerable species. Its status was revised to “threatened” species in 2009. At the federal level, it has listed in Schedule 1 of the Species at Risk Act as an “endangered” species since 2003.

Following these designations, the Gouvernement du Québec deployed recovery teams with the mandate to prepare recovery plans and issue recommendations to the Minister of Forests, Wildlife and Parks concerning the Woodland Caribou populations and the Gaspésie Mountain Caribou population and their habitat.

The Gouvernement du Québec is currently preparing the strategy for Woodland and Mountain Caribou. The objective is to respond appropriately to their needs so as to ensure both their sustainability and the vitality of Québec and its regions. The strategy plans to establish territories where the habitats will be preserved or restored and where forest activities, in particular, will be governed. Québec’s approach is based on vast territories of 5,000 km^2 and over and on maintenance within them of forest tracts with a low level of disturbance.

2.2.1.1 Special Needs of Woodland and Mountain Caribou

The knowledge acquired to date allows identification of the characteristics of the Woodland Caribou’s critical habitat, namely vast expanses of mature boreal forest, lichen tundra, bogs with a high level of connectivity and a low rate of natural and anthropogenic disturbances. In winter, they tend to select sectors with a high lichen biomass and where the snow is less deep.

Gaspésie Mountain Caribou frequent the high summits of the Chic-Choc Mountain range and the McGerrigle Mountains. Their critical habitat is composed of alpine tundra and subalpine forest. In winter, these caribou may also use mature coniferous stands in the mountain stage, where they consume tree lichen.

The main threat to most of the Woodland and Mountain Caribou populations in Québec and Canada comes from habitat disturbances generated by anthropogenic activities and the resulting increase in predation. Forest management leads to rejuvenation and homogenization of the forest matrix, thus creating adverse habitat conditions for caribou, which are closely dependent on mature forests. The deployment of the road network associated with forest management also has an effect on the habitat

quality of Woodland and Mountain Caribou. Other threats, such as the anthropogenic disturbance associated with industrial and recreational tourism activities, harvesting and climate change, may also affect individuals or populations. The *Revue de littérature sur les facteurs impliqués dans le déclin des populations de caribous forestiers au Québec et de caribous montagnards de la Gaspésie* (Literature review of the factors involved in the decline of the Woodland Caribou populations in Québec and the Gaspésie Mountain Caribou population) explains the habitat needs of these caribou in detail, as well as the decline factors and the state of the populations.

Interim Measures

Until the strategy is adopted and in continuity with the caribou habitat management conditions provided in the previous Integrated Forest Management Plans (PAFI), interim habitat management measures for Woodland Caribou and Gaspésie Mountain Caribou have been deployed. This mainly involves the protection of crucial tracts for caribou. With the objective of reducing long-term habitat disturbances, the MRNF is proceeding with the gradual adaptation progressive of forest planning, aiming at single-pass aggregated cut blocks combined with dismantling of roads, in certain regions of Québec. A map of the interim measures may be consulted on the Web page of the Strategy for Woodland and Mountain Caribou.

To learn more, consult:

The Strategy for Woodland and Mountain Caribou.
Literature review of the factors involved in the decline of the Woodhand Caribou populations in Quebec and the Gaspesie Mountain caribou population

2.3 SOCIO-ECONOMIC CONTEXT

Natural resource exploitation has always been the trigger for territorial occupation. Even today, it plays a significant role in social and economic development. Over the years, new industrial, commercial, institutional, recreational and cultural activities have enriched the social and economic spheres.

2.3.1 LAND USE HISTORY

The Québec-Labrador peninsula was colonized after the last ice age, which ended 10,000 years ago. Waves of migration came from the Great Lakes, the Labrador coast, and Rivière Saguenay between 5,300 and 5,000 years ago. These were nomadic hunting peoples.

The fur trade began in this territory around 1670. European colonists, including Pierre-Esprit Radisson and Médard Chouart des Groseilliers, were active participants in exploring the lands and establishing the Hudson's Bay Company. In the early 18th century, the fur trade was booming, with numerous trading posts across the region. The colonists traded with the "Indians" they encountered there, primarily the Crees.

“In the late 19th century, the primary commercial activity remained fur trading. But this was about to change. A shift began with scientific reports of the wealth of potential mineral, forest, and hydroelectric resources in James Bay.”

Chibougamau was founded in 1954, the first town built in the region to capitalize on its mineral resources, especially copper. The northern forestry industry began to develop over the ensuing years. The mining village of Chapais was formed at about the same time, with the opening of the Opemiska Copper Mine. It was not until the 1970s that a sawmill and processing plant were built and Chapais, later Barrette-Chapais, began to diversify its economy. “Matagami [founded in 1963] [also] owed its existence and most of its growth to the mining industry”, in contrast to Lebel-sur-Quévillon, which was literally built from forestry camps. The town and the surrounding area also experienced their own successive waves of mineral prospectors.

Located completely west of the territory of Nord-du-Québec and located almost exactly on the 49th parallel, the localities of Val-Paradis and Beaucanton (now merged and named Valcanton) and the locality of Villebois are born around 1935. They are populated by the arrival of new settlers attracted by forest lands and the hope of developing agriculture there[1].

The Aboriginal peoples living on the land continued their hunting, fishing, and trapping activities throughout this development, though they had to adapt to the growing presence of foreigners. The Algonquin communities of Pikogan (Abitibiwinni) and of Lac Simon were respectively created in 1958 and 1962. The Atikamekw community of Opitciwan was created in 1944. The Cree communities of Mistissini, Waswanipi, Nemaska, and Waskaganish were created in the 1970s and 80s after the signing of the JBNQA, although certain occupations date back to the trading post era. Oujé-Bougoumou was created in 1995 after many years of wandering and fighting for recognition of their band[1].

2.3.2 THE FORESTRY SECTOR

Forest development is a major economic driving force for many municipalities. For example, impacts were felt during the economic crisis in the United States that shook the lumber market in the period from 2008 to 2012. Changes in consumer habits have also forced the pulp and paper industry to adapt to declining world demand for newsprint, printing paper and writing paper and to take advantage of expanding markets for products such as pulp, packaging and tissue paper.

The GDP[2] contribution made by the wood and paper product manufacturing sectors is shown in the table below.

[1] Source: http://www.histoireforestiereat.com
[1] Source: Huot, F. and J. Désy (2009). *La Baie James des uns et des autres « Eeyou Ischtee »*, Les Productions FH, Québec, 303 pp. Website: https://www.rncan.gc.ca/sciences-terre/geomatique/arpentage-terres-canada/publications/11099 consulted on April. 04, 2022
[2] GDP : Gross Domestic Product

Table 6 Contribution of the forest industry to employment in the region

Sector or industry	GDP	Jobs 2015
Industry		
Manufacture of pulp and paper products	16.1	1012
Manufacture of wood products	51.1	961
Forestry sector		
Forestry and logging	55.2	557

For the Nord-du-Québec region, the job market in the forest sector depends on manufacturing of wood products, manufacturing of pulp and paper products, and logging. These three hubs respectively include 40%, 38% and 22% of the sector's jobs. Sawmills and wood preservation activities are the leading employers with a weight of 78%. On the whole, the forest sector shows an improvement of its economic outlook, while its GDP grew 5.7% on the average between 2010 and 2015. Wood products manufacturing, with an average increase per year of 8.6%, offset the slight reduction of 1.3% per year for forestry and logging. [1]

Diversification into new markets such as non-residential construction, bio-products and bioenergy provides an opportunity to reduce the forestry sector's vulnerability to economic cycles. These wood by-products can also be used to replace products with a greater carbon footprint as part of the global fight against climate change.

The purpose of allowing forest development on public land is to ensure a fairly constant flow of raw materials. The main rights granted in the Management Units are supply guarantees and permits to harvest timber to supply wood processing plants. These rights provide secure access to wood and help to maintain stable supplies for primary processing mills. The table 7 presents a list of the holders of forestry and industrial rights, from inside and outside the region, that obtain their supplies from the region. Since the list is likely to change, please click on the links for up-to-date information.

[11] Source: MFFPQ, Importance du secteur forestier dans le développement économique des municipalités et des régions du Québec, Québec, mai 2019. PwC | Impact économique de la filière de la transformation du bois sur les régions du Québec

Table 7 Forest and Industrial Rights Holders Supplied in the Region

Category	RCM (in French, MRC)	Plant	Species
GA	Chibougamau	Les Chantiers de Chibougamau ltée	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL) Hardwoods Poplars
GA	Chapais	Barrette-Chapais ltée	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	Matagami	Interfor (Matagami)	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	Amos	Forex Amos inc. (LVL)	Poplars
GA	Amos	Forex Amos inc. (OSB)	Paper Birch Poplars
GA	Amos	Matériaux Blanchet inc. (Amos)	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	La Sarre	West Fraser (La Sarre - Panels)	Paper Birch Poplars
GA	Lebel-sur-Quévillon	Resolute FP Canada Inc. (Comtois)	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	Senneterre	Resolute FP Canada Inc. (Senneterre)	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	La Sarre	GreenFirst Forest Products (QC) Inc. (La Sarre)	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	Waswanipi	Nabakatuk Forest Products 2008, G.P.	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
GA	Landrienne	Scierie Landrienne	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
PRAU	Waswanipi	Eenatuk Forestry Corporation	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)
PRAU	Waswanipi	Corporation foncière de Waswanipi Landholding corporation	Balsam Fir-Spruce-Jack Pine-Eastern Larch/Tamarack (SAB-EP-PIG-MEL)

The MRNF has expanded access to timber by auctioning 25% of timber volumes from the public forest. Any individual or organization can take part in the auction process and obtain a contract for a specific volume of wood. The government introduced this competitive system to focus more on productivity, allowing the most efficient and innovative companies to benefit and hence encouraging optimal use of forest resources. The government adjusts its management methods to the realities and needs of local and regional communities. The free market for timber also provides a solid point of reference that is used to establish the fair market value of timber based on auction sale prices from the last five years.

Processing potential (e.g. peeling, sawing, pulp) is determined by species and by stem characteristics (e.g. diameter, tapering, knots, decay). The wood sector map shown in the diagram below illustrates the connections between the forest and the mills, and between the mills themselves. The regional wood sector map can be used to identify the actors and characterize the flows of products and services in order to identify bottlenecks and potentials.

Please see:

Forestry rights granted
Director of holders of forestry rights on lands in the domain of the State

Map 14 ***Mapping of the Regional Timber Sector***

Supply species group	**FSPL**	**FSPL**	**Poplars, Paper Birch (BOP)**	**Poplars, Paper Birch (BOP)**
Species in greatest demand	Spruces, Jack Pine (PIG)	Spruces, Jack Pine (PIG)	Paper Birch (BOP)	Temporary sample plot (PET)
Desired principal characteristics	- Diameter - Length - Resistance - Rigidity - Knot (small) - Taper (low)	- Fibre length - Colour - Low resin - Dimension	- Diameter - Length - Resistance - Rigidity - Knot (small) - Taper (low)	- Size - Grain size - Density
Supply(territory/type)	MU[1]/round timber[2]	By-products from another plant	MU/round timber	MU/round timber
Plant	Interfor (Matagami)	Chapais Énergie, Société en commandite	Les Chantiers de Chibougamau ltée	Forex Amos inc.
	Nabakatuk Forest Products 2008, G.P.	Norforce Énergie inc.		West Fraser (La Sarre)
	Resolute Forest Products (Senneterre and Comtois)	Huiles essentielles NORDIC		
	Barrette-Chapais ltée	Kraft Nordic S.E.C.		
	Les Chantiers de Chibougamau ltée	Barrette-Chapais ltée		
	Eenatuk Forestry Corporation	9302-0469 Québec inc. (BoréA)		
	Corporation foncière de Waswanipi Landholding corporation	Granule 777 inc.		
	Municipalité de Taschereau			
	Matériaux Blanchette (Amos)			
	Scierie Landrienne (Amos)			
	GreenFirst (Béarn and La Sarre)			
Product type	Lumber	Pulp and paper, bioproducts, by-products, bioenergy	Quality lumber	Panels, by-products

[1] MU: Management Unit Other sources of supply are possible e.g.: importing from other regions or provinces

[2] Round lumber: trees to be produced by forest management

: Groups of plants where one supplies the other with processing residues

2.3.2.1 Forest biomass

The MRNF issues two types of permits to harvest timber to supply a wood processing plant: permits for merchantable wood and permits for forest biomass. In addition, individuals may obtain permits to harvest firewood on lands in the domain of the State.

Biomass is defined as unused trees or parts of trees forming part of the allowable cut, as well as trees, bushes, crowns, branches and foliage that do not form part of the allowable cut. Processing waste from mills (bark, sawdust and shavings) is also considered to be biomass.

2.3.3 RECREATIONAL, TOURIST AND WILDLIFE USE

The recreational and tourism sector generates significant economic spinoffs, mainly from hunting and fishing activities. In the public forest, the supply of services associated with these activities is concentrated around structured wildlife territories.

In addition to hunting and fishing activities, these territories have diversified their supply of services by adding related recreational activities such as wildlife observation, hiking and vacation accommodation (cottages, camping, etc.).

The protection objectives and permitted activities differ by type of territory.

- Community wildlife area: a public body of water (lake or river) for which an exclusive lease for community fishing purposes has been issued, and which is managed by a non-profit corporation.
- Outfitter: an enterprise that offers lodging and services or equipment, in exchange for payment, for recreational hunting, fishing or trapping
- Controlled zone (ZEC): an area established for the purpose of developing, harvesting or conserving wildlife or a particular wildlife species and, to a lesser extent, for recreational use.
- Wildlife reserve: an area set aside for the conservation, development and use of wildlife and, to a lesser extent, for recreational use.
- Trapline: land for which the granting of a lease notably gives the holder exclusivity to trapping activities.

Wildlife harvesting activities are more important in less urban regions. In Québec, nearly 35% of hunting-related expenditures are incurred in a region other than the one in which the hunters live. As a result, several million dollars are transferred each year from the urban regions to the resource regions.

The managed forest in Nord-du-Québec offers a wealth of recreational, visual, and cultural uses. It includes controlled wildlife territories (two wildlife reserves and four outfitting operations with exclusive rights), 18 outfitters without exclusive rights, and leased lands with exclusive trapping rights. The forest also contains 1,276 rough shelters, illustrating the importance of wildlife harvesting activities in the region. There are also 843 recreational leases[1], the majority of which are located south of the 50th parallel. Private recreational properties have sprung up around some forty lakes, whose popularity varies according to their accessibility and proximity to area communities. Matagami, Chibougamau,

[1] Ministère des Ressources naturelles et de la Faune. Direction de l'énergie, des mines et du territoire public, Internal compilation, December 2007.

Quévillon, Opémisca, Turgeon, Caché, aux Dorés, Buckell, Royer, David, Olga, Josée, Pajegasque, Cavan, Dulieux and Madeleine are the main lakes. Rough shelters have a more spread distribution, particularly because a minimum distance of three kilometres must be respected between each piece of land subject to such a right. This standard is intended to achieve a protection objective with respect to the density of land use, to ensure the quality of the recreational experience of hunting and fishing activities and to ensure minimum levels of wildlife populations required for Cree traditional activities. Since 1996, an administrative moratorium has prevented the issuance of new outfitting rights on Category III lands. In addition, since 2012, there has been an administrative suspension for the issuance of new vacation lot leases. Similarly, the lease of public land for a rough shelter has been suspended since 1993, and the only way to obtain this type of lease is to acquire an existing lease on public land.

For more information, please refer to the land rights (leases) map:

Leases map

Public lands also support a major network of infrastructure and trails that enables locals to enjoy their favorite activities. There are over 4,100 km of canoe/kayak routes[1] used by various sports companies and associations on some 40 rivers, including the Rupert, Eastmain, Harricana, Bell, and de la Baleine. The area includes over 2,090 km of managed and informal snowmobile trails between the sectors of Villebois and Mistissini. They are maintained by various snowmobile clubs in Matagami, Lebel-sur-Quévillon, Chapais, and Chibougamau. Approximately 1,230 km of ATV trails have been created in Chapais-Chibougamau and Villebois-Valcanton and are maintained by local ATV clubs. Motorized sports enthusiasts use thousands more kilometers of forest roads and unmarked trails to get around and enjoy all the forest has to offer.

A variety of other sorts of trails also crisscross the forest: some 60 km of registered dogsled trails, more than 160 km of hiking and bike trails, 110 km of snowshoe and cross-country ski trails and some 20 km of equestrian trails[2].

More outdoor tourism offerings are springing up with activities from Centre de plein air du Mont Chalco, Tourisme Baie-James and Eeyou Istchee Tourism, and adventure tourism businesses offering nature expeditions in cooperation with the Cree communities. The managed forest in Nord-du-Québec also encompasses archeological sectors and sites that present a record of the ancient practices of Aboriginal communities.

Please see the Gouvernement du Québec's ecoforest data portal,

Forêt Ouverte

Forêt Ouverte: Structured Wildlife Territories

[1] Ministère de l'Énergie et des Ressources naturelles. Direction régionale Nord-du-Québec, IGT compilation interne, Mai 2015.

[2] Source: http://www.decrochezcommejamais.com/fichiersUpload/fichiers/20180404144534-bj-2018-gto-fra-low-res.pdf, accessed on June 13, 2018
Ministère de l'Énergie et des Ressources naturelles. Direction régionale Nord-du-Québec, IGT compilation interne, June, 2020.

Table 8 Area of Structured Wildlife Territories of the Nord-du-Québec Region

a) Standard regime

Structured wildlife territory		Management Unit					
Category and name of territory	Area	085-51		086-52		087-51	
	(Km²)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
Outfitter with exclusive rights							
Air Tamarac Oufitter - Lac Hébert	62.9	0.0	0.0%	0.0	0.0%	0.0	0.0%
Club Kapitachuan	369.2	0.0	0.0%	0.0	0.0%	0.1	0.0%
Pourvoirie de chasse et pêche Mistawac	25.2	3.7	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie St-Cyr Royal	300.6	0.0	0.0%	0.0	0.0%	140.1	3.1%
		3.7	**0.0%**	**0.0**	**0.0%**	**140.2**	**3.1%**
Wildlife Reserve							
Assinica wildlife reserve	8,947.5	0.0	0.0%	0.0	0.0%	0.0	0.0%
Lacs-Albanel-Mistassini-et-Waconichi wildlife reserve	16,560.6	0.0	0.0%	0.0	0.0%	0.0	0.0%
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**
		3.7	**0.0%**	**0.0**	**0.0%**	**140.2**	**3.1%**

b) Adapted regime - UG Chibougamau local office

Structured wildlife territory		Management Unit											
Category and name of territory	Area	026-61		026-62		026-63		026-64		026-65		026-66	
	(Km²)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
Outfitter with exclusive rights													
Air Tamarac Oufitter - Lac Hébert	62.9	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	19.6	0.7%
Club Kapitachuan	369.2	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie de chasse et pêche Mistawac	25.2	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie St-Cyr Royal	300.6	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**19.6**	**0.7%**

Structured wildlife territory		Management Unit											
Category and name of territory	Area	026-61		026-62		026-63		026-64		026-65		026-66	
	(Km²)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
Wildlife Reserve													
Assinica wildlife reserve	8,947.5	3,088.7	53.8%	25.0	0.8%	688.4	37.6%	742.8	14.0%	546.0	11.9%	0.0	0.0%
Lacs-Albanel-Mistassini-et-Waconichi wildlife reserve	16,560.6	1,154.5	20.1%	1,924.1	60.0%	0.0	0.0%	650.2	12.3%	0.0	0.0%	0.0	0.0%
		4,243.2	**73.9%**	**1,949.1**	**60.7%**	**688.4**	**37.6%**	**1,393.0**	**26.3%**	**546.0**	**11.9%**	**0.0**	**0.0%**
		4,243.2	**73.9%**	**1,949.1**	**60.7%**	**688.4**	**37.6%**	**1,393.0**	**26.3%**	**546.0**	**11.9%**	**19.6**	**0.7%**

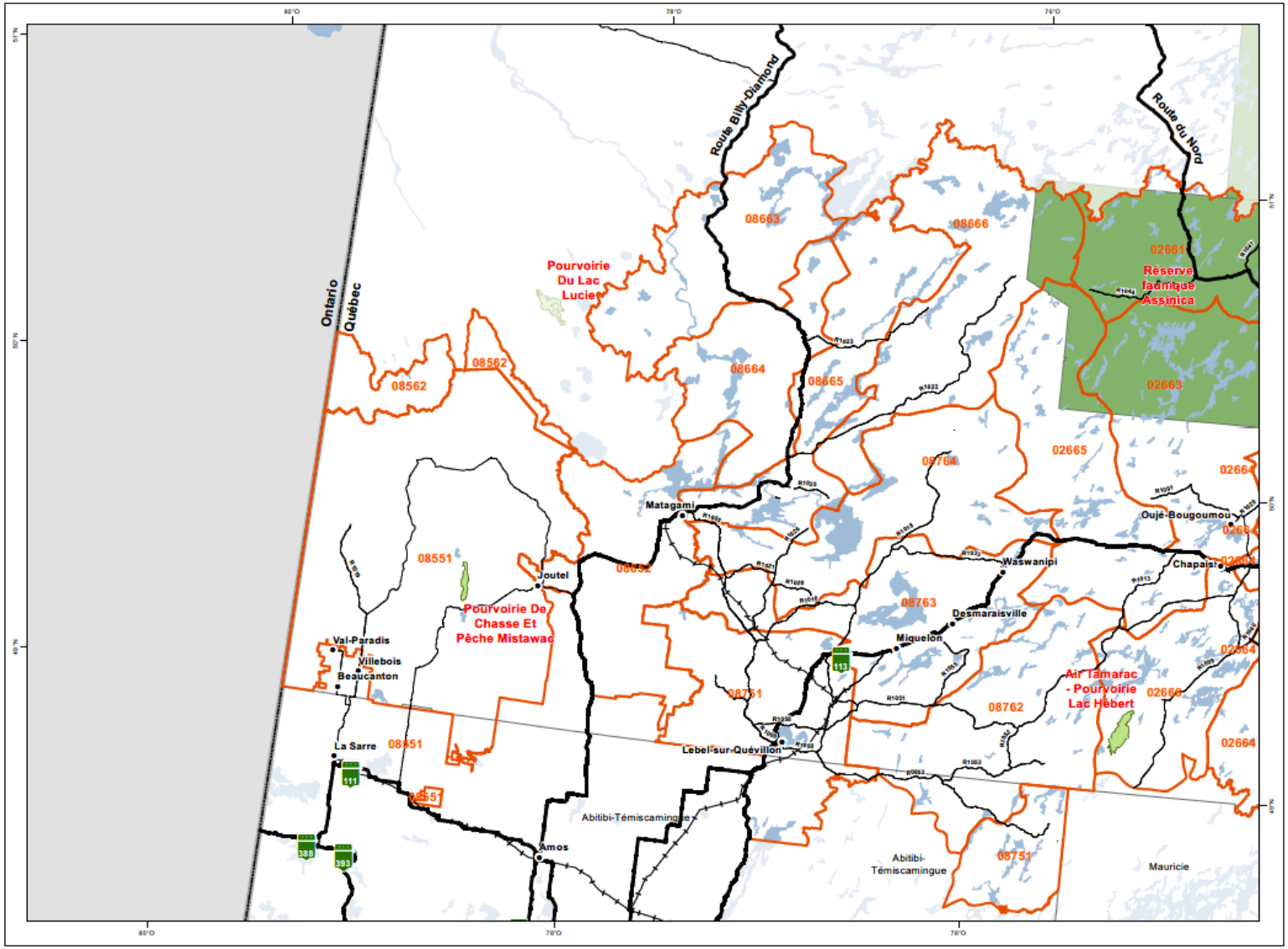
c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Structured wildlife territory		Management Unit							
Category and name of territory	Area	085-62		087-62		087-63		087-64	
	(Km²)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
Outfitter with exclusive rights									
Air Tamarac Oufitter - Lac Hébert	62.9	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Club Kapitachuan	369.2	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie de chasse et pêche Mistawac	25.2	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie St-Cyr Royal	300.6	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**
Wildlife Reserve									
Assinica wildlife reserve	8,947.5	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Lacs-Albanel-Mistassini-et-Waconichi wildlife reserve	16,560.6	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**

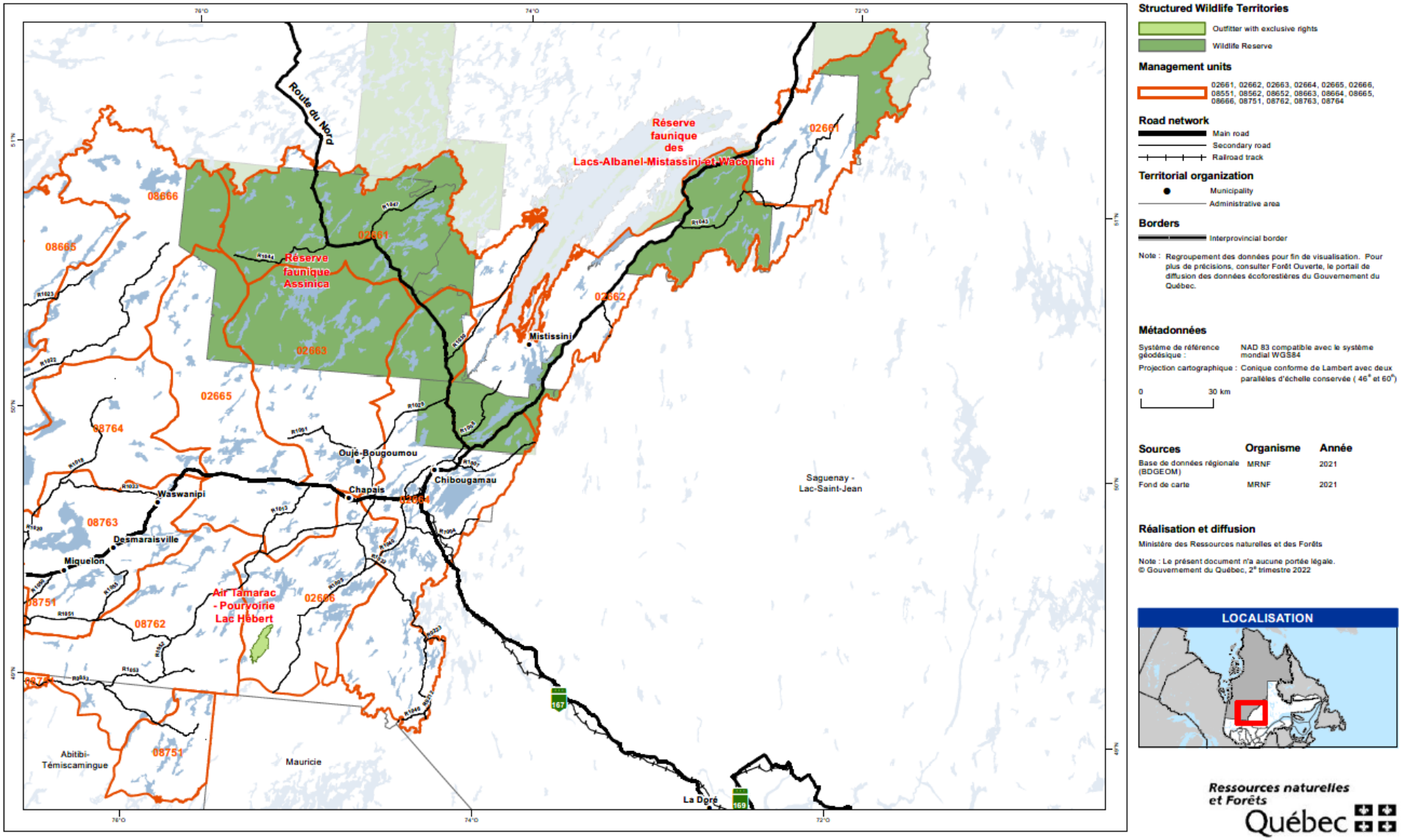
d) Adapted regime - UG Harricana-Nord local office

Structured wildlife territory		Management Unit							
Category and name of territory	Area	086-63		086-64		086-65		086-66	
	(Km²)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
Outfitter with exclusive rights									
Air Tamarac Oufitter - Lac Hébert	62.9	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Club Kapitachuan	369.2	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie de chasse et pêche Mistawac	25.2	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
Pourvoirie St-Cyr Royal	300.6	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**
Wildlife Reserve									
Assinica wildlife reserve	8,947.5	0.0	0.0%	0.0	0.0%	0.0	0.0%	90.4	3.0%
Lacs-Albanel-Mistassini-et-Waconichi wildlife reserve	16,560.6	0.0	0.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**90.4**	**3.0%**
		0.0	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**	**90.4**	**3.0%**

Map 15 : Region 10 – West Structured Wildlife Territories



Map 16 : Region 10 – East Structured Wildlife Territories



2.3.3.1 Hunting

Hunting is an emblematic activity that is anchored in the identity and economy of Québec's regions. Hunting enthusiasts often practise more than one type of hunting for which a licence is required.

The main large wildlife species sought by hunters are moose and black bear. In 2020, as an indication, 4,679 moose hunters killed 395 moose that year. Similarly, 213 Black Bears were harvested in spring 2020.

In Québec, hunting small game, such as Spruce Grouse, Snowshoe Hare and Ruffed Grouse, ranks second in popularity, behind moose hunting. Willow Ptarmigan is a species found occasionally in great abundance in Nord-du-Québec. It is also highly prized by the region's residents and attracts a clientele from outside the region.

The territory of Eeyou Istchee James Bay includes three hunting zones, 16, 17 and 22.

Since 2022, a moratorium has prevented the issuance of moose hunting licences in zone 17.

For more details, refer to the map of hunting zones of the Gouvernement du Québec:
Hunting zones | Gouvernement du Québec (quebec.ca)

2.3.3.2 Trapping

Several fur-bearing species are harvested in Québec, including the marten, Canada lynx and beaver among others. These species are present throughout the area in varying densities, depending on habitat availability. Trapping activities are governed by the ***Act respecting the conservation and development of wildlife*** and the Act respecting hunting and fishing rights in the James Bay and New Québec territories, and all trappers must obtain a professional trapping licence, except for Aboriginal people.

The Nord-du-Québec region has 20 traplines under lease, containing 8 registered camps, which corresponds to an area of 1,020 km^2 and an average of 51 km^2 per trapline. However, they are managed by the Abitibi-Témiscamingue region and the harvest produced there is compiled with the harvest of that region.

In addition to the network of traplines under lease, trappers may engage in their activities in a small sector of free territory on the lands in the domain of the State in the Villebois and Valcanton region. Trapping in the rest of Québec's territory is reserved for the beneficiaries of the James Bay and Northern Québec Agreement, apart from snaring hare, which is authorized under certain conditions.

Twenty fur-bearing animal species can be harvested in Québec. These species live in variable density in the territory depending on various factors, including the availability of habitats. As an indication, according to the data available on pelts marketed during the 2020-2021 season in Nord-du-Québec, the species most prized by trappers seem to be American Marten, Beaver, Canada Lynx, Red Fox, Muskrat and Otter. The other species trapped, Weasel, Coyote, Arctic Fox, Squirrel, Wolf, Skunk, Black Bear, Fisher, Raccoon and Mink, were trapped in a lower proportion during this season.

2.3.3.3 Fishing

Sport fishing is the wildlife-related activity that attracts the most attention from outdoor enthusiasts in Québec. Roughly 30 of the 119 freshwater and migratory fish species present in Québec are fished for sports or commercial purposes in Québec. In the case of some of these species, such as the walleye, lake trout and Atlantic salmon, management plans have been prepared to improve population health and fishing quality.

Walleye is species of most interest to sport fishing enthusiasts in Nord-du-Québec. The region also has lakes with Lake Trout populations. Most of the available fishing is located in free territory.

2.4 BIOPHYSICAL PROFILE

The profiles presented in this section were produced from the ecoforest stand maps generated by the fifth ten-year inventory program, and were up-to-date as of March 31, 2021. It is important to note that the observations apply only to forests in which forest development activities can be carried out, i.e. the forest under development.

2.4.1 NATURAL FOREST DISTURBANCE REGIME

The main disturbances encountered in Québec's forests are fire, spruce budworm and windthrow. Each region has its own natural disturbance regime. Some Management Units are more susceptible to fires, while others encounter more insect infestations or windfall. Special development plans are used to ensure, to a certain extent, that the damaged wood is salvaged.

In Nord-du-Québec, various natural disturbances shape the structure of the stands, depending on their intensity. They involve fires, windthrow, insect epidemics and diseases. The region's dominant disturbance regime is fire, which alone represents about 95% of the areas affected over the past few years.

2.4.1.1 Fire

Fires vary significantly in terms of severity, and in terms of prevalence from one year to the next. In addition, although fires are usually perceived to be serious, a high percentage of fire-damaged areas may be composed of partially burned stands. Fire variability is caused by a combination of climate-related and edaphic factors. Fire cycles throughout Québec have tended to increase in length over time, from the historical period to the recent period (1940-2020). However, the fire risk will continue to be high for decades to come.

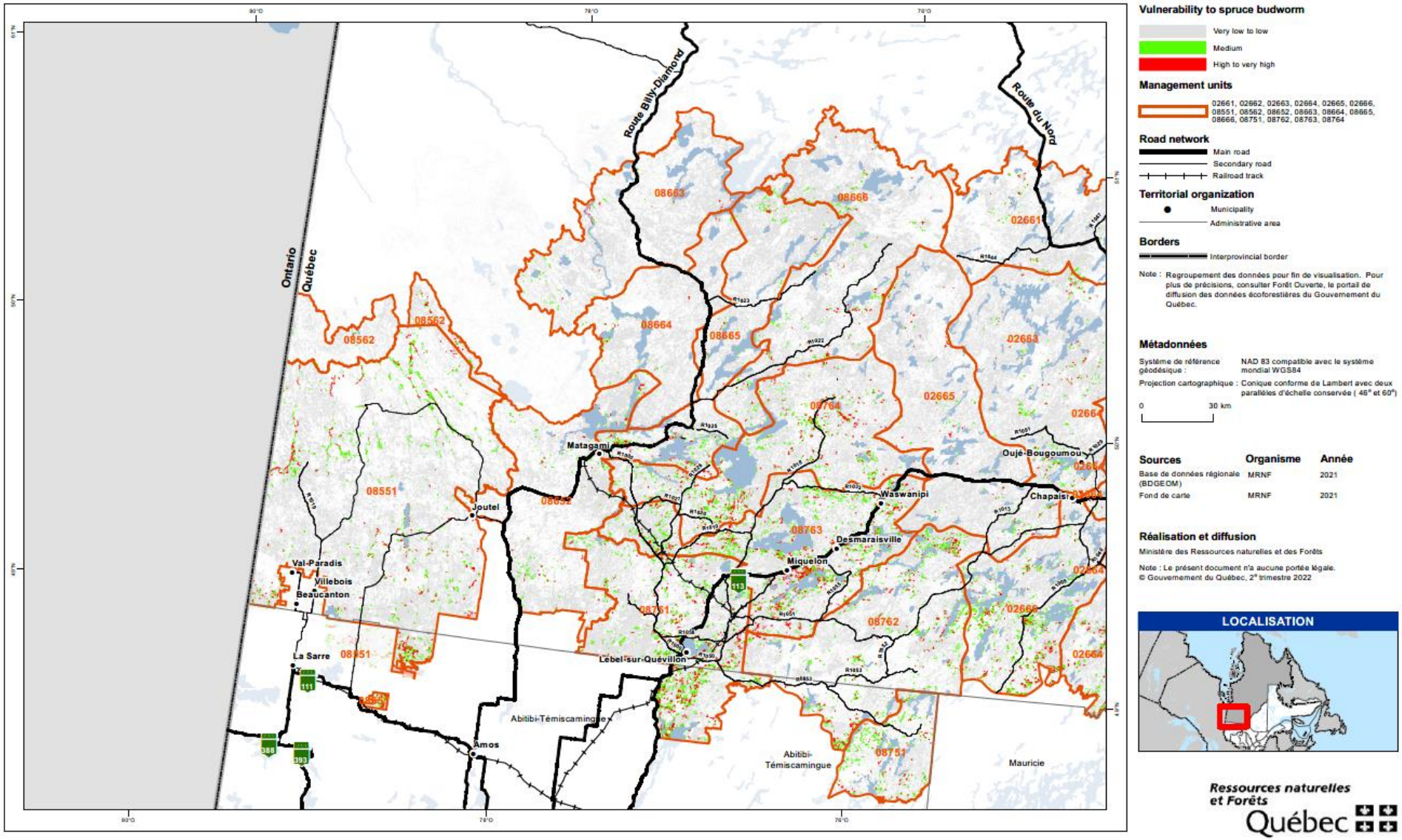
2.4.1.2 Spruce Budworm

The spruce budworm is the insect that causes the most damage in Québec. It defoliates new shoots, killing the trees or reducing their growth. The most vulnerable species are Balsam Fir, White Spruce and, to a lesser extent, Black Spruce. Infestations occur every 30 to 40 years or so, with the interval being conditioned by a complex dynamic between the insect and its natural enemies. An infestation is

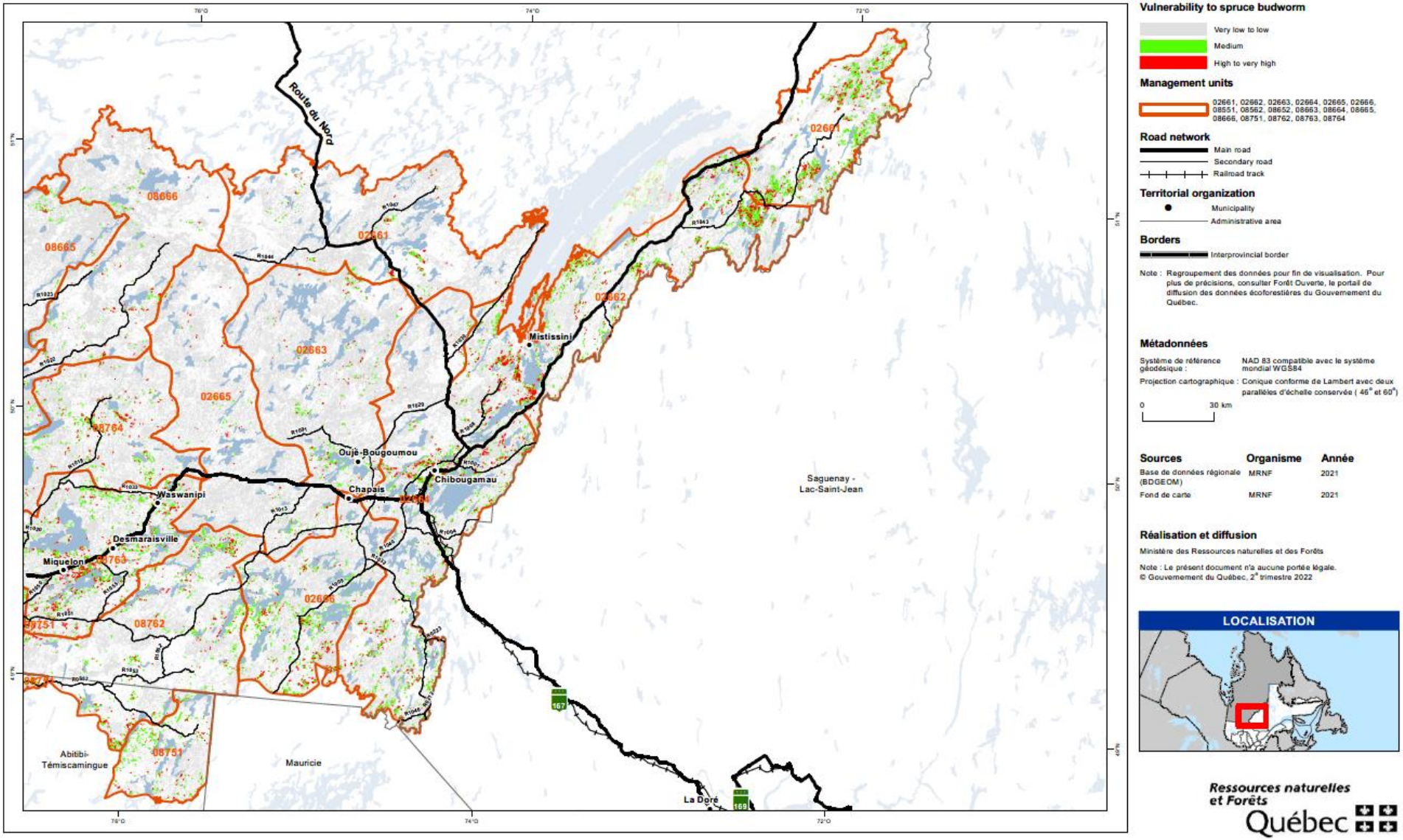
currently underway, mainly in the Côte-Nord, Saguenay–Lac-Saint-Jean, Gaspésie and Outaouais regions.

The spruce budworm's impacts vary by region, among other things due to stand structure and composition. A stand's vulnerability increases according to the percentage of host trees (e.g. Balsam Fir, White Spruce), tree age and site conditions. Mature fir forests are generally more vulnerable than other types of stands. A significant presence of hardwood trees at landscape and stand level can reduce the impacts of spruce budworm infestations on host species. The last two infestations occurred mostly in Management Units located in the Balsam Fir-Yellow Birch and Balsam Fir-White (Paper) Birch forests, due to the large number of Balsam Fir stands in those areas. The insect's range appears to be shifting northwards as a result of climate warming. See the Spruce Budworm Vulnerability map for the region's Management Units.

Map 17: Vulnerabilities to Spruce Budworm in Region 10 – West



Map 18: Vulnerabilities to Spruce Budworm in Region 10 – East



2.4.1.3 Windthrow

The term “windthrow” refers to the overturning (uprooting or breakage) of a tree or group of trees, usually due to age, disease or climatic elements such as wind, snow or ice. Windthrow is more frequent along the edges of recent cuts, usually in the first 20 to 30 metres, as well as in waterside strips, logging separators and other residual stands. Vulnerability to windthrow also depends on exposure to wind (e.g. strip orientation, topographical position).

2.4.1.4 Overview of recent natural disturbances

The diagram below shows the main natural disturbances occurring in the period 2000 to 2020. It is important to note that partial disturbances (25% to 75% of the canopy damaged) and total disturbances (more than 75% of the canopy damaged) are presented without distinction. In the specific case of infestations, the figures do not refer to annual defoliation, but to deaths resulting from several years of defoliation.

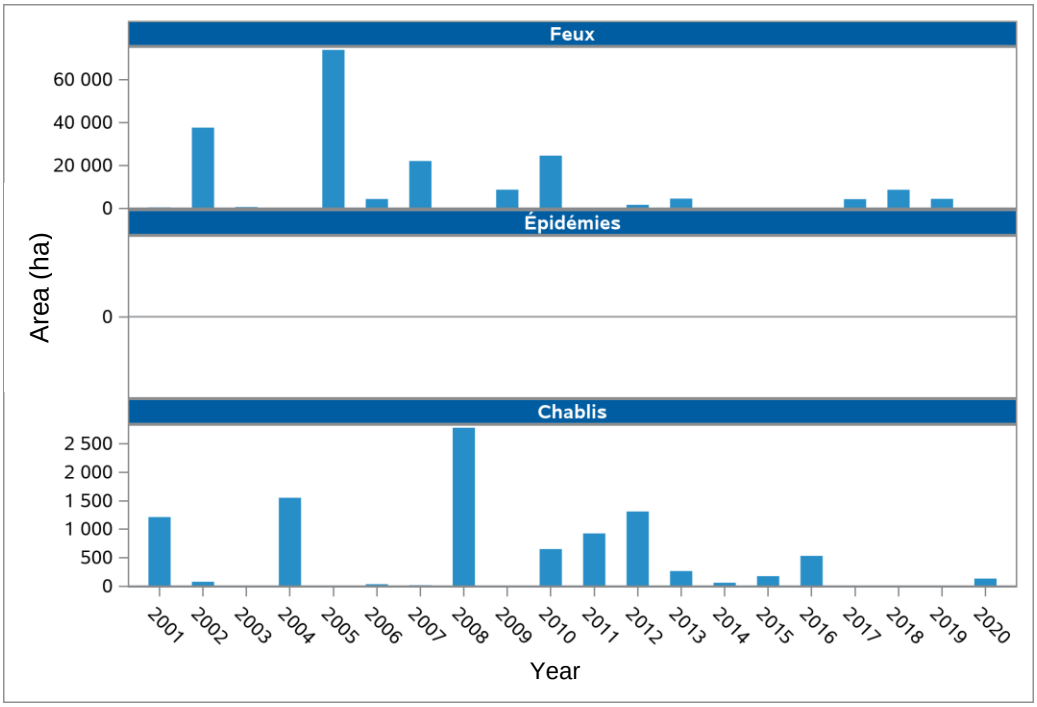
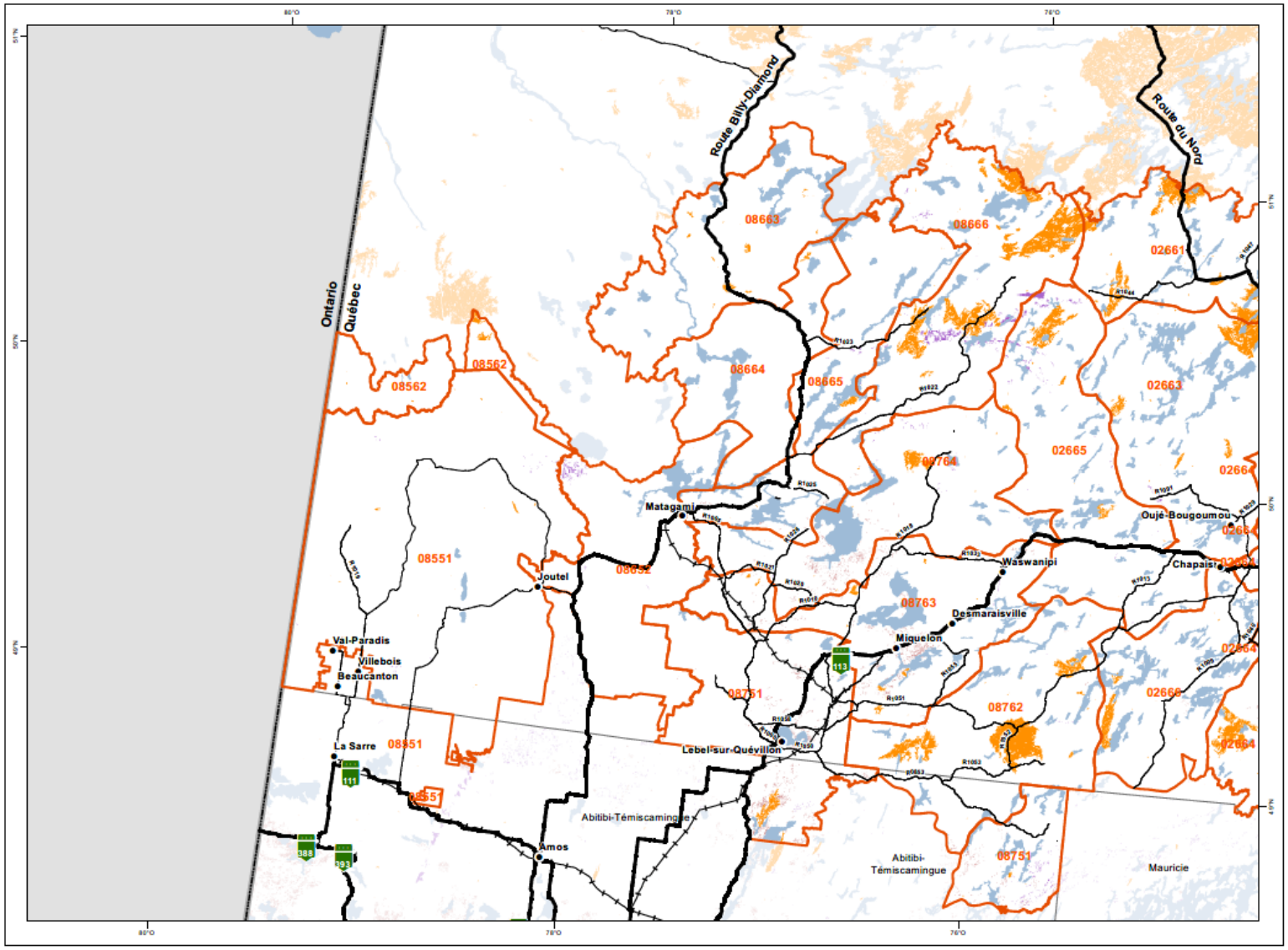


Figure 2 Regional Annual Area of Fires, Epidemics and Windthrow for the 2001 to 2020 Period

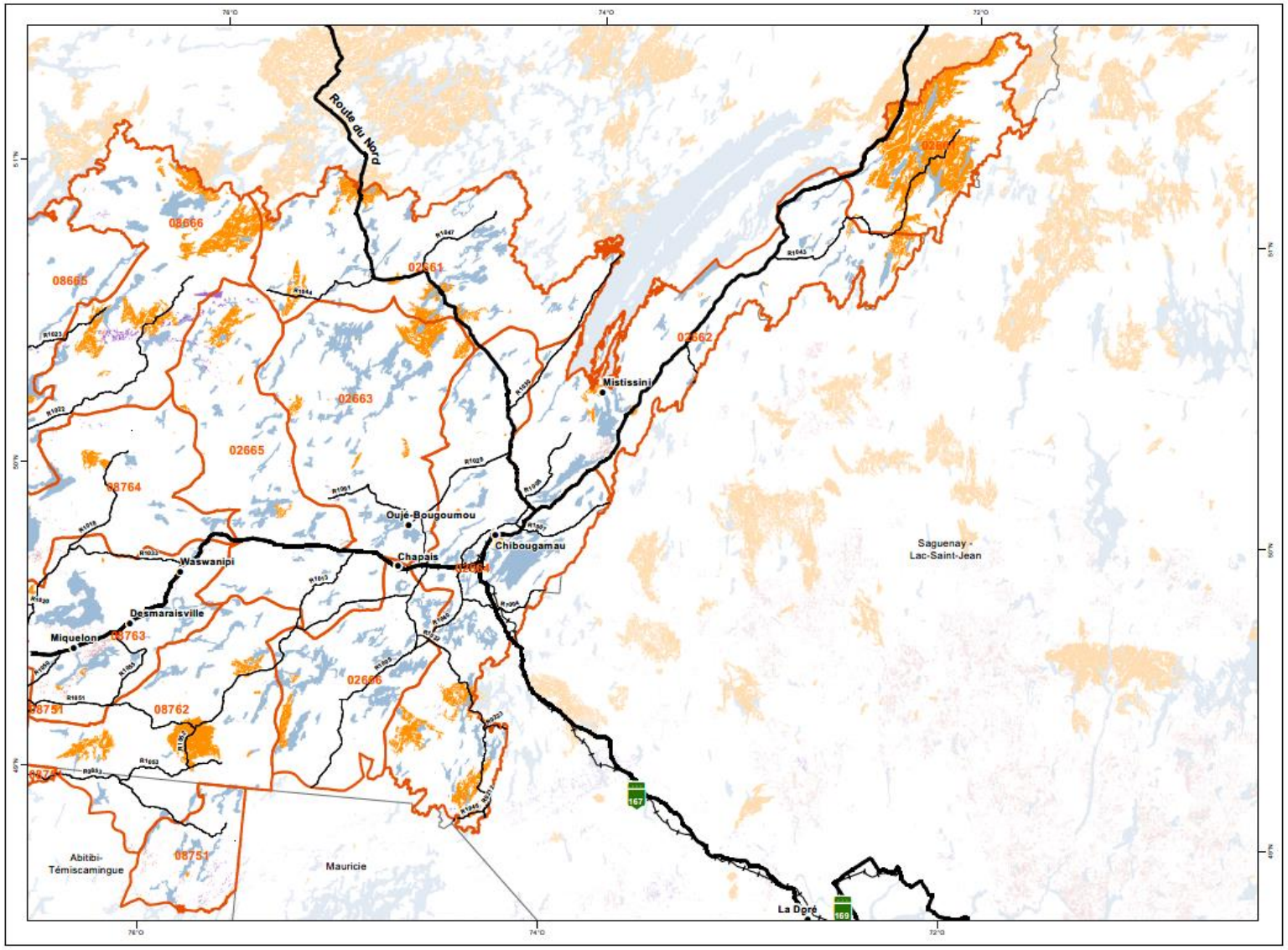
Please see the Québec Government’s ecoforest data portal

Forêt Ouverte
Forêt Ouverte: Natural Disturbances — Fires
Forêt Ouverte: Natural Disturbances — Insects and Diseases

Map 19 : Region 10 – West Natural Disturbances



Map 20 : Region 10 – East Natural Disturbances



2.4.1.5 Diseases and Other Disturbances

The data recorded in the table below represent the field observations performed in summer 2020 and 2021 in UG 81 (Témiscamingue), 82 (Rouyn-Noranda, 83 (Val-d'Or), 84 (Mégiscane), 85 (Lac Abitibi), 86 (Harricana-Sud), 105 (Mont Plamondon), 106 (Harricana-Nord) et 107 (Quévillon).

The percentage figures (for each organization, insect or disease) are an average of the different grouped observation stations. In the territory of these 9 MRNF local offices (UG), a total of 65 plantations (all species combined) are inventoried each year. Since the aerial surveys do not characterize the defoliation or devastation zones for the above-mentioned organizations, it is impossible to indicate a quantity of hectares affected by these types of pests.

Table 9 Field Observations, Summers of 2020 and 2021

Insects or diseases	Description	Observations and presence, 2020-2021
Pine Tortoise Scale (*Toumeyella parvicornis* (Cockerell))	This insect was identified for the first time in 1920 in the State of Wisconsin, in the United States. Since then, it has also been inventoried in Canada. Infestations of this insect are generally localized, but may be severe. Pine Tortoise Scale significantly affected young Jack Pine stands in MU 082-51 in 2012 and 2013.	Endemic presence of the insect in Abitibi-Témiscamingue and Nord-du-Québec. No outbreak observed since 2014 (UG 82). No collection of the insect and no defoliation during sampling at Jack Pine observation stations.
Forest Tent Caterpillar Moth (*Malacosoma Disstria* HBN)	An insect indigenous to North America, this spring defoliator feeds on the leaves of several hardwood species. Its preferred hosts are Trembling Aspen, Paper Birch and Sugar Maple, as well as Willow and Northern Red Oak. The infestations, which occur every 10 to 12 years, generally last no longer than four or five years. The infestations are controlled by the combined action of natural enemies, climate, diseases and the lack of food for the caterpillar. An epidemic does not necessarily lead to mortality of the stems, but consecutive significant defoliations can weaken the trees and render them vulnerable to other pests or diseases.	The last Forest Tent Caterpillar Moth epidemic ended in 2018. The larvae (caterpillars) of the Forest Tent Caterpillar Moth are present sporadically in the entire Trembling Aspen range. Very small defoliation outbreaks can be observed in the territories of all the MRNF local offices (UG) of the DGSNO, but the damage is at a very light or trace level.
Western Gall Rust	This disease, caused by a fungus (*Peridermium harknessii* (J.P. Moore) Y. Hiratsuka) is easily identifiable. Indeed, more or less round galls form on the branches and sometimes on the trunk of Jack, Scots, Mountain and Austrian Pines. When the rust is located on the branches, it has little effect on the growth of the trees. The disease becomes more severe when the trunk is affected.	This disease is present in all Jack Pine plantations of the MRNF local offices (UG) of the DGSNO. The presence of the disease may vary from 0% to 55% depending on the plantations visited. Western Gall Rust does not exceed the moderate scale in the plantations.
Large Aspen Tortrix	Large Aspen Tortrix mainly attacks Trembling Aspen, but also Balsam Poplar, Paper Birch, various Willows, Speckled Alder and Bitter-berry. An indigenous defoliator, the range of the Large Aspen Tortrix corresponds to that of its main host, Trembling Aspen. In Canada, the insect is present in all provinces. Historically, Ontario has been the hardest hit province, followed by Québec. These epidemics are frequent following Forest Tent Caterpillar Moth invasions. The intensity level	Since summer 2019, we have observed a few Large Aspen Tortrix outbreaks almost everywhere in Abitibi-Témiscamingue and Nord-du-Québec in Trembling Aspen stands.

Insects or diseases	Description	Observations and presence, 2020-2021
	of Large Aspen Tortrix epidemics would depend on climate conditions, and the epidemic lasts about 3 years. The trees affected generally have no difficulty producing a second leafing during the summer after defoliation by the insect.	
Jack Pine Budworm	An indigenous defoliator, Jack Pine Budworm mainly attacks Jack Pine. The caterpillars of this species resemble those of the Spruce Budworm closely enough to be mistaken for them. Severely defoliated trees show sparse crowns, but most of the time, defoliation is limited to the upper part of the crown. Crown death and loss of growth are the most frequent consequences. In epidemic periods, when severe defoliations persist for two or three consecutive years, death may occur.	Spruce Budworm is present endemically in Jack Pine stands throughout the DGSNO's territory. There are 15 insect detection sites with installation of pheromone traps to capture Jack Pine Budworm moths. Moth captures have increased slightly over the past few years, giving reason to believe in a possible increase of the insect's populations. No significant damage is observed in the territory.

2.4.2 ECOLOGICAL CLASSIFICATION

Québec's territory is extremely diverse in terms of its geology, relief, hydrography, soils and climate. All these components interact and also have an individual impact on forest ecosystem dynamics. The Hierarchical Ecological Classification System is used to describe the ecological diversity and distribution of Québec's forests. It has 11 levels, with each level being distinguished in the upper scales by its climate, dominant vegetation and disturbance regime (vegetation zones or subzones and bioclimatic domains or subdomains), and in the lower scales by its physical environmental characteristics such as altitude, relief and surficial deposits. This system is one of the information tools that is needed for forest development and protection. The table below presents the percentage of each bioclimatic subdomain in the region's Management Units

Please see the Québec Government's ecoforest data portal

Forêt Ouverte

Forêt Ouverte: Bioclimatic domain and subdomain

Table 10 Area of Bioclimatic Domains and Subdomains and Ecological Regions of the MUs

a) Standard regime

Bioclimatic domain and subdomain		085-51		086-52		087-51	
	Ecological region	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)
5 - Balsam Fir-Paper Birch domain							
West	5a - Abitibi Plain	111,862	11.7%	13,891	3.9%	105,765	23.7%
	5b - Gouin Reservoir	0	0.0%	0	0.0%	26,650	6.0%
		111,862	**11.7%**	**13,891**	**3.9%**	**132,415**	**29.7%**
6 - Spruce-moss domain							
West	6a - Lac Matagami Plain	843,369	88.3%	346,073	96.1%	184,946	41.4%
	6c - Lac Opémisca	0	0.0%	0	0.0%	128,944	28.9%
	6d - Assinica and Rupert Rivers	0	0.0%	0	0.0%	0	0.0%
	6e - Nestaocano River	0	0.0%	0	0.0%	0	0.0%
	6f - Lac Mistassini	0	0.0%	0	0.0%	0	0.0%
	6g - Lac Manouane	0	0.0%	0	0.0%	0	0.0%
		843,369	**88.3%**	**346,073**	**96.1%**	**313,890**	**70.3%**
7 - Spruce-lichen domain							
East	7h - Lac Indicateur	0	0.0%	0	0.0%	0	0.0%
		0	**0.0%**	**0**	**0.0%**	**0**	**0.0%**

b) Adapted regime - UG Chibougamau local office

Bioclimatic domain and subdomain		026-61		026-62		026-63		026-64		026-65		026-66	
Ecological region		(Ha)	(%)	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)
5 - Balsam Fir-Paper Birch domain													
West	5a - Abitibi Plain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	5b - Gouin Reservoir	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		0	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
6 - Spruce-moss domain													
West	6a - Lac Matagami Plain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	19,536	4.2%	0	0.0%
	6c - Lac Opémisca	0	0.0%	9,495	3.0%	111,839	61.0%	264,202	49.9%	286,373	62.2%	252,302	91.8%
	6d - Assinica and Rupert Rivers	368,160	64.1%	0	0.0%	71,422	39.0%	5,981	1.1%	154,154	33.5%	0	0.0%
	6e - Nestaocano River	0	0.0%	61,075	19.0%	0	0.0%	157,321	29.7%	0	0.0%	22,605	8.2%
	6f - Lac Mistassini	76,419	13.3%	123,569	38.5%	0	0.0%	101,762	19.2%	0	0.0%	0	0.0%
	6g - Lac Manouane	129,361	22.5%	126,810	39.5%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		573,940	**100.0%**	**320,950**	**100.0%**	**183,261**	**100.0%**	**529,266**	**100.0%**	**460,062**	**100.0%**	**274,907**	**100.0%**
7 - Spruce-lichen domain													
East	7h - Lac Indicateur	128	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		128	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**

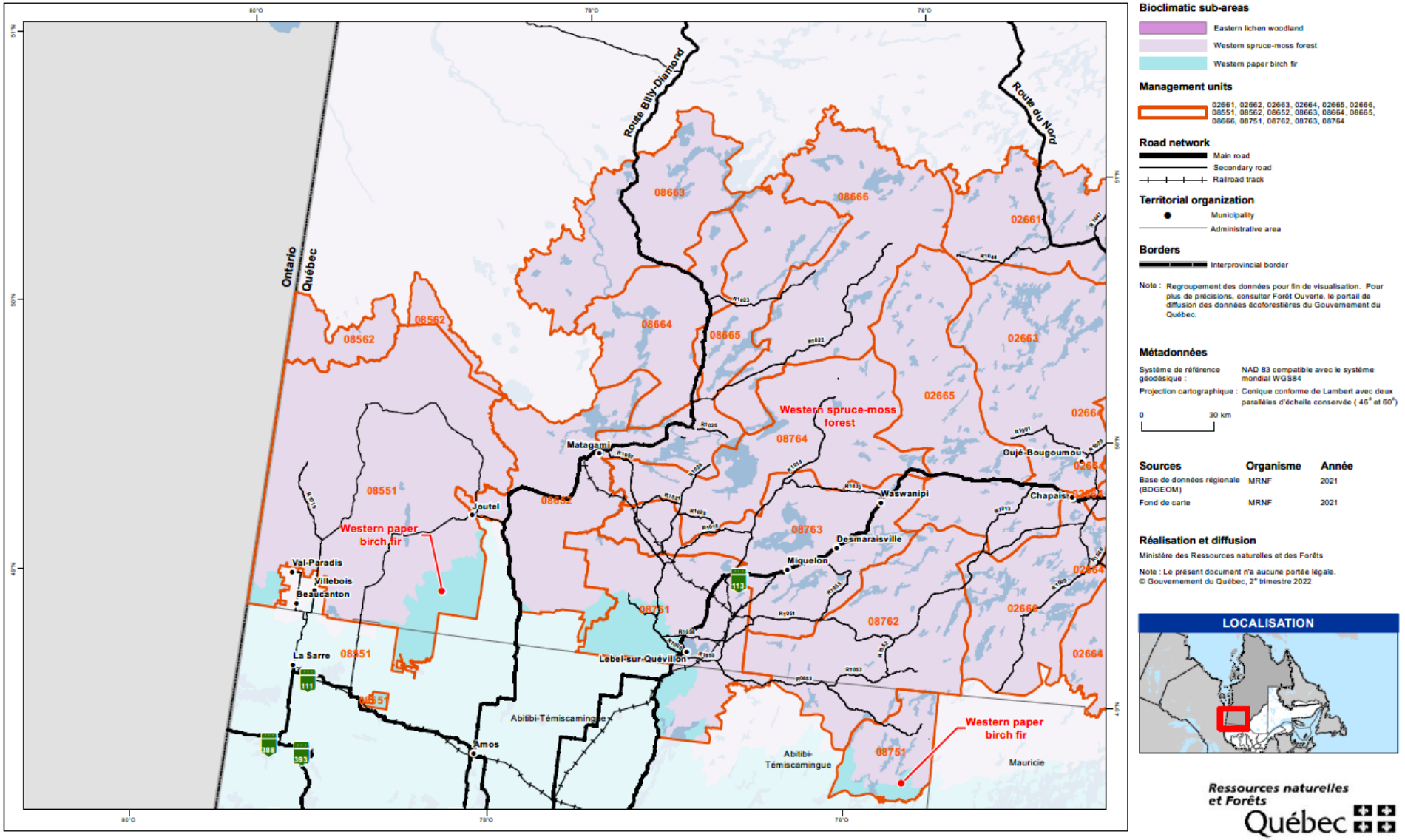
c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Bioclimatic domain and subdomain		085-62		087-62		087-63		087-64	
Ecological region		(Ha)	(%)	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)
5 - Balsam Fir-Paper Birch domain									
West	5a - Abitibi Plain	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	5b - Gouin Reservoir	0	0.0%	74	0.0%	0	0.0%	0	0.0%
		0	**0.0%**	**74**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
6 - Spruce-moss domain									
West	6a - Lac Matagami Plain	84,238	100.0%	21,245	4.9%	266,973	83.7%	348,529	93.0%
	6c - Lac Opémisca	0	0.0%	414,993	95.1%	51,823	16.3%	25,269	6.7%
	6d - Assinica and Rupert Rivers	0	0.0%	0	0.0%	0	0.0%	884	0.2%
	6e - Nestaocano River	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	6f - Lac Mistassini	0	0.0%	0	0.0%	0	0.0%	0	0.0%
	6g - Lac Manouane	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		84,238	**100.0%**	**436,237**	**100.0%**	**318,796**	**100.0%**	**374,682**	**100.0%**
7 - Spruce-lichen domain									
East	7h - Lac Indicateur	0	0.0%	0	0.0%	0	0.0%	0	0.0%
		0	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**

d) Adapted regime - UG Harricana-Nord local office

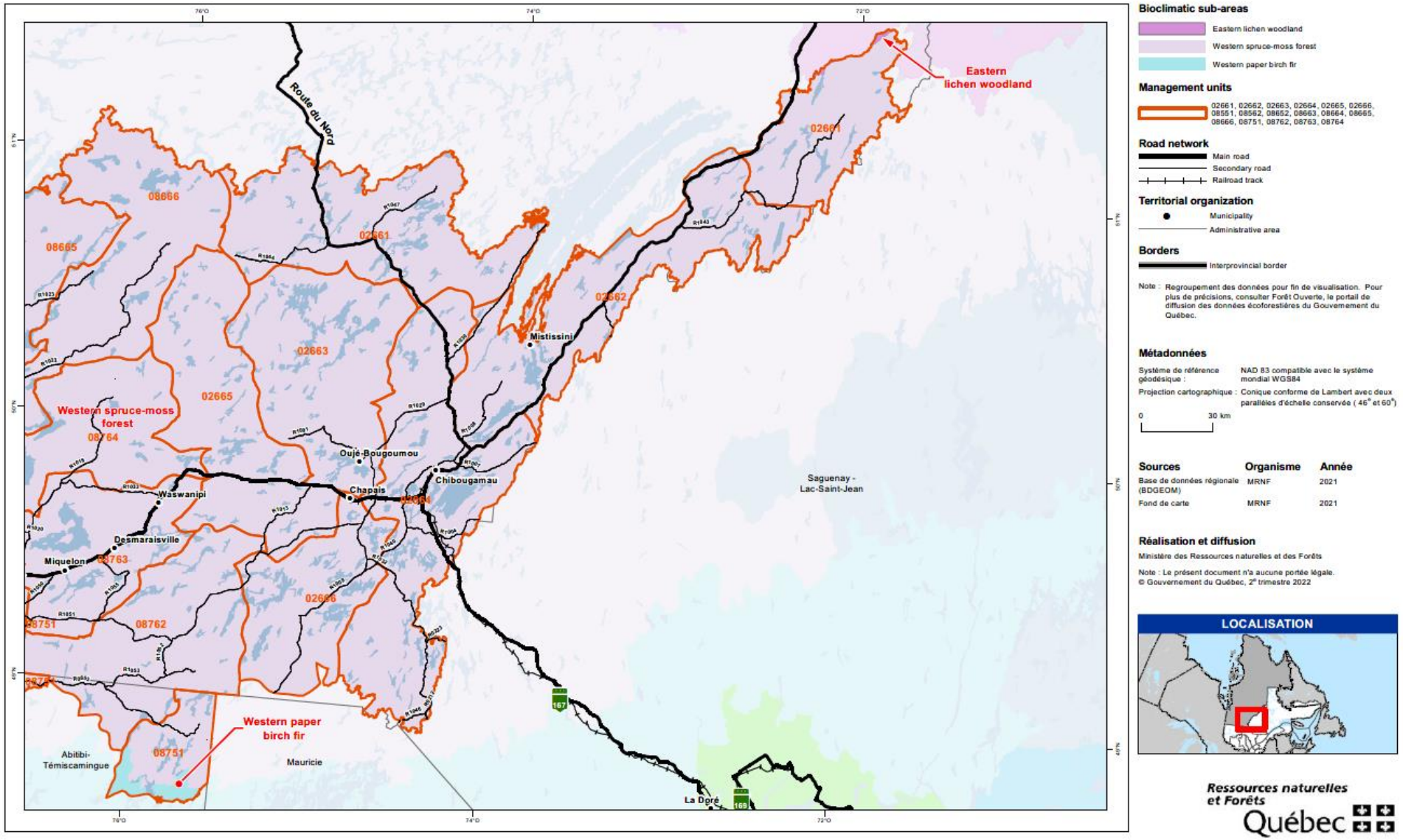
Bioclimatic domain and subdomain		086-63		086-64		086-65		086-66		Total MU	
	Ecological region	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)	(Ha)	(%)
5 - Balsam Fir-Paper Birch domain											
West	5a - Abitibi Plain	0	0.0%	0	0.0%	0	0.0%	0	0.0%	231,518	3.6%
	5b - Gouin Reservoir	0	0.0%	0	0.0%	0	0.0%	0	0.0%	26,724	0.4%
		0	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**258,242**	**4.0%**
6 - Spruce-moss domain											
West	6a - Lac Matagami Plain	227,009	100.0%	262,514	100.0%	285,504	100.0%	173,407	56.8%	3,063,343	47.9%
	6c - Lac Opémisca	0	0.0%	0	0.0%	0	0.0%	307	0.1%	1,545,548	24.2%
	6d - Assinica and Rupert Rivers	0	0.0%	0	0.0%	0	0.0%	131,561	43.1%	732,162	11.4%
	6e - Nestaocano River	0	0.0%	0	0.0%	0	0.0%	0	0.0%	241,001	3.8%
	6f - Lac Mistassini	0	0.0%	0	0.0%	0	0.0%	0	0.0%	301,750	4.7%
	6g - Lac Manouane	0	0.0%	0	0.0%	0	0.0%	0	0.0%	256,172	4.0%
		227,009	**100.0%**	**262,514**	**100.0%**	**285,504**	**100.0%**	**305,276**	**100.0%**	**6,139,976**	**96.0%**
7 - Spruce-lichen domain											
East	7h - Lac Indicateur	0	0.0%	0	0.0%	0	0.0%	0	0.0%	128	0.0%
		0	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**128**	**0.0%**

Map 21 : Region 10 – West Bioclimatic Domain and Subdomain



Ressources naturelles et Forêts Québec

Map 22 : Region 10 – East Bioclimatic Domain and Subdomain



Ecological type is a portion of land, at local scale, exhibiting a permanent combination of the environment's potential vegetation and physical characteristics. As a classification unit, it expresses both the characteristics of the vegetation that grows or may grow in the area (potential vegetation) and the physical characteristics of the environment (Berger and Blouin, 2006). Ecological type provides information on forest ecosystem dynamics at local level, and offers a detailed view of the forest. It is useful among other things for planning forest development, preparing silvicultural scenarios, making allowable cut calculations, establishing the locations of exceptional or rare forest ecosystems, developing nature interpretation trails, establishing the locations of hunting areas and studying wildlife habitats. The table 11 presents the percentage of the main ecological types in the region's Management Units.

Please see:
Ecological Classification

Table 11 Distribution of Main Ecological Types of Productive Forest Lands by MU

a) Standard regime

Ecological type		All MUs	085-51	086-52	087-51
Code	Description	(%)	(%)	(%)	(%)
RS22	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, mesic drainage	17.5%	4.4%	< 2%	14.6%
RE22	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, mesic drainage	11.5%	< 2%	< 2%	2.7%
RE39	Black Spruce-Sphagnum stand on thin to thick organic deposit, hydric drainage, ombrotrophic	11.3%	23.1%	8.5%	7.4%
RE26	Black Spruce-moss or Ericaceous stand on thin to thick deposit, fine texture, subhydric drainage	7.3%	12.7%	8.2%	3.3%
RS26	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, subhydric drainage	6.8%	10.4%	10.3%	17.7%
RE25	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, subhydric drainage	6.5%	< 2%	< 2%	< 2%
RE38	Black Spruce-Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	6.1%	7.8%	8.8%	6.9%
RE21	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	5.8%	2.8%	< 2%	3.4%
RE37	Black Spruce-Sphagnum stand on thin to thick mineral deposit, hydric drainage, ombrotrophic	4.2%	8.8%	10.6%	4.4%
ME16	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, subhydric drainage	3.4%	6.3%	29.9%	4.7%
RS23	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, mesic drainage	3.1%	7.3%	4.8%	8.7%
RS25	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, subhydric drainage	2.3%	< 2%	< 2%	< 2%
RS21	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, coarse texture, xeric to mesic drainage	2.1%	2.2%	< 2%	3.0%
MS22	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, medium texture and mesic drainage	< 2%	< 2%	< 2%	4.2%
RS20	Balsam Fir-Black Spruce stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	< 2%

Ecological type		All MUs	085-51	086-52	087-51
Code	Description	(%)	(%)	(%)	(%)
RE24	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, subhydric drainage	< 2%	< 2%	< 2%	2.7%
RE20	Black Spruce-moss or Ericaceous stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	< 2%
RE23	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, fine texture, mesic drainage	< 2%	< 2%	< 2%	< 2%
ME13	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, mesic drainage	< 2%	2.2%	10.4%	< 2%
RS38	Balsam Fir-Black Spruce and Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	< 2%	< 2%	< 2%	< 2%
MS23	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, fine texture and mesic drainage	< 2%	< 2%	< 2%	4.2%
RE12	Black Spruce-lichen stand on thin to thick mineral deposit, medium texture, mesic drainage	< 2%	< 2%	< 2%	< 2%
RE11	Black Spruce-lichen stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	< 2%	< 2%	< 2%	< 2%
Rare	All ecological types that cover less than 2% of the area of the MU	11.9%	12.1%	8.6%	11.8%

b) Adapted regime - UG Chibougamau local office

Ecological type		All MUs	026-61	026-62	026-63	026-64	026-65	026-66
Code	Description	(%)	(%)	(%)	(%)	(%)	(%)	(%)
RS22	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, mesic drainage	17.5%	27.5%	30.2%	15.8%	23.6%	20.7%	24.4%
RE22	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, mesic drainage	11.5%	29.9%	18.3%	25.6%	17.7%	24.8%	13.0%
RE39	Black Spruce-Sphagnum stand on thin to thick organic deposit, hydric drainage, ombrotrophic	11.3%	4.2%	7.4%	9.9%	11.5%	10.4%	9.0%
RE26	Black Spruce-moss or Ericaceous stand on thin to thick deposit, fine texture, subhydric drainage	7.3%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
RS26	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, subhydric drainage	6.8%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
RE25	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, subhydric drainage	6.5%	12.2%	13.1%	9.8%	13.2%	13.7%	12.0%
RE38	Black Spruce-Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	6.1%	< 2%	< 2%	6.2%	5.1%	7.6%	8.5%

Ecological type		All MUs	026-61	026-62	026-63	026-64	026-65	026-66
Code	Description	(%)	(%)	(%)	(%)	(%)	(%)	(%)
RE21	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	5.8%	12.4%	11.8%	17.4%	9.9%	9.9%	7.8%
RE37	Black Spruce-Sphagnum stand on thin to thick mineral deposit, hydric drainage, ombrotrophic	4.2%	< 2%	< 2%	< 2%	< 2%	< 2%	2.3%
ME16	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, subhydric drainage	3.4%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
RS23	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, mesic drainage	3.1%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
RS25	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, subhydric drainage	2.3%	< 2%	3.3%	< 2%	3.3%	< 2%	7.0%
RS21	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, coarse texture, xeric to mesic drainage	2.1%	< 2%	2.3%	2.0%	2.3%	< 2%	5.5%
MS22	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, medium texture and mesic drainage	< 2%	< 2%	2.1%	< 2%	3.1%	< 2%	2.1%
RS20	Balsam Fir-Black Spruce stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	2.0%	< 2%	< 2%	< 2%
RE24	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, subhydric drainage	< 2%	< 2%	< 2%	2.3%	2.3%	< 2%	2.3%
RE20	Black Spruce-moss or Ericaceous stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	2.9%	< 2%	< 2%	< 2%
RE23	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, fine texture, mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
ME13	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
RS38	Balsam Fir-Black Spruce and Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
MS23	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, fine texture and mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
RE12	Black Spruce-lichen stand on thin to thick mineral deposit, medium texture, mesic drainage	< 2%	2.3%	< 2%	< 2%	< 2%	< 2%	< 2%
RE11	Black Spruce-lichen stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	< 2%	< 2%	2.2%	< 2%	< 2%	< 2%	< 2%
Rare	All ecological types that cover less than 2% of the area of the MU	11.9%	11.5%	9.3%	6.1%	8.1%	12.8%	6.2%

c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Ecological type		All MUs	085-62	087-62	087-63	087-64
Code	Description	(%)	(%)	(%)	(%)	(%)
RS22	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, mesic drainage	17.5%	< 2%	26.6%	18.1%	20.7%
RE22	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, mesic drainage	11.5%	< 2%	12.8%	3.0%	9.2%
RE39	Black Spruce-Sphagnum stand on thin to thick organic deposit, hydric drainage, ombrotrophic	11.3%	29.6%	9.5%	7.9%	8.2%
RE26	Black Spruce-moss or Ericaceous stand on thin to thick deposit, fine texture, subhydric drainage	7.3%	22.4%	< 2%	9.4%	11.4%
RS26	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, subhydric drainage	6.8%	2.3%	< 2%	16.4%	11.8%
RE25	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, subhydric drainage	6.5%	< 2%	11.8%	2.6%	2.9%
RE38	Black Spruce-Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	6.1%	15.1%	4.6%	5.5%	6.9%
RE21	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	5.8%	2.2%	8.8%	3.5%	2.1%
RE37	Black Spruce-Sphagnum stand on thin to thick mineral deposit, hydric drainage, ombrotrophic	4.2%	6.0%	3.6%	4.1%	5.0%
ME16	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, subhydric drainage	3.4%	< 2%	< 2%	< 2%	< 2%
RS23	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, mesic drainage	3.1%	4.2%	< 2%	5.5%	4.6%
RS25	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, subhydric drainage	2.3%	< 2%	4.3%	3.0%	3.5%
RS21	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, coarse texture, xeric to mesic drainage	2.1%	< 2%	3.7%	4.5%	< 2%
MS22	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, medium texture and mesic drainage	< 2%	< 2%	3.1%	4.3%	2.5%
RS20	Balsam Fir-Black Spruce stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	< 2%	2.4%
RE24	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, subhydric drainage	< 2%	< 2%	4.0%	< 2%	< 2%
RE20	Black Spruce-moss or Ericaceous stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	< 2%	2.1%

Ecological type		All MUs	085-62	087-62	087-63	087-64
Code	Description	(%)	(%)	(%)	(%)	(%)
RE23	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, fine texture, mesic drainage	< 2%	13.2%	< 2%	< 2%	2.1%
ME13	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RS38	Balsam Fir-Black Spruce and Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	< 2%	< 2%	< 2%	< 2%	< 2%
MS23	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, fine texture and mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RE12	Black Spruce-lichen stand on thin to thick mineral deposit, medium texture, mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RE11	Black Spruce-lichen stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
Rare	All ecological types that cover less than 2% of the area of the MU	11.9%	5.0%	7.1%	12.2%	4.5%

d) Adapted regime - UG Harricana-Nord local office

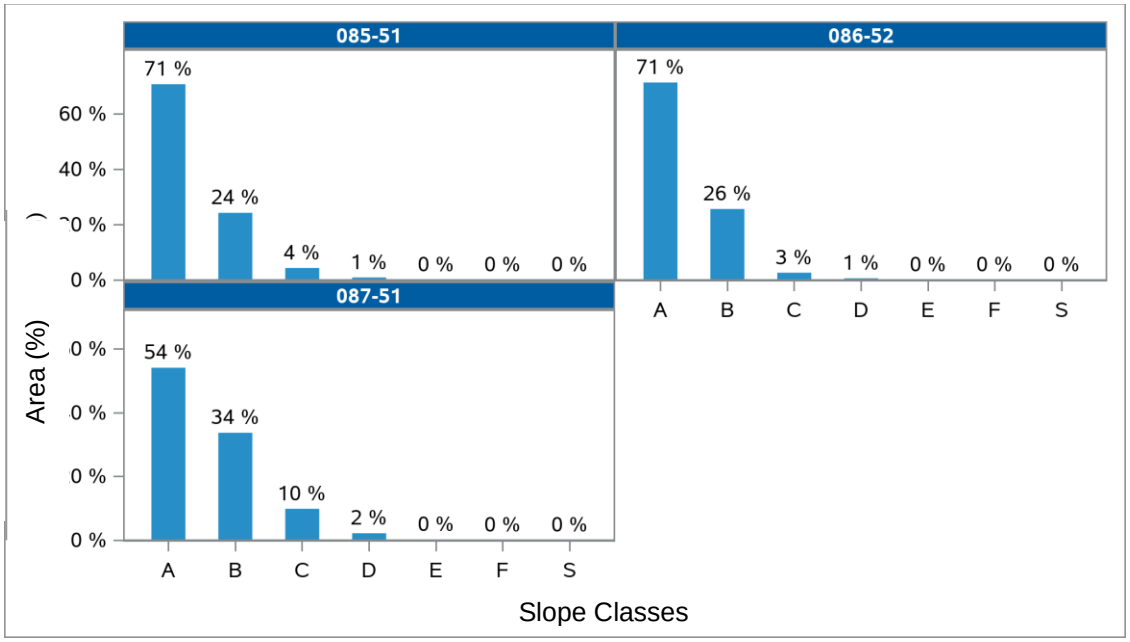
Ecological type		All MUs	086-63	086-64	086-65	086-66
Code	Description	(%)	(%)	(%)	(%)	(%)
RS22	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, mesic drainage	17.5%	< 2%	7.3%	13.1%	27.9%
RE22	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, mesic drainage	11.5%	3.8%	5.4%	6.9%	11.8%
RE39	Black Spruce-Sphagnum stand on thin to thick organic deposit, hydric drainage, ombrotrophic	11.3%	25.2%	17.7%	8.4%	8.9%
RE26	Black Spruce-moss or Ericaceous stand on thin to thick deposit, fine texture, subhydric drainage	7.3%	31.3%	22.7%	18.6%	10.7%
RS26	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, subhydric drainage	6.8%	2.4%	7.6%	15.9%	9.2%
RE25	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, medium texture, subhydric drainage	6.5%	< 2%	< 2%	< 2%	5.5%
RE38	Black Spruce-Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	6.1%	7.0%	8.7%	5.0%	6.5%
RE21	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	5.8%	< 2%	< 2%	< 2%	< 2%
RE37	Black Spruce-Sphagnum stand on thin to thick mineral deposit, hydric drainage, ombrotrophic	4.2%	6.8%	5.0%	4.1%	4.3%

Ecological type		All MUs	086-63	086-64	086-65	086-66
Code	Description	(%)	(%)	(%)	(%)	(%)
ME16	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, subhydric drainage	3.4%	< 2%	9.3%	2.8%	< 2%
RS23	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, fine texture, mesic drainage	3.1%	3.1%	3.1%	5.4%	< 2%
RS25	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, medium texture, subhydric drainage	2.3%	< 2%	< 2%	< 2%	4.9%
RS21	Balsam Fir-Black Spruce stand on thin to thick mineral deposit, coarse texture, xeric to mesic drainage	2.1%	< 2%	< 2%	< 2%	< 2%
MS22	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, medium texture and mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RS20	Balsam Fir-Black Spruce stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	< 2%	< 2%	2.2%	< 2%
RE24	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, coarse texture, subhydric drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RE20	Black Spruce-moss or Ericaceous stand on very thin deposit, varied texture, xeric to hydric drainage	< 2%	3.5%	< 2%	2.0%	< 2%
RE23	Black Spruce-moss or Ericaceous stand on thin to thick mineral deposit, fine texture, mesic drainage	< 2%	10.4%	3.4%	2.3%	< 2%
ME13	Black Spruce-Trembling Aspen stand on thin to thick deposit, fine texture, mesic drainage	< 2%	< 2%	3.7%	< 2%	< 2%
RS38	Balsam Fir-Black Spruce and Sphagnum stand on thin to thick organic or mineral deposit, hydric drainage, minerotrophic	< 2%	< 2%	< 2%	3.1%	< 2%
MS23	Balsam Fir-White (Paper) Birch stand on thin to thick deposit, fine texture and mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RE12	Black Spruce-lichen stand on thin to thick mineral deposit, medium texture, mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
RE11	Black Spruce-lichen stand on thin to thick mineral deposit, coarse texture, xeric or mesic drainage	< 2%	< 2%	< 2%	< 2%	< 2%
Rare	All ecological types that cover less than 2% of the area of the MU	11.9%	6.4%	6.0%	10.1%	10.3%

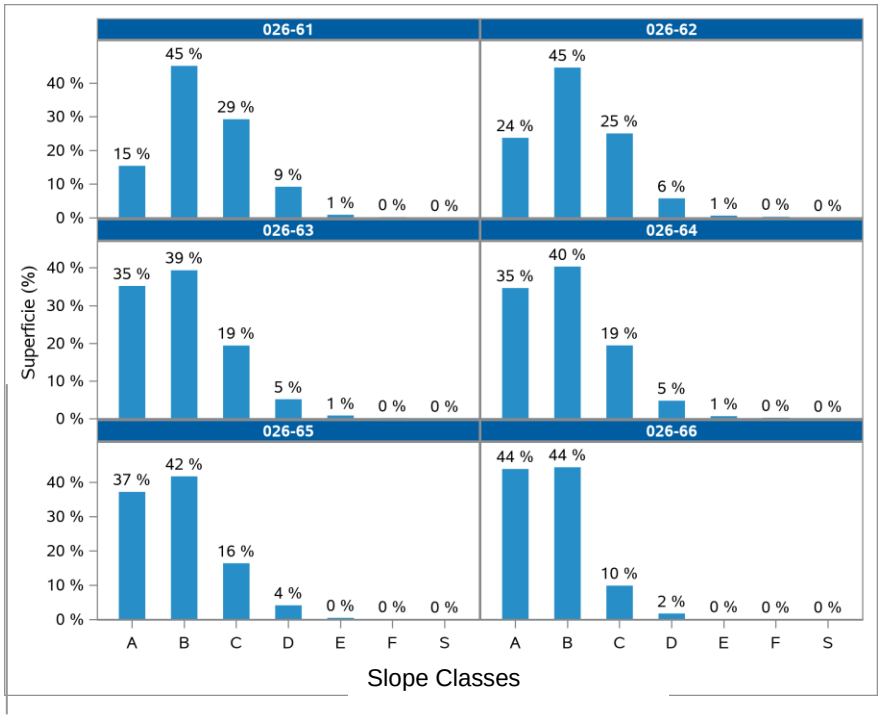
2.4.3 RELIEF AND SURFICIAL DEPOSITS

At stand level, the incline (%) of the land on which the majority of the stand is located is classified into different slope categories. There are seven slope categories in Québec, and forestry operations are permitted on five of those categories (A, B, C, D and E). Harvesting is not permitted on slopes falling into the other two categories (F and S).

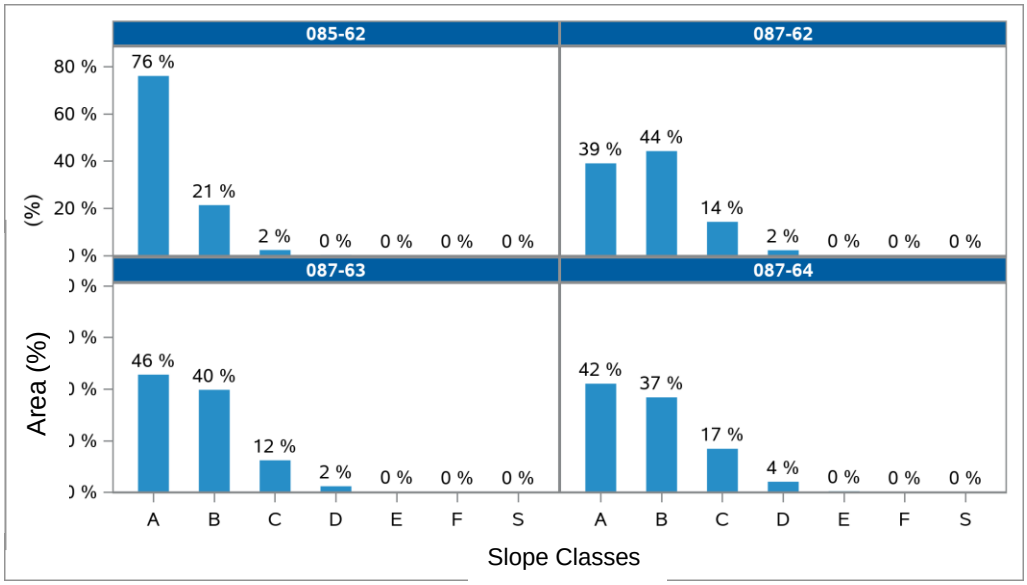
a) Standard regime



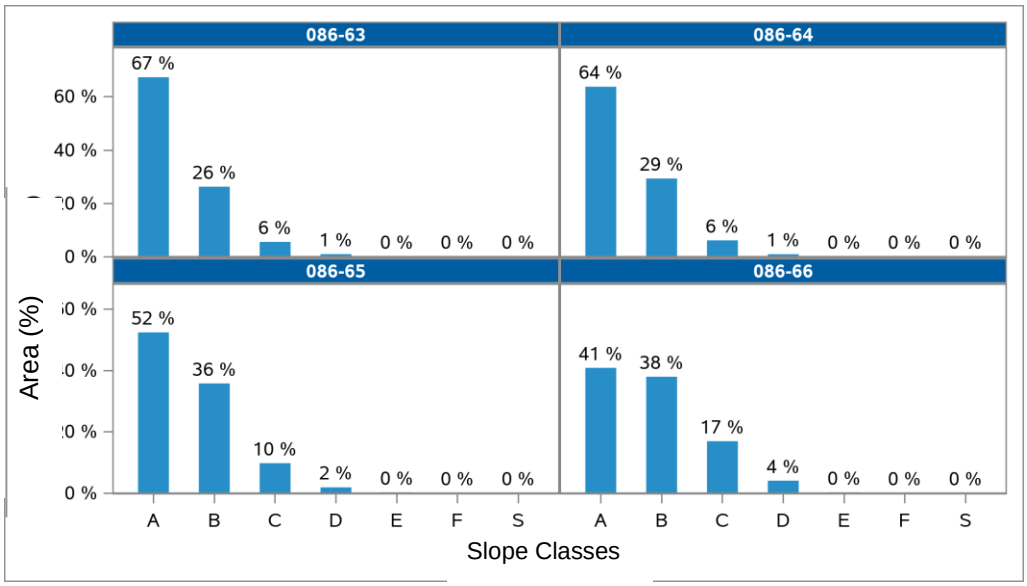
b) Adapted regime - UG Chibougamau local office



c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices



d) Adapted regime - UG Harricana-Nord local office



Accessible Slope Classes

- A Zero slope: incline less than 4%
- B Low slope: incline from 4% to 8%
- C Gentle slope: incline from 9% to 15%
- D Moderate slope: incline less 16% to 30%
- E Steep slope: incline from 31% to 40%

Inaccessible Slope Classes

- F Excessive slope: incline greater than 40%
- S Area surrounded by slops with an incline greater than 40%

Figure 3 Distribution of Slope Classes of Productive Forest Lands by MU

The surface deposit is the layer of loose material covering the rock. It may have been put in place as the glaciers receded at the end of the last glacial stage, or as a result of other processes associated with erosion and sedimentation. Its nature is evaluated from the landform, its position on the slope, soil texture and other elements. Surface deposit maps show the main surface deposit categories and their nature, thickness and distribution.

Please see:

Données Québec — Surficial Deposits

Table 12 – Distribution of the Main Surficial Deposits of Productive Forest Lands by MU

a) Standard regime

Surficial deposits		All MUs	085-51	086-52	087-51
Code	Description	(%)	(%)	(%)	(%)
1A	Glacial deposit, without special morphology, undifferentiated till	27.7%	2.9%	< 2%	10.7%
4GA	Lacustrine, glaciolacustrine deposit, (deepwater facies)	26.8%	39.4%	82.7%	51.2%
7T	Organic, thin organic deposit	13.0%	20.9%	10.0%	9.0%
1AY	Glacial deposit, without special morphology, undifferentiated till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	9.9%	3.4%	< 2%	11.0%
1AM	Glacial deposit, without special morphology, undifferentiated till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	3.7%	2.2%	< 2%	2.8%
2A	Fluvioglacial, juxtaglacial deposit	3.6%	< 2%	< 2%	3.7%
7E	Organic, thick organic deposit	2.7%	7.1%	< 2%	< 2%
1AA	Glacial deposit, without special morphology, clay matrix till	2.6%	13.8%	< 2%	< 2%
4GS	Lacustrine, glaciolacustrine deposit, (shallow water facies)	2.5%	3.1%	< 2%	5.3%
R1A	Glacial deposit, without special morphology, undifferentiated till, average thickness 0 to 50 cm with frequent rock outcrops	< 2%	< 2%	< 2%	< 2%
1BP	Glacial deposit, with morphology, disintegration moraine	< 2%	< 2%	< 2%	< 2%
2BE	Fluvioglacial, preglacial deposit, spreading	< 2%	< 2%	< 2%	< 2%
1BG	Glacial deposit, with morphology, De Geer moraine	< 2%	< 2%	< 2%	< 2%
1BD	Glacial deposit, with morphology, drumlins and drumlinoids	< 2%	< 2%	< 2%	< 2%
1BI	Glacial deposit, with morphology, interlobate moraine	< 2%	< 2%	< 2%	< 2%
1AAY	Glacial deposit, without special morphology, clay matrix till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	< 2%	< 2%	< 2%	< 2%
1AAM	Glacial deposit, without special morphology, clay matrix till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	< 2%	< 2%	< 2%	< 2%
Rare	All surficial deposits that cover less than 2% of the area of the MU	7.5%	7.2%	7.3%	6.3%

b) Adapted regime - UG Chibougamau local office

Surficial deposits		All MUs	026-61	026-62	026-63	026-64	026-65	026-66
Code	Description	(%)	(%)	(%)	(%)	(%)	(%)	(%)
1A	Glacial deposit, without special morphology, undifferentiated till	27.7%	54.1%	53.5%	39.2%	43.9%	46.5%	44.3%
4GA	Lacustrine, glaciolacustrine deposit, (deepwater facies)	26.8%	< 2%	< 2%	< 2%	< 2%	2.2%	< 2%
7T	Organic, thin organic deposit	13.0%	5.2%	7.2%	12.4%	12.8%	13.1%	14.6%
1AY	Glacial deposit, without special morphology, undifferentiated till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	9.9%	15.7%	11.2%	11.1%	14.1%	12.7%	13.9%
1AM	Glacial deposit, without special morphology, undifferentiated till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	3.7%	5.0%	4.9%	6.5%	5.1%	4.6%	3.6%
2A	Fluvioglacial, juxtaglacial deposit	3.6%	6.1%	5.4%	9.4%	7.3%	4.4%	8.7%
7E	Organic, thick organic deposit	2.7%	< 2%	< 2%	3.1%	3.8%	4.1%	2.1%
1AA	Glacial deposit, without special morphology, clay matrix till	2.6%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
4GS	Lacustrine, glaciolacustine deposit, (shallow water facies)	2.5%	< 2%	< 2%	< 2%	< 2%	3.0%	2.2%
R1A	Glacial deposit, without special morphology, undifferentiated till, average thickness 0 to 50 cm with frequent rock outcrops	< 2%	< 2%	< 2%	3.3%	2.1%	< 2%	< 2%
1BP	Glacial deposit, with morphology, disintegration moraine	< 2%	6.7%	7.8%	< 2%	2.0%	< 2%	< 2%
2BE	Fluvioglacial, preglacial deposit, spreading	< 2%	< 2%	2.5%	3.3%	4.3%	< 2%	4.6%
1BG	Glacial deposit, with morphology, De Geer moraine	< 2%	< 2%	< 2%	5.8%	< 2%	4.4%	< 2%
1BD	Glacial deposit, with morphology, drumlins and drumlinoids	< 2%	< 2%	2.1%	< 2%	< 2%	< 2%	< 2%
1BI	Glacial deposit, with morphology, interlobate moraine	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
1AAY	Glacial deposit, without special morphology, clay matrix till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
1AAM	Glacial deposit, without special morphology, clay matrix till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
Rare	All surficial deposits that cover less than 2% of the area of the MU	7.5%	7.1%	5.5%	5.8%	4.6%	4.9%	5.9%

c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Surficial deposits		All MUs	085-62	087-62	087-63	087-64
Code	Description	(%)	(%)	(%)	(%)	(%)
1A	Glacial deposit, without special morphology, undifferentiated till	27.7%	< 2%	44.2%	19.9%	25.2%
4GA	Lacustrine, glaciolacustrine deposit, (deepwater facies)	26.8%	< 2%	4.6%	42.7%	39.9%
7T	Organic, thin organic deposit	13.0%	33.0%	12.3%	10.4%	10.4%
1AY	Glacial deposit, without special morphology, undifferentiated till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	9.9%	< 2%	13.7%	8.3%	12.2%
1AM	Glacial deposit, without special morphology, undifferentiated till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	3.7%	< 2%	3.6%	4.8%	4.5%
2A	Fluvioglacial, juxtaglacial deposit	3.6%	< 2%	7.1%	2.8%	< 2%
7E	Organic, thick organic deposit	2.7%	8.8%	< 2%	< 2%	< 2%
1AA	Glacial deposit, without special morphology, clay matrix till	2.6%	42.4%	< 2%	< 2%	< 2%
4GS	Lacustrine, glaciolacustrine deposit, (shallow water facies)	2.5%	< 2%	7.6%	6.4%	2.1%
R1A	Glacial deposit, without special morphology, undifferentiated till, average thickness 0 to 50 cm with frequent rock outcrops	< 2%	< 2%	< 2%	< 2%	2.5%
1BP	Glacial deposit, with morphology, disintegration moraine	< 2%	< 2%	< 2%	< 2%	< 2%
2BE	Fluvioglacial, preglacial deposit, spreading	< 2%	< 2%	< 2%	< 2%	< 2%
1BG	Glacial deposit, with morphology, De Geer moraine	< 2%	< 2%	< 2%	< 2%	< 2%
1BD	Glacial deposit, with morphology, drumlins and drumlinoids	< 2%	< 2%	< 2%	< 2%	< 2%
1BI	Glacial deposit, with morphology, interlobate moraine	< 2%	2.7%	< 2%	< 2%	< 2%
1AAY	Glacial deposit, without special morphology, clay matrix till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	< 2%	5.8%	< 2%	< 2%	< 2%
1AAM	Glacial deposit, without special morphology, clay matrix till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	< 2%	4.0%	< 2%	< 2%	< 2%
Rare	All surficial deposits that cover less than 2% of the area of the MU	7.5%	3.4%	6.9%	4.8%	3.2%

d) Adapted regime - UG Harricana-Nord local office

Surficial deposits		All MUs	086-63	086-64	086-65	086-66
Code	Description	(%)	(%)	(%)	(%)	(%)
1A	Glacial deposit, without special morphology, undifferentiated till	27.7%	2.6%	6.0%	14.5%	36.5%
4GA	Lacustrine, glaciolacustrine deposit, (deepwater facies)	26.8%	36.9%	56.8%	56.3%	29.5%
7T	Organic, thin organic deposit	13.0%	25.3%	22.8%	12.4%	11.1%
1AY	Glacial deposit, without special morphology, undifferentiated till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	9.9%	2.4%	5.6%	6.9%	13.1%
1AM	Glacial deposit, without special morphology, undifferentiated till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	3.7%	2.8%	3.5%	4.0%	3.2%
2A	Fluvioglacial, juxtaglacial deposit	3.6%	< 2%	< 2%	< 2%	< 2%
7E	Organic, thick organic deposit	2.7%	6.4%	2.6%	< 2%	< 2%
1AA	Glacial deposit, without special morphology, clay matrix till	2.6%	16.3%	< 2%	< 2%	< 2%
4GS	Lacustrine, glaciolacustrine deposit, (shallow water facies)	2.5%	< 2%	< 2%	< 2%	< 2%
R1A	Glacial deposit, without special morphology, undifferentiated till, average thickness 0 to 50 cm with frequent rock outcrops	< 2%	2.1%	< 2%	3.5%	< 2%
1BP	Glacial deposit, with morphology, disintegration moraine	< 2%	< 2%	< 2%	< 2%	< 2%
2BE	Fluvioglacial, preglacial deposit, spreading	< 2%	< 2%	< 2%	< 2%	< 2%
1BG	Glacial deposit, with morphology, De Geer moraine	< 2%	< 2%	< 2%	< 2%	< 2%
1BD	Glacial deposit, with morphology, drumlins and drumlinoids	< 2%	< 2%	< 2%	< 2%	< 2%
1BI	Glacial deposit, with morphology, interlobate moraine	< 2%	< 2%	< 2%	< 2%	< 2%
1AAY	Glacial deposit, without special morphology, clay matrix till, average thickness 50 cm to 1 m with rare to very rare rock outcrops	< 2%	< 2%	< 2%	< 2%	< 2%
1AAM	Glacial deposit, without special morphology, clay matrix till, average thickness 25 to 50 cm with rare to infrequent rock outcrops	< 2%	< 2%	< 2%	< 2%	< 2%
Rare	All surficial deposits that cover less than 2% of the area of the MU	7.5%	5.2%	2.8%	2.5%	6.8%

2.5 RESOURCE PROFILE

The many resources available in the forest are conducive to multiple uses and contribute to the diversification of economic activity. The forests change continually as a result of natural disturbances and human interventions that shape the forest ecosystems.

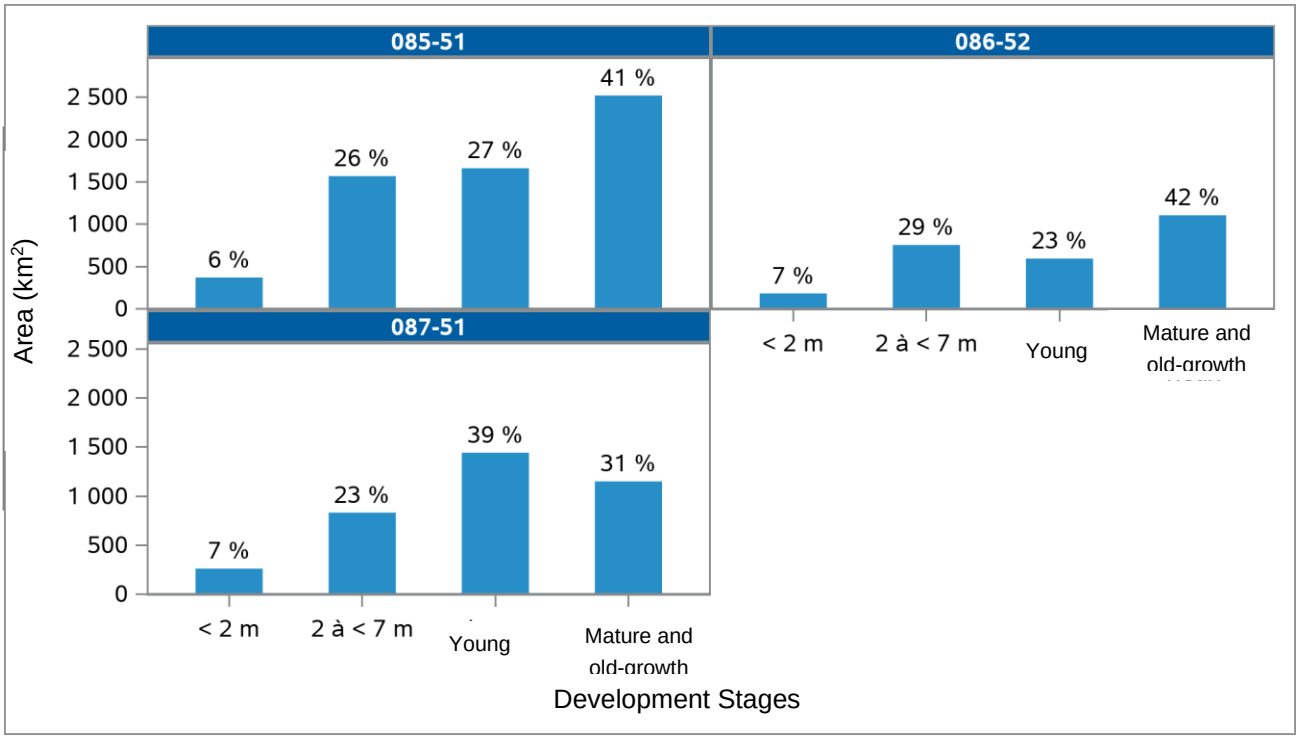
2.5.1 TIMBER RESOURCES

Forest composition is a key element in the choice of forest development strategies. The distribution of different types of canopies, combined with different development stages, present challenges for integrated, synergic development.

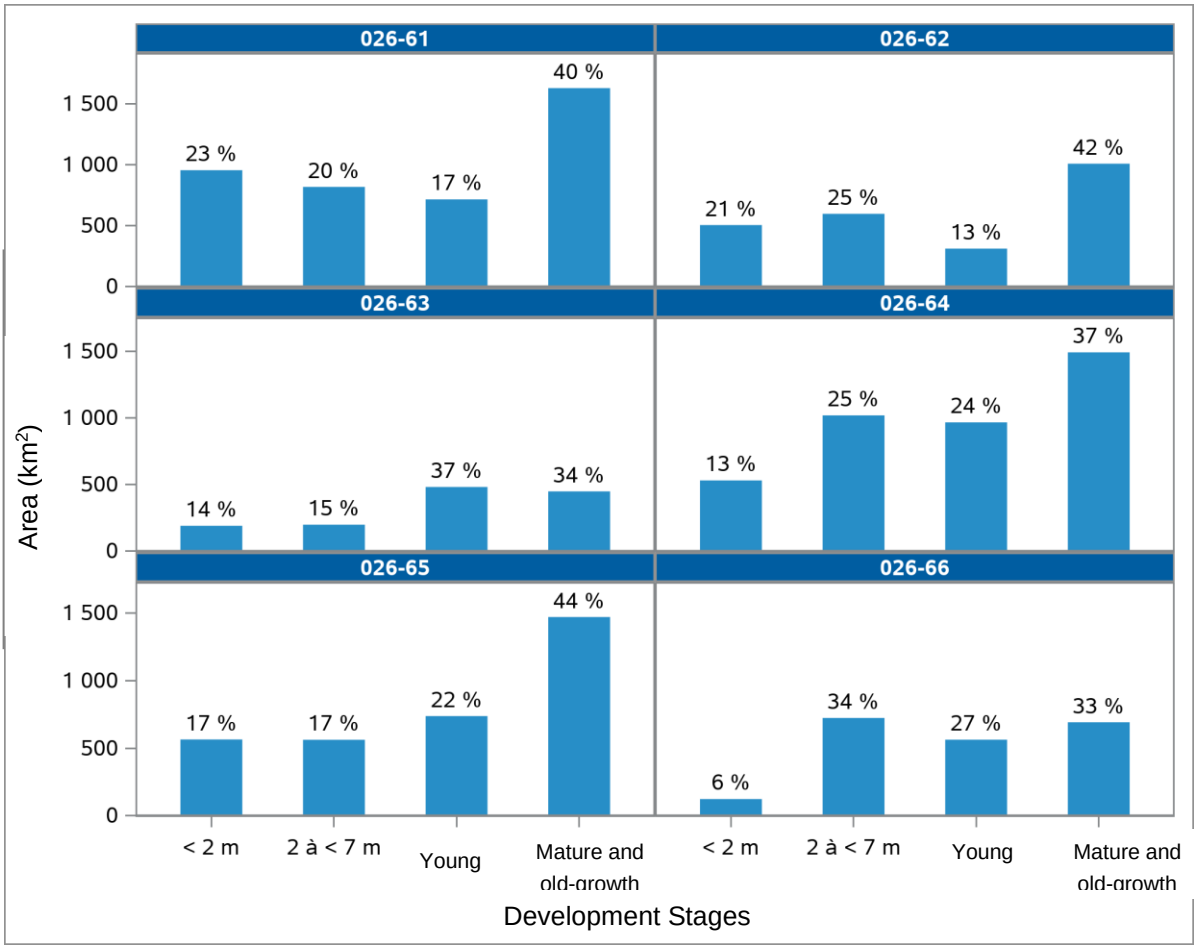
2.5.1.1 Development stages

The percentage of the area occupied by each development stage indicates the forest's maturity and evolution. Depending on its origins, height and growth, a forest stand can be classified as regenerating (< 2 m), regenerated (from 2 to 7 m), young (> 7 m and not yet at maturity), mature and old-growth.

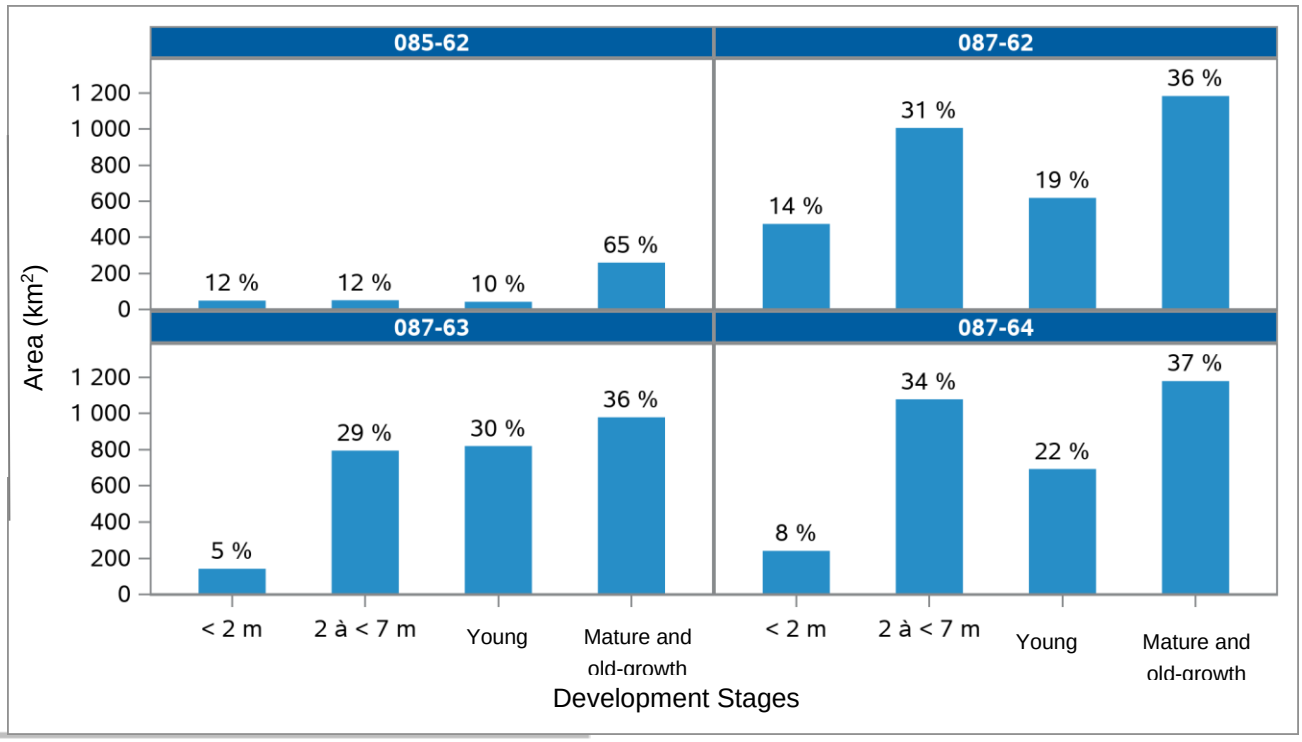
a) Standard regime



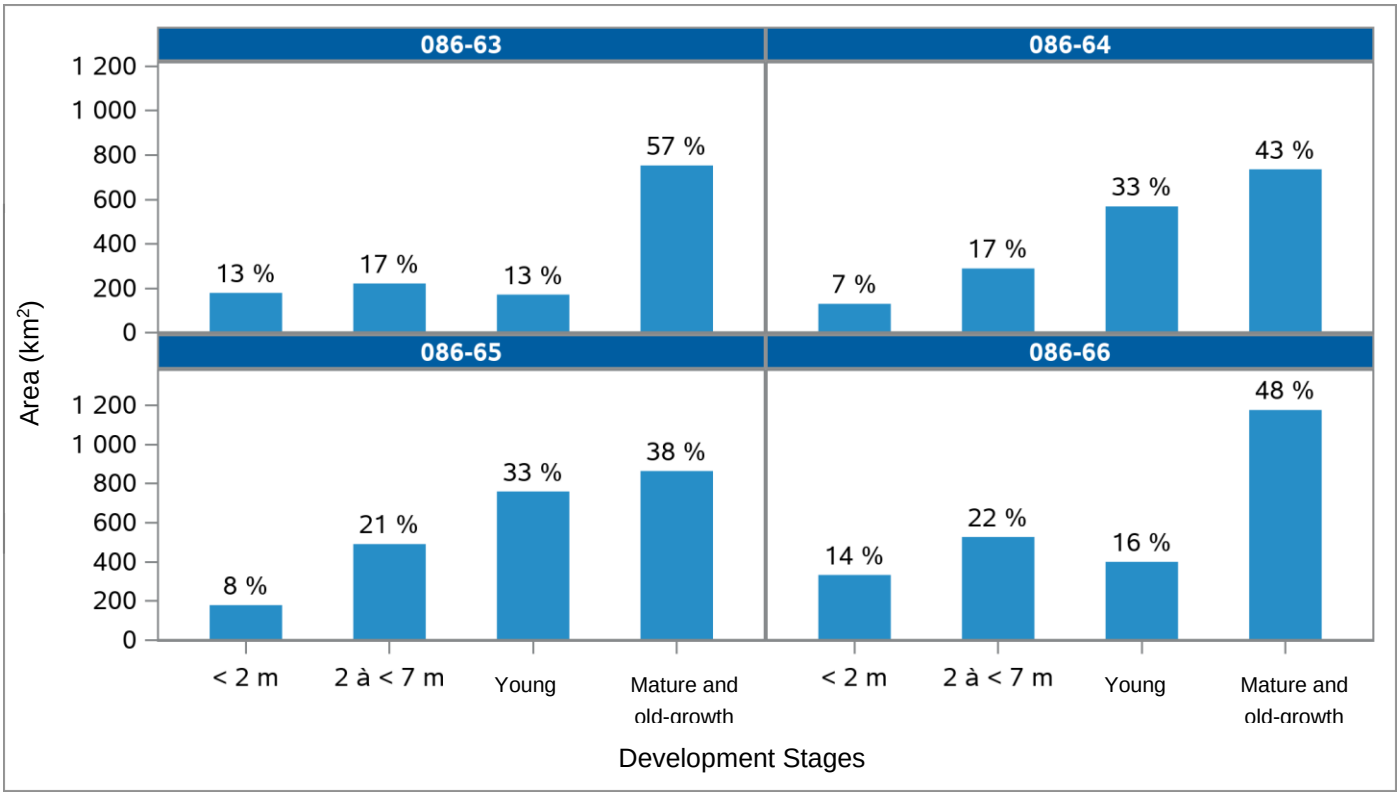
b) Adapted regime - UG Chibougamau local office



c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices



d) Adapted regime - UG Harricana-Nord local office



Description of Development Stages

< 2 m	Regenerating forest less than 2 m tall and an undetermined type of cover
2 to < 7 m	Regenerated forest between 2 m and less than 7 m tall
Young	Forest 7 m and taller with increasing mean annual growth
Mature and old-growth	Forest 7 m and taller with decreasing or negative annual growth

Figure 4 Distribution of Development Stages by MU

2.5.1.2 Age class

Stand age class denotes two characteristics, namely the stand's structure and the age of the trees that make up the stand. Stand structure may be regular (single storey), irregular (several tree heights) or two-storied (two separate storeys). In a regular structure, stands composed of trees with an age difference of no more than 20 years are described as "even-aged", and age classes (10 years, 30 years, 50 years, etc.) are used. Stands composed of trees from several age classes are described as "uneven-aged". Irregular and uneven-aged stands are divided into young stands (≤ 80 years) and old-growth stands (> 80 years).

Table 13 Area of age classes by MU

a) Standard regime

Age class		085-51		086-52		087-51	
Code	Name	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
<Nil>	Regenerating	317	5.2%	133	5.1%	216	5.9%
10	Less than 21 years	781	12.8%	465	17.7%	618	16.8%
30	21 to 40 years	1,652	27.0%	818	31.2%	1,154	31.4%
50	41 to 60 years	412	6.7%	55	2.1%	263	7.2%
70	61 to 80 years	588	9.6%	81	3.1%	402	11.0%
90	81 to 100 years	698	11.4%	672	25.6%	590	16.1%
120	Over 100 years	1,274	20.9%	332	12.7%	187	5.1%
JIN	Uneven-aged young	20	0.3%	4	0.2%	37	1.0%
VIN	Uneven-aged old -growth	67	1.1%	14	0.5%	105	2.9%
JIR	Irregular young	48	0.8%	4	0.2%	27	0.7%
VIR	Irregular old-growth	252	4.1%	45	1.7%	73	2.0%

b) Adapted regime - UG Chibougamau local office

Age class		026-61		026-62		026-63		026-64		026-65		026-66	
Code	Name	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
<Nil>	Regenerating	911	22.2%	464	19.2%	187	14.3%	507	12.7%	550	16.5%	96	4.6%
10	Less than 21 years	576	14.0%	271	11.2%	43	3.3%	321	8.0%	135	4.1%	275	13.2%
30	21 to 40 years	462	11.2%	521	21.6%	263	20.1%	1,012	25.3	687	20.6%	687	32.8%
50	41 to 60 years	268	6.5%	73	3.0%	58	4.5%	275	6.9%	81	2.4%	30	1.4%
70	61 to 80 years	263	6.4%	67	2.8%	325	24.9%	363	9.1%	408	12.3%	298	14.2%
90	81 to 100 years	456	11.1%	47	2.0%	166	12.7%	453	11.3%	738	22.2%	131	6.3%
120	Over 100 years	889	21.6%	786	32.6%	168	12.8%	764	19.1%	541	16.2%	366	17.5%
JIN	Uneven-aged young	17	0.4%	12	0.5%	5	0.4%	43	1.1%	12	0.4%	25	1.2%
VIN	Uneven-aged old -growth	103	2.5%	49	2.0%	25	1.9%	84	2.1%	70	2.1%	62	3.0%
JIR	Irregular young	8	0.2%	3	0.1%	4	0.3%	18	0.4%	6	0.2%	13	0.6%
VIR	Irregular old-growth	160	3.9%	121	5.0%	65	4.9%	161	4.0%	101	3.0%	110	5.3%

c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Age class		085-62		087-62		087-63		087-64	
Code	Name	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
<Nil>	Regenerating	47	11.9%	436	13.3%	113	4.1%	207	6.5%
10	Less than 21 years	44	11.1%	770	23.5%	309	11.3%	424	13.3%
30	21 to 40 years	1	0.3%	519	15.8%	1,039	38.1%	1,080	33.9%
50	41 to 60 years	9	2.4%	67	2.0%	161	5.9%	141	4.4%
70	61 to 80 years	42	10.6%	279	8.5%	93	3.4%	134	4.2%
90	81 to 100 years	51	13.0%	529	16.2%	567	20.8%	501	15.7%
120	Over 100 years	155	39.1%	396	12.1%	271	9.9%	472	14.8%
JIN	Uneven-aged young	0	0.0%	24	0.7%	22	0.8%	13	0.4%
VIN	Uneven-aged old -growth	0	0.0%	84	2.6%	26	1.0%	71	2.2%
JIR	Irregular young	6	1.4%	20	0.6%	24	0.9%	14	0.4%
VIR	Irregular old-growth	40	10.1%	152	4.6%	103	3.8%	127	4.0%

d) Adapted regime - UG Harricana-Nord local office

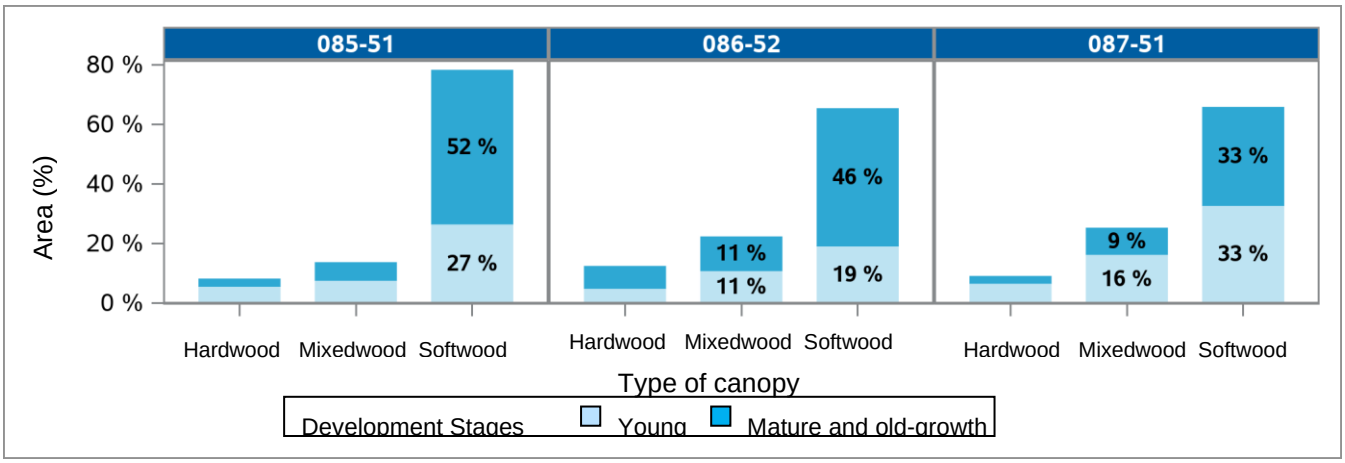
Age class		086-63		086-64		086-65		086-66		Total MU	
Code	Name	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)	(Km²)	(%)
<Nil>	Regenerating	175	13.2%	123	7.2%	158	6.9%	317	13.0%	4,958	10.5%
10	Less than 21 years	144	10.9%	163	9.5%	124	5.4%	318	13.1%	5,783	12.3%
30	21 to 40 years	79	6.0%	150	8.7%	585	25.6%	283	11.7%	10,991	23.4%
50	41 to 60 years	11	0.8%	10	0.6%	67	2.9%	146	6.0%	2,125	4.5%
70	61 to 80 years	151	11.4%	551	32.1%	487	21.3%	176	7.3%	4,709	10.0%
90	81 to 100 years	132	10.0%	420	24.4%	388	17.0%	341	14.0%	6,881	14.6%
120	Over 100 years	536	40.6%	222	12.9%	341	14.9%	657	27.0%	8,354	17.8%
JIN	Uneven-aged young	1	0.1%	1	0.0%	18	0.8%	15	0.6%	268	0.6%
VIN	Uneven-aged old -growth	7	0.5%	31	1.8%	71	3.1%	117	4.8%	985	2.1%
JIR	Irregular young	9	0.7%	3	0.2%	10	0.4%	3	0.1%	219	0.5%
VIR	Irregular old-growth	76	5.7%	45	2.6%	38	1.7%	57	2.3%	1,724	3.7%

2.5.1.3 Forest canopy

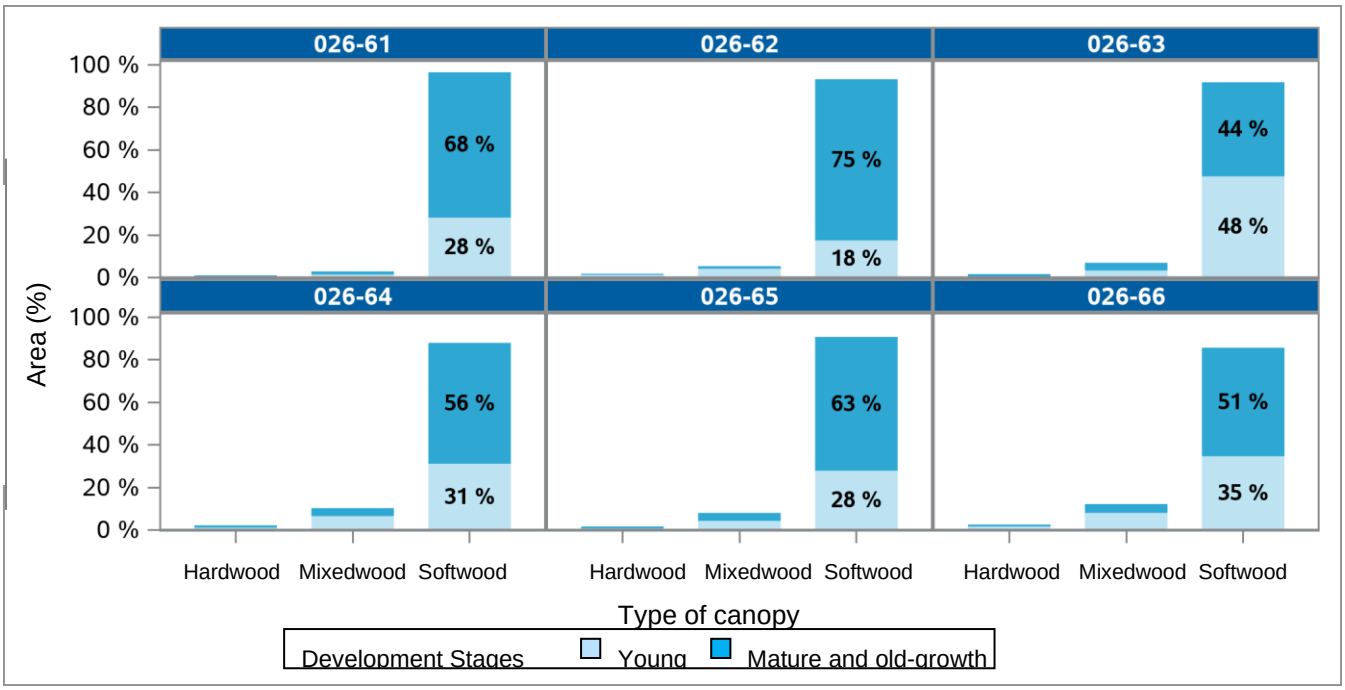
The distribution and mix of different types of forest canopies reveal trends in the composition of the region's forest. The percentage of a stand's land area occupied by softwood species determines the type of canopy (softwood, mixedwood or hardwood). The canopy is softwood when more than 75% of the land area is occupied by softwood species, and hardwood when the figure is less than 25%. Between 25% and 75%, the canopy is considered to be mixedwood. The land area of a stand is the total of the areas occupied by merchantable trees measuring 1.3 m or more. It is expressed in square metres.

The figure 5 illustrates a great abundance of predominantly softwood forests from south to north. However, there is a lower proportion of mixedwood stands and predominantly intolerant hardwood stands in most of the MUs of the region.

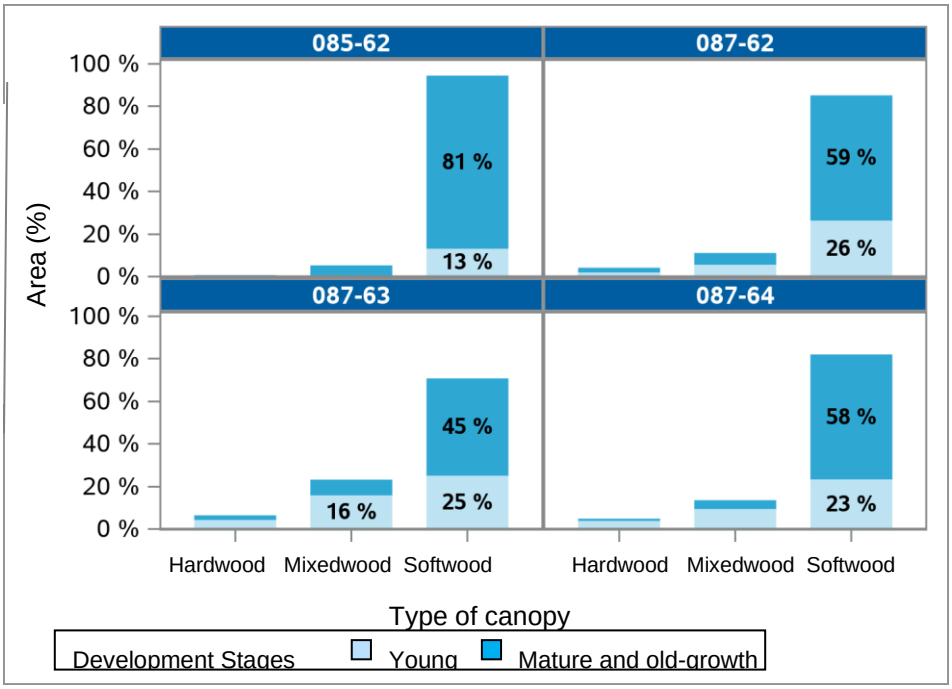
a) Standard regime



b) Adapted regime - UG Chibougamau local office



c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices



d) Adapted regime - UG Harricana-Nord local office

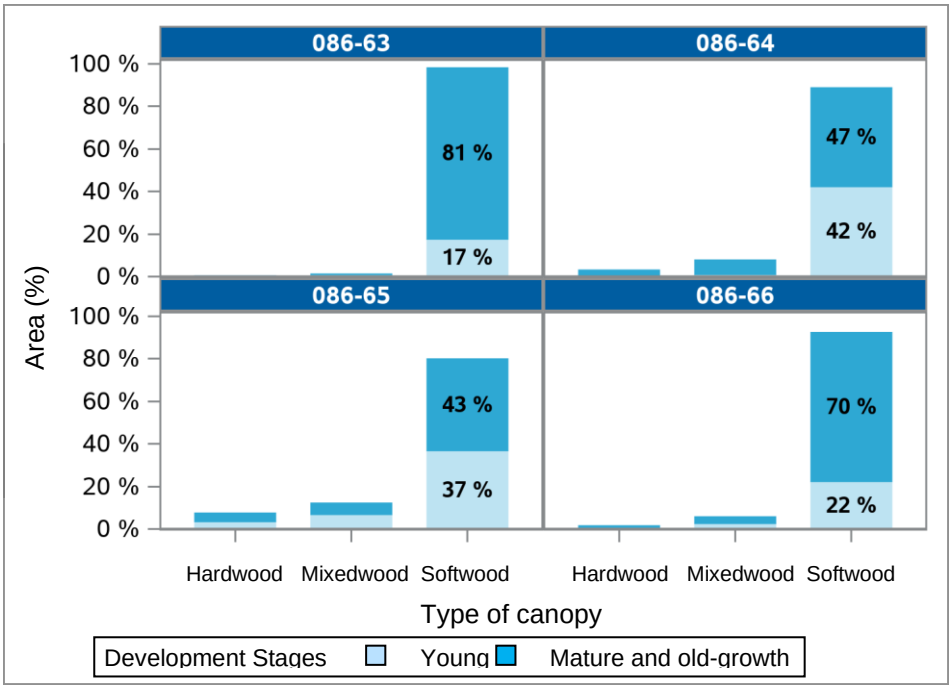
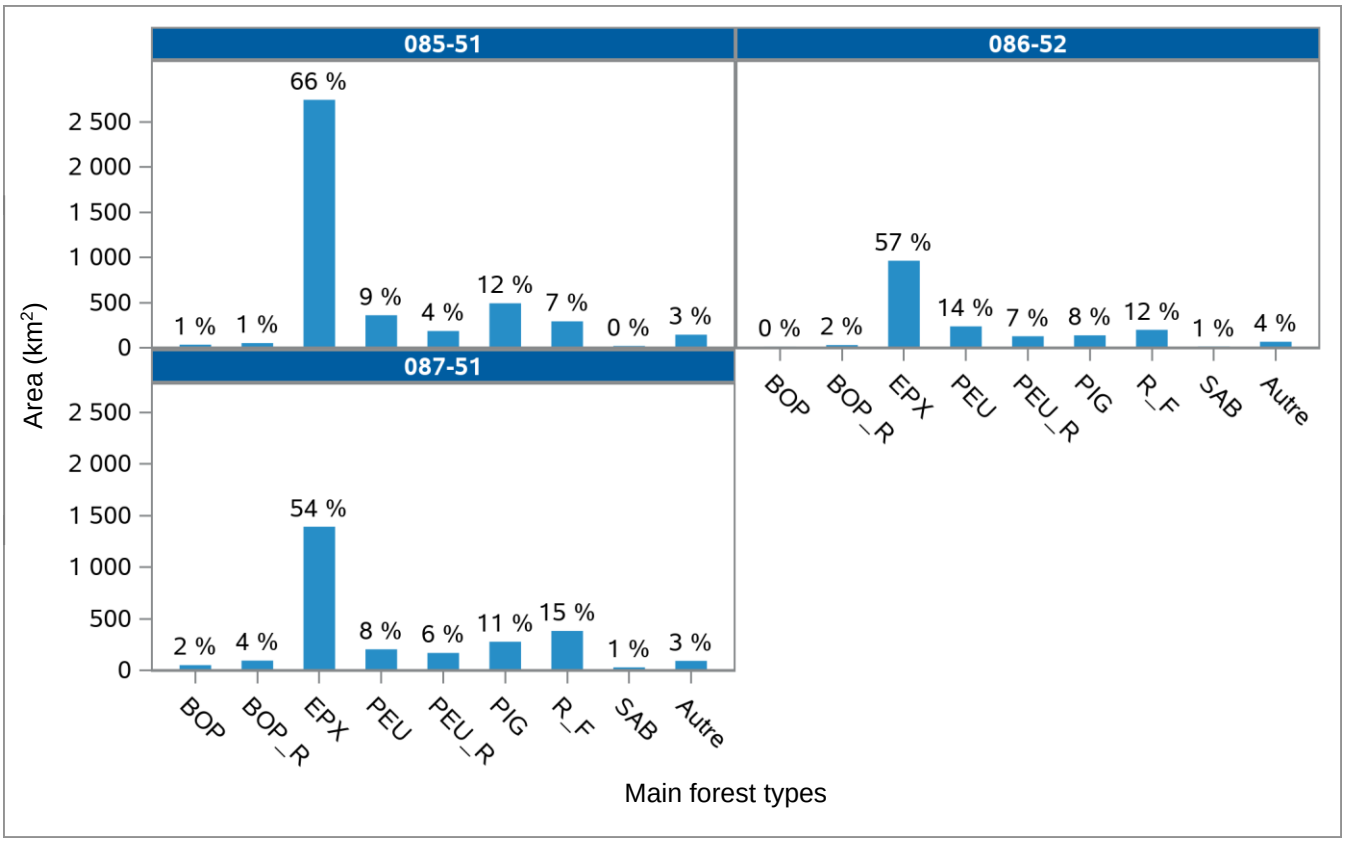


Figure 5 Distribution of Types of Cover and Forest Development Stages 7 m and Taller by MU

2.5.1.4 Forest type

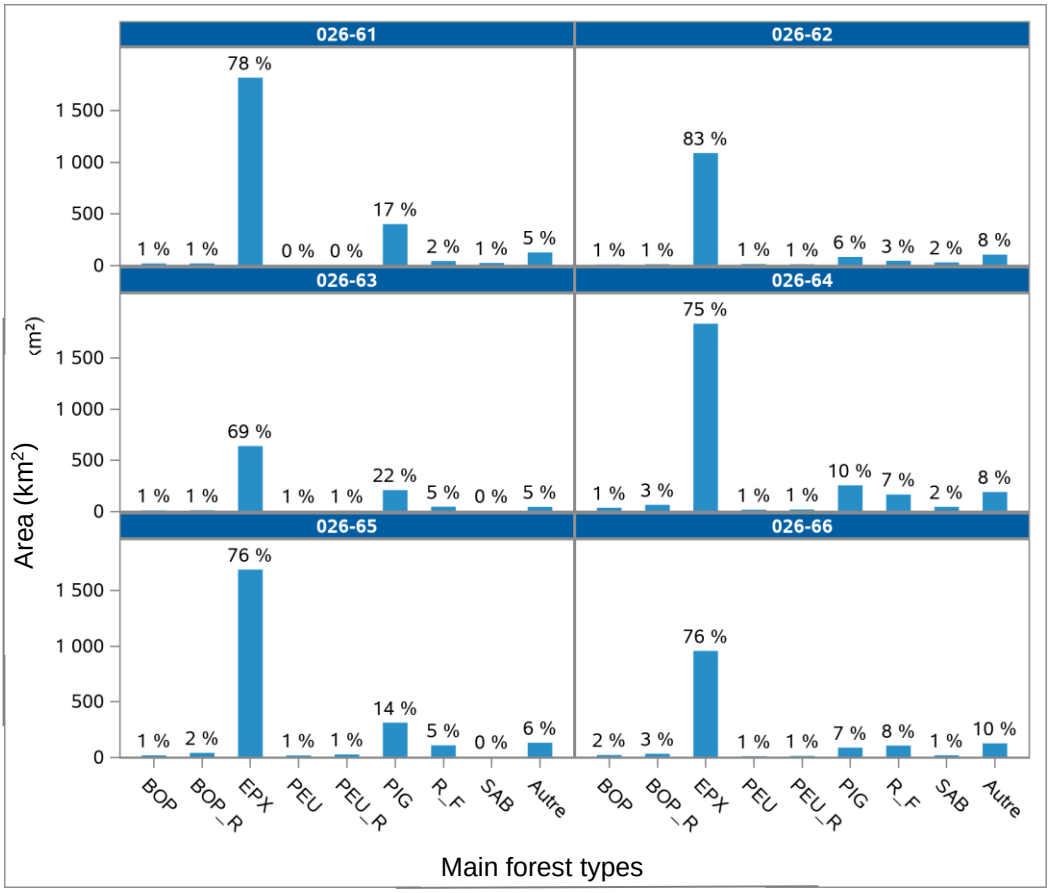
The figure 6 presents the distribution of the main forest types[1] used for forest development. The table provides additional information on the types of forests that grow in proximity to one another. Each main type is distinguished by its dominant species. These species may be used for different purposes and some may be difficult to market, depending on the industrial structure.

a) Standard regime

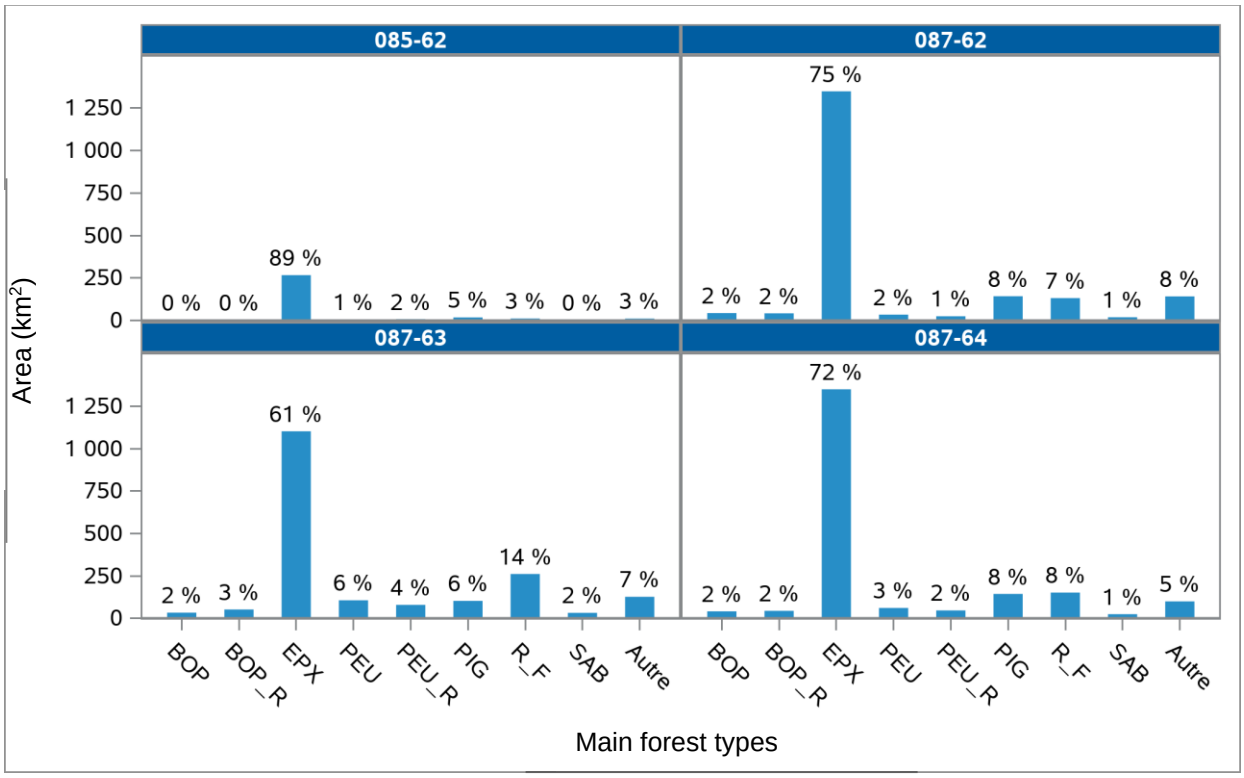


[1] The major forest types correspond to a synthesis of forest types. They constitute a grouping of different species compositions according to the detailed species information of the ecoforest map. These groupings are defined by the Bureau du forestier en chef (BFEC). Adaptations relative to what is presented here may be made by the BFEC in certain MUs. The official information is the information considered in the allowable cut calculation.

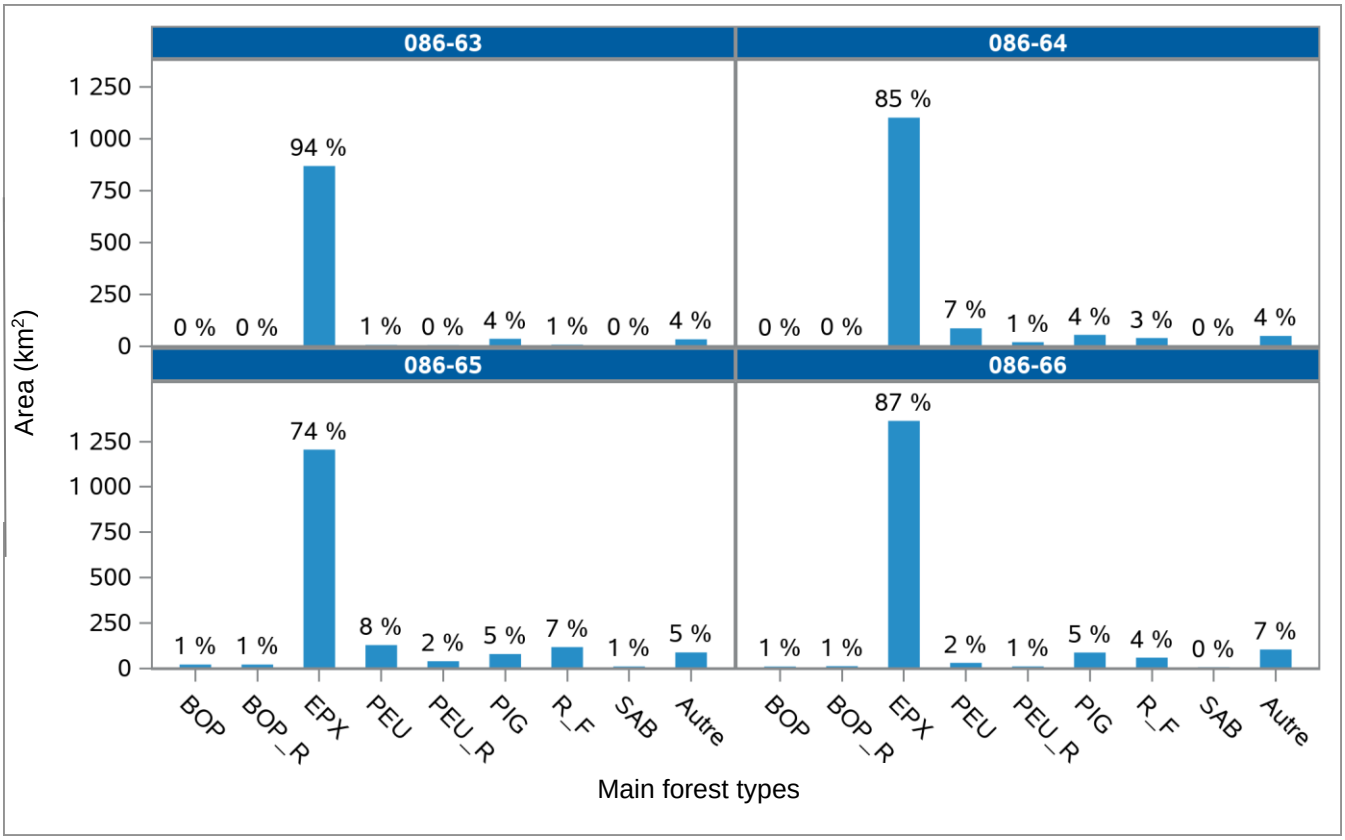
b) Adapted regime - UG Chibougamau local office



c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices



d) Adapted regime - UG Harricana-Nord local office



Description of the major forest types:

BOP	White (Paper) Birch stands
BOP_R	Paper Birch-softwood stands
Spruces (EPX)	Spruce stands
Poplars (PEU)	Poplar stands
PEU_R	Poplar-softwood stands
Jack pine (PIG)	Jack Pine stands
R_F	Softwood-hardwood
SAB	Balsam Fir stands
Other	All major forest types that cover less than 2% of the area of the MU.

Figure 6 Distribution of Forest Types in Forest 7 m and Taller by MU

Table 14 Distribution of Forest Types in Forest 7 m and Taller by MU

a) Standard regime

Forest type*		All MUs	085-51	086-52	087-51
Code	Description	(%)	(%)	(%)	(%)
Ep	Spruce stands	59.5%	54.9%	47.4%	39.3%
EpRx	Spruce-softwood stands	12.5%	10.8%	9.2%	14.4%
Pg	Jack Pine stands	4.9%	6.6%	4.5%	4.7%
EpFx	Spruce-hardwood stands	4.7%	4.3%	6.9%	8.1%
PgRx	Jack Pine-softwood stands	4.6%	5.1%	3.4%	5.8%
PeFx	Poplar-hardwood stands	4.3%	8.5%	13.8%	7.8%
PeRx	Poplar-softwood stands	2.5%	4.4%	7.3%	6.4%
BpRx	White (Paper) Birch-softwood stands	< 2%	< 2%	< 2%	3.5%
SbFx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	3.7%
PgFx	Jack Pine-softwood stands	< 2%	2.1%	3.7%	2.8%
BpFx	White (Paper) Birch-hardwood stands	< 2%	< 2%	< 2%	< 2%
SbRx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	< 2%
Rare	All forest types that cover less than 2% of the area of the MU.	6.8%	3.4%	3.7%	3.4%

b) Adapted regime - UG Chibougamau local office

Forest type*		All MUs	026-61	026-62	026-63	026-64	026-65	026-66
Code	Description	(%)	(%)	(%)	(%)	(%)	(%)	(%)
Ep	Spruce stands	59.5%	64.3%	74.3%	52.7%	60.4%	57.4%	59.2%
EpRx	Spruce-softwood stands	12.5%	13.3%	8.4%	16.2%	14.2%	18.9%	17.2%
Pg	Jack Pine stands	4.9%	10.7%	4.6%	13.4%	5.4%	6.0%	< 2%
EpFx	Spruce-hardwood stands	4.7%	< 2%	2.6%	4.0%	4.8%	3.6%	6.2%
PgRx	Jack Pine-softwood stands	4.6%	6.4%	< 2%	9.0%	4.9%	8.1%	4.9%
PeFx	Poplar-hardwood stands	4.3%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
PeRx	Poplar-softwood stands	2.5%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
BpRx	White (Paper) Birch-softwood stands	< 2%	< 2%	< 2%	< 2%	2.6%	< 2%	2.6%
SbFx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
PgFx	Jack Pine-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
BpFx	White (Paper) Birch-hardwood stands	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%	< 2%
SbRx	Balsam Fir-softwood stands	< 2%	< 2%	2.2%	< 2%	< 2%	< 2%	< 2%
Rare	All forest types that cover less than 2% of the area of the MU.	6.8%	5.4%	7.9%	4.7%	7.7%	5.9%	10.0%

* Grouping of different species compositions according to the detailed species information of the ecoforest map. This grouping is defined by the Bureau du forestier en chef (BFEC). Adaptations to what is presented here may be made by the BFEC in certain MUs. The official information is the information considered in the allowable cut calculation.

c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Forest type*		All MUs	085-62	087-62	087-63	087-64
Code	Description	(%)	(%)	(%)	(%)	(%)
Ep	Spruce stands	59.5%	79.1%	60.0%	47.4%	60.2%
EpRx	Spruce-softwood stands	12.5%	9.6%	15.0%	13.9%	12.0%
Pg	Jack Pine stands	4.9%	2.8%	2.7%	2.4%	4.6%
EpFx	Spruce-hardwood stands	4.7%	2.9%	4.9%	9.3%	5.2%
PgRx	Jack Pine-softwood stands	4.6%	2.5%	5.1%	3.2%	3.0%
PeFx	Poplar-hardwood stands	4.3%	< 2%	< 2%	5.8%	3.1%
PeRx	Poplar-softwood stands	2.5%	< 2%	< 2%	4.3%	2.4%
BpRx	White (Paper) Birch-softwood stands	< 2%	< 2%	2.2%	2.8%	2.2%
SbFx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	4.0%	< 2%
PgFx	Jack Pine-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%
BpFx	White (Paper) Birch-hardwood stands	< 2%	< 2%	2.3%	< 2%	2.1%
SbRx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%
Rare	All forest types that cover less than 2% of the area of the MU.	6.8%	3.0%	7.8%	6.9%	5.2%

d) Adapted regime - UG Harricana-Nord local office

Forest type*		All MUs	086-63	086-64	086-65	086-66
Code	Description	(%)	(%)	(%)	(%)	(%)
Ep	Spruce stands	59.5%	89.8%	77.5%	65.4%	75.1%
EpRx	Spruce-softwood stands	12.5%	4.4%	7.0%	8.9%	11.5%
Pg	Jack Pine stands	4.9%	2.3%	< 2%	2.2%	< 2%
EpFx	Spruce-hardwood stands	4.7%	< 2%	2.5%	5.3%	3.3%
PgRx	Jack Pine-softwood stands	4.6%	< 2%	2.7%	2.6%	3.5%
PeFx	Poplar-hardwood stands	4.3%	< 2%	6.5%	7.9%	< 2%
PeRx	Poplar-softwood stands	2.5%	< 2%	< 2%	2.4%	< 2%
BpRx	White (Paper) Birch-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%
SbFx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%
PgFx	Jack Pine-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%

* Grouping of different species compositions according to the detailed species information of the ecoforest map. This grouping is defined by the Bureau du forestier en chef (BFEC). Adaptations to what is presented here may be made by the BFEC in certain MUs. The official information is the information considered in the allowable cut calculation. † 7 m and taller only, the volume was not assessed in the forest under 7 m. ‡ Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU. § Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU. ** Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU. [6] An SEG permit is a permit issued by the MFFP for the capture of wild animals for scientific, educational or wildlife management purposes. This permit authorizes a person or an organization working in these fields to derogate, under certain conditions, from a set of legal or regulatory prohibitions.

BpFx	White (Paper) Birch-hardwood stands	< 2%	< 2%	< 2%	< 2%	< 2%
SbRx	Balsam Fir-softwood stands	< 2%	< 2%	< 2%	< 2%	< 2%
Rare	All forest types that cover less than 2% of the area of the MU.	6.8%	3.5%	3.7%	5.4%	6.5%

The major forest types orient harvesting to supply the plants. It is observed that the most important forest types in the region are Spruce and Spruce-softwood, which occupy 72% of the stands over 7 m tall.

2.5.1.5 Gross merchantable standing volume by species and by canopy type

A tree is considered merchantable when it achieves a diameter over-bark of 9.1 cm at breast height, i.e. roughly 1.3 metres from the highest root. The gross merchantable volume of a forest stand can be calculated using the height and diameter variables of the species of which it is composed. Gross merchantable volume is the volume between stump diameter (i.e. 15 cm above the highest ground level) and the minimum use diameter of 9.1 cm. The gross merchantable volume is not the same as the net merchantable volume, which includes reductions for defective and decayed wood or unusable elements.

A table of production potential in areas intended for forest development is produced by estimating standing volumes using forest inventory data. These volumes do not reflect provincial, regional and local sustainable forest development objectives, and therefore do not represent the actual volume available for harvesting, which is determined by the allowable cut.

Table 15 Mean Gross Merchantable Volume and Total Stock by Species Type and by MU

Territory		Species	Gross merchantable volume		
MU	**Area* (ha)**	**Type**	**Medium (m^3/ha)**	**Total (m^3)**	**% in the MU**
026-61	234,260	Hardwood	1.2	272,817	1.8%
		Softwood	628	14,703,932	98.2%
			63.9	**14,976,749**	**100.0%**
026-62	131,630	Hardwood	3.6	469,495	4.7%
		Softwood	71.6	9,430,307	95.3%
			75.2	**9,899,801**	**100.0%**
026-63	92,480	Hardwood	3.8	348,944	4.8%
		Softwood	74.7	6,903,645	95.2%
			78.4	**7,252,590**	**100.0%**

* 7 m and taller only, the volume was not assessed in the forest under 7 m. * Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.[1] An SEG permit is a permit issued by the MFFP for the capture of wild animals for scientific, educational or wildlife management purposes. This permit authorizes a person or an organization working in these fields to derogate, under certain conditions, from a set of legal or regulatory prohibitions.

Territory		Species	Gross merchantable volume		
MU	Area* (ha)	Type	Medium (m^3/ha)	Total (m^3)	% in the MU
026-64	245,480	Hardwood	7.4	1,812,594	8.0%
		Softwood	85.4	20,964,540	92.0%
			92.8	**22,777,134**	**100.0%**
026-65	220,620	Hardwood	3.8	847,047	4.5%
		Softwood	82.3	18,158,624	95.5%
			86.1	**19,005,671**	**100.0%**
026-66	125,060	Hardwood	5.2	655,147	5.4%
		Softwood	92.3	11,541,083	94.6%
			97.5	**12,196,230**	**100.0%**
085-51	417,600	Hardwood	16.6	6,949,676	19.4%
		Softwood	69.2	28,892,127	80.6%
			85.8	**35,841,804**	**100.0%**
085-62	29,860	Hardwood	4.8	142,768	6.6%
		Softwood	67.3	2,009,207	93.4%
			72.1	**2,151,976**	**100.0%**
086-52	169,290	Hardwood	39.8	6,745,205	34.8%
		Softwood	74.8	12,655,476	65.2%
			114.6	**19,400,681**	**100.0%**
086-63	92,180	Hardwood	1.6	146,888	2.9%
		Softwood	54.1	4,987,448	97.1%
			55.7	**5,134,336**	**100.0%**
086-64	130,190	Hardwood	16.2	2,112,212	14.0%
		Softwood	100.1	13,028,513	86.0%
			116.3	**15,140,725**	**100.0%**
086-65	162,060	Hardwood	18.0	2,919,463	16.4%
		Softwood	92.0	14,915,687	83.6%
			110.1	**17,835,151**	**100.0%**
086-66	157,260	Hardwood	3.6	566,380	4.4%
		Softwood	78.9	12,400,974	95.6%
			82.5	**12,967,354**	**100.0%**
087-51	258,570	Hardwood	24.1	6,226,379	20.4%
		Softwood	93.8	24,250,679	79.6%
			117.9	**30,477,058**	**100.0%**
087-62	179,820	Hardwood	7.1	1,267,870	6.9%
		Softwood	95.3	17,129,869	93.1%
			102.3	**18,397,738**	**100.0%**
087-63	179,590	Hardwood	22.8	4,100,124	18.8%

Territory		Species	Gross merchantable volume		
MU	**Area* (ha)**	**Type**	**Medium (m^3/ha)**	**Total (m^3)**	**% in the MU**
		Softwood	98.3	17,653,771	81.2%
			121.1	**21,753,895**	**100.0%**
087-64	186,900	Hardwood	9.1	1,703,601	9.7%
		Softwood	84.7	15,829,560	90.3%
			93.8	**17,533,161**	**100.0%**
Total stock for all MUs: 282,742,053 m^3					

* 7 m and taller only, the volume was not assessed in the forest under 7 m.

Table 16 Gross Merchantable Volumes of the Main Species by MU

a) Standard regime

Species*	All MUs		085-51		086-52		087-51	
	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)
Black Spruce	187,231,200	64.8%	20,264,032	53.9%	9,033,611	45.1%	15,793,379	50.1%
Jack Pine	34,414,247	11.9%	5,570,637	14.8%	2,359,675	11.8%	4,051,608	12.9%
Trembling Aspen	28,896,781	10.0%	6,184,441	16.5%	6,124,148	30.6%	4,531,283	14.4%
Balsam Fir	17,552,075	6.1%	2,006,037	5.3%	947,750	4.7%	3,367,588	10.7%
White (Paper) Birch	7,906,554	2.7%	675,404	< 2%	301,147	< 2%	1,684,130	5.3%
Eastern Larch (Tamarack))	3,497,248	< 2%	614,180	< 2%	244,747	< 2%	545,202	< 2%
White Spruce	2,666,653	< 2%	437,190	< 2%	69,686	< 2%	492,565	< 2%
Total hardwood < 2%	483,275	< 2%	765,235	2.0%	621,056	3.1%	10,966	< 2%
Total softwood < 2%	6,257,920	2.2%	1,051,421	2.8%	314,441	< 2%	1,038,103	3.3%

b) Adapted regime - UG Chibougamau local office

Species*	All MUs		026-61		026-62		026-63		026-64	
	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)
Black Spruce	187,231,200	64.8%	11,090,497	72.1%	7,627,581	76.0%	4,945,516	66.0%	16,102,763	69.3%
Jack Pine	34,414,247	11.9%	1,884,825	12.3%	438,755	4.4%	1,864,110	24.9%	2,864,292	12.3%
Trembling Aspen	28,896,781	10.0%	52,044	< 2%	222,139	2.2%	143,746	< 2%	926,351	4.0%
Balsam Fir	17,552,075	6.1%	1,604,105	10.4%	1,223,785	12.2%	81,690	< 2%	1,458,397	6.3%
White (Paper) Birch	7,906,554	2.7%	220,773	< 2%	246,878	2.5%	205,198	2.7%	886,175	3.8%
Eastern Larch (Tamarack)	3,497,248	< 2%	87,048	< 2%	50,217	< 2%	7,787	< 2%	188,529	< 2%
White Spruce	2,666,653	< 2%	37,409	< 2%	89,940	< 2%	4,542	< 2%	259,496	< 2%
Total hardwood < 2%	483,275	< 2%	272,817	< 2%	477	< 2%	143,746	< 2%	67	< 2%
Total softwood < 2 %	6,257,920	2.2%	124,504	< 2%	140,186	< 2%	94,019	< 2%	539,088	2.3%

* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.[1] An SEG permit is a permit issued by the MFFP for the capture of wild animals for scientific, educational or wildlife management purposes. This permit authorizes a person or an organization working in these fields to derogate, under certain conditions, from a set of legal or regulatory prohibitions.

Species*	026-65		026-66	
	(M^3)	(%)	(M^3)	(%)
Black Spruce	14,343,675	73.6%	14,343,675	73.6%
Jack Pine	3,212,627	16.5%	3,212,627	16.5%
Trembling Aspen	540,430	2.8%	540,430	2.8%
Balsam Fir	414,039	2.1%	414,039	2.1%
White (Paper) Birch	306,596	< 2%	306,596	< 2%
Eastern Larch (Tamarack)	131,838	< 2%	131,838	< 2%
White Spruce	56,235	< 2%	56,235	< 2%
Total hardwood < 2%	306,617	< 2%	306,617	< 2%
Total softwood < 2 %	188,283	< 2%	188,283	< 2%

c) Adapted regime - UG Mont-Plamondon and UG Quévillon local offices

Species*	All MUs		085-62		087-62		087-63		087-64	
	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)
Black Spruce	187,231,200	64.8%	1,732,093	78.2%	12,730,297	69.0%	12,897,864	58.2%	12,831,436	71.8%
Jack Pine	34,414,247	11.9%	183,447	8.3%	2,890,400	15.7%	1,545,135	7.0%	1,739,531	9.7%
Trembling Aspen	28,896,781	10.0%	108,433	4.9%	444,561	2.4%	3,309,313	14.9%	1,069,005	6.0%
Balsam Fir	17,552,075	6.1%	23,929	< 2%	1,052,226	5.7%	2,345,034	10.6%	931,036	5.2%
White (Paper) Birch	7,906,554	2.7%	26,136	< 2%	802,349	4.4%	762,690	3.4%	633,936	3.5%
Eastern Larch (Tamarack)	3,497,248	< 2%	55,897	2.5%	46,002	< 2%	441,972	< 2%	213,147	< 2%
White Spruce	2,666,653	< 2%	13,840	< 2%	410,695	2.2%	423,765	< 2%	114,411	< 2%
Total hardwood < 2%	483,275	< 2%	34,336	< 2%	20,960	< 2%	28,121	< 2%	660	< 2%
Total softwood < 2%	6,257,920	2.2%	37,769	< 2%	46,250	< 2%	423,765	< 2%	327,558	< 2%

* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The “Total < 2%” values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The “Total < 2%” values

d) Adapted regime - UG Harricana-Nord local office

Species*	All MUs		086-63		086-64		086-65		086-66	
	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)	(M^3)	(%)
Black Spruce	187,231,200	64.8%	4,618,252	88.9%	11,717,116	74.4%	12,131,721	65.8%	10,562,973	78.6%
Jack Pine	34,414,247	11.9%	225,603	4.3%	849,333	5.4%	1,691,340	9.2%	1,131,564	8.4%
Trembling Aspen	28,896,781	10.0%	122,271	2.4%	1,972,111	12.5%	2,585,389	14.0%	325,533	2.4%
Balsam Fir	17,552,075	6.1%	32,641	< 2%	189,976	< 2%	827,726	4.5%	475,431	3.5%
White (Paper) Birch	7,906,554	2.7%	24,617	< 2%	140,077	< 2%	334,073	< 2%	240,847	< 2%
Eastern Larch (Tamarack)	3,497,248	< 2%	109,471	2.1%	270,302	< 2%	199,520	< 2%	219,348	< 2%
White Spruce	2,666,653	< 2%	1,481	< 2%	1,787	< 2%	65,380	< 2%	11,659	< 2%
Total hardwood < 2%	483,275	< 2%	24,617	< 2%	140,101	< 2%	334,074	< 2%	240,847	< 2%
Total softwood < 2%	6,257,920	2.2%	34,122	< 2%	462,064	2.9%	264,900	< 2%	231,007	< 2%
Total stock for all species: 282,742,053 m^3										

for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.[1] An SEG permit is a permit issued by the MFFP for the capture of wild animals for scientific, educational or wildlife management purposes. This permit authorizes a person or an organization working in these fields to derogate, under certain conditions, from a set of legal or regulatory prohibitions.

* Only the species for which the stock represents at least 2% of the stock for all species in at least one MU of the region are presented. The "Total < 2%" values for softwood and hardwoods include all other species, but also those presented when they represent less than 2% of the total stock of the MU.[1] An SEG permit is a permit issued by the MFFP for the capture of wild animals for scientific, educational or wildlife management purposes. This permit authorizes a person or an organization working in these fields to derogate, under certain conditions, from a set of legal or regulatory prohibitions.

2.5.1.6 Information on source data

The tables and figures in the “Description of Public Land” and “Resource Profile” modules were produced from a set of ecoforest, ecological and territorial data amalgamated for the province as a whole so that they could be compiled into area reviews and other regional results. This work was done during the fall of 2021. The most recent versions of the data available at that time were used. It is important to note that the observations presented here apply only to forests in which forest development activities may be carried out – in other words, the forest under development.

2.5.2 NON-TIMBER FOREST PRODUCTS

The United Nations Food and Agriculture Organization (FAO) defines non-timber forest products as “goods of biological origin other than wood, derived from forests, other wooded land and trees outside forests” (FAO, 2013). There are many different non-timber forest products, and they can be grouped into three main categories:

- Food products
  - Maple products
  - Wild fruits
  - Wild mushrooms
  - Indigenous plants including Labrador tea
- Decorative products
  - Various horticultural species derived from wild species (e.g. cedar and maple)
  - Products used for decorative or artistic purposes including Christmas trees and wreaths, flowers and foliage used by florists (e.g. Lemonleaf, ferns)
  - Specialist wood products and wood sculptures (e.g. using bark and wood for bark canoes, baskets and snowshoes)
- Substances extracted from forest plants
  - Pharmaceutical and personal hygiene products (e.g. paclitaxel, Canada Yew extracts [Ground Hemlock])
  - Fir resin
  - Essential oils
  - etc.

So far, two non-timber forest products have been regulated by the MRNF, namely maple production, harvesting of Canada Yew and Labrador tea. Under the *Sustainable Forest Development Act*, a forestry permit must be obtained to cultivate and operate a sugar bush for maple syrup production purposes and to harvest bushes or shrubs to supply a wood processing plant. A forestry permit to harvest Labrador tea for commercial purposes is also required where the company concerned markets products derived from the resource.

A number of non-timber forest product initiatives have been developed in the region’s public and private forests. In recent years, the non-timber forest products industry has proliferated and the demand for these types of products appears to be following this trend.

2.5.2.1 Maple production

Maple syrup production is a First Nations legacy activity and a major economic activity. Québec is the largest producer of maple syrup in the world and, although most of this production is done in private forests, maple syrup production in public forests contributes to this success. To maintain this global leadership role, the MRNF:

- supports businesses and encourages the development of new maple syrup projects at suitable sites to ensure increased productivity and resilience over time;
- contributes to the development of knowledge of maple syrup production in both public and private forests.

Maple syrup production in public forests must be consistent with the many forestry activities, including timber harvesting, and must be carried out in accordance with proven practices based on state-of-the-art scientific knowledge in order to ensure its long-term maintenance. It is important to remember that the MRNF only intervenes in sugar bush operations located in state forests, by issuing intervention permits and managing forest management activities related to the cultivation and operation of maple syrup operations.

2.5.2.2 Harvesting of Canada Yew

The Canada Yew, also known as “Ground Hemlock” or “Boxwood”, is a slow-growing bush that varies in height from 30 cm to 90 cm. Its attraction lies in the harvesting potential of its branches, which contain numerous diterpenic components (taxanes), the main one being paclitaxel, used in chemotherapy. Applicants for permits to harvest this resource must also hold a permit to operate a wood processing plant indicating the quantity of branches that can be harvested, in green metric tons.

2.5.2.3 Blueberry fields

The Ministère des Ressources naturelles et des Forêts (MRNF) is responsible for leasing lands in the domain of the State for industrial or commercial purposes, including the operation of wild blueberry fields. However, a forestry permit is needed to carry out agricultural development work, such as deforestation with a view to creating a blueberry field on public land.

2.5.2.4 Edible fruits and plants

Raspberries, blueberries, redcurrants, wintergreen, Labrador tea, fireweed flowers, sweet gale seeds (Bog Myrtle), dune pepper (Green Alder), bake-apple and spruce tips are just some of the forest plants and fruits that can be harvested for sale. The *Association pour la commercialisation des produits forestiers non ligneux* (ACPFNL) is a grouping of companies, organizations and individuals with an interest in harvesting, processing and selling non-timber forest products. The cooperative Cultur'Innov keeps an updated directory of companies selling non-timber forest products, small emergent fruits and nuts in Québec.

2.5.3 WILDLIFE RESOURCES

The MELCCFP's mission includes the conservation and development of wildlife species and their habitats. Wildlife management plans have been prepared for the species targeted by hunters, anglers and trappers in Québec, presenting the population's status and establishing conditions for harvesting.

In terms of its forest wildlife profile, the Nord-du-Québec region is characterized by the small number of structured territories seeking for wildlife management purposes. However, the two wildlife reserves of the provincial network located in the region occupy considerable areas. Indeed, Lacs-Albanel-Mistassini-et-Waconichi wildlife reserve and Assinica wildlife reserve respectively rank first and third provincially with 16,400 km² and 8,885 km². Since April 1, 2017, and in accordance with the provisions set out in Paix des braves and the Final Settlement. Agreement Concerning the Transfer of Some Mistissini Land to the Gouvernement du Québec, the Nibiischii Corporation, designated by the Cree Nation of Mistissini, has been responsible for the administration and management of these two wildlife reserves.

Sport fishing is a key economic engine of the Nord-du-Québec region. The species that are the object of this activity, such as Brook Trout, Lake Trout, Walleye and Northern Pike, strongly orient the management activities of the government aquatic wildlife management teams. The Government has deployed specific provincial management plans for Walleye and Lake Trout, which reflect the regional particularities of Nord-du-Québec, with the aim of favouring long-term harvesting. The next management plan, which targets Brook Trout, is in preparation. Moreover, according to the requirements of the JBNQA, Lake Sturgeon, Lake Whitefish, Burbot, Cisco, Goldeye and Suckers are species reserved for the fall harvest in the vast majority of the Agreement territory and must be considered in the context of maintenance of subsistence fishing, in the conservation, forest management and development project analysis strategies in the forest territory. Moreover, given its fragility and its special protection status at both the provincial and federal levels, Lake Sturgeon, which is an essential species in Cree culture, requires special attention in all activities for analysis of development projects, forest harvesting, issuance of permits for scientific, educational or wildlife management permits (SEG permits)[1] and the preparation of knowledge acquisition projects.

On the regional level, certain terrestrial wildlife species are important for cultural, economic and conservation purposes. Moose, a priority species for Aboriginal communities, is the main source of wild meat for their members and an important species for sport hunters residing in the region. In the 1980s, Cree hunters, for the first time, mapped the sites they considered of interest for moose. These sites are reused annually and are considered permanent moose habitats (winter habitats, calving sites, riparian ecosystems, etc.), for which special protective measures are required. These sits are now an integral part of forest planning through consultation systems established after the signing of Paix des braves in 2002.

[1] An SEG permit is a permit issued by the MFFP for the capture of wild animals for scientific, educational or wildlife management purposes. This permit authorizes a person or an organization working in these fields to derogate, under certain conditions, from a set of legal or regulatory prohibitions.

Woodland Caribou are an emblematic boreal forest species of special importance for the First Nations. Five Woodland Caribou populations use the Nord-du-Québec region: the Detour, Nottaway, Assinica, Témiscamie and Caniapiscau populations. Woodland Caribou are the focus of a provincial issue (for more information, see the section on Woodland Caribou and Gaspésie Mountain Caribou).

Black Bear are also of interest, because it represents a species considered both as big game and a fur-bearing animal. However, Black Bear trapping is reserved exclusively for the beneficiaries of the Northern Agreements in the majority of the Nord-du-Québec territory, apart from a few sectors located in the southwest of the region. Nonetheless, sport hunters have the right to hunt Black Bear in all of Zones 16, 17, 23 and 24. Despite the relatively low density of Black Bears in the Nord-du-Québec territory compared to the rest of Québec, the populations in the region seem to be in good condition and a marked increase in the pence of Black Bear in the more northern parts of the province was observed during the last decade.

With the exception of some sectors located in Zone 16, trapping in the forest territory is reserved exclusively for Aboriginal people. The members of the Cree Nation communities have long had recourse to a land use system based on family traplines. Species such as Marten, Muskrat, Red Fox and Beaver are the most trapped, because their pelts are in demand. Beaver and Muskrat are also part of the Cree trappers' diet. In smaller proportions, Mink, Ermine, Squirrel, Lynx and Otter are also sought by trappers. Wolf and Fisher are trapped occasionally.

2.5.4 OTHER RESOURCES

2.5.4.1 Water Resources

In the Quaternary, the region went through major glacial phenomena (glaciation, regional glacial readvances, marine and lacustrine invasions). The retreat of the waters of the Ojibway-Barlow glaciolacustrine complex, and then the emergency of lands in the course of the isostatic rebound and the retreat of the Tyrrell Sea, allowed the constitution of the modern hydrographic network, in particular. From east to west, from the Mistassini Highlands to the Abitibi and James Bay Lowlands, the hydrographic network gains importance. In the sectors farther east, the network shows high density of small lakes and rivers of medium importance (Chibougamau and Témiscamie Rivers, upper course of the Rupert River). Lac Mistassini, the biggest natural lake in Québec at 2,200 km², borders the attributable boreal forest on the northeast. To the west, the great Harricana, Nottaway and Broadback Rivers flow into James Bay. Remember that the upstream sections of the Rupert and Eastmain Rivers were diverted to supply the La Grande River hydroelectric complex. The density of lakes is low, but several big lakes are found there, including Lac Evans, Lac au Goéland and Lac Waswanipi. The essential waters of the attributable forest region are trained by the watersheds of the Harricana, Nottaway, Broadback and Rupert Rivers.[1]

[1] Sources: DUBÉ-LOUBERT, H. (2009). *Chronologie des événements glaciaires et non glaciaires dans le cours inférieur de la rivière Harricana, Basse-terres de la Baie-James, Québec : Implications pour la dynamique de la calotte laurentienne, publication of the Université du Québec à Montréal, 185 p.*,
LI, T. and J. P. DUCRUC (1999). *Les provinces naturelles. Niveau I du cadre écologique de référence du Québec*, Ministère de l'Environnement, 90 p.

2.5.4.2 Geological Resources

Geological Profile

The attributable forest zone of the Nord-du-Québec region is essentially contained within Superior Province, in which the Archaean Eon bedrock (over 2.5 billion years old) is recognized as particularly rich in precious metals (gold and silver) and common metals (copper, zinc and nickel). The bedrock is composed of tonalite intersected by bands of volcanic rocks (basalt) and sedimentary rocks. In the eastern part of the zone, a certain portion belongs to Grenville Province, which is characterized by a potential for industrial minerals (silica, mica, etc.), uranium and architectural stone. The geological base is essentially composed of gneiss, anorthosite and granite.

The mining activity in the region today is the reflection of a significant number of mineral rights, where mineral production is highly diversified: nickel, gold, copper, silver and several other metals, including zinc, the platinoids and diamonds.

Indeed, the region, endowed with exceptional mineral potential, ranks first among the administrative regions in mining investment, with expenses that reached $1,325 M in 2019, for 44.5% of Québec's total mining investment ($2.98 B).

Two types of activities are found in the mining field: those related to operation and those related to exploration.

For activities related to operation, the Eeyou Istchee James Bay region has two gold mines, the Éléonore underground mine (Newmont Corporation) and the Casa Berardi mine (Hecla Mining Company), for which the underground part has been in operation since 2013 and the pit (open-pit mine) since 2016. In 2018, Bonterra Resources acquired the Bachelor Lake mine and its ore processing mill, but ceased extraction and processing operations the same year. The company is currently expanding the mill to process ore from its mining projects located between Lebel-sur-Quévillon, Matagami and Chapais, in Nord-du-Québec. The Géant Dormant mill (Abcourt Mines) has processed the ore from the Elder gold mine since 2016. Two zinc and copper mines are also found in Eeyou Istchee James Bay.

The Matagami sector contains the Bracemac-McLeod underground mine (Glencore Canada Corporation), where commercial production started in July 2013. The Langlois underground mine (Nyrstar Canada Resources) is located in the Lebel-sur-Quévillon sector. This mine operated intermittently between 1996 and 2008 before resuming operation in 2012. The company then ceased production in 2020 for an undetermined period. Several secondary substances are extracted from these metal mines, such as silver, cadmium, cobalt, iridium, palladium, platinum, rhodium and ruthenium.

Also located in the region is the Renard mine (Stornoway Diamond Corporation), the first diamond mine in Québec, which started commercial production in December 2016.

Apart from the mining activities for metallic and industrial minerals, quarries and sand pits are distinguished, which are also considered to be a mining activity and serve for the development and maintenance of road infrastructure. There are about 4,100 open extraction sites for surface mineral substances (quarries and sand pits) sites, but only 417 of them are active. Finally, there are also 33 mining leases, tailings storage facilities and storage sites.

PARENT, M. J., S. PARADIS, G. BILODEAU and R. PIENITZ (1996). « La déglaciation et les épisodes glaciolacustres et marins du quaternaire supérieur au sud-est de la baie d'Hudson, Québec », *Bulletin d'information de l'Association québécoise pour l'étude du Quaternaire*, Vol. 22, 1.

The mining activities also include exploration activities, particularly prospecting and geological work, and geochemical and geophysical surveys. In May 2021, the scope of the mineral exploration activities in Eeyou Istchee James Bay was illustrated by over 91,400 mineral exploration titles (active claims), representing a total area over 32,150 km².

Relief Profile

From east to west, the relief changes from a large plateau with scattered hills to a plain sloping slightly toward James Bay. In the east, the Mistassini Highlands vary in altitude from 300 to 450 m, with a few peaks exceeding 500 m, while in the Abitibi and James Bay Lowlands, the altitude decreases slowly, form 350 m in the south and east to sea level on the shore of James Bay. The hills are rare, low in altitude with a somewhat rounded shape, fashioned by the glaciers that covered the region repeatedly over the past million years.

Surficial Deposits

The ice of the last glaciation, the Wisconsinian, withdrew about 10,000 years ago and shaped the relief into moraines (Harricana and Sakami) and eskers. These are elongated sand and gravel buttes, partially covered with clay from the lacustrine invasion of the Ojibway-Barlow glaciolacustrine complex, and then the marine intrusion of the Tyrrell Sea. The southern part of the zone is dominated by these silts and clays, while the buttes and hills present thin glacial deposits pierced by many rock outcrops. Toward the north, the Cochrane till, rich in carbonate elements and washed away in the Quaternary by a regional readvance of the glacial front, is associated with major bogs, intersected by sand and gravel from the Harricana moraine, one of the biggest moraines in North America. Toward the east, glacial deposits are abundant, often thick, very stony and sandy in texture, but remain intercepted by major fluvioglacial sand and gravel deposits.[1]

2.5.4.3 Wind

The Nord-du-Québec region has 85% of Québec's technical wind potential according to a study conducted in 2005 by Hélimax Énergie inc. and AWS Truewind LLC. The wind potential is concentrated mainly along the La Grande River basin, from the Caniapiscau Reservoir to the locality of Radisson. Similarly, the southwest part of Lac Mistissini and the northern part of the Otish Mountains are familiar with high winds that can be developed. Although the increases in costs generated by remoteness and climate represent constrains to the efficient exploitation of this form of energy, these problems could be mitigated by a next generation of wind turbines better adapted to northern conditions. The space available also allows the possibility of larger-scale project planning. This could help reduce costs and provide a better development context.[2].

There are no wind development projects in the short or medium term.

[1] Sources: Dubé-Loubert, H. (2009). Chronologie des événements glaciaires et non glaciaires dans le cours inférieur de la rivière Harricana, Basse-terres de la baie James, Québec : Implications pour la dynamique de la calotte laurentienne, publication of the Université du Québec à Montréal, 185 p.,
Hocq, M. et al. (1994). Géologie du Québec, Les Publications du Québec, 155 p.
Li, T. and J. P. Ducruc (1999). Les provinces naturelles. Niveau I du cadre écologique de référence du Québec, Ministère de l'Environnement, 90 p.
Parent, M. J., S. Paradis, G. Bilodeau and R. Pienitz (1996). « La déglaciation et les épisodes glaciolacustres et marins du quaternaire supérieur au sud-est de la baie d'Hudson, Québec », Bulletin d'information de l'Association québécoise pour l'étude du Quaternaire, Vol. 22, 1online] [http://www.cgcq.rncan.gc.ca/aqqua/bulle.htm] (consulted on August 2, 2012).

[2] Sources : Ministère de l'Énergie et des Ressources naturelles. Inventaire du potentiel éolien exploitable du Québec (Inventory of Québec's exploitable wind potential) [online] http://www.mern.gouv.qc.ca/publications/energie/eolien/vent_inventaire_inventaire_2005.pdf

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