

FORÊTS,  
FAUNE ET  
PARCS

# SUSTAINABLE FOREST MANAGEMENT STRATEGY



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Ministère des Forêts, de la Faune et des Parcs

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## MESSAGE FROM THE MINISTER

Forests have always contributed to the development of Québec. For Quebecers, forests are a natural heritage that produces a wide range of products and services. The government is determined to ensure that Québec forests remain a source of pride, wealth, stimulating jobs, and sustainable development. The Sustainable Forest Management Strategy is key to implementing the forest regime and presents forestry objectives of the Ministère des Forêts, de la Faune et des Parcs.

The Sustainable Forest Management Strategy is in line with the government's vision based on the sustainable development of our natural resources. It shares some of Plan Nord's territory and sustainable development orientations. Moreover, it meets a legal obligation of the minister set out in the Sustainable Forest Development Act. This strategy has thus a dynamics and objectives of it's own.

The Sustainable Forest Management Strategy presents the vision, challenges, orientations, objectives, and actions for putting the forest regime into practice. The economic viability of the forest industry, maintenance of a good quality environment, the social acceptability of forest practices, and equitable sharing of the benefits of forest management are just some of the principles underlying the Strategy. It lays a framework for rallying all Québec forest stakeholders around a shared vision of sustainable forest management for today and tomorrow since the vision, challenges, and orientations set out in the Strategy cover a 20-year period. Moreover, the objectives and actions are reviewed every five years based on the results obtained and in collaboration with all concerned forest stakeholders.

Entered in force on April 1, 2013, the forest regime increases community involvement in forest management and defines a management approach that is environment- and biodiversity-friendly while contributing to economic growth. Furthermore, it provides greater access to timber to a larger number of businesses. The Strategy explains how these items, as well as all the items set out in the Act, are to be implemented. It clearly and concretely lays out all the forestry reforms made in recent years, marking a new era of forest management in Québec.

The Sustainable Forest Management Strategy proposes potential economic solutions to halt the decline of the forestry industry. In this perspective, we must go beyond traditional approaches and adopt a short, medium, and long term economic vision for increasing the value produced from our forests.

The Strategy is already in effect not only for the forest professionals but all forest stakeholders, since they helped develop it. The government's adoption of the Strategy demonstrates its commitment to the future of Québec's forestry sector. It also shows its desire to make sustainable forest management a lever for creating wealth in Québec, and particularly its regions. Coupled with Quebecers' ingenuity and ability to innovate, the Sustainable Forest Management Strategy will propel the forest sector to new heights and help Québec secure a position on national and international markets as a leader in sustainable forest management and the production of high quality forest products.

Let's take every opportunity available to build a green and prosperous Québec!

A handwritten signature in black ink, appearing to read 'L. Lessard', written in a cursive style.

Laurent Lessard

Ministre des Forêts, de la Faune et des Parcs



## SECTION 1

# QUÉBEC'S FORESTS

QUÉBEC IS CHARACTERIZED BY AN ABUNDANCE OF FORESTS. NEARLY HALF THE PROVINCE IS COVERED BY ONE OF THE BIGGEST FOREST RESERVES IN THE WORLD. FOREST LANDSCAPES COVER AN AREA OF 761,100 KM<sup>2</sup>, WHICH IS EQUIVALENT TO THE SIZE OF SWEDEN AND NORWAY COMBINED. FIFTY-FIVE PERCENT OF THIS AREA IS MADE UP OF PRODUCTIVE AND ACCESSIBLE FOREST LAND, I.E., COMMERCIAL FORESTS. QUÉBEC'S FORESTS MAKE UP 20% OF CANADIAN FORESTS AND 2% OF THE WORLD'S FORESTS.

The vast majority of Québec's forests are part of our collective heritage. In fact, 92% of Québec's forest area is publicly owned<sup>1</sup>. Though they make up only 8% of the forested area<sup>2</sup>, privately owned forests play a strategic role in Québec's forest landscape. Nearly 130,000 forest landowners contribute around 16% of the timber delivered to wood processing plants<sup>3</sup>. Private forests in rural areas are the most accessible and productive forest lands in Québec.

Québec's forests are made up of a complex set of ecosystems generating a multitude of goods and services. They provide habitat for over 200 bird species, 60 mammal species, some 40 amphibian and reptile species, 100 fish species, and thousands of insect species. Forests play an important role in the water and nutrient cycles, soil formation and maintenance, and climate control. In fact, forests are essential to biodiversity, animal life, and human well-being.

Québec forests are heavily used by the public. Hunting, fishing, and trapping are very popular activities. Over 15.3 million person-days are dedicated to these activities, which

sustain nearly 14,000 jobs and generate benefits totaling \$1.8 billion<sup>4</sup>. These activities also attract many foreign visitors. Nearly three million Quebecers enjoy outdoor activities<sup>5</sup> such as hiking, camping, wildlife observation, adventure tourism, snowmobiling, and rock climbing.

The forest industry is active in nearly every region of Québec. In 2012, over 330 primary wood processing plants<sup>6</sup> were in operation. In the same year, manufacturing shipments by Québec's forest products industry totaled nearly \$14 billion, half of which was earmarked for export. Québec has always been a net exporter of forest products.

Forests generate numerous jobs in Québec communities, some in forest management, and others in the primary, secondary, and tertiary wood and paper processing industry. These jobs help strengthen the regional fabric and revitalize communities. Despite the difficulties experienced in recent years, the

1. Data for the intensive survey area south of the 52<sup>nd</sup> parallel.

2. 0,4% of the forested area is federal land.

3. <http://www.foretrivee.ca/wp-content/uploads/2015/07/La-foret-privee-chiffree.pdf>

4. Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs (2013), *Retombées économiques des activités de chasse, de pêche et de piégeage au Québec en 2012 : Synthèse*. Study conducted by BCDM Conseil Inc., Québec City, 16 p.

5. Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs (2013), "La faune du Québec grandeur nature." 2012 data.

6. Pulp and paper mills, lumber, veneer and plywood, chipboard, turned and shaped wood mills, and even cogeneration and energy products mills.

sector still provides nearly 59,000 direct jobs to Quebecers<sup>7</sup>. This number doubles if indirect and induced jobs are taken into consideration.

Québec holds a substantial share of the market in high value-added products (secondary and tertiary processing) and is Canada's job leader in this sector, ranking ahead of British Columbia and Ontario. This innovative sector provides new products to meet ever-increasing needs.

In short, forests play an important role in the lives of Quebecers, both for the products they generate and the activities they provide for. For many people, forests are a source of wealth, prosperity, and well-being. For others, they also represent peace, tranquility, and relaxation. Forests are part of the culture and identity of many communities and sustain their way of life. Québec's growth and development has always been linked to its forests. They have forged its history, permeate its present, and will affect its future.

## A STRATEGY TO FOSTER SUSTAINABLE FOREST MANAGEMENT

### SUSTAINABLE FOREST MANAGEMENT IN QUÉBEC

→ Sustaining forest products and services helps meet society's current needs without compromising the needs of future generations.



A strong, dynamic forest sector requires a responsible society committed to forest management as well as healthy, resilient ecosystems.

7. <https://www.mffp.gouv.qc.ca/publications/forets/connaissances/portraitstatistique-2015.pdf>

The goal of sustainable forest management is to strike a balance between a prosperous and dynamic industry, a high quality of life for current and future generations, and healthy forest ecosystems. To achieve this balance, choices must be made in a complex, ever-changing environment where a wide variety of stakeholders and groups have a role to play.

For the Ministère des Forêts, de la Faune et des Parcs (MFFP), sustainable forest management is based on the following six criteria<sup>8</sup>:

- > The preservation of biological diversity
- > The maintenance and improvement of the condition and productivity of forest ecosystems
- > The conservation of soil and water
- > The maintenance of forest ecosystem contributions to major ecological cycles
- > The maintenance of the many socioeconomic benefits society derives from forests
- > The consideration, in making development choices, of the values and needs expressed by the populations concerned

The MFFP is responsible for the sustainable development and management of forests in the public domain. This responsibility is regulated by the Sustainable Forest Development Act. On April 1, 2013, this act replaced the Forest Act and introduced numerous changes to forest governance.

Under the article 11 of the Sustainable Forest Development Act, the Minister des Forêts, de la Faune et des Parcs must draw up and publish a sustainable forest management strategy. The article 12 stipulates that the strategy must set out the sustainable management approach, policy directions, and objectives applicable to forest lands, in particular with regard to ecosystem management. It also defines the mechanisms and means required for its implementation, monitoring, and evaluation.

#### PUBLIC CONSULTATION

As part of the Sustainable Forest Management Strategy development process, a province-wide public consultation was held. Over 900 people took part in the nearly 50 information meetings organized in Québec's regions, and some 250 groups and individuals submitted their opinions on the draft strategy.

In conjunction with the Sustainable Forest Development Act, the Strategy is the foundation of the new forest regime and indicates how the MFFP intends to put it into practice. Through the strategy, the MFFP, together with its partners and forest users, are promoting a common vision of the goals to be accomplished and the actions to be taken to foster sustainable forest management in Québec.

#### A FEW MILESTONES ON THE ROAD TO SUSTAINABLE FOREST MANAGEMENT IN QUÉBEC

Adoption of the Sustainable Forest Management Strategy is a major advancement in Québec's sustainable forest management. A number of milestones have been reached in this regard, and the Strategy furthers and enhances action already taken:

- > Adoption of the Forest Act (1986)
- > Adoption of the Regulation respecting standards of forest management for forests in the domain of the State (1988)
- > Adoption of the Forest Protection Strategy entitled "Une stratégie – aménager pour mieux protéger les forêts" (1994)
- > Inclusion of sustainable forest management criteria in the Forest Act (1996)
- > Creation of regional agencies for private forest development (1996) and publication of private forest protection and development plans (2000–2002)
- > Publication of the 1995–1999 Report on the State of Québec Forests (2002)
- > Increased public participation in forest management (participation of users prior to forest planning [2001] and adoption of the Consultation Policy on Orientations for the Management and Development of the Forest Environment [2003])
- > Publication of the Commission d'étude sur la gestion de la forêt publique québécoise report (2004);
- > Implementation of forest resource protection and development objectives (2005)
- > Creation of Chief Forester's position (2005)
- > Adoption of the Sustainable Development Act, which establishes an accountability framework for all ministries and many agencies to foster sustainable development (2006)
- > Creation of the regional land and natural resources commissions (2008)
- > Publication of the Chief Forester's "Report on Sustainable Forest Management 2000–2008" (2010)
- > Adoption of the Sustainable Forest Development Act (2010)
- > Publication of the 2012–2017 Transformation Strategy for the Québec Forest Product Industry (2012)

8. Under the article 2 of the Sustainable Forest Development Act.

## REGULATION RESPECTING SUSTAINABLE FOREST MANAGEMENT

The Regulation respecting sustainable forest management establishes the standards that all local stakeholders must follow when conducting forest management activities in forests of the public domain. The purpose of these standards is to ensure that forest lands are protected, forest cover is maintained and reconstituted, and forest management activities are in line with the activities of other users.

The Regulation constitutes the minimum requirements that everyone must meet in forests of the public domain. Some regulatory provisions may be enhanced to adapt them to local needs, particularly by local integrated land and resource management panels.

The Regulation, which complements the Sustainable Forest Management Strategy, ensures compliance with a number of the Strategy's objectives and actions. For example, it sets the rules for initiating ecosystem management, protecting rivers, streams, forest landscapes, and wildlife habitats, and ensuring that the traditional activities of Aboriginal communities are respected.

## JURISDICTION

The Strategy applies to all Québec public and private forests. Implementation may vary according to regional characteristics, such as ecological features or economic conditions.

Adjustments can be made for private forests to take into account their specific context. The MFFP invites woodlot owners to embrace the Strategy and apply its relevant sections to their lands. Regional private forest development agencies are also invited to take the Strategy into account when reviewing and implementing their plans.

## A COMMON VISION FOR SUSTAINABLE FOREST MANAGEMENT IN QUÉBEC

To make Québec a true forest management success story, the MFFP has adopted a sustainable forest management strategy. The ambitions behind the strategy are expressed in the vision it sets forth. The MFFP is committed to ensuring that this vision, like a society project, serves as an inspiration to both individuals and organizations as they progress toward sustainable forest management.

Québec forests are a source of pride, wealth, stimulating jobs, and development for everyone. Québec is known worldwide for the quality and diversity of its forests, its exemplary sustainable forest management practices, and the high quality of its forestry products and services.



## SECTION 2

# SIX CHALLENGES FOR TAKING ACTION

➔ The Sustainable Forest Management Strategy revolves around six challenges that were selected to reflect the MFFP’s vision of sustainable forest management and cover all aspects of Québec forest management. These challenges were inspired by sustainable forest management criteria, i.e., the environmental, social, and economic components:

- > Take the interests, values and needs of the Québec population and the Aboriginal nations into account in managing the forests
- > Use forest management practices that ensure ecosystem sustainability
- > Ensure productive forests that create wealth at different levels
- > Support a diversified, competitive, and innovative wood products and forestry industry
- > Ensure that forests and the forest sector help fight and adapt to climate change
- > Ensure sustainable, structured, and transparent forest management

Each challenge is accompanied by orientations to help us chart the course we need to follow over the next 20 years to foster sustainable forest management. The objectives define the goal for the five years following adoption or amendment of the Strategy. The actions indicate the concrete action the MFFP will take to achieve each objective. The appendix presents a table summarizing all the challenges, orientations, objectives, actions, and indicators of the Strategy.

In this document, the actions that have already been taken, are part of ongoing efforts, or are currently underway are preceded by the symbol  to distinguish them from upcoming actions.



# CHALLENGE TAKE THE INTERESTS, VALUES AND NEEDS OF THE QUÉBEC POPULATION, INCLUDING THE ABORIGINAL NATIONS INTO ACCOUNT IN MANAGING THE FORESTS

→ The population of Québec has values and needs with regard to its forests. The government must take these values and needs into account in managing the forests and be able to meet the specific requirements of certain communities. For this to happen, public, community, and forest stakeholder participation is key and must be encouraged.

For public involvement to be meaningful, interested individuals and groups must be provided with certain tools and given an opportunity to express their opinions so that they can influence decisions. For its part, the public must accept its share of responsibility and communicate its concerns, values, and needs. The MFFP encourages participatory management, which provides the public, including the members of Aboriginal communities, with various opportunities to take part in the decision-making process.

The following three orientations were selected to meet this challenge:

1. Maintain a dialogue with the public, including the Aboriginal communities about forest management and development
2. Allow citizens, local communities, and Aboriginal communities to actively take part in regional forest management
3. Take into account the rights, interests, values, and needs of Aboriginal communities in forest land and resources management

## ORIENTATION 1

### MAINTAIN A DIALOGUE WITH THE PUBLIC AND THE ABORIGINAL COMMUNITIES ABOUT FOREST MANAGEMENT AND DEVELOPMENT

→ As the manager of Québec's public forests, the MFFP acts in the public interest. Technical and scientific knowledge is necessary to make informed decisions, as is traditional knowledge acquired over the centuries by Aboriginal and local communities. The aspirations and needs of Quebecers as a whole are also considered. Public interest in forests and their management is growing, and the population wants to be more involved. It is important to maintain this interest and create opportunities to inform and dialogue with Quebecers about various forest management issues.

The MFFP intends to refine its understanding of public values, expectations, and needs by holding further consultations and experimenting with new participatory approaches. It wants to inform the public about forest management and development in Québec. It also intends to share knowledge it has acquired about forest ecosystems and the use and processing of forest resources. Relevant information provided in accessible language is key to informed public participation.

This orientation reflects the MFFP’s desire to expand its dialogue with the population in order to adequately meet public expectations while fulfilling its own responsibilities in the public interest.

#### PUBLIC CONSULTATIONS

The MFFP has adopted a consultation policy on forest management and development guidelines<sup>9</sup>. This policy is an important tool for fostering more participatory and transparent forest management. Public consultations allow people to voice their opinions on various forest management issues and have an influence on the outcome of the decision-making process.

The policy is based on the principles of openness, simplicity, transparency, clarity, and flexibility as well as procedures that allow the full participation of groups and individuals who wish to make their voices heard.

### Objective 1 – Identify the interests, values, needs, and expectations of the population including the Aboriginal communities, with regard to forest management and development in Québec.

- > Conduct surveys and strategic monitoring to document and track changes in the values, needs, and expectations of population including the Aboriginal communities, concerning forest management and development.
- > Experiment with models for dialogue and discussion between the public and the MFFP on forest issues.

### Objective 2 – Invest in forest information and education to address the concerns of the public and the school community.

- ✓ Support and guide forest information and education initiatives by the MFFP partners.
- ✓ Encourage the organization of activities for the general public and the school community and actively participate in them.
- ✓ Design and distribute, in collaboration with partners, information and education tools that address the concerns of the population.

#### FOREST CULTURE

The MFFP defines forest culture as the body of knowledge, beliefs, and customs associated with forests and their use that are acquired, shared, and transmitted by a group.

Forests have significantly contributed to shaping the Quebec identity and are a source of pride for Quebecers. The MFFP recognizes the forest’s importance and actively contributes to Québec’s forest culture in order to:

- > Assume its responsibility for forest information and education
- > Make the public aware of major forest issues
- > Improve the social acceptability of forest management
- > Ensure succession in forestry-related trades and occupations
- > Enable Quebecers who live off the forest to continue doing so, and those who enjoy forests to continue reaping the benefits in a respectful and responsible manner

9. Ministère des Ressources naturelles. “Québec’s Consultation Policy on Orientations for the Management and Development of the Forest Environment.” Québec City: Government of Québec, 2002, 24 p.

## ORIENTATION 2

### ALLOW CITIZENS, LOCAL COMMUNITIES, AND ABORIGINAL COMMUNITIES TO ACTIVELY TAKE PART IN REGIONAL FOREST MANAGEMENT

➔ As Québec's regions are highly diversified, the MFFP firmly believes that this diversity must be taken into account in implementing its strategic orientations, policies, and programs. To do so, it focuses on a regionalized approach to land and natural resource management. Regionalization allows local<sup>10</sup> and regional stakeholders to play an active role in developing their land base. Local and Aboriginal communities can make their forest-related concerns, values, and needs known more directly. Regionalization, however, must be in accordance with Québec-wide guidelines.

The MFFP would like to increase the forest sector's contribution to the well-being and development of local and Aboriginal communities, a wish echoed by local and regional representatives. To do so, it encourages all stakeholders to actively participate in the various stages of regionalized forest management. Regional and local socioeconomic development is intrinsically linked to this participation.

Regionalization involves the sharing of responsibilities between the government, regional county municipalities<sup>11</sup> and the competent bodies<sup>12</sup> (for the Nord-du-Québec region) as well as direct involvement by local stakeholders, including local and Aboriginal communities.

#### LOCAL INTEGRATED LAND AND RESOURCE MANAGEMENT PANELS

Local integrated land and resource management panels take into consideration the interests and concerns of individuals and organizations involved in forest management activities.

The composition and operation of these panels are the responsibility of the regional municipality county or the competent bodies.

Throughout the planning process, panel members express their needs and concerns and agree on local sustainable management objectives and measures to harmonize use.

The panels make their voices heard and influence resource development decisions in their regions.

### Objective 1 – Entrust the regional municipality county or the competent bodies with responsibilities in the area of integrated land and resource management.

- ✓ Promote implementation of local and regional development projects defined in the regional plan for integrated land and resource development.
- ✓ Support the establishment and operation of local integrated land and resource management panels.

10. The term "local communities" refers to municipalities, cities, towns, and regional county municipalities.

11. Under the article 55.1 of the Sustainable forest development act (chapter A-18.1).

12. Under the article 21.5 of the Act respecting the ministère des Affaires municipales, des Régions et de l'Occupation du territoire (chapter M-22.1).

**Objective 2 – Improve participation by forest stakeholders in integrated forest management planning.**

- ✓ Provide participants on local integrated land and resource management panels with the information needed to plan integrated forest management.
- ✓ Offer, at the request of the regional municipality county or the competent bodies, to transfer knowledge by having the MFFP experts participate on an ad hoc basis in local integrated land and resource management panels.
- > Measure the satisfaction of participants with regard to local integrated land and resource management panels and the results achieved.

**Objective 3 – Provide local and Aboriginal communities with opportunities for participating in and taking responsibility for forest management.**

- ✓ Adopt a policy to define criteria for delimiting and selecting local forests.
- > Select and create local forests.
- > Establish local forests and sign agreements delegating management of forest lands and resources.
- > Offer administrative and technical support to delegated local forest managers.
- > Allocate volumes of timber (permit to harvest timber to supply a wood processing plant) to local and Aboriginal communities, which will be responsible for their harvest and marketing.

.....  
**ORIENTATION 3**  
.....

**TAKE INTO ACCOUNT THE RIGHTS, INTERESTS, VALUES, AND NEEDS OF ABORIGINAL COMMUNITIES IN RESOURCES MANAGEMENT AND OF FOREST LAND**

➔ Consideration of the rights, interests, values, and needs of Aboriginal communities is an essential component of sustainable forest management in Québec. The forest plays a central role in the lives of many Aboriginal people, who use it for hunting, fishing, trapping, or gathering for ritual, social, or domestic purposes. The Supreme Court of Canada has defined the Crown’s obligation to consult Aboriginal communities and accommodate them, where necessary, when a measure that may affect their rights is under consideration. The Ministère des Forêts, de la Faune et des Parcs has developed various tools, programs, and procedures to take these rights into consideration, in accordance with the Interim Guide for Consulting the Aboriginal Communities<sup>13</sup>. Conditions governing protection, particularly in relation to Aboriginal camps, portage trails, and gathering places, are also set forth in the new Regulation respecting sustainable forest management.

The need to establish and maintain harmonious, constructive relations with the Aboriginal communities underlies the consideration given to their rights and concerns. This is the frame inside which the MFFP intends to implement this orientation.

13. Interministerial Support Group on Aboriginal Consultation. Interim Guide for Consulting the Aboriginal Communities. Québec City: Government of Québec, 2008, 14 p.

#### ABORIGINAL COMMUNITIES OF QUÉBEC

The Québec National Assembly passed resolutions in 1985 and 1989 recognizing Québec's 11 Aboriginal nations and their distinct character. There are 55 Aboriginal communities in Québec, grouped into 10 Amerindian nations and one Inuit nation.

The Québec government recognizes the need to establish harmonious relations with Aboriginal communities, particularly by negotiating and entering into agreements.

To this end, it has signed various agreements with Aboriginal nations and communities, notably regarding natural resources and land. A major agreement of this nature was concluded in 2002 between the Cree of Québec and the Québec government. The Agreement Concerning a New Relationship between le Gouvernement du Québec and the Crees of Québec (commonly known as the "Peace of the Braves") provides for adaptations to the forest regime with a view to taking greater account of the Cree traditional way of life. Two subsequent agreements<sup>14</sup> between the Eeyou Istchee Cree Nation and the Government of Québec also include special provisions regarding forestry, particularly the implementation of a collaborative forestry management regime.

Owing to its obligations and commitments to the Aboriginal communities, the government has a special relationship with them regarding sustainable forest management. The MFFP is committed to ensuring that their rights, interests, values, and needs are taken into consideration and to increasing their involvement in forest management and development.

### Objective 1 – Promote Aboriginal community participation in sustainable forest management and development.

- > Establish a discussion table to facilitate consideration of main Aboriginal issues in forest management.
- ✓ Work in cooperation with Aboriginal communities to develop collaboration and consultation processes adapted to their reality.
- ✓ Encourage Aboriginal communities to define and communicate their interests, values, and needs regarding sustainable forest management and development.
- > Raise awareness among forest stakeholders, including local integrated land and resource management panels, of the presence and distinctive nature of Aboriginal communities.

14. The Agreement on Governance in the Eeyou Istchee James Bay Territory and the Agreement to resolve the Baril-Moses dispute, concluded in 2012 and 2015 respectively.

- ✓ Promote and support the participation of Aboriginal communities in forest management and development activities, including local integrated land and resource management panels.

### Objective 2 – Promote the socioeconomic development of Aboriginal communities through the development of forest lands.

- ✓ Promote access to forest resources for Aboriginal communities and businesses by allocating volumes of timber or delegating management in the form of local forests.
- ✓ Encourage the allocation of silviculture contracts to Aboriginal businesses.
- ✓ Support the certification of Aboriginal forest management businesses.

### Objective 3 – Contribute, in conjunction with the Secrétariat aux affaires autochtones, in negotiating, implementing, and monitoring agreements between the government and Aboriginal nations and communities.

- ✓ Participate in negotiating agreements with Aboriginal communities on forest-specific matters.
- ✓ Participate in implementing and monitoring agreements on forest-specific matters.

## CHALLENGE USE FOREST MANAGEMENT PRACTICES THAT ENSURE ECOSYSTEM SUSTAINABILITY

→ In a natural forest, the conditions of plant and animal life are not immutable. Evolution has endowed species with the ability to adapt to natural changes that occur in their environment. Forest management affects the diversity and structure of forests, which can alter the quality of terrestrial and aquatic habitats and the productive capacity of soil. If these changes cannot be avoided they must, at very least, respect the adaptive capacity of the species present and the resilience of ecosystems<sup>15</sup>, i.e., their ability to return to their original state after a major disturbance.

Forest management is based on the dynamics of a natural forest. It takes into account the characteristics of ecosystems that are under management and pays special attention to species known to be sensitive to forestry activities, including those whose survival is precarious. By allowing ecological processes to take their course, forest managers can ensure that ecosystems retain their productivity and biological diversity.

In this spirit, the Sustainable Forest Development Act places a strong emphasis on ecosystem management, making this concept one of the pillars of sustainable forest management in Québec.

The five main orientations for overcoming this challenge are as follows:

1. Manage forests in a manner that preserves the main features of natural forests.
2. Maintain quality habitats for species requiring particular attention and species sensitive to forest management activities.
3. Contribute to the development and sustainable management of an effective network of protected areas representative of Québec's biodiversity.

4. Integrate new knowledge on ecosystem productivity into forest management.
5. Introduce forestry practices and protective measures to maintain the integrity and ecological functions of aquatic, riparian, and wetland environments and forest soils.

### ECOSYSTEM MANAGEMENT

Ecosystem management seeks to maintain ecosystem biodiversity and sustainability by limiting the observed differences between managed and natural forests. This concept is based on the fact that maintaining managed forests in a state close to that of natural forests better ensures the survival of most species<sup>16</sup>, which are well suited to natural variations in the conditions of their habitats. Currently, this approach is the best option available to avoid the loss of biodiversity and ensure sustainable production of goods and services<sup>17</sup>. It is particularly suited to Québec's forests, which, in many ways, remain natural to a certain degree.

The goal of ecosystem management is not to keep all forests in a pristine state or completely recreate natural forests, but to arrive at a close approximation of a natural forest. It therefore encompasses timber harvesting and production activities. The management practices used are designed to create forest landscapes that contain all the diversity and irregularity of natural forests, including the composition and shape of stands, the presence of trees of different sizes, snags, and wood debris.

Different users coexist in the same forest area. Ecosystem management is part of a participatory management approach that addresses environmental issues as well as social and economic issues.

15. An ecosystem is a dynamic whole formed of living organisms and the non-living environment in which they evolve. Ecosystems vary greatly in size, from an entire ocean to a tree stump.

16. Seymour, R.S. and M.L. Hunter, Jr. 1999. "Principles of Ecological Forestry," in *Managing Biodiversity in Forest Ecosystems*. Edited by M.L. Hunter, Jr. Cambridge University Press. p. 22-61.

17. Gauthier, S., Vaillancourt, M.-A., Leduc, A., De Grandpré, L., Kneeshaw, D., Morin, H., Drapeau, P., Bergeron, Y. (editors). 2009. *Ecosystem management in the boreal forest*. Presses de l'Université du Québec, Québec, QC.

# ORIENTATION 1

## MANAGE FORESTS IN A MANNER TO PRESERVE THE MAIN FEATURES OF NATURAL FORESTS

➔ The MFFP wants to ensure that the management strategies set out in the integrated forest management plans address the main ecological issues raised by forest management activities. To achieve this, it compares managed forests to natural forests to identify the main differences, then translates them into ecological issues. These issues are worked into the integrated forest management plans so that the management strategies include actions that contribute to reducing the differences identified. This way, ecosystem management takes into account the specific features of each region and each management unit.

Among the main issues, those related to age structure and spatial organization have a greater ecological, economic, and social impact. The solutions put forth to address these issues are those with the strongest impact on the choice of forest management strategies. For that reason, and to ensure a certain degree of consistency across the province, the MFFP sets specific objectives and targets for these attributes and provides detailed instructions on how to achieve them.

### NATURAL FOREST

A natural forest (also known as a preindustrial forest) is a forest that has not undergone any major transformations as a result of large-scale industrial harvesting. Its characterization is not static and it takes into account the fluctuations the forest has experienced over time under the influence of natural disturbances and climate variations. The characterization of a natural forest is based in part on historical studies and in part on observations of forests that have never been developed.

### THE MAIN ECOLOGICAL ISSUES RAISED BY FOREST MANAGEMENT IN QUEBEC

When the MFFP develops management strategies, it pays special attention to the main ecological issues recognized by the scientific community<sup>18</sup>:

- > Changes in the age structure of forests
- > Changes in the spatial organization of forests
- > Changes in the plant composition of forests
- > Simplification of forest stand structure
- > Depletion of certain types of deadwood
- > Alteration of ecological functions in wetlands and riparian zones

### Objective 1 – Include local analysis of ecological issues in the integrated forest management plans and ensure suitable solutions are implemented.

- ✓ Publish and maintain a natural forest baseline record using available research results, taking into account the work done by regional land and natural resource commissions.
- ✓ Produce a technical document that provides a framework for the local analysis of ecological issues and sets out guidelines for choosing appropriate solutions when creating integrated forest management plans.
- ✓ Include additional provisions on protecting wetlands and riparian zones in the Regulation respecting sustainable forest management.
- ✓ Publish a progress report on actions announced in the integrated forest management plans to address ecological issues.

18. Comité scientifique sur les enjeux de biodiversité. 2007. Enjeux de biodiversité de l'aménagement écosystémique dans la réserve faunique des Laurentides. Preliminary report by the scientific committee. Ministère des Ressources naturelles et de la Faune. Québec City (Québec). viii + 118 p. + appendices.  
Jetté, J.-P., M.-A. Vaillancourt, A. Leduc and S. Gauthier. 2009. "Ecological issues related to forest management. Introduction." in Ecosystem management in the boreal forest. S. Gauthier, M.-A. Vaillancourt, A. Leduc, L. Degrandpré, D. Kneeshaw, H. Morin, P. Drapeau and Y. Bergeron (editors). Presses de l'Université du Québec, Qc, p. 1-10.

**Objective 2 – Ensure that the age structure of managed forests resembles that of natural forests.**

- ✓ Include age structure targets in the management strategy of each integrated forest management plan and take them into consideration when calculating allowable cuts.
- ✓ In a technical document on integrating ecological issues into integrated forestry management plans, update the MFFP guidelines on the conservation of mature and overmature forests.

**Objective 3 – Apply a distribution model for forest operations that is based on the natural forest.**

- ✓ Update the guidelines for planning the spatial distribution of cuts in integrated forest management plans (2013–2018) for the spruce-moss bioclimatic domain.
- ✓ Include provisions in the future Regulation respecting sustainable forest management to take into account key aspects of the distribution of forest operations in the spruce moss domain.
- ✓ Establish a new model for the distribution of forest operations in the balsam fir–white birch and balsam fir–yellow birch bioclimatic domains for application in integrated forest management plans (2018–2023).

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**ORIENTATION 2**  
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**MAINTAIN QUALITY HABITATS FOR SPECIES REQUIRING SPECIAL ATTENTION AND SPECIES SENSITIVE TO FOREST MANAGEMENT**

➔ Certain species have specific needs that require targeted protection or enhancement measures. Examples include managing and protecting designated wildlife habitats<sup>19</sup>, sites of wildlife interest, the habitat of certain harvested species, and the habitat of threatened or vulnerable species.

Some species, such as woodland caribou, require extensive territories to meet their basic needs. In these circumstances, protective measures have a strong impact on the management of the areas in question. The MFFP also wants to protect certain wildlife sites that have special characteristics or are of special interest to local communities.

**THREATENED OR VULNERABLE SPECIES**

A species is considered “threatened” when there is a high risk of extinction and “vulnerable” when its survival is precarious, even if it is not expected to become extinct in the short or medium term.

In Québec, there are number of legal provisions protecting threatened and vulnerable species. The provisions cover the legal designation of these species and the protection of their habitats once they are mapped. By convention, this denomination also includes species that are likely to be designated as threatened or vulnerable and are on the official list updated by the Ministère du Développement durable, de l’Environnement et de la Lutte contre les changements climatiques and the Ministère des Forêts, de la Faune et des Parcs<sup>20</sup>.

19. Wildlife habitats are designated as such under the Act Respecting the Conservation and Development of Wildlife.

20. [mddep.gouv.qc.ca/biodiversite/especes]

The decline or disappearance of a species often results from the alteration or loss of suitable habitat due to human activity. In its efforts to maintain habitats for all species, the MFFP focuses first on recommended preventive measures in ecosystem management. It also looks at crucial habitat conditions in order to adapt its actions and the ecosystem management targets described in the integrated forest management plans. Finally, to ensure that forest management practices maintain conditions favorable to species and biological diversity, the MFFP intends to, monitor species that are sensitive to forest management activities.

### **Objective 1 – Take into account the specific requirements of certain species when planning and carrying out integrated forest management activities.**

- ✓ Include in integrated forest management plans:
  - Management methods for maintaining the mapped habitat of each threatened or vulnerable species and each site of wildlife interest
  - Silviculture prescriptions for white-tailed deer yards identified in compliance with the Act Respecting the Conservation and Development of Wildlife (2.5 km<sup>2</sup> or more)
- ✓ Include basic provisions in the Regulation respecting sustainable forest management to govern forest operations in white-tailed deer yards (2.5 km<sup>2</sup> or more)
- > Establish suitable protective measures for species that are threatened, vulnerable, or likely to be designated as such and that are not yet covered by such measures.
- > For certain threatened or vulnerable plant species, experiment with measures other than across-the-board habitat protection when their survival requires targeted action.
- ✓ Publish and update a technical guide on requirements for wildlife species that are threatened, vulnerable, sensitive to forest management activities, or of socioeconomic interest in order to better integrate them into the 2018–2023 forest management strategies.

#### **WOODLAND CARIBOU**

*Rangifer tarandus caribou*, commonly known as woodland caribou, is the only subspecies of caribou found in Québec. However, specialists recognize three different ecotypes. The migratory barren-ground ecotype is found only in the north of Québec, the montane ecotype is found in the Gaspé region and Torngat Mountains, and the boreal ecotype is spread out in small herds in the boreal forest, mainly between the 49<sup>th</sup> and 55<sup>th</sup> parallels. Two small, isolated populations of the latter ecotype, known as the Val-d’Or herd and the Charlevoix herds, remain below these latitudes. In 2002, the boreal ecotype was listed as threatened in Canada, and in 2005, it was declared vulnerable in Québec.

Research carried out in the last decade has demonstrated that certain forest management practices affect the quality of woodland caribou habitat, notably by favoring wolves and black bears, the caribou’s two main predators.

In 2009, Québec published its first woodland caribou recovery plan for 2005 to 2012 as well as a first version of the guidelines for managing woodland caribou habitat. The approach taken in these guidelines is to maintain, whenever possible, large areas of mature forest measuring 100 to 250 km<sup>2</sup> that are exempt from forestry activity. Near these protected areas, large replacement sectors are managed to recreate suitable habitat as quickly as possible. These policies are currently being applied as part of the 2013–2018 integrated forest management plans covering the sections of caribou range located inside managed forests. North of these forests, where some 74% of the total area covered by the woodland caribou recovery plan is located, no forest management activities are being carried out.

Along with these efforts to protect woodland caribou habitat, stricter conservation measures have also been introduced. Currently, 11 protected areas in Québec significantly contribute to protecting areas used by the woodland caribou.

The 2013–2023 recovery plan and the new habitat management guidelines for woodland caribou, which are based on current knowledge of the species, call for measures better adapted to the animal’s needs, particularly with regard to large tracts of forest and relatively undisturbed habitat. The government is searching for a solution that balances reasonable economic effort with sufficient precautions to ensure caribou populations remain viable. As part of this process, it seeks to mobilize and rally the main stakeholders involved in this important sustainable forest management challenge.

## Objective 2 – Ensure that forest management contributes to the recovery of woodland caribou populations.

- ✓ In the 2013-2018 integrated forest management plans, include recommended forest management measures based on the 2010 guidelines for managing woodland caribou habitat.
- ✓ In the Regulation respecting sustainable forest management, include provisions required to maintain suitable conditions for woodland caribou habitat, notably for limiting the road network.
- ✓ Apply the forest management measures outlined in Québec's 2005–2012 recovery strategy for woodland caribou.
- > Carry out an inventory to determine the situation of woodland caribou herds and monitor their status over time and throughout their territory.
- > Take part in the evaluation and analysis of new woodland caribou habitat management guidelines stemming from the 2013–2023 recovery plan.
- > Adapt the new woodland caribou habitat management guidelines with a view to securing the support of forest stakeholders.
- > Contribute to the creation of large wild protected areas responding to the need of this ecotype, and the creation of additional core protection in favorable habitats of the forest under management.

## Objective 3 – Establish monitoring of species sensitive to forest management.

- > Help establish a Québec-wide wildlife diversity monitoring program for public and private forests.
- > For 2018, develop and implement a monitoring system based on the habitat quality models for at least three wildlife species sensitive to forest management activities, as identified in five forest zones<sup>21</sup>.
- > By 2018, integrate habitat quality models into the tools used to develop integrated forest management plans and calculate allowable cuts in order to assess and take into account the effect of forest management strategies on the quality and quantity of targeted wildlife habitats.

21. The forests of the maple subzone, the balsam fir–white birch and balsam fir–yellow birch sub-domains, and the eastern and western spruce–moss sub-domains.

## ORIENTATION 3

### CONTRIBUTE TO THE DEVELOPMENT AND SUSTAINABLE MANAGEMENT OF AN EFFECTIVE NETWORK OF PROTECTED AREAS REPRESENTATIVE OF QUÉBEC'S BIODIVERSITY

➔ Protected areas are intended to preserve species and their genetic variability and maintain the natural processes and ecosystems that sustain life. They are managed to preserve a representative sample of biodiversity. Some of them constitute "control areas" where natural ecosystems are left to evolve freely. In other areas, biodiversity is managed more actively to maintain or even restore the ecosystems and habitats of specific species. These "multipurpose protected areas" allow a certain degree of sustainable natural resource exploitation. This network of "control" and "multipurpose" protected areas provides a valuable reference for forest ecosystem management.

Protected areas play a very important socioeconomic role. National parks, in particular, diversify the way forests contribute to the economy and help inform and educate the public. The development of a network of protected areas also makes it easier to obtain forestry certification, providing the forestry industry with a competitive advantage when dealing with buyers who increasingly require compliance with national and international standards.

#### PROTECTED AREAS IN QUÉBEC

A protected area is defined as "An area of land and/or sea especially dedicated to the protection and maintenance of biological diversity, and of natural and associated cultural resources, and managed through legal or other effective means" (Natural Heritage Conservation Act)

According to the International Union for Conservation of Nature, the fundamental role of a system of protected areas is to increase the efficiency of biodiversity conservation. For conservation efforts to succeed in the long term, a network of protected areas must include a representative sample of each type of ecosystem. The goal of all types of protected areas should be to ensure the long-term conservation of biodiversity, species, and ecosystems and contribute to regional conservation strategies.

In the last few decades, the MFFP has established and managed a number of conservation sites (e.g., exceptional forest ecosystems, biological refuges, wildlife refuges, wildlife habitats) legally designated under the Sustainable Forest Development Act or the Act Respecting the Conservation and Development of Wildlife. These sites of varying size contribute to the network of protected areas by allowing the targeted conservation of specific, even noteworthy aspects of biological diversity. In particular, they help protect Québec's old forests and threatened or vulnerable species.

In 2009, the government of Québec committed to protecting 12% of Québec's land by 2015. By the start of 2014, the network of protected areas covered 155,778 km<sup>2</sup>, or 9.16% of Québec. More recently, it committed to protecting 20% of the area covered by the Plan Nord by 2020 and at least 12% of boreal forest land. The MFFP is working toward developing the network of protected areas in accordance with government orientations, notably by defining new statuses for forests put to multiple uses. The MFFP is working toward completing this network, notably by defining new statuses for forests put to multipurpose.

### **Objective 1 – Pursue the creation, legal recognition, and management of protected areas for which the MFFP is responsible.**

- ✓ Identify the main gaps in the network of exceptional forest ecosystems and fill them by legally classifying new protected sites and providing interim protection for exceptional forest ecosystems slated for protection.
- > Promote the voluntary conservation of exceptional forest ecosystems in private forests by sharing information with concerned parties.
- > Evaluate the network of biological refuges and legally designate all sites set aside since 2008.
- > In collaboration with Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, take the necessary steps to ensure the recognition of additional exceptional forest ecosystems, biological refuges, and wildlife habitats in the register of protected areas.
- > Support initiatives to develop the protected areas for which the MFFP is responsible for observation, information, and educational purposes.

### **Objective 2 – Help develop Québec's network of protected areas in forested areas.**

- ✓ Work with the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, to create new protected areas, in particular in the continuous boreal forest and the northern temperate forest.
- > Work with the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, in analyzing candidate areas and assigning legal conservation status.

### **Objective 3 – Help define new types of protected area status in the forests and create new protected areas.**

- > Work with the Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques on defining a broader range of statuses for protected areas where certain resource development activities are permitted.
- > Help create habitat and species management areas, protected landscapes and seascapes, and protected areas with sustainable resource use (International Union for Conservation of Nature Category IV, V, and VI protected areas<sup>22</sup>), including by developing areas of interest for conservation located in wildlife reserves.
- > Develop the concept of high conservation value wetlands as well as criteria for creating new wetland protected areas on lands in the domain of the State.

22. N. Dudley (editor) (2008), Guidelines for Applying Protected Area Management Categories, International Union for Conservation of Nature, Gland, Suisse, 96 p.

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## ORIENTATION 4

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### INTEGRATE NEW KNOWLEDGE ON ECOSYSTEM PRODUCTIVITY INTO FOREST MANAGEMENT

➔ A forest's productivity (i.e., the volume of wood it produces per unit of surface and time) mainly depends on climate, soil fertility, and disturbances. Climate change can also influence the growth and composition of stands as well as the severity and frequency of natural disturbances.

Spruce budworm epidemics<sup>23</sup>, forest fires, acid rain, climate, and site characteristics have been the subject of numerous studies and environmental monitoring projects in an effort to understand how these factors influence ecosystem productivity. Some of them are considered in whole or in part when calculating allowable cuts, but the approaches used must be refined to be able to better predict how disturbances will affect tree growth. The challenge for the future will be to enrich this knowledge and integrate it into the forest management planning process and the calculation of allowable cuts.

#### A NEW APPROACH FOR DETERMINING ALLOWABLE CUTS

Allowable cuts, which are determined by the chief forester with regard to forest management activities, are the annual amounts that can be cut for sustained yield. They correspond to the maximum annual timber volume of a species or group of species that can be harvested in perpetuity from a given management unit or local forest without compromising productive capacity. Allowable cuts also take into account certain sustainable forest management objectives such as the natural dynamic of forests (e.g., composition, age structure) and their diverse uses.

The MFFP is revising how annual cuts are calculated with a view to fostering the sustainable production of forest ecosystem services (e.g., supply, regulation, socio cultural services, and support). This new approach will contribute to the long-term sustainability of ecosystems and to the diversified use of forests.

### Objective 1 – Take into account the effects of the main natural disturbances when planning forest management and calculating allowable cuts.

- ✓ Identify the main disturbances specific to each region and the ecological and structural factors associated with them.
- ✓ Develop models to assess the effects of natural disturbances on the state of the forest and the calculation of allowable cuts.
- ✓ Take the results of natural disturbance models into consideration when calculating allowable cuts and developing integrated forest management plans.

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23. Spruce budworm is a species of moth native to North America. It causes the most damage in its caterpillar stage. In Québec, it mainly feeds on the year's foliage of balsam fir and white spruce. During infestations it can also be found on other softwood species.

**Objective 2 –Take soil fertility into account when planning and conducting forest operations.**

- ✓ Integrate available data on soil fertility into forest management tools such as silviculture guides.
- > Take areas vulnerable to nutrient loss into account when determining silviculture prescriptions.
- ✓ Add provisions to the Regulation respecting sustainable forest management aimed at sustaining soil fertility and prohibiting the removal of non-marketable sections of harvested trees from sites vulnerable to nutrient loss.

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**ORIENTATION 5**  
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**INTRODUCE FORESTRY PRACTICES AND PROTECTIVE MEASURES TO MAINTAIN THE INTEGRITY AND ECOLOGICAL FUNCTIONS OF AQUATIC, RIPARIAN, AND WETLAND ENVIRONMENTS AND FOREST SOILS**

→ Soil and water are the essential building blocks of a forest ecosystem, forming the basis of its function and productivity. Forests are very good at intercepting rain and snow and protecting soils by preventing surface runoff and stabilizing waterways. Riparian zones feed nutrients and wood debris into waterways, creating aquatic wildlife habitat and regulating temperature. Soil and water preservation helps maintain ecological cycles (water, carbon, nutrients) as well as the aquatic, riparian, and land habitat essential to numerous animal and plant species.

Forest operations can alter soil and water, so it is essential to ensure proper protection of these collective resources when such activities are carried out. In recent decades, additions to the Regulation respecting standards of forest management for forests in the public domain and the introduction of protection and development objectives have ensured better soil and water protection during forestry management activities.

However, a number of challenges remain with regard to soil rutting, loss of productive area, erosion caused by forest roads, free movement of fish, and headwater protection. This orientation stems from the MFFP's desire to improve measures protecting soil and water during forestry management activities.

### **Objective 1 – Reduce soil disturbances that hinder the function of ecosystems and diminish long-term productivity.**

- ✓ Improve measures to fight rutting and the loss of productive area caused by forest roads and roadsides by integrating new requirements into the Regulation respecting sustainable forest management.

### **Objective 2 – Protect aquatic environments by improving forestry practices and forest road management.**

- ✓ Improve protection for water and aquatic environments by including new requirements in the Regulation respecting sustainable forest management.
- > Monitor the effectiveness of measures in the Regulation respecting sustainable forest management aimed at protecting aquatic environments and ensuring the sustainability of forest road infrastructure.
- ✓ Apply the specific management methods<sup>24</sup> decided on by local integrated land and resource management panels and selected by the MFFP in order to provide better protection of exceptional aquatic wildlife habitats.
- ✓ Ensure and monitor compliance with maximum deforestation levels (equivalent clearcut area) in Atlantic salmon river drainage basins and certain landlocked Atlantic salmon rivers.
- > Formulate a policy for planning the development of forest road networks and for maintaining and closing roads after harvest so as to minimize impacts on aquatic environments.

24. In certain cases, this could include applying local limits on equivalent clearcut areas in drainage basins near sites of significant wildlife interest (e.g., sites of wildlife interest, habitats of threatened or vulnerable species).

# CHALLENGE ENSURE PRODUCTIVE FORESTS THAT GENERATE DIVERSIFIED WEALTH SOURCES

→ Wood is the forest resource that generates the greatest economic benefits for Quebec. The MFFP is committed to ensuring that wood remains an economic driving force, especially for local communities. The challenge is to maximize value while respecting the productive capacity of ecosystems and taking into account the interests and concerns of the different stakeholders. Wealth generation will also require greater timber mobilization, particularly in private forests.

To generate more wealth, the MFFP is also opening up access to timber through an auction system. This system creates a competitive timber market that encourages performance, innovation, optimal use of resources and added value. That means wood is sold at fair market value for the benefit of Québec society.

The future lies in the diversification of products derived from the forest. Hunting, fishing, hiking, and harvesting of non-timber products such as maple sap, Canada yew, mushrooms, and berries are all forest activities that generate profits that benefit local communities and the population of Québec as a whole.

In response, the MFFP wishes to:

1. Increase the value created from wood to generate greater collective wealth.
2. Expand the range of products and services generated by the integrated development of forest resources and functions.
3. Increase the contribution of private forests to the collective wealth of Québec.
4. Sell timber at its fair market value and extend access to more processors.

## ORIENTATION 1

### INCREASE THE VALUE CREATED FROM WOOD TO GENERATE GREATER COLLECTIVE WEALTH

→ Forests produce wood without human intervention, but silviculture can increase its quality and quantity. Based on the ecological characteristics of sites and the objectives pursued, managers decide which silviculture treatments<sup>25</sup> provide the most cost-effective results.

#### SILVICULTURAL INTENSITY GRADIENT

To help monitor different silviculture scenarios and allocate resources more effectively, the MFFP has created a silvicultural intensity gradient. This gradient has four categories:

- > Extensive silviculture
- > Basic silviculture
- > Intensive silviculture
- > Elite silviculture

An intensity gradient is assigned to each silviculture scenario during the preparation of integrated forest management plans. It is then taken into consideration when silvicultural prescriptions are prepared, making it easier to keep track of management work.

Extensive silviculture and basic silviculture are applied on most of the forest land. Intensive silviculture and elite silviculture, which require more operations over time, are applied where justified by high profitability. These areas are usually limited in size, clearly defined, and very productive.

25. Silviculture treatments are operations designed to control stand development, including renewal, or increase stand productivity and quality

The MFFP is reconsidering its approach to timber production with the goal of turning the forestry industry into an engine of wealth creation for Québec. As forests are a limited resource, it is important to ensure that every square meter of timber that is harvested and processed is financially profitable for businesses and economically profitably for Québec. The MFFP draws on the concept of the “value chain” to improve harmonization and strengthen synergies between industry stakeholders with a view to maximizing the value of timber and generating the greatest benefits for all.

To orchestrate the efforts required to meet these objectives, the MFFP is adopting a timber production strategy. This diversified strategy is designed to take advantage of every production opportunity and, most importantly, is grounded in regional realities.

#### THE IMPORTANCE OF OPTIMIZING THE FORESTRY VALUE CHAIN

The value chain includes all activities from raw material supply planning to the marketing of finished products. To have a real influence on product value, it is important to manage every link in the chain. By reinforcing the efficiency of each link and the connections between them, overall performance is optimized.

Québec’s forest value chain has three main components: planning, supply, and processing. It can be optimized by encouraging forestry industry stakeholders to work together toward a common vision so that they benefit from the synergies their joint efforts create. Setting up this network has three main objectives:

- > Maximize the value of forest products
- > Lower the cost of supplying timber to processing plants.
- > Make actions more effective and stakeholders more efficient

### Objective 1 – Develop a timber production strategy for Québec.

- > Implement a systematic provincial and regional process to analyze timber production options and their profitability.
- > Gradually adjust integrated forest management plan strategies to apply promising production options.
- > Develop a Québec timber production strategy that draws

on the strategies applied in each region.

- > Identify financial and budget incentives to support implementation of the Québec timber production strategy.
- > Establish Québec-wide and regional timber production targets.

### Objective 2 – Produce timber in a way that takes into account site ecology and target objectives.

- ✓ Produce the Québec silviculture guide and station guides.
- ✓ Set planning, execution, monitoring, and inspection efforts for each category of the silvicultural intensity gradient.

### Objective 3 – Target silviculture investments according to economic profitability.

- ✓ Further economic and financial analyses and integrate them into the calculation of allowable cuts as well as integrated forest management plans with a view to guiding silviculture investments toward the most profitable choices.
- > Examine the silviculture scenarios used in the past to evaluate their wealth creation potential and modify them if necessary.
- ✓ Further the development of economic and financial analysis tools.
- ✓ Integrate the use of economic and financial analysis tools into the process of optimizing Québec’s forest value chain.
- > Produce a yearly analysis of the economic profitability of silviculture work for decision makers.

## Objective 4 – Dedicate certain portions of land to timber production.

- > In the integrated forest management plans, determine the proportion and location of increased timber production areas.
- > Maintain a register of areas of increased timber production and make it available to the public.
- > Include government guidelines for increased timber production areas in the public land use plan.

## ORIENTATION 2

### EXPAND THE RANGE OF PRODUCTS AND SERVICES GENERATED BY THE INTEGRATED DEVELOPMENT OF FOREST RESOURCES AND FUNCTIONS

➤ Public forest lands are managed and shared by a variety of users. Multiple uses provide social, economic, and environmental benefits. These benefits must be diversified and increased by developing other existing or potential forest resources and activities (e.g., wildlife harvesting, tourism, maple syrup production, blueberry harvesting, landscape protection) while continuing timber production and harvesting.

To accomplish this, the MFFP uses integrated land and resource management and a participative approach that takes different forms of land use into account right from the start of integrated forest management plan preparation. In each region, local stakeholders are involved in local integrated land and resource management panels where they can share their concerns and help define the main environmental, social, and economic issues for local forests. The result of these discussions is greater user collaboration around resource development.

The Regulation respecting sustainable forest development includes provisions on the protection of landscapes and the maintenance of trails and minimum forest cover, as these features are essential to forest resource development.

#### FOREST OPERATIONS THAT PROMOTE HARMONIZED USE

Different uses often overlap on the same territory. When preparing management plans, managers seek to harmonize use and favor forest operations that achieve multiple objectives. For example, silviculture prescriptions could:

- > Make shelter and food available to wildlife by maintaining tree stands in cut areas.
- > Make a certain amount of food available to wildlife by leaving fruit bearing trees in place during a clear cut.
- > Help provide a quality hunting experience by ensuring that forest operations are conducted outside of hunting season.
- > Maintain a landscape conducive to tourism and recreation by fractioning and distributing cut areas.
- > Allow yew and mushrooms to be harvested before trees are cut.

## Objective 1 – Include activities that promote the development and protection of forest resources and functions in integrated forest management plans.

- ✓ In integrated forest management plans, include local management objectives and harmonization measures agreed on by local integrated land and resource management panels and approved by the MFFP.
- > In silviculture scenarios, integrate the forestry practices recommended in wildlife habitat management guides (for white-tailed deer, moose, and ruffed grouse) and, if necessary, produce other wildlife guides.

**Objective 2 – Promote the integrated management of the forest road network.**

- ✓ Develop a forest road network management framework.

**Objective 3 – Promote the development of services within structured areas through adapted forest management.**

- ✓ Add provisions to the Regulation respecting sustainable forest development regarding forest management issues specific to ZECs, wildlife sanctuaries, and outfitter operations with exclusive rights.
- ✓ In integrated forest management plans, include local management objectives and harmonization measures inherent to the development of structured area activities (e.g., hunting, fishing, trapping, ecotourism) that have been agreed on by local integrated land and resource management panels and approved by the MFFP.

**Objective 4 – Ensure the maintenance of the visual quality of forest landscapes.**

- ✓ In integrated forest management plans, include local objectives and harmonization measures for sensitive landscapes requiring protection that have been agreed on by local integrated land and resource management panels and approved by the MFFP.
- ✓ Add provisions to the Regulation respecting sustainable forest development to ensure landscape protection for certain types of site or infrastructure of recognized importance.

**Objective 5 – Support the development of maple syrup production.**

- ✓ In public land use plans and local integrated development plans, identify public land with good potential for maple syrup production and take it into consideration in integrated forest management plans.
- > Adapt the analysis tool to assess the economic benefits of maple syrup production.

**Objective 6 – Encourage the development of non-timber forest products.**

- ✓ In the integrated forest management plans, include harmonization measures for non-timber forest products agreed on by local integrated land and resource management panels and approved by the MFFP.

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**ORIENTATION 3**  
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**INCREASE THE CONTRIBUTION OF PRIVATE FORESTS TO QUÉBEC'S COLLECTIVE WEALTH**

➔ Most private forests are located in southern Québec, where the climate is milder and the soil is more fertile. They represent 16% of the province's total productive forested area. There are some 130,000 private forest owners, and nearly 20,000 of them derive their main or secondary income from these forests. The value of the timber harvested by forest producers totals some \$300 million annually. But private forests contribute much more than timber production; they also help maintain rural landscapes, wildlife habitats, biological diversity, and air and water quality.

**REGIONAL AGENCIES FOR PRIVATE FOREST DEVELOPMENT**

Québec’s 17 regional agencies for private forest development are privileged partners of the government. They guide the development of private forests in their regions by drawing up protection and development plans and managing certain programs. These programs offer financial and technical assistance to owners who are legally recognized as forest producers.

Agency boards are composed of representatives of private forest owners, forest industries, municipalities, and the MFFP.

Private forests play an important role in the social and economic vitality of Québec’s regions, but they can make a larger contribution to collective wealth. To ensure its investments create wealth, the MFFP seeks to direct them toward the development of forest resources in private forests.

The government wants to ensure that Quebecers get the most out of every dollar invested in private forests. Owner engagement is essential to achieving these objectives, and the MFFP wants to establish a business relationship with owners ready to make that commitment. It is reviewing its assistance programs to provide better support to owners actively engaged in woodlot management and timber production.

The MFFP reiterates its trust in regional agencies for private forest development as partners in the implementation of this orientation.

**Objective 1 – Clarify the roles of private forest partners.**

- ✓ Introduce a governance model that includes the following panels: provincial partner forums, ministry/agencies table, interministerial advisory table, and the MFFP’s decision-making table.
- > Support private forest initiatives in integrated local land and resource development plans that are consistent with protection and development plans as well as the MFFP guidelines.

**Objective 2 – Better target private forest investments.**

- > Adopt a policy to protect public investments at each agency.
- ✓ Amend the Regulation respecting the reimbursement of property taxes to update the list and value of eligible work and include activities such as multi-resource management.
- > Adapt the economic analysis tools designed for public forests to the private forest context.
- > Establish a single financial assistance grid for private forests based on the public forest experience.

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**ORIENTATION 4**  
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**SELL TIMBER AT ITS FAIR MARKET VALUE AND BROADEN ACCESS FOR A GREATER NUMBER OF PROCESSORS**

➔ Prior to April 1, 2013, timber processing plants holding supply and forest management contracts with the MFFP held most of the rights to harvest timber on public lands. This was a barrier to the creation of new businesses and to the expansion of those considered as top performers.

In light of this, the government decided to make a portion of timber from public lands available to all potential buyers through auctions. By introducing this competitive system, the government seeks to promote performance and innovation. The most effective and innovative businesses obtain more timber at auctions, which stimulates Québec’s entire forestry industry. The resource is exploited more efficiently, which contributes to wealth creation from public forest timber.

An open timber market also provides a reliable baseline for establishing the fair value of timber. At auction, businesses set the price they are ready to pay with full knowledge of the cost of harvesting the timber and the profits that can be derived from it. That means the price of timber is set by fluctuating supply and demand on the market.

In addition, the government ensures processing plants have a reliable supply of roundwood at all times through a supply guarantee which protects the investments of forestry companies and helps stabilize communities that directly depend on timber harvesting and processing.

#### THE FREE TIMBER MARKET

The timber marketing board was created in early 2011. This administrative body, the role of which is defined in the Sustainable Forest Development Act, is dedicated to managing the free timber market, whose objective is to sell a minimum of 25% of the timber available from public lands in all regions of Québec. This portion is required to establish the fair market value of standing timber on public lands.

To obtain the fair and optimal value, the timber marketing board ensures that sales are competitive and that they meet the conditions for a free market. This means the timber must be available to a maximum number of bidders (e.g., plants, entrepreneurs, cooperatives) without regional restrictions. Auctions are carried out according to recognized rules and the principles of equity, thoroughness, and efficiency.

The scope and frequency of these sales ensure that Quebecers receive fair royalties from their forests based on market demand.

### Objective 1 – Establish the real value of timber in public forests based on market forces.

- ✓ Define and implement the conditions required to hold timber auctions, including through implementation projects.
- ✓ Define and implement the conditions and rules required for a free timber market by publishing a marketing manual.
- ✓ Auction off the minimum volume of timber from public lands necessary to determine its fair market value.

### Objective 2 – Broaden access to timber by relying on market forces and reviewing allocation mechanisms while maintaining a form of supply reliability.

- ✓ Implement conditions and tools that promote the involvement of a maximum number of bidders on the free timber market (e.g., efficient processes, customer service, buyer support, transactional website).
- ✓ In each region, determine the volume of timber available by species or group of species for the timber supply guarantee.
- ✓ Establish and make known the timber allocation mechanism in order to broaden access for more businesses.

# CHALLENGE SUPPORT A DIVERSIFIED, COMPETITIVE, AND INNOVATIVE WOOD PRODUCTS AND FORESTRY INDUSTRY

→ The MFFP wants the forest sector<sup>26</sup> to play a central role in economic growth and wealth creation. Innovation is key to improving the industry's position on the markets, ensuring its future, and creating wealth for the benefit of Québec society. The MFFP intends to act as a catalyst for businesses and stakeholders by introducing conditions that foster the development, performance, innovation, and profitability of companies that manage our forests and develop forest products and resources.

The MFFP encourages the forest products industry to modernize, diversify, adapt to changing markets, develop new products, and increase the amount of wood used in bioenergy production.

Furthermore, the MFFP intends to support the development of wildlife, recreation, and tourism businesses as well as companies that promote non-timber forest products (maple and birch syrup, mushrooms, wild fruit, etc.) to diversify local economies and encourage economic development in Québec.

Two orientations will help meet this challenge:

1. Modernize the forest industry by diversifying products to better adapt to changing markets.
2. Promote profitable and efficient forest management companies and diversified firms that develop non-timber resources.

## ORIENTATION 1

### MODERNIZE THE FOREST INDUSTRY BY DIVERSIFYING PRODUCTS TO BETTER ADAPT TO CHANGING MARKETS

→ The traditional activities of Québec's forest industry face cyclical markets for wood products and structural issues for pulp and paper. Added to these issues is strong competition resulting from the opening up of markets and the intensification of world trade. The 2012–2017 Strategy to Transform Québec's Forest Products Industry<sup>27</sup> proposes repositioning Québec's forest industry by diversifying the wood products manufacturing sector, designing new products in the pulp and paper sector, and developing the supply chain required for the use of forest biomass as an energy source.

The wood products industry must not only be dealt with as a sector, but also as a series of production steps that can each be improved upon. Now is a good time to review the industry's business model in order to adjust it to low demand for wood by-products, reduce its vulnerability to economic cycles, and adapt it to the changing needs of its customers. The transition from commodity products to higher valued-added specialty products requires significant flexibility and closer ties between producers and their customers. This is an opportunity for all industry stakeholders to invest in training a creative, qualified, and competent workforce. Processing companies must also have the proper machines, equipment, and software to support the productivity and innovative capacity required to make the proposed shift. Sawmills will be able to further promote the forest resource, and board plants will be able to develop niche markets. Secondary and tertiary processing plants will be able to exploit the new opportunities that the industrialization of the construction sector has to offer.

26. The forest sector includes the forest products industry, forest management companies (silviculture and harvesting), service providers (consultants, equipment suppliers, etc.), and businesses that promote non-timber forest resources (outfitters, recreational and tourism companies, sugar bushes, blueberry fields, etc.).

27. Ministère des Ressources naturelles et de la Faune. 2012–2017 Strategy to Transform Québec's Forest Products Industry. Québec City: Government of Québec, 2012, 46 p.

#### WOOD IN QUÉBEC CONSTRUCTION

Wood is a renewable, recyclable material recognized for having one of the lowest environmental impacts of all materials. Its increased use in construction is a concrete means of reducing greenhouse gas emissions. Because of its environmental, economic, and social impact, construction with wood is perfectly in line with Québec's sustainable development approach.

To reorient, the industry needs to capitalize more on the chemical properties of wood and wood extractives and continue developing new generations of paper and cardboard. The expansion of world markets for bioproducts based on nanotechnology and green chemistry opens the door for strong potential growth in a few years. The outlook justifies investments to modernize existing facilities, build new facilities required for future production, and train a highly skilled and qualified workforce.

The bioenergy sector can convert by-products from sawmills and pulp and paper mills, maximizing the value derived from the forest and providing strong revenue potential on wood pellet markets while offering an alternative to fossil fuels. Growth in this sector depends on the development of the different components of its value chain. Efforts must be made with regard to availability of the resource, the means of production, transportation, and handling, as well as target markets.

#### Objective 1 – Create favorable conditions for developing the forest product industry.

- ✓ Promote Québec's good practices in sustainable forest management on export markets.
- > Ensure, together with the industry, that the research and technology transfer infrastructures required to modernize the industry are in place.
- > Support measures to make available a qualified workforce adapted to new products and technologies.

#### Objective 2 – Wood product manufacturing: Diversify to reduce reliance on a cyclical economy.

- ✓ Continue efforts to promote the use of wood in construction to take full advantage of the environmental benefits of green construction.
- > Support the industry in seeking and opening up new markets for existing products and niche markets for innovative products with a small environmental footprint.
- > Encourage the industry to adapt plants on the basis of available resources and new needs and minimize operating costs by providing its workforce with appropriate training and implementing innovative technology.

#### Objective 3 – Pulp and paper industry: Develop new products and markets.

- > Help develop new high value-added wood products such as smart paper, nanocrystalline cellulose, cellulose fibrils, fiber composites, and extractables.
- > Support the industry in reducing its operating costs and help it set up more efficient transport logistics.
- > Encourage companies to use employee training programs to prepare staff for new technologies.

#### Objective 4 – Bioenergy sector: Take advantage of business opportunities to develop forest biomass as an energy source.

- > Encourage projects that create market opportunities for using forest biomass as an energy source.
- > Promote investment in regional use of forest biomass to replace fossil fuels.
- > Encourage investment in equipment and facilities for wood pellet production and handling to make forest biomass harvesting more profitable.

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## ORIENTATION 2

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### PROMOTE PROFITABLE AND EFFICIENT FOREST MANAGEMENT COMPANIES AND DIVERSIFIED FIRMS THAT DEVELOP NON-TIMBER RESOURCES

➔ Forest management and wood products companies contribute to collective wealth by creating jobs and diversifying community income sources. The MFFP recognizes the importance of these businesses and encourages entrepreneurship. It also encourages companies to develop non-timber resources in accordance with the carrying capacity of the forest.

Forest contractors involved in harvesting activities have seen revenues decline in recent years. The MFFP is concerned about their current situation and future prospects, and the conditions facilitating business startups and growth.

#### WORKERS AT FOREST MANAGEMENT COMPANIES

The MFFP is aware of the problems experienced by forestry workers, both in the forest and in the mills. Remote worksites entailing high employment expenses, physically demanding work, long hours, employment seasonality, the high risk of accident, and the less than appealing wage policies make it difficult to recruit and retain this workforce.

In this regard the MFFP would like to work with its employer and union partners and with other ministries concerned to find solutions adapted to regional realities and improve conditions and compensation for silviculture and logging workers.

The MFFP believes that having competent, motivated workers in sufficient numbers is essential to ensure the long-term viability of successful forest management companies. It intends to support improvements to working conditions to help attract and retain forestry workers, ensure their succession, and by the same token enhance the image of forestry work. It also wants to put in place conditions favorable to company stability and profitability.

Many private and public organizations and associations rely on wildlife resources, whether for hunting, fishing, or trapping. These activities attract over a million enthusiasts to the forest every year, generating economic wealth, especially in rural areas. In addition to being an integral part of the Québec identity and culture, maple products are the most lucrative non-timber forest products for the Québec economy. Both wildlife activities and maple products are attracting increasing interest, both in Québec and worldwide.

Companies involved in developing non-timber resources supply products in a variety of fields, such as food (maple syrup, mushrooms, berries), essential oils, biopharmaceuticals, nutraceuticals (e.g., Taxol, health products), and decoration (Christmas trees).

Furthermore, as mentioned in the 2012–2020 Tourism Industry Development Plan<sup>28</sup>, tourism is a fast-growing segment and a core economic driver in Québec’s regions. The quality of the landscape, tranquility, and the presence of wildlife are values particularly sought out by visitors. The MFFP is concerned about consistency in government policies, programs, and actions that relate to forests. It therefore takes part in their development in collaboration with the ministries and agencies involved.

28. Tourisme Québec. “Un itinéraire vers la croissance.” Plan de développement de l’industrie touristique 2012–2020. Québec City: Government of Québec, 2012, 112 p.

**Objective 1 – Foster the development and maintenance of an efficient network of forest management companies.**

- > Require forest management companies to hold certification recognized by the MFFP when they perform management work in public forests.
- > Take part in efforts to foster a positive image of forest industry jobs and trades and find solutions for improving the conditions of silviculture workers.
- ✔ Continue discussions with the representatives of forest contractors in order to establish the best conditions possible for business growth.
- > Sign multi-year contracts with forest management companies and forest cooperatives for carrying out non-commercial work for a portion of management work.

**Objective 2 – Promote development of wildlife, ecotourist and non-timber product businesses on public land.**

- > Promote development of blueberry fields on public lands.
- ✔ Promote consistency in the policies, programs, decisions, and actions of ministries and partners involved with non-timber forest products.
- > Develop decision support tools that help take into consideration the economic impact of forest management choices on the activities of businesses specializing in the development of wildlife.

## CHALLENGE ENSURE THAT FORESTS AND THE FOREST SECTOR HELP FIGHT AND ADAPT TO CLIMATE CHANGE

→ Forests are an important component of the carbon cycle. They contain and constantly exchange carbon with the atmosphere. Forests are a carbon pool; depending on their state, they can be a carbon source or sink. These roles are even more important nowadays, given that the increased atmospheric concentration of carbon dioxide (CO<sub>2</sub>) is the main cause of climate change.

There are a number of ways to increase the forest carbon pool. Forested area can be increased by creating new forests on abandoned farmland and poorly or sparsely regenerated areas or by managing forests to maintain and even increase the average amount of carbon stored there. Furthermore, wood products such as construction materials help sequester certain amounts of carbon in the atmosphere during their useful life. These products can replace other materials whose manufacture generates more greenhouse gases. Using forest biomass to produce energy or biofuels to replace fossil fuels such as oil is another method that can help fight climate change.

Climate change affects forests and their characteristics and dynamics by changing the growing conditions of trees and the natural disturbance regimes to which they are subject. To continue enjoying the benefits of forests, we must consider the effects of climate change when managing and developing them.

Two orientations will help meet this challenge:

1. Increase use of forest biomass and products to reduce greenhouse gas emissions in Québec and fight climate change.
2. Consider forest carbon and the effects of climate change in forest management and development.

# ORIENTATION 1

## INCREASE USE OF FOREST BIOMASS AND PRODUCTS TO REDUCE GREENHOUSE GAS EMISSIONS IN QUÉBEC AND FIGHT CLIMATE CHANGE

→ Québec has pledged to pursue its efforts to reduce its greenhouse gas emissions to 20% below the 1990 level by 2020<sup>29</sup>. Forest products can directly contribute to these efforts. First, forest biomass can be used to produce energy or biofuels that help reduce fossil fuel consumption. Second, wood can replace energy-intensive materials such as concrete and steel. As long as it is not burned or degraded, wood sequesters and stores the carbon present in the atmosphere, in addition to being a renewable raw material. The MFFP, with the collaboration of other ministries, supports the judicious use of forest biomass for energy purposes and the use of appearance wood and construction lumber in Québec, particularly in commercial buildings.

### WOOD CHARTER

Made public in spring 2013, the Wood Charter proposes the following measures:

- > Evaluate the use of wood for all projects funded in whole or in part by public funds.
- > Allow the construction of five- or six-story wooden buildings.
- > Promote training on wood and its use as a structural component.
- > Create conditions conducive to research and innovation for the use of wood in construction.

### Objective 1 – Reduce greenhouse gas emissions from institutional and commercial heating by using forest biomass instead of fossil fuels.

- > Promote the development of sufficient supplies of biomass from public forests, even during periods of reduced forest activities, in accordance with forest carrying capacity.
- > Encourage biomass users to source supplies from private forests.
- > Use life cycle analysis to determine which types of biomass to use and which fossil fuels to replace in order to optimize benefits with respect to greenhouse gas reduction.

### Objective 2 – Reduce greenhouse gas emissions by increasing the use of construction lumber and appearance wood in Québec.

- ✓ Continue efforts to promote the use of wood in construction to fully capture the environmental benefits of green construction.

29. Ministère du Développement durable, de l'Environnement et des Parcs. 2013–2020 Climate Change Action Plan. Québec City: Government of Québec, 2012, 55 p.

## ORIENTATION 2

### CONSIDER FOREST CARBON AND THE EFFECTS OF CLIMATE CHANGE IN FOREST MANAGEMENT AND DEVELOPMENT

→ The main goal of forest carbon management is to maintain as much carbon as possible in the forests while providing as many forest products as possible for society.

Southern Québec, where most managed forests are located, experienced a rise in annual average temperatures of 0.3°C to 1.5°C between 1960 and 2008<sup>30</sup>. Various scenarios point to even greater temperature increases in the future<sup>31</sup>. Climate change is leading to much uncertainty about the state of forests and the ecological, economical, and social services that they can provide to current and future generations. Decision makers and forest managers need to have sufficient knowledge to help them adjust their decisions and actions as needed.

#### **Objective 1 – Evaluate the effect of management strategies on the carbon pool in the forest ecosystem.**

- ✓ Develop expertise to account for and integrate forest carbon in forest management.
- > Render operational the tools designed to integrate forest carbon (pool and flow) into the model used to calculate allowable cuts.

#### **Objective 2 – Determine and implement climate change adaptation measures in all spheres of forest management.**

- ✓ Define climate change adaptation measures and integrate them into forest management and development.

#### **Objective 3 – Update the approach used to manage natural disturbances as part of an integrated risk management process.**

- > Produce an orientation document on proper management practices for natural disturbances based on an integrated risk management approach.
- > Draft and adopt new management practices for natural disturbances based on integrated risk management, in accordance with the commitments made by Québec for the implementation of the National Forest Pest Strategy and the Canadian Wildland Fire Strategy.

30. Ministère du Développement durable, de l'Environnement et des Parcs. 2013–2020 Climate Change Action Plan. Québec City: Government of Québec, 2012, 55 p.

31. T. Logan, I. Charron, D. Chaumont, and D. Houle. Atlas of Climate Scenarios for Québec Forests. Ouranos and Ministère des Ressources naturelles et de la Faune, 2011, 55 p. and appendices.

**CHALLENGE** ENSURE SUSTAINABLE, STRUCTURED, AND TRANSPARENT FOREST MANAGEMENT

➔ The MFFP relies on ecoforest inventories and scientific research to manage forest in responsible way. It promotes rigorous management that facilitates continuous improvement to its practices in order to advance sustainable forest management.

The establishment of an environmental management system within the MFFP’s regional operations will help meet this objective while assisting in decision-making and monitoring. This system will make it easier to obtain forest certification.

To meet public expectations, the MFFP issues progress reports on sustainable forest management and publicizes the measures it has taken.

This challenge is based on the following orientation:

- 1. Make and report on progress in sustainable forest management using knowledge and tools

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**ORIENTATION**  
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**MAKE AND REPORT ON PROGRESS IN SUSTAINABLE FOREST MANAGEMENT USING KNOWLEDGE AND TOOLS**

➔ Use of cutting-edge knowledge is key to implementing sustainable forest management, particularly to better understand the state of ecosystems and how they work, estimate their production capacity, adapt silviculture to forest characteristics, establish the value of the resource, or innovate in forest product production. Knowledge makes it possible to better plan forest operations, better understand their effects, which are in addition to those caused by natural disturbances, and ensure that silvicultural treatments are appropriate, while still generating expected yields.

The MFFP is noteworthy for conducting research and collecting data from across the province over long periods. For example, forest inventories conducted since 1970 and monitoring of natural disturbances and wildlife habitats help better understand the state of Québec’s forests. A number of other organizations also contribute to forest knowledge.

Knowledge acquisition needs are increasing in number and variety, and include factors affecting social acceptability and solutions for modernizing the structure of the wood products industry. To respond to these new requirements, the MFFP intends to better structure its knowledge acquisition activities using an integrated approach. For this purpose, it is developing a knowledge management plan that will help optimize the main phases, i.e., needs assessment, knowledge acquisition and transfer, and integration of knowledge into forest management.

The MFFP regional offices have set up an environmental management system within their organization. This system is the subject of an environmental policy that defines objectives, establishes a monitoring and control mechanism, and ensures that mitigation measures are put in place.

In terms of sustainable forest management, the results obtained are made public by means of the five-year review provided for under the Sustainable Forest Development Act. This review includes a report on the implementation of the Sustainable Forest Management Strategy and an analysis of the sustainable forest management results achieved in the forests in the domain of the State, prepared by the Chief Forester. It also enables the MFFP to report on the quality and performance of its forest management at the national and international level.

### **Objective 1 – Foster the acquisition and wider dissemination of knowledge to advance sustainable forest management.**

- > Draw up a knowledge management plan that addresses data acquisition, knowledge development, and reporting.

### **Objective 2 – Report on progress made.**

- > Submit the five-year sustainable forest development review to the National Assembly, including a report on the implementation of the Sustainable Forest Management Strategy.
- > Make the five-year sustainable forest development review available online and use various platforms to publicize it.



## SECTION 3

# IMPLEMENTATION OF THE STRATEGY

THE SUSTAINABLE FOREST MANAGEMENT STRATEGY IS THE BASIS FOR ALL SUSTAINABLE FOREST MANAGEMENT INITIATIVES BY THE GOVERNMENT. IT IS IMPLEMENTED USING VARIOUS MANAGEMENT TOOLS, INCLUDING REGULATIONS, POLICIES, STRATEGIES, PROGRAMS, GUIDELINES, PLANS, ALLOWABLE CUT CALCULATIONS, TIMBER ALLOCATION MECHANISMS, AGREEMENTS, CONTRACTS, ETC.

➔ Notwithstanding this framework, the MFFP wishes to give stakeholders more latitude to propose solutions of their own adapted to local and regional issues. That is why the MFFP is using a management approach based on objectives and results to implement the strategy. The approach focuses on setting clear and coherent objectives and empowering stakeholders to achieve the desired results, giving them the opportunity to propose different and complementary actions in the aim of continuous improvement.

The MFFP is pursuing the objectives set out in the Strategy by progressively implementing the proposed actions in keeping with the means of the government. The Sustainable Forest Management Strategy will come into effect on the date of its publication. However, a number of the actions it sets out have already been completed, including the establishment of local integrated land and resource management panels, the incorporation of various ecosystem protection measures into integrated forest management plans, and the creation of a free timber market. Some actions are underway, and others are forthcoming to advance the MFFP's vision of sustainable forest management.

### MANAGEMENT BY OBJECTIVES AND RESULTS



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# EVALUATION OF THE SUSTAINABLE FOREST MANAGEMENT STRATEGY AND ACCOUNTABILITY

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➔ For the MFFP, continuous improvement of sustainable forest management practices is fundamental. To this end, the MFFP has established a monitoring and evaluation framework based on a series of indicators (presented in the appendix) to monitor actions and evaluate the extent to which the objectives established in the Strategy have been achieved. Every five years, the MFFP evaluates the objectives and issues a report on the implementation of the Strategy, based in part on indicators and targets. The report is included in the 2013–2018 sustainable forest development review provided for in the Sustainable Forest Development Act and will be submitted in 2019 to the National Assembly.

Based on the results obtained, existing forestry knowledge, and Québec society’s expectations of its forests, the MFFP will review the Strategy and propose new objectives and actions to progress further toward sustainable forest management.

# SECTION 4

## APPENDIX

### SUMMARY TABLE OF SUSTAINABLE FOREST MANAGEMENT STRATEGY REPORTING INDICATORS

For each of the 48 Strategy objectives, an actions report will be included in the five-year sustainable forest development review. For 31 of these objectives, indicators will also be documented in the report. This table presents all the indicators that will be produced. An indicator may help with the reporting of multiple objectives and multiple indicators may be used to assess achievement of an objective.

<b>CHALLENGE TAKE THE INTERESTS, VALUES AND NEEDS OF THE QUÉBEC POPULATION INCLUDING THE ABORIGINAL NATIONS INTO ACCOUNT IN MANAGING THE FORESTS</b>		
<b>ORIENTATION 1. MAINTAIN A DIALOGUE WITH THE PUBLIC INCLUDING THE ABORIGINAL COMMUNITIES ABOUT FOREST MANAGEMENT AND DEVELOPMENT</b>		
<b>Objective</b>	<b>Action</b>	<b>Indicator</b>
1. Identify the interests, values, needs, and expectations of Quebecers including the Aboriginal communities, with regard to forest management and development in Québec	<p>Conduct surveys and strategic monitoring to document and track changes in the values, needs, and expectations of Quebecers, including the Aboriginal communities, concerning forest management and development.</p> <p>Experiment with models for dialogue and discussion between the public and MFFP on forest issues.</p>	Report on the interests, values, needs, and expectations expressed in public consultations
2. Invest in forest information and education to address the concerns of the public and the school community	<p>Support and guide forest information and education initiatives by the MFFP partners.</p> <p>Encourage the organization of activities for the general public and the school community and actively participate in them.</p> <p>Design and distribute, in collaboration with partners, information and education tools that address the concerns of the population.</p>	Report on actions and forest information and education initiatives conducted in all regions of Québec
<b>ORIENTATION 2. ALLOW CITIZENS, LOCAL COMMUNITIES, AND ABORIGINAL COMMUNITIES TO ACTIVELY TAKE PART IN REGIONAL FOREST MANAGEMENT</b>		
<b>Objective</b>	<b>Action</b>	<b>Indicator</b>
1. Entrust the competent bodies or the regional county municipality with responsibilities in the area of integrated land and resource management	<p>Promote implementation of local and regional development projects defined in the regional plan for integrated land and resource development.</p> <p>Support the establishment and operation of local integrated land and resource management panels.</p>	Report on actions

<p>2. Improve participation by forest stakeholders in integrated forest management planning</p>	<p>Provide participants on local integrated land and resource management panels with the information needed to plan integrated forest management.</p> <p>Offer, at the request of the competent body or the regional county municipality, to transfer knowledge by having the MFFP experts participate on an ad hoc basis in local integrated land and resource management panels.</p> <p>Measure the satisfaction of participants with regard to local integrated land and resource management panels and the results achieved.</p>	<p>Report on participation in public consultations on forest management orientations (number of participants and level of representation by interest group)</p> <p>Rate of stakeholder participation in integrated land and resource management panels</p>
<p>3. Provide local and Aboriginal communities with opportunities for participating in and taking responsibility for forest management</p>	<p>Adopt a policy to define criteria for delimiting and selecting local forests.</p> <p>Select and create local forests.</p> <p>Establish local forests and sign agreements delegating management of forest lands and resources.</p> <p>Offer administrative and technical support to delegated local forest managers.</p> <p>Allocate volumes of timber (permit to harvest timber to supply a wood processing plant) to local and Aboriginal communities, which will be responsible for their harvest and marketing.</p>	<p>Report on delegating management, including policy on local forests</p>

**ORIENTATION 3. TAKE INTO ACCOUNT THE RIGHTS, INTERESTS, VALUES, AND NEEDS OF ABORIGINAL COMMUNITIES IN FOREST LAND AND RESOURCES MANAGEMENT**

<b>Objective</b>	<b>Action</b>	<b>Indicator</b>
<p>1. Promote Aboriginal community participation in sustainable forest management and development</p>	<p>Establish a discussion table to facilitate consideration of main Aboriginal issues in forest management.</p> <p>Work in cooperation with Aboriginal communities to develop collaboration and consultation processes adapted to their reality.</p> <p>Encourage Aboriginal communities to define and communicate their interests, values, and needs regarding sustainable forest management and development.</p> <p>Raise awareness among forest stakeholders, including local integrated land and resource management panels, of the presence and distinctive nature of Aboriginal communities.</p> <p>Promote and support the participation of Aboriginal communities in forest management and development activities, including local integrated land and resource management panels.</p>	<p>Number of consultations on forest planning held with local and Aboriginal community representatives</p>
<p>2. Promote the socioeconomic development of Aboriginal communities through the development of forest lands</p>	<p>Promote access to forest resources for Aboriginal communities and businesses by allocating volumes of timber or delegating management in the form of local forests.</p> <p>Encourage the allocation of silviculture contracts to Aboriginal businesses.</p> <p>Support the certification of Aboriginal forest management businesses.</p>	<p>Report on actions</p>
<p>3. Assist, in conjunction with Secrétariat aux affaires autochtones, in negotiating, implementing, and monitoring agreements between the government and Aboriginal nations and communities</p>	<p>Participate in negotiating agreements with Aboriginal communities on forest-specific matters.</p> <p>Participate in implementing and monitoring agreements on forest-specific matters.</p>	<p>Report on actions</p>

## CHALLENGE USE FOREST MANAGEMENT PRACTICES THAT ENSURE ECOSYSTEM SUSTAINABILITY

### ORIENTATION 1. MANAGE FORESTS IN A MANNER THAT PRESERVES THE MAIN FEATURES OF NATURAL FORESTS

Objective	Action	Indicator
1. Include local analysis of ecological issues in the integrated forest management plans and ensure suitable solutions are implemented	<p>Publish and maintain a natural forest baseline record using available research results, taking into account the work done by regional land and natural resource commissions.</p> <p>Produce a technical document that provides a framework for the local analysis of ecological issues and sets out guidelines for choosing appropriate solutions when creating integrated forest management plans.</p> <p>Include additional provisions on protecting wetlands and riparian zones in the Regulation respecting sustainable forest management.</p> <p>Publish a progress report on actions announced in the integrated forest management plans to address ecological issues.</p>	Report on ecological issues and how they are taken into account in planning
2. Ensure that the age structure of managed forests resembles that of natural forests	<p>Include age structure targets in the management strategy of each integrated forest management plan and take them into consideration when calculating allowable cuts.</p> <p>In a technical document on integrating ecological issues into integrated forestry management plans, update MFFP guidelines on the conservation of mature and overmature forests.</p>	Percentage of land where the age structure of managed forests presents a low or moderate degree of alteration versus natural reference forests
3. Apply a distribution model for forest operations that is based on the natural forest	<p>Update the guidelines for planning the spatial distribution of cuts in integrated forest management plans (2013–2018) for the spruce-moss bioclimatic domain.</p> <p>Include provisions in the future Regulation respecting sustainable forest management to take into account key aspects of the distribution of forest operations in the spruce moss domain.</p> <p>Establish a new model for the distribution of forest operations in the balsam fir–white birch and balsam fir–yellow birch bioclimatic domains for application in integrated forest management plans (2018–2023).</p>	Rate of compliance with provisions of the Regulation respecting sustainable forest management and key aspects of the guidelines for planning the spatial distribution of forests in the spruce-moss bioclimatic domain

### ORIENTATION 2. MAINTAIN QUALITY HABITATS FOR SPECIES REQUIRING SPECIAL ATTENTION AND SPECIES SENSITIVE TO FOREST MANAGEMENT ACTIVITIES

Objective	Action	Indicator
1. Take into account the specific requirements of certain species when planning and carrying out integrated forest management activities	<p>Include in integrated forest management plans:</p> <ul style="list-style-type: none"> <li>&gt; Management methods for maintaining the mapped habitat of each threatened or vulnerable species and each site of wildlife interest</li> <li>&gt; Silviculture prescriptions for white-tailed deer yards identified in compliance with the Act Respecting the Conservation and Development of Wildlife (2.5 km<sup>2</sup> or more)</li> </ul> <p>Include basic provisions in the Regulation respecting sustainable forest management to govern forest operations in white-tailed deer yards (2.5 km<sup>2</sup> or more)</p> <p>Establish suitable protective measures for species that are threatened, vulnerable, or likely to be designated as such and that are not yet covered by such measures.</p> <p>For certain threatened or vulnerable plant species, experiment with measures other than across-the-board habitat protection when their survival requires targeted action.</p> <p>Publish and update a technical guide on requirements for wildlife species that are threatened, vulnerable, sensitive to forest management activities, or of socioeconomic interest in order to better integrate them into the 2018–2023 forest management strategies.</p>	Report on actions

<p>2. S'assurer que l'aménagement forestier contribue au rétablissement des populations du caribou forestier</p>	<p>In the 2013-2018 integrated forest management plans, include recommended forest management measures based on the 2010 guidelines for managing woodland caribou habitat.</p> <p>In the Regulation respecting sustainable forest management, include provisions required to maintain suitable conditions for woodland caribou habitat, notably for limiting the road network.</p> <p>Apply the forest management measures outlined in Québec's 2005–2012 recovery strategy for woodland caribou.</p> <p>Carry out an inventory to determine the situation of woodland caribou herds and monitor their status over time and throughout their territory.</p> <p>Take part in the evaluation and analysis of new woodland caribou habitat management guidelines stemming from the 2013–2023 recovery plan.</p> <p>Adapt the new woodland caribou habitat management guidelines with a view to securing the support of forest stakeholders.</p> <p>Encourage the creation of large protected areas and the extension of existing protected areas in order to provide woodland caribou with more habitat exempt from human disturbances.</p>	<p>Development and implementation of governmental orientations for the management of woodland caribou habitat</p>
<p>3. Establish monitoring of species sensitive to forest management</p>	<p>Help establish a Québec-wide wildlife diversity monitoring program for public and private forests.</p> <p>For 2018, develop and implement a monitoring system based on the habitat quality models for at least three wildlife species sensitive to forest management activities, as identified in five forest zones.</p> <p>By 2018, integrate habitat quality models into the tools used to develop integrated forest management plans and calculate allowable cuts in order to assess and take into account the effect of forest management strategies on the quality and quantity of targeted wildlife habitats.</p>	<p>Report on actions</p>

**ORIENTATION 3. CONTRIBUTE TO THE DEVELOPMENT AND SUSTAINABLE MANAGEMENT OF AN EFFECTIVE NETWORK OF PROTECTED AREAS REPRESENTATIVE OF QUÉBEC'S BIODIVERSITY**

Objective	Action	Indicator
<p>1. Pursue the creation, legal recognition, and management of protected areas for which MFFP is responsible</p>	<p>Identify the main gaps in the network of exceptional forest ecosystems and fill them by legally classifying new protected sites and providing interim protection for exceptional forest ecosystems slated for protection.</p> <p>Promote the voluntary conservation of exceptional forest ecosystems in private forests by sharing information with concerned parties.</p> <p>Evaluate the network of biological refuges and legally designate all sites set aside since 2008.</p> <p>In collaboration with Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, take the necessary steps to secure recognition of more exceptional forest ecosystems, biological refuges, and wildlife habitats in the register of protected areas.</p> <p>Support initiatives to develop the protected areas for which MFFP is responsible for observation, information, and educational purposes.</p>	<p>Percentage of exceptional forest ecosystems, biological refuges, wildlife refuges, and forests targeted by measures to protect threatened or vulnerable plant habitats that have been properly protected in forest management activities</p>

<p>2. Help develop Québec's network of protected areas in forested areas</p>	<p>Work with Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, to create new protected areas, in particular in the continuous boreal forest and the northern temperate forest.</p> <p>Work with Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques, in analyzing candidate areas and assigning legal conservation status.</p>	<p>Report on actions</p>
<p>3. Help define new types of protected area status in the forests and create new protected areas</p>	<p>Work with Ministère du Développement durable, de l'Environnement et de la Lutte contre les changements climatiques on defining a broader range of statuses for protected areas where certain resource development activities are permitted.</p> <p>Help create habitat and species management areas, protected landscapes and seascapes, and protected areas with sustainable resource use (International Union for Conservation of Nature Category IV, V, and VI protected areas ), including by developing areas of interest for conservation located in wildlife reserves.</p> <p>Develop the concept of wetlands of interest as well as criteria for creating new wetland protected areas on lands in the domain of the state.</p>	<p>Report on actions</p>

**ORIENTATION 4. INTEGRATE NEW KNOWLEDGE ON ECOSYSTEM PRODUCTIVITY INTO FOREST MANAGEMENT**

Objective	Action	Indicator
<p>1. Take into account the effects of the main natural disturbances when planning forest management and calculating allowable cuts.</p>	<p>Identify the main disturbances specific to each region and the ecological and structural factors associated with them.</p> <p>Develop models to assess the effects of natural disturbances on the state of the forest and the calculation of allowable cuts.</p> <p>Take the results of natural disturbance models into consideration when calculating allowable cuts and developing integrated forest management plans.</p>	<p>Report on forest fires and actions taken to protect against forest fires</p> <p>Report on actions taken to manage main forest pests</p>
<p>2. Take soil fertility into account when planning and conducting forest operations</p>	<p>Integrate available data on soil fertility into forest management tools such as silviculture guides.</p> <p>Take areas vulnerable to nutrient loss into account when determining silviculture prescriptions.</p> <p>Add provisions to the Regulation respecting sustainable forest management aimed at sustaining soil fertility and prohibiting the removal of non-marketable sections of harvested trees from sites vulnerable to nutrient loss.</p>	<p>Report on actions</p>

**ORIENTATION 5. INTRODUCE FORESTRY PRACTICES AND PROTECTIVE MEASURES TO MAINTAIN THE INTEGRITY AND ECOLOGICAL FUNCTIONS OF AQUATIC, RIPARIAN, AND WETLAND ENVIRONMENTS AND FOREST SOILS**

Objective	Action	Indicator
<p>1. Reduce soil disturbances that hinder the function of ecosystems and diminish long-term productivity</p>	<p>Improve measures to fight rutting and the loss of productive area caused by forest roads and roadsides by integrating new requirements into the Regulation respecting sustainable forest management.</p>	<p>Percentage of productive forest area lost on harvested land</p> <p>Rutting</p>

<p>2. Protect aquatic environments by improving forestry practices and forest road management</p>	<p>Improve protection for water and aquatic environments by including new requirements in the Regulation respecting sustainable forest management.</p> <p>Monitor the effectiveness of measures in the Regulation respecting sustainable forest management aimed at protecting aquatic environments and ensuring the sustainability of forest road infrastructure.</p> <p>Apply the specific management methods decided on by local integrated land and resource management panels and selected by MFFP in order to provide better protection of aquatic species and exceptional wildlife habitats.</p> <p>Ensure and monitor compliance with maximum deforestation levels (equivalent clearcut area) in Atlantic salmon river drainage basins and certain landlocked Atlantic salmon rivers.</p> <p>Formulate a policy for planning the development of forest road networks and for maintaining and closing roads after harvest so as to minimize impacts on aquatic environments.</p>	<p>Rate of compliance of forest management activities with MFFP regulatory and legal provisions on protecting water and aquatic environments and wetlands</p>
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## CHALLENGE ENSURE PRODUCTIVE FORESTS THAT REGENERATE WEALTH AT DIFFERENT LEVELS

### ORIENTATION 1. INCREASE THE VALUE CREATED FROM WOOD TO GENERATE GREATER COLLECTIVE WEALTH

Objective	Action	Indicator
<p>1. Develop a timber production strategy for Québec</p>	<p>Implement a systematic provincial and regional process to analyze timber production options and their profitability.</p> <p>Gradually adjust integrated forest management plan strategies to apply promising production options.</p> <p>Develop a Québec timber production strategy that draws on the strategies applied in each region.</p> <p>Identify financial and budget incentives to support implementation of the Québec timber production strategy.</p> <p>Establish Québec-wide and regional timber production targets.</p>	<p>Development of a national timber production strategy</p>
<p>2. Produce timber in a way that takes into account site ecology and target objectives</p>	<p>Produce the Québec silviculture guide and station guides.</p> <p>Set planning, execution, monitoring, and inspection efforts for each category of the silvicultural intensity gradient.</p>	
<p>3. Target silviculture investments according to economic profitability</p>	<p>Further economic and financial analyses and integrate them into the calculation of allowable cuts as well as integrated forest management plans with a view to guiding silviculture investments toward the most profitable choices.</p> <p>Examine the silviculture scenarios used in the past to evaluate their wealth creation potential and modify them if necessary.</p> <p>Further the development of economic and financial analysis tools.</p> <p>Integrate the use of economic and financial analysis tools into the process of optimizing Québec's forest value chain.</p> <p>Produce a yearly analysis of the economic profitability of silviculture work for decision makers.</p>	<p>Amount of forest management investments in public forests and number of silvicultural treatments carried out</p> <p>Profitability of government-planned commercial treatments in public forests</p>

<p>4. Dedicate certain portions of land to timber production</p>	<p>In the integrated forest management plans, determine the proportion and location of areas of increased timber production.</p> <p>Maintain a register of areas of increased timber production and make it available to the public.</p> <p>Include government guidelines for areas of increased timber production in the public land use plan.</p>	<p>Percentage of public productive forest land registered as potential increased timber production areas in 2013–2018 integrated forest management plans</p>
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**ORIENTATION 2. EXPAND THE RANGE OF PRODUCTS AND SERVICES GENERATED BY THE INTEGRATED DEVELOPMENT OF FOREST RESOURCES AND FUNCTIONS**

Objective	Action	Indicator
<p>1. Include activities that promote the development and protection of forest resources and functions in integrated forest management plans</p>	<p>In integrated forest management plans, include local management objectives and harmonization measures agreed on by local integrated land and resource management panels and approved by MFFP.</p> <p>In silviculture scenarios, integrate the forestry practices recommended in wildlife habitat management guides (for white-tailed deer, moose, and ruffed grouse) and, if necessary, produce other wildlife guides.</p>	<p>Report on harmonization measures in integrated forest management plans</p>
<p>2. Promote the integrated management of the forest road network</p>	<p>Develop a forest road network management framework.</p>	<p>Report on actions</p>
<p>3. Promote the development of services within structured areas through adapted forest management</p>	<p>Add provisions to the Regulation respecting sustainable forest development regarding forest management issues specific to ZECs, wildlife sanctuaries, and outfitter operations with exclusive rights.</p> <p>In integrated forest management plans, include local management objectives and harmonization measures inherent to the development of structured area activities (e.g., hunting, fishing, trapping, ecotourism) that have been agreed on by local integrated land and resource management panels and approved by MFFP.</p>	<p>Included in the report on harmonization measures</p>
<p>4. Maintain the visual quality of forest landscapes</p>	<p>In integrated forest management plans, include local objectives and harmonization measures for sensitive landscapes requiring protection that have been agreed on by local integrated land and resource management panels and approved by MFFP.</p> <p>Add provisions to the Regulation respecting sustainable forest development to ensure landscape protection for certain types of site or infrastructure of recognized importance.</p>	<p>Included in the report on harmonization measures</p>
<p>5. Support the development of maple syrup production</p>	<p>In public land use plans and local integrated development plans, identify public land with good potential for maple syrup production and take it into consideration in integrated forest management plans.</p> <p>Adapt the analysis tool to assess the economic benefits of maple syrup production.</p>	<p>Report on actions</p>
<p>6. Encourage the development of non-timber forest products</p>	<p>In the integrated forest management plans, include harmonization measures for non-timber forest products agreed on by local integrated land and resource management panels and approved by MFFP.</p>	<p>Included in the report on harmonization measures</p>

**ORIENTATION 3. INCREASE THE CONTRIBUTION OF PRIVATE FORESTS TO QUÉBEC'S COLLECTIVE WEALTH**

Objective	Action	Indicator
<p>1. Clarify the roles of private forest partners</p>	<p>Introduce a governance model that includes the following panels: provincial partner forums, ministry/agencies table, interministerial advisory table, and MFFP's decision-making table.</p> <p>Support private forest initiatives in integrated local land and resource development plans that are consistent with protection and development plans as well as MFFP guidelines.</p>	<p>Report on actions</p>

2. Better target private forest investments	<p>Adopt a policy to protect public investments at each agency.</p> <p>Amend the Regulation respecting the reimbursement of property taxes to update the list and value of eligible work and include activities such as multi-resource management.</p> <p>Adapt the economic analysis tools designed for public forests to the private forest context.</p> <p>Establish a single financial assistance grid for private forests based on the public forest experience.</p>	<p>Investments in silvicultural work in private forests</p> <p>Report on measures to identify and secure investments in private forests</p>
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#### ORIENTATION 4. SELL TIMBER AT ITS FAIR MARKET VALUE AND EXTEND ACCESS TO MORE PROCESSORS

Objective	Action	Indicator
1. Establish the real value of timber in public forests based on market forces	<p>Define and implement the conditions required to hold timber auctions, including through implementation projects.</p> <p>Define and implement the conditions and rules required for a free timber market by publishing a marketing manual.</p> <p>Auction off the minimum volume of timber from public lands necessary to determine its fair market value.</p>	<p>Percentage of attributable volume available on the free timber market for 2013–2018</p> <p>Percentage of non-harvested volumes available on the free timber market</p>
2. Broaden access to timber by relying on market forces and reviewing allocation mechanisms while maintaining a form of supply reliability	<p>Implement conditions and tools that promote the involvement of a maximum number of bidders on the free timber market (e.g., efficient processes, customer service, buyer support, transactional website).</p> <p>In each region, determine the volume of timber available by species or group of species for the timber supply guarantee.</p> <p>Establish and make known the timber allocation mechanism in order to broaden access for more businesses.</p>	<p>Access: Percentage of volume sold to non-beneficiaries of the timber supply guarantee</p> <p>Security: Percentage of attributable volume available under the timber supply guarantee or timber harvesting permits to supply a wood processing plant</p> <p>Percentage of unharvested volumes offered by mutual agreement sales</p>

## CHALLENGE SUPPORT A DIVERSIFIED, COMPETITIVE, AND INNOVATIVE WOOD PRODUCTS AND FORESTRY INDUSTRY

#### ORIENTATION 1. MODERNIZE THE FOREST INDUSTRY BY DIVERSIFYING PRODUCTS TO BETTER ADAPT TO CHANGING MARKETS

Objective	Action	Indicator
1. Create favorable conditions for developing the forest product industry.	<p>Promote Québec's good practices in sustainable forest management on export markets.</p> <p>Ensure, together with the industry, that the research and technology transfer infrastructures required to modernize the industry are in place.</p> <p>Support measures to make available a qualified workforce adapted to new products and technologies.</p>	Report on actions
2. Wood product manufacturing: Diversify to reduce reliance on a cyclical economy.	<p>Continue efforts to promote the use of wood in construction to take full advantage of the environmental benefits of green construction.</p> <p>Support the industry in seeking and opening up new markets for existing products and niche markets for innovative products with a small environmental footprint.</p> <p>Encourage the industry to adapt plants on the basis of available resources and new needs and minimize operating costs by providing its workforce with appropriate training and implementing innovative technology.</p>	Main achievements regarding the industrial strategy for wood products

<p>3. Pulp and paper industry: Develop new products and markets.</p>	<p>Help develop new high value-added wood products such as smart paper, nanocrystalline cellulose, cellulose fibrils, fiber composites, and extractables.</p> <p>Support the industry in reducing its operating costs and help it set up more efficient transport logistics.</p> <p>Encourage companies to use employee training programs to prepare staff for new technologies.</p>	<p>Amounts invested and main achievements regarding the industrial strategy for new products</p>
<p>4. Bioenergy sector: Take advantage of business opportunities to develop forest biomass as an energy source.</p>	<p>Encourage projects that create market opportunities for using forest biomass as an energy source.</p> <p>Promote investment in regional use of forest biomass to replace fossil fuels.</p> <p>Encourage investment in equipment and facilities for wood pellet production and handling to make forest biomass harvesting more profitable.</p>	<p>Number of bioenergy projects that have benefited from assistance or monitoring</p> <p>Proportion of forest biomass available in forests in the domain of the State for allocation</p>

**ORIENTATION 2. PROMOTE PROFITABLE AND EFFICIENT FOREST MANAGEMENT COMPANIES AND DIVERSIFIED FIRMS THAT DEVELOP NON-TIMBER RESOURCES**

Objective	Action	Indicator
<p>1. Foster the development and maintenance of an efficient network of forest management companies.</p>	<p>Require forest management companies to hold certification recognized by MFFP when they perform management work in public forests.</p> <p>Take part in efforts to foster a positive image of forest industry jobs and trades and find solutions for improving the conditions of silviculture workers.</p> <p>Continue discussions with the representatives of forest contractors in order to establish the best conditions possible for growth.</p> <p>Sign multi-year contracts with forest management companies and forest cooperatives for carrying out non-commercial work for a portion of development work.</p>	<p>Report on actions</p>
<p>2. Encourage the development of wildlife, ecotourism, and recreation and tourism businesses as well as other businesses specialized in non-timber forest products.</p>	<p>Grant concessions on public land with potential for blueberry field development.</p> <p>Promote consistency in the policies, programs, decisions, and actions of ministries and partners involved with non-timber forest products.</p> <p>Develop decision support tools that help take into consideration the economic impact of forest management choices on the activities of businesses specializing in the development of wildlife.</p>	<p>Report on actions</p>

**CHALLENGE** ENSURE THAT FORESTS AND THE FOREST SECTOR HELP FIGHT AND ADAPT TO CLIMATE CHANGE

**ORIENTATION 1. INCREASE USE OF BIOMASS AND FOREST PRODUCTS TO REDUCE GREENHOUSE GAS EMISSIONS IN QUÉBEC AND FIGHT CLIMATE CHANGE**

Objective	Action	Indicator
<p>1. Reduce greenhouse gas emissions from institutional and commercial heating by using forest biomass instead of fossil fuels.</p>	<p>Promote the development of sufficient supplies of biomass from public forests, even during periods of reduced forest activities, in accordance with forest carrying capacity.</p> <p>Encourage biomass users to source supplies from private forests.</p> <p>Use life cycle analysis to determine which types of biomass to use and which fossil fuels to replace in order to optimize benefits with respect to greenhouse gas reduction.</p>	<p>Number of bioenergy projects that have benefited from assistance or monitoring</p> <p>Proportion of forest biomass available in forests in the domain of the State for allocation</p>

2. Reduce greenhouse gas emissions by increasing the use of construction lumber and appearance wood in Québec.	Continue efforts to promote the use of wood in construction to fully capture the environmental benefits of green construction	Percentage of construction lumber used in non-residential construction
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**ORIENTATION 2. CONSIDER FOREST CARBON AND THE EFFECTS OF CLIMATE CHANGE IN FOREST MANAGEMENT AND DEVELOPMENT**

Objective	Action	Indicator
1. Evaluate the effect of management strategies on the carbon pool in the forest ecosystem.	Develop expertise to account for and integrate forest carbon in forest management. Render operational the tools designed to integrate forest carbon (pool and flow) into the model used to calculate allowable cuts.	Annual carbon balance in Québec's managed forests
2. Determine and implement climate change adaptation measures in all spheres of forest management.	Define climate change adaptation measures and integrate them into forest management and development.	Report on actions
3. Update the approach used to manage natural disturbances as part of an integrated risk management process.	Produce a guideline document on preferred management practices for natural disturbances based on an integrated risk management approach. Draft and adopt new management practices for natural disturbances based on integrated risk management, in accordance with the commitments made by Québec for the implementation of the National Forest Pest Strategy and the Canadian Wildland Fire Strategy.	Development of guidelines for managing natural disturbances based on an integrated risk management approach

**CHALLENGE ENSURE SUSTAINABLE, STRUCTURED, AND TRANSPARENT FOREST MANAGEMENT**

**ORIENTATION 1. MAKE AND DOCUMENT PROGRESS IN SUSTAINABLE FOREST MANAGEMENT WITH THE HELP OF KNOWLEDGE AND TOOLS**

Objective	Action	Indicator
1. Foster the acquisition and wider dissemination of knowledge in order to progress in sustainable forest management.	Draw up a knowledge management plan that addresses data acquisition, knowledge development, and reporting.	Report on knowledge acquisition, dissemination, and transfer actions and activities Report on knowledge acquisition, dissemination, and transfer activities
2. Report on progress made	Submit the five-year sustainable forest development review to the National Assembly, including a report on the implementation of the Sustainable Forest Management Strategy. Make the five-year sustainable forest development review available online and use various platforms to publicize it.	Report on actions





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