Exceptional Forest Ecosystems in Québec

Key elements of our biodiversity

Québec

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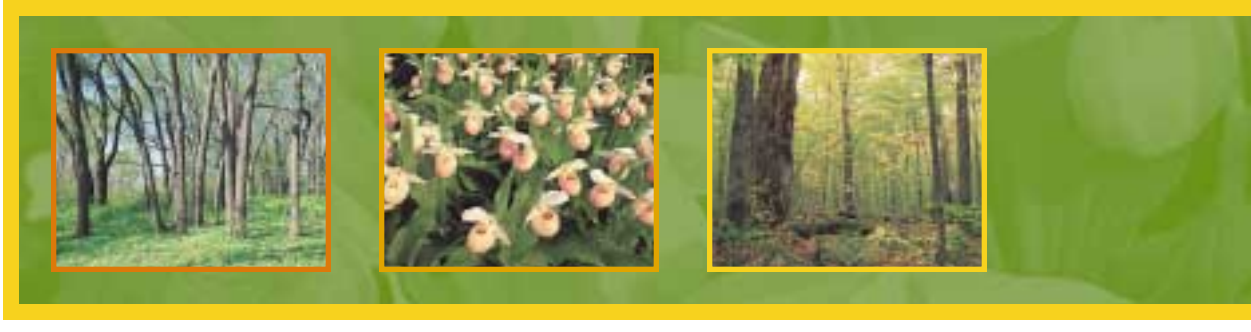
We are familiar with only a tiny part of the thousands of species of insects, bacteria, viruses, and fungi that inhabit our forest ecosystems. This means no one can truly measure the loss if a type of forest were to disappear from our environment. However, we do know that the natural balance between species is fragile, and that it is essential to maintain diverse forest ecosystems. Studies have shown that the ecological relationship between ecosystems plays a role we are only just beginning to discover. This means Québec must act carefully and with determination to protect its *exceptional forest ecosystems* (EFE) for the enjoyment of people now and for many generations to come.



Rafting on the Saint-Maurice

A Land of Forests!

Québec is a land not only of lakes and rivers, but also of forests, at least in its southern regions (figure). During the 19th and 20th centuries, the forest ecosystems in the most southerly areas of Québec underwent considerable change. In the St. Lawrence Valley, for example, they gave way to agriculture and urbanization. Woodlots were generally considered as sources of wood for construction, heating, lumber and eventually for the pulp and paper industry rather than habitats for many species of flora and fauna.

Generation upon generation of Quebecers have harvested all kinds of resources from the hardwood, softwood, and mixed stands in the Outaouais, Témiscamingue, Mauricie, and Saguenay—Lac-Saint-Jean regions, notably to feed the forest industry, which quickly became one of the driving forces of the Québec economy. Today, hardwood stands that survive in urban and agricultural areas no longer include all the species they once did, either because they are now too small or too fragmented, or because they have been subjected to intense harvesting, without regard for ecological concerns. For instance, certain maple syrup producers have focused solely on sugar maple trees at the expense of the other tree species that once added to the richness of

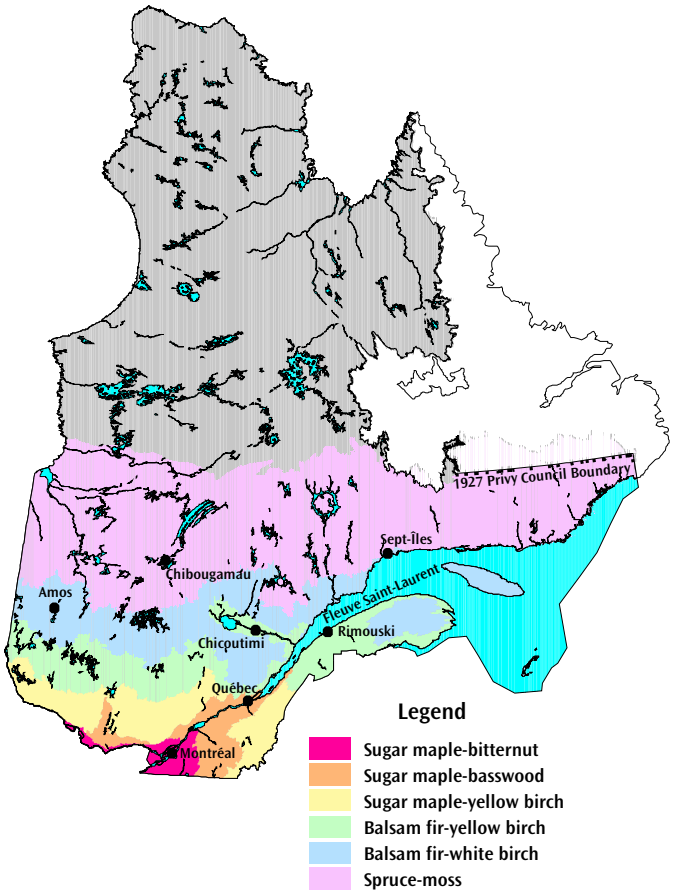


Figure: Southern Québec Bioclimatic Domains

their maple forests. The species that have been eliminated this way used to play an ecological role, notably by providing food and nesting sites to certain bird species that rely on these trees to survive and reproduce.

While they are still very abundant, softwood forests are also gradually being transformed by extensive logging operations. In addition, certain measures implemented to protect forests against fire, insects, and disease have altered the normal cycles of these naturally occurring phenomena.

What Is an Exceptional Forest Ecosystem?

In its 1996 publication entitled *Biodiversité du milieu forestier-Bilan et engagements du ministère des Ressources naturelles*, the department made a distinction between "common" forest ecosystems and "exceptional" forest ecosystems. The latter cover three distinct categories: *rare forests*, *old-growth forests*, and *shelter forests for threatened or vulnerable species*.

Rare forests are forest ecosystems that occupy a limited number of sites and cover a small area. Generally, they are naturally rare or they have become rare as a result of human activity in which case they are referred to as "anthropogenic". Rare forests are assessed not only on a Québec-wide scale, but also on more regional levels. For example, pitch pine stands are rare throughout Québec. Red oak stands, on the other hand, are common in the southwest part of the province, but rare on the Gaspé peninsula.

The term *old-growth forests* refers to stands that have not been affected by Man and that have experienced no major natural disturbances in recent times. They are composed of very old trees. These forests display a number of special features—they include living, senescent (aging), and dead trees, and the forest floor is littered with large trunks in varying stages of decomposition. There are very few old-growth forests left in Québec. In the southern part of the province, most old-growth stands were considerably affected by colonization and, later, by urbanization. Further north, insect epidemics and forest fires have hit them hard.

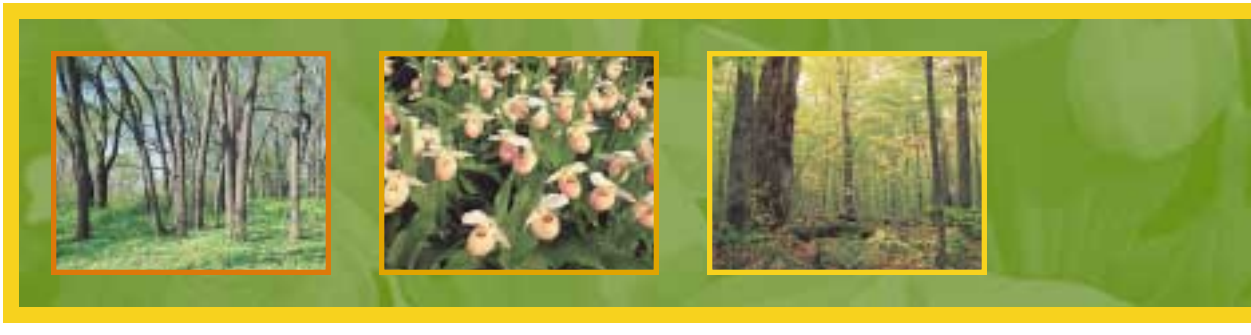
Lastly, *shelter forests for threatened or vulnerable species* are stands featuring either a significant concentration of threatened or vulnerable plant species[1] or a population[2] that is of great value to the conservation of one of these species.

1 "Threatened or vulnerable species" are those designated as such under the *Regulations respecting threatened or vulnerable plant species and their habitats* and those likely to become threatened or vulnerable and whose names appear on the Ministerial Order published under section 9 of the *Act respecting threatened or vulnerable species* (R.S.Q. c. E-12.01). A species is deemed "threatened" when it is likely to disappear and "vulnerable" when its survival is deemed precarious.

2 A "population" is a group of several individuals of the same species at a given site.

Where Are the Exceptional Forest Ecosystems?

A number of years ago, the MRN undertook the task of drawing up a list of all the exceptional forest ecosystems in Québec. With the cooperation of forest engineers and technicians, biologists, ecologists, and other specialists in Québec forestry, the Department has already identified a large number of sites that could eventually be awarded this special status. Even though they cover only 8% of the province, private lands in southern Québec are home to over half of these potential EFEs. The remainder are on public lands, and law already protects many, as they are located in parks, ecological reserves, or other protected areas. Since 1997, the Department has provided administrative protection for a certain number of potential EFEs on public lands. It intends to gradually attribute legally protected status to these sites. MRN specialists estimate that, throughout Québec, several hundred sites present the features required to be classified as *exceptional forest ecosystems*.



Shelter forests for threatened or vulnerable species: "a must" for their survival!

Every region of Québec has forests that are of paramount importance to one or more threatened or vulnerable species. The royal lady's slipper shown here belongs to the Orchid family. It is a species threatened by overpicking and which is sensitive to changes to its habitat. A forest stand that is home to one of Québec's finest populations of this plant species certainly deserves the status of **exceptional forest ecosystem.**

Owners of *old-growth forests* can be conservationists!

Many researchers believe that old-growth forests are highly important for a whole range of animal and plant species, and that they are essential for maintaining biodiversity. These ecosystems are home to large, dead trees (still standing) in which numerous bird and insect species live, feed, and reproduce (photo: holes made by woodpeckers in search of insects). The large, rotting trunks lying on the floors of old-growth forests are a living environment for many insect species and small amphibians. Lichen and mushrooms also abound. The disappearance of old-growth forests would obviously have a highly detrimental effect on many of these species.

In a *rare forest*, what you can't see is important!

The North american range of the common hackberry extends as far northeast as southern Québec. Two insect species—a beetle and a butterfly—feed exclusively on the wood and leaves of this tree. These species are rarely seen in Québec. It is therefore important to realize that by protecting a stand designated as a "rare forest" by virtue of the tree species it includes, we are also protecting certain living organisms that are often overlooked and little known. Specialists estimate that only 50% of the species in Québec have been identified to date. By protecting rare forests, we are also protecting species not easily seen and even sometimes species that are still unknown.

Who Are the Key Players in the Protection of EFEs in Québec?

Since EFEs are located both on private and public lands, their protection requires the involvement of all forest owners, managers, and users. In public forests, all holders of forestry rights, including beneficiaries of Timber Supply and Forest Management Agreements (CAAF), have a crucial role to play. In private forests, the responsibility for preserving EFEs falls on the owners, who can act as they see fit on their woodlots. However, they should be supported by the government and by such organizations as the *Regional Agencies for Private Forest Development*.

In addition to these stakeholders in the forestry sector, all government and broader government organizations responsible for managing public land also have a key role to play. In fact, all Quebecers must become aware of the need to protect EFEs. The MRN, the number one manager of Québec's public forests and a partner in the sustainable development of private forests, intends to play a leading role in this regard.

How Does the MRN Help in Protecting EFEs?

Within the framework of the recent review of its forest system, Québec created a new legal tool to protect EFEs. The MRN can now ensure the protection of EFEs as a normal part of its operations. Under the *Forest Act*, the Minister can, after making the necessary consultations, classify a site as an *exceptional forest ecosystem*. The implementation of the new provisions in the Act will gradually lead to the creation of a new provincial network of protected territories. This network will be one of the Department's key contributions to maintaining EFEs in Québec. The MRN also plans to pursue its efforts to inform and raise awareness among its various partners (public and private) in order to support them in their efforts to preserve the EFEs for which they are responsible.

Old-growth forests are littered with woody debris and dead trees. The few hikers that venture into them have trouble finding a clear path. In fact, while the size of the trees in these forests can sometimes be impressive, the forests themselves are not necessarily the most visually attractive. However, removing the woody debris from the floor of an old-growth forest would deprive it of one of its most important features. Inside and underneath stumps or rotting logs lives a world of insects, salamanders, mushrooms, and other tiny organisms that feed, shelter, and reproduce there.

What Activities Are Allowed on EFE Lands under the Forest Act?

Generally speaking, the Act prohibits all forest management activities (cutting, drainage, road building, etc.) in EFEs. However, where the ministère des Ressources naturelles deems it acceptable and where it does not affect the preservation of biodiversity, the Department may authorize such activities under certain conditions, and after consultation with the environment minister and the minister responsible for wildlife and parks. In certain cases, the development of an *exceptional forest ecosystem* for educational, scientific, and even recreational purposes may be justifiable, provided these activities do not alter the EFE's exceptional character.

Lands classified as *exceptional forest ecosystems* remain accessible to the public. The awarding of this status in no way affects the regulations governing wildlife harvesting on these lands. However, any form of development that requires forest management work must be approved by the Minister. The promoters must obtain a permit that is awarded only if their project involves no risk to the ecosystem in question. The exercising of existing mining rights on lands designated as EFEs are subject to the *Forest Act*. Moreover, the *Mining Act* gives the ministère des Ressources naturelles the right to protect lands designated as EFEs from staking, map designation, mining research or mining operations, and the right to ensure that work relating to the exercise of mining rights does not adversely affect the area's biodiversity.

Old-growth forests are also found in the softwood-dominated boreal zone.

What happens if a natural disaster destroys an exceptional forest ecosystem?

No forest ecosystem is immune to natural disturbances or disasters that can temporarily wipe out one or more of its distinguishing features. However, ecosystems are made up not only of vegetation and fauna, but also of physical components like soil, air, water, geological features, microclimates, etc. The legally acknowledged status of an* exceptional forest ecosystem *is therefore not affected in the event of a disaster, as these physical features remain and the forest cover will eventually grow back. Nevertheless, the Minister may declassify an* exceptional forest ecosystem *if he considers that the reasons for which it was classified no longer exist.

Why must we Protect Exceptional Forest Ecosystems?

Preserving *exceptional forest ecosystems* helps maintain the biodiversity of the ecosystems and species that characterize Québec's forests. This way, the species that live in *old-growth forests*, *rare forests*, and *shelter forests for threatened or vulnerable species*—even those we don't yet know about—can continue to benefit from the special habitats found there. Maintaining biodiversity is one of the prerequisites of sustainable forest management, not only in Québec, but worldwide, prerequisites that are laid out in the very first provisions of Québec's *Forest Act*. By protecting *exceptional forest ecosystems*, we are taking a wise and cautious approach, since knowledge about interspecies interaction and the evolution of ecosystems is still too sketchy to allow us to alter them without worry. Moreover, these EFEs can be promoted for recreational, educational, or research purposes, provided we preserve their exceptional character.

But when all is said and done, isn't it only fair to allow future generations, too, the opportunity to enjoy all what these *exceptional forest ecosystems* have to offer?

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Need Further Information?

To obtain further information or a copy of this publication, contact the:

Ministère des Ressources naturelles
Direction de l'environnement forestier
880 chemin Sainte-Foy, Suite 5.50
Québec City (Québec) G1S 4X4
Phone: (418) 627-8646
Email: gtefe@mrn.gouv.qc.ca

Ministère des Ressources naturelles
Service aux citoyens
5700–4e Avenue Ouest, B-302
Charlesbourg (Québec) G1H 6R1
Phone: (418) 627-8600 or 1-866-248-6936
Fax: (418) 643-0720
Email: service.citoyens@mrn.gouv.qc.ca
Web site: www.mrn.gouv.qc.ca

Whenever the MRN awards the status of *exceptional forest ecosystem* to a site, it releases a detailed description of the area. These descriptions and this publication can be consulted on the MRN Web site.

This is a publication by the Direction de l'environnement forestier.

Ministère des Ressources naturelles, 2001
Legal deposit, Bibliothèque nationale du Québec, 2001
ISBN: 2-550-38099-1
Distribution code: 2001-3073

Cette publication est disponible en français sous le titre :
Les écosystèmes forestiers exceptionnels du Québec
ISBN: 2-550-38098-3
Distribution code: 2001-3072

Coordination
André R. Bouchard

Research and Copywriting
Lucille Bastien
Gisèle Bélanger
André R. Bouchard
Mathieu Bouchard
Nicole Lavoie
Normand Villeneuve

Proofreading
Réjeanne Bissonnette

Graphic Design
Conception Graphique BCGD

Photography
Marc-André Grenier
Jean-François Bergeron
Enviro Foto
Archives nationales du Québec
Ministère de l'Environnement
Ministère des Ressources naturelles

Acknowledgements
Mario Castonguay
Sylvie Delisle
France Lafontaine
Bruno Lévesque
Pierre Marineau
Pierre-Martin Marotte
Jocelyne Quessy

Ressources naturelles
Québec