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The *Ministère des Ressources naturelles, de la Faune et des Parcs* publishes the quarterly *Newsletter from Québec – Forests* to inform the world community of its achievements in the forestry sector. The publication allows the MRNFP to remain in contact with its partners abroad, and deals with specific aspects of forest management in Québec.

## Summary

### January 2005

- Importance and Future of the Québec Forest Products Industry
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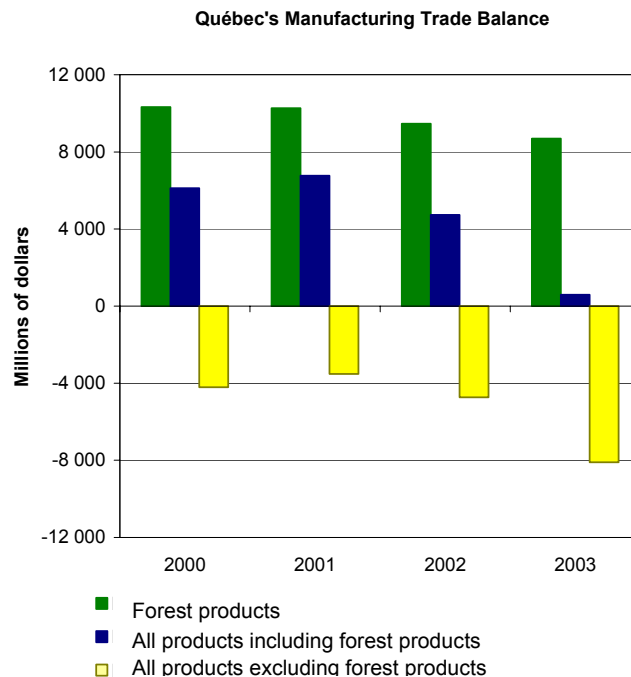
## Importance and Future of the Québec Forest Products Industry

*(Direction du développement de l'industrie des produits forestiers)*

The forest products industry is of significant economic and social importance to Québec. This large manufacturing industry contributes directly to the maintenance of more than 80,000 jobs. Forest products processing is the main manufacturing activity identified in 245 Québec municipalities. Some one hundred of these municipalities depend exclusively on this vital industry.

In recent years, Québec manufacturing exports have outperformed imports thanks to forest products. In 2003, forest products contributed 8.7 billion dollars to Québec's balance of trade, creating a net surplus of 600 million dollars, for all products.

The forest products industry includes a wide range of fields, namely sawn timber,



panelboard, structural engineered and appearance grade lumber, furniture and cabinet components, pulp and paper, and containerboard.



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It should be noted that Québec has the highest number of jobs among all of Canada in secondary and tertiary wood processing.

The forest products industry is constantly expanding, and relies increasingly on high-tech equipment. Thus personnel educational requirements can range from a high school diploma to a university degree, as the case may be.

With the globalization of markets, the multitude of products offered to consumers is rapidly changing, in keeping with design trends and new technologies. Moreover, sustainable development of the forest environment and the sharing of its resources by all forest users are ever present concerns. To succeed, companies must target their clientele, innovate and stand out from the competition. These are the new market realities.

The forest products industry is facing new challenges:

- Diversify product range to conquer new markets;
- Offer value-added products;
- Reduce manufacturing costs to increase competitiveness, through the use of leading-edge technologies and processes requiring qualified labour;
- Devote more time and effort to research and development;
- Improve knowledge of wood characteristics in order to innovate;
- Form strategic alliances with other companies in the industry or with businesses in other areas of activity, in order to penetrate new markets and benefit from economies of scale;
- Appeal to young people in order to ensure succession.

Moreover, the Commission for the study of public forest management in Québec notes in its report tabled on December 14, 2004: *“The low rate of capacity utilization for the wood processing industry, the resulting anticipated decreases in allowable cuts and volumes, the uncertainty of the newsprint sector and the increasing international competition, especially with regard to standard products (studding, etc.), suggest that the wave of consolidation in the industry will continue to develop in the years to come...”*

Note: This report is available on the Commission’s website at:  
<http://www.commission-foret.qc.ca>

## **Managing Woodland Caribou Habitat: A Major Challenge**

*(Summary of an article by Stéphane Déry and Agathe Cimon, Direction de l'environnement forestier, and Claude Dussault, Faune Québec, Saguenay – Lac-Saint-Jean Region)*

In the not-so-distant past, caribou roamed North American forests and could be found as far as the northern United States. However, its distribution range began to shrink rapidly by the end of the 19th century. Today, with the exception of a few isolated populations, free-ranging caribou are only found north of the 49th parallel.

The woodland caribou is the least known among the caribou of Québec, and exists in small, dispersed bands in the boreal forest. It does not make long annual migrations, but prefers to use favourable habitat in the forest interior. Some call it the grey ghost of the boreal forest. Experts have observed that increased use of the territory is driving herds farther north. This disturbing trend has led to the designation of the woodland caribou as a vulnerable species under the Québec *Act Respecting Threatened or Vulnerable Species*.



## **Solutions for managing woodland caribou habitat**

In managing woodland caribou habitat, researchers advise consideration of the species' need for large undisturbed areas containing the various elements it requires to complete its life cycle (e.g., calving, rutting and winter grounds). To this end, management based on an understanding of the ecosystem (ecosystemic management) is proposed.



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This primarily involves emulating natural disturbances present on the territory, such as fires or insect epidemics, and attempting to recreate an environment where the caribou can find all of the essential characteristics of its habitat.

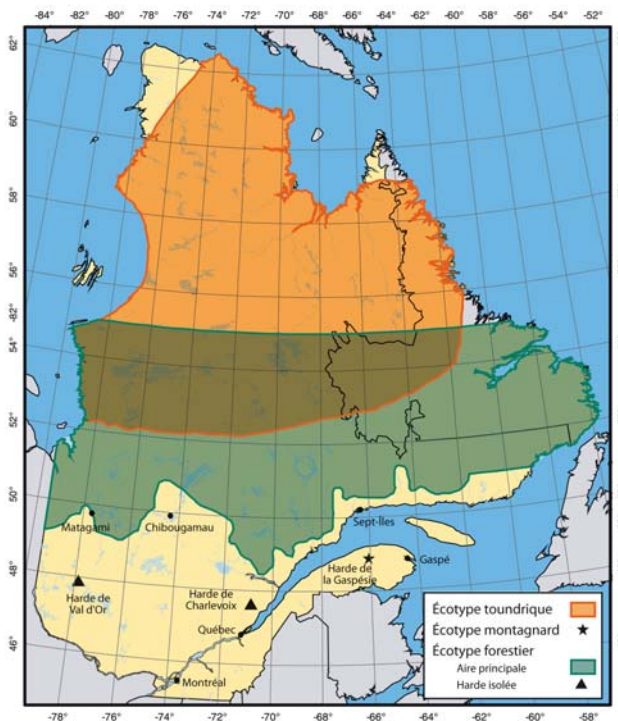
In addition to maintaining caribou habitat, forest management must also take into account the social, economic and environmental values and needs of human populations. In order to address these dual concerns with a view to sustainable development, the experts propose a north-south division of Québec's territory and the designation of a caribou-moose management zone. The southern portion would be managed mainly to encourage moose habitat, thus taking into consideration some of the expectations expressed by territory users. Forest managers could then practice block cutting, which is generally favourable to the moose.

The northern portion of the division corresponds to the spruce-moss forest ecosystem, where the goal is to maintain woodland caribou populations. Block cutting will not work here. Therefore another cutting pattern is required, one which emulates a major fire, a disturbance characteristic of spruce-moss stands. Forest managers should opt for fewer but larger cuts distributed throughout the territory. Within these large cuts, while attempting to emulate forest fire disturbances, residual forest should be maintained based on the hypothesis that it will reproduce conditions to which the caribou is adapted. In parallel, the strategy requires the maintenance of vast forest massifs corresponding to the portion of land untouched by fire. This is central to the management of woodland caribou habitat.

The large areas of forest form the basis of management plans, which are aimed at ensuring adequate protection of woodland caribou habitat. They should cover an area of 100 to 250 km<sup>2</sup> (the ideal being the largest area possible) and comprise elements essential to its life cycle, including isolation and protection from predators and human disturbances. Large cuts should be carried out near the protected areas at different periods to complete the management plan. The purpose of this strategy is to recreate as rapidly as possible other forest massifs indispensable to the woodland caribou, which will enable the timely harvest of the initial protected areas. This approach is therefore based on rotating between large protected areas of forest and the areas created to replace them, thus helping to reduce impacts on annual allowable cuts caused by the maintenance of large areas of mature forest.

## Reconciling forest management and the protection of woodland caribou habitat

The coming years are crucial to the preservation of the woodland caribou and its habitat, spruce-moss forests, which are one of Québec's major ecological heritages. Based on current knowledge, ecosystemic management appears to be the best approach. Projects already under way involving the protection of woodland caribou provide for this type of approach, and all of the stakeholders are devoted to meeting the challenge.



Adapted from Courtois et al. 2004. Historical changes and current distribution of Caribou, *Rangifer tarandus*, in Québec. *Canadian Field-Naturalist* 117, in the press

### Three ecotypes of Québec caribou

Everyone knows the caribou, also called "reindeer" in Europe (*Rangifer tarandus*), a large mammal with impressive antlers that roams the tundra around the polar circle. Québec caribou belong to the subspecies "woodland caribou" (*Rangifer tarandus caribou*).

### Experts divide the woodland caribou into three ecotypes based on their habitat.

- The **barren ground** caribou, the best known, which exists in northern Québec (shown in orange on the map) in large herds numbering in the thousands and has extensive migration routes.
- The **mountain** caribou, which makes its home in Parc de la Gaspésie where it is a main attraction.
- The **woodland** caribou, the least known, which lives in small, dispersed herds in the boreal forest (shown in green on the map).

## High-Temperature Treated Wood

*(By Steve Huppé, Direction du développement de l'industrie des produits forestiers)*

High-temperature treated wood is a natural, preservative-free product that is finding a growing market. It has an appealing appearance and is resistant to biodegradation. High-temperature treated wood is also referred to as retified wood<sup>®</sup>, torrefied wood and heat-treated wood. Processes vary somewhat, but use the same principle: heat treatment ranging from 160° C to 245° C.



On buildings, high-temperature treated wood offers the warm appearance of wood as well as adequate resistance.

High-temperature treatment for a given period is known as controlled pyrolysis of the chemical composition of wood. This process modifies the internal structure and physico-chemical properties of the wood.

Wood treated in this manner is more resistant to attacks by pathogenic agents and has increased dimensional stability, thanks to a moisture content of close to 0%. This makes it an interesting substitute for chemically treated wood, in some cases.

The process does diminish structural properties, however, thus limiting its uses. High-temperature treatment also hardens the wood, affecting machinability.

High-temperature treated wood is best used for the manufacture of outdoor products such as fencing, garden furniture, patios, play structures, panelling, etc. Moreover,



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because this type of treatment also modifies the colour, species with low market value can increase their value through use in components such as kitchen cabinets and flooring, since they more closely resemble exotic lumber which is gaining popularity on various markets, namely in Europe.

The future of high-temperature treated wood appears promising. However, many challenges must be met in order to strengthen its position in the marketplace. Marketing and product consistency are key factors that are sometimes neglected by promoters.