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lettre du Québec

The Ministère des Ressources naturelles publishes a quarterly Newsletter from Québec – Forests to inform the world community about its forestry achievements. The publication, which addresses various aspects of forest management in Québec, allows the MRN to remain in contact with its foreign partners.

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Report on the State of Québec's Forests 1995-1999
(By Rémy Charest, Direction de la planification et des communications)

On June 14, 2002, Québec's Minister of Natural Resources, François Gendron, tabled the Five-Year Report on the State of Québec's Forests, 1995-1999 in the National Assembly. The Report, which is the principal portrait of forestry development in Québec, contains detailed information on changes to the forest canopy, forest management activities and the extent of natural disturbances, in private woodlots as well as in forests in the domain of the State.

The 1995-1999 Report examines a five-year period that was particularly active in terms of forestry in Québec. It was marked by some major natural disturbances, along with an intensification of forestry activities, and also saw the beginning of an extensive review of Québec's forest system that culminated in the adoption of *Bill 136* in May 2001.

The Report underscores the increase in forest-based activities, and confirms the relevance of the steps taken by the Ministère des Ressources naturelles (MRN) to maximize the use of harvested timber and promote secondary and tertiary processing. It also supports the MRN's intensification of control and monitoring measures for forest activities, as well as its focus on sustainable development and the need for a balance between the social, environmental, leisure, tourist and economic roles played by Québec's forests.

For further information, please consult the full version of the Report, or the summary document, both of which are available on the following website:

http://www.mrn.gouv.qc.ca/forets/quebec/quebec-etat.jsp

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Elimination of Chemical Phytocides from Québec's Forests: A First in Canada

(Summary of an article by Gil Lambany, Direction des programmes forestiers)

In 1995, as part of the implementation of its Forest Protection Strategy, the Ministère des Ressources naturelles (MRN) promised to end the use of chemical phytocides in Québec's forests. This goal was finally achieved in 2001, and the MRN has not used phytocide products since then.

Québec's achievement – the first of its kind in Canada – will promote the use of forest management methods that are more respectful of natural regeneration. In the longer term, Québec's position with regard to phytocides will also encourage preventive silviculture focused on integrated, sustainable resource management and the preservation of ecosystem biodiversity in the forests.

Although it has not yet been possible to measure all the impacts of the Forest Protection Strategy, many of its commitments have played a significant role in the elimination of chemical phytocides from Québec's forests, especially those relating to prevention and the control of competing vegetation.

The Strategy's authors, by proposing cutting methods, harvesting techniques and silvicultural treatments geared towards the protection of natural regeneration, were able to create a context conducive to the reduction of chemical phytocide use, which was concentrated mainly in plantations.

It is estimated that between 15% and 20% of all logging areas do not regenerate adequately by natural means, and seedlings must be planted in these areas for reinforcement. A preventive strategy based on the use of oversized seedlings was therefore adopted, and played a significant role in achieving the goal of eliminating chemical phytocides.

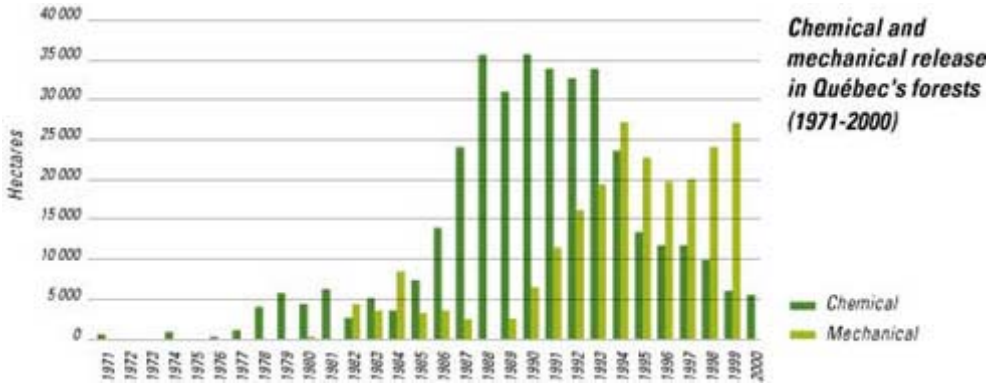
In 1998, nearly 30 million oversized seedlings were planted in Québec's forests, accounting for 75% of the target set in 1995. To date, however, oversized seedlings

have been used principally in the private woodlots, and could play a much greater role in the public forests. The use of oversized seedlings has a dual benefit, in that on the more fertile sites only one release cut is generally needed to establish their vertical dominance, and mechanical release work is often unnecessary in areas reforested in this way.

Mechanical Release

Until 1993, chemical phytocides were the principal tool used to control competing vegetation, especially in plantations. From 1994 onwards, however, they were replaced by mechanical release methods, as recommended in the Forest Protection Strategy. In 1999, more than 27,000 hectares of plantations were mechanically released in Québec, whereas chemical phytocides were applied to slightly over 6,000 hectares.

In fact, the use of chemical phytocides has declined steadily in Québec's forests since 1993 (see figure), and has been prohibited in all forests in the domain of the State since 2001. Moreover, the MRN no longer provides financial support for the spreading of phytocides in the private woodlots, and the slash cutter has become the method of choice for plantation release work.



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Another Forest Resource to be Developed: Canadian Yew Branches

(By Gil Lambany, Direction des programmes forestiers)

Harvesting mushrooms, small fruit and species other than trees can be an interesting source of revenue for local communities, and also promotes multiple use of the forests. In Canada, activities such as these generate economic spin-offs of nearly $500 million!

Yet, our forests still contain many untapped resources. For example, researchers have discovered that the branches of the Canadian yew contain substances that are effective in the treatment of some forms of cancer. Yew colonies are common in Québec's forests, and local communities can therefore take advantage of this new market niche.

The pharmaceutical industry needs huge quantities of raw materials. For example, it takes 30,000 kilograms of young yew branches to produce just one kilogram of Paclitaxel, one of the most sought-after anti-cancer agents.

Regulating Harvesting

Yew harvesting in the private woodlots can be managed and monitored by the wood producers' syndicates and marketing boards. In the public forests, it is governed by the provisions of the Forest Act concerning the harvesting of shrubs, half-shrubs and branches. The Ministère des Ressources naturelles (MRN) grants priority harvesting rights to certain companies for specific areas in the domain of the State.

Forêt Québec, an MRN government agency, is responsible for monitoring authorized harvesting activities in Québec's public forests. One of its tasks is to make sure yew branches are cut in accordance with the standards and prescriptions set out in the annual permits. Its employees also check that the branches are weighed properly for billing purposes and ensure that permit holders pay their dues.

Harvesting Canadian Yew Branches

Branches must be cut using hand-held shears. It is important to cut only the ends of a percentage of the branches on each shrub, and to limit harvesting to shrubs with a

main stem at least 50 cm in height. This allows new branches to form and ensures that harvesting will be able to continue on a regular basis in a given sector. Clear cutting is authorized only on the rights-of-way of new forest roads.

Harvesting periods vary according to the needs of the industry and the regions concerned, although generally speaking late summer and fall are the best times. Anyone harvesting branches during the hunting season should wear an orange bib for safety reasons.

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Laval University: The Cooperative Bachelor's Degree Program in Wood Engineering is Now Accredited

(By Michel Beaudoin, Laval University)

The Cooperative Bachelor's Degree Program in Wood Engineering offered by Québec City's Laval University received accreditation from the Canadian Engineering Accreditation Board (CEAB) in July 2002. In concrete terms, this means that the program's graduates are now eligible for membership of the Ordre des ingénieurs du Québec.

Abitibi-Price pavilion at Université Laval

A Short Background History

The program was first launched in the early 1980s when the Forest Engineering program was subdivided into three separate programs, one being the Wood Sciences program, the forerunner of the current Wood Engineering program. Its beginnings were modest, with three very small cohorts of between five and ten students per year. However, its graduates soon earned an excellent reputation in the wood processing industry.

In the early 1990s, the program was converted to the cooperative formula – in other words, to include industry training sessions alternating with classroom sessions. This change strengthened the links between employers, students, graduates and teachers, and highlighted the need for this type of training, not only in Québec but in the whole of Eastern Canada.

In the mid-1990s, the Ministère des Ressources naturelles acknowledged the program's importance and created a task force composed of representatives from the industry, the university community and the Department, to study the relevance of providing additional support for the program and extending its scope to cover secondary wood processing, engineering products and value-added products. The results of this process were extremely beneficial for the program.

In 1996 and 1997, the program was appraised and reviewed in depth. It was increased from 112 to 120 credits, and core elements on the timber resource and processing methods were maintained, with the addition of new elements relating to secondary transformation. At the same time, the process engineering component was enhanced substantially. These changes brought the program into line with comments made by the task force's industrial representatives, and moved it closer to CEAB's accreditation requirements (this was one of the task force's recommendations).

The first cohort graduated from the new version of the program in 2001, and the university applied for and obtained accreditation in July 2002.

Attendance and Placement

The number of students enrolled in the program is still fairly small, varying between five and ten per year. Numbers tend to fluctuate over time and in response to the economic context of the wood products industry, but are still insufficient to meet the market demand, both for trainees and for graduates.

The placement rate is such that all graduates find jobs. In some cases, there are not enough graduates to satisfy the demand. Moreover, the salaries paid to trainees and graduates alike are often higher than those obtained by graduates from other comparable engineering programs.

In short, graduates of the Cooperative Bachelor's Degree Program in Wood Engineering all have good, well-paid jobs in leading-edge (high technology) fields. They work principally on the improvement of processing methods.

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Norway Spruce Productivity Virtually Unaffected by the White Pine Weevil

(By Marie-Josée Mottet, Direction de la recherche forestière and Gaëtan Daoust, Canadian Forestry Service)

The Norway spruce has the ability to correct defects caused by the white pine weevil, with the result that its timber production potential remains high even where the insect is present. At least, this is the conclusion reached by researchers from the Canadian Forestry Service (CFS) of Natural Resources Canada and the Direction de la recherche forestière of Québec's Ministère des Ressources naturelles.

The study, whose findings were published recently, was carried out using trees selected at random during selection cutting, with a trunk diameter of between 14 and 22 cm. At the time of the cut, the plantation's volume productivity was in excess of 300 m³/ha. The trees were divided into three categories according to the extent of major weevil defects in the trunk. A classification of "1" signified no major defect, whereas classifications of "2" and "3" were reserved respectively for trees with one defect and two or more defects.

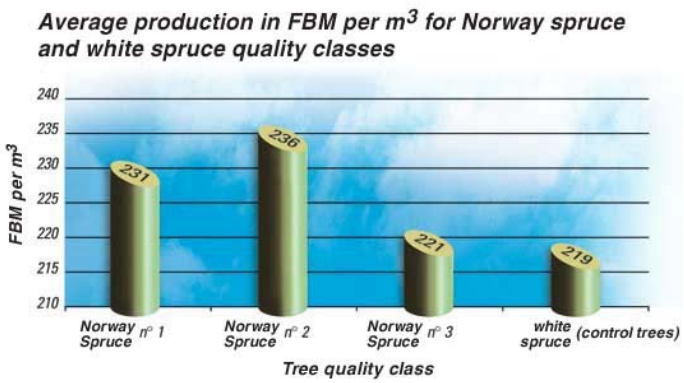
The insect, which attacks the tree's leader growth, first infested the plantation in 1975, six years after planting. In some years, the attack rate was in excess of 35%. For comparison purposes, trees from a white spruce plantation of similar age, located close by, were used as a control group.

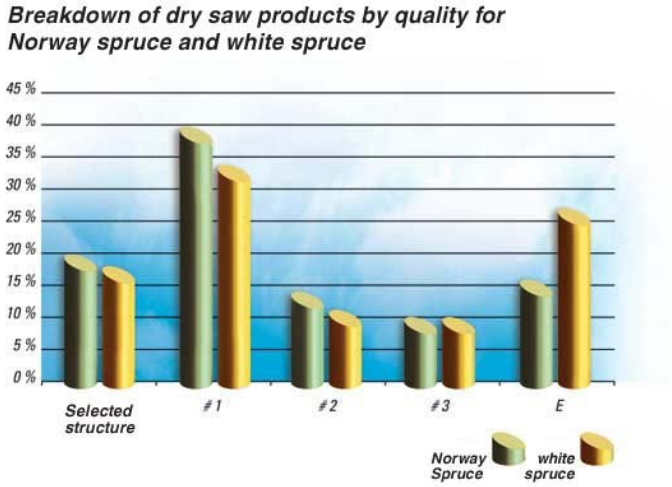
A total of 150 trees, including 40 white spruce, were cut down, measured, sawn into 2.4-metre (8-foot) logs and transported to the Duchesnay Forestry and Wood Technology School in the Québec City region, to be cut into pieces. The wood was then classified using current classification standards, first in its green state and subsequently after drying and planing.

The preliminary results for the Norway spruce showed that, compared to the white spruce control trees:

- The volume of logs delivered to the sawmill was fairly similar, despite the weevil defects. For category 1 and category 2 logs, which made up nearly 80% of the stand, losses due to weevil damage were minimal. The vast majority of the losses were from category 3 logs, and accounted for approximately 11% of the category's volume.
- Board-foot production was 5% higher for category 1 and category 2 logs, and similar for category 3 logs.

- On average, for dried pieces measuring 5 cm (2 inches) thick, the percentage classified as “selected structure” and “category 1” was higher.





In conclusion, the Norway spruce exhibited a high potential for quality wood production despite damage inflicted by the white pine weevil. The preliminary results of this study suggest that production will be of superior quality during subsequent thinning and final harvesting (the volume recovered at these two stages will account for more than 80% of the volume produced in the plantation). These findings should encourage producers and managers, and may even incite them to request more plants of this high-yield species for their reforestation operations. It is important to remember that, on sites of average quality, Norway spruce productivity is 50% higher than that of the white spruce (7.1 as opposed to 4.6 m³/ha/year).